Opening Session

Room Plenary Hall 07:30-08:20 *Chair:* Georg Bongartz, ISMRM President

07:30 **Welcome & Award Presentations**.

2011 Mansfield Lecture

Room Plenary Hall 08:20-09:05 *Chair:* Georg Bongartz, ISMRM President

08:20 **Challenges in fMRI**
Seiji Ogawa, Ph.D.
Tohoku Fukushi University, Sendai, Japan

Plenary Lectures
Functional Brain Networks at "Rest": Mechanisms, Methods & Clinical Utilization

Room Plenary Hall 09:05-10:20 *Organizers:* Peter A. Bandettini & Mark J. Lowe

09:05 **1**. **What is the Physiological Basis of Functional Connectivity & What Can It Tell Us?**
Maurizio Corbetta
Washington University School of Medicine, St. Louis, MO, USA
Spontaneous or intrinsic, i.e. not stimulus- or task-driven, activity in the brain is not noise, but orderly and organized at the level of large scale systems in a series of functional networks that maintain at all times a high level of coherence. Understanding this distributed spatio-temporal structure is critical for understanding neuronal communication and behavior.

09:30 **2**. **Resting-State Signals: Identification, Classification & Relation to Brain Connectivity**
Stephen M. Smith
Oxford University FMRIB Centre, Oxford, England, UK
Cardiovascular MRI technology continues to evolve in terms of its ability to rapidly and reliably produce accurate, functional, diagnostic information, and also in its capacity to provide quantitative results. a number of centers are beginning to explore the use of MRI as a means to triage patients presenting in the emergency room with acute chest pain. This presentation will explore the latest advances in cardiovascular MRI methods that are especially applicable to the diagnosis of Acute Coronary Syndrome (ACS).

09:55 **3**. **Resting Functional Connectivity: Potential as a Clinical Marker in Individual Patients**
Michael D. Greicius
Stanford University Medical Center, Stanford, CA, USA
Functional MRI currently has few clinical applications. This is due, in part, to the difficulty of using task-activation fMRI in a clinical setting. Resting-state fMRI, which allows for the detection of 15-20 large-scale brain networks, has the potential to overcome some of these clinical limitations. This talk will examine efforts to develop resting-state fMRI biomarkers for several neuropsychiatric disorders including coma, depression and chronic pain. Particular emphasis will be placed on resting-state fMRI as a potential biomarker in Alzheimer's disease.

Clinical Intensive Course
(Admission limited to Clinical Course registrants only)
Hip Bone & Soft Tissue Pathology: Case-Based Teaching

Room 516A-C 08:30-09:45 *Moderator:* Mark Schweitzer

08:30 **Soft Tissue Pathology About the Hip**
Miriam A. Bredella

09:10 **Osseous Pathology About the Hip**
Mark Schweitzer

Clinical Intensive Course
(Admission limited to Clinical Course registrants only)
Oncologic Body Imaging

Room 510 08:30-10:15

08:30 **Tumor Response Assessment using CT & MRI: Current Clinical Practice**
Frank H. Miller

09:00 **Tumor Response Assessment using the Advanced MRI Methods**
Dow-Mu Koh

09:30 **Whole Body DWI: Does It Have a Role in Oncology?**
Taro Takahara

10:00 **Discussion**

Clinical Intensive Course
MR Imaging in Brain Tumors - ISMRM/ASNR Joint Session

Room 510 11:00-13:00 *Moderators:* Meng Law & Brian D. Ross

11:00 **Cerebral Blood Flow & Permeability in Brain Tumors**
Meng Law

11:25 **Diffusion in Brain Tumors**
Danielle van Westen

11:50 **MR Biomakers in Brain Tumor**
Thomas L. Chenevert

12:15 **Pseudoprogression, Recurrence & Radiation Necrosis**
Pia C. Maly Sundgren

12:45 **Discussion**

Clinical Intensive Course
Clinical Protocol Challenges in MSK

Room 516A-C 11:00-13:00 *Moderator:* Garry E. Gold

11:00 **High Field (3T & 7T)**
Garry E. Gold

11:40 **Reducing Metallic Susceptibility**
Hollis G. Potter

12:20 **Pediatric**
Jerry R. Dwek

High Resolution Brain Imaging

Room 511A-C 11:00-13:00 *Moderators:* Fernando Calamante & Timothy Q. Duong

11:00 **4**. **Using *In-Vivo* MRI to Study Learning Induced Brain Plasticity in Adult Mice Trained on a Spatial Maze**
Jurgen Germann[1], D. Vousden[1], P Steadman[1], J. Dazai[1], C. Laliberte[1], S. Spring[1], L. Cahill[1], R. M. Henkelman[1], Jason P. Lerch[1]
[1]The Mouse Imaging Centre, the Hospital for Sick Children, Toronto, Ontario, Canada

11:12 **5**. **Can Preexisting Differences in Neuroanatomy Predict Training Performance? An *In-Vivo* MRI study of Adult Mice Trained on a Spatial Maze**

Jurgen Germann[1], P. Steadman[1], D. Vousden[1], J. Dazai[1], S. Spring[1], C. Laliberte[1], L. Cahill[1], R. M. Henkelman[1], J. P. Lerch[1]

[1]The Mouse Imaging Centre, the Hospital for Sick Children, Toronto, Ontario, Canada

11:24 **6**. **Super-Resolution Track-Density Imaging Studies of Mouse Brain: Comparison to Histology**

Fernando Calamante[1,2], Jacques-Donald Tournier[1,2], Nyoman D. Kurniawan[3], Zhengyi Yang[3], Erika Gyengesi[4], Graham J. Galloway[3], David C. Reutens[3], Alan Connelly[1,2]

[1]Brain Research Institute, Florey Neuroscience Institutes, Heidelberg West, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia; [3]Centre for Advanced Imaging, the University of Queensland, Brisbane, Queensland, Australia; [4]Neuroscience Research Australia, Randwick, New South Wales, Australia

11:36 **7**. **Ultra-High Resolution Functional MRI & Electrophysiology of the Rat Primary Somatosensory Cortex**

Yen-Yu Ian Shih[1], You-Yin Chen[2], Hsin-Yi Lai[2], Timothy Q. Duong[1]

[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, USA; [2]Institute of Biomedical Engineering, National Yang-Ming University, Taipei, Taiwan

11:48 **8**. **Magnetic Resonance Microscopy of Human α-Motor Neurons & Neural Processes**

Jeremy Joseph Flint[1,2], Brian Hansen[3], Sharon Portnoy[1,2], Choong H. Lee[2,4], Michael A. King[5], Michael Fey[6], Franck Vincent[6], Peter Vestergaard-Poulsen[3], Stephen J. Blackband[2,7]

[1]Neuroscience, University of Florida, Gainesville, Fl, USA; [2]McKnight Brain Institute, University of Florida, Gainesville, Fl, USA; [3]Center for Functionally Integrative Neuroscience, University of Aarhus, Aarhus, Denmark; [4]Electrical Engineering, University of Florida, Gainesville, Fl, USA; [5]Pharmacology & Therapeutics, University of Florida, Gainesville, Fl, USA; [6]Bruker Biospin; [7]National High Magnetic Field Laboratory, Talahassee, Fl, USA

12:00 **9**. **Evidence Towards Columnar Organization of Human Area MT with Sub-Millimetric, 3D, T_2 weighted BOLD fMRI at 7 Tesla**

Federico De Martino[1], Jan Zimmermann[1], Gregor Adriany[2], Pierre-Francois van de Moortele[2], David A. Feinberg[3], Kamil Ugurbil[2], Rainer Goebel[1], Essa Yacoub[2]

[1]Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands; [2]CMRR, Radiology, University of Minnesota, Minneapolis, MN, USA; [3]Advanced MRI Technologies, Sebastopol, CA, USA

12:12 **10**. **Within Digit Somatotopy of the Human Somatosensory Cortex using fMRI at 7T**

Rosa M. Sanchez Panchuelo[1], Julien Besle[2], Richard Bowtell[3], Denis Schluppeck[2], Susan Francis[3]

[1]Sir Peter Mansfield Magnetic Resonance Centre , University of Nottingham, Nottingham, United Kingdom; [2]School of Psychology, University of Nottingham, Nottingham, United Kingdom; [3]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

12:24 **11**. **Fast High Resolution Whole Brain T_2* Weighted Imaging using Echo Planar Imaging at 7T**

Jaco J. M. Zwanenburg[1, 2], Maarten J. Versluis[3], Peter R. Luijten[1], Natalia Petridou[1, 4]

[1]Radiology, Universiy Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, Universiy Medical Center Utrecht, Utrecht, Netherlands; [3]Radiology, Leiden University Medical Center, Leiden, Netherlands; [4]Rudolf Magnus Institute, University Medical Center Utrecht, Utrecht, Netherlands

12:36 **12**. **Investigation of Magnetic Susceptibility Contrast Across Cortical Grey Matter & White Matter**

Masaki Fukunaga[1,2], Peter van Gelderen[1], Jongho Lee[1], Tie-Qiang Li[1], Jacco A. de Zwart[1], Hellmut Merkle[1], Kant M. Matsuda[3], Eiji Matsuura[4], Jeff H. Duyn[1]

[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, USA; [2]Biofunctional Imaging, Immunology Frontier Research Center, Osaka University, Suita, Osaka, Japan; [3]Laboratory of Pathology, NCI, National Institutes of Health, Bethesda, MD, USA; [4]Laboratory of Neuroimmunology, NINDS, National Institutes of Health, Bethesda, MD, USA

12:48 **13**. **Exploring Orientation Dependence of T_2* in White Matter by Extreme Rotation of the Human Head at 7 Tesla**

Graham Wiggins[1], Chris Wiggins[2], Bei Zhang[1], Ryan Brown[1], Bernd Stoeckel[3], Daniel K. Sodickson[1]

[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY10016, USA; [2]CEA/NeuroSpin, Saclay, France; [3]Siemens Medical Solutions USA Inc, New York, NY, USA

Experimental Myocardial Imaging & Spectroscopy

Room 511D-F 11:00-13:00 *Moderators:* David Sosnovik & Gustav J. Strijkers

11:00 **14**. **Introduction**
Frederick H. Epstein

11:12 **15**. **Regional Quantification of Myocardial Stiffness using MR Elastography**
Arunark Kolipaka[1], Kiaran McGee[1], Shivani Aggarwal[1], Qingshan Chen[1], Nandan Anavekar[1], Armando Manduca[1], Richard Ehman[1], Philip Araoz[1]
[1]Mayo Clinic, Rochester, MN, USA

11:24 **16**. **Embryonic Cardiomyocytes Improve Contractility & Viability of Ischemic Myocardium**
Leonie E. Paulis[1], Alexandra Klein[2], Tessa Geelen[1], Bernd Fleischmann[2], Wilhelm Roell[2], Klaas Nicolay[1], Gustav J. Strijkers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Institute for Physiology, Life & Brain Centre, University of Bonn, Bonn, Germany

11:36 **17**. **Beyond Qualitative Tractography: A Novel & Reproducible Technique for the Quantitative Analysis of Cardiac Diffusion MR Tractography Datasets *In Vivo***
Choukri Mekkaoui[1], Shuning Huang[1], Guangping Dai[1], Timothy G. Reese[1], Udo Hoffmann[2], Marcel P. Jackowski[3], David E. Sosnovik[1]
[1]Radiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center For Biomedical Imaging, Charlestown, MA, USA; [2]Radiology, Massachusetts General Hospital, Harvard Medical School, USA; [3]Computer Science, University of São Paulo, Institute of Mathematics & Statistics, São Paulo, Brazil

11:48 **18**. **Microstructural Signatures of Ischemia & Stem Cell Therapy in the Myocardium Revealed with Serial Diffusion Tensor MRI & Tractography of the Mouse Heart *In Vivo*.**
Shuning Huang[1], Choukri Mekkaoui[1], Howard H. Chen[1], Soeun Ngoy[2], Michael Bauer[2], Ruopeng Wang[1], Van J. Wedeen[1], Guangping E. Dai[1], Ronglih Liao[2], David E. Sosnovik[1, 3]
[1]Martinos Center for Biomedical Imaging, Mass General Hospital, Charlestown, MA, USA; [2]Cardiology, Brigham & Woman's Hospital, Boston, MA, USA; [3]Cardiology, Mass General Hospital, Charlestown, MA, USA

12:00 **19**. **Quantitative Assessment of Mitochondrial Metabolic Efficiency by ^{17}O & ^{31}P MR Spectroscopy in Isolated Rat Hearts**
Bharath Atthe[1, 2], Mary Kemerer[1, 2], Ya Chen[1, 2], Ming Lu[1, 2], Gheorghe Mateescu[2, 3], Chris Flask[2, 3], Xin Yu[1, 2]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA; [2]Case Center for Imaging Research, Case Western Reserve University, Cleveland, OH, USA; [3]Radiology, Case Western Reserve University School of Medicine, Cleveland, OH, USA

12:12 **20**. **Creatine Kinase Overexpression Increases *In Vivo* ATP Synthesis in the Failing Mouse Heart**
Ashish Gupta[1,2], Vadappuram P. Chacko[3], Yibin Wang[4], Robert G. Weiss[2,5]
[1]Department of Medicine, Division of Cardiology, the Johns Hopkins University, School of Medicine, Baltimore, MD, USA; [2]Department of Radiology, Division of Magnetic Resonance Research, the Johns Hopkins University , Baltimore, MD, USA; [3]Department of Radiology,Division of Magnetic Resonance Research, the Johns Hopkins University School of Medicine, Baltimore, MD, USA; [4]Department of Anesthesiology & Medicine, University of California, Los Angeles, CA, USA; [5]Department of Medicine, Division of Cardiology, the Johns Hopkins University School of Medicine, Baltimore, MD, USA

12:24 **21**. **Hyperpolarized ^{13}C Magnetic Resonance Imaging & Spectroscopy Uniquely Reveal Early & Late Onset Metabolic Changes in the Failing Heart**
Marie Allen Schroeder[1, 2], Angus Z. Lau[1, 3], Albert Chen[4], Kim Connelly[1, 5], Xudong Hu[5], Jennifer Barry[1], Damian J. Tyler[2], Kieran Clarke[2], Graham A. Wright[1,3], Chuck H. Cunningham[1,3]
[1]Schulich Heart Centre, Sunnybrook Health Sciences Centre, Toronto, Ontario , Canada; [2]Physiology, Anatomy & Genetics, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [4]GE-Healthcare, Toronto, Ontario, Canada; [5]Keenan Research Centre of the Li Ka Shing Knowledge Institute, St Michael's Hospital , Toronto, Ontario, Canada

12:36 **22**. **Assessment of Chemical Exchange Saturation Transfer Effects in Myocardial Tissue at 7T**
Mohammad Haris[1], Anup Singh[1], Kejia Cai[1], Walter R. T. Witschey[2], James J. Pilla[1], Giovanni Ferrari[3], Kevin Koomalsingh[3], Robin Hinmon[3], Gerald Zsido[1], Joseph H. Gorman III[3], Robert C. Gorman[3], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]University Hospital Freiburg, Germany; [3]Department of Surgery, University of Pennsylvania

12:48 **23**. **High Spatial Resolution Free Breathing 3D T_2 Mapping for Edema Detection in Radio Frequency Ablation**
Haiyan Ding[1,2], Di Xu[1], M. Muz Zviman[3], Valeria Sena-Weltin[3], Luciano Amado[3], Saman Nazarian[3], Henry Halperin[3], Elliot R. McVeigh[1], Daniel A. Herzka[1]
[1]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, USA; [2]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of; [3]Department of Medicine, Division of Cardiology, Johns Hopkins School of Medicine, Baltimore, MD, USA

Fetal & Pediatric Neuro Studies

Room 512A-G 11:00-13:00 *Moderators:* Patricia Ellen Grant & Judith Verhoeven

11:00 **24**. **Radial & Tangential Migrational Pathways Revealed by Diffusion Tractography**
Emi Takahashi[1], Rebecca D. Folkerth[2], Albert M. Galaburda[3], P. Ellen Grant[1]
[1]Children's Hospital Boston, Boston, MA, USA; [2]Brigham & Women's Hospital; [3]Beth Israel Deaconess Medical Center

11:12 **25**. ***In Vivo* Fetal Cortical Development**
Cedric Clouchoux[1,2], Dimitri Kudelski[3], Ali Gholipour[4], Simon K. Warfield[4], Sophie Viseur[5], Jean-Luc Mari[3], Alan C. Evans[2], Adre J. DuPlessis[1], Catherine Limperopoulos[1,2]
[1]Children's National Medical Center, Washington, DC, USA; [2]Montreal Neurological Institute, Montreal, QC, Canada; [3]LSIS, Marseille, France; [4]Children's Hospital Boston, Boston, MA, USA; [5]Universite de Provence, Marseille, France

11:24 **26**. **Detection & Mapping of Delays in Early Cortical Folding in Fetuses with Ventriculomegaly from *In Utero* MRI**
Piotr A. Habas[1], Julia A. Scott[1], Vidya Rajagopalan[1], Kio Kim[1], A. James Barkovich[1], Orit A. Glenn[1], Colin Studholme[1]
[1]University of California San Francisco, San Francisco, CA, USA

11:36 **27**. **Diminished Regional Brain Growth is Associated with Impaired White Matter Microstructural Development Following Premature Birth**
Gareth Ball[1], James P. Boardman[1,2], Daniel Rueckert[3], Paul Aljabar[3], Tomoki Arichi[1,4], Nazakat Merchant[1,4], Ioannis S. Gousias[1], A. David Edwards[1,4], Serena J. Counsell[1]
[1]Imperial College London & MRC Clinical Sciences Centre, London, United Kingdom; [2]Simpson Centre for Reproductive Health, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom; [3]Department of Computing, Imperial College London, London, United Kingdom; [4]Division of Neonatology, Imperial College Healthcare NHS Trust, London, United Kingdom

11:48 **28**. **Initial Experience with Pseudo-Continuous Arterial Spin Labeling (pCASL) in the Infant Brain**
Mathieu Dehaes[1,2], Rudolph Pienaar[2], Janet S. Soul[3], P. Ellen Grant[1,2]
[1]Division of Newborn Medicine, Department of Medicine, Children's Hospital Boston, Harvard Medical School, Boston, MA, USA; [2]Center for Fetal-Neonatal Neuroimaging & Developmental Science, Boston, MA, USA; [3]Department of Neurolory, Children's Hospital Boston, Harvard Medical School, Boston, MA, USA

12:00 **29**. **Prognostic Value of ^{1}H-MRS & DTI after Hypothermic Treatment in Newborns with Perinatal Asphyxial Encephalopathy**
Claudia Testa[1], Caterina Tonon[1], David Neil Manners[1], Emil Malucelli[1], Sara Grandi[2], Francesca Sbravati[2], Giacomo Faldella[2], Gina Ancora[2], Raffaele Lodi[1]
[1]MR Spectroscopy Unit, Department of Internal Medicine, Aging & Nephrology, University of Bologna, Bologna, Italy; [2]Neonatology Unit, Department of Woman, Child & Adolescent Health, University of Bologna, Bologna, Italy

12:12 **30**. **Serial Diffusion Tensor Tractography Studies in Term Neonates with Hypoxic Ischemic Encephalopathy**
Richa Trivedi[1], Abhishek Yadav[2], Gyanendra Kumar Malik[3], Archana Yadav[3], Ram K. S. Rathore[4], Rakesh Kumar Gupta[2]
[1]Institute of Nuclear Medicine & Allied Sciences, New Delhi, Uttar Pradesh, India; [2]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [3]Paediatrics, Chhatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [4]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India

12:24 **31**. **Correlation of Thalamic Volume & Microstructural Abnormalites in Central Visual Pathways in High Risk Preterm Infants**
Arabhi C. Nagasunder[1,2], Rafael Ceschin[3], Robin L. Haynes[4], Jessica Wisnowski[1,5], Jane Tavare[6], Marvin D. Nelson[1], Stefan Bluml[1,2], Lisa Paquette[7], Ashok Panigrahy[1,3]
[1]Radiology, Childrens Hospital Los Angeles, Los Angeles, CA, USA; [2]Rudi Schulte Research Institute, Santa Barbara, CA, USA; [3]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, USA; [4]Pathology, Children's Hospital Boston, Boston, MA, USA; [5]Brain & Creativity Institute, University of Southern California, Los Angeles, CA, USA; [6]Division of Pathology, Childrens Hospital Los Angeles, Los Angeles, CA, USA; [7]Division of Neonatology, Childrens Hospital Los Angeles, Los Angeles, CA, USA

12:36 **32**. **Corpus Callosum Alterations in Preterm Infants at Term Predict Motor Outcomes at 5 Years**
Deanne Kim Thompson[1,2], Terrie E. Inder[1,3], Gehan Roberts[1], Jeremy Lim[1], Lex W. Doyle[1,4], Peter J. Anderson[1], Gary F. Egan[2]
[1]Murdoch Childrens Research Institute, Royal Children's Hospital, Parkville, Victoria, Australia; [2]Florey Neurosciences Institute, Centre for Neuroscience, University of Melbourne, Parkville, Victoria, Australia; [3]Department of Pediatrics, St Louis Children's Hospital, Washington University in St Louis, St Louis, USA; [4]Department of Obstetrics & Gynecology, Royal Women's Hospital, Parkville, Victoria, Australia

12:48 **33**. **Prematurity & Prenatal Growth Restriction Differently Affects Brain Connectivity**
Elda Fischi-Gomez[1], François Lazeyras[2], Cristina Borradori-Tolsa[3], Jean-Philippe Thiran[1], Petra S. Hüppi[3]
[1]Signal Processing Laboratory 5 (LTS5), Ecole Politechnique Federale de Lausanne, Lausanne, Vaud, Switzerland; [2]Service of Radiology, University Hospital of Geneva, Geneva, Switzerland; [3]Division of Development & Growth. Department of Pediatrics, University of Geneva, Geneva, Switzerland

Microscopy & Elastography

Room 513A-D 11:00-13:00 *Moderators:* Robert R. Edelman & Cornelius J. Faber

11:00 **34**. **Non-Invasive Visualization of the Complete Cardiac Conduction System using MR Microscopy**
Min-Sig Hwang[1,2], Katja E. Odening[3], Bum-Rak Choi[3], Gideon Koren[3], Stephen J. Blackband[1,2], John R. Forder[1,4]
[1]McKnight Brain Institute, Gainesville, FL, USA; [2]Neuroscience, University of Florida, Gainesville, FL, USA; [3]Cardiovascular Research Center, the Rhode Island Hospital, Alpert Medical School of Brown University, Providence, RI, USA; [4]Radiology, University of Florida, Gainesville, FL, USA

11:12 **35**. **A New Method for Phenotyping the Brain Tumor Microenvironment using MR Microscopy**
Eugene Kim[1], Jiangyang Zhang[2], Karen Hong[3], Arvind P. Pathak[2,4]
[1]Department of Biomedical Engineering, the Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University School of Medicine; [3]The Johns Hopkins University School of Public Health; [4]JHU ICMIC Program

11:24 **36**. **MR Microscopy of Brain Cytoarchitecture by Quantitative Mapping of Magnetic Susceptibility**
Chunlei Liu[1,2], Wei Li[1], G. Allan Johnson[2]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, USA; [2]Radiology, Duke University, Durham, NC, USA

11:36 **37**. **Imaging Neural Stem Cell Populations in the Developing Mouse Brain using Magnetic Resonance Micro Histology**
Francesca C. Norris[1, 2], Jon O. Cleary[1, 3], Joanne Henderson[4], Benjamin Sinclair[1, 5], Karen McCue[6], Jack A. Wells[1], Sebastien Ourselin[7], Paolo Salomoni[4], Peter J. Scambler[6], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [2]Centre for Mathematics & Physics in the Life Sciences & Experimental Biology (CoMPLEX), University College London, London, United Kingdom; [3]Department of Medical Physics & Bioengineering, University College London, London, United Kingdom; [4]Samantha Dickson Brain Cancer Unit, UCL Cancer Institute, London, United Kingdom; [5]Centre for Medical Image Computing, University College London, London, United Kingdom; [6]Molecular Medicine Unit, UCL Institute of Child Health, London, United Kingdom; [7]Centre for Medical Image Computer, University College London, London, United Kingdom

11:48 **38**. **Dual-Mode Optical-MR Microscopy with Uniplanar Gradient Coils**
Andrey V. Demyanenko[1], Shuyi Nie[1], Yun Kee[1], Marianne Bronner-Fraser[1], Julian Michael Tyszka[1]
[1]Biology, California Institute of Technology, Pasadena, CA, USA

12:00 **39**. **Investigating Anisotropic Elasticity using MR-Elastography Combined with Diffusion Tensor Imaging: Validation using Anisotropic & Viscoelastic Phantoms**
Eric Chuan Qin[1], Ralph Sinkus[2], Caroline Rae[1], Lynne Eckert Bilston[1]
[1]Neuroscience Research Australia, Randwick, NSW, Australia; [2]Centre de Recherches Biomédicales , Hopital Beaujon, Paris, France

12:12 **40**. **Biomechanical Properties Quantified *In Vivo* By Magnetic Resonance Elastography Correlate wth Myelination & Brain Parenchymal Integrity – a Combined 7 Tesla MRE & Histopathology Study in a Mouse Model of Multiple Sclerosis**
Katharina Schregel[1,2], Eva Wuerfel[3], Philippe Garteiser[4], Timur Prozorovskiy[5], Hartmut Merz[6], Dirk Petersen[1], Jens Wuerfel[1,7], Ralph Sinkus[4,7]
[1]Institute of Neuroradiology, University Luebeck, Luebeck, Germany; [2]INSERM UMR 773, CRB3, Centre de Recherches Biomédicales Bichat-Beaujon , Paris, France; [3]Department of Pediatrics, University Luebeck, Luebeck, Germany; [4]INSERM UMR 773, CRB3, Centre de Recherches Biomédicales Bichat-Beaujon, Paris, France; [5]Molecular Neurology, Heinrich-Heine-University, Life Science Center, Duesseldorf, Germany; [6]Department of Pathology, University Luebeck, Luebeck, Germany; [7]authors contributed equally

12:24 **41**. **Hydrocephalus Detection using Intrinsically-Activated MRE**
Keith D. Paulsen[1,2], Adam J. Pattison[1], Irina M. Perreard[3], John B. Weaver[1,3], David W. Roberts[3]
[1]Thayer School of Engineering, Dartmouth College, Hanover, NH, USA; [2]Norris Cotton Cancer Center, Lebanon, NH, USA; [3]Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA

12:36 **42**. **Cerebral MR Elastography for Measuring Poroelastic Properties of the Brain**
Sebastian Hirsch[1], Dieter Klatt[1], Sebastian Papazoglou[1], Kaspar Josche Streitberger[1], Juergen Braun[2], Ingolf Sack[1]
[1]Department of Radiology, Charité - University Medicine Berlin, Berlin, Germany; [2]Institute of Medical Informatics, Charité - University Medicine Berlin, Berlin, Germany

12:48 **43**. **Cardiac-Gated Hepatic MR Elastography with Intrinsic Transient Waveforms**
David Andrew Olsen[1], Pengfei Song[1], Kevin J. Glaser[1], Richard L. Ehman[1]
[1]Mayo Clinic, Rochester, MN, USA

Prostate Cancer (Clinical Studies)

Room 518-A-C 11:00-13:00 *Moderators:* Jurgen J. Fütterer & Anwar Padhani

11:00 **44**. **Introduction**
Anwar Padhani

11:12 **45**. **Diffusion Kurtosis Imaging in Prostate Cancer**
Andreas Lemke[1], Anja Weidner[2], Jörg Döpfert[1], Dietmar Dinter[2], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Department of Clinical Radiology & Nuclear Medicine, Heidelberg University, Mannheim, Germany

11:24 **46**. **Preoperative Nomograms Incorporating Magnetic Resonance Imaging & Spectroscopy for Prediction of Insignificant Prostate Cancer**
Amita Shukla-Dave[1], Hedvig Hricak[1], Oguz Akin[1], Changhong Yu[2], Kristen L. Zakian[1], Victor Reuter[1], Peter T. Scardino[1], James Eastham[1], Michael W. Kattan[2]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, USA; [2]Cleveland Clinic, Cleveland, OH, USA

11:36 **47**. **Multiparametric 3T MR Imaging of Prostate Cancer: Histopathologic Correlation using Customized MRI-Based Specimen Molds**
Baris Turkbey[1], Haresh Mani[2], Vijay Shah[3,4], Marcelino Bernardo[3, 4], Ardeshir Rastinehad[5], Thomas Pohida[6], Yuxi Pang[7], Dagane Daar[3], Compton Benjamin[5], Yolanda McKinney[1], Joanna Shih[8], Maria J. Merino[2], Peter A. Pinto[5], Peter L. Choyke[1]
[1]Molecular Imaging Program, NCI, NIH, Bethesda, MD, USA; [2]Laboratory of Pathology, NCI, NIH, USA; [3]Molecular Imaging Program, NCI, NIH, USA; [4]Imaging Physics, SAIC Frederick, Inc., NCI-Frederick; [5]Urologic Oncology Branch, NCI, NIH, USA; [6]Division of Computational Bioscience, Center for Information Technology, NIH, USA; [7]Philips Healthcare, USA; [8]Biometric Research Branch, NCI, NIH, USA

11:48 **48**. **Diffusion Weighted Magnetic Resonance Imaging (DW-MRI) for Locally Recurrent Prostate Cancer after External Beam Radiotherapy (EBRT)**
Veronica A. Morgan[1], Sharon L. Giles[1], Sophie F. Riches[1], David Dearnaley[2], Nandita M. deSouza[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Academic Urology, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

12:00 **49**. **Diagnostic value of ADC in Patients with Prostate Cancer: Influence of the Choice of b-Values**
Gregor Thörmer[1], Josephin Otto[1], Martin Reiss-Zimmermann[1], Matthias Seiwerts[1], Nikita Garnov[1], Michael Moche[1], Thomas Kahn[1], Harald Busse[1]
[1]Department of Diagnostic & Interventional Radiology, Leipzig University Hospital, Leipzig, Saxony, Germany

12:12 **50**. **A Novel Luminal Water Model for DCE MRI of Prostatic Tissues**
Susan M. Noworolski[1,2], Galen D. Reed[1,2], John Kurhanewicz[1, 2]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA; [2]Graduate Group in Bioengineering, University of California, San Francisco & Berkeley, San Francisco & Berkeley, CA, USA

12:24 **51**. **Validation with DCE-CT Proves that the DCE-MRI Phase Signal Can be Used for Robust Measurement of the Arterial Input Function (AIF) in the Iliac Arteries**
Johannes Georg Korporaal[1], Cornelis A. T. van den Berg[1], Matthias J. P. van Osch[2], Greetje Groenendaal[1], Marco van Vulpen[1], Uulke A. van der Heide[1]
[1]Dept. of Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands; [2]Dept. of Radiology, Leiden University Medical Center, Leiden, Netherlands

12:36 **52**. **Magnetic Resonance Imaging-Transrectal Ultrasound Fusion Improves Biopsy Yield**
Daniel Jason Aaron Margolis[1], Shyam Natarajan[2], Dinesh Kumar[3], Ram Narayanan[3], Leonard Marks[4]
[1]Dept. of Radiology, UCLA David Geffen School of Medicine, Los Angeles, CA, USA; [2]Center for Advanced Surgical & Interventional Technology , UCLA David Geffen School of Medicine; [3]Eigen; [4]Dept. of Urology, UCLA David Geffen School of Medicine, Los Angeles, CA, USA

12:48 **53**. **3T MRI-Guided Transperineal Targeted Prostate Biopsy: Clinical Feasibility, Safety & Early Results**
Kemal Tuncali[1], Junichi Tokuda[1], Andriy Fedorov[1], Iulian Iordachita[2], Sam Song[1], Sota Oguro[1], Andras Lasso[3], Fiona M. Fennessy[1], Yi Tang[1], Nobuhiko Hata[1], Clare M. Tempany[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, USA; [2]The Johns Hopkins University, Baltimore, MD, USA; [3]School of Computing, Queen's University, ON, Canada

Cancer Cells

Room 520B-F 11:00-13:00 *Moderators:* E. Jim Delikatny & Kristine Glunde

11:00 **54**. **Both the Glutaminolytic & Reverse Isocitrate Dehyrdogenase Pathways are Important for De Novo Lipogenesis from Glutamine in Immortilized Hematapoietic Cells**
Anthony Mancuso[1,2], Kathryn E. Wellen[1], Chao Lu[1], Weixia Liu, Stephen Pickup, Craig B. Thompson[1,3]
[1]Cancer Biology, University of Pennsylvania, Philadelphia, PA, USA; [2]Radiology, University of Pennsylvania, Philadelphia, PA, USA Minor Outlying Islands; [3]Memorial Sloan Kettering Cancer Center, New York, NY, USA

11:12 **55**. **Lactate-Mediated Metabolic Cooperation between Human Stromal & Breast Cancer Cells**
Ellen Ackerstaff[1], Brijesh B. Patel[2], Yanique I. Rattigan[2], George Sukenick[3], Natalia Kruchevsky[1], John W. Glod[2], Jason A. Koutcher[1], Debabrata Banerjee[2]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, USA; [2]The Cancer Institute of New Jersey, RWJMS, UMDNJ, New Brunswick, NJ, USA; [3]Sloan-Kettering Institute, New York, NY, USA

11:24 **56**. **Free Choline Influences Adaptation Mechanisms in Choline Phospholipid Metabolism of Human Breast Cancer Cells**
Balaji Krishnamachary[1], Noriko Mori[1], Mayur Gadiya[1], Yelena Mironchik[1], Flonne Wildes[1], Kristine Glunde[1], Zaver M. Bhujwalla[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, USA

11:36 **57**. **Effects of Targeting the Glycerophosphocholine Phosphodiesterase GDPD5 in Breast Cancer Models**
Maria Dung Cao[1,2], Lu Jiang[1], Balaji Krishnamachary[1], Mailin Doepkens[1,3], Zaver M Bhjuwalla[1], Ingrid Gribbestad[2], Kristine Glunde[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Department of Circulation & Medical Imaging, Norwegian University of Science & Technology (NTNU), Trondheim, Norway; [3]Department of Chemistry & Biology, University of Bremen, Bremen, Germany

11:48 **58**. **Effect of the HIF Pathway Inhibitor NSC-134754 on Glucose Metabolism**
Lauren C. J. Baker[1], Yuen-Li Chung[1], Jessica K. Boult[1], Margaret A. Ashcroft[2], Simon P. Robinson[1]
[1]CRUK & EPSRC Cancer Imaging Centre, the Institute of Cancer Research & Royal Marsden NHS Trust, Sutton, Surrey, United Kingdom; [2]University College London, United Kingdom

12:00 **59**. **Magnetic Resonance Spectroscopy Metabolic Profiling Reveals Different Mechanisms of Action in Response to Signaling Inhibitors in Prostate Cancer**
Alessia Lodi[1], Sabrina M. Ronen[1]
[1]University of California San Francisco, San Francisco, CA, USA

12:12 **60**. **Comparing the Chemotherapeutic Response of Prostate Cancer Cells using MR-visible Lipids & Fluorescent Fatty Acid Incorporation**
Daniel-Joseph Leung[1,2], E. James Delikatny[2]
[1]Department of Pharmacology, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA

12:24 **61**. **Noninvasive Assessment of Renal Tumor Aggressiveness using Hyperpolarized ^{13}C MR**
Kayvan R. Keshari[1], Bertram Koelsch, Rahwa Iman, Mark Van Criekinge, Daniel B. Vigneron, John Kurhanewicz, Zhen J. Wang
[1]UCSF, San Francisco, CA, USA

12:36 **62**. **^{1}H MRS & Hyperpolarised ^{13}C MRS Assays of Pyruvate-Lactate Exchange in SW1222 Cancer Cells *In Vitro***
Deborah Katherine Hill[1], Yann Jamin[1], Nicolas Tardif[1], Anne-Christine Wong Te Fong[1], Simon P. Robinson[1], Harold G. Parkes[1], Matthew R. Orton[1], Martin O. Leach[1], Yuen-Li Chung[1], Thomas R. Eykyn[1,2]
[1]Clinical Magnetic Resonance, CRUK & EPSRC Cancer Imaging Centre, Royal Marsden NHS Trust & the Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Division of Imaging Sciences, the Rayne Institute, Lambeth Wing, St.Thomas Hospital, London, United Kingdom

12:48 **63**. **Metabolism of Hyperpolarized U-^{13}C-d$_7$-D-Glucose in Living Breast Cancer Cell Cultures**
Talia Harris[1], Lucio Frydman[1], Hadassa Degani[2]
[1]Chemical Physics, Weizmann Institute of Science, Rehovot, Israel; [2]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel

Compressed Sensing & Sparsity

Room 710A 11:00-13:00 *Moderators:* Michael Lustig & Nicole E. Seiberlich

11:00 **64**. **Introduction**

11:12 **65**. **ESPIRiT (Efficient Eigenvector-Based L1SPIRiT) for Compressed Sensing Parallel Imaging - Theoretical Interpretation & Improved Robustness for Overlapped FOV Prescription**
Peng Lai[1], Michael Lustig[2,3], Shreyas S. Vasanawala[4], Anja C. S. Brau[1]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [2]Electrical Engineering, Stanford University, Stanford, CA, USA; [3]Electrical Engineering & Computer Science, University of California, Berkeley, CA, USA; [4]Radiology, Stanford University, Stanford, CA, USA

11:24 **66**. **Combination of Compressed Sensing & Parallel Imaging with Respiratory Motion Correction for Highly-Accelerated First-Pass Cardiac Perfusion MRI**
Ricardo Otazo[1], Daniel Kim[1], Leon Axel[1], Daniel K. Sodickson[1]
[1]Department of Radiology, NYU School of Medicine, New York, NY, USA

11:36 **67**. **Entropy Aided K-t Group Sparse SENSE Method for Highly Accelerated Dynamic MRI**
Muhammad Usman[1], Claudia Prieto[1], Tobias Schaeffter[1], Philip G. Batchelor[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

11:48 **68**. **Improving Compressed Sensing Parallel Imaging using Autocalibrating Parallel Imaging Initialization with Variable Density Tiled Random k-Space Sampling**
Peng Lai[1], Tao Zhang[2], Michael Lustig[2,3], Shreyas S. Vasanawala[4], Anja C. S. Brau[1]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [2]Electrical Engineering, Stanford University, Stanford, CA, USA; [3]Electrical Engineering & Computer Science, University of California, Berkeley, CA, USA; [4]Radiology, Stanford University, Stanford, CA, USA

12:00 **69**. **K-t Group Sparse using Intensity Based Clustering**
Claudia Prieto[1], Muhammad Usman[1], Eike Nagel[1], Philip Batchelor[1], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

12:12 **70**. **High-Frequency Subband Compressed Sensing with ARC Parallel Imaging**
Kyunghyun Sung[1], Anderson N. Nnewihe[1,2], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Bioengineering, Stanford University, Stanford, CA, USA

12:24 **71**. **Joint Bayesian Compressed Sensing for Multi-Contrast Reconstruction**
Berkin Bilgic[1], Vivek K. Goyal[1], Elfar Adalsteinsson[1, 2]
[1]EECS, MIT, Cambridge, MA, USA; [2]Harvard-MIT Division of Health Sciences & Technology, MIT, Cambridge, MA, USA

12:36 **72**. **Location Constrained Approximate Message Passing (LCAMP) Algorithm for Compressed Sensing**
Kyunghyun Sung[1], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, USA

12:48 **73**. **On the Quality Evaluation for Images Reconstructed by Compressed Sensing**
Tobias Wech[1, 2], Daniel Stäb[1], André Fischer[1], Dietbert Hahn[1], Herbert Köstler[1]
[1]Institute of Radiology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, USA

Brain Microstructure & Diffusion Imaging

Room 710B 11:00-13:00 *Moderators:* Valerij G. Kiselev & Eleftheria Panagiotaki

11:00 **74**. **Axon Diameter Mapping in the Presence of Orientation Dispersion using Diffusion MRI**
Hui Zhang[1], Penny L. Hubbard[2], Geoff J. M. Parker[2], Daniel C. Alexander[1]
[1]University College London, London, United Kingdom; [2]Manchester Academic Health Sciences Centre, Manchester, United Kingdom

11:12 **75**. **Magnetic Resonance Characterization of General Compartment Size Distributions**
Evren Ozarslan[1,2], Noam Shemesh[3], Cheng Guan Koay[1, 4], Yoram Cohen[3], Peter Joel Basser[1]
[1]STBB / PPITS / NICHD, National Institutes of Health, Bethesda, MD, USA; [2]Center for Neuroscience & Regenerative Medicine, USUHS, Bethesda, MD, USA; [3]School of Chemistry, Tel Aviv University, Tel Aviv, Israel; [4]Department of Medical Physics, University of Wisconsin, Madison, WI, USA

11:24 **76**. **AxCaliber 3D**
Daniel Barazany[1], Derek Jones[2], Yaniv Assaf[1]
[1]Neurobiology, Tel Aviv University, Tel Aviv, Israel; [2]CUBRIC, School of Psychology, Cardiff University, Wales, UK

11:36 **77**. **Inferring Micron-scale Tissue Structure using Extreme Value Theory for Cylindrically-restricted Diffusion**
Leigh A. Johnston[1,2], David Wright[2], Rick H. H. M. Philipsen[3], Scott C. Kolbe[2], James A. Bourne[4], Iven M. Y. Mareels[1], Gary F. Egan[2]
[1]Electrical & Electronic Engineering & NICTA VRL, University of Melbourne, Parkville, VIC, Australia; [2]Howard Florey Institute, Florey Neuroscience Institutes, Parkville, VIC, Australia; [3]Technical University of Eindhoven, Netherlands; [4]Australian Regenerative Medicine Institute, Monash University, Australia

11:48 **78**. **Activation Energies for Water Diffusion in *ex-vivo* White Matter**
Bibek Dhital[1], Christian Labadie[1,2], Harald E. Möller[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Laboratoire de Spectrométrie Ionique et Moléculaire, Université Claude Bernard Lyon 1, Lyon, France

12:00 **79**. **Assessment of Axon Diameter Distribution in Mouse Spinal Cord with q-Space Imaging**
Henry H. Ong[1], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA

12:12 **80**. **Surface-to-Volume Ratio with Oscillating Gradients**
Dmitry S. Novikov[1], Valerij G. Kiselev[2]
[1]Radiology, NYU School of Medicine, New York, NY, USA; [2]Diagnostic Radiology, University Hospital Freiburg, Freiburg, Germany

12:24 **81**. **Probing Microscopic Cellular Architecture in the Mouse Brain by Oscillating Gradient Diffusion Tensor Imaging**
Manisha Aggarwal[1], Susumu Mori[1], Jiangyang Zhang[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, USA

12:36 **82**. **Double-PFG MR Imaging of the CNS: Probing Underlying Grey Matter Microstructure**
Noam Shemesh[1], Daniel Barzany[2], Ofer Sadan[3], Yuval Zur[4], Daniel Offen[5], Yaniv Assaf[2], Yoram Cohen[1]
[1]School of Chemistry, Tel Aviv University, Tel Aviv, Israel; [2]Department of Neurobiology, Tel Aviv University, Israel; [3]Department of Neurology, Tel-Aviv Medical Center, Tel Aviv University, Israel; [4]GE Healthcare, Israel; [5]Laboratory of Neurosciences, Felsenstein Medical Research Center, Department of Neurology, Rabin Medical Center & Tel Aviv University, Israel

12:48 **83**. **A Comparative Study of Axon Diameter Imaging Techniques using Diffusion MRI**
Hui Zhang[1], Daniel Barazany[2], Yaniv Assaf[2], Henrik M. Lundell[3], Daniel C. Alexander[1], Tim B. Dyrby[3]
[1]University College London, London, United Kingdom; [2]Tel Aviv University, Tel Aviv, Israel; [3]Copenhagen University Hospital Hvidovre, Hvidovre, Denmark

Gold Corporate Member Lunchtime Symposium
Siemens

Room Plenary Hall 12:30-13:30

Clinical Intensive Course
MRI of the Foot & Ankle

Room 510 14:00-16:00 *Moderator:* Lynne S. Steinbach

14:00 **Forefoot**
Lynne S. Steinbach

14:40 **Ankle Tendons**
Kathryn J. Stevens

15:20 **Ankle Excluding Tendon**
William B. Morrison

Clinical Intensive Course
Female Pelvis & Bladder: Case-Based Teaching

Room 516A-C 14:00-16:00 *Moderators:* Patricia Noël & Evis Sala

14:00 **MRI of the Adnexa: Lesion Characterization**
Patricia Noël

14:30 **Bladder Tumors: The Role of MRI in Staging & Treatment Planning**
Andrea G. Rockall

15:00 **MRI of the Ovarian Cancer: Staging, Treatment Response & Detection of Recurrence**
Evis Sala

15:30 **MRI of Pregnant Patient: Diagnostic & Management Challenges**
Fergus Coakley

Clinical Intensive Course
Spine & Spinal Cord Imaging - ISMRM/ASNR Joint Session

Room 520B-F 14:00-16:00 *Moderators:* Mauricio Castillo & Majda M. Thurnher

14:00 **Trauma to the Spine & Spinal Cord**
Mauricio Castillo

14:25 **Postoperative Spine Imaging**
Mario Muto

14:50 **Tumors to the Spine & Spinal Cord**
Diana M. Gomez-Hassan

15:15 **Demyelinating Disease + Myelitis**
Massimo Gallucci

15:45 **Discussion**

ISMRM/SMRT Forum: DTI: is It Ready for the Clinic

Room 511A-C 14:00-16:00

14:00 **Technical Considerations for the Clinical Application of DTI: A Physicist's Perspective**
Derek K. Jones

14:30 **Technical Considerations for the Clinical Application of DTI: A Radiographer's Perspective**
Shawna Farquharson

15:00 **Implementation & Development of Guidelines for using DTI in Routine Clinical Practise: A Radiologist's Perspective**
Meng Law

15:30 **Panel Discussion**

Non-Contrast & Contrast-Enhanced MRA

Room 511D-F 14:00-16:00 *Moderators:* Tim Leiner & Mitsue Miyazaki

14:00 **84**. **Introduction: Contrast-Enhanced MRA: Relic of the Past or Alive & Kicking?**
Jeffrey H. Maki

14:12 **85**. **Simultaneous MR Angiography & Perfusion (MRAP): Application in Lower Extremity MRA & Skeletal Muscle Perfusion**
Katherine L. Wright[1,2], Nicole Seiberlich[2,3], John A. Jesberger[2], Raymond F. Muzic[1,3], Mark A. Griswold[1,3], Vikas Gulani[2,3]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA; [2]Case Center for Imaging Research, Case Western Reserve University, Cleveland, OH, USA; [3]Department of Radiology, University Hospitals, Cleveland, OH, USA

14:24 **86**. **4D PC MR of the portal venous system: Benefits of using a Blood Pool Contrast Agent**
Benjamin Landgraf[1], Alex Frydrychowicz[1], Kevin Johnson[2], Alejandro Roldan[1], Chris Francois[1], Scott Reeder[1, 2], Oliver Wieben[2]
[1]Radiology, University of Wisconsin - Madison, Madison, WI, USA; [2]Medical Physics, University of Wisconsin - Madison, Madison, WI, USA

14:36 **87**. **Comparison of CAPR MRA with CT Angiography for Evaluation of Below the Knee Runoff: Preliminary Results of Radiologist Confidence**
Phillip Young[1], James F. Glockner[1], Terri R. Vrtiska, Thanila Macedo, Petrice Mostardi, Stephen J. Riederer
[1]Radiology, Mayo Clinic, Rochester, MN, USA

14:48 **88**. **ECG-gated First-pass Contrast-Enhanced Magnetic Resonance Angiography of the Thorax - Initial Experience in Healthy Volunteers & Patients**
Moritz Wagner[1,2], Yutaka Natsuaki[2,3], Bernd Hamm[4], Gerhard Laub[2,3], Paul Finn[2]
[1]Radiology, Charite - University Hospital, Berlin, Germany; [2]Department of Radiological Sciences, David Geffen School of Medicine, University of California, Los Angeles, CA, USA; [3]Siemens Healthcare, USA; [4]Radiology, Charite - University Hospital, Berlin, Germany

15:00 **89**. **Incidental Venous Thrombosis as Detected by Magnetic Resonance Thrombus Imaging in 245 Patients with Suspected Peripheral Arterial Disease using a Blood Pool Contrast Agent**
Dariusch Reza Hadizadeh[1], Guido M. Kukuk[1], Ute L. Fahlenkamp[1], Jürgen Gieseke[1,2], Frank Träber[1], Josephine Pressacco[3], Christian Schäfer[4], Eberhard Rabe[5], Arne Koscielny[6], Frauke Verrel[6], Hans H. Schild[1], Winfried A. Willinek[1]
[1]Radiology, University of Bonn, Bonn, NRW, Germany; [2]Philips Healthcare, Best, Netherlands; [3]Radiology, Montreal Heart Institute, Montreal, Quebec, Canada; [4]Internal Medicine II, Division of Cardiology, Pneumology & Angiology, University of Bonn, Bonn, NRW, Germany; [5]Dermatology, Division of Phlebology, University of Bonn, Bonn, NRW, Germany; [6]Vascular Surgery, University of Bonn, Bonn, NRW, Germany

15:12 **90**. **Acceleration Dependent Vascular Anatomy for Non-Contrast-Enhanced MRA (ADVANCE-MRA)**
Andew Nicholas Priest[1], Martin J. Graves[1], David J. Lomas[1]
[1]Department of Radiology, Addenbrookes Hospital & University of Cambridge, Cambridge, United Kingdom

15:24 **91**. **Non-Enhanced Extracranial Carotid MR Angiography using Pseudocontinuous ASL: Comparison with Pulsed ASL & Clinical Feasibility at 1.5T**
Ioannis Koktzoglou[1,2], NavYash Gupta[3], Robert R. Edelman[1]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, USA; [2]Radiology, the University of Chicago, Chicago, IL, USA; [3]Vascular Surgery, NorthShore University HealthSystem, Evanston, IL, USA

15:36 **92**. **3D Angiography with Psuedo Continous Arterial Spin Labeling(PCASL) & Accelerated 3D Radial Acquisition**
Huimin Wu[1], Walter F. Block[2], Patrick A. Turski[3], Charles A. Mistretta[1], Kevin M. Johnson[1]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, USA; [2]Biomedical engineering, University of Wisconsin-Madison, Madison, WI, USA; [3]Radiology, University of Wisconsin-Madison, Madison, WI, USA

15:48 **93**. **Highly-Accelerated Dynamic Non-Contrast MRA using a Combination of Compressed Sensing & Parallel Imaging**
Ricardo Otazo[1], Pippa Storey[1], Daniel Kim[1], Daniel K. Sodickson[1], Vivian S. Lee[1]
[1]Department of Radiology, NYU School of Medicine, New York, NY, USA

Your Coils & You: A Primer for the Busy Clinician & the Curious Scientist

Room 512A-G 14:00-16:00

14:00 **What is an RF Coil?**
Cecil E. Hayes

14:30 **A Buyer's & User's Guide to RF Coils**
Graham C. Wiggins

15:00 **What Can Coils Do?**
Lawrence L. Wald

15:30 **Coils in 2020**
Daniel K. Sodickson

Young Investigator Awards, Oral Presentations

Room 710A 14:00-16:00

14:00 **94**. **Magnetic Resonance Elastography of Human Lung Parenchyma: Technical Development, Theoretical Modeling & *In Vivo* Validation**
Yogesh kannan Mariappan[1], Kevin Glaser[1], Rolf D. Hubmayr[2], Armando Manduca[1], Richard L. Ehman[1], Kiaran P. McGee[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, USA; [2]Department of Pulmonary & Critical Care medicine, Mayo Clinic, Rochester, MN, USA

14:20 **95**. **Hyperpolarized Xenon-129 Gas-Exchange Imaging of Lung Microstructure: Preliminary Results in Subjects with Obstructive Lung Disease**
Isabel Dregely[1], John P. Mugler III[2], Iulian Constantin Ruset[3], Talissa A. Altes[2], Jamie F. Mata[2], G. Wilson Miller[2], Jeffrey Ketel[3], Steve Ketel[3], Jan Distelbrinck[3], F. William Hersman[1,3], Kai Ruppert[2]
[1]Physics, University of New Hampshire, Durham, NH, USA; [2]Radiology, University of Virginia, Charlottesville, VA, USA; [3]Xemed LLC, Durham, NH, USA

14:40 **96**. **3D+T Biventricular Strain from Tagged Magnetic Resonance Images by Phase-Unwrapped HARP**
Bharath Ambale Venkatesh[1], Himanshu Gupta[2], Steven G. Lloyd, Louis Dell' Italia, Thomas S. Denney, Jr.
[1]Electrical & Computer Engineering, Auburn University, Auburn, AL, USA; [2]University of Alabama at Birmingham, USA

15:00 **97**. **Multi-Coil Shimming of the Mouse Brain**
Christoph Juchem[1], Peter B. Brown[1], Terence W. Nixon[1], Scott McIntyre[1], Douglas L. Rothman[1], Robin A. de Graaf[1]
[1]MR Research Center, Yale University, New Haven, CT, USA

15:20 **98**. **Double-PFG MR as a Novel Means for Characterizing Microstructures in Grey Matter**
Noam Shemesh[1], Ofer Sadan[2], Daniel Offen[3], Yoram Cohen[1]
[1]School of Chemistry, the Raymond & Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Tel Aviv, Israel; [2]Department of Neurology, Tel-Aviv Medical Center & the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel; [3]Laboratory of Neurosciences, Felsenstein Medical Research Center, Department of Neurology, Rabin Medical center, Israel

15:40 **99**. **Low-dimensional-Structure Self-Learning & Thresholding (LOST): Regularization Beyond Compressed Sensing for MRI Reconstruction**
Mehmet Akcakaya[1], Tamer Basha[1], Beth Goddu[1], Lois Goepfert[1], Kraig V. Kissinger[1], Vahid Tarokh[2], Warren J. Manning[1], Reza Nezafat[1]
[1]Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA; [2]School of Engineering & Applied Sciences, Harvard University, Cambridge, MA, USA

Clinical Intensive Course
MR Physics & Techniques for Clinicians

Room 516A-C 16:30-18:30

16:30 **Spin Gymnastics I**
Walter Kucharczyk

17:10 **Spin Gymnastics II**
Donald B. Plewes

17:50 **K-space**
Kevin M. Koch

Neurophysiological Basis of fMRI

Room 510 16:30-18:30 *Moderators:* Galit Pelled & Ed X. Wu

16:30 **100**. **The Laminar Specific Neuronal Responses to Forepaw & Optogenetics Stimulations**
John Downey[1], Nan Li[2,3], Assaf A. Gilad[4,5], Piotr Walczak[4,5], Nitish V. Thakor[3], Galit Pelled[1,4]
[1]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [2]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [3]The Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [4]The Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [5]Cellular Imaging Section, Vascular Biology Program, Institute for Cell Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA

16:42 **101**. **Opto-fMRI in Awake Rodents: Activation & Deactivation fMRI Signals Induced by Excitation & Inhibition of Neurons**
Lino Becerra[1,2], Gary Brenner[2,3], James Bishop[1], Pei-Ching Chang[1], Hae-Sook Shin[3], Aimei Yang[4], Michael Baratta[4], Patrick Monahan[4], Edward Boyden[4,5], David Borsook[1,2]
[1]A. Martinos Center, Massachusetts General Hospital, Boston, MA, USA; [2]Harvard Medical School, Boston, MA, USA; [3]Anesthesiology & Critical Care, Massachusetts General Hospital, Boston, MA, USA; [4]Media Laboratory, Massachusetts Institute of Technology, Cambridge, MA, USA; [5]Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

16:54 **102**. **Optogenetics-Guided Cortical Plasticity Following Forepaw Denervation**
Nan Li[1, 2], John Downey[3], Amnon Bar-Shir[4,5], Assaf A. Gilad[4,5], Piotr Walczak[4,5], Heechul Kim[4,5], Suresh E. Joel[3,4], James J. Pekar[3, 4], Nitish V. Thakor[2], Galit Pelled[3, 4]
[1]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [2]The Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [4]The Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [5]Cellular Imaging Section, Vascular Biology Program, Institute for Cell Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA

17:06 **103**. **Tight Coupling of Resting-State BOLD Fluctuations with Intracortical DC Changes in Rat Somatosensory Cortex during Prolonged Medetomidine Sedation**
Wen-ju Pan[1], Matthew Magnuson[1], Garth Thompson[1], Dieter Jaeger[2], Shella Keilholz[1]
[1]Biomedical Engineering, Emory University/ Georgia Institute of Technology, Atlanta, GA, USA; [2]Biology, Emory University, Atlanta, GA, USA

17:18 **104**. **Strengthening of Thalamocortical Synapses at Layer IV in the Juvenile Whisker Barrel Measured by MRI & Electrophysiology**
Xin Yu[1], Seungsoo Chung[1], Shumin Wang[1], Stephen Dodd[1], Judith Walters[1], John Isaac[1], Alan Koretsky[1]
[1]NINDS, NIH, Bethesda, MD, USA

17:30 **105**. **Layer-Specific Interhemispheric Functional Connectivity in Rat S1fl Revealed by Laminar Electrode Recordings & Resting State fMRI**
Kwangyeol Baek[1,2], Woo Hyun Shim[1,2], Jaeseung Jeong[1], Harsha Radhakrishnan[2], Bruce R. Rosen[2], David A. Boas[2], Maria Franceschini[2], Young Ro Kim[2]
[1]Bio & Brain Engineering, KAIST, Daejeon, Korea, Republic of; [2]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA

17:42 **106**. **Caffeine-Induced Reductions in Motor Connectivity: A Comparison of fMRI & MEG Measures**
Omer Tal[1], Chi Wah Wong[2], Valur Olafsson[2], Mithun Diwakar[1,2], Ming-Xiong Huang[2], Thomas T. Liu[2]
[1]Department of Bioengineering , University of California - San Diego, La Jolla, CA, USA; [2]Department of Radiology, University of California - San Diego, La Jolla, CA, USA

17:54 **107**. **Simultaneous Intracranial EEG-fMRI in Humans Suggests that High Gamma Frequencies are the Closest Neurophysiological Correlate of BOLD fMRI**
David William Carmichael[1], Serge Vulliemoz[1, 2], Roman Rodionov[1], Matthew Walker[1], Karin Rosenkranz[1], Andrew McEvoy[3], Louis Lemieux[1, 4]
[1]Clinical & Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom; [2]Epilepsy Unit, University Hospital & University of Geneva, Geneva, Switzerland; [3]Victor Horsley Dept. Neurosurgery, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [4]MRI Unit , National Society for Epilepsy, Chalfont St Peter, United Kingdom

18:06 **108**. **A Simultaneous EEG & High Temporal Resolution fMRI Study of Trial-by-Trial Fluctuations in Visual Evoked Potentials**
Pierre LeVan[1], Benjamin Zahneisen[1], Thimo Grotz[1], Jürgen Hennig[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany

18:18 **109**. **Negative BOLD & CBF Responses are Predicted by Natural Variations in Evoked EEG Response to a Median Nerve Stimulus in Humans.**
Karen J. Mullinger[1], Stephen D. Mayhew[2], Andrew P. Bagshaw[2], Richard W. Bowtell[1], Susan T. Francis[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Birmingham University Imaging Centre, School of Psychology, University of Birmingham, Birmingham, United Kingdom

Vessel Wall Imaging & Coronary MRA

Room 511A-C 16:30-18:30 *Moderators:* René M. Butnar & Kun-cheng Li

16:30 **110**. **Carotid Plaque Characteristics at MRI & Recurrent Clinical Cerebrovascular Ischemic Events**
Robert Kwee[1], Robert van Oostenbrugge[2], Werner Mess[2], Rob van der Geest[3], Johannes ter Berg[4], Cees Franke[5], Arthur Korten[6], Bé Meems[7], Jos van Engelshoven[2], Joachim Wildberger[2], Eline Kooi[2]
[1]Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Maastricht University Medical Center, Netherlands; [3]Leiden University Medical Center; [4]Orbis Medical Center Sittard, Netherlands; [5]Atrium Medical Center Parkstad Heerlen, Netherlands; [6]Laurentius Hospital Roermond, Netherlands; [7]VieCuri Medical Center Venlo, Netherlands

16:42 **111**. **WITHDRAWN**

16:54 **112**. **Characterization of Carotid Atherosclerotic Plaque Compositions by Single Magnetic Resonance Imaging Sequence: A Comparison Study with Multicontrast Plaque Imaging at 3T**
Xihai Zhao[1], Niranjan Balu[2], Wenbo Liu[2], Jinnan Wang[3], Huilin Zhao[4], Jianrong Xu[4], Chun Yuan[1,2]
[1]Department of Biomedical Engineering & Center for Biomedical Imaging Research, School of Medicine, Tsinghua University, Beijing, China, People's Republic of; [2]Department of Radiology, University of Washington, Seattle, WA, USA; [3]Philips Research North America, Briarcliff Manor, NY, USA; [4]Department of Radiology, Renji Hospital, Shanghai Jiao Tong University, Shanghai, China, People's Republic of

17:06 **113**. **Interpretation of Tissue Contrast in a Rapid Black-Blood Gradient Echo Sequence with Motion-Sensitized Driven Equilibrium (MSDE) Preparation (3D MERGE) for 3D Isotropic High-Resolution Imaging of the Vessel Wall & its Application for Hemorrhage Detection**
Niranjan Balu[1], Vasily Yarnykh[1], William Kerwin[1], Jinnan Wang[2], Chun Yuan[1]
[1]Department of Radiology, University of Washington, Seattle, WA, USA; [2]Philips Research North America, Seattle, WA, USA

17:18 **114**. **Haptoglobin Phenotype Modulates MRIPH Signal**
General Leung[1,2], Helen Cheung[2], Stephanie E. Chiu[1], Betty Wong[3], David Cole[3], Alan R. Moody[1,2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Medical Imaging, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [3]Division of Biochemistry & Genetics, Sunnybrook Health Sciences Centre

17:30 **115**. **High Resolution 3D Coronary Vessel Wall Imaging with Near 100% Respiratory Efficiency using Epicardial Fat Tracking: Reproducibility & Comparison with Standard Methods**
Andrew David Scott[1,2], Jennifer Keegan[1,2], David Firmin[1,2]
[1]Cardiovascular Magnetic Resonance Unit, Imperial College London, London, United Kingdom; [2]Cardiovascular Magnetic Resonance Unit, the Royal Brompton & Harefield NHS Foundation Trust, London, United Kingdom

17:42 **116**. **Left Coronary Artery Imaging at 7T: Initial Results using Multiple B_1+ Shimming Algorithms & Targets**
Gregory John Metzger[1], Lance Delabarre[1], Xiaoming Bi[2], Saurabh Shah[2], Sven Zuehlsdorff[2], Tommy Vaughan[1], Kamil Ugurbil[1], Pierre-Francois van de Moortele[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA; [2]Siemens Healthcare, Cardiovascular MR R&D, Chicago, IL, USA

17:54 **117**. **Water/Fat resolved Whole-Heart Imaging for Coronary MRA**
Peter Koken[1], Holger Eggers[1], Gabrielle Beck[2], Peter Börnert[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Philips Healthcare, Best, Netherlands

18:06 **118**. **Whole-Heart Coronary MRA using 2D Self-Navigation**
Markus Henningsson[1], Christian Stehning[2], Claudia Prieto[1], Peter Koken[2], Rene M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Philips Research Europe, Hamburg, Germany

18:18 **119**. **A Joint Prospective-Retrospective Respiratory Navigator for Contrast Enhanced Whole-Heart Coronary MRI**
Mehdi Hedjazi Moghari[1], Tamer Basha[1], Mehmet Akçakaya[1], Alan O'Connor[1], Lois Goepfert[1], Kraig V. Kissinger[1], Beth Goddu[1], Doug Stanton[2], Warren J. Manning[1], Reza Nezafat[1]
[1]Dept. of Medicine (Cardiovascular Div.), Beth Israel Deaconess Medical Center, Harvard Medical Sch., Boston, MA, USA; [2]Philips Research

New Contrast

Room 511D-F 16:30-18:30 *Moderators:* Ludovic De Rochefort & Klaas Pruessmann

16:30 **120**. **SEMI-TWINS: Simultaneous Extraction of Myelin & Iron using a T_2*-Weighted Imaging Sequence**
Ferdinand Schweser[1,2], Andreas Deistung[1], Berengar Wendel Lehr[3], Karsten Sommer[1, 4], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology, Jena University Hospital, Jena, Germany; [4]School of Physics & Astronomy, Friedrich Schiller University of Jena, Jena, Germany

16:42 **121**. ***In Vivo* Evidence of Susceptibility Anisotropy & Susceptibility Tensor Imaging of Human Brain**
Wei Li[1], Bing Wu[1], Chunlei Liu[1,2]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, USA; [2]Radiology, Duke University, Durham, NC, USA

16:54 **122**. **Origin of Phase Contrast: Insight from Susceptibility, R_2* & Element Imaging by LA-ICP-MS**
Ana-Maria Oros-Peusquens[1], Andreas Matusch[2], Johannes Lindemeyer[3], Sabine Johanna Becker[4], Nadim Jon Shah[1]
[1]Institute of Neuroscience & Medicine (INM-4), Research Centre Juelich, Juelich, NA, Germany; [2]INM-2, Research Centre Juelich, Germany; [3]INM-4, Research Centre Juelich, Germany; [4]ZCH, Research Centre Juelich

17:06 **123**. **Active Contrast Modulation of Iron Oxide Nanoparticles using Rotary Saturation**
Bo Zhu[1,2], Thomas Witzel[1,2], Shan Jiang[3], Daniel G. Anderson[3], Robert S. Langer[3], Bruce R. Rosen[1,2], Lawrence L. Wald[1,2]
[1]Harvard-MIT Division of Health Sciences & Technology, Massachusetts Institute of Technology, Cambridge, MA, USA; [2]Department of Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [3]Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

17:18 **124**. **A General $T_{1\rho}$ Relaxation Model for Spin-Lock MRI using a Rotary Echo Pulse**
Jing Yuan[1], Yi-Xiang Wang[1]
[1]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong, Shatin, New Territories, Hong Kong

17:30 **125**. **Comparing Electric Properties Tomography at 1.5, 3 & 7 T.**
Astrid L. H. M. W. van Lier[1], Tobias Voigt[2], Ulrich Katscher[2], Cornelis A. T. van den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Philips Research Europe, Hamburg, Germany

17:42 **126**. **Imaging Electrical Properties of the Human Brain using a 16-Channel Transceiver Array Coil at 7T**
Xiaotong Zhang[1], Pierre-Francois Van de Moortele[2], Sebastian Schmitter[2], Bin He[1]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA

17:54 **127**. ***In Vivo* Glioma Characterization using MR Conductivity Imaging**
Tobias Voigt[1], Ole Väterlein[2], Christian Stehning[1], Ulrich Katscher[1], Jens Fiehler[2]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Department of Neuroradiology, University Medical Centre Hamburg-Eppendorf, Hamburg, Germany

18:06 **128**. **Real-Time Conductivity Mapping using Balanced SSFP & Phase-Based Reconstruction**
Christian Stehning[1], Tobias Ratko Voigt[2], Ulrich Katscher[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Institute of Biomedical Engineering, University of Karlsruhe, Karlsruhe, Germany

18:18 **129**. **Panel**
Richard W. Bowtell, Ludovic De Rochefort, Klaas Pruessmann & Daniel K. Sodickson

Novel Techniques for Image Analysis

Room 512A-G 16:30-18:30 *Moderators:* Jan Scholz & Simon K. Warfield

16:30 **130**. **Comparison of Cortical Surface Reconstructions from MP2RAGE Data at 3T & 7T**
Kyoko Fujimoto[1], Jonathan R. Polimeni[1], Andre J. van de Kouwe[1], Tobias Kober[2], Thomas Benner[1], Bruce Fischl[1,3], Lawrence L. Wald[1,4]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, USA; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Advanced Clinical Imaging Technology, Siemens Suisse SA - CIBM, Lausanne, Switzerland; [3]Computer Science & AI Lab (CSAIL), Massachusetts Institute of Technology, Cambridge, MA, USA; [4]Harvard-MIT Division of Health Sciences & Technology, Massachusetts Institute of Technology, Cambridge, MA, USA

16:42 **131**. **Who Said Fat is Bad? Skull-Stripping Benefits from Additional Fat Image.**
Delphine Ribes[1,2], Tobias Kober[1,2], Giulio Gambarota[3], Reto Meuli[4], Gunnar Krueger[2]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Advanced Clinical Imaging Technology, Siemens Suisse SA - CIBM, Lausanne, Switzerland; [3]Clinical Imaging Center, GSK, Imperial College, London, United Kingdom; [4]Department of Radiology, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland

16:54 **132**. **Atlas-Based Online Spatial Normalization**
Judd M. Storrs[1,2], Jing-Huei Lee[1,3]
[1]Center for Imaging Research, University of Cincinnati, Cincinnati, OH, USA; [2]Department of Psychiatry & Behavioral Neuroscience, University of Cincinnati, Cincinnati, OH, USA; [3]School of Energy, Environmental, Biological & Medical Engineering, University of Cincinnati, Cincinnati, OH, USA

17:06 **133**. **Segmentation Priors from Local Image Properties, Not Location-Based Templates**
Ziad Serhal Saad[1], Andrej Vovk[2], Janez Stare[3], Dusan Suput[2], Robert W. Cox[1]
[1]SSCC, NIMH/NIH, Bethesda, MD, USA; [2]Institute of Pathophysiology, University of Ljubljana, Ljubljana, Slovenia; [3]Institute for Biostatistics & Medical Informatics, University of Ljubljana, Ljubljana, Slovenia

17:18 **134**. **Improved Segmentation of Mouse MRI Data using Multiple Automatically Generated Templates**
Mallar Chakravarty[1,2], Matthijs Christiaan van Eede[1], Jason P. Lerch[1]
[1]Mouse Imaging Centre (MICe), the Hospital for Sick Children, Toronto, Ontario, Canada; [2]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada

17:30 **135**. **Creation of a Population-Representative Brain Atlas with Clear Anatomical Definition**
Yajing Zhang[1], Jiangyang Zhang[2], Jun Ma[3], Kenichi Oishi[2], Andreia V. Faria[2], Michael I. Miller[1,3], Susumu Mori[2,4]
[1]Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]Center for Imaging Science, Johns Hopkins University, Baltimore, MD, USA; [4]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA

17:42 **136**. **Computerized Lesion Segmentation on DCE-MRI using Active Contours & Spectral Embedding.**
Shannon Agner[1], Jun Xu[1], Sudha Karthigeyan[1], Anant Madabhushi[1]
[1]Biomedical Engineering, Rutgers University, Piscataway, NJ, USA

17:54 **137**. **MR Estimation of Longitudinal Relaxation Time (T_1) in Spoiled Gradient Echo using an Adaptive Neural Network**
Hassan Bagher-Ebadian[1,2], Siamak P. Nejad-Davarani[1,3], Ramesh Paudyal[1], Tom Mikkelsen[4], Quan Jiang[1,2], James R. Ewing[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, USA; [2]Physics, Oakland University, Rochester, MI, USA; [3]Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA; [4]Neurosurgery, Henry Ford Hospital, Detroit, MI, USA

18:06 **138**. **Application of the Extended Phase Graph Technique to Improve T_2 Quantitation Across Sites**
William D. Rooney[1], James R. Pollaro[1], Sean C. Forbes[2], Dah Jyuu Wang[3], Krista Vandenborne[2], Glenn A. Walter[4]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, USA; [2]Department of Physical Therapy, University of Florida, Gainesville, FL, USA; [3]Department of Radiology, the Children's Hospital of Philadelphia, Philadelphia, PA, USA; [4]Department of Physiology & Functional Genomics, University of Florida, Gainesville, FL, USA

18:18 **139**. **Support Vector Machines can Decode Speech Patterns from High Speed Dynamic Spiral FLASH Images of the Mouth**
Stephen LaConte[1], Jonathan Lisinski[1], Bradley Sutton[2]
[1]School of Biomedical Engineering & Sciences, Virginia Tech, Blacksburg, VA, USA; [2]Bioengineering, University of Illinois, Urbana-Champaign, Urbana, IL, USA

Spectroscopy Localization

Room 513A-D 16:30-18:30 *Moderators:* Hoby Hetherington & Vladimir Mlynarik

16:30 **140**. ***In-Vivo* Proton MR Spectroscopic Imaging of Glycine in Brain Tumors at 3.0 T**
Sandeep Kumar Ganji[1], Ivan E. Dimitrov[1,2], Elizabeth A. Maher[3], Changho Choi[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Philips Medical Systems, Cleveland, OH, USA; [3]Internal Medicine & Neurology, University of Texas Southwestern Medical Center, Dallas, TX, USA

16:42 **141**. **Slice with Non-Parallel Boundaries**
Bu S. Park[1], M. J. Lizak[2], Y. Xiang[1], J. Shen[1]
[1]National Institute of Mental Health (NIMH), NIH, Bethesda, MD, USA; [2]National Institute of Neurological Disorders & Stroke (NINDS), NIH, Bethesda, MD, USA

16:54 **142**. **Multi-Slice MRSI of the Human Brain at 7 Tesla using Dynamic B_0 & B_1 Shimming**
Vincent Oltman Boer[1], Dennis W. J. Klomp[1], Christoph Juchem[2], Peter R. Luijten[1], Robin A. de Graaf[2]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]MR Research Center, Yale University, New Haven, Conneticut, USA

17:06 **143**. **Diffusion-Weighted Spectroscopic Imaging of Rat Brains After Middle Cerebral Artery Occlusion**
Yoshitaka Bito[1], Yuko Kawai[2], Koji Hirata[1], Toshihiko Ebisu[3], Toru Shirai[1], Satoshi Hirata[1], Yoshihisa Soutome[1], Hisaaki Ochi[1], Masahiro Umeda[2], Toshihiro Higuchi[4], Chuzo Tanaka[4]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji-shi, Tokyo, Japan; [2]Medical Informatics, Meiji University of Integrative Medicine, Kyoto, Japan; [3]Neurosurgery, Nantan General Hospital, Kyoto, Japan; [4]Neurosurgery, Meiji University of Integrative Medicine, Kyoto, Japan

17:18 **144**. **High-Resolution Mapping of the Neurochemical Profile after Focal Ischemia in Mice**
Malte Frederick Alf[1,2], Hongxia Lei[1,3], Carole Berthet[4], Lorenz Hirt[4], Rolf Gruetter[1,3], Vladimir Mlynárik[1]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Institute of Pharmaceutical Sciences, ETH Zürich, Zürich, Switzerland; [3]Department of Radiology, University of Lausanne; [4]Department of Clinical Neuroscience, Centre Hospitalier Universitaire Vaudois

17:30 **145**. **Fast ^{1}H Metabolic Imaging of Cancer**
Sairam Geethanath[1], Hyeon-Man Baek[2], Sandeep K. Ganji[2,3], Yao Ding[3], Robert D. Sims[4], Changho Choi[2,4], Vikram D. Kodibagkar[1,4]
[1]Joint graduate program in biomedical engineering, UT Arlington & UT Southwestern Medical Center, Dallas, TX, USA; [2]Advanced Imaging Research Center, UT Southwestern Medical Center; [3]Graduate program in radiological sciences, UT Southwestern Medical Center; [4]Radiology, UT Southwestern Medical Center

17:42 **146**. **Artefact Minimized Spectral Editing at 7T: Quick & Accurate *In-Vivo* Detection of GABA.**
Anna Andreychenko[1], Vincent O. Boer[1], Jannie P. Wijnen[1], Catalina Arteaga[1], Peter Luijten[1], Dennis W. J. Klomp[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

17:54 **147**. **Adiabatic Spiral Correlation Chemical Shift Imaging**
Ovidiu Cristian Andronesi[1], Borjan A. Gagoski[2], Elfar Adalsteinsson[2], A. Gregory Sorensen[1]
[1]Martinos Center for Biomedical Imaging, Radiology Department, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, USA; [2]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA

18:06 **148**. **Water-Independent Frequency- & Phase-Corrected Spectroscopic Averaging using Cross-Correlation & Singular Value Decomposition**
Aaron T. Hess[1], André J. W. van der Kouwe[2], Ernesta M. Meintjes[1]
[1]MRC/UCT Medical Imaging Research Unit, Human Biology, University of Cape Town, Cape Town, South Africa; [2]Radiology, Massachusetts General Hospital, Boston, MA, USA

18:18 **149**. **Short Dual-Band VAPOR-Like Pulse Sequence for Simultaneous Water & Lipid Suppression for *In Vivo* MR Spectroscopy & Spectroscopic Imaging**
Zenon Starcuk Jr.[1], Jana Starcukova[1], Zenon Starcuk[1]
[1]Magnetic Resonance & Bioinformatics, Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno, Czech Republic

Placenta, Fetus & Gynecologic Malignancy

Room 518-A-C 16:30-18:30 *Moderators:* Penny Anne Gowland & Patricia Noël

16:30 **150**. **Introduction: Fetal Development & the Utero-Placental Unit: What Can MRI Tell Us?**
Penny Anne Gowland

16:42 **151**. **The Effect of Maternal Diabetes on Placental Blood Flow Assessed using IVIM**
Devasuda Anblagan[1], Ruta Deshpande[2], Nia W. Jones[2], Carolyn Costigan[1], Nick Raine Fenning[3], Peter Mansell[2], George Bugg[2], Lopa Leach[4], Penny A. Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Nottingham University Hospitals NHS Trust, University of Nottingham, Nottingham, United Kingdom; [3]School of Clinical Sciences, University of Nottingham, Nottingham, United Kingdom; [4]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom

16:54 **152**. **Changes in Placental & Fetal Organ Perfusion during Chronic Maternal Hypoxia: Assessment by BOLD MRI During Brief Hypercapnic & Hyperoxic Challenge**
Rinat Abramovitch[1,2], Nathalie Corchia[1], Uriel Elchalal[3], Yehuda Ginosar[4]
[1]The Goldyne Savad Institute of Gene Therapy, Hadassah Hebrew University Medical Center, Jerusalem, Israel; [2]MRI lab HBRC, Hadassah Hebrew University Medical Center, Israel; [3]Department of Obstetrics & Gynecology, Hadassah Hebrew University Medical Center, Jerusalem, Israel; [4]Department of Anesthesiology, Hadassah Hebrew University Medical Center, Jerusalem, Israel

17:06 **153**. **Intra Voxel Incoherent Motion in the Human Placenta using the Akaike Information Criterion**
David Mark Morris[1,2], Caroline Wright[3], Philip A. Baker[4], Ian Crocker[3], Penny A. Gowland[5], Geoff J. M. Parker[1,6], Colin P. Sibley[3]
[1]Imaging Science & Biomedical Engineering, the University of Manchester, Manchester, United Kingdom; [2]Biomedical Imaging Institute, the University of Manchester, Manchester, United Kingdom; [3]Maternal & Fetal Helath Research Group, the University of Manchester, Manchester, United Kingdom; [4]Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Alberta, Canada; [5]Sir Peter Mansfield Magentic Resonance Centre, University of Nottingham, Nottingham, United Kingdom; [6]Biomedical Imaging Institute, the University of Manchester, Manchester, United Kingdom

17:18 **154**. **Protection of Fetuses from *In Utero* Inflammation: Can MRI be the Solution?**
Sylvie Girard[1], Luc Tremblay, Guillaume Sebire, Martin Lepage
[1]Universite de Sherbrooke, Sherbrooke, QC, Canada

17:30 **155**. **A Novel Technique for Cardiac MRI of the Fetal Heart: MR Compatible Doppler Ultrasound (CTG) for CardiacTriggering**
Ulrike Wedegaertner[1], Michael Frisch[1], Inga Kopp[1], Joachim Graessner[2], Kurt Hecher[1], Gerhard Adam[1], Jin Yamamura[1]
[1]University Hospital Hamburg-Eppendorf, Hamburg, Germany; [2]Siemens

17:42 **156**. **Characterising Heterogeneity of Stage 1 Cervical Cancers using Histogram Analysis from Diffusion Weighted Images.**
Katherine Downey[1,2], S. F. Riches[1,2], V. A. Morgan[1,2], S. L. Giles[1,2], C. Simpkin[1,2], D. P. Barton[3,4], N. M. deSouza[1,2]
[1]Clinical MRI Unit, Institute of Cancer Research, Sutton, United Kingdom; [2]Clinical MRI Unit, the Royal Marsden Hospital , Sutton, United Kingdom; [3]Gynaecology Unit, the Royal Marsden Hospital, Sutton, United Kingdom; [4]Gynaecology Unit, Institute of Cancer Research, Sutton, United Kingdom

17:54 **157**. **Endovaginal Magnetic Resonance Imaging of Stage 1A/1B$_1$ Cervical Cancer with a T$_2$- & Diffusion-Weighted Magnetic Resonance Technique: Effect of Lesion Size & Previous Cone Biopsy on Tumor Detectability**
Elizabeth Charles-Edwards[1], Veronica Morgan[1], Ayoma Attygalle[2], Sharon Giles[1], Thomas E. Ind[3], Michael Davis[4], John Shepherd[3], Norman McWhinney[5], Nandita deSouza[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Histopathology, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [3]Gynaecology, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [4]Gynaecology, Kingston Hospital , Kingston, Surrey, United Kingdom; [5]Gynaecology, Epsom & St. Helier NHS Trust, Epsom, Surrey, United Kingdom

18:06 **158**. **Comparison of Diffusion Weighted Imaging & Dynamic Contrast Enhanced MRI for Assessing the Depth of Myometrial Invasion in Endometrial Cancer**
Peter Beddy[1], Penelope Moyle[1], Masako Kataoka[1], Adam K. Yamamoto[1], Ilse Joubert[1], David J. Lomas[1], Robin Crawford[2], Evis Sala[1]
[1]Radiology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Gynaecological Oncology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

18:18 **159**. **Assessment of Ovarian Movement on Consecutive Pelvic MRI Scans for Accurate Radiotherapy Planning in Patients with Gynaecological Malignancies**
Nicky HGM Peters[1,2], Gail Horan[3], Deborah Gregory[3], Li Tee Tan[3], Charlotte Coles[3], Andrew J. Patterson[2], Evis Sala[2]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, Addenbrooke's Hospital, Cambridge, Cambridghire, United Kingdom; [3]Oncology, Addenbrooke's Hospital, Cambridge, Cambridghire, United Kingdom

Receive Coils & Arrays

Room 520B-F 16:30-18:30 *Moderators:* Hiroyuki Fujita & Tamer S. Ibrahim

16:30 **160**. **A 64-Channel Array Coil for 3T Head/Neck/C-spine Imaging**
Boris Keil[1], Stephan Biber[2], Robert Rehner[2], Veneta Tountcheva[1], Kathrin Wohlfarth[2], Philipp Hoecht[3], Michael Hamm[3], Heiko Meyer[2], Hubertus Fischer[2], Lawrence L. Wald[1,4]
[1]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, USA; [2]Siemens Healthcare, Erlangen, Germany; [3]Siemens Healthcare, Charlestown, MA, USA; [4]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, USA

16:42 **161**. **Millimeter Isotropic Resolution Volumetric Pediatric Abdominal MRI with a Dedicated 32-Channel Phased Array Coil**
Shreyas S. Vasanawala[1], Thomas Grafendorfer[2], Paul Calderon[3], Greig Scott[4], Marcus T. Alley[1], Michael Lustig[5], Anja C. Brau[6], Arvind Sonik[1], Peng Lai[6], Vijay Alagappan[7], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]ATD Coils, GE Healthare, Stanford, CA, USA; [3]MR Hardware Engineering, GE Healthcare, Fremont, CA, USA; [4]Electrical Engineering, Stanford University, Stanford, CA, USA; [5]Electrical Engineering & CS, UC Berkeley, Berkeley, CA, USA; [6]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [7]ATD Coils, GE Healthcare, Aurora, OH, USA

16:54 **162**. **A 7T Coil System for Imaging Humans in the Sphinx Position to Evaluate the Effect of Head Orientation Relative to B_0 for MR Imaging**
Bei Zhang[1], Ryan Brown[1], Chris Wiggins[2], Daniel K. Sodickson[1], Bernd Stoeckel[3], Graham Wiggins[1]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY10016, USA; [2]CEA/NeuroSpin, Saclay, France; [3]Siemens Medical Solutions USA Inc, New York, NY, USA

17:06 **163**. **Multiplexed RF Transmission for Transceiver Arrays at 7T**
Hoby Patrick Hetherington[1], Nikolai I. Avdievich[1], Jullie W. Pan[1]
[1]Neurosurgery, Yale University, New Haven, CT, USA

17:18 **164**. **Human Brain Imaging at 9.4 Tesla using a Combination of Traveling Wave Excitation with a 15-Channel Receive-Only Array**
Jens Oliver Hoffmann[1], Gunamony Shajan[1], Rolf Pohmann[1]
[1]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tuebingen, BW, Germany

17:30 **165**. **32-Channel Receive Only Array for Cardiac Imaging at 7T**
Carl Jason Snyder[1], Lance DelaBarre[1], Gregory Metzger[1], Kamil Ugurbil[1], J. Thomas Vaughan[1]
[1]University of Minnesota, Minneapolis, MN, USA

17:42 **166**. **Highly Accelerated 7T Prostate Imaging using Parallel Imaging**
Alexander J. E. Raaijmakers[1], Ozlem Ipek[1], Wouter Koning[2], Hugo Kroeze[2], Cecilia Possanzini[3], Paul R. Harvey[3], Dennis Klomp[2], Peter R. Luijten[2], Jan J. W. Lagendijk[1], Cornelis A. T. van den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands; [3]Philips Medical Systems, Best, Netherlands

17:54 **167**. **Dual Mouse 8-Element Coil Array & Bed for Sequential Multimodality PET, SPECT, CT & MRI of Multiple Mice**
Marcelino Bernardo[1,2], Gabriela Kramer-Marek[3], Nalini Shenoy[4], Jurgen Seidel[1], Michael V. Green[1], Jacek Capala[5], Peter L. Choyke[1]
[1]Molecular Imaging Program, NCI, Bethesda, MD, USA; [2]SAIC-Frederick, Frederick, MD, USA; [3]Radiation Oncology Branch, NCI, USA; [4]Image Probe Development Center, NIH, USA; [5]Radiation Oncology Branch, NCI, Bethesda, MD, USA

18:06 **168**. **A Novel Radiolucent Phased Array Design Suitable for MR Guided Radiation Therapy**
Kirk Champagne[1], Wayne Schellekens[1], Mehran Fallah-Rad[1], Hongxiang Yi[1], Haoqin Zhu[1], Labros Petropoulos[1]
[1]IMRIS Inc., Winnipeg, MB, Canada

18:18 **169**. **Design Criteria of an MR-PET Array Coil for Highly Parallel MR Brain Imaging**
Christin Y. Sander[1,2], Boris Keil[2], Ciprian Catana[2], Bruce R. Rosen[2,3], Lawrence L. Wald[2,3]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA; [2]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, USA; [3]Health Sciences & Technology, Harvard-MIT, Cambridge, MA, USA

Diffusion Acquisition & Pulse Sequences

Room 710A 16:30-18:30 *Moderators:* Roland Bammer & Claudia A. Wheeler-Kingshott

16:30 **170**. **Preventing Signal Dropouts in DWI using Continous Prospective Motion Correction**
Michael Herbst[1], Julian Maclaren[1], Matthias Weigel[1], Jan Gerrit Korvink[2,3], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [3]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Germany

16:42 **171**. **Benefits of Optical Prospective Motion Correction for Single-Shot DTI**
Murat Aksoy[1], Christoph Forman[2], Daniel Kopeinigg[1], Matus Straka[1], Rafael O'Halloran[1], Samantha Holdsworth[1], Stefan Skare[1,3], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Computer Science, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany; [3]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

16:54 **172**. **Prospective Correction of Spatially Non-Linear Phase Patterns for Diffusion-Weighted FSE Imaging using Tailored RF Excitation Pulses**
Rita Gouveia Nunes[1, 2], Shaihan J. Malik[2], Joseph V. Hajnal[2]
[1]Institute of Biophysics & Biomedical Engineering, Faculty of Sciences, University of Lisbon, Lisbon, Portugal; [2]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom

17:06 **173**. **Dynamic & Inherent B_0 Correction for DTI using Stimulated Echo Spiral Imaging**
Alexandru Vlad Avram[1, 2], Trong-Kha Truong[2], Arnaud Guidon[1, 2], Chunlei Liu[2], Allen W. Song[2]
[1]Biomedical Engineering Department, Duke University, Durham, NC, USA; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, USA

17:18 **174**. **Diffusion-Weighted Inner-Field-of-View EPI using 2D-Selective RF Excitations with a Tilted Excitation Plane**
Jürgen Finsterbusch[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

17:30 **175**. **3D Submillimeter-Resolution Reduced-Field-of-View Diffusion Tensor Imaging**
Anh Tu Van[1], Joseph Holtrop[2], Bradley P. Sutton[2]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA

17:42 **176**. **A New Spectro-Spatial RF Pulse Design for High-Resolution Isotropic Diffusion Imaging**
Sangwoo Lee[1], Gaohong Wu[1]
[1]GE Healthcare, Waukesha, WI, USA

17:54 **177**. **Diffusion Weighted vGRASE (DW-vGRASE)**
Mathias Engström[1], Roland Bammer[2], Stefan Skare[1]
[1]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden; [2]Radiological Sciences Laboratory, Stanford University, Palo Alto, CA, USA

18:06 **178**. **Bipolar Diffusion Encoding with Implicit Spoiling of Undesired Coherence Pathways**
Thorsten Feiweier[1]
[1]Siemens AG, Healthcare Sector, Erlangen, Germany

18:18 **179**. **X-PROP: A Fast & Robust Diffusion-Weighted PROPELLER Technique**
Zhiqiang Li[1], James G. Pipe[2], Chu-Yu Lee[2,3], Josef P. Debbins[2,3], John P. Karis[4], Donglai Huo[1,2]
[1]MR Engineering, GE Healthcare, Waukesha, WI, USA; [2]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, USA; [3]Electrical Engineering, Arizona State University, Tempe, AZ, USA; [4]Radiology, Barrow Neurological Institute, Phoenix, AZ, USA

Human Brain Tumors: Advances in Diagnosis & Prognosis

Room 710B 16:30-18:30 *Moderators:* Sarah J. Nelson & A. Gregory Sorensen

16:30 **180**. **Feature Analysis in SVM-Based Classification of Gliomas**
Frank G. Zoellner[1], Kyrre E. Emblem[2,3], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany; [2]Department of Radiology, MGH-HST A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital & Harvard Medical School, Boston, MA, USA; [3]The Interventional Center, Oslo University Hospital, Oslo, Norway

16:42 **181**. ***In Vivo* Detection of IDH Mutations in Gliomas by ^{1}H-MRS**
Changho Choi[1], Sandeep Ganji[1], Ralph De Berardinis[1], Zoltan Kovacs[1], Robert Bachoo[1], Juan Pascual[1], Ivan Dimitrov[1,2], Bruce Mickey[1], Craig Malloy[1,3], Elizabeth Maher[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Philips Medical Systems; [3]VA North Texas Health Care System

16:54 **182**. **Metabolic Characterization of Glioma Populations with Emphasis on Onco-Metabolite 2-Hydroxyglutarate**
Adam Elkhaled[1], Llewellyn Jalbert[1], Hikari Yoshihara[1], Gabriella Bourne[1], Joanna Phillips[2], Soonmee Cha[1], Susan M. Chang[3], Radhika Srinivasan[1], Sarah J. Nelson[1,4]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA; [2]Department of Pathology, University of California, San Francisco; [3]Department of Neurological Surgery, University of California, San Francisco; [4]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco

17:06 **183**. **Presence of 2-Hydroxyglutarate in IDH1 Mutated Low-Grade Glioma using *Ex Vivo* Proton HR-MAS Spectroscopy**
Llewellyn Jalbert[1], Adam Elkhaled[1], Joanna Phillips[2], Hikari Yoshihara[1], Radhika Srinivasan[1], Gabriela Bourne[1], Susan Chang[3], Soonmee Cha[1], Sarah Nelson[1, 4]
[1]Department of Radiology & Biomedical Imaging, University of California - San Francisco, San Francisco, CA, USA; [2]Department of Pathology, University of California - San Francisco; [3]Department of Neurological Surgery, University of California - San Francisco; [4]Department of Bioengineering & Therapeutic Sciences, University of California - San Francisco

17:18 **184**. **Detection of 2-Hydroxyglutarate in Mutant Brain Tumors *In Vivo* using Proton Magnetic Resonance Spectroscopy**
Rajakumar Nagarajan[1], Michael Albert Thomas[1], Whitney B. Pope[1], Robert M. Prins[2], Neil Wilson[1], Noriko Salamon[1], Linda M. Liau[2]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, USA; [2]Neurosurgery, University of California Los Angeles

17:30 **185**. **Segmentation of Combinations of Mean Diffusivity & DCE Perfusion Derived CBV in Glioblastoma Multiforme**
Rishi Awasthi[1], Ram Kishan Singh Rathore[2], Jitesh Kumar Singh[2], Nuzhat Husain[3], Priyanka Soni[3], Rohit Kumar Singh[4], Sanjay Behari[4], Rakesh Kumar Gupta[1], Shaleen Kumar[5]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; [3]Pathology, Chatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [4]Neurosurgery, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Radiotherapy, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, India

17:42 **186**. **Evaluation of Relative $CMRO_2$ from BOLD & CBF Changes in Hyperoxia: Significant Increase of Oxygen Consumption rate in Glioblastoma**
Heisoog Kim[1,2], Ciprian Catana[1], Kim Mouridsen[1], Div Bolar[1], Elizabeth R. Gerstner[3], Tracy T. Batchelor[3], Rakesh K. Jain[4], Bruce R. Rosen[1,2], A. Gregory Sorensen
[1]Radiology, A. A. Martinos Center, Charlestown, MA, USA; [2]HST/NSE, Massachusetts Institute of Technology, Cambridge, MA, USA; [3]Neurology, Massachusetts General Hospital, Boston, MA, USA; [4]Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA

17:54 **187**. **A Simultaneous Measurement of Relative $CMRO_2$ with MRI & FMISO Uptake with PET in Glioblastoma**
Heisoog Kim[1], Ciprian Catana[1], Grae Arabasz[1], Div Bolar[1], Elizabeth R. Gerstner[2], Tracy T. Batchelor[2], Rakesh K. Jain[3], Bruce R. Rosen[1], A. Gregory Sorensen[1]
[1]Radiology, A. A. Martinos Center, Charlestown, MA, USA; [2]Neurology, Massachusetts General Hospital, Boston, MA, USA; [3]Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA

18:06 **188**. **Multicentre Prospective Classification of Childhood Brain Tumours Based on Metabolite Profiles Derived from ^{1}H MRS**

Nigel Paul Davies[1,2], Simrandip Gill[2,3], Theodoros N. Arvanitis[3,4], Dorothee Auer[5], Richard Grundy[6,7], Franklyn A. Howe[8], Darren Hargrave[9], Tim Jaspan[7], Lesley MacPherson[3], Kal Natarajan[1,3], Geoffrey Payne[9,10], Dawn Saunders[11], Yu Sun[2,3], Martin Wilson[2,3], Andrew C. Peet[2,3]

[1]Medical Physics, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom; [2]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [3]Birmingham Children's Hospital NHS Foundation Trust, Birmingham, United Kingdom; [4]Department of Electrical, Electronic & Computer Engineering, University of Birmingham, Birmingham, United Kingdom; [5]Academic Radiology, University of Nottingham, Nottingham, United Kingdom; [6]Children's Brain Tumour Research Centre, University of Nottingham, Nottingham, United Kingdom; [7]University Hospital Nottingham, Nottingham, United Kingdom; [8]St. George's University of London, London, United Kingdom; [9]Royal Marsden Hospital, London, United Kingdom; [10]Institute of Cancer Research, London, United Kingdom; [11]Great Ormond Street Hospital, London, England, United Kingdom

18:18 **189**. **Segmentation of Tumor Infiltrative & Vasogenic Edema in Brain Tumors using Voxel-Wise Analysis of 11C-Methinonine & FDG PET & its Comparison with Diffusion Tensor Imaging**

Manabu Kinoshita[1], Testu Goto[1], Hideyuki Arita[1], Naoki Kagawa[1], Yasunori Fujimoto[1], Haruhiko Kishima[1], Yoichi Saitoh[2], Jun Hatazawa[3], Naoya Hashimoto[1], Toshiki Yoshimine[1]

[1]Neurosurgery, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [2]Neuromodulation & Neurosurgery, Center for Advanced Science & Innovation, Osaka University, Suita, Osaka, Japan; [3]Nuclear Medicine & Tracer Kinetics, Osaka University Graduate School of Medicine, Suita, Osaka, Japan

Study Groups
Dynamic NMR Spectroscopy

Room 510 18:45-20:45

Study Groups
Hyperpolarized Media MR

Room 511A-C 18:45-20:45

Study Groups
MR Safety

Room 511D-F 18:45-20:45

Study Groups
White Matter

Room 512A-G 18:45-20:45

Study Groups
Susceptibility Weighted Imaging

Room 513A-D 18:45-20:45

Study Groups
Current Issues in Brain Function

Room 516A-C 18:45-20:45

Study Groups
Interventional MR

Room 518A-C 18:45-20:45

Study Groups
Motion Correction

Room 520 B-F 18:45-20:45

Study Groups
Diffusion

Room 710A 18:45-20:45

Study Groups
MR Engineering

Room 710B 18:45-20:45

Clinical Intensive Course
Sunrise Educational Course
Hot Topics in Body MRI

Room 510 07:00-08:00 *Moderators:* Dow-Mu Koh & Bachir Taouli

Diffusion Imaging: Body Applications

07:00 **Diffusion Imaging: Physics Applied to Body Applications**
Thomas L. Chenevert

07:20 **Liver Lesions: Added Value of Diffusion MRI**
Elizabeth M. Hecht

07:40 **Renal Lesions: Added Value of Diffusion MRI**
Hersh Chandarana

Clinical Intensive Course
Sunrise Educational Course
Neuro MRI from Start to Finish

Room 516A-C 07:00-08:00

Fetal

07:00 **Conventional MRI**
Orit Glenn

07:30 **Non-Conventional MRI**
Patricia Ellen Grant

Sunrise Educational Course
Image Analysis

Room 511A-C 07:00-08:00 *Moderator:* Simon K. Warfield

07:00 **Segmentation: Theory**
Marleen de Bruijne

07:30 **Segmentation: Practice**
Paul A. Yushkevich

Sunrise Educational Course
Translational Imaging: Animal Models in MSK

Room 511D-F 07:00-08:00 *Moderator*: Bernard J. Dardzinski

07:00 **Choosing the Best Animal Model**
Lisa A. Fortier

07:30 **Live Animal Imaging: Challenges & Longitudinal Analysis**
Richard P. Kennan

Sunrise Educational Course
Fast & Furious: The New Era of Rapid Imaging

Room 512A-G 07:00-08:00

Fast Cardiovascular Imaging

07:00 **Current Clinical Practices & Needs**
Frandics P. Chan

07:30 **Emerging Techniques**
Jeffrey Tsao

Sunrise Educational Course
Molecular Imaging & Contrast Agents

Room 513A-D 07:00-08:00

07:00 **Conventional Contrast Agents**
Val M. Runge

07:30 **Physico Chemical Principles & Applications of Fluorine**
Peter M. Jakob

Sunrise Educational Course
Cardiovascular MR Imaging: Bridging the Gap Between Research & Clinical Problems

Room 518A-C 07:00-08:00

Stress MRI for Evaluation of CAD

07:00 **Types of Stress MR Imaging**
Juerg Schwitter

07:20 **Acquisition Issues**
Peter Kellman

07:40 **Postprocessing Issues**
Michael Jerosch-Herold

Sunrise Educational Course
MRS - Metabolite Profiling & Metabolism

Room 520B-F 07:00-08:00 *Moderators:* Kevin M. Brindle & Ivan Tkac

07:00 **Requirements for Reliable Metabolite Profiling**
Ivan Tkac

07:30 **Strategies for Probing Metabolism**
Robin A. de Graaf

Sunrise Educational Course
Image Reconstruction

Room 710A 07:00-08:00

Non-Cartesian Trajectories & Off-Resonance Correction

07:00 **Fast Image Reconstruction from Non-Cartesian Data**
Craig H. Meyer

07:30 **Off-Resonance Effects & Correction**
Bradley P. Sutton

Sunrise Educational Course
Absolute Beginners' Guide to Anatomical & Functional MRI of the Brain

Room 710B 07:00-08:00 *Moderator:* Thomas M. Talavage

07:00 **Functional MRI**
Christina Triantafyllou

07:30 **Functional MRI Analysis**
Robert W. Cox

Plenary Lectures
Diagnosis & Triage of Acute Coronary Syndromes in the Emergency Room

Plenary Hall 08:15-09:30 *Organizers:* David E. Sosnovik & Matthias Stuber

08:15 **190**. **Diagnosis of Acute Coronary Syndromes: Scope of the Problem**
Warren J. Manning
Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA

Acute coronary syndrome (ACS) encompasses a heterogeneous subpopulation of patients presenting with non-traumatic chest pain. ACS includes the clinical syndromes of STEMI, NSTEMI, and unstable angina. Despite a careful history, physical examination, and conventional testing with biomarkers, many patients without ACS are unnecessarily admitted to the hospital, while others with ACS are sometimes discharged from the ED to experience high morbidity and mortality. For low and moderate risk ACS patients with inconclusive testing, cardiac imaging often plays a valuable role in the identification of those with ACS and safe discharge for those with non-life threatening conditions

08:25 **191**. **Cardiac CT: The Imaging Technique of Choice?**
Udo Hoffmann
Massachusetts General Hosptial, Boston, MA, USA

Cardiac CT provides new insights into cardiac and coronary morphology and function and may be an efficient triage tool for patients presenting with acute chest pain to the Emergency Department.

08:40 **192**. **Cardiac MRI in the Emergency Room**
Andrew E. Arai
National Institutes of Health/NHLBI, Bethesda, MD, USA

The diagnosis and triage of acute coronary syndrome (ACS) in the emergency room (ER) is a complex and expensive medical problem that can benefit from incorporation of imaging into clinical practice guidelines and treatment algorithms. Cardiac MRI can assess many parameters important in the diagnosis and risk stratification of patients with possible ACS. More importantly, several clinical trials have shown that cardiac MRI is feasible, diagnostically accurate, complimentary to conventional clinical tools, and even cost effective in the emergency room setting.

09:05 **193**. **Faster & Better: Emerging tools for Cardiovascular MRI in the Emergency Room**
Orlando P. Simonetti
Ohio State University, Columbus, OH, USA
Cardiovascular MRI technology continues to evolve in terms of its ability to rapidly and reliably produce accurate, functional, diagnostic information, and also in its capacity to provide quantitative results. a number of centers are beginning to explore the use of MRI as a means to triage patients presenting in the emergency room with acute chest pain. This presentation will explore the latest advances in cardiovascular MRI methods that are especially applicable to the diagnosis of Acute Coronary Syndrome (ACS).

Clinical Intensive Course
(Admission limited to Clinical Course registrants only)
Cortical Cartography: Case-Based Teaching

Room 510 08:15-09:30 *Moderator:* Jeffrey Joseph Neil

08:15 **Development**
Petra S. Hüppi

08:45 **Disease**
David van Essen

09:15 **Discussion & Meet the Teachers**

Clinical Intensive Course
(Admission limited to Clinical Course registrants only)
Liver MRI: How I Do It

Room 516A-C 08:15-10:15 *Moderator:* Shahid M. Hussain

08:15 **Liver MRI: Protocol Optimization**
Donald G. Mitchell

08:45 **Contrast Media for Liver MRI: Which One to Choose?**
Scott B. Reeder

09:15 **MRI of Focal Liver Lesions: A Step-by-Step Approach**
Claude B. Sirlin

09:45 **MRI of Diffuse Liver Disorders**
Hero K. Hussain

Clinical Intensive Course
MRI of Elbow, Wrist & Hand

Room 510 10:30-12:30 *Moderator:* Lynne S. Steinbach

10:30 **Elbow Tendons**
Christine Chung

11:10 **Wrist**
Laura W. Bancroft

11:50 **Hand**
Ronald C. Shnier

Clinical Intensive Course
MRI in Drug Abuse

Room 512A-G 10:30-12:30

10:30 **Drug Exposure in Utero**
Claire D. Coles

11:10 **Anatomical & Functional MRI of Cocaine & Nicotine Addiction**
Elliot A. Stein

11:50 **MRI of Ecstasy Addiction**
Ronald L. Cowan

Clinical Intensive Course
Artifacts in Body MRI: Case-Based Teaching

Room 516A-C 10:30-12:30 *Moderators:* Shahid M. Hussain & Caroline Reinhold

10:30 **Diffusion-Weighted Imaging: Artifacts & Remedies in Body MRI**
Thomas G. Perkins

11:00 **Artifacts in Clinical Practice: Physicist's Perspective**
Martin J. Graves

11:45 **Artifacts & Pitfalls: Radiologist's Perspective**
Donald G. Mitchell

Interventional MRI: Technical Developments & Clinical Applications

Room 511A-C 10:30-12:30 *Moderators:* Claudia M. Hillenbrand & Harald H. Quick

10:30 **194**. **Assessment & Completion of RF Ablation for the Treatment of Atrial Fibrillation using Real-Time MRI Guidance**
Sathya Vijayakumar[1,2], Eugene G. Kholmovski[1,2], Ravi Ranjan[2,3], Gaston Vergara[2,3], Joshua Blauer[2,4], Gene Payne[1,2], Nelly Volland[1,2], Kamal Vij[5], Gregory Gardner[2,4], Peter Piferi[5], Kimberly Johnson[2,3], Li Pan[6], Klaus Kirchberg[6], Rob MacLeod[2,4], Christopher J. McGann[2,3], Nassir F. Marrouche[2,3]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, USA; [2]CARMA Center, University of Utah, Salt Lake City, UT, USA; [3]Department of Cardiology, University of Utah, Salt Lake City, UT, USA; [4]SCI,, University of Utah, Salt Lake City, UT, USA; [5]SurgiVision Inc., Irvine, CA, USA; [6]Center for Applied Medical Imaging, Siemens Corporate Research, Princeton, NJ

10:42 **195**. **An Integrated System for Catheter Tracking & Visualization in MR-Guided Cardiovascular Interventions**
Li Pan[1], Julien Barbot[2], Steven M. Shea[1], Sunil Patil[1], Klaus J. Kirchberg[2], Glenn Meredith[2], Tongbai Meng[1], Eugene G. Kholmovski[3,4], Sathya Vijayakumar[3,4], Kamal Vij[5], Mike Guttman[5], Peter G. Piferi[5], Kimble L. Jenkins[5], Christine H. Lorenz[1]
[1]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, USA; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Princeton, NJ, USA; [3]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, USA; [4]CARMA Center, University of Utah, Salt Lake City, UT, USA; [5]SurgiVision, Inc., Irvine, CA, USA

10:54 **196**. **Prospective High Resolution Respiratory Resolved Whole-Heart MRI for Image-Guided Cardiovascular Interventions**
Christoph Kolbitsch[1], Claudia Prieto[1], Christian Buerger[1], Reza Razavi[1], Jouke Smink[2], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Philips Healthcare, Best, Netherlands

11:06 **197**. **Evaluation of a Novel MR-RF Ablation Catheter with Full Clinical Functionality**
Steffen Weiss[1], Bernd David[1], Kai-Michael Luedeke[1], Oliver Lips[1], Daniel Wirtz[1], Sascha Krueger[1], Peter Koken[1], Ronald Holthuizen[2], Tobias Schaeffter[3], Jas Gill[3], Reza Razavi[3]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Philips Healthcare, Best, Netherlands; [3]Division of Imaging Sciences, King's College, London, United Kingdom

11:18 **198**. **MRI-Guided Sclerotherapy of Veno-Lymphatic Vascular Malformations: Evaluation of Procedure Safety & Long-term Efficacy**
Sherif G. Nour[1], Daniel P. Hsu[2], Jamal J. Derakhshan[3], Jonathan S. Lewin[4]
[1]Radiology, Emory University Hospital, Atlanta, GA, USA; [2]Radiology, Case Medical Center, Cleveland, OH; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA; [4]Radiology, Johns Hopkins School of Medicine, Baltimore, MA, USA

11:30 **199**. **Longitudinal High Resolution MRI to Evaluate a Novel Statin Loaded HDL Nanoparticle Therapy in Experimental Atherosclerosis.**
Raphael Duivenvoorden[1,2], Jun Tang[1], David Izquierdo-Garcia[3], David P. Cormode[1], Eric S. G. Stroes[2], Edward A. Fisher[4], Zahi A. Fayad[1,3], Willem J. M. Mulder[1]
[1]Translational & Molecular Imaging Institute, Mount Sinai School of Medicine, New York, NY, USA; [2]Vascular Medicine, Academic Medical Center, Amsterdam, NH, Netherlands; [3]Radiology, Mount Sinai School of Medicine, New York, NY, USA; [4]Department of Medicine, Division of Cardiology, New York University School of Medicine, New York, NY, USA

11:42 **200**. **Quantitative Transcatheter Intraarterial Perfusion MRI to Predict Drug Delivery during Chemoembolization for Hepatocellular Carcinoma**
Dingxin Wang[1,2], Brian Jin[3], Robert Lewandowski[3], Robert Ryu[3], Kent Sato[3], Ann Ragin[3], Laura Kulik[4], Mary Mulcahy[5,6], Frank Miller[3], Riad Salem[3,6], Andrew Larson[3,6], Reed Omary[3,6]
[1]Siemens Medical Solutions USA, Inc., Minneapolis, MN, USA; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA; [3]Department of Radiology, Northwestern University, Chicago, IL, USA; [4]Department of Hepatology, Northwestern University, Chicago, IL, USA; [5]Department of Medicine, Northwestern University, Chicago, IL, USA; [6]Robert H. Lurie Comprehensive Cancer Center, Northwestern University, Chicago, IL, USA

11:54 **201**. **Detection & Quantification of Holmium-166 Loaded Microspheres in Patients with Liver Metastases: Initial Experience within the Framework of a Phase I Study**
Gerrit Hendrik van de Maat[1], Mattijs Elschot[2], Peter Roland Seevinck[1], Hendrik de Leeuw[1], H.W. de Jong[3], M. L. Smits[3], M. A. van den Bosch[3], M. G. Lam[3], B. A. Zonnenberg[3], A. D. van het Schip[3], J. Frank Nijsen[3], Chris J. Bakker[1]
[1]Image Sciences Institute, University Medical Center, Utrecht, Netherlands; [2]Department of Radiology & Nuclear Medicine, University Medical Center, Utrecht , Netherlands; [3]Department of Radiology & Nuclear Medicine, University Medical Center, Utrecht, Netherlands

12:06 **202**. **Clinically Usable Tool For Dynamic Scan-Plane Tracking For Real-Time MRI-Guided Needle Interventions in a High-Field-Open MRI System**
Uta Wonneberger[1], Sascha Krüger[2], Daniel Wirtz[2], Christoph Leussler[2], Steffen Weiss[2], Kerstin Jungnickel[1], Matthias Ludewig[1], Jürgen Bunke[3], Jens Ricke[1], Frank Fischbach[1]
[1]Klinik für Radiologie & Nuklearmedizin, Otto-von-Guericke-Universität Magdeburg, D-39120 Magdeburg, Germany; [2]Imaging Systems & Intervention, Philips Research Europe, D-22335 Hamburg, Germany; [3]Healthcare, Philips, D-22335 Hamburg, Germany

12:18 **203**. **Pass-Through Piston Driver for MR Elastography Assessment of Percutaneous Laser Ablation**
David Arthur Woodrum[1], Jun Chen[1], Kevin J. Glaser[1], Krzysztof Gorny[1], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, USA

Parallel Transmission in Three Dimensions

Room 511D-F 10:30-12:30 *Moderators:* Kawin Setsompop & V. Andrew Stenger

10:30 **204**. **Exploiting Phase Encoding Capabilities of Parallel Excitation for Improved Spatial Selectivity in Inner-Volume Imaging**
Johannes Thomas Schneider[1,2], Martin Haas[3], Wolfgang Ruhm[1], Juergen Hennig[3], Peter Ullmann[1]
[1]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [2]Dept. of Radiology, Medical Physics, University Medical Center Freiburg , Freiburg, Germany; [3]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

10:42 **205**. **3D Parallel Excitation Pulse Design using Interleaved Sparse Approximation & Local Optimization**
William A. Grissom[1], Chen Dong[1], Laura Sacolick[1], Mika W. Vogel[1]
[1]GE Global Research, Munich, Germany

10:54 **206**. **Application of K_t-Points to Human Brain Imaging At 7 Tesla**
Martijn Anton Cloos[1,2], Nicolas Boulant[1], Guillaume Ferrand[2], Michel Luong[2], Christopher J. Wiggins[1], Denis Le Bihan[1], Alexis Amadon[1]
[1]LRMN, CEA, DSV, I2BM, NeuroSpin, Gif-Sur-Yvette, ile-de-France, France; [2]CEA, DSM, IRFU, Gif-Sur-Yvette, ile-de-France, France

11:06 **207**. **Parallel Transmit using 3D Spokes RF Pulses for Improved B_1^+ Homogeneity over 3D Volumes**
Mohammad Mehdi Khalighi[1], Manojkumar Saranathan[2], William Grissom[3], Adam B. Kerr[4], Ron Watkins[2], Brian K. Rutt[2]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [2]Department of Radiology, Stanford University, Stanford, CA, USA; [3]Imaging Technologies Lab, General Electric Global Research, Garching B. Munchen, Germany; [4]Department of Electrical Engineering, Stanford University, Stanford, CA, USA

11:18 **208**. **Parallel Transmission Design of Multi-Pulse Sequences using Spatially Resolved Extended Phase Graphs (SREPG)**
Shaihan J. Malik[1], Hanno Homann[2], Peter Börnert[3], Joseph V. Hajnal[1]
[1]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom; [2]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [3]Philips Research, Hamburg, Germany

11:30 **209**. **Joint Optimization of Tip-Down & Tip-Up RF Pulses in Small-Tip (Non-Spin-Echo) Fast Recovery Imaging**
Jon-Fredrik Nielsen[1], Daehyun Yoon[2], Neal Anthony Hollingsworth[3], Katherine Lynn Moody[4], Mary Preston McDougall[3,4], Steven M. Wright[3,4], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA; [2]Electrical Engineering & Computer Science, University of Michigan; [3]Electrical & Computer Engineering, Texas A&M University; [4]Biomedical Engineering, Texas A&M University

11:42 **210**. **Parallel RF Pulse Design with Subject-Specific Global SAR Supervision**
Cem Murat Deniz[1,2], Leeor Alon[2,3], Ryan Brown[3], Hans-Peter Fautz[4], Daniel K. Sodickson[3], Yudong Zhu[3]
[1]Center for Biomedical Imaging , Department of Radiology, NYU School of Medicine, New York, NY, USA; [2]Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, NY, USA; [3]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, USA; [4]Siemens Medical Solutions, Erlangen, Germany

11:54 **211**. **Parallel Spatially Selective Excitation using Nonlinear Non-Bijective PatLoc Encoding Fields: Experimental Realization & First Results**
Johannes Thomas Schneider[1,2], Martin Haas[2], Stéphanie Ohrel[1], Heinrich Lehr[1], Wolfgang Ruhm[1], Hans Post[1], Jürgen Hennig[2], Peter Ullmann[1]
[1]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [2]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

12:06 **212**. **Parallel Transmission with Spectral-Spatial Pulses for Susceptibility Artifact Correction**
Cungeng Yang[1], Weiran Deng[1], Vijayanand Alagappan[2], Lawrence L. Wald[3], Victor Andrew Stenger[1]
[1]University of Hawaii, Honolulu, HI, USA; [2]General Electric Medical Systems, Waukesha, WI, USA; [3]Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, USA

12:18 **213**. **Through-Plane Signal Loss Recovery & B_1 Inhomogeneity Reduction *In Vivo* at 7T using Parallel Transmission**
Hai Zheng[1], Tiejun Zhao[2], Yongxian Qian[3], Tamer Ibrahim[1,3], Fernando Boada[1,3]
[1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, USA; [2]Siemens Medical Solutions, Pittsburgh, PA, USA; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, USA

Myocardial Perfusion: Experimental Models & Human Studies

Room 513A-D 10:30-12:30 *Moderators:* Rohan Dharmakumar & Michael Jerosch-Herold

10:30 **214**. **Adenosine-Induced Stress Myocardial Perfusion MRI using SW-CG-HYPR with Whole Left Ventricular Coverage: Comparison of Results with X-Ray Angiography in Patients with Suspected Coronary Artery Disease**
Heng Ma[1], Lan Ge[2], Jing An[3], David Chen[2], Lixin Jin[4], Xiaoming Bi[5], Renate Jerecic[4], Kuncheng Li[1], Debiao Li[2,6]
[1]Xuanwu Hospital, Capital Medical University, Beijing, China, People's Republic of; [2]Northwestern University; [3]Siemens Healthcare, MR Collaboration NE Asia, Siemens Mindit Magnetic Resonance; [4]Siemens Healthcare, MR Collaboration NE Asia, Siemens Limited China; [5]Siemens Healthcare, Cardiovascular MR R&D, USA; [6]Cedars-Sinai Medical Center & UCLA

10:42 **215**. **Cardiac ASL: Optimisation & Validation in the Mouse Heart**
Adrienne E. Campbell[1,2], Anthony N. Price[3], Jack A. Wells[1], Roger J. Ordidge[2], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Department of Medical Physics & Bioengineering, University College London, London, United Kingdom; [3]Robert Steiner MRI Unit, Imaging Science Department, Hammersmith Hostpital, Imperial College London, London, United Kingdom

10:54 **216**. **Quantitative MRI of the Myocardial Microcirculation in Mice using FAIR Look-Locker Arterial Spin Labeling & a Gamma-Variate Model of Blood Transit Time Distribution**
Frederick H. Epstein[1,2], Nivedita K. Naresh[2], Patrick F. Antkowiak[2], Moriel H. Vandsburger[2], Xiao Chen[2]
[1]Radiology, University of Virginia, Charlottesville, VA, USA; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, USA

11:06 **217**. **Detecting Myocardial Ischemia at Rest with Cardiac Phase-Resolved BOLD MRI: Early Findings**
Sotirios Athanasios Tsaftaris[1,2], Veronica Rundell[2], Xiangzhi Zhou[2], Ying Liu[2], Richard Tang[2], Debiao Li[2], Rohan Dharmakumar[2]
[1]Electrical Engineering & Computer Science, Northwestern University, Evanston, IL, USA; [2]Radiology, Northwestern University, Chicago, IL, USA

11:18 **218**. **Methods for Quantification of Absolute Myocardial Oxygen Consumption with ^{17}O-CMR**
David Muccigrosso[1], Xiang He[2], Dana Abendschein[1], Adil Bashir[1], Pradeep Gupte[3], Wei Chen[4], Robert J. Gropler[1], Jie Zheng[1]
[1]Washington University School of Medicine, St. Louis, MO, USA; [2]University of Pittsburg; [3]Rockland Technimed, Ltd.; [4]University of Minnesota

11:30 **219**. **Rapid CINE Myocardial T_2^* Mapping at 7T**
Fabian Hezel[1], Peter Kellman[2], Christof Thalhammer[1], Wolfgang Renz[3], Thoralf Niendorf[1,4]
[1]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Laboratory of Cardiac Energetics, National Institutes of Health/NHLBI, Bethesda, MD, USA; [3]Siemens Medical Systems, Erlangen, Germany; [4]Experimental & Clinical Research Center (ECRC), Charité Campus Buch, Humboldt-University, Berlin, Germany

11:42 **220**. **Pyruvate is Superior to Glucose in Supporting Metabolism of Machine Perfused Donor Hearts for Transplantation**
Michael Cobert[1], Matthias Peltz[1], Matthew Merritt[2], LaShondra West[1], Michael E. Jessen[1]
[1]Cardiovascular & Thoracic Surgery, University of Texas Southwestern Medical Center at Dallas, Dallas, TX, USA; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center at Dallas, Dallas, TX, USA

11:54 **221**. **Myocardial ASL Perfusion Reserve Test Detects Angiographic CAD in Initial Cohort of 29 Patients**
Zungho Zun[1], Terrence Jao[1], Padmini Varadarajan[2], Ramdas G. Pai[3], Eric C. Wong[4], Krishna S. Nayak[1]
[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, USA; [2]Division of Cardiology, Loma Linda University Medical Center, Loma Linda, CA, USA; [3]Division of Cardiology, Loma Linda University Medical Center, Loma Linda , CA, USA; [4]Departments of Radiology & Psychiatry, University of California, San Diego, La Jolla, CA, USA

12:06 **222**. **Self-Gated Cardiac Perfusion MRI**
Edward DiBella[1], Ganesh Adluru[2], Liyong Chen[3], Chris McGann[4]
[1]University of Utah, Salt Lake City, UT, USA; [2]Radiology, University of Utah; [3]Bioengineering, University of Utah; [4]Cardiology, University of Utah

12:18 **223**. **Endothelial Progenitor Cells Mediated Improvements in Post-Infarct Left Ventricular Myocardial Blood Flow Estimated by Spin Labeling CMR**
Hua-Lei Zhang[1,2], Hui Qiao[1], Rachel S. Frank[1], Stephanie Eucker[2], Bin Huang[1], William M. Armstead[3], Victor A. Ferrari[4], Jonathan A. Esptein[4], Rong Zhou[1]
[1]Laboratories of Molecular Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Bioengineering, School of Engineering & Applied Science, University of Pennsylvania, Philadelphia, PA, USA; [3]Department of Anesthesia, University of Pennsylvania, Philadelphia, PA, USA; [4]Department of Medicine (Division of Cardiovascular Medicine), University of Pennsylvania, Philadelphia, PA, USA

Endogenous Contrast Mechanisms: MT & Relaxometry

Room 518-A-C 10:30-12:30 *Moderators:* Karla L. Miller & Bruce Pike

10:30 **224**. **Fast Bound Pool Fraction Imaging of the *In Vivo* Rat Brain: Assocation with Myelin Content & Validation in the C_6 Glioma Model**
Hunter R. Underhill[1], Robert C. Rostomily[1], Andrei M. Mikheev[1], Chun Yuan[1], Vasily L. Yarnykh[1]
[1]University of Washington, Seattle, WA, USA

10:42 **225**. **Modeling & Measuring the Myelin G-Ratio**
Nikola Stikov[1], Lee M. Perry[2], Aviv Mezer[2], John M. Pauly[3], Brian A. Wandell[2], Robert F. Dougherty[2]
[1]Montreal Neurological Institute, McGill University, Montreal, QC, Canada; [2]Psychology, Stanford University, Stanford, CA, USA; [3]Electrical Engineering, Stanford University, Stanford, CA, USA

10:54 **226**. **Paradoxical Changes in Magnetization Transfer Ratio & Susceptibility Contrast in the Motor Cortex**
Olivier E. Mougin[1], Samuel J. Wharton[1], Rosa M. Sanchez Panchuelo[1], Richard W. Bowtell[1], Penny A. Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

11:06 **227**. **Fast Macromolecular Proton Fraction Mapping From a Single Off-Resonance Magnetization Transfer Measurement**
Vasily L. Yarnykh[1]
[1]Radiology, University of Washington, Seattle, WA, USA

11:18 **228**. **Origins of the Ultrashort-T_2 ^{1}H NMR Signals in Myelinated Nerve: A Direct Measure of Myelin Content?**
Robert Adam Horch[1,2], *John C. Gore*[2,3], *Mark D. Does*[1,2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, USA; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, USA; [3]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, USA

11:30 **229**. **New MRI Contrasts in Experimental Stroke: What Do We Measure with RAFF & ZAPI?**
Johanna Närväinen[1], *Kimmo Jokivarsi*[2], *Timo Liimatainen, Olli Gröhn, Risto A. Kauppinen*[3]
[1]A. I. Virtanen Institute, University of Eastern Finland, Kuopio, Finland; [2]Massachusetts General Hospital; [3]Dartmouth College, USA

11:42 **230**. **Observation of Myelin Water at Ultra-Short Echo Time by Longitudinal Relaxographic Imaging with Spin-Echo Center-Out EPI (DEPICTING)**
Christian Labadie[1,2], *William D. Rooney*[3], *Charles S. Springer, Jr.*[3], *Jing-Huei Lee*[4], *Monique Aubert-Frécon*[2], *Stefan Hetzer*[5], *Toralf Mildner*[1], *Harald E. Möller*[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Laboratoire de Spectrométrie Ionique et Moléculaire, Université Claude Bernard Lyon 1, France; [3]Oregon Health & Science University, Portland, OR, USA; [4]Biomedical Engineering, University of Cincinnati, OH, USA; [5]Bernstein Center for Computational Neuroscience, Berlin, Germany

11:54 **231**. **3D Quantitative Imaging of T_1rho & T_2**
Weitian Chen[1], *Atsushi Takahashi*[1], *Eric Han*[1]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA

12:06 **232**. **Is Iron the Source of Post Mortem Susceptibility Contrast in the Brain?**
Ferdinand Schweser[1,2], *Christian Langkammer*[3,4], *Andreas Deistung*[1], *Nikolaus Krebs*[4], *Walter Goessler*[5], *E. Scheurer*[4], *K. Yen*[4], *Franz Fazekas*[3], *Jürgen R. Reichenbach*[1], *Stefan Ropele*[3]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]Dept. of Neurology, Medical University of Graz, Graz, Austria; [4]Ludwig Boltzmann Institute for Clinical-Forensic Imaging, Graz, Austria; [5]Institute of Chemistry, Analytical Chemistry, University of Graz, Graz, Austria

12:18 **233**. **Three Dimensional T_2prep Spiral Imaging with Efficient Brain Coverage For Myelin Water Quantification: Validation At 1.5 Tesla**
Thanh D. Nguyen[1], *Cynthia Wisnieff*[2], *Mitchell Cooper*[2], *Dushyant Kumar*[1], *Ashish Raj*[1], *Martin R. Prince*[1], *Yi Wang*[1], *Tim Vartanian*[3], *Susan A. Gauthier*[3]
[1]Radiology, Weill Cornell Medical College, New York, NY, USA; [2]Biomedical Engineering, Cornell University, Ithaca, NY, USA; [3]Neurology, Weill Cornell Medical College, New York, NY, USA

Bridging the Gap between MR & ER

Room 520B-F 10:30-12:30 *Moderators:* Jalal B. Andre & Daniela Prayer

10:30 **Imaging Requirements in the Emergency Room**
James V. Quinn

11:00 **Neurological Emergencies: MR vs CT**
Nancy J. Fischbein

11:30 **From the ER to the MR Suite at a Major Academic Hospital: A Body Imager's Perspective**
Elmar M. Merkle

12:00 **ER: A Challenge for MR Technology**
Steven M. Conolly

Manganese Enhanced MRI - Advances & Applications

Room 710A 10:30-12:30 *Moderators:* Nicholas A. Bock & Daniel H. Turnbull

10:30 **234**. ***In Vivo* Manganese-Enhanced MRI of Conditioned Fear Response**
Iris Yuwen Zhou[1,2], Abby Y. Ding[1,2], Qi Li[3,4], Frank Yik Hin Lee[1,2], Shujuan J. Fan[1,2], Kevin Chuen Wing Chan[1,2], Grainne M. McAlonan[3,4], Ed Xuekui Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Psychiatry, the University of Hong Kong; [4]Centre for Reproduction Growth & Development, the University of Hong Kong

10:42 **235**. **Mapping CNS Response to Leptin by MEMRI**
A-B-M-A Asad[1], Serene Y. L. Tong[1], Ma Wei[2], Weiping Han[2], Kai-Hsiang Chuang[1]
[1]Magnetic Resonance Imaging Group, Singapore Bioimaging Consortium, A*STAR, Singapore, Singapore; [2]Lab of Metabolic Medicine, Singapore Bioimaging Consortium, A*STAR, Singapore, Singapore

10:54 **236**. **Biocompatible & pH Sensitive PLGA Encapsulated Mno Nanocrystals for Molecular & Cellular MRI**
Margaret F. Bennewitz[1], Michael K. Nkansah[1], Tricia L. Lobo[2], Erik M. Shapiro[1,2]
[1]Department of Biomedical Engineering, Yale University, New Haven, CT, USA; [2]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, USA

11:06 **237**. ***In-Vivo* Detection of Cell Cycle Arrest using Manganese-Enhanced MRI (MEMRI)**
Shigeyoshi Saito[1], Sumitaka Hasegawa[1], Takako Furukawa[1], Tsuneo Saga[1], Ichio Aoki[1]
[1]Molecular Imaging Center (MIC), National Institute of Radiological Sciences (NIRS), Chiba, Japan

11:18 **238**. **MEMRI Atlas of Neonatal Mouse Brain Development**
Kamila Urszula Szulc[1], Brian J. Nieman[2], Edward Jospeh Houston[1], Alexandra L. Joyner[3], Daniel H. Turnbull[1,4]
[1]Kimmel Center for Biology & Medicine at the Skirball Institute of Biomolecular Medicine, NYU School of Medicine, New York, NY, USA; [2]Mouse Imaging Center, Hospital for Sick Children, Toronto, Canada; [3]Developmental Biology Program, Sloan-Kettering Institute, New York, NY, USA; [4]Radiology, NYU School of Medicine, New York, NY, USA

11:30 **239**. **Brain Regions Showing Manganese Accumulation in the Human versus the Rat Brain**
Ulrike Dydak[1,2], Jun Xu[1,2], Ashritha Epur[2], Xiangrong Li[3], Seth Streitmatter[1], Li-Ling Long[3], Wei Zheng[1], Yue-Ming Jiang[4]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, USA; [2]Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, USA; [3]Department of Radiology, Guangxi Medical University, Nanning, China, People's Republic of; [4]Department of Health Toxicology, Guangxi Medical University, Nanning, China, People's Republic of

11:42 **240**. **Mn Distribution in Rat Hippocampus: Correlative use of Synchrotron X-Ray Microprobe & MEMRI**
Alexia Daoust[1,2], Emmanuel Luc Barbier[1,2], Sylvain Bohic[1,3]
[1]INSERM U836, Grenoble, France; [2]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [3]European Synchrotron Radiation Facility (ESRF), Grenoble, France

11:54 **241**. **Detection of Altered Axonal Transport a Mouse Model of Neurofibromatosis using Manganese Enhanced MRI**
Kevin M. Bennett[1], Shannon S. Olfers[2], Vinodh Narayanan[2]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, Az, USA; [2]Developmental Neurogenetics Laboratory, Barrow Neurological Institute, Phoenix, Az, USA

12:06 **242**. **Aging Impacts Significantly on Neuronal Transport in Normal Mice but Not in an Accelerated Mouse Model of Amyloid Beta Pathology**
Umer Abdur Rahim Khan[1], Anne Bertrand[1,2], Hoang Minh Dung[1], Dmitry Novikov[1], Lindsay Kathleen Hill[1], Benjamin Winthrope Little[1], Hameetha B. Rajamohamed Sait[3], Mesha Shamsie[1], Einar M. Sigurdsson[3], Youssef Zaim Wadghiri[1]
[1]Radiology, New York University Langone Medical Center, New York, NY, USA; [2]URA CEA-CNRS 2210, Mircen, Fontenay-Aux-Roses, France; [3]Physiology & Neuroscience, New York University Langone Medical Center, New York, NY, USA

12:18 **243**. **Paraformaldehyde & Glutaraldehyde Fixations Preserve Manganese Enhancement in *Ex Vivo* Mouse Brain MRI**
Yutong Liu[1], Larisa Poluektova[2], Balasrinivasa Sajja[1], Howard Gendelman[2], Boska Michael[1]
[1]Radiology, UNMC, Omaha, NE, USA; [2]Pharmacology/Exp Neuroscience, UNMC, Omaha, NE, USA

Human Brain Tumors: Response to Therapy

Room 710B 10:30-12:30 *Moderators:* Meng Law & Brian D. Ross

10:30 **244**. **Graded Functional Diffusion Maps (Fdms) Predict Survival in Recurrent Glioblastoma Treated with Bevacizumab**
Benjamin M. Ellingson[1], Timothy F. Cloughesy[2], Albert Lai[2], Phioanh L. Nghiemphu[2], Whitney B. Pope[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, USA; [2]Neurology, University of California Los Angeles, Los Angeles, CA, USA

10:42 **245**. **Combined ^{31}P & ^{1}H MRSI in Recurrent Glioblastomas Prior & Post Antiangiogenetic Therapy**
Ulrich Pilatus[1], Oliver Bähr[2], Joachim Steinbach[2], Elke Hattingen[1]
[1]Institute of Neuroradiology, Goethe University Frankfurt, Frankfurt/Main, Germany; [2]Senckenbergisches Institut für Neuroonkologie, Goethe University Frankfurt, Frankfurt/Main, Germany

10:54 **246**. **MR Spectroscopy as a Biomarker to Predict the Responses of Glioblastoma to an Anti-Angiogenic Treatment**
Heisoog Kim[1], Ciprian Catana[1], Eva-Maria Ratai[1], Ovidiu C. Andronesi[1], Tracy T. Batchelor[2], Rakesh K. Jain[3], A. Gregory Sorensen[1]
[1]Radiology, A. A. Martinos Center, Charlestown, MA, USA; [2]Neurology, Massachusetts General Hospital, Boston, MA, USA; [3]Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA

11:06 **247**. **Increased Blood Flow during Anti-VEGF Induced Vascular Normalization**
Kyrre E. Emblem[1], Pavlina Polaskova[1], Dominique L. Jennings[1], Elizabeth R. Gerstner[2], Tracy T. Batchelor[2], Rakesh K. Jain[3], A. Gregory Sorensen[1]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, USA; [2]Pappas Center for Neuro-Oncology, Massachusetts General Hospital, Boston, MA, USA; [3]Department of Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA

11:18 **248**. **Improved Localization of BOLD Activation in Patients with Brain Tumors using Vasoreactivity Maps**
Henning U. Voss[1], Kyung K. Peck[2], Nicole M. Petrovich Brennan[2], Amir Iranmahboob[2], Bob L. Hou[3], Andrei I. Holodny[2]
[1]Dept. of Radiology, Weill Cornell Medical College, New York, NY, USA; [2]Dept. of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA; [3]Dept. of Radiology, West Virginia University, Morgantown, VA, USA

11:30 **249**. **Serial Changes in Diffusion Imaging Parameters Vary with Treatment Regimen for Patients with Newly Diagnosed Glioblastoma Multiforme**
Laleh Jalilian[1], Emma Essock-Burns[2], Yan Li[1], Soonmee Cha[1,3], Susan Chang[3], Michael Prados[3], Nicholas Butowski[3], Sarah J. Nelson[1,2]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, USA; [2]Bioengineering, UCSF, San Francisco, CA, USA; [3]Neurological Surgery, UCSF, San Francisco, CA, USA

11:42 **250**. **How Blood Perfusion Maps are Analyzed Can Greatly Improve the Predictive Potential For Assessing Survival in Patients Treated For Gliomas**
Benjamin Lemasson[1], Stefanie Galbán[2], Christina Tsien[2], Charles R. Meyer[1,3], Timothy D. Johnson[4], Thomas Leonard Chenevert[1], Alnawaz Rehemtulla[1,2], Brian Dale Ross[1], Craig J. Galbán[1]
[1]Radiology, University of Michigan, Ann Arbor, MI, USA; [2]Radiation Oncology, University of Michigan, Center for Molecular Imaging, Ann Arbor, MI, USA; [3]Biomedical, University of Michigan, Center for Molecular Imaging, Ann Arbor, MI, USA; [4]Biostatistics, University of Michigan, Ann Arbor, MI, USA

11:54 **251**. **Treatment Effects of Diffuse Intrinsic Pontine Gliomas On Tumor & Normal Appearing Cortical Gray Matter Assessed By Arterial Spin Labeling Perfusion & 3D Volumetric Measurements**

Jan Sedlacik[1,2], Claudia M. Hillenbrand[1], Alberto Broniscer[3]

[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, USA; [2]Neuroradiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Oncology, St. Jude Children's Research Hospital, Memphis, TN, USA

12:06 **252**. **UDP-GlcNAc & UDP-GalNAc, as Detected By ^{1}H MRS, Increase in the Early Phase of Cisplatin –Induced Cell Death in Brain Tumour Cells**

Xiaoyan Pan[1,2], Martin Wilson[1,2], Carmel McConville[1], Julian L. Griffin[3], Theodoros N. Arvanitis[2,4], Andrew C. Peet[1,2], Risto A. Kauppinen[5]

[1]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [2]Oncology, Birmingham Children's Hospital NHS Foundation Trust, Birmingham, United Kingdom; [3]Biochemistry, University of Cambridge, Cambridge, United Kingdom; [4]School of Electronic, Electrical & Computer Engineering, University of Birmingham, Birmingham, United Kingdom; [5]Department of Radiology, Dartmouth College, Hanover, NH, USA

12:18 **253**. **Characterization of Microbleed Formation from Normal Brain Microvasculature After Radiation Therapy**

Janine M. Lupo[1], Susan M. Chang[2], Soonmee Cha[1,2], Sarah J. Nelson[1,3]

[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, CA, USA; [2]Department of Neurological Surgery, University of California, San Francisco, CA, USA; [3]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco, CA, USA

Gold Corporate Member Lunchtime Symposium
GE Healthcare

Room Plenary Hall 12:30-13:30

Clinical Intensive Course
Nouvelle Techniques in Current Clinical Use

Room 520B-F 13:30-15:30 *Moderators:* Robert C. McKinstry & Kenneth L. Weiss

13:30 **Clinical Imaging of Short T_2/T_2* Tissues**
Graeme M. Bydder

13:55 **High Field**
Keith R. Thulborn

14:20 **New Contrast Agents**
Marco Essig

14:45 **Models for Predicting Outcome**
Ruth C. Carlos

15:10 **Discussion & Meet the Teachers**

Clinical Intensive Course
Commonly Missed Diagnoses in Shoulder & Knee MR

Room 510 13:30-15:30 *Moderator:* Hollis G. Potter

13:30 **Commonly Missed Diagnoses in the Shoulder**
Thomas W. Hash

14:20 **Questions**

14:30 **Commonly Missed Diagnoses in the Knee**
Gustav Andreisek

15:20 **Questions**

Clinical Decision Making with Advanced Techniques

Room 516A-C 13:30-15:30

13:30 **fMRI**
Stefan Sunaert

14:00 **Perfusion MRI (ASL)**
Joseph A. Maldjian

14:30 **Diffusion Tensor Imaging**
Aaron S. Field

15:00 **Perfusion MRI (DSC-MRI & DCE-MRI)**
A. Gregory Sorensen

Cardiovascular MRI - Exploring the Boundaries Part 1: Cardiovascular Molecular Imaging

Room 512A-G 13:30-15:30 *Moderators:* Paula J. Foster & David E. Sosnovik

13:30 **Contrast Agents & Platforms**
Peter Caravan

13:50 **Imaging Techniques & Quantification**
René M. Botnar

14:10 **Cell Therapy**
Dara L. Kraitchman

14:30 **Atherosclerosis**
Patrick M. Winter

14:50 **Myocardium**
David E. Sosnovik

15:10 **Hybrid Systems**
Ciprian Catana

Body Diffusion: Beyond ADC?

Room 518-A-C 13:30-15:30 *Moderators:* Dow-Mu Koh & Thomas C. Kwee

13:30 **254**. **Introduction**
David J. Collins

13:42 **255**. **Short Term Measurement Reproducibility of Perfusion Fraction (F), Pseudo-Diffusion Coefficient (D*) & Diffusion Coefficient (D) in Colorectal Liver Metastases Derived By Intravoxel Incoherent Motion Analysis of Respiratory-Triggered Diffusion-Weighted MR Imaging**
Adrian Andreou[1], Matthew Orton[2], David J. Collins[1,2], Martin O. Leach[2], Dow-Mu Koh[1]
[1]Department of Radiology, Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CRUK-EPSRC Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom

13:54 **256**. **Intravoxel Incoherent Motion (IVIM) Analysis of Liver Fibrosis in an Experimental Mouse Model**
April M. Chow[1,2], Darwin S. Gao[1,3], Shu Juan Fan[1,3], Gladys G. Lo[4], Siu Ki Yu[2], Ed X. Wu[1,3]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [2]Medical Physics & Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of; [3]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [4]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of

14:06 **257**. **Assessment of Hepatocellular Carcinoma in Fresh Liver Explants using a Non-Gaussian Diffusion Kurtosis Model.**
Andrew B. Rosenkrantz[1], Eric E. Sigmund[1], Benjamin E. Niver[1], Glyn R. Morgan[2], Bradley Spieler[1], Anthony G. Gilet[1], Cristina H. Hajdu[3]
[1]Radiology, NYU Langone Medical Center, New York, USA; [2]Transplant Surgery, NYU Langone Medical Center, New York, USA; [3]Pathology, NYU Langone Medical Center, New York, NY, USA

14:18 **258**. **Histopathological Correlation of IVIM-Derived True Diffusion Constant in Patients with Pancreatic Carcinoma & Chronic Pancreatitis**
Miriam Klauss[1], Matthias Gaida, Andreas Lemke[2], Katharina Grünberg[2], Dirk Simon[2], Stefan Delorme[2], Hans-Ulrich Kauczor, Lars Grenacher, Bram Stieltjes[2]
[1]Diagnostic Radiology, University of Heidelberg, Heidelberg, Baden-Württemberg, Germany; [2]DKFZ

14:30 **259**. **Association of the Apparent Diffusion Coefficient of Bladder Cancer with Metastatic Disease: Preliminary Results**
Thais C. Mussi[1], Bradley Spieler[1], Andrew B. Rosenkrantz[1]
[1]Radiology, NYU Langone Medical Center, New York, USA

14:42 **260**. **Towards Repeatable ADC Mapping of the Liver: Some Guidance for Clinical Use**
Paul Summers[1], Antonio Gregoraci[2], Giuseppe Petralia[1], Anna Caroli[3], Roberto Di Filippi[1], Luca Antiga[3], Massimo Bellomi[1]
[1]Department of Radiology, European Institute of Oncology, Milan, Italy; [2]Faculty of Medicine & Surgery, University of Milan, Milan, Italy; [3]Mario Negri Institute, Bergamo, Italy

14:54 **261**. **Quantitative Analysis of the Diffusion-Weighted Steady-State Free-Precession Signal in Vertebral Bone-Marrow Lesions**
Olaf Dietrich[1], Andreas Biffar[1], Andrea Baur-Melnyk, Gerwin Schmidt, Maximilian F. Reiser[1]
[1]Josef Lissner Laboratory for Biomedical Imaging, Department of Clinical Radiology, Ludwig Maximilian University of Munich, Munich, Germany

15:06 **262**. **Parallel RF Excitation For Diffusion-Weighted Whole Body MR Imaging with Background Body Signal Suppression At 3.0 Tesla**
G. M. Kukuk[1], M. Kaschner[1], F. Träber[1], D. Skowasch[2], J. Gieseke[1,3], H. H. Schild[1], W. A. Willinek[1], P. Mürtz[1]
[1]Department of Radiology, University of Bonn, Bonn, NRW, Germany; [2]Department of Pneumology, University of Bonn, Bonn, Germany; [3]Philips Healthcare, Best, Netherlands

15:18 **263**. **Diffusion-Prepared Fast Imaging with Steady-State Free Precession (DP-FISP): A Rapid Diffusion MRI Technique at 7T**
Lan Lu[1], Bernadette Erowku[1], Gregory R. Lee[1], Katherine Dell[2,3], Chris A. Flask[1,4]
[1]Radiology, Case Western Reserve University, Cleveland, OH, USA; [2]Pediatrics, Case Western Reserve University, Cleveland, OH, USA; [3]MetroHealth Medical Center, Cleveland, OH, USA; [4]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA

Clinical Intensive Course
MR Physics & Techniques for Clinicians

Room 516A-C 16:00-18:00

16:00 **Spin Echo Imaging**
Bernd A. Jung

16:40 **Gradient Echo Imaging**
Brian A. Hargreaves

17:20 **Fast Spin Echo Imaging**
Frank R. Korosec

You Are what You Eat

Room 510 16:00-18:00 *Moderators:* Bruce M. Damon & Bernard J. Dardzinski

16:00 **264**. **^{31}P MRS at 7T Shows a Relation Between the Alkaline Ph Compartment Content Compared to Phosphocreatine Recovery Kinetics At 1.5T**
Joep van Oorschot[1], Hermien Kan[2], Andrew Webb[2], Klaas Nicolay[1], Jeroen Jeneson[1]
[1]Biomedical NMR, University of Technology Eindhoven, Eindhoven, Noord-Brabant, Netherlands; [2]C. J. Gorter Center for High Field MRI, Dept. of Radiology, Leiden University Medical Center, Leiden, Netherlands

16:12 **265**. **Quantification of Susceptibility-Induced Fat Resonance Shift On Chemical Shift-Based Water/Fat Separation of Skeletal Muscle**
Dimitrios C. Karampinos[1], Huanzhou Yu[2], Ann Shimakawa[2], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA

16:24 **266**. **Mitochondrial Dysfunction in Patients with Primary Congenital Insulin Resistance**
Alison Sleigh[1], Philippa Raymond-Barker[2], David Porter[3], Kerrie Thackray[4], Louise McGrath[1], Soren Brage[4], Mensud Hatunic[4], T. A. Carpenter[1], Kevin M. Brindle[5,6], Graham J. Kemp[7], Steve O'Rahilly[4], Rob K. Semple[4], David B. Savage[4]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, United Kingdom; [2]Wellcome Trust Clinical Research Facility, Addenbrooke's Hospital, Cambridge, United Kingdom; [3]Siemens AG Healthcare Sector, Erlangen, Germany; [4]Institute of Metabolic Science, University of Cambridge, Cambridge, United Kingdom; [5]Dept. of Biochemistry, University of Cambridge, Cambridge, United Kingdom; [6]Cancer Research UK Cambridge Research Institute, Cambridge, United Kingdom; [7]Magnetic Resonance & Image Analysis Research Centre, University of Liverpool, Liverpool, United Kingdom

16:36 **267**. **Combination of DEPT & PRESS for Detection of UFA in Posterior & Medial Thigh Muscle By ^{13}C MRS At 7T**
Xing Chen[1], Anke Henning[1], Peter Boesiger[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zürich, Switzerland

16:48 **268**. **Diffusion Measurements Reveal a Difference in Apparent Diffusion Coefficients of Intra- & Extramyocellular Lipids**
Vaclav Brandejsky[1], Roland Kreis[1], Christine Sandra Bolliger[2], Chris Boesch[1]
[1]Dept. of Clinical Research, University of Bern , Bern, Switzerland; [2]Dept. of Clinical Research, University of Bern, Bern, Switzerland

17:00 **269**. **Quantitative Assessment of the Inter- & Intra-Muscle Fat Fraction Variability in Duchenne Muscular Dystrophy Patients**
Beatrijs Wokke[1], Janneke van den Bergen[1], Annemieke Aartsma-Rus[2], Andrew Webb[3], Jan Verschuuren[1], Hermien Kan[3]
[1]Neurology, Leiden University Medical Centre, Leiden, Netherlands; [2]Human genetics, Leiden University Medical Centre; [3]Radiology, Leiden University Medical Centre

17:12 **270**. **Lipid Accumulation & Mitochondrial Function in Skeletal Muscle of ATGL Knockout Mice: A ^{31}P MRS Study**
Patricia M. Nunes[1], Andor Veltien[1], Henk Arnts[2], Tineke van de Weijer[3], Patrick Shrauwen[3], Cees J. Tack[4], Arend Heerschap[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Central Animal Laboratory, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Human Biology, NUTRIM, School of Nutrition, Toxicology & Metabolism, Maastricht University Medical Centre, Maastricht, Netherlands; [4]Internal Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

17:24 **271**. **Quantification of Adipose Tissue Depots in the Thigh with Two-Point Dixon Imaging: Effect of Fitness Level on Adiposity in Elderly Women**
Danchin Daniel Chen[1], Diego Hernando[2], Curtis Laurence Johnson[1], Armen Alex Gharibans[1], Dolores D. Guest[3], Christie Ward[4], Bhibha Das[3], Ellen M. Evans[4], John G. Georgiadis[1]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA; [2]Department of Radiology, University of Wisconsin, Madison, WI, USA; [3]Department of Kinesiology & Community Health, University of Illinois at Urbana-Champaign, Urbana, IL, USA; [4]Department of Kinesiology, University of Georgia, Athens, GA, USA

17:36 **272**. **Diffusion Weighted Spectroscopy: A Novel Approach to Investigate Intramyocellular Lipids**
Li Xiao[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of

17:48 **273**. **Using DTI to Assess the Effect of Obesity & Physical Activity on Muscle Quality in Elderly Women**
Armen Alex Gharibans[1], Danchin Daniel Chen[1], Curtis Laurence Johnson[1], Dolores D. Guest[2], Christie Ward[3], Bhibha Das[2], Ellen M. Evans[3], John G. Georgiadis[1]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA; [2]Department of Kinesiology & Community Health, University of Illinois at Urbana-Champaign, Urbana, IL, USA; [3]Department of Kinesiology, University of Georgia, Athens, GA, USA

Myocardial Function: Experimental Models & Human Studies

Room 511A-C 16:00-18:00 *Moderators:* Thoralf Niendorf & Mihaela Pop

16:00 **274**. **A Feasibility Study: MR Elastography as a Method to Compare Stiffness Estimates in Hypertrophic Obstructive Cardiomyopathy & in Normal Volunteers**
Arunark Kolipaka[1], Kiaran McGee[1], Shivani Aggarwal[1], Nandan Anavekar[1], Armando Manduca[1], Richard Ehman[1], Philip Araoz[1]
[1]Mayo Clinic, Rochester, MN, USA

16:12 **275**. **Direct Elastography of *In Vivo* Human Heart**
Heiko Tzschätzsch[1], Thomas Elgeti[1], Sebastian Hirsch[1], Thoralf Niendorf[2], Jürgen Braun[3], Ingolf Sack[1]
[1]Department of Radiology, Charité University Medicine, Berlin, Germany; [2]Berlin Ultrahigh Field Facility, Charité University Medicine, Berlin, Germany; [3]Institute of Medical Informatics, Charité University Medicine, Berlin, Germany

16:24 **276**. **Anatomic & Functional Cardiac MR at 7T: A Comparison of 4, 8 & 16-Element Transceive RF Coil Designs**
Lukas Winter[1], Christof Thalhammer[1], Matthias Dieringer[1,2], Celal Özerdem[1], Jan Rieger[1], Fabian Hezel[1], Wolfgang Renz[3], Thoralf Niendorf[1,2]
[1]Berlin Ultrahigh-Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Experimental & Clinical Research Center (ECRC), Charité Campus Buch, Humboldt-University, Berlin, Germany; [3]Siemens AG, Erlangen, Germany

16:36 **277**. **Free-Breathing 3D Whole Heart Black Blood Imaging with Motion Sensitized Driven Equilibrium**
Subashini Srinivasan[1,2], Peng Hu[2], Kraig V. Kissinger[2], Beth Goddu[2], Lois Geopfert[2], Ehud J. Schmidt[3], Sebastian Kozerke[1], Reza Nezafat[2]
[1]Institute of Biomedical Engineering, ETH, Zurich, Switzerland; [2]Department of Medicine (Cardiovascular Division), Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA; [3]Department of Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, USA

16:48 **278**. **Temporal Evolution of Cardiac Function in Mice with Myocardial Hypertrophy & Heart Failure**
Bastiaan J. van Nierop[1], Elza D. van Deel[2], Dirk J. Duncker[2], Gustav J. Strijkers[1], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Cardiology, Thoraxcenter, Erasmus MC, University Medical Center Rotterdam, Rotterdam, Netherlands

17:00 **279**. **Molecular & Microstructural Changes Accompanying Left Ventricular Hypertrophy Revealed with *In-Vivo* Diffusion Tensor MRI (DTI) & Molecular Imaging of the Mouse Heart**
Shuning Huang[1], Choukri Mekkaoui[1], Miloslav Polasek[1], Howard H. Chen[1], Ruopeng Wang[1], Soeun Ngoy[2], Ronglih Liao[2], Van J. Wedeen[1], Guangping Dai[1], Peter Caravan[1], David E. Sosnovik[1,3]
[1]Martinos Center for Biomedical Imaging, Mass General Hospital, Charlestown, MA, USA; [2]Cardiology, Brigham & Woman's Hospital, Boston, MA, USA; [3]Cardiology, Mass General Hospital, Boston, MA, USA

17:12 **280**. **Human Statistical Atlas of Cardiac Fiber Architecture from DT-MRI**
Herve Lombaert[1,2], Jean-Marc Peyrat[3], Stanislas Rapacchi[4], Laurent Fanton[5], Herve Delingette[2], Nicholas Ayache[2], Pierre Croisille[4]
[1]Ecole Polytechnique, Montreal, QC, Canada; [2]Asclepios, INRIA, Sophia-Antipolis, France; [3]Siemens Molecular Imaging, Oxford, United Kingdom; [4]Creatis-LRMN, HCL, Lyon, France; [5]Institut Universitaire de Médecine Légale, Lyon, France

17:24 **281**. ***In Vivo* Characterization of Myocardial Microstructure in Normal & Infarcted Hearts using the Supertoroidal Model**
Choukri Mekkaoui[1], Shuning Huang[1], Guangping Dai[1], Timothy G. Reese[1], Marcel P. Jackowski[2], David Sosnovik[3]
[1]Radiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center For Biomedical Imaging, Charlestown, MA, USA; [2]Computer Science, University of São Paulo, Institute of Mathematics & Statistics, São Paulo, Brazil; [3]Cardiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center For Biomedical Imaging, Charlestown, MA, USA

17:36 **282**. **Sequence Timing Optimization in Multi-Slice Diffusion Tensor Imaging of the Beating Heart**
Christian Torben Stoeck[1], Nicolas Toussaint[2], Peter Boesiger[1], Philip G. Batchelor[2], Sebastian Kozerke[1,2]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Imaging Sciences, King's College London, London, United Kingdom

17:48 **283**. **Imaging Three-Dimensional Myocardial Mechanics in Mice using Volumetric Spiral Cine DENSE**
Xiaodong Zhong[1], Lauren B. Gibberman[2], Andrew D. Gilliam[3], Craig H. Meyer[2,4], Brent A. French[4], Frederick H. Epstein[2,4]
[1]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, USA; [2]Radiology Department, University of Virginia, Charlottesville, VA, USA; [3]Andrew D. Gilliam Consulting, Providence, RI, USA; [4]Biomedical Engineering Department, University of Virginia, Charlottesville, VA, USA

Static & Dynamic B_0

Room 511D-F 16:00-18:00 *Moderators:* Christoph Juchem & Kevin M. Koch

16:00 **284**. **Correction of Breathing-Induced Artefacts in High-Field Brain MRI using Concurrent Field Monitoring**
Johanna Vannesjö[1], David Brunner[1], Christoph Barmet[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Technology, University & ETH Zurich, Zurich, Switzerland

16:12 **285**. **Theoretical Basis of Projection Based Shim Estimation**
Daniel Nicolas Splitthoff[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, Unversity Medical Center Freiburg, Freiburg, Germany

16:24 **286**. **Instant Measurement of Point Spread Functions using an NMR Field Probe**
Lars Kasper[1,2], Bertram Jakob Wilm[1], Christoph Barmet[1], Klaas Paul Prüssmann[1]
[1]University & ETH Zurich, Institute for Biomedical Engineering, Zurich, Switzerland; [2]University of Zurich, Laboratory for Social & Neural Systems Research, Zurich, Switzerland

16:36 **287**. **Accelerated Point Spread Function Mapping using Signal Modelling for Accurate EPI Geometric Distortion Correction**
Iulius Dragonu[1], Thomas Lange[1], Nicoleta Baxan[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freibug, Baden-Wuerttemberg, Germany

16:48 **288**. **Comprehensive Correction of Artifacts due to Eddy Current-Induced Echo Shifts in Partial Fourier DTI**
Trong-Kha Truong[1], Nan-kuei Chen[1], Allen W. Song[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, USA

17:00 **289**. **Magnetic Resonance Imaging of Arthroplasty: Comparison of MAVRIC & Conventional Fast Spin Echo Techniques**
Matthew F. Koff[1], Catherine Lee Hayter[1], Parina Shah[1], Kevin M. Koch[2], Theodore T. Miller[1,3], Hollis G. Potter[1,3]
[1]Department of Radiology & Imaging, Hospital for Special Surgery, New York, NY, USA; [2]Applied Science Laboratory, General Electric Healthcare, Waukesha, WI, USA; [3]Weill Cornell Medical College of Cornell University, New York, NY, USA

17:12 **290**. **MRI Assessment of Wear-induced Synovitis**
Catherine Lee Hayter[1], Hollis G. Potter[1,2], Douglas E. Padgett[3], Giorgio Perino[4], Bryan J. Nestor[3]
[1]Department of Radiology & Imaging, Hospital for Special Surgery, New York, NY, USA; [2]Weill Cornell Medical College of Cornell University, New York, NY, USA; [3]Department of Orthopedic Surgery, Hospital for Special Surgery, New York, NY, USA; [4]Department of Pathology, Hospital for Special Surgery, New York, NY, USA

17:24 **291**. **New MR Imaging Methods for Metallic Implants in the Knee: Artifact Correction & Clinical Impact**
Christina A. Chen[1], Weitian Chen[2], Stuart B. Goodman, Brian A. Hargreaves, Kevin M. Koch[2], Wenmiao Lu[3], Anja C. Brau[2], Hillary J. Braun, Garry E. Gold
[1]Radiology, Stanford University, Stanford, CA, USA; [2]GE Healthcare Applied Science Lab; [3]Nanyang Technological University

17:36 **292**. **Metal Artifact Reduction using Slice Encoding with Shear Correction**
Pauline Wong Worters[1], Kim Butts Pauly[1], Brian A. Hargreaves[1]
[1]Stanford University, Stanford, CA, USA

17:48 **293**. **Frequency Encoding in the Presence of Extreme Static Field Gradients**
Kevin M. Koch[1], Kevin F. King[1], Weitian Chen[2], Garry E. Gold[3], Brian A. Hargreaves[3]
[1]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, USA; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [3]Department of Radiology, Stanford University, Stanford, CA, USA

Arterial Spin Labeling

Room 512A-G 16:00-18:00 *Moderators:* David C. Alsop & Wen-Chau Wu

16:00 **294**. **Blind Detection of Source Vessel Locations & Resonance Offsets using Randomly Encoded VEASL**
Eric Wong[1], Jia Guo[2]
[1]Radiology/Psychiatry, UC San Diego, La Jolla, CA, USA; [2]Bioengineering, UC San Diego, La Jolla, CA, USA

16:12 **295**. **Mapping Cerebral Blood Flow Territories using Harmonic Encoding Pseudocontinuous Arterial Spin Labeling, Fuzzy Clustering & Independent Component Analysis**
Wen-Chau Wu[1,2]
[1]Graduate Institute of Oncology, National Taiwan University, Taipei, Taiwan; [2]Graduate Institute of Clinical Medicine, National Taiwan University, Taipei, Taiwan

16:24 **296**. **Increased Tagging Efficiency in Velocity Selective ASL using Multiple Velocity Selective Saturation Modules**
Jia Guo[1], Eric C. Wong[2]
[1]Bioengineering, University of California San Diego, La Jolla, CA, USA; [2]Department of Radiology & Psychiatry, University of California San Diego, La Jolla, CA, USA

16:36 **297**. **Arrival Time Changes Demonstrate Active Cerebral Autoregulation in Normal Subjects using Lower Body Negative Pressure & Arterial Spin Labeling MRI**
John Robert Cain[1], Gerard Thompson[1], Laura M. Parkes[1], Alan Jackson[1]
[1]Imaging Science, University of Manchester, Manchester, United Kingdom

16:48 **298**. **Modelling Dispersion in Arterial Spin Labelling with Validation from ASL Dynamic Angiography**
Michael A. Chappell[1,2], Bradley J. MacIntosh[2,3], Mark W. Woolrich[2], Peter Jezzard[2], Stephen J. Payne[1]
[1]Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [3]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

17:00 **299**. **Cardiac Triggering & Label-Control Transition Profiles in Hadamard Encoded Pseudo-Continuous Arterial Spin Labeling**
Wouter Teeuwisse[1], Michael Helle[2], Susanne Rüfer[2], Matthias J. P. van Osch[1]
[1]Radiology, C. J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [2]Institute for Neuroradiology, Christian-Albrechts-Universität, UK-SH, Kiel, Germany

17:12 **300**. **Impact of Equilibrium Magnetization of Blood On ASL Quantification**
Yufen Chen[1], Ze Wang[1,2], John A. Detre[1]
[1]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, USA

17:24 **301**. **Quantification of Cerebellar Blood Flow using Arterial Spin Labeling**
Alan Jerry Huang[1,2], Jun Hua[1], Jonathan Farrell[1], Qin Qin[1], James J. Pekar[1], Matthias van Osch[3], John E. Desmond[4], Peter van Zijl
[1]FM Kirby Research Center, Johns Hopkins University, Baltimore, MD, USA; [2]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, USA; [3]Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [4]Department of Neurology, Johns Hopkins University, Baltimore, MD, USA

17:36 **302**. **Comparison of Pseudocontinuous & Velocity Selective Arterial Spin Labeling with Gold Standard Xenon CT: A Study in Patients with Moyamoya Disease**
Deqiang Qiu[1], Michael E. Moseley[1], Greg Zaharchuk[1]
[1]Lucas Imaging Center, Stanford University, Stanford, CA, USA

17:48 **303**. **SPECT Validation of Pseudo-Continuous Arterial Spin Labeling MRI**
Peiying Liu[1], Jinsoo Uh[1], Michael D. Devous[2], Bryon Adinoff[3,4], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Department of Radiology, University of Texas Southwestern Medical Center, Dallas, TX, USA; [3]Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, USA; [4]VA North Texas Health Care System, Dallas, TX, USA

Spectroscopy Quantification & Metabolism

Room 513A-D 16:00-18:00 *Moderators:* Ulrike Dydak & Richard A. Edden

16:00 **304**. **Measurement of Elevated 2-Hydroxyglutaric Acid in Brain Tumors By Difference Editing At 3T *In Vivo***
Changho Choi[1], Sandeep Ganji[1], Zoltan Kovacs[1], Ralph DeBerardinis[1], Elizabeth Maher[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, USA

16:12 **305**. **Elucidating Brain Metabolism by Dynamic ^{13}C Isotopomer Analysis**
Alexander A. Shestov[1], Dinesh K. Deelchand[1], Kamil Ugurbil[1], Pierre-Gilles Henry[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA

16:24 **306**. **Increased Brain Monocarboxylic Acid Transport & Metabolism in T_1DM Patients with Hypoglycemia Unawareness**
Henk M. De Feyter[1], Barbara I. Gulanski[2], Kathleen A. Page[3], Anne Howard O'Connor, Ellen V. Hintz, Susan M. Harman, Renata Belfort De Aguiar, Graeme F. Mason, Douglas L. Rothman, Robert S. Sherwin
[1]Diagnostic Radiology, Yale University, New Haven, CT, USA; [2]VA Connecticut Healthcare System, West Haven; [3]USC Keck School of Medicine, Los Angeles, USA

16:36 **307**. **Brain Glycogen Content & Metabolism in Type 1 Diabetes**
Gulin Oz[1], Nolawit Tesfaye[1], Anjali Kumar[1], Dinesh K. Deelchand[1], Elizabeth R. Seaquist[1]
[1]University of Minnesota, Minneapolis, MN, USA

16:48 **308**. **Definition of the Macromolecular Baseline Based On T_1 As Well As T_2 Properties**
Daniel Guo Quae Chong[1], Christine S. Bolliger[2], Johannes Slotboom[3], Chris Boesch[2], Roland Kreis[2]
[1]Dept. of Diagnostic, Interventional & Pediatric Radiology (DIPR), Inselspital, Bern, Switzerland; [2]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [3]Institute for Diagnostic & Interventional Neuroradiology, Inselspital, Bern, Switzerland

17:00 **309**. **Metabolite Concentration Changes during Visual Stimulation using Functional Magnetic Resonance Spectroscopy (Fmrs) on a Clinical 7T Scanner**
Benoit Michel Schaller[1], Ralf Mekle[2], Lijing Xin[3], Rolf Gruetter[1,4]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [3]Department of Radiology, University of Lausanne, Lausanne, Switzerland; [4]Department of Radiology, Universities of Lausanne and Geneva, Switzerland

17:12 **310**. **Classification of Single Voxel ^{1}H Spectra of Brain Tumours using Lcmodel**
Felix Raschke[1], Elies Fuster-Garcia[2,3], Kirstie Suzanne Opstad[1], Franklyn Arron Howe[1]
[1]Division of Clinical Science, St George's University of London, London, United Kingdom; [2]IBIME & ITACA, Universidad Politécnica de Valencia, Valencia, Spain; [3]Universitat Internacional Valenciana, Valencia, Spain

17:24 **311**. **Investigating the Metabolic Changes Due to Visual Stimulation using Functional Proton Magnetic Resonance Spectroscopy At 7T**
Yan Lin[1,2], Mary C. Stephenson[1], Samuel J. Wharton[1], Lijing Xin[3], Olivier E. Mougin[1], Antonio Napolitano[4], Peter G. Morris[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Medical Imaging Department, Second Affiliated Hospital, Shantou University Medical College, Shantou, Guangdong, China, People's Republic of; [3]Laboratory of Functional & Metabolic Imaging, Ecole Poly technique Federale de Lausanne, Lausanne, Switzerland; [4]Academic Radiology, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

17:36 **312**. **Quantitative MRS of Ovaries & Ovarian Masses at 3T: Methodology & Initial Findings**
Patrick J. Bolan[1], Jori S. Carter[2], Navneeth Lakkadi[1], Levi S. Downs Jr.[2]
[1]Radiology/CMRR, University of Minnesota, Minneapolis, MN, USA; [2]Obstetrics, Gynecology & Women's Health, University of Minnesota, Minneapolis, MN, USA

17:48 **313**. **Hepatic Glycogen Metabolism in Mice by *In Vivo* ^{13}C MRS at 14T**
Christine Nabuurs[1], Frederic Preitner[2], Bernard Thorens[2], Rolf Gruetter[3]
[1]CIBM, Hôpitaux Universitaires de Genève (HUG), Lausanne, Switzerland; [2]Mouse Metabolic Facility, Center for Integrative Genomics, UNIL, Lausanne, Switzerland; [3]Laboratory of Functional & Metabolic Imaging (LIFMET), l'Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

Novel Contrast Agents & Labels

Room 518-A-C 16:00-18:00 *Moderators:* David P. Cormode & Mark D. Pagel

16:00 **314**. ***In Vivo* MR CEST Imaging of the Viability of Microencapsulated Cells**
Kannie Wai Yan Chan[1,2], Xiaolei Song[1,2], Guanshu Liu[1,3], Dian Arifin[1,2], Heechul Kim[1,2], Chulani Galpoththawela[1,2], Ming Yang[4], Justin Hanes[4,5], Assaf Gilad[1,2], Piotr Walczak[1,2], Jeff W. M. Bulte[1,2], Michael T. McMahon[1,3]
[1]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Cellular Imaging Section & Vascular Biology Program, Institute for Cell Engineering, Baltimore, MD, USA; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [4]Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [5]Department of Oncology & the Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD, USA

16:12 **315**. **Measuring *In Vivo* Tumor Phe with a DIACEST MRI Contrast Agent**
Liu Qi Chen[1], Vipul R. Sheth[2], Christine A. Howison[3], Phillip H. Kuo[4], Mark D. Pagel[5]
[1]Chemistry & Biochemistry, University of Arizona, Tucson, AZ, USA; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA; [3]Arizona Research Laboratories, University of Arizona, Tucson, AZ, USA; [4]Radiology, Medicine, Biomedical Engineering, University of Arizona, Tucson, AZ, USA; [5]Biomedical Engineering & Chemistry & Biochemistry, University of Arizona, Tucson, AZ, USA

16:24 **316**. **CEST Imaging Reveals Dynamic Changes of Implanted Hydrogel Scaffold *In Vivo***
Yajie Liang[1,2], Amnon Bar-Shir[1,2], Xiaolei Song[1,2], Assaf A. Gilad[1,2], Jeff W. M. Bulte[1,2], Piotr Walczak[1,2]
[1]Division of MR Research, Russell H. Morgan Dept. of Radiology , the Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Cellular Imaging Section, Institute for Cell Engineering, the Johns Hopkins University School of Medicine, Baltimore, MD, USA

16:36 **317**. **Study Axonal Transport Rate & Neuronal Turnover Rate of the Olfactory System using Novel MRI Anatomical Contrast Agent Gddota-CTB**
Carolyn W.-H. WU[1], Olga Vasalatiy[2], Leslie G. Ungerleider[3], Gary Griffiths[2]
[1]NeuroSpin / CEA, Gif Sur Yvette, Île-de-France, France; [2]IPDC /NHLBI / NIH, Rockville, MD, USA; [3]LBC /NIMH /NIH, Bethesda, MD, USA

16:48 **318**. **Direct Albumin Imaging in Mouse Tumour Model**
Jamu K. Alford[1], Christian T. Farrar[1], Yan Yang[1], William Bradfield Handler[2], Blaine A. Chronik[2], Timothy J. Scholl[3], Gunjan Madan[4], Peter Caravan[1]
[1]Radiology, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [2]Physics & Astronomy, the University of Western Ontario, London, ON, Canada; [3]Department of Medical Biophysics, the University of Western Ontario, London, ON, Canada; [4]Siemens Medical Solutions Inc., Malvern, PA, USA

17:00 **319**. **A Novel Fluorine Relaxation Switch for Tracking the Binding & Intracellular Processing of Molecularly Targeted Nanoparticle Contrast Agents**
Lingzhi Hu[1], Junjie Chen[1], Shelton D. Caruthers[1], Gregory M. Lanza[1], Samuel A. Wickline[1]
[1]Washington University in St. Louis, St. Louis, MO, USA

17:12 **320**. **Specific Targeting of EGF Receptor Expression with Monoclonal Antibody Conjugates in Human Gliomas using MRI**
Mohammed Salman Shazeeb[1,2], Christopher Howard Sotak[1,3], Alexei Bogdanov, Jr.[3,4]
[1]Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA, USA; [2]Graduate School of Biomedical Sciences, University of Massachusetts Medical School, Worcester, MA, USA; [3]Radiology, University of Massachusetts Medical School, Worcester, MA, USA; [4]Cell Biology, University of Massachusetts Medical School, Worcester, MA, USA

17:24 **321**. **High R_1 of Mn^{2+} Adsorbed to Hydrophilic Pores of Magnetoferritin Nanoparticles**
Veronica Clavijo Jordan[1], Kevin M. Bennett[1]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, USA

17:36 **322**. **Quantitative Assessment of Macrophage Activity in Inflammatory Bowel Disease using Fluorine-19 MRI & the Response to Treatment**
Deepak K. Kadayakkara[1,2], Eric T. Ahrens[1,2]
[1]Carnegie Mellon University, Pittsburgh, PA, USA; [2]Pittsburgh NMR Center for Biomedical Research, Pittsburgh, PA, USA

17:48 **323**. ***In Vivo* MR Imaging of Macrophages in Cardiac Ischemia/Reperfusion Injury with Paramagnetic Phosphatidylserine-Containing Liposomes**
Tessa Geelen[1], Sin Yuin Yeo[1], Leonie E. Paulis[1], Bram F. Coolen[1], Klaas Nicolay[1], Gustav J. Strijkers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

Transmit RF Arrays

Room 520B-F 16:00-18:00 *Moderators:* Stuart R. Crozier & Greig C. Scott

16:00 **324**. **Evaluating Further Benefits of B_1^+ Homogenity When More Transmit Chnnels Are Used**
Niravkumar Darji[1], Kyoung-Nam Kim[2], Gopesh Patel[1], Hans-Peter Fautz[3], Johannes Bernarding[2], Oliver Speck[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Saxony Anhalt, Germany; [2]Institute for Biometry & Medicine Informatics, Otto-von-Guericke University, Magdeburg, Saxony Anhalt, Germany; [3] Siemens Healthcare, Erlangen, Germany

16:12 **325**. **Dual-channel Transmit-SENSE For Flip-Angle Homogenization in the Human Brain At 7 Tesla: A Feasibility Study**
Martijn Anton Cloos[1,2], Guillaume Ferrand[2], Nicolas Boulant[1], Michel Luong[2], Christopher J. Wiggins[1], Denis Le Bihan[1], Alexis Amadon[1]
[1]LRMN, CEA, DSV, I2BM, NeuroSpin, Gif-Sur-Yvette, ile-de-France, France; [2]CEA, DSM, IRFU, Gif-Sur-Yvette, ile-de-France, France

16:24 **326**. **Design, Evaluation & Application of a Sixteen-Channel Transmit/Receive Surface Coil Array for Cardiac MRI at 7T**
Christof Thalhammer[1,2], Wolfgang Renz[1,3], Harald Pfeiffer[4], Jan Rieger[1], Lukas Winter[1], Fabian Hezel[1], Frank Seifert[4], Werner Hoffmann[4], Reiner Seemann[4], Thoralf Niendorf[1,5]
[1]Berlin Ultrahigh Field Facility, Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]University of Regensburg, Regensburg, Germany; [3]Siemens Healthcare, Erlangen, Germany; [4]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig & Berlin, Germany; [5]Experimental & Clinical Research Center (ECRC), Charité Campus Buch, Berlin, Germany

16:36 **327**. **6-Channel Radiative Transmit Array with a 16-Channel Surface Receiver Array for Improved Carotid Vessel Wall Imaging At 7T**
Wouter Koning[1], Erwin Langenhuizen[1], Alexander J. E. Raaijmakers[1], Cornelis A. T. van den Berg[1], Jaco J. M. Zwanenburg[1], Peter R. Luijten[1], Dennis W. J. Klomp[1]
[1]University Medical Center, Utrecht, Netherlands

16:48 **328**. **Improved Longitudinal Coverage For Human Brain At 7T: A 16 Element Transceiver Array**
Nikolai I. Avdievich[1], Jullie W. Pan[1], Hoby P. Hetherington[1]
[1]Neurosurgery, Yale University, New Haven, CT, USA

17:00 **329**. **A 16-Channel Conformal Transceive Coil for 7-T Neuroimaging**
Kyle Michael Gilbert[1], Andrew T. Curtis[1], Joseph S. Gati[1], L Martyn Klassen[1], Ravi S. Menon[1]
[1]Robarts Research Institute, The University of Western Ontario, London, Ontario, Canada

17:12 **330**. **Consistent High Acceleration Factor *In-Vivo* Tx SENSE with Generic (Measured or Simulated) Set of B_1+ Maps on Load Independent Whole-Head Tx Arrays**
Tamer S. Ibrahim[1], Tiejun Zhao[2], Fernando E. Boada
[1]University of Pittsburgh, Pittsburgh , PA, USA; [2]Siemens Medical Solutions

17:24 **331**. **Distribution Errors in 8×8 & 16×16 Butler-Matrices Multi-Coil Excitation for 7T MRI**
Pedram Yazdanbakhsh[1], Klaus Solbach[1]
[1]HFT, Duisburg-Essen University, Duisburg, NRW, Germany

17:36 **332**. **Active Coil Decoupling by Impedance Synthesis using Frequency-Offset Cartesian Feedback**
Pascal P. Stang[1], Marta Gaia Zanchi[1], Adam Kerr[1], John Mark Pauly[1], Greig C. Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, USA

17:48 **333**. **Transmit / Receive Single Echo Imaging**
Ke Feng[1], Mary P. McDougall[2], Steven M. Wright[1,2]
[1]Electrical & Computer Engineering, Texas A&M University, College Station, TX, USA; [2]Biomedical Engineering, Texas A&M University, College Station, TX, USA

Therapy Response

Room 710A 16:00-18:00 *Moderators:* Hagit Dafni & Evis Sala

16:00 **334**. **Assessing Chemotherapy Response in Metastatic Ovarian Cancer: The Value of Histogram Analysis of Apparent Diffusion Coefficients**
Stavroula Kyriazi[1], David J. Collins[1], Robert L. Davidson[1], Veronica A. Morgan[1], Sharon L. Giles[1], Catherine J. Simpkin[1], Stan B. Kaye[2], Nandita M. deSouza[1]
[1]Cancer Imaging Centre, Institute of Cancer Research & The Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Gynaecological Oncology, Institute of Cancer Research & The Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

16:12 **335**. **Reversal of ADC Changes in Tumors after Treatment at Short Diffusion Times**
Junzhong Xu[1], Ke Li[1], Ralph Adam Smith[1], Ping Zhao[1], Mark D. Does[1], Henry Charles Manning[1], John C. Gore[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, USA

16:24 **336**. **Assessing Response in Bone Metastases in Prostate Cancer with Diffusion Weighted MRI**
Christina Messiou[1], David J. Collins[1], Sharon Giles[1], Veronica A. Morgan[1], Johann S. de Bono[2], Diletta Bianchini[2], Nandita M. deSouza[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Medicine, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

16:36 **337**. **Assessment of Drug-Induced Vessel Remodeling in Experimental Bone Metastases By DCE MRI**
Maren Bretschi[1], Maximilian Merz[1], Dorde Komljenovic[1], Woflhard Semmler[1], Tobias Bäuerle[1]
[1]Medical Physics in Radiology, DKFZ German Cancer Research Center, Heidelberg, Germany

16:48 **338**. **DCE-MRI Biomarkers of Microvascular Structure & Function Predict CRC Liver Metastasis Shrinkage Induced By Bevacizumab & FOLFOX6**
Chris James Rose[1,2], James P. O'Connor[1,2], Alan Jackson[1,2], Yvon Watson[1,2], Fran Maders[3], Brandon J. Whitcher[4], Caleb Roberts[1,2], Giovanni A. Buonaccorsi[1,2], Gerard Thompson[1,2], Andrew R. Clamp[3,5], Gordon C. Jayson[5], Geoffrey J. Parker[1,2]
[1]The University of Manchester Biomedical Imaging Institute, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Manchester Academic Health Science Centre, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [3]Department of Radiology, Christie Hospital, Manchester, Greater Manchester, United Kingdom; [4]GlaxoSmithKline Clinical Imaging Centre, Hammersmith Hospital, Imperial College London, London, Greater London, United Kingdom; [5]Cancer Research UK Department of Medical Oncology, Christie Hospital, Manchester, Greater Manchester, United Kingdom

17:00 **339**. **Serial R_2* MRI to Evaluate Response to Tumour Vascular Disruptive Treatment: Final Results of a Clinical Phase I Trial**
Martin Zweifel[1], Daniel Patterson[1], N. Jane Taylor[2], J. James Stirling[2], Ian C. Simcock[2], David J. Collins[3], James A. d'Arcy[3], Martin O. Leach[3], Gordon J. Rustin[1], Anwar R. Padhani[2]
[1]Dept of Medical Oncology, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [2]Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [3]CRUK-EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey SM2 5PT, United Kingdom

17:12 **340**. **Can DCE-MRI Predict Pathological Complete Response After Neoadjuvant Chemoradiation Therapy in Rectal Cancer Patients? Initial Observations in 38 Patients**
Giuseppe Petralia[1], Paul Summers[1], Stefano Viotti[2], Luke Bonello[2], Moreno Pasin[1], Maria Giulia Zampino[3], Maria Cristina Leonardi[4], Laura Travaini[5], Valeria Panebianco[6], Massimo Bellomi[1,2]
[1]Radiology, European Institute of Oncology, Milan, Italy; [2]School of Radiology, University of Milan, Milan, Italy; [3]Medical Care Unit, Medicine, European Institute of Oncology, Milan, Italy; [4]Radiotherapy, European Institute of Oncology, Milan, Italy; [5]Nuclear Medicine, European Institute of Oncology, Milan, Italy; [6]Radiological Sciences, Policlinico Umberto I, University "Sapienza", Rome, Italy

17:24 **341**. **Intra-Procedural Transcatheter Intraarterial Perfusion MRI as a Predictor of Tumor Response to Chemoembolization for Hepatocellular Carcinoma**
Dingxin Wang[1,2], Ron Gaba[3], Brian Jin[4], Ahsun Riaz[4], Robert Lewandowski[4], Robert Ryu[4], Kent Sato[4], Ann Ragin[4], Laura Kulik[5], Mary Mulcahy[6,7], Riad Salem[4,7], Andrew Larson[4,7], Reed Omary[4,7]
[1]Siemens Medical Solutions USA, Inc., Minneapolis, MN, USA; [2]Center for Magnetic Resonance Research , University of Minnesota, Minneapolis, MN, USA; [3]Department of Radiology, University of Illinois at Chicago, Chicago, IL, USA; [4]Department of Radiology, Northwestern University, Chicago, IL, USA; [5]Department of Hepatology, Northwestern University, Chicago, IL, USA; [6]Department of Medicine, Northwestern University, Chicago, IL, USA; [7]Robert H. Lurie Comprehensive Cancer Center, Northwestern University, Chicago, IL, USA

17:36 **342**. **Evaluating the Early Effects of Anti-angiogenic Treatment in Human Breast Cancer with Intrinsic Susceptibility-Weighted & Diffusion-Weighted MRI: Initial Observations**
Sonia P. Li[1], N. Jane Taylor[2], Shaveta Mehta[3], Nicholas P. Hughes[4], J. James Stirling[2], Ian C. Simcock[2], David J. Collins[5], James A. d'Arcy[5], Martin O. Leach[5], Adrian L. Harris[3], Andreas Makris[1], Anwar R. Padhani[2]
[1]Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [2]Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [3]University Department of Medical Oncology, Churchill Hospital, Oxford OX3 7LJ, United Kingdom; [4]Department of Radiology, Stanford University School of Medicine, Stanford, CA 94305-5427, USA; [5]CRUK-EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey SM2 5PT, United Kingdom

17:48 **343**. **^{31}P MRS at 7T Can be More Sensitive & Specific Than ^{1}H MRS in Monitoring Breast Cancer Treatment**
Dennis Klomp[1], Wybe van der Kemp[1], Mies Korteweg[1], Jannie Wijnen[1], Maurice van de Bosch[1], Peter Luijten[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

Clinical Application of Diffusion Tensor Imaging

Room 710B 16:00-18:00 *Moderators:* Marco Essig & Majda M.Thurnher

16:00 **344**. **Investigating the Role of ICBM-Space Human Brain Diffusion Tensor Templates in Inter-Subject Spatial Normalization**
Shengwei Zhang[1], Konstantinos Arfanakis[1]
[1]Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, USA

16:12 **345**. **Cerebral Viscoelasticity in Normal Pressure Hydrocephalus: Disorder & Softening of the Mechanical Matrix of the Brain & Its Reorganization After Shunt Treatment**
Ingolf Sack[1], Sebastian Hirsch[1], Dieter Klatt, Kaspar Josche Streitberger, Florian Freimann[2], Christian Sprung[2], Jürgen Braun[3]
[1]Department of Radiology, Charité University Medicine, Berlin, Germany; [2]Department of Neurosurgery, Charité University Medicine; [3]Institute of Medical Informatics, Charité University Medicine, Berlin, Germany

16:24 **346**. **A Longitudinal Study of Microstructural White Matter Changes After Mild Traumatic Brain Injury**
Fan-pei Gloria Yang[1], Charvi Shetty[1], Hana Lee[1], Sara Lahue[1], Shelly Cooper[1], Chirstopher Nguyen[1], Mehul Sampat[1], Jamshid Ghajar[2], Geoffrey Manley[3,4], Sandya Venugopal[1], Pratik Mukherjee[1,4]
[1]Radiology & Bioengineering, University of California San Francisco, San Francisco, CA, USA; [2]Brain Trauma Foundation, New York, USA; [3]Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, USA; [4]Brain & Spinal Injury Center, University of California San Francisco, USA

16:36 **347**. **Disrupted Anatomical Brain Connectivity in Retired Professional Football Players**
Feng Shi[1,2], Pew-Thian Yap[1,2], J. Keith Smith[1], Kelly S. Giovanello[3,4], Candice Goerger[5,6], Weili Lin[1,2], Kevin M. Guskiewicz[5,7], Dinggang Shen[1,2]
[1]Department of Radiology, University of North Carolina, Chapel Hill, NC, USA; [2]Biomedical Research Imaging Center, University of North Carolina, Chapel Hill, NC, USA; [3]Department of Psychology, University of North Carolina, Chapel Hill, NC, USA; [4]Biomedical Research Imaging Center, University of North Carolina , Chapel Hill, NC, USA; [5]Department of Exercise & Sport Science, Orthopedics, University of North Carolina, Chapel Hill, NC, USA; [6]Center for the Study of Retired Athletes, University of North Carolina , Chapel Hill, NC, USA; [7]Center for the Study of Retired Athletes, University of North Carolina, Chapel Hill, NC, USA

16:48 **348**. **Propagation of Probabilistic Tractography of the Optic Radiation for Neuronavigation in Epilepsy Surgery**
Gavin P. Winston[1], Pankaj Daga[2], Jason Stretton[1], Marc Modat[2], Mark R. Symms[1], Andrew W. McEvoy[3], Sebastien Ourselin[2], John S. Duncan[1,3]
[1]UCL Institute of Neurology, London, United Kingdom; [2]UCL Centre for Medical Image Computing, London, United Kingdom; [3]National Hospital for Neurology & Neurosurgery, London, United Kingdom

17:00 **349**. **Patterns of CNS Injury in HIV Infection: A DTI Tract-Based Spatial Statistics Study**
Tong Zhu[1], Jianhui Zhong[1], Rui Hu[2], Wei Tian[1], Sven Ekholm[1], Constantin Yiannoutsos[3], Ron Cohen[4], Bradford Navia[5], Michael Taylor[6], Eric Daar[7], Elyse Singer[8], Thomas Campbell[9], Deborah McMahon[10], Yuen So[11], Giovanni Schifitto[1,12]
[1]Dept. Imaging Sciences, University of Rochester, Rochester, NY, USA; [2]Dept. Biostatistics, University of Rochester, Rochester, NY, USA; [3]Division of Biostatistics, Indiana University School of Medicine, Indianapolis, IN, USA; [4]The Miriam Hospital, Brown University, Providence, RI, USA; [5]Tufts University School of Medicine, Boston, MA, USA; [6]University of California at San Diego, La Jolla, CA, USA; [7]UCLA/Harbor, Torrance, CA, USA; [8]UCLA, Los Angeles, CA, USA; [9]University of Colorado, Denver, CO, USA; [10]University of Pittsburgh, Pittsburgh, PA, USA; [11]Stanford University, Palo Alto, CA, USA; [12]Dept. Neurology, University of Rochester, Rochester, NY, USA

17:12 **350**. **Atypical Gray & White Matter Microstructure in Autism Spectrum Disorders**
Mariana Lazar[1], Laura Miles[1], Jeffrey Donaldson[1], Jens H. Jensen[1], Joy Carol Ming[2]
[1]Department of Radiology, New York University School of Medicine, New York, USA; [2]Livingston High School, Livingston, NJ, USA

17:24 **351**. **Can Structural Connectivity Analyses Measure Brain Plasticity in Amyotrophic Lateral Sclerosis?**
Stephen Rose[1], Kerstin Pannek[1], Fusun Baumann[2], Robert Henderson[2]
[1]Centre for Clinical Research, University of Queensland, Brisbane, Queensland, Australia; [2]Neurology, Royal Brisbane & Women's Hospital, Brisbane, Queensland, Australia

17:36 **352**. **Using Surface Connectivity Atlases to Measure Striato-Cortical "Disconnection Rate" in Huntington Disease**
Linda Marrakchi-Kacem[1,2], Christine Delmaire[3], Alan Tucholka[4,5], Pauline Roca[1,2], Pamela Guevara[1,2], Sophie Lecomte[1,2], Fabrice Poupon[1,2], Jerome Yelnik[6], Alexandra Durr[6], Jean-François Mangin[1,2], Stephane Lehericy[2,3], Cyril Poupon[1,2]
[1]NeuroSpin, CEA, Gif-Sur-Yvette, France; [2]IFR49, Gif-Sur-Yvette, France; [3]CENIR, Pitié Salpêtrière Hospital, Paris, France; [4]Centre de Recherche Hôpital Ste-Justine, Montreal, Canada; [5]Université de Montréal, Montreal, Canada; [6]CRICM, Inserm/UPMC, Paris, France

17:48 **353**. **Prediction of Genetic Risks in Schizophrenia: A DTI-Based Pattern Classification Study**
Madhura Ingalhalikar[1], Stathis Kanterakis[1], Drew Parker[1], Raquel E. Gur[2], Ruben C. Gur[2], Ragini Verma[1]
[1]Section of Biomedical Image Analysis, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Brain Behavior Laboratory, Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, USA

Bronze Corporate Member Symposium
Agilent Technologies

Room 511 D-F 18:15-20:15

Bronze Corporate Member Symposium
Bracco

Room 518 A-C 18:15-20:15

Bronze Corporate Member Symposium
Lantheus Medical Imaging, Inc.

Room 513 A-D 18:15-20:15

Clinical Intensive Course
Sunrise Educational Course
Hot Topics in Body MRI

Room 510 07:00-08:00 *Moderators*: Caroline Reinhold & Evis Sala

MRI of the Uterus

07:00 **MRI of Pelvic Pain**
Patricia Noël

07:30 **Congenital Uterine Anomalies**
Margaret A. Hall-Craggs

Clinical Intensive Course
Sunrise Educational Course
Neuro MRI from Start to Finish

Room 516A-C 07:00-08:00

Neonatal

07:00 **Scanning Children Without Sedation**
Carissa Cascio

07:30 **Common Neonatal Lesions**
Terrie E. Inder

Sunrise Educational Course
Image Analysis

Room 511A-C 07:00-08:00 *Moderator*: James C. Gee

07:00 **Registration: Theory**
Sebastien Ourselin

07:30 **Registration: Practice**
Lilla Zöllei

Sunrise Educational Course
Translational Imaging: Animal Models in MSK

Room 511D-F 07:00-08:00 *Moderators:* Bernard J. Dardzinski & Miika T. Nieminen

07:00 **Role of MRI & MRS for the Study of Bone & Bone Marrow in Animal Models of Disease**
Felix W. Wehrli

07:30 **Cartilage Repair & Degradation**
Lisa A. Fortier

Sunrise Educational Course
Fast & Furious: The New Era of Rapid Imaging

Room 512A-G 07:00-08:00

Fast Body Imaging

07:00 **Current Practices, Clinical Needs & Emerging Techniques**
Jean H. Brittain & Scott B. Reeder

Sunrise Educational Course
Molecular Imaging & Contrast Agents

Room 513A-D 07:00-08:00

07:00 **Physico Chemical Principles of Metal Based Paramagnetic/Iron Contrast**
Natalie J. Serkova

07:30 **Preclinical & Clinical Applications of Metal Based Paramagnetic/Iron Contrast**
Jean-Paul Vallée

Sunrise Educational Course
Cardiovascular MR Imaging: Bridging the Gap Between Research & Clinical Problems

Room 518A-C 07:00-08:00

CMR for Evaluation of Arrhythmia

07:00 **Atrial Fibrillation**
Reza Nezafat

07:20 **Ventricular Tachycardia**
Henry R. Halperin

07:40 **Devices & Safety**
Wolfgang R. Bauer

Sunrise Educational Course
MRS - Metabolite Profiling & Metabolism

Room 520B-F 07:00-08:00 *Moderators*: Kevin M. Brindle & Ivan Tkac

07:00 **Challenges of Advanced Clinical MRS**
Petra J. W. Pouwels

07:30 **Current Possibilities of MRS**
Rolf Gruetter

Sunrise Educational Course
Image Reconstruction

Room 710A 07:00-08:00

Parallel Imaging

07:00 **Parallel Imaging Reconstruction I: Cartesian**
Jonathan R. Polimeni

07:30 **Parallel Imaging Reconstruction II: Non-Cartesian**
Nicole E. Seiberlich

Sunrise Educational Course
Absolute Beginners' Guide to Anatomical & Functional MRI of the Brain

Room 710B 07:00-08:00 *Moderator*: Joelle E. Sarlls

07:00 **Diffusion Imaging**
Jacques-Donald Tournier

07:30 **Diffusion Imaging Processing**
Susumu M. Mori

Plenary
Clinical Needs & Research Promises: In Practice, *Panel Discussion*

Plenary Hall 08:15-09:27 Organizers: Georg Bongartz, Mark A. Griswold, Vivian S. Lee & Caroline Reinhold

Cardiac Arrhythmia

08:15 **354**. **Case**: *Gaston Vergara*

08:18 **Discussion**: *Nassir F. Marrouche*

Inflammatory Bowel Disease

08:33 **355**. **Case**: *Manil Chouhan*

08:36 **Discussion**: *Stuart A. Taylor*

Arthropathy

08:51 **356**. **Case**: *Karen Chen*

08:54 **Discussion**: *Christine Chung*

Brain Tumors

09:09 **357**. **Case**: *Sven Haller*

09:12 **Discussion**: *Jacques F. Schneider*

Hands-On Workshop 1
Neuro & Musculoskeletal Protocol Optimization
GE Healthcare

Room 520A-D 10:30-12:30

Hands-On Workshop 1
Neuro & Musculoskeletal Protocol Optimization
Siemens

Room 515A-C 10:30-12:30

Clinical Intensive Course
MSK Tumors & Marrow Evaluation

Room 516A-C 10:30-12:30 *Moderator:* David M. Panicek

10:30 **Bone & Soft Tissue Tumors**
David M. Panicek

11:30 **Bone Morrow**
Thomas M. Link

Clinical Intensive Course
MR Spectroscopy in Clinical Use

Room 512A-G 10:30-12:30 *Moderators:* Jeffry R. Alger & Sven Ekholm

10:30 **Advances in MRS for Clinical Use**
Peter B. Barker

10:55 **MRS in Brain Tumors**
Ramon Gilberto Gonzalez

11:20 **MRS in Metabolic Disorders**
Zoltan Patay

11:50 **MRS in Bipolar Disorder**
John D. Port

12:20 **Discussion**

Clinical Applications of Ultra-High Field 7T MR - Moving to FDA/EU Approval

Room 510 10:30-12:30 *Moderators:* Soonmee Cha & John C. Gore

10:30 **Neuroradiological Applications of 7T MRI**
Christopher P. Hess

11:00 **Potential Clinical Applications for Ultra-High Field MRI**
Michael V. Knopp

11:30 **New Research Toward Additional Clinical Applications**
Mark E. Ladd

12:00 **Regulatory Considerations for Use of Ultra-High Field MRI**
Lucie L. Yang

Neurovascular Angiography Techniques - Clinical Studies

Room 511A-C 10:30-12:30 *Moderators:* Timothy J. Carroll & Oliver Wieben

10:30 **358**. **A New High Resolution MR DSA Protocol for Intracranial Vascular Malformations**
Parmede Vakil[1], Sameer A. Ansari[2], Michael C. Hurley[2], Timothy J. Carroll[2]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, USA; [2]Radiology, Northwestern University, Chicago, IL, USA

10:42 **359**. **Unenhanced Four Dimensional Magnetic Resonance Angiography: Preliminary Experience in Patients with Cerebrovascular Disorders**
Kaiyuan Zhang[1], Jie Lu[1], Jing An[2], Mo Zhang[1], Xiaoming Bi[3], Kuncheng Li[1]
[1]Department of Radiology, Xuanwu Hospital, Capital Medical University, Beijing, China, People's Republic of; [2]Siemens Mindit Magnetic Resonance, Shenzhen, Guangdong, China, People's Republic of; [3]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, USA

10:54 **360**. **Time-Resolved Angiography with a Highly Undersampled Multi-Echo 3D Radial Trajectory**
Gregory R. Lee[1], Nicole Seiberlich[1], Jeffrey L. Sunshine[1,2], Timothy J. Carroll[3,4], Mark A. Griswold[1,5]
[1]Radiology, Case Western Reserve University, Cleveland, OH, USA; [2]Radiology, University Hospitals Case Medical Center, Cleveland, OH, USA; [3]Radiology, Northwestern University, Chicago, IL, USA; [4]Biomedical Engineering, Northwestern University, Chicago, IL, USA; [5]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA

11:06 **361**. **High Resolution Hemodynamics of Small Intracranial Aneurysms with Phase Contrast Stack of Stars**
Steven Kecskemeti[1], Kevin Johnson[1], Yijing Wu[1], Patrick Turski[2], Oliver Wieben[1]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, USA; [2]Radiology, University of Wisconsin - Madison, Madison, WI, USA

11:18 **362**. **Visualizing Small Intra-Cranial Arteries using TOF with Compressed Sensing**
Jerome Yerly[1,2], Michel Louis Lauzon[2,3], Richard Frayne[2,3]
[1]Department of Electrical & Computer Engineering, University of Calgary, Calgary, AB, Canada; [2]Foothills Medical Centre, Seaman Family MR Research Centre, Calgary, AB, Canada; [3]Departments of Radiology & Clinical Neurosciences, University of Calgary, Calgary, AB, Canada

11:30 **363**. **High Resolution Time-Of Flight MRA using Slice Selective Saturation Transfer Contrast & Water Excitation Technique For the Visualization of the Lenticulostriate Arteries At 1.5T**
Faiza Admiraal-Behloul[1], Evert Blink[1], Bei Zhang[1], Mitsue Miyazaki[2]
[1]MR-BU, Toshiba Medical Systems Europe, Zoetermeer, Netherlands; [2]Toshiba Medical Research Institute , Vernon Hills, Illinois, USA

11:42 **364**. **Superselective MR-Angiography Based On Pseudo-Continuous Arterial Spin Labeling & First Applications in AVM Patients**
Michael Helle[1], Susanne Rüfer[1], Wouter Teeuwisse[2], Olav Jansen[1], David Gordon Norris[3,4], Matthias van Osch[2]
[1]Institute for Neuroradiology, Christian-Albrechts-Universität, UK-SH, Kiel, Germany; [2]C. J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands; [4]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

11:54 **365**. **Application of Temporally Constrained Compressed Sensing for High Spatial & Temporal Resolution Intracranial CE MRA**
Julia V. Velikina[1], Kevin M. Johnson[1], Steven R. Kecskemeti[1], Patrick A. Turski[2], Alexey A. Samsonov[1,2]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, USA; [2]Radiology, University of Wisconsin - Madison

12:06 **366**. **Fast Analysis of Vessel Encoded ASL Perfusion & Angiographic Images**
Michael A. Chappell[1,2], Tom W. Okell[2], Stephen J. Payne[1], Peter Jezzard[2], Mark W. Woolrich[2]
[1]Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom

12:18 **367**. **Validation of a Simple Anatomical Classification Method of the Circle of Willis: A MR Angiographical & Selective Arterial Spin Labeling MRI Study at 3 Tesla**
Jeroen Hendrikse[1], Xavier Golay[2], Esben Thade Petersen[3]
[1]UMC, Radiology, Utrecht, Netherlands; [2]Institute of Neurology, UCL, London, United Kingdom; [3]CIRC, NUS-A*STAR, Singapore

Perfusion MRI: Applications in Humans & Animals

Room 511D-F 10:30-12:30 *Moderators:* Rick M. Dijkhuizen & Linda Knutsson

10:30 **368**. **High Resolution Δr_2, Δr_2*& Vessel Density MRI of the Rat Ocular Circulation**
Yen-Yu Ian Shih[1], Li Guang[1], Bryan H. De La Garza[1], Eric R. Muir[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, USA

10:42 **369**. **Macromolecular DCE MRI at 14.1Tesla Allows Comparative Quantitative Evaluation of Antiangiogenic Treatment Effects in Responsive & Resistant GBM Models**
Myriam Marianne Chaumeil[1], Samuel Rose[2], Subramanian Sukumar[1], Hagit Dafni[1], Manish Aghi[2], Sabrina M. Ronen[1]
[1]Radiology, University of California San Francisco, San Francisco, CA, USA; [2]Neurological Surgery, University of California San Francisco, San Francisco, CA, USA

10:54 **370**. **Imaging of the Permeability Dependence of Focused Ultrasound-Induced Blood-Brain Barrier Opening at Distinct Pressures & Microbubble Diameters**
Fotios Vlachos[1], Yao-Sheng Tung[1], Jameel Feshitan[2], Mark Borden[2], Elisa Konofagou[1,3]
[1]Biomedical Engineering, Columbia University, New York, USA; [2]Chemical Engineering, Columbia University, New York, USA; [3]Radiology, Columbia University, New York, USA

11:06 **371**. **Pseudocontinuous Arterial Spin Labeling (pCASL) at Very High Field (11.75T) for Mouse Brain Perfusion Imaging**
Guillaume Duhamel[1], Mohamed Tachrount[1], Patrick J. Cozzone[1], David C. Alsop[2], Virginie Callot[1]
[1]CRMBM / CNRS 6612, Faculté de Médecine, Université de la Méditerranée, Marseille, France; [2]Department of Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, USA

11:18 **372**. ***In Vivo* Arterial Blood T_2 Measurement with Arterial Spin Labeling at 9.4 Tesla**
Yuguang Meng[1], Alberto Vazquez[1], Seong-gi Kim[1]
[1]Neuroimaging Center, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, USA

11:30 **373**. **Perfusion Asymmetries & Flow in Children with Sickle Cell Disease Assessed By Pseudo-Continuous Arterial Spin Labeling & Phase Contrast MRI**
Sanna Gevers[1], Pim van Ooij[1], Matthias J. P. van Osch[2], Sandra van den Berg[1], Karin J. Fijnvandraat[3], Charles B. L. M. Majoie[1], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Pediatrics, Academic Medical Center, Amsterdam, Netherlands

11:42 **374**. **Alteration of Cerebral Blood Flow Values in Children with Cerebral Palsy using 3D Pseudocontinuous Arterial Spin Labeling: Its Correlation with DTI Metrics**
Bhaswati Roy[1], Vimal Paliwal[2], Puneet Goel[3], Siddhant Kumar[1], Ram Kishan Singh Rathore[4], Sanjay Verma[4], Rakesh Kumar Gupta[1]
[1]Department of Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2] Department of Neurology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [3]Department of Anaesthesiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [4]Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India

11:54 **375**. **Simultaneous Functional & Quantitative ASL: An Optimal Tool for Imaging Ongoing Pain States**
Jingyi Xie[1], Andy Segerdahl[1,2], Irene Tracey[1,3], Peter Jezzard[1]
[1]Nuffield Dept of Clinical Neurosciences (FMRIB Centre), University of Oxford, Oxford, United Kingdom; [2]Nuffield Dept of Clinical Neurosciences (Anaesthetics), University of Oxford, Oxford, United Kingdom; [3]Nuffield Dept of Clinical Neurosciences (Anaesthetics), University of Oxford, , Oxford, United Kingdom

12:06 **376**. **Subject-specific AIF Optimizes Reproducibility of Perfusion Parameters in Longitudinal DSC-MRI in Comparison to Session & Population Level AIF**
Kim Mouridsen[1], Kyrre Eeg Emblem[2], Atle Bjørnerud[3], Dominique Jennings[2], Gregory Sorensen[2]
[1]Center for Functionally Integrative Neuroscience, Aarhus University | Aarhus University Hospital, Aarhus, Denmark; [2]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA; [3]Department of Physics, University of Oslo, Interventional Centre, Rikshospitalet, Olso University Hospital, Oslo, Norway

12:18 **377**. **Correction for Delay & Dispersion of Contrast Bolus: A Comparison of Quantitative DSC Cerebral Perfusion & [^{15}O]-H_2O PET**
Jessy Mouannes Srour[1], John Lee[2], Colin Derdeyn[2,3], Wanyong Shin[4], Timothy J. Carroll[1,5]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, USA; [2]Radiology, Washington University in Saint Louis, Saint Louis, MO, USA; [3]Neurology & Neurological Surgery, Washington University in Saint Louis, Saint Louis, MO, USA; [4]Imaging Institute, Mellen Center, The Cleveland Clinic, Cleveland, OH, USA; [5]Radiology, Northwestern University, Chicago, IL, USA

Acquisition Strategies: Improving the Old & Exploring the New

Room 513A-D 10:30-12:30 *Moderators:* Peter M. Jakob & Krishna S. Nayak

10:30 **378**. **The "Central Signal Singularity" Phenomenon in Balanced SSFP**
R. Reeve Ingle[1], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, USA

10:42 **379**. **Desperately Seeking: Non-Balanced Steady State Free Precession Fluid Signal**
Oliver Bieri[1], Carl Ganter[2], Klaus Scheffler[1]
[1]Department of Medical Radiology, Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Institut für Radiologie, Klinikum rechts der Isar, Technische Universität München

10:54 **380**. **Fast Quantitative Double Echo Steady State Diffusion Imaging**
Oliver Bieri[1], Carl Ganter[2], Klaus Scheffler[1]
[1]Department of Medical Radiology, Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Institut für Radiologie, Klinikum rechts der Isar, Technische Universität München, Munich, Germany

11:06 **381**. **Isotropic Mapping of T_1, T_2 & M_0 with MP-DESS & Phase-Graph Data Fitting**
Tony Stoecker[1], Kaveh Vahedipour[1], Eberhard Pracht[1], Daniel Brenner[1], N. Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

11:18 **382**. **Continuous SWIFT**
Djaudat Idiyatullin[1], Steven Suddarth[2], Curt Corum[1], Gregor Adriany[1], Michael Garwood[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, USA; [2]Agilent Technologies, Santa Clara, CA, USA

11:30 **383**. **Interferometric Techniques for Magnetic Resonance Imaging**
Kenneth Otho Johnson[1], Craig H. Meyer[1]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, USA

11:42 **384**. **Self-Navigated Kinematic Imaging of the Knee**
Liheng Guo[1], Antonio J. Machado Segundo[2], John A. Derbyshire[3], John A. Carrino[2], Daniel A. Herzka[4]
[1]Biomedical Engineering, Johns Hopkins University, Baltimore, MD, USA; [2]Department of Radiology & Radiological Science, Johns Hopkins School of Medicine; [3]Translational Medicine Branch, DIR, NHLBI, National Institutes of Health, Bethesda, MD; [4]Department of Biomedical Engineering, Johns Hopkins School of Medicine

11:54 **385**. **Spatial Selection Through Multi-Coil Magnetic Field Shaping**
Christoph Juchem[1], Terence W. Nixon[1], Peter B. Brown[1], Scott McIntyre[1], Douglas L. Rothman[1], Robin A. de Graaf[1]
[1]MR Research Center, Yale University, New Haven, CT, USA

12:06 **386**. **SNR-Optimized Accelerated Phase-Sensitive Dual-Acquisition Signle-Slab 3D Turbo Spin Echo Imaging**
Hyunyeol Lee[1], Jin-Seok Seo[1,2], Jaeseok Park[3]
[1]Department of Medical Science, Yonsei University, Seoul, Korea, Republic of; [2]Department of Radiology , Yonsei University, Seoul, Korea, Republic of; [3]Department of Radiology, Yonsei University, Seoul, Korea, Republic of

12:18 **387**. **3D Radial bUTE**
Clemens Diwoky[1], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria

Liver Fibrosis

Room 518-A-C 10:30-12:30 *Moderators:* Bachir Taouli & Bernard E.Van Beers

10:30 **388**. **Introduction**
Claude B. Sirlin

10:42 **389**. **Magnetic Resonance Elastography Measurements of Viscosity: A Novel Biomarker For Human Hepatic Tumor Malignancy?**
Sabrina Doblas[1], Philippe Garteiser[1], Nathalie Haddad[1,2], Jean-Luc Daire[1,2], Mathilde Wagner[1,2], Helena Leitao[2,3], Valérie Vilgrain[1,2], Ralph Sinkus[1], Bernard E. Van Beers[1,2]
[1]Centre de Recherche Biomédicale Bichat-Beaujon, INSERM U773, Clichy, France; [2]Department of Radiology, Beaujon University Hospital, University Paris Diderot, Clichy, France; [3]Department of Radiology, Hospitais de Universidade de Coimbra, Coimbra, Portugal

10:54 **390**. **MR Elastography of the Liver: Observations from a Review of 1,377 Exams**
Meng Yin[1], Jayant A. Talwalkar[2], Kevin J. Glaser[1], Richard L. Ehman[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, USA; [2]Division of Gastroenterology, Mayo Clinic, Rochester, MN, USA

11:06 **391**. **Paradoxical Correlation between Mrp2 Expression & Fibrosis**
Natsuko Tsuda[1], Osamu Matsui[2]
[1]Medical Affairs , Bayer Yakuhin, Ltd., Osaka, Japan; [2]Department of Radiology, Kanazawa University Graduate School of Medical Science, Kanazawa, Ishikawa, Japan

11:18 **392**. **Macromolecular Proton Fraction Mapping of the Human Liver *In Vivo*: Technical Feasibility & Preliminary Observations in Hepatic Fibrosis**
Vasily L. Yarnykh[1], George N. Ioannou[2]
[1]Department of Radiology, University of Washington, Seattle, WA, USA; [2]Department of Medicine, University of Washington, Seattle, WA, USA

11:30 **393**. **Gadoxetic Acid-Enhanced Magnetic Resonance Imaging for Evaluation of Borderline Hepatocellular Nodules in Cirrhotic Livers**
Jeong Min Lee[1], Hyun Kyung Yang[1], joon koo han[1], Byung Ihn Choi[1]
[1]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

11:42 **394**. **Quantitative MRI of Liver Fibrosis in an Experimental Mouse Model**
April M. Chow[1,2], Darwin S. Gao[1,3], Shu Juan Fan[1,3], Gladys G. Lo[4], Siu Ki Yu[2], Ed X. Wu[1,3]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [2]Medical Physics & Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of; [3]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [4]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of

11:54 **395**. **T_2 Relaxation Time As a Surrogate Marker of Liver Fibrosis**
Alexander R. Guimaraes[1,2], Luiz Siqueira[2], Giles Boland[2], Deborah Gervais[2], Michael Chew[2], Peter Hahn[2]
[1]Radiology/Massachusetts General Hospital, Martinos Center for Biomedical Imaging, Charlestown, MA, USA; [2]Radiology/Massachusetts General Hospital, Division of Abdominal Imaging & Interventional Radiology, Boston, MA, USA

12:06 **396**. **Analysis of Radially Undersampled 4D Velocity Mapping (PC VIPR) for Comprehensive Imaging in Portal Hypertension.**
Alex Frydrychowicz[1], Alejandro Roldán-Alzate[2], Ben R. Landgraf[1], Eric Niespodzany[2], Rakhee Wadhwa Verma[1], Oliver Wieben[2], Scott B. Reeder[1]
[1]Department of Radiology, University of Wisconsin - Madison, Madison, WI, USA; [2]Departments of Radiology, Medical Physics, University of Wisconsin - Madison, Madison, WI, USA

12:18 **397**. **MRI-Based Detection of the Extracellular Matrix Surrounding the Hepatic Sinusoid**
Scott Charles Beeman[1], Lawrence Mandarino[2,3], Jorge Rakela[4], Kevin Bennett[1,5]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, USA; [2]Department of Medicine, Mayo Clinic in Arizona, Scottsdale, AZ, USA; [3]School of Life Sciences, Arizona State University, Tempe, AZ, USA; [4]Department of Gastroenterology & Hepatology, Mayo Clinic in Arizona, Scottsdale, AZ, USA; [5]Keller Center for Imaging Innovation, Barrow Neurological Institute, Phoenix, AZ, USA

MR Imaging of the Post-Operative Joint

Room 520B-F 10:30-12:30 *Moderator:* Lawrence M. White

10:30 **Post-Operative Shoulder**
Laura M. Fayad

11:10 **Post-Operative Knee**
Lawrence M. White

11:50 **Cartilage Repair**
Carl S. Winalski

Spinal Cord Imaging & Injury

Room 710A 10:30-12:30 *Moderators:* Benjamin M. Ellingson & Massimo Filippi

10:30 **398**. **Demyelination in the Injured Human Spinal Cord Detected with Diffusion & Magnetization Transfer Imaging**
Julien Cohen-Adad[1,2], Mohamed-Mounir El Mendili[3], Stéphane Lehéricy[4], Pierre-François Pradat[5], Sophie Blancho[6], Serge Rossignol[7], Habib Benali[3]
[1]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA; [2]Harvard Medical School, Boston, MA, USA; [3]UMR-678, INSERM-UPMC, Pitié-Salpêtrière Hospital, Paris, France; [4]CENIR, CRICM, UPMC, UMR-S975, INSERM U975, CNRS UMR 7225, Groupe Hospitalier Pitie-Salpetriere, Paris, France; [5]Fédération des Maladies du Système Nerveux, AP-HP, Pitié-Salpêtrière Hospital, Paris, France; [6]Institut pour la Recherche sur la Moelle Epinière et l'Encéphale, France; [7]GRSNC, Faculty of Medicine, Université de Montréal, Montreal, QC, Canada

10:42 **399**. **The Role of MRI For the Evaluation of Spinal Cord Injury & Stem Cell Transplantation in Mice.**
Laura Elizabeth Gonzalez-Lara[1,2], Xiaoyun Xu, Arthur Brown[3], Paula J. Foster[1,4]
[1]Imaging Research Laboratories, Robarts Research Institute, London, ON, Canada; [2]Department of Medical Biophysics , the University of Western Ontario, London, ON, Canada; [3]Department of Anatomy & Cell Biology, the University of Western Ontario, London, ON, Canada; [4]Department of Medical Biophysics, the University of Western Ontario, London, ON, Canada

10:54 **400**. **Diffusion Tensor Imaging of the Pediatric Spinal Cord using an Inner-FoV EPI Pulse Sequence in Normals & Patients with SCI**
Nadia Barakat[1], Louis Hunter[2], Jürgen Finsterbusch[3], John Gaughan[1], Amer Samdani[2], M. J. Mulcahey[2], Randal Betz[2], Scott Faro[1], Feroze Mohamed[1]
[1]Temple University, Philadelphia, PA, USA; [2]Shriners Hospital For Children; [3]University Medical Center Hamburg-Eppendorf, Hamburg, Germany

11:06 **401**. **Medullar & Thalamic Metabolic Alterations Following Spinal Cord Injury (SCI): A Preliminary Mice Study, Combining Early & Longitudinal Follow-Ups using High-Spatially Resolved MRS & DTI At High Field**
Mohamed Tachrount[1], Guillaume Duhamel[1], André Maues de Paula[2], Jérôme Laurin[3], Tanguy Marqueste[3], Patrick Decherchi[3], Patrick J. Cozzone[1], Virginie Callot[1]
[1]Centre de Résonance Magnétique Biologique et Médicale (CRMBM, UMR 6612, CNRS), Faculté de Médecine, Université de la Méditerranée, Marseille, France; [2]Service d'Anatomie Pathologique, Hôpital de la Timone, Marseille, France; [3]Institut des Sciences du Mouvement (ISM, UMR CNRS 6233), Faculté des sciences, Université de la Méditerranée, Marseille, France

11:18 **402**. **The Treatment Impact of Minocycline On Quantitative MRI in Acute Spinal Cord Injury**
Yunyan Zhang[1], V. Wee Yong[1], R. John Hurlbert[1], Steve Casha[2]
[1]University of Calgary, Calgary, AB, Canada; [2]Dalhousie University, Halifax, Nova Scotia, Canada

11:30 **403**. **Atrophy of the Whole Cervical Cord Differs Among the Major Multiple Sclerosis Clinical Phenotypes & is Associated with Disability: A Multicenter Study**
Maria Assunta Rocca[1,2], Mark A. Horsfield[3], Stefania Sala[1], Paola Valsasina[1], J. Drulovic[4], Maria Emma Rodegher[2], Domenico Caputo[5], Massimiliano Copetti[6], T. Stosic-Opincal[7], Sarlota Mesaros[4], Giancarlo Comi[2], Massimo Filippi[1,2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]Department of Cardiovascular Sciences, University of Leicester, Leicester, United Kingdom; [4]Institute of Neurology, Clinical Centre of Serbia, Faculty of Medicine, University of Belgrade, Belgrade; [5]Department of Neurology, Scientific Institute Fondazione Don Gnocchi, Milan, Italy; [6]Biostatistics Unit, IRCCS-Ospedale Casa Sollievo della Sofferenza, San Giovanni Rotondo, Italy; [7]Institute of Radiology, Clinical Centre of Serbia, Faculty of Medicine, University of Belgrade, Belgrade

11:42 **404**. **Diffusion Tensor Imaging in Human Cervical Spondylotic Myelopathy using a 2D RF Excitation Pulse Combined with a Reduced Field-Of-View Single-Shot Echoplanar Readout (Zoomed-EPI)**
Benjamin M. Ellingson[1], John Grinstead[2], Josef Pfeuffer[3], Thorsten Feiweier[3], Langston Holly[4], Noriko Salamon[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, USA; [2]Siemens Healthcare, Portland, OR, USA; [3]Siemens Healthcare, Erlangen, Germany; [4]Neurosurgery, University of California Los Angeles, Los Angeles, CA, USA

11:54 **405**. **Myelin Water Measurement in the Presence of Myelin Debris**
Henry Szu-Meng Chen[1], Nathan Holmes[2], Jie Liu[2], Wolfram Tetzlaff[2], Piotr Kozlowski[1,2]
[1]UBC MRI Research Centre, Vancouver, BC, Canada; [2]ICORD, Vancouver, BC, Canada

12:06 **406**. **Non-Water Suppressed Proton MR Spectroscopy Allows Spectral Quality Improvement in the Human Cervical Spinal Cord**
Andreas Hock[1], Erin Leigh MacMillan[2], Alexander Fuchs[1], Roland Kreis[2], Peter Boesiger[1], Spyros Kollias[3], Anke Henning[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [3]University Hospital of Zurich, Institute of Neuroradiology, Zurich, Switzerland

12:18 **407**. **Application of Chemical Exchange Saturation Transfer (CEST) Imaging to Examine Amide Proton Transfer (APT) in the Spinal Cord at 3T**
Adrienne N. Dula[1,2], Richard D. Dortch[1,2], Bennett A. Landman[1,3], John C. Gore[1,2], Seth A. Smith[1,2]
[1]Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, USA; [2]Radiology & Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, USA; [3]Electrical Engineering & Computer Science, Vanderbilt University, Nashville, TN, USA

Diffusion Tensor & Beyond

Room 710B 10:30-12:30 *Moderators:* Matthew D. Budde & Mara Cercignani

10:30 **408**. **Diffusion Tensor Spectroscopic Imaging of Rat Brains**
Yoshitaka Bito[1], Yuko Kawai[2], Koji Hirata[1], Toshihiko Ebisu[3], Toru Shirai[1], Satoshi Hirata[1], Yoshihisa Soutome[1], Hisaaki Ochi[1], Masahiro Umeda[2], Toshihiro Higuchi[4], Chuzo Tanaka[4]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji-shi, Tokyo, Japan; [2]Medical Informatics, Meiji University of Integrative Medicine, Kyoto, Japan; [3]Neurosurgery, Nantan General Hospital, Kyoto, Japan; [4]Neurosurgery, Meiji University of Integrative Medicine, Kyoto, Japan

10:42 **409**. **Changes to the Fractional Anisotropy & Mean Diffusivity of *In Vivo* Rat Brain Measured At Short Effective Diffusion-Times**
Jeff Kershaw[1,2], Christoph Leuze[3], Takayuki Obata[1], Iwao Kanno[1], Ichio Aoki[1]
[1]Molecular Imaging Centre, National Institute of Radiological Sciences, Chiba, Japan; [2]School of Bioscience & Biotechnology, Tokyo Institute of Technology, Yokohama, Japan; [3]Department of Neurophysics, Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

10:54 **410**. **Microscopic Determinates of Anisotropy in the Injured Rodent Brain using Histological Fourier Analysis**
Matthew D. Budde[1,2], Lindsay Janes[2], Eric Gold[2], L. Christine Turtzo[2], Joseph A. Frank[1,2]
[1]Radiology & Imaging Sciences, National Institutes of Health, Bethesda, MD, USA; [2]Center for Neuroscience & Regenerative Medicine at the Uniformed Services University, Bethesda, MD, USA

11:06 **411**. **Investigation of the Diffusion Tensor's Primary Eigenvector Correspondence to Tissue Structure in MR Microscopy of the Human Spinal Cord with Direct Comparison to Histology**
Brian Hansen[1], Jeremy J. Flint[2,3], Choong Heon-Lee[3,4], Michael Fey[5], Franck Vincent[5], Michael A. King[6], Peter Vestergaard-Poulsen[1], Stephen J. Blackband[7]
[1]Center for Functionally Integrative Neuroscience (CFIN), Aarhus University, Aarhus, Denmark; [2]Department of Neuroscience, University of Florida; [3]McKnight Brain Institute, University of Florida, Gainesville, FL, USA; [4]Department of Electrical Engineering, University of Florida, Gainesville, FL, USA; [5]Bruker Biospin; [6]Department of Pharmacology & Therapeutics, University of Florida; [7]Department of Neuroscience, Center for Structural Biology & National High Magnetic Field Laboratory, University of Florida

11:18 **412**. **Surface Based Analysis of Diffusion Orientation for Identifying Architectonic Domains in the *In Vivo* Human Cortex**
Jennifer Andrea McNab[1], Jonathan R. Polimeni[1], Lawrence L. Wald[1,2]
[1]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA; [2]Harvard-MIT Division of Health Sciences & Technology, Massachusetts Institute of Technology, Cambridge, MA, USA

11:30 **413**. **Multi-TE Diffusion Tensor Imaging *In Vivo***
Alexandru Vlad Avram[1,2], Arnaud Guidon[1,2], Chunlei Liu[2], Allen W. Song[2]
[1]Biomedical Engineering Department, Duke University, Durham, NC, USA; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, USA

11:42 **414**. **The Sensitivities of the Phenomenological DWI Models in the Presence of Cellular Compartments**
Chu-Yu Lee[1], Josef P. Debbins[2]
[1]Electrical Engineering, Arizona State University, Tempe, AZ, USA; [2]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, USA

11:54 **415**. **Investigation Tissue Micro-Structure Changes in Short Term Neuro-Plasticity with Diffusion MRI**
Ido Tavor[1], Shir Hofstetter[1], Shani Ben-Amitay[1], Yaniv Assaf[1]
[1]Neurobiology, Tel Aviv University, Tel Aviv, Israel

12:06 **416**. **A Hybrid Diffusion Imaging Atlas in Q-space**
Thijs Dhollander[1,2], Wim Van Hecke[1,3], Frederik Maes[1,2], Stefan Sunaert[1,3], Paul Suetens[1,2]
[1]Medical Imaging Research Center (MIRC), K.U.Leuven, Leuven, Belgium; [2]Department of Electrical Engineering (ESAT), K.U.Leuven, Leuven, Belgium; [3]Department of Radiology, University Hospitals of the K.U.Leuven, Leuven, Belgium

12:18 **417**. **Whole-Brain, Multi-Shot, Diffusion-Weighted Imaging in Humans at 7T with 1 mm Isotropic Resolution**
Robin Martin Heidemann[1], David A. Porter[2], Alfred Anwander[1], Thorsten Feiweier[2], Fernando Calamante[3], Jaques-Donald Tournier[3], Gabriele Lohmann[1], Heiko Meyer[2], Thomas R. Knösche[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Siemens Healthcare, Erlangen, Germany; [3]Brain Research Institute, Melbourne, Australia

Gold Corporate Member Lunchtime Symposium
Philips

Room Plenary Hall 12:30-13:30

Hands-On Workshop 2
Body & Cardiovascular Protocol Optimization
GE Healthcare

Room 520A-D 13:30-15:30

Hands-On Workshop 2
Body & Cardiovascular Protocol Optimization
Siemens

Room 515A-C 13:30-15:30

Clinical Intensive Course
Intracranial & Spine Infections

Room 510 13:30-15:30 *Moderators:* Walter Kucharczyk & Raili K. Raininko

13:30 **Changing Trends in Infectious Agents**
Gregory A. Storch

13:55 **Prion Disease**
Walter Kucharczyk

14:35 **Bacterial Infections of Brain & Spine**
Majda M. Thurnher

Clinical Intensive Course
Breast MRI

Room 516A-C 13:30-15:30 *Moderators*: Fiona J. Gilbert & Margaret A. Hall-Craggs

13:30 **Imaging of the Dense Breast**
Fiona J. Gilbert

14:15 **Lymph Node Imaging: A Clinical Perspective**
Michael Douek

14:45 **Breast Masses: A Case-Based Approach**
Fiona J. Gilbert

Clinical Intensive Course
Combined MRI

Room 520B-F 13:30-15:30

13:30 **MRI/PET**
A. Gregory Sorensen

14:10 **MRI/HIFU**
Kullervo Hynynen

14:50 **MRI/EEG**
Jean Gotman

Cardiovascular MRI - Exploring the Boundaries Part 2: Ultra-High Field Cardiovascular MRI

Room 512A-G 13:30-15:30 *Moderators*: Thoralf Niendorf & Matthias Stuber

13:30 **Clinical Opportunities & Technical Challenges**
Albert de Roos

13:50 **RF Coil Technology & MR Methodology**
Mark E. Ladd

14:10 **Cardiac MR at 7T**
Jeanette Schulz-Menger

14:30 **Coronary MRA at 7T**
Matthias Stuber

14:50 **Non-Contrast Enhanced Renal MRA at 7T**
Gregory J. Metzger

15:10 **Future Directions**
Thoralf Niendorf

Brittle Bones & Stiff Disks

Room 710A 13:30-15:30 *Moderators:* Laura M. Fayad & Roland Krug

13:30 **418**. **Morphologic & Quantitative Mapping of Biological Disc Contructs in a Rat Tail Model**
Sarah Pownder[1], Matthew F. Koff[1], Andrew James[2], Harry H. Gebhard[2], Roger Hartl[2], Robby D. Bowles[3], Lawrence J. Bonassar[3], Hollis G. Potter[1]
[1]Department of Radiolgy & Imaging - MRI, Hospital for Special Surgery, New York, NY, USA; [2]Department of Neurological Surgery, Weill Cornell Brain & Spine Center; [3]Department of Biomedical Engineering, Cornell University

13:42 **419**. ***In Vivo* T_2 & T_1rho Mapping of Rabbit Disc using Spin-Lock Sequence at 3T**
Chan Hong Moon[1], Lloydine Jacobs[2,3], Jung-Hwan Kim[1], Xiang He[1], James Kang[2,3], Kyongtae Ty Bae[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, USA; [2]Orthopaedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [3]Ferguson Laboratory for Orthopaedic & Spine Research

13:54 **420**. **Improving Predictability of Painful Discs by using T_1ρ MRI & Disc Height**
Rachelle Berger[1], Matthew Fenty[2], Bryan Fry[1], Philip M. Maurer[3], Dawn M. Elliott[4], Ari Borthakur[2]
[1]Department of Biochemistry & Molecular Biophysics, University of Pennsylvania School of Medicine, Philadelphia, PA, USA; [2]CMROI, Department of Radiology, University of Pennsylvania School of Medicine, Philadelphia, PA, USA; [3]3B Orthopaedics, Philadelphia, PA, USA; [4]McKay Orthopaedic Lab, Department of Orthopaedic Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA, USA

14:06 **421**. ***In Vivo* Sodium MRI of Intervertebral Disc At 7T**
Chenyang Wang[1,2], Mark Elliott[3], Thomas Connick[3], Walter Witshcey[3], Joseph Calabro[4], Ari Borthakur[3], Ravinder Reddy[3]
[1]School of Medicine, Yale University, New Haven, CT, USA; [2]Bioengineering, University of Pennsylvania, Philadelphia, PA, USA; [3]Radiology, University of Pennsylvania, Philadelphia, PA, USA; [4]Siemens Medical Solutions, USA

14:18 **422**. **Association between Spinal Disc Degeneration & Deficits in Endplate Perfusion**
L. Tugan Muftuler[1], Yen K. Hong[2], Hon J. Yu[1], Vance O. Gardner[3], Anton N. Hasso[4], Nitin N. Bhatia[5]
[1]Center for Functional Onco-imaging, University of California, Irvine, CA, USA; [2]Microbiology & Molecular Genetics, University of California; [3]Orthopaedic Education & Research Institute, Orange, CA; [4]Radiological Sciences, University of California, Irvine, CA; [5]Orthopaedic Surgery, University of California, Irvine, CA

14:30 **423**. **MR Imaging After Spinal Fusion using Slice Encoding For Metal Artifact Correction (SEMAC)**
Kathryn Jane Stevens[1], Pauline W. Worters[1], Garry Evan Gold[1], Jarrett K. Rosenberg[1], Brian A. Hargreaves[1]
[1]Department of Radiology, Stanford University Medical Center, Stanford, CA, USA

14:42 **424**. **Trabecular Bone Elastic Properties Depend On µMRI-Derived Measures of Bone Volume Fraction & Fabric**
Michael J. Wald[1], Chamith S. Rajapakse[1], Jeremy F. Magland[1], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA

14:54 **425**. **Quantification of Bone Marrow Types from High-Resolution MR Images in the Proximal Femur using Three Class Clustering**
Jenny Folkesson[1], Julio Carballido-Gamio[2], Dimitrios C. Karampinos[1], Thomas Baum[1], Thomas M. Link[1], Sharmila Majumdar[1], Roland Krug[1]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, CA, USA; [2]Grupo Tecnologico Santa Fe, Mexico City, Mexico

15:06 **426**. **Initial Results from Baseline Structural & Computational Biomechanics µMRI Study in Postmenopausal Women**
Yusuf A. Bhagat[1], Chamith S. Rajapakse[1], Jeremy F. Magland[1], Michael J. Wald[1], Theresa M. Scattergood[2], Peter J. Snyder[2], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, University of Pennsylvania, Philadelphia, PA, USA; [2]Division of Endocrinology, Diabetes & Metabolism, University of Pennsylvania, Philadelphia, PA, USA

15:18 **427**. ***In Vivo* ^{31}P Solid State MRI of Human Wrists: Short-T_2 MRI using the Scanner ^{1}H Channel<**
Jerome L. Ackerman[1,2], Yaotang Wu[2,3], Timothy G. Reese[1,2], Haihui Cao[2,3], Mirko I. Hrovat[4], Steven P. Toddes[5], Rostislav A. Lemdiasov[5]
[1]Martinos Center, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA; [2]Harvard Medical School, Boston, MA, USA; [3]Department of Orthopedic Surgery, Children's Hospital, Boston, MA, USA; [4]Mirtech, Inc., Brockton, MA; [5]InsightMRI, Inc., Leominster, MA, USA

Clinical Intensive Course
MR Physics & Techniques for Clinicians

Room 516A-C 16:00-18:00

16:00 **Ultrafast Imaging**
Pauline Wong Worters

16:40 **Parallel Imaging**
Stefan O. Schönberg

17:20 **High Field Imaging**
Gunnar Krueger

Functional Connectivity: Mechanisms & Applications

Room 510 16:00-18:00 *Moderators:* Catherine E. Chang & Richard G. Wise

16:00 **428**. **White Matter Cerebral Blood Flow is Inversely Correlated with Structural & Functional Connectivity in the Human Brain**
Sina Aslan[1,2], Hao Huang[1,2], Jinsoo Uh[1], Virendra Mishra[1,2], Guanghua Xiao[3], Matthias van Osch[4], Hanzhang Lu[1,2]
[1]Advanced Imaging Research Center, University of Texas at Southwestern Medical Center, Dallas, TX, USA; [2]Biomedical Engineering Graduate Program, University of Texas at Southwestern Medical Center, Dallas, TX, USA; [3]Division of Biostatistics, Department of Clinical Sciences, University of Texas at Southwestern Medical Center, Dallas, TX, USA; [4]Department of Radiology, Leiden University Medical Center, Leiden, Netherlands

16:12 **429**. **Forty Weeks of Rest: An Investigation into Functional Network Stability**
Suresh Emmanuel Joel[1,2], Craig K. Jones[1,2], Brian S. Caffo[3], Peter C. M. van Zijl[1,2], James J. Pekar[1,2]
[1]Radiology, Johns Hopkins University, Baltimore, MD, USA; [2]FM Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [3]Biostatistics, Johns Hopkins University, Baltimore, MD, USA

16:24 **430**. **Symmetry of Resting-State Functional Connectivity in fMRI: High Correlation Across Hemispheres Exists with or without Callosal Connection**
Hang Joon Jo[1], Ziad S. Saad[1], Steve J. Gotts[2], Richard C. Reynolds[1], Patricia Christidis[1], Daniel R. Glen[1], Alex Martin[2], Robert W. Cox[1]
[1]Statistical & Scientific Computing Core, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, USA; [2]Cognitive Neuropsychology Section, Laboratory of Brain & Cognition, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, USA

16:36 **431**. **BOLD Resting State Networks in Adults with Complete Callosal Agenesis**
Julian Michael Tyszka[1], Lynn K. Paul[2], Ralph Adolphs[1,2]
[1]Biology, California Institute of Technology, Pasadena, CA, USA; [2]Humanities & Social Sciences, California Institute of Technology, Pasadena, CA, USA

16:48 **432**. **Investigating the Dependence of Spontaneous Fluctuations in Visual Cortex on Callosal Connectivity**
Li-Wei Kuo[1], Zhongming Liu[1], Jacco A. de Zwart[1], Peter van Gelderen[1], Jeff H. Duyn[1]
[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, USA

17:00 **433**. **Caffeine Causes Widespread Decreases in Resting-State BOLD Connectivity & Energy**
Chi Wah Wong[1], Valur Olafsson[1], Omer Tal[1], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California San Diego, La Jolla, CA, USA

17:12 **434**. **Differential Effects of Opioid Analgesics on Functional Connectivity of Cortical-Subcortical Networks in Humans**
Richard G. Wise[1], Anna Jolly[2], Kevin Murphy[1], C. John Evans[1], Judith E. Hall[2]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, S. Glamorgan, United Kingdom; [2]Department of Anaesthetics & Intensive Care Medicine, School of Medicine, Cardiff University, Cardiff, S. Glamorgan, United Kingdom

17:24 **435**. **Prediction of Age using Resting-State Functional & Effective Connectivity**
Zhihao Li[1], John A. Sexton[1], Gopikrishna Deshpande[2], Xiaoping Hu[1]
[1]Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, USA; [2]Electrical & Computer Engineering, Auburn University, Auburn, AL, USA

17:36 **436**. **Left Lateralization of Motor Circuit Connectivity is Associated with Better Motor Performance in Children**
Anita Dyan Barber[1,2], Suresh E. Joel[1], Priti Srinivasan[2], Simona Spinelli[2], Jim J. Pekar[1,2], Stewart H. Mostofsky[1,2]
[1]Johns Hopkins School of Medicine, Baltimore, MD, USA; [2]Kennedy Krieger Institute, Baltimore, MD, USA

17:48 **437**. **Functional Connectivity MRI Reveals Memory Networks After Maze Learning in Rodents**
Fatima Ali Nasrallah[1], Chen Yow Der-Yow[2], Aryeh Routtenberg[3], Kai-Hsiang Chuang
[1]Lab of Molecular Imaging, A*Star Biomedical Research Institutes, Buona Vista, Singapore, Singapore; [2]NIH, NINDS; [3]Northwestern University

Renal Function - BOLD

Room 511A-C 16:00-18:00 *Moderators:* Hersh Chandarana & Vivian S. Lee

16:00 **438**. **Introduction**
Diego R. Martin

16:12 **439**. **Assessment of Rhabdomyolysis-Induced Acute Kidney Injury (AKI) in Mice using Hemodynamic Response Imaging (HRI)**
Zohar Milman[1], Jonathan Axelrod[1], Samuel Heyman[2], Nathalie Corchia[1], Rinat Abramovitch[1]
[1]The Goldyne Savad Institute for Gene Therapy, Hadassah Hebrew University Medical Center, Jerusalem, Israel; [2]Medicine, Hadassah Hebrew University Medical Center, Jerusalem, Israel

16:24 **440**. **Intra-Renal Oxygenation in Radio-Contrast Nephropathy Model by BOLD MRI: Effect of the Dose & Viscosity**
Lu-Ping Li[1], Tammy Franklin[2], Joann Carbray[2], Maria Papadopulou-Rosenzweig[3], Richard Solomon[4], Pottumarthi V. Prasad[1]
[1]Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL, USA; [2]Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL , USA; [3]Radiation Medicine, Northshore University Healthsystem, Evanston, IL , USA; [4]Nephrology, University of Vermont, Burlington, VT , USA

16:36 **441**. **Renal BOLD-MRI Does Not Reflect Renal Function: A Prospective Study in 368 Patients**
Henrik J. Michaely[1], Linda Metzger[1], Ulrike I. Attenberger[1], Stefan Haneder[1], Stefan O. Schoenberg[1]
[1]University Medical Center Mannheim, Mannheim, BaWue, Germany

16:48 **442**. **Establishment of a Renal Oxygen Transit Model Based on BOLD MRI**
Jeff Lei Zhang[1], Lizette Warner[2], Henry Rusinek[1], Hersh Chandarana[1], Pippa Storey[1], Eric E. Sigmund[1], Qun Chen[1], Lilach O. Lerman[3], Vivian S. Lee[1]
[1]Department of Radiology, New York University, New York, NY, USA; [2]MR Development, Methods & Applications Software, Philips Healthcare, Highland Hts, OH, USA; [3]Division of Nephrology & Hypertension, Mayo Clinic, Rochester, MN, USA

17:00 **443**. **Measuring Whole Kidney Nephron Endowment using MRI**
Scott Charles Beeman[1], Min Zhang[2], Lina Gubhaju[3], David Frakes[1,2], John Bertram[3], Teresa Wu[2], Kevin Bennett[1]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, USA; [2]School of Electrical, Computer & Energy Engineering, Arizona State University, Tempe, AZ, USA; [3]Department of Anatomy & Developmental Biology, Monash University, Melbourne, Victoria, Australia

17:12 **444**. **Follow-up of Living Kidney Donors After Transplantation by DWI reveals Compensatory Changes in the Remaining Kidney.**
Peter Vermathen[1], Tobias Binser[1], Harriet C. Thoeny[2], Chris Boesch[1], Felix J. Frey[3], Ute Eisenberger[3]
[1]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [2]Dept. of Radiology, University & Inselspital, Bern, Switzerland; [3]Dept. of Nephrology, University & Inselspital, Bern, Switzerland

17:24 **445**. **Measurement of Single-Kidney Glomerular Filtration Rate (GFR) by Arterial Spin Labeling**
Xiang He[1], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, USA

17:36 **446**. **Diffusion Tensor Imaging (DTI) & Tractography for Assessment of Renal Allograft Dysfunction**
Katja Hueper[1], Marcel Gutberlet[1], Dagmar Hartung[1], Frank Lehner[2], Wilfried Gwinner[3], Xiaoqi Ding[4], Michael Galanski
[1]Radiology, Hannover Medical School, Hannover, Germany; [2]General, Abdominal & Transplant Surgery, Hannover Medical School; [3]Nephrology, Hannover Medical School; [4]Neuroradiology, Hannover Medical School

17:48 **447**. **Renal Perfusion Measured Pre- & Post-Transplantation with ASL MRI in Donor-Recipient Pairs**
Nathan S. Artz[1], Elizabeth A. Sadowski[2], David J. Niles[1], Karl K. Vigen[1], Andrew L. Wentland[1], Arjang Djamali[3], Thomas M. Grist[1,2], Sean B. Fain[1,2]
[1]Medical Physics, University of Wisconsin, Madison, WI, USA; [2]Radiology, University of Wisconsin, Madison, WI, USA; [3]Nephrology, University of Wisconsin, Madison, WI, USA

Targeted Molecular Imaging

Room 511D-F 16:00-18:00 *Moderators:* Peter Caravan & Angelique Louie

16:00 **448**. **Theranostic Imaging of Metastatic Prostate Cancer**
Zhihang Chen[1], Marie-France Penet[1], Sridhar Nimmagadda[1], Cong Li[1], Sangeeta Ray[1], Paul T. Winnard Jr.[1], Dmitri Artemov[1], Kristine Glunde[1], Martin G. Pomper[1], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, USA

16:12 **449**. **Positive Contrast for Imaging of Receptor Targeted Magnetic Nanoparticles in the Orthotopic Pancreatic Cancer Xenograft Model using Ultrashort Echo Time MRI**
Liya Wang[1,2], Xiaodong Zhong[3], Weiping Qian[4], Hongwei Chen[1,2], Lily Yang[4], Hui Mao[1,2]
[1]Radiology, Emory University School of Medicine, Atlanta, GA, USA; [2]Center for Systems Imaging, Emory University, Atlanta, GA, USA; [3]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, USA; [4]Surgery, Emory University School of Medicine, Atlanta, GA, USA

16:24 **450**. **MR Imaging Guided NCT by a Dual Gd/B Agent Targeted to Tumor Cells via Upregulated LDL Transporters.**
Simonetta Geninatti-Crich[1], Diego Alberti[1], Ibolya Szabo[1], Antonio Toppino[2], Annamaria Deagostino[2], Paolo Venturello[2], Nicoletta Protti[3], Silva Bortolussi[3], Saverio Altieri[3], Silvio Aime[1]
[1]University of Torino, Torino, Italy; [2]University of Torino, Italy; [3]University of Pavia, Italy

16:36 **451**. **Multimodal Molecular Imaging of Angiogenesis in a Mouse Model of Melanoma**
Giselle Alexandra Suero Abreu[1], Benjamin B. Bartelle[1], Orlando Aristizábal[1], Edward J. Houston[2], Daniel H. Turnbull[2,3]
[1] Skirbal Institute of Biomolecular Medicine, NYU School of Medicine, New York, USA; [2]Skirbal Institute of Biomolecular Medicine, NYU School of Medicine, New York, USA; [3]Radiology Department, NYU School of Medicine, New York, NY, USA

16:48 **452**. **Direct Protein Imaging of Inflammation in the Human Hand**
Jamu K. Alford[1], A. Gregory Sorensen[1], Thomas Benner[1], Blaine A. Chronik[2], William Bradfield Handler[2], Timothy J. Scholl[3], Gunjan Madan[4], Peter Caravan[1]
[1]Radiology, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [2]Physics & Astronomy, The University of Western Ontario, London, ON, Canada; [3]Department of Medical Biophysics, The University of Western Ontario, London, ON, Canada; [4]Siemens Medical Solutions Inc., Malvern, PA, USA

17:00 **453**. **Molecular MRI of Liver Fibrosis by Fibrin-Fibronectin Targeted Contrast Agent in an Experimental Mouse Model**
April M. Chow[1,2], Mingqian Tan[3], Darwin S. Gao[1,4], Shu Juan Fan[1,4], Jerry S. Cheung[1,4], Kwan Man[5], Zheng-Rong Lu[3], Ed X. Wu[1,4]
[1]Laboratory of Biomedical Imaging & Signal Processing, The University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [2]Medical Physics & Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of; [3]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA; [4]Department of Electrical & Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [5]Department of Surgery, The University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of

17:12 **454**. ***In Vivo* Dynamic Contrast Enhanced MRI of Novel Contrast Agents Targeted to the Estrogen Receptor**
Adi Pais[1], Gunanathan Chidambaram[2], Inbal Biton[3], Raanan Margalit[1], David Milstein[2], Hadassa Degani[1]
[1]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel; [2]Organic Chemistry, Weizmann Institute of Science, Rehovot, Israel; [3]Veterinary Resources, Weizmann Institute of Science, Rehovot, Israel

17:24 **455**. **MRI with Magnetic Nanoparticles Serves As a Biomarker For the Inflammation Associated with the Early, Insulitic Phase of Type I Diabetes**
Alexander R. Guimaraes[1,2], Jason L. Gaglia[3,4], Mukesh G. Harisinghani[2], Christophe Benoist[3,4], Diane Mathis[3,4], Ralph Weissleder[1]
[1]Center for Systems Biology, Boston, MA, USA; [2]Radiology/Massachusetts General Hospital, Division of Abdominal Imaging & Interventional Radiology, Boston, MA, USA; [3]Pathology, Harvard Medical School, Boston, MA, USA; [4]Section on Immunology & Immunogenetics, Joslin Diabetes Center, Boston, MA, USA

17:36 **456**. **MRI of Cells & Mice At 1 & 7Tesla with Gd-Targeting Agents: When the Low Field is Better!**
Simonetta Geninatti-Crich[1], Diego Alberti[1], Ibolya Szabo[1], Dario Longo[1], Silvio Aime[1]
[1]University of Torino, Torino, Italy

17:48 **457**. **Enhanced Relaxivity of Hydroxyapatite-Targeted Gadolinium Contrast Agents**
Jonathan Marmurek[1,2], Khaled Nasr[3], Elena Vinogradov[2], Ananth J. Madhuranthakam[4], John V. Frangioni[3], Robert E. Lenkinski[2]
[1]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, USA; [2]Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA; [3]Hematology & Oncology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA; [4]Global Applied Science Laboratory, GE Healthcare, Boston, MA, USA

Stroke - Clinical Studies

Room 512A-G 16:00-18:00 *Moderators:* Jeffry R. Alger & Charlotte Rosso

16:00 **458**. **Ischemic Penumbra in Acute MCA Stroke: Comparison of the PWI-DWI Mismatch & the ADC-Based NEURINFARCT Methods**
Aurelie Drier[1,2], Thomas Tourdias[3], Igor Sibon[4], Yohan Attal[5], Gurkan Mutlu[6], Stéphane Lehéricy[1,2], Yves Samson[6], Jacques Chiras[1], Didier Dormont[1], Jean-Marc Orgogozo[4], Vincent Dousset[3], Charlotte Rosso[6]
[1]Neuroradiology, Pitié Salpêtrière Hospital, Paris, France; [2]Centre de NeuroImagerie de Recherche - CENIR,CRICM U795, Paris, France; [3]Neuroradiology, CHU Pellegrin, Bordeaux, France; [4]Neurology, CHU Pellegrin, Bordeaux, France; [5]CRICM, CNRS, UMR7225 équipe NEMESIS, Paris, France; [6]Urgences cérébro-vasculaires, Pitié Salpêtrière Hospital, Paris, France

16:12 **459**. **Bolus Delay & Dispersion in Predictor Models in Acute Stroke**
Lisa Willats[1], Alan Connelly[1,2], Soren Christensen[3,4], Geoffrey Donnan[2,5], Stephen Davis[4,6], Fernando Calamante[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes , Melbourne, Australia; [2]Department of Medicine, University of Melbourne, Australia; [3]Department of Radiology, University of Melbourne, Australia; [4]Royal Melbourne Hospital, Melbourne, Australia; [5]Florey Neuroscience Institutes, Melbourne, Australia; [6]Department of Neurology, University of Melbourne, Australia

16:24 **460**. **Comparison of Pseudo-Continuous Arterial Spin-Labeled & Dynamic Susceptibility Contrast Enhanced Perfusion Imaging in Acute Ischemic Stroke**
Danny J. J. Wang[1], David S. Liebeskind[1], Qing Hao[1], Joe X. Qiao[2], Rana Fiazv[1], Matthias Gunther[3,4], Whitney B. Pope[2], Samuel Hou[2], Lirong Yan[1], Jeffrey L. Saver[1], Noriko Salamon[2], Jeffry R. Alger[1,2]
[1]Neurology, UCLA, Los Angeles, CA, USA; [2]Radiology, UCLA, Los Angeles, CA, USA; [3]Faculty of Physics & Electronics, University of Bremen, Bremen, Germany; [4]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany

16:36 **461**. **Reversal of Abnormal ADC Lags Reperfusion & Does Not Necessarily Represent Tissue Salvage**
Hongyu An[1], Andria L. Ford[2], Katie D. Vo[3], William J. Powers[4], Jin-Moo Lee[2], Weili Lin[1]
[1]Radiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; [2]Neurology, Washington University in St. Louis, St. Louis, MO, USA; [3]Radiology, Washington University in St. Louis, St. Louis, MO, USA; [4]Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

16:48 **462**. **Consequences of Multi-Echo Fits in Perfusion MRI for the Determination of MTT in Presence of T_1-Effects.**
Matus Straka[1], Heiko Schmiedeskamp[1], Greg Zaharchuk[1], Jalal B. Andre[1], Jean-Marc Olivot[2], Nancy J. Fischbein[1], Maarten G. Lansberg[2], Michael E. Moseley[1], Gregory W. Albers[2], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Stanford Stroke Center, Stanford University, Stanford, CA, USA

17:00 **463**. **Operatively Defined Ischemic Core, Penumbra & Oligemia in Human Acute Stroke using Sequential MR Perfusion Images**
Hongyu An[1], Andria L. Ford[2], Cihat Eldeniz[1], Yang Yang[1], Yasheng Chen[1], Katie D. Vo[3], William J. Powers[4], Jin-Moo Lee[2], Weili Lin[1]
[1]Radiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; [2]Neurology, Washington University in St. Louis, St. Louis, MO, USA; [3]Radiology, Washington University in St. Louis, St. Louis, MO, USA; [4]Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

17:12 **464**. **Cerebrovascular Reactivity Measured with Arterial Spin Labeling MRI in the Caudate Nucleus, Lentiform Nucleus & Thalamus in Patients with Steno-Occlusive Internal Carotid Artery Disease**
Nolan S. Hartkamp[1], R. P. H. Bokkers[1], H. B. van der Worp[2], M. J. P. van Osch[3], J. Hendrikse[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Neurology, UMC Utrecht, Utrecht, Netherlands; [3]C. J. Gorter Center, Leiden UMC, Leiden, Netherlands

17:24 **465**. **Whole-brain Arterial Spin Labeling Perfusion MR Imaging in Patients with Acute Stroke**
Reinoud P. H. Bokkers[1], Steven Warach[2], Daymara Hernandez[2], Matthias J. van Osch[3], Jeroen Hendrikse[1], Raymond V. Mirasol[2], José G. Merino[2], Lawrence L. Latour[2]
[1]Department of Radiology, UMCU, Utrecht, Netherlands; [2]Section of Stroke Diagnostics & Therapeutics, NINDS, NIH, Bethesda, MD, USA; [3]C. J. Gorter Institute for High Field MRI, LUMC, Leiden, Netherlands

17:36 **466**. **An Automated Tool for Prediction of Secondary Hemorrhage in Stroke.**
Matus Straka[1], Bruce C. Campbell[2], Maarten G. Lansberg[3], Greg Zaharchuk[1], Michael Mlynash[3], Stephanie M. Kemp[3], Demi Thai[3], Gregory W. Albers[3], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Neurology, Royal Melbourne Hospital, Melbourne, Australia; [3]Stanford Stroke Center, Stanford University, Stanford, CA, USA

17:48 **467**. **Carotid Atherosclerotic Lesion Distribution in Patients with Cerebrovascular Events: A 3.0 Tesla Magnetic Resonance Vessel Wall Imaging Study using Three-dimensional, Isotropic, Fast Sequence with Large Coverage**
Xihai Zhao[1], Niranjan Balu[2], Jinnan Wang[3], Huilin Zhao[4], Jianrong Xu[4], Chun Yuan[1,2]
[1]Department of Biomedical Engineering & Center for Biomedical Imaging Research, School of Medicine, Tsinghua University, Beijing, China, People's Republic of; [2]Department of Radiology, University of Washington, Seattle, WA, USA; [3]Philips Research North America, Briarcliff Manor, NY, USA; [4]Department of Radiology, Renji Hospital, Shanghai Jiao Tong University, Shanghai, China, People's Republic of

Non-Proton MRI

Room 513A-D 16:00-18:00 *Moderators:* Christian Beaulieu & Nadim J. Shah

16:00 **468**. **Potential of Relaxation-Weighted ^{23}Na-MRI for Brain Tumor Characterization**
Armin Michael Nagel[1], Michael Bock[1], Christian Hartmann[2], Lars Gerigk[1], Jan-Oliver Neumann[2], Marc-André Weber[2], Martin Bendszus[2], Alexander Radbruch[2], Wolfgang Wick[2], Heinz-Peter Schlemmer[1], Wolfhard Semmler[1], Armin Biller[2]
[1]German Cancer Research Center, Heidelberg, Germany; [2]University Hospital Heidelberg, Germany

16:12 **469**. **Brain Lithium & Sodium Concentration in Lithium-Treated Euthymic Bipolar Disorder Subjects**
Fernando Emilio Boada[1], Mary Phillips[2], Yongxian Qian[3], David Kupfer[2]
[1]Radiology & Bioengineering, University of Pittsburgh, Pittsburgh, PA, USA; [2]Psychiatry, University of Pittsburgh, Pittsburgh, PA, USA; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, USA

16:24 **470**. **Temporal Water Mobility & Sodium Intensity Measurements in Penumbra & Core Tissue During Acute Stroke**
Friedrich Wetterling[1,2], Lindsay Gallagher[3], William Holmes[3], I. Mhairi MacRae[3], Andrew J. Fagan[1,4]
[1]School of Physics, University of Dublin, Dublin, Ireland; [2]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [3]Glasgow Experimental MRI Centre, University of Glasgow, Glasgow, United Kingdom; [4]Centre for Advanced Medical Imaging, St. James's Hospital, Dublin, Ireland

16:36 **471**. **A Dual Resonator System For Whole-Body Sodium-MRI At 3T**
Friedrich Wetterling[1], Andre Rennings[2], Raffi Kalayciyan[1], Dominique M. Corteville[1], Simon Konstandin[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]General & Theoretical Electrical Engineering, University of Duisburg-Essen, Duisburg, Germany

16:48 **472**. **A 30-Channel Phased Array for Oxygen-17 (^{17}O) Brain MRI at 7 Tesla**
Florian Martin Meise[1], Jens Groebner[1], Armin M. Nagel[1], Reiner Umathum[1], Helmut Stark[2], Stefan H. Hoffmann[1], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Stark Contrast GmbH - MR Coils Research, Erlangen, Germany

17:00 **473**. ***In Vivo* Relaxation Parameters of Oxygen-17 (^{17}O)**
Stefan H. Hoffmann[1], Armin M. Nagel[1], Florian M. Meise[1], Reiner Umathum[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

17:12 **474**. **Exploring the New Utility of the ^{17}O-MRS Imaging Technique for Studying $CMRO_2$ & Perfusion in Stroke Mice**
Xiao-Hong Zhu[1], James Chen[2], Tsang-Wei Tu[2], Wei Chen[1], Sheng-Kwei Song[2]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota, Minneapolis, MN, 55455, USA; [2]Department of Radiology, Washington University School of Medicine, St Louis, MO 63110, USA, USA

17:24 **475**. **Echo-based Single Point Imaging: A Novel Pulsed EPR Imaging Modality for High Spatial & Spectral Resolution for *In Vivo* Quantitative Oximetry**
Sankaran Subramanian[1], Nallathamby Devasahayam[1], Shingo Matsumoto[1], Murali C. Krishna[1]
[1]National Cancer Institute, National Institute of Health, Bethesda, MD, USA

17:36 **476**. **Rapid *In Vivo* Quantification of Oxygen Concentration in Blood Flow with a Fluorine Nanoparticle Reporter & a Novel Blood Enhanced Saturation Recovery (BESR) Sequence**
Lingzhi Hu[1], Junjie Chen[1], Shelton D. Caruthers[1], Gregory M. Lanza[1], Samuel A. Wickline[1]
[1]Washington University, St. Louis, MO, USA

17:48 **477**. ***In-Vivo* ^{19}F Imaging of 5-Fluorouracil & its Metabolites in Rat by Two-Element Phased-Array Coil**
Yosuke Otake[1], Koji Hirata[1], Yoshihisa Soutome[1], Yoshitaka Bito[1]
[1]Hitachi, Ltd., Central Resaerch Laboratory, Kokubunji, Tokyo, Japan

Parallel Imaging

Room 518-A-C 16:00-18:00 *Moderators:* R. Todd Constable & Ricardo Otazo

16:00 **478**. **Wave-CAIPIRHINA: A Method For Reducing G-Factors in Highly Accelerated 3D Acquisitions**
Kawin Setsompop[1,2], Borjan A. Gagoski[3], Johnathan Polimeni[1,2], Lawrence L. Wald[1,4]
[1]Radiology, A. A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, USA; [2]Harvard Medical School, Boston, MA, USA; [3]Department of Electrical Engineering & Computer Science, MIT, Cambridge, MA, USA; [4]Harvard-MIT Division of Health Sciences & Technology, MIT, Cambridge, MA, USA

16:12 **479**. **An Eigen-Vector Approach to AutoCalibrating Parallel MRI, Where SENSE Meets GRAPPA**
Michael Lustig[1], Peng Lai[2], Mark Murphy[1], Shreyas Mark Vasanawala[3], Michael Elad[4], Jian Zhang[5], John Pauly[5]
[1]Electrical Engineering & Computer Science, University of California Berkeley, Berkeley, CA, USA; [2]ASL West, GE Healthcare, Menlo Park, CA, USA; [3]Radiology, Stanford University, Stanford, CA, USA; [4]Computer Science, Technion IIT, Haifa, Israel; [5]Electrical Engineering, Stanford University, Stanford, CA, USA

16:24 **480**. **Multi-Dimensional Encoded (MDE) Magnetic Resonance Imaging**
Fa-Hsuan Lin[1,2], Thomas Witzel[2], Aapo Nummenmaa[2,3], Panu Vesanen[3], Risto J. Ilmoniemi[3], John W. Belliveau[2]
[1]National Taiwan University, Taipei, Taiwan; [2]Martinos Center, Massachusetts General Hospital, Charlestown, MA, USA; [3]Department of Biomedical Engineering & Computational Science (BECS), Aalto University, Espoo, Finland

16:36 **481**. **K-Space Based Image Reconstruction of MRI Data Encoded with Ambiguous Gradient Fields**
Gerrit Schultz[1], Daniel Gallichan[1], Hans Weber[1], Walter Witschey[1], Matthias Honal[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]University Medical Center Freiburg, Freiburg, Germany

16:48 **482**. **A Performance Measure for MRI with Nonlinear Encoding Fields**
Kelvin Layton[1,2], Mark Morelande[1], Peter Mark Farrell[1], Bill Moran[1], Leigh Andrea Johnston[1,3]
[1]Electrical & Electronic Engineering, The University of Melbourne, Melbourne, Australia; [2]NICTA Victorian Research Laboratory, Melbourne, Australia; [3]Howard Florey Institute, Australia

17:00 **483**. **Post-Cartesian Calibrationless Parallel Imaging Reconstruction by Structured Low-Rank Matrix Completion**
Michael Lustig[1]
[1]Electrical Engineering & Computer Science, University of California Berkeley, Berkeley, CA, USA

17:12 **484**. **Rapid, Self-calibrated Parallel Reconstruction for Variable Density Spiral with GROWL**
Wei Lin[1], Peter Börnert[2], Feng Huang[1], George R. Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Philips Healthcare, Gainesville, FL, USA; [2]Philips Research Europe, Hamburg, Germany

17:24 **485**. **Parallel Imaging with Nonlinear Reconstruction using Variational Penalties**
Florian Knoll[1], Christian Clason[2], Kristian Bredies[2], Martin Uecker[3], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria; [2]Institute for Mathematics & Scientific Computing, University of Graz, Graz, Austria; [3]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany

17:36 **486**. **Iterative Self-Consistent Magnetic Resonance Inverse Imaging**
Tsung-Min Huang[1], Thomas Witzel[2], Wen-Jui Kuo[3], Fa-Hsuan Lin[1,2]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Martinos Center, Massachusetts General Hospital, Charlestown, MA, USA; [3]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan

17:48 **487**. **Derivative Encoding for Parallel Imaging**
Jun Shen[1]
[1]NIMH, Bethesda, MD, USA

RF Safety at High Field: SAR

Room 520B-F 16:00-18:00 *Moderators:* Blaine A. Chronik & Christopher M. Collins

16:00 **488**. **Introduction**
Christopher M. Collins

16:12 **489**. **Validation & Comparison of Patient-Specific SAR Models**
Hanno Homann[1], Peter Börnert[2], Kay Nehrke[2], Holger Eggers[2], Olaf Dössel[1], Ingmar Graesslin[2]
[1]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [2]Philips Research Europe, Hamburg, Germany

16:24 **490**. **Assessment of RF Safety of Transmit Coils at 7 Tesla by Experimental & Numerical Procedures**
Andreas Klaus Bitz[1,2], Oliver Kraff[1,2], Stephan Orzada[1,2], Stefan Maderwald[1,2], Irina Brote[1,2], Sören Johst[1,2], Mark E. Ladd[1,2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany

16:36 **491**. **Do Constraints On $|B_1+|$ Also Constrain $|E|$ & SAR in High Field MR?**
Leeor Alon[1,2], Cem Murat Deniz[1,2], Daniel K. Sodickson[1,2], Yudong Zhu[1,2]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, USA; [2]Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, NY, USA

16:48 **492**. **SAR Analysis of Parallel Transmission in Cardiac Imaging at 7T**
Xiaoping Wu[1], Sebastian Schmitter[1], J. Tian[1], J. T. Vaughan[1], Kamil Ugurbil[1], P.-F. Van de Moortele[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, USA

17:00 **493**. **Quality Assessment of B_1-Based Local SAR Estimation As a Function of Position Within a Parallel Transmit Coil At 3T**
Stefanie Buchenau[1], Martin Haas[1], Juergen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

17:12 **494**. **Single Element SAR Measurements in a Multi-Transmit System**
Ulrich Katscher[1], Christian Findeklee[1], Tobias Voigt[1]
[1]Philips Research Europe, Hamburg, Germany

17:24 **495**. **Generalized Model Compression Method For Peak Local SAR Estimation**
Joonsung Lee[1], Matthias Gebhardt[2], Lawrence L. Wald[3,4], Elfar Adalsteinsson[1,4]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA; [2]Siemens Healthcare, Erlangen, Germany; [3]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA; [4]Harvard-MIT Division of Health Sciences & Massachusetts Institute of Technology, Cambridge, MA, USA

17:36 **496**. **A Multi-Channel, High Dynamic Range, Real Time RF Power Deposition Monitor**
AbdELMonem M. El-Sharkawy[1], Di Qian[1,2], Paul A. Bottomley[1,2], William A. Edelstein[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, USA; [2]Electrical & Computer Enginnering, Johns Hopkins University, Baltimore, MD, USA

17:48 **497**. **Total Proton Resonance Frequency Shift Coefficient in the Porcine Brain to Image Radiofrequency Heating in Ultra-High Field MRI**
Devashish Shrivastava[1], Ute Goerke[1], Shalom Michaeli[1], Jingeng Tian[1], Lance DelaBarre[1], John T. Vaughan[1]
[1]University of Minnesota, Minneapolis, MN, USA

Weak in the Knees

Room 710A 16:00-18:00 *Moderators:* Jiang Du & Ravinder R. Regatte

16:00 **498**. **Cartilage Quality Assessment using gagCEST & Sodium MRI at 7 Tesla**
Benjamin Schmitt[1], Stefan Zbyn[2,3], David Stelzeneder[2], Vladimir Jellus[4], Dominik Paul[4], Lars Lauer[4], Peter Bachert[1], Siegfried Trattnig[2]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Radiology, Medical University of Vienna, Vienna, Austria; [3]Orthopedics, Medical University of Vienna; [4]Siemens Healthcare, Erlangen, Germany

16:12 **499**. **Quantitative & Morphologic Evaluation of Cartilage Repair in an Equine Model**
Sarah Pownder[1], Matthew F. Koff[1], Lisa Fortier[2], Emme Castiglione[3], Ryan Saska[3], Gino Bradica[3], Kira Novakofski[2], Hollis G. Potter[1]
[1]Department of Radiolgy & Imaging - MRI, Hospital for Special Surgery, New York, NY, USA; [2]College of Veterinary Medicine, Cornell University, Ithaca, NY, USA; [3]Kensey Nash Corporation

16:24 **500**. **Simultaneous Estimation of T_2 & ADC in Human Articular Cartilage *In Vivo* with a Modified 3D DESS Sequence at 3T**
Ernesto Staroswiecki[1,2], Kristin Lee Granlund[1,2], Marcus Tedrow Alley[1], Garry Evan Gold[1], Brian Andrew Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Electrical Engineering, Stanford University, Stanford, CA, USA

16:36 **501**. ***In Vivo* DTI of Articular Cartilage: A New Set of Biomarkers For the Early Diagnosis of Osteoarthritis**
Jose G. Raya[1], Annie Horng[2], Olaf Dietrich[2], Svetlana Krasnokutsky, Luis S. Beltran, Maximilian F. Reiser[2], Michael Recht, Michael Recht, Christian Glaser
[1]Radiology, New York University Langone Medical Center, New York, NY, USA; [2]University of Munich

16:48 **502**. **Clinical Performance of 3D-FSE-Cube in the Upper Extremity**
Lauren Michelle Shapiro[1], Deborah M. Lee[1], Karthryn J. Stevens[1], Weitian Chen[2], Anja C. Brau[2], Brian A. Hargreaves[3], Garry Evan Gold[1,4]
[1]Department of Radiology, Stanford University, Stanford, CA, USA; [2]Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [3]Department of Radiology, Stanford University, Stanford University, CA, USA; [4]Department of Bioengineering, Stanford University, Stanford, CA, USA

17:00 **503**. **Rapid Multi-Planar Assessment of the Articular Cartilage of the Knee Joint using Isotropic Resolution VIPR-ATR Imaging**
Richard Kijowski[1], Jessica Klaers[2], Kenneth Lee[1], Humberto Rosas[1], Larry Hernandez[2], Walter Block[2,3]
[1]Radiology, University of Wisconsin, Madison, WI, USA; [2]Medical Physics, University of Wisconsin, Madison, WI, USA; [3]Biomedical Engineering, University of Wisconsin, Madison, WI, USA

17:12 **504**. **A B_1-insensitive High Resolution 2D T_1 Mapping Pulse Sequence for Radial dGEMRIC of the Hip at 3T**
Riccardo Lattanzi[1,2], Christian Glaser[1,2], Artem V. Mikheev[2], Catherine Petchprapa[2], David J. Mossa[2], Soterios Gyftopoulos[2], Henry Rusinek[2], Michael Recht[2], Daniel Kim[1,2]
[1]Center for Biomedical Imaging, New York University Langone Medical Center, New York, NY, USA; [2]Radiology, New York University Langone Medical Center, New York, NY, USA

17:24 **505**. **Parametric Relaxation Measurements in Bovine Patellar Cartilage**
Wen Ling[1], Elizabeth Arendt[2], Denis Clohisy[2], Silvia Mangia[1], Shalom Michaeli[1], Michael Garwood[1], Jutta Elllermann[1]
[1]Center for Magnetic Resonance Research, Univ. of Minnesota, Minneapolis, MN, USA; [2]Dept. of Orthopedic Surgery, Univ. of Minnesota, Minneapolis, MN, USA

17:36 **506**. **Simultaneous Acquisition of T_1rho & T_2 Quantification in Cartilage – Reproducibility & Diurnal Variation**
Xiaojuan Li[1], Joseph Schooler[1], Fei Liang[1], Keerthi Shet Vishnudas[1], Weitian Chen[2], Suchandrima Banerjee[2], Sharmila Majumdar[1]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA

17:48 **507**. **Are Sports Good For Your Knees? An MRI Evaluation of the Effects of Basketball On Knee Health in Division I Collegiate Athletes**
Melissa Ann Vogelsong[1,2], George Pappas[3], Ernesto Staroswiecki[1,4], Neal K. Bangerter[5], Eric Han[6], Brian A. Hargreaves[1], Hillary J. Braun[1], Marc R. Safran[3], Garry E. Gold[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]UCSF School of Medicine, San Francisco, CA, USA; [3]Orthopaedic Surgery, Stanford University; [4]Electrical Engineering, Stanford University; [5]Electrical Engineering, Brigham Young University; [6]GE Global Applied Sciences Laboratory, Menlo Park, CA

Breast MRI - Clinical & Technical

Room 710B 16:00-18:00 *Moderators:* Bruce L. Daniel & Brian A. Hargreaves

16:00 **508**. **Optimization of the Percent Enhancement Threshold for Breast MRI Tumor Volume Measurement During Neoadjuvant Treatment of Breast Cancer for Predicting Recurrence Free Survival Time**
David C. Newitt[1], Savannah C. Partridge[2], Belinda Chang[1], Bonnie N. Joe[1], Nola Hylton[1]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, CA, USA; [2]Radiology, University of Washington, Seattle, WA

16:12 **509**. **ADC Measurements of Malignant & Benign Breast Tumors & their Correlation to Prognostic Markers: Preliminary 3T Study**
Sunitha Thakur[1,2], Sharp Malak[2], Sanjay Annarao[1], Dilip Giri[3], Jason Koutcher[1,2], Elizabeth Morris[2]
[1]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, NY, USA; [2]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, USA; [3]Pathology, Memorial Sloan Kettering Cancer Center

16:24 **510**. **Assessment of *In Vivo* DCIS Grade: A Model Incorporating Dynamic Contrast Enhanced & Diffusion Weighted Imaging Parameters on Breast MRI**
Habib Rahbar[1,2], Savannah Partridge[1,2], Wendy DeMartini[1,2], Franklin Liu[1,2], Robert Gutierrez[1,2], Kimberly Allison[3], Sue Peacock[1,4], Constance Lehman[1,2]
[1]Radiology, University of Washington, Seattle, WA, USA; [2]Radiology, Seattle Cancer Care Alliance, Seattle, WA, USA; [3]Pathology, University of Washington, Seattle, WA; [4]Radiology, Seattle Cancer Care Alliance, Seattle , WA, USA

16:36 **511**. **Potential of Diffusion MRI As a Biomarker of Low-Risk DCIS**
Mami Iima[1], Denis Le Bihan[2,3], Tomohisa Okada[1], Koji Fujimoto[1], Shotaro Kanao[1], Shiro Tanaka[4], Kaori Togashi[1]
[1]Dept. of Diagnostic Radiology, Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan; [3]Neurospin, CEA-Saclay Center, Gif-sur-Yvette Cedex, France; [4]The Translational Research Center, Kyoto University Hospital, Kyoto, Japan

16:48 **512**. **Differentiating between Benign & Malignant Breast Tumors using the Choline Concentration As Determined by Chemical Shift Imaging**
Paul E. Sijens[1,2], Monique D. Dorrius[1], Ruud M. Pijnappel[1], Martine C. Jansen-van der Weide[1], Peter Kappert[1], Matthijs Oudkerk[1,2]
[1]UMCG, Groningen, Netherlands; [2]CMI, Groningen, Netherlands

17:00 **513**. **High-Speed MR Spectroscopic Imaging of Total Choline in Breast Cancer & Healthy Controls at 3T: A Feasibility Study**
Chenguang Zhao[1], Patrick Bolan[2], Melanie Royce[3], Lavneeth Lakkadi[2], Sang-Joon Lee[4], Steve Eberhard[5], Stefan Posse[1,6]
[1]Neurology, University of New Mexico, Albuquerque, NM, USA; [2]CMRR, University of Minnesota, Minneapolis, MN, USA; [3]Medical Oncology, University of New Mexico, Albuquerque, NM, USA; [4]Internal Medicine, University of New Mexico, Albuquerque, NM, USA; [5]Radiology, University of New Mexico, Albuquerque, NM, USA; [6]Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, USA

17:12 **514**. **Visualizing Collagen I Fiber Architecture in Human Breast Tumor Specimens using Diffusion Tensor Imaging**
Samata M. Kakkad[1], Jiangyang Zhang[1], Lu Jiang[1], Zaver M. Bhujwalla[1], Kristine Glunde[1]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, USA

17:24 **515**. **Breast Cancer Detection & Diagnosis based on Diffusion Tensor Imaging**
Edna Furman-Haran[1], Erez Eyal[1], Myra Shapiro-Feinberg[2], Dov Grobgeld[1], talia Golan[3], Yaacov Itzchak[3], Raphael Catane[3], Moshe Papa[3], Hadassa Degani[1]
[1]The Weizmann Institute of Science, Rehovot, Israel; [2]Meir Medical Center, Israel; [3]Sheba Medical Center, Israel

17:36 **516**. **Menstrual Cycle Related Fluctuations in Breast Density Evaluated using 3D MRI**
Siwa Chan[1], Jeon-Hor Chen[2,3], Jia-Pei Wu[3], Fu-Ju Lei[3], Muqing Lin[2], Orhan Nalcioglu[2], Min-Ying L. Su[2]
[1]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan; [2]Center for Functional Onco-Imaging & Department of Radiological Science, University of California Irvine, Irvine, CA, USA; [3]Department of Radiology, China Medical University Hospital, Taichung, Taiwan

17:48 **517**. **T_2 Values of Breast Lymph Nodes At 1.5 T in Patients Pre & Post Subcutaneous Injection of Superparamagnetic Iron Oxide - Initial Results From a Sentinel Node Negative Population**
Laura Johnson[1], Geoff Charles-Edwards[2], Jyoti Parikh[3], Margaret Hall-Craggs[4], Tobias Schaeffter[5], Michael Douek[1]
[1]Research Oncology, Kings College London, London, England, United Kingdom; [2]Medical physics, Guy's & St Thomas' NHS Foundation Trust; [3]Radiology, Guys and St Thomas' NHS Foundation Trust; [4]Imaging & Medical Physics & Bio−Engineering, University College London; [5]Imaging sciences, Kings College London

Study Groups
Cardiac MR & MR Flow & Motion Quantitation

Room 510 18:15-20:15

Study Groups
MR in Drug Research

Room 511A-C 18:15-20:15

Study Groups
Molecular & Cellular Imaging

Room 511D-F 18:15-20:15

Study Groups
Musculoskeletal MR

Room 518A-C 18:15-20:15

Study Groups
MR of Cancer

Room 520 B-F 18:15-20:15

Study Groups
High Field Systems & Applications

Room 710A 18:15-20:15

Study Groups
Perfusion

Room 710B 18:15-20:15

Sunrise Educational Course
Hot Topics in Body MRI

Room 510 07:00-08:00 *Moderators:* Shahid M. Hussain & Bachir Taouli

Treated Liver Lesions & Small Renal Lesions

07:00 **MRI Appearance of Treated Liver Lesions**
Ihab Kamel

07:30 **Characterization of Small Renal Lesions: Problem Solving with MRI**
Gary M. Israel

Sunrise Educational Course
Image Analysis

Room 511A-C 07:00-08:00 *Moderator:* Henry Rusinek

07:00 **Analysis of Texture: Theory**
Andrzej Materka

07:30 **Analysis of Texture: Practice**
Arvid Lundervold

Sunrise Educational Course
Translational Imaging: Animal Models in MSK

Room 511D-F 07:00-08:00 *Moderators:* Bernard J. Dardzinski & Ravinder R. Regatte

07:00 **Tendon & Enthesis Models**
Scott A. Rodeo

07:30 **Muscle Models**
Bruce M. Damon

Sunrise Educational Course
Fast & Furious: The New Era of Rapid Imaging

Room 512A-G 07:00-08:00

Fast Neuroimaging

07:00 **Current Clinical Practices & Needs**
John P. Karis

07:30 **Emerging Techniques**
James G. Pipe

Sunrise Educational Course
Molecular Imaging & Contrast Agents

Room 513A-D 07:00-08:00

07:00 **Physico Chemical Principles CEST**
Robert E. Lenkinski

07:30 **Preclinical & Clinical Applications of CEST**
Michael T. McMahon

Sunrise Educational Course
Neuro MRI from Start to Finish

Room 516A-C 07:00-08:00

Mature

07:00 **Normal Brain**
Marco Essig

07:30 **MRI of Pathological Aging Brain**
Yukio Miki

Sunrise Educational Course
Cardiovascular MR Imaging: Bridging the Gap Between Research & Clinical Problems

Room 518A-C 07:00-08:00

Lumen & Vessel Wall Imaging

07:00 **Coronary Arteries**
René M. Botnar

07:20 **Carotid Arteries**
Bruce A. Wasserman

07:40 **Peripheral Arteries**
James C. Carr

Sunrise Educational Course
MRS - Metabolite Profiling & Metabolism

Room 520B-F 07:00-08:00 *Moderators:* Kevin M. Brindle & Ivan Tkac

07:00 **Tumor Phospholipid Metabolism**
Franca Podo

07:30 **MRS in Cancer Research**
Carles Arús

Sunrise Educational Course
Image Reconstruction

Room 710A 07:00-08:00

Sparse Data

07:00 **Compressed Sensing & HYPR**
Julia V. Velikina

07:30 **Exploiting Spatiotemporal Correlations for Dynamic Imaging**
Pablo Irarrazaval

Sunrise Educational Courses
Absolute Beginners' Guide to Anatomical & Functional MRI of the Brain

Room 710B 07:00-08:00 *Moderator:* Ziad S. Saad

07:00 **Registration, Segmentation & Atlases**
D. Louis Collins

07:30 **Surface, Edge & Voxel-Based Analyses**
Douglas N. Greve

Plenary Session

Room Plenary Hall 08:00-08:30 *Chair:* Debiao Li, ISMRM President

08:00 **Young Investigator Awards & Poster Awards**

2011 Lauterbur Lecture

Room Plenary Hall 08:30-09:10 *Chair:* Debiao Li, ISMRM President

08:30 **fMRI at 20 – Has It Changed the World?**
Bruce R. Rosen, M.D., Ph.D.
Massachusetts General Hospital, Charlestown, MA, USA

Plenary Lectures
Reducing Radiation: MR & CT in the Era of Radiation Dose Concerns

Room Plenary Hall 09:10-10:10 *Organizers:* Thoralf Niendorf & Bachir Taouli

09:10 **518**. **CT Radiation Exposure: How Bad is it & How Can it Be Reduced in Practice?**
Aaron D. Sodickson
Brigham & Women's Hospital, Boston, MA, USA

The objective of this talk is to convey some understanding about the approximate levels of risk imparted by CT, and the factors influencing these risks. I will review common radiation terminology, typical dose values for common CT exam types, and technology and patient factors that influence dose. I will demonstrate how to make order of magnitude cancer risk estimates using the most common Linear-No-Threshold risk model. Finally, we will explore practical opportunities to reduce radiation exposure, including potential opportunity areas where MRI may play a role if the common challenges of access, exam duration, and technical complexity can be overcome.

09:30 **519**. **A Hard Look At MR: is It Simple Enough & Fast Enough to Fill the Gap?**
Elmar M. Merkle
Duke University Medical Center, Durham, NC, USA

This plenary session will focus on abdominal and pelvic CT and MR imaging with an emphasis on: 24/7 availability of MR and CT, robustness of the data acquisition, vulnerability to artifacts causing substantial study limitations, in room time versus sequence acquisition time, lack of standardized sequence protocols, and the MR incompatible patient.

09:50 **520**. **A Look Ahead: How Will New MR Techniques & Technologies Change the Landscape?**
Heinz-Peter W. Schlemmer
German Cancer Research Centre (DKFZ), Heidelberg, Germany

Through the persistent progress in medicine over the last 4 centuries MR has become an indispensible tool for basic, translational, clinical research and every-day clinical application. the capability to comprehensively visualize morphology, function and metabolism without necessitating ionization radiation essentially drives the ongoing progress of personalized medicine. But the whole extent of potentials for prevention, diagnosis and therapy of diseases by MR will only be exploited if a team of medical doctors, physicists, biologists, chemists, computer specialists, etc. efficiently works together in optimized processes. Furthermore, Radiologists will have to use "spacey" communication technology to handle the increased amount and complexity of information.

Hands-On Workshop 1 (Repeat)
Neuro & Musculoskeletal Protocol Optimization
GE Healthcare

Room 520A-D 10:30-12:30

Hands-On Workshop 1 (Repeat)
Neuro & Musculoskeletal Protocol Optimization
Siemens

Room 515A-C 10:30-12:30

Connectivity

Room 510 10:30-11:30 *Moderators:* Kaj M. Ericson & Tobias Schmidt-Wilcke

10:30 **fcMRI During Development**
Christopher D. Smyser

11:00 **fcMRI Connectivity in Disease**
Tarek Yousry

MR-Guided Focused Ultrasound, Thermotheraphy & Thermometry

Room 511A-C 10:30-12:30 *Moderators:* Chrit T. Moonen & Rudolf Stollberger

10:30 **521**. **Hybrid Referenceless & Multi-Baseline Thermometry For Mrgfus Brain Applications**
Viola Rieke[1], Beat Werner[2], Nathan McDannold[3], William Grissom[4], Ernst Martin[2], Kim Butts Pauly[1]
[1]Department of Radiology, Stanford University, Stanford, CA, USA; [2]MR-Center, University Children's Hospital Zurich, Zurich, Switzerland; [3]Department of Radiology, Brigham & Women's Hospital, Boston, MA, USA; [4]Imaging Technologies Laboratory, GE Global Research, Munich, Germany

10:42 **522**. **Dynamic Study of Tissue Penetration For MR Contrast Agents of Different Sizes Following Ultrasound Induced Blood Brain Barrier Disruption in Rodent Models**
Benjamin Marty[1], Benoit Larrat[1], Caroline Robic[2], Mathieu Pernot[3], Mickael Tanter[3], Marc Port[2], Philippe Robert[2], Denis Le Bihan[1], Franck Lethimonnier[1], Sébastien Mériaux[1]
[1]CEA/DSV/I2BM/Neurospin, Gif-sur-Yvette, France; [2]Research Division, Guerbet, Roissy Charles de Gaulle, France; [3]Institut Langevin, Paris, France

10:54 **523**. **Pressure & Microbubble-Size Dependence of the FUS-Induced Blood Brain Barrier Opening Reversibility *In Vivo***
Gesthimani Samiotaki[1], Yao-Sheng Tung[1], Fotios Vlachos[1], Elisa Konofagou[1,2]
[1]Department of Biomedical Engineering, Columbia University, New York, NY, USA; [2]Department of Radiology, Columbia University, New York, NY, USA

11:06 **524**. **ARFI-Prepared MR-Guided Transcostal HIFU in Sheep Liver *In Vivo* using a High Resolution Hybrid ARFI/MRT GRE-EPI Sequence**
Vincent Auboiroux[1], Magalie Viallon[1], Jean-Noël Hyacinthe[1], Joerg Roland[2], Lorena Petrusca[1], Thomas Goget[1], Patrick Gross[2], Christoph D. Becker[1], Rares Salomir[1]
[1]Radiology Dept, Geneva University Hospital, Geneva, Switzerland; [2]Siemens Healthcare, Erlangen, Germany

11:18 **525**. **Real Time Respiration Based Steering for High Intensity Focused Ultrasound in the Liver**
Andrew B. Holbrook[1,2], Charles L. Dumoulin[3], Juan M. Santos[4], Yoav Medan[5], Kim Butts Pauly[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Bioengineering, Stanford University, Stanford, CA, USA; [3]University Cincinnati College of Medicine, Imaging Research Center, Cincinnati, OH, USA; [4]HeartVista, Palo Alto, CA, USA; [5]InSightec, Tirat Carmel, Israel

11:30 **526**. **Three-Dimensional Motion Analysis of Hepatic Tissue for Focal Spot Tracking Based on Portal Vain Structure**
Etsuko Kumamoto[1,2], Yoshie Takao[3], Daisuke Kokuryo[4], Toshiya Kaihara[2], Kagayaki Kuroda[5,6]
[1]Information Science & Technology Center, Kobe University, Kobe, Japan; [2]Graduate School of System Infomatics, Kobe University, Kobe, Japan; [3]Graduate School of Engineering, Kobe University, Kobe, Japan; [4]Molecular Imaging Center, National Institute of Radiological Sciences, Chiba, Japan; [5]Graduate School of Engineering, Tokai University, Hiratsuka, Japan; [6]Medical Device Development Center, Foundation for Biomedical Research & Innovation, Kobe, Japan

11:42 **527**. **Reference-Less PRFS MR Thermometry of the Whole Liver Based On Near-Harmonic Calculation: Clinical Evaluation From LITT Ablation Data**
Antje Kickhefel[1], Christian Rosenberg[2,3], Joerg Roland[4], Patrick Gross[4], Fritz Schick[5], Norbert Hosten[2], Rares Salomir[6]
[1]Diagnostic & Interventional Radiology, Eberhard-Karls-University Tübingen, Tübingen, Baden-Württemberg, Germany; [2]Diagnostic Radiology & Neuroradiology, Ernst-Moritz-Arndt-Universität Greifswald, Greifswald, Germany; [3]Diagnostic Radiology & Neuroradiology, Greifswald, Germany; [4]Siemens Healthcare, Erlangen, Bavaria, Germany; [5]Diagnostic & Interventional Radiology, Eberhard-Karls-University Tübingen, Tübingen, Baden-Würtemberg, Germany; [6]Radiology, University Hospitals of Geneva, Geneva, Switzerland

11:54 **528**. **Feasibility of Temperature Imaging of Fat & Water Based on Methylene T_1 & Water Proton Resonance Frequency**
Kagayaki Kuroda[1,2], Mie Kee Lam[3], Taku Iwabuchi[1], Makoto Obara[4], Masatoshi Honda[5], Kensuke Saito[1], Yutaka Imai[5]
[1]Graduate School of Engineering, Tokai University, Hiratsuka, Kanagawa, Japan; [2]Medical Device Development Center, Foundation for Biomedical Research & Innovation, Kobe, Hyogo, Japan; [3]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [4]MR Marketing, Philips Electronics Japan Medical Systems, Shinagawa, Tokyo, Japan; [5]Department of Radiology, Tokai University, Isehara, Kanagawa, Japan

12:06 **529**. **Frequency-Selective Asymmetric Spin-Echo EPI with Parallel Imaging For Fast Internally Referenced MR Thermometry**
Markus Nikola Streicher[1], Andreas Schäfer[1], Dirk Müller[1], Carsten Kögler[1], Enrico Reimer[1], Bibek Dhital[1], Robert Trampel[1], Debra Rivera[1], André Pampel[1], Dimo Ivanov[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

12:18 **530**. **Multi-Shot High-Speed 3D-EPI Thermometry using a Hybrid Method Combining 2DRF Excitation, Parallel Imaging & UNFOLD**
Chang-Sheng Mei[1,2], Onur Afacan[2,3], Jing Yuan[4], Bruno Madore[2], Lawrence Panych[2], Nathan McDannold[2]
[1]Physics, Boston College, Chestnut Hill, MA, USA; [2]Radiology, Harvard Medical School, Brigham & Women's Hospital, Boston, MA, USA; [3]ECE, Northeastern University, Boston, MA, USA; [4]The Chinese University of Hong Kong

Advances in Image Analysis

Room 511D-F 10:30-12:30 *Moderators:* Shannon C. Agner & Benoit Scherrer

10:30 **531**. **Quantitative MRI Biomarkers for Knee Pain & Other Symptoms**
Jose Tamez-Pena[1], Patricia Gonzalez[2], Joshua Farber[2], Edward Schreyer[2], Saara Totterman[2], Victor Trevino[1]
[1]Biomedicine, ITESM, Monterrey, Nuevo Leon, Mexico; [2]Qmetrics Technologies, Rochester, NY, USA

10:42 **532**. **Measuring the Volumes & Thickness of Hippocampal Subfields *In Vivo* using Automatic Segmentation of T_2-Weighted MRI: A Pilot Evaluation Study**
Paul A. Yushkevich[1], Hongzhi Wang[1], John Pluta[1], Sandhitsu R. Das[1], Brian Avants[1], Michael Weiner[2], Susanne Mueller[2], David Wolk[3]
[1]PICSL, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Radiology, University of California, San Francisco, San Francisco, CA, USA; [3]Department of Neurology, University of Pennsylvania, Philadelphia, PA, USA

10:54 **533**. **MTR at 3T in the Hippocampus – Validation of Automated Post-Analysis & Comparison of Quantification Metrics**
Shawn Sidharthan[1], Ryan Joseph Hutten[1], Christopher Glielmi[2], Hongyan Du[3], Fiona Malone[1], Ann Ragin[1,4], Robert R. Edelman[1], Ying Wu[1,5]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, USA; [2]MR Research & Development, Siemens Healthcare, Chicago, IL, USA; [3]Center for Clinical Research Informatics, NorthShore University HealthSystem, Evanston, IL, USA; [4]Radiology, Northwestern University, Chicago, IL, USA; [5]Radiology, University of Chicago, Chicago, IL, USA

11:06 **534**. **Analysis of Hippocampal Shape in Children using a Surface-to-Centerline Distance Method & Template-Based Surface & Volumetric Non-Rigid Registration Methods**
Muqing Lin[1], Kevin Head[2], Claudia Buss[2], Tugan Muftuler[1], Elysia Poggi Davis[1], Curt A. Sandman[2], Orhan Nalcioglu[1], Min-Ying Lydia Su[1]
[1]Tu & Yuen Center for Functional Onco-Imaging & Department of Radiological Sciences, University of California, Irvine, CA, USA; [2]Department of Psychiatry & Human Behavior, University of California, Irvine, CA, USA

11:18 **535**. **Comparison of Tissue Classification Models for Automatic Brain MR Segmentation**
Delphine Ribes[1,2], Bénédicte Mortamet[1], Meritxell Cuadra Bach[3], Clifford R. Jack[4], Reto Meuli[5], Gunnar Krueger[1], Alexis Roche[1]
[1]Advanced Clinical Imaging Technology, Siemens Medical Solutions-CIBM, Lausanne, Switzerland; [2]Radiology, UNIL, Lausanne, Switzerland; [3]Signal Processing Laboratory (LTS5), EPFL, Lausanne, Switzerland; [4]Mayo Clin, Rochester, MN USA; [5]Centre Hospitalier Universitaire Vaudois & University of Lausanne, Lausanne, Switzerland

11:30 **536**. **Using Multi-Parametric Quantitative MRI to Model Myelin in the Brain**
J. B. M. Warntjes[1,2], J. West[1,3], O. Dahlqvist-Leinhard[1,3], G. Helms[4], A.-M. Landtblom[5], P. Lundberg[6,7]
[1]Linköping University, Center for Medical Image Science & Visualization, Linköping, Sweden; [2]Department of Medicine & Health, Division of Clinical Physiology, Linköping, Sweden; [3]Department of Medicine & Health, Division of Radiation Physics, Linköping, Sweden; [4]University Medical Center, MR-Research in Neurology & Psychiatry, Göttingen, Germany; [5]Department of Clinical Neuroscience, Linköping, Sweden; [6]Linköping University, Dept of Radiation Physics & Dept of Radiology, IMH, University of Linkoping, Linköping, Sweden; [7]University Hospital of Linköping, Dept of Radiation Physics & Dept of Radiology, CKOC, University Hospital of Linkoping, Linköping, Sweden

11:42 **537**. **Orthogonal Super Resolution Reconstruction for 3D Isotropic Imaging in 9.4T MRI**
Niranchana Manivannan[1], Bradley D. Clymer[1], Anna Bratasz[2,3], Kimerly A. Powell[2,3]
[1]Department of Electrical & Computer Engineering, The Ohio State University, Columbus, OH, USA; [2]Small Animal Imaging Shared Resource, The Ohio State University; [3]Department of Biomedical Informatics, The Ohio State University, Columbus, OH, USA

11:54 **538**. **Addressing Positioning Induced Variabillity in VBM Analyses**
Costin Tanase[1], Tyler Lesh[1], Cameron Carter[1]
[1]Psychiatry & Behavioral Sciences, University of California at Davis, Sacramento, CA, USA

12:06 **539**. **Training-Related Cortical Thickness Changes**
Jan Scholz[1], Miriam Klein[2], Heidi Johansen-Berg[1]
[1]University of Oxford, FMRIB Centre, Oxford, United Kingdom; [2]University College London, Sobell Department of Motor Neuroscience & Movement Disorders, London

12:18 **540**. **A General-Purpuse Learning-Based Wrapper Method to Correct Systematic Errors in Automatic Image Segmentation: Consistently Improved Performance in Hippocampus, Cortex & Brain Segmentation**
Hongzhi Wang[1], Sandhitsu R. Das[1], Murat Altinay[1], John Pluta[1], Jung Wook Suh[1], caryne craige[1], Brian Avants[1], Paul Yushkevich[1]
[1]PICSL, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA

Iron Detection & Quantification

Room 512A-G 10:30-12:30

10:30 **Tissue Iron Detection & Quantification with MRI**
Jens H. Jensen

10:55 **Clinical Introduction**
John F. Schenck

11:05 **Brain Iron Deposition**
Joanna F. Collingwood

11:30 **Cardiac Iron Deposition**
Claudia M. Hillenbrand

11:55 **Liver Iron**
Bachir Taouli

12:20 **Discussion**

Proton vs. Hyperpolarized-Gas MRI for Evaluating the Lung

Room 513A-D 10:30-12:30 *Moderators:* Per A. G. Åkeson & Kiarash Emami

10:30 **541**. **Validation of Ventilation- & Perfusion-Weighted Fourier Decomposition MRI with Hyperpolarized ^{3}He-MRI & Dynamic Contrast-Enhanced MRI in An Animal Experiment**
Grzegorz Bauman[1], Alexander Scholz[2], Julien Rivoire[2], Maxim Terekhov[2], Janet Friedrich[2], Andre de Oliveira[3], Wolfhard Semmler[1], Laura M. Schreiber[2], Michael Puderbach[4]
[1]Division of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Department of Radiology, Section of Medical Physics, Johannes Gutenberg University Medical Center, Mainz, Germany; [3]Siemens Healthcare, Erlangen, Germany; [4]Division of Radiology, German Cancer Research Center, Heidelberg, Germany

10:42 **542**. **Heterogeneity of the Ventilation–Perfusion Ratio in Lung Disease using OE-MRI**
Penny Louise Hubbard[1,2], Geoff J. M. Parker[1,2], Dave Singh[3], Eva Bondesson[4], Lars E. Olsson[5], Lars Wigström[5], Simon S. Young[6], Josephine H. Naish[1,2]
[1]Imaging Sciences & Biomedical Engineering, The University of Manchester, Manchester, United Kingdom; [2]The Biomedical Imaging Institute, The University of Manchester, Manchester, United Kingdom; [3]Airway Pharmacology Group, School of Translational Medicine, University Hospital of South Manchester Foundation Trust, Manchester, Greater Manchester, United Kingdom; [4]AstraZeneca R & D, Lund, Sweden; [5]AstraZeneca R & D, Möndal, Sweden; [6]AstraZeneca R & D, Charnwood, United Kingdom

10:54 **543**. **Assessment of Relative Regional Lung Compliance in Patients with Chronic Obstructive Pulmonary Disease**
Alexandra Rose Morgan[1,2], Geoff J. M. Parker[1,2], Penny L. Hubbard[1,2], David Singh[2,3], Jørgen Vestbo[2,3], Simon S. Young[4], Eva Bondesson[5], Lars Wigström[5], Lars E. Olsson[6], Marietta L. J. Scott[7], Josephine H. Naish[1,2]
[1]Imaging Science & Biomedical Engineering, University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Biomedical Imaging Institute, University of Manchester, Manchester, Greater Manchester, United Kingdom; [3]Airway Pharmacology Group, School of Translational Medicine, University Hospital of South Manchester, Manchester, Greater Manchester, United Kingdom; [4]AstraZeneca R&D, Charnwood, United Kingdom; [5]AstraZeneca, Lund, Sweden; [6]AstraZeneca, Mölndal, Sweden; [7]AstraZeneca, Alderley Park, Macclesfield, United Kingdom

11:06 **544**. **Non-Contrast-Enhanced High Resolution MRI of the Pulmonary Blood Volume using a Two Compartment Model & T_1 Mapping**
Thomas Gaass[1,2], Julien Dinkel[3], Grzegorz Bauman[2], Moritz Zaiss[2], Axel Haase[1], Frederik Laun[2]
[1]Institute of Medical Engineering, Technical University Munich, Munich, Germany; [2]Division of Medical Physics, German Cancer Research Center, Heidelberg, Germany; [3]Division of Radiology, German Cancer Research Center, Heidelberg, Germany

11:18 **545**. **Pulmonary Blood Volume Mapping using a Modified T_1 Weighted, Steady State MRI Technique in a Rodent Model of Hypoxic Pulmonary Vasoconstriction**
Ronn P. Walvick[1,2], Austin L. Reno[2], Alexei A. Bogdanov[2], Mitchell S. Albert[2]
[1]Radiology, New York University Langone Medical Center, New York, NY, USA; [2]Radiology, University of Massachusetts Medical School, Worcester, MA, USA

11:30 **546**. **Acquisition of Spatially-registered Helium-3 & Proton 3D Image Sets of the Lung in Less than 10 Seconds using Compressed Sensing**
Kun Qing[1], Talissa A. Altes[2], Nicholas J. Tustison[2], Jaime F. Horta Coelho Mata[2], Grady W. Miller[2,3], Eduard E. De Lange[2], William A. Tobias[3], Gordon D. Cates[3], James R. Brookeman[2], John Philip Mugler[1,2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; [2]Radiology, University of Virginia; [3]Physics, University of Virginia

11:42 **547**. **Highly Accelerated Dynamic 3D Hyperpolarized Lung Imaging**
Sebastian Kozerke[1,2], Salma Ajraoui[3], Thomas Eykyn[4], Reza Razavi[4], Jim M. Wild[3]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [3]Unit of Academic Radiology, University of Sheffield, United Kingdom; [4]Division of Imaging Sciences & Biomedical Engineering, King's College London, United Kingdom

11:54 **548**. **Pulmonary ^{3}He MRI of Pediatric Subjects with Risk Factors for Asthma**
Robert V. Cadman[1], Jionghan Dai[1], Michael D. Evans[2], Daniel J. Jackson[3], James E. Gern[3], Robert F. Lemanske Jr.[3], Sean B. Fain[1]
[1]Medical Physics, University of Wisconsin, Madison, WI, USA; [2]Biostatistics & Medical Informatics, University of Wisconsin, Madison, WI, USA; [3]Pediatrics, University of Wisconsin, Madison, WI, USA

12:06 **549**. **Imaging of Lung Micromechanics with Hyperpolarized Gas Diffusion MRI: Regional Compliance**
Yi Xin[1], Kiarash Emami[1], Stephen J. Kadlecek[1], Puttisarn Mongkolwisetwara[1], Nicholas N. Kuzma[1], Harilla Profka[1], Yinan Xu[1], Hooman Hamedani[1], Benjamin M. Pullinger[1], Rajat K. Ghosh[1], Jennia N. Rajaei[1], Stephen Pickup[1], Masaru Ishii[2], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, USA

12:18 **550**. **Quantitative Scoring of Hyperpolarized ^{129}Xe Ventilation Imaging: Correlation with Pulmonary Function Testing & Age**
Bastiaan Driehuys[1,2], Zackary I. Cleveland[2,3], John Nouls[1,2], S. Sivaram Kaushik[2,4], Gary P. Cofer[2], Santiago Jimenez-Martinez[1], Jan Wolber[5], Monica Kraft[6], H. Page McAdams[1]
[1]Department of Radiology, Duke University, Durham, NC, USA; [2]Center for in vivo Microscopy, Duke University; [3]Department of Radiology, Duke University, Durham, NC, USA; [4]Biomedical Engineering, Duke University; [5]GE Healthcare; [6]Pulmonary and Critical Care Medicine, Duke University

What Went Wrong? A Case-Based Approach to MR Image Quality – Case-Based Teaching

Room 516A-C 10:30-12:30 *Hosts:* Walter F. Block, Derek K. Jones & Chalres A. McKenzie

10:30 **"Guess That Artifact" Game Show**

Cancer Animal Models

Room 518-A-C 10:30-12:30 *Moderators:* Yuen-Li Chung & Robert J. Gillies

10:30 **551**. **Imaging of Glucose Uptake in Breast Tumors using Non-Labeled D-Glucose**
Kannie Wai Yan Chan[1], Michael C. McMahon[2], Guanshu Liu[3], Yoshinori Kato, Zaver Bhujwalla, Dmitri Artemov, Peter Christiaan van Zijl[1,3]
[1]Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]F.M. Kirby Research Center, Kennedy Krieger Research Insitute, Baltimore, MD, USA; [3]kennedy Krieger Research Insitute

10:42 **552**. **HGF/SF-Induced Ca+2 Intake to Breast Tumor Cells – a Manganese Enhanced MRI Study**
Galia Tsarfaty[1], Ilan Tsarfaty[2], Sari Natan[2], Eli Konen[1], Tammar Kushnir[1]
[1]Dept. of Diagnostic Imaging, MRI Unit, the Chaim Sheba Medical Center, Tel Hashomer, Israel; [2]Department of Human Microbiology, Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

10:54 **553**. **Mapping of Oxygen By Imaging Lipids relaxation Enhancement (MOBILE): Application to Changes in Tumor Oxygenation of Mammary Cancer Models**
Julie Magat[1], Elif Ozel[1], Valérie Marchand[1], Caroline Bouzin[2], Olivier Feron[2], Benedicte F. Jordan[1], Bernard Gallez[1]
[1]Louvain Drug Research Institute, Biomedical Magnetic Resonance Research Group, University of Louvain, Brussels, Belgium; [2]Pole of Pharmacotherapy, University of Louvain, Brussels, Belgium

11:06 **554**. **Histological Verification of Oxygen-Enhanced MRI for Detection of Hypoxia**
Inna V. Linnik[1,2], Marietta Scott[3], Neil Woodhouse[4], John C. Waterton[3,5], Helen Young[3], Carsten Liess[3], Hervé Barjat[3], Jose Ulloa[3], Cassandra L. Hodgkinson[6], Timothy Ward[6], Caroline Dive[6], Darren Roberts[6], Josephine H. Naish[1,7], Geoffrey J. M. Parker[5,8]
[1]Imaging Science & Biomedical Engineering, School of Cancer & Enabling Sciences, University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom; [2]Biomedical Imaging Institute, University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom; [3]Imaging, Translational Sciences, AstraZeneca, Alderley Park, Macclesfield, Cheshire, SK10 4TG, United Kingdom; [4]Imaging, Translational Sciences, AstraZeneca, Alderley Park, Macclesfield, Cheshire, SK10 4TG , United Kingdom; [5]Imaging Science & Biomedical Engineering, School of Cancer & Enabling Sciences, University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom; [6]Paterson Institute for Cancer Research, Manchester, United Kingdom; [7]Biomedical Imaging Institute, University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom; [8]Biomedical Imaging Institute , University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom

11:18 **555**. ***In Vivo* Dynamic Contrast Enhanced MRI & Histopathological Assessment of Tumor Angiogenesis in Luminal-Like & Basal-Like Breast Cancer Xenografts**
Else Marie Huuse[1], Siver Andre Moestue[1], Tone Frost Bathen[1], Anna Bofin[2], Gunhild Mari Mælandsmo[3], Lars A. Akslen[4], Olav Engebraaten[3,5], Ingrid S. Gribbestad[1]
[1]Department of Circulation & Medical Imaging, Norwegian University of Science & Tehcnology (NTNU), Trondheim, Norway; [2]Department of Laboratory Medicine, Children's & Women's Health, NTNU, Trondheim, Norway; [3]Department of Oncology & Department of Tumor Biology, Oslo University Hospital, Oslo, Norway; [4]The Gade Institute, Section for Pathology, University of Bergen, Bergen, Norway; [5]Institute for Clinical Medicine, University of Oslo, Oslo, Norway

11:30 **556**. **Dual PI3K/mTOR Inhibition Induces Structural Changes in Tumor Vasculature Assessed by Vessel Size Imaging**
Shelby Katherine Wyatt[1], Sharon E. Ungersma[1], Jason R. Oeh[2], Calvin Ho[1], Tim C. Cao[1], Hartmut Koeppen[3], Lori S. Friedman[2], Deepak Sampath[2], Richard A. D. Carano[1]
[1]Biomedical Imaging, Genentech, Inc, South San Francisco, CA, USA; [2]Translational Oncology, Genentech, Inc, South San Francisco, CA, USA; [3]Pathology, Genentech, Inc, South San Francisco, CA, USA

11:42 **557**. **Genetic Manipulation of Proton Transport Mechanisms Generates Modulations of Intra & Extracellular Ph & Growth Characteristics in Tumors**
Norbert W. Lutz[1], Johanna Chiche[2], Yann LeFur[1], Frederic Frassineti[3], Laurent Daniel[3], Jacques Pouyssegur[2], Patrick J. Cozzone[1]
[1]Dept. of Medicine La Timone, Marseille, France; [2]Institute of Developmental Biology & Cancer, University of Nice, Nice, France; [3]Dept. of Pathology La Timone, Marseille, France

11:54 **558**. **Metabolic Profiling of Primary & Recurrent Mammary Gland Tumors in an Inducible Her2/neu Breast Cancer Mouse Model using ^{1}H MRS**
Dania Daye[1], James Alvarez[2,3], Suzanne Wehrli[4], Mitchell Schnall[5], Lewis Chodosh[2,3]
[1]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Cancer Biology, University of Pennsylvania; [3]Abramson Family Cancer Research Institute, University of Pennsylvania; [4]Nuclear Magnetic Resonance Core Facility, Children's Hospital of Philadelphia; [5]Department of Radiology, University of Pennsylvania

12:06 **559**. **MRI & MRS Characterization of Two Experimental Models of Ovarian Cancer with Different Glycolytic Phenotypes**
Rossella Canese[1], Giorgia Nardo[2], Marika Crescenzi[2], Egidio Iorio[1], Stefano Indraccolo[2]
[1]Istituto Superiore di Sanità, Rome, RM, Italy; [2]Istituto Oncologico Veneto -IRCCS, Padova, Italy

12:18 **560**. **Magnetic Resonance Spectroscopic Imaging of Orthotopic Ovarian Cancer**
Marie-France Penet[1], Kristine Glunde[1], Dmitri Artemov[1], Franca Podo[2], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Department of Cell Biology & Neurosciences, Section of Molecular & Cellular Imaging, Istituto Superiore di Sanità, Rome, Italy

The Short of It

Room 520B-F 10:30-12:30 *Moderators:* Garry E. Gold & Matthew F. Koff

10:30 **561**. **Introduction**
Won C. Bae

10:42 **562**. **Clinical Ultra-Short TE-Enhanced T_2* Mapping of Meniscus**
Ashley Williams[1], Yongxian Qian[2], Constance R. Chu[1]
[1]Cartilage Restoration Center, University of Pittsburgh, Pittsburgh, PA, USA; [2]Department of Radiology, University of Pittsburgh

10:54 **563**. **Direct Depiction of Bone Microstructure using ZTE Imaging**
Markus Weiger[1,2], Marco Stampanoni[3,4], Klaas Paul Pruessmann[3]
[1]Bruker BioSpin AG, Faellanden, Switzerland; [2]Bruker BioSpin MRI GmbH, Faellanden, Germany; [3]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [4]Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland

11:06 **564**. **SWIFT Imaging of Osteochondral Repair in Equine Model with Correlation to µCT**
Mikko Johannes Nissi[1], Jari Rautiainen[1], Lauri Juhani Lehto[1], Virpi Tiitu[1], Outi Kiviranta[1], Hertta Pulkkinen[1], Anne Brunott[2], Rene van Weeren[3], Pieter Brama[4], Ilkka Kiviranta[5], Jutta Ellermann[6], Miika Tapio Nieminen[7,8]
[1]University of Eastern Finland, Kuopio, Finland; [2]Brünott Equine Surgery & Ortopedics, Netherlands; [3]University of Utrecht, Netherlands; [4]University College Dublin, Ireland; [5]University of Helsinki, Finland; [6]University of Minnesota, USA; [7]University of Oulu, Finland; [8]Oulu University Hospital, Finland

11:18 **565**. **Free & Bound Water Evaluation of Articular Cartilage**
Jiang Du[1], Chantal Pauli[2], Eric Diaz[1], Won Bae[1], Sheronda Statum[1], Darryl DLima[2], Christine Chung[1]
[1]Radiology, University of California, San Diego, San Diego, CA, USA; [2]Scripps Reseach Institution

11:30 **566**. **Investigations of the Origin of Phase Differences Seen with Ultrashort TE Imaging of Short T_2 Meniscal Tissue**
Michael Carl[1]
[1]Global Applied Science Laboratory, GE Healthcare, San Diego, CA, USA

11:42 **567**. **High Resolution 3D Ultrashort TE (UTE) Imaging: *In Vivo* Applications**
Jiang Du[1], Michael Carl[2], Mark Bydder[1], Jing-Tzyh Chiang[1], Richard Znamirowski[1], Christine Chung[1], Graeme Bydder[1]
[1]Radiology, University of California, San Diego, San Diego, CA, USA; [2]Global Applied Science Laboratory, GE Healthcare, San Diego, CA, USA

11:54 **568**. **Temporal & Regional Changes of T_2* in the Repaired Meniscus**
Matthew F. Koff[1], Lisa A. Fortier[2], Scott A. Rodeo[3], Atsushi Takahashi[4], Suzanne Maher[5], Demetris Delos[3], Parina Shah[1], Hollis G. Potter[1]
[1]Department of Radiology & Imaging - MRI, Hospital for Special Surgery, New York, NY, USA; [2]College of Veterinary Medicine, Cornell University, Ithaca, NY, USA; [3]Department of Orthopaedic Surgery, Hospital for Special Surgery, New York, NY, USA; [4]Global Applied Science Laboratory, General Electric Healthcare, Menlo Park, CA, USA; [5]Department of Biomechanics, Hospital for Special Surgery, New York, NY, USA

12:06 **569**. **Sensitivity of Quantitative UTE MRI to Degradation of Human Temporomandibular Discs**
Won C. Bae[1], Sheronda Statum[1], Reni Biswas[2], Koichi Masuda[3], Jiang Du[1], Terry Tanaka[4], Christine B. Chung[1]
[1]Radiology, University of California, San Diego, San Diego, CA, USA; [2]Bioengineering, University of California, San Diego, La Jolla, CA, USA; [3]Orthopaedic Surgery, University of California, San Diego, La Jolla, CA, USA; [4]School of Dentistry, Department of Graduate Prosthodontics, University of Southern California, Los Angeles, CA, USA

12:18 **570**. **Ultrashort Time-to-Echo MRI of the Cartilagenous Endplate & Relationship to Degenerative Disc Disease & Schmorl's Nodes**
Tsz Kwun Law[1], Dino Samartzis[2], Mina Kim[1], Queenie Chan[3], Pek-Lan Khong[1], M C Kenneth Cheung[2], Marina-Portia Anthony[1]
[1]Diagnostic Radiology, The University of Hong Kong, Hong Kong, China, People's Republic of; [2]Orthopaedics & Traumatology, The University of Hong Kong, Hong Kong, China, People's Republic of; [3]Philips Healthcare, Hong Kong, China, People's Republic of

Applications & Evaluations of State-of-the-Art Sequences

Room 710A 10:30-12:30 *Moderators:* Priti Balchandani & Jean H. Brittain

10:30 **571**. **Simultaneous 3D Tracking of Multiple ^{19}F Labeled Capsules using a 3D Golden Angle Sampling Scheme**
Tobias Hahn[1], Andreas Steingoetter[1,2], Werner Schwizer[2], Martin Buehrer[1], Sebastian Kozerke[1], Peter Boesiger[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology & Hepatology, University Hospital Zurich, Zurich, Switzerland

10:42 **572**. **Ultrashort TE Spectroscopic Imaging (UTESI): An Efficient Technique For Free & Bound Water Quantification**
Jiang Du[1], Eric Diaz[1], Richard Znamirowski[1], Sheronda Statum[1], Darryl DLima[2], Graeme Bydder[1], Christine Chung[1]
[1]Radiology, University of California, San Diego, San Diego, CA, USA; [2]Scripps Reseach Institution

10:54 **573**. **Influence of Spectral Model & Signal Decay on Hepatic Fat Fraction Measurements at 3T with Dual-Echo Dixon Imaging**
Holger Eggers[1], Thomas G. Perkins[2], Shahid M. Hussain[3,4]
[1]Philips Research, Hamburg, Germany; [2]Philips Healthcare, Cleveland, OH, USA; [3]University of Nebraska Medical Center, Omaha, NE, USA; [4]The Nebraska Medical Center, Omaha, NE, USA

11:06 **574**. **Comparison of Different Data Acquisition Strategies in Myocardial Strain Assessment using Strain-Encoded (SENC) MRI**
Elsayed H. Ibrahim[1], Wolfgang Rehwald[2], Bradley Sutton[3], Sven Zuehlsdorff[2], Richard D. White[1]
[1]Department of Radiology, University of Florida, Jacksonville, FL, USA; [2]Siemens Medical Solutions, Cardiovascular MRI R&D, Chicago, IL, USA; [3]Department of Bioengineering, University of Illinois, Urbana-Champaign, IL, USA

11:18 **575**. **Validation of 4D Velocity Mapping using 5-Point PC-VIPR For Blood Flow Quantification in the Thoracic Aorta & Main Pulmonary Artery**
Alex Frydrychowicz[1], Eric Niespodzany[2], Scott B. Reeder[1], Kevin M. Johnson[3], Oliver Wieben[2], Christopher J. François[1]
[1]Department of Radiology, University of Wisconsin - Madison, Madison, WI, USA; [2]Departments of Radiology, Medical Physics, University of Wisconsin - Madison, Madison, WI, USA; [3]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI, USA

11:30 **576**. **Initial Comparative Evaluation of a Five-Minute Comprehensive Cardiac MR Examination using Highly Accelerated Parallel Imaging**
Jian Xu[1,2], Daniel Kim[1], Ricardo Otazo[1], Monvadi Srichai[1], Ruth Lim[1], Kellyanne Mcgorty[1], Ryan Avery[1], Leon Axel[1], Thoralf Niendorf[3], Daniel Sodickson[1]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, USA; [2]PolyTechnic Institute of NYU & Siemens Medical Solutions USA Inc., New York, NY, USA; [3]Charite' - University Medicine, Berlin-Buch, Germany

11:42 **577**. **Fast 3D B_1+ Mapping using An Optimized, Asymmetric Bloch-Siegert Method**
Manojkumar Saranathan[1], Mohammad Mehdi Khalighi[2], Adam B. Kerr[3], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [3]Electrical Engineering, Stanford University, Stanford, CA, USA

11:54 **578**. **Single-Shot Spiral Based Bloch-Siegert B_1^+ Mapping**
Mohammad Mehdi Khalighi[1], Gary H. Glover[2], Prachi Pandit[2], Scott Hinks[3], Adam B. Kerr[4], Manojkumar Saranathan[2], Brian K. Rutt[2]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [2]Department of Radiology, Stanford University, Stanford, CA, USA; [3]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, USA; [4]Department of Electrical Engineering, Stanford University, Stanford, CA, USA

12:06 **579**. **Quantification of Susceptibility Mapping with Synchrotron X-ray Fluorescence Iron Mapping**
Weili Zheng[1], E Mark Haacke[1], Saifeng Liu[2], Jaladhar Neelavalli[3], Helen Nichol[4]
[1]Radiology, Wayne State University, Detroit, MI, USA; [2]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [3]The Magnetic Resonance Imaging Institute for Biomedical Research, Detroit, MI, USA; [4]Department of Anatomy & Cell Biology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

12:18 **580**. **Correlation between Elemental Distribution & Susceptibility Change in Intracerebral Hemorrhagic Stroke**
Weili Zheng[1], E. Mark Haacke[1], Helen Nichol[2]
[1]Radiology, Wayne State University, Detroit, MI, USA; [2]Department of Anatomy & Cell Biology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Clinical Applications of 7T Including Neurodegenerative Diseases

Room 710B 10:30-12:30 *Moderators:* Oliver Speck & Kamil Ugurbil

10:30 **581**. **Introduction**
Mark A. van Buchem

10:54 **583**. **Higher GABA Concentrations in the Brainstem in Parkinson's Disease by ^{1}H MRS at 7T**
Uzay Emrah Emir[1], Susan Rolandelli[1], Paul Joseph Tuite[1], Gulin Oz[1]
[1]University of Minnesota, Minneapolis, MN, USA

11:06 **584**. **MR Relaxometry in PKAN Patients at 1.5T, 3T & 7T**
Monika Dezortova[1], Vit Herynek[1], Martin Krssak[2], Claudia Kronnerwetter[3], Milan Hajek[1]
[1]MR-Unit, Dept Diagnostic & Interventional Radiology, Institute for Clinical & Experimental Medicine, Prague, Czech Republic; [2]Center for Medical Physics & Biomedical Engineering & MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [3]Dept Radiology & MR Centre of Excellence, Medical University of Vienna, Vienna, Austria

11:18 **585**. **Susceptibility Mapping of the Substantia Nigra in Parkinson Patients At 7T After One Year of Diagnosis & Treatment**
Andreas Schäfer[1], Derek V. Ott[2], Almut Focke[2], Johannes Schwarz[2], David Weise[2], Robert Turner[1], Sonja A. Kotz[1]
[1]Max-Planck-Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]University Hospital, Leipzig, Germany

11:30 **586**. **Susceptibility Mapping of Alzheimer Plaques at 7T**
Michael Zeineh[1], Hagen Kitzler[2], Scott Atlas[1], Hannes Vogel[3], Brian Rutt[1]
[1]Radiology, Stanford University, Stanford, CA, USA; [2]Neuroradiology, 2Department of Neuroradiology, Technische Universitaet Dresden, Germany; [3]Pathology, Stanford University, Stanford, CA, USA

11:42 **587**. **Spectroscopic Imaging of Human Medial Temporal Lobe Epilepsy At 7T**
Jullie W. Pan[1], Dennis D. Spencer[1], R. Bradley Duckrow[2], Nikolai Avdievich[1], Hoby P. Hetherington[1]
[1]Neurosurgery, Yale University School of Medicine, New Haven, CT, USA; [2]Neurology, Yale University School of Medicine, New Haven, CT, USA

11:54 **588**. **Glutamate Level in the Frontal Cortex Decreases During Young Adulthood**
Anouk Marsman[1], Dennis Klomp[2], Jannie Wijnen[2], Martijn Van den Heuvel[1], Vincent Boer[2], Peter Luijten[2], Hilleke Hulshoff Pol[1]
[1]Psychiatry, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

12:06 **589**. **Effect of Normal Aging On the Intra-Cellular Sodium Volume Fraction in the Human Brain: A 7T MRI *In-Vivo* Study**
Lazar Fleysher[1], Niels Oesingmann[2], Ryan Brown[1], Hina Jaggi[1], Graham Wiggins[1], Daniel Sodickson[1], Matilde Inglese[1,3]
[1]Radiology, NYU School of Medicine, New York, USA; [2]Siemens Medical Solutions USA, Malvern, PA, USA; [3]Neurology, NYU School of Medicine, New York

12:18 **590**. **Diffuse Iron Deposition in the Putamen & Caudate Nucleus in CADASIL: Comparing Phase & Magnitude Images At 7 Tesla**
Michael Kwan-Yoe Liem[1], Saskia A. J. Lesnik Oberstein[2], Maarten J. Versluis[1], Joost Haan[3], Andrew G. Webb[1], Michel D. Ferrari[3], Mark A. van Buchem[1], Jeroen van der Grond[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Clinical Genetics, Leiden University Medical Center, Leiden, Netherlands; [3]Neurology, Leiden University Medical Center, Leiden, Netherlands

Hands-On Workshop 2 (Repeat)
Body & Cardiovascular Protocol Optimization
GE Healthcare

Room 520A-D 13:30-15:30

Hands-On Workshop 2 (Repeat)
Body & Cardiovascular Protocol Optimization
Siemens

Room 515A-C 13:30-15:30

Cardiovascular MRI - Exploring the Boundaries Part 3: Case-Based Studies in CMR
Case-Based Teaching

Room 512A-G 13:30-15:30 *Moderators:* Tim Leiner & Warren J. Manning

13:30 **Ischemic CMP**
Tim Leiner

13:50 **Non-Ischemic CMP**
Bernd J. Wintersperger

14:10 **Valvular Disease**
Warren J. Manning

14:30 **Congenital Heart Disease**
Jeffrey H. Maki

14:50 **Right Ventricle / ARVD**
Harikrishna Tandri

15:10 **Coronary Angiography**
Qi Yang

MR Safety: Risk-Benefit Approach: Case-Based Teaching

Room 516A-C 13:30-15:30

13:30 **MR Environment & Patient Screening: Increasing Patient Access**
Paul M. Ruggieri

14:00 **Scanning Dangerous Things: Risk Benefit Approach**
Micheal D. Phillips

14:30 **Interventional MRI-Interventional Procedures**
Alastair J. Martin

15:00 **7T & Higher-Human Safety & the Path to the Clinic Adoption**
Jaane Rauschenberg

Toward Clinical 7T from Toe to Head

Room 518-A-C 13:30-15:30 *Moderators:* Jeanette Schulz-Menger & Daniel K. Sodickson

13:30 **591**. **Introduction**
Daniel K. Sodickson

13:42 **592**. **MRI of the Human Prostate *In Vivo* at 7T**
Tom W.J. Scheenen[1,2], Stephan Orzada[2,3], Thiele Kobus[1], Miriam W. Lagemaat[1], Marnix C. Maas[1], Oliver Kraff[2], Stefan Maderwald[2], Irina Brote[2,3], Mark E. Ladd[2,3], Andreas K. Bitz[2,3]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [3]Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany

13:54 **593**. **Dynamically Applied Multiple B_1+ Shimming Scheme for Arterial Spin Labeling of the Prostate at 7T**
Xiufeng Li[1], Pierre-Francois Van de Moortele[1], Kamil Ugurbil[1], Greg Metzger[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA

14:06 **594**. **7 Tesla Abdominal Imaging using TIAMO**
Stephan Orzada[1,2], Sören Johst[1,2], Andreas K. Bitz[1,2], Oliver Kraff[1,3], Irina Brote[1,2], Susanne C. Ladd[1,2], Mark E. Ladd[1,2], Stefan Maderwald[1,3]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, NRW, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, NRW, Germany; [3]University of Duisburg-Essen, Essen, NRW, Germany

14:18 **595**. **Initial Results of Abdominal MRI at 7T using a 16-channel Transmit/Receive Coil**
Fabian Hezel[1], Peter Kellman[2], Christof Thalhammer[1], Celal Özerdem[1], Wolfgang Renz[3], Thoralf Niendorf[1]
[1]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Laboratory of Cardiac Energetics, National Institutes of Health/NHLBI, Bethesda, MD, USA; [3]Siemens Medical Systems, Erlangen, Germany

14:30 **596**. **Balanced SSFP Cardiac Imaging at 7T**
Lance DelaBarre[1], J. Thomas Vaughan[1], Carl Snyder[1], Pierre-Francois van de Moortele[1]
[1]CMRR - Dept. of Radiology, University of Minnesota, Minneapolis, MN, USA

14:42 **597**. **Fat-water Separated Imaging At 7T: Initial Results For Cardiac Applications**
Peter Kellman[1], Fabian Hezel[2], Saurabh Shah[3], Wolfgang Renz[4], Christof Thalhammer[2], Jeanette Schulz-Menger[2,5], Thoralf Niendorf[2,6]
[1]NIH, Bethesda, MD, USA; [2]Berlin Ultrahigh Field Facility, Max-Delbrueck-Center for Molecular Medicine, Berlin, Germany; [3]Siemens Medical Solutions, USA, Chicago, IL, USA; [4]Siemens Healthcare, Erlangen, Germany; [5]Charité Campus Buch, Helios Klinkum, Berlin, Germany; [6]Experimental & Clinical Research Center, Charité Campus Buch, Humboldt-University, Berlin, Germany

14:54 **598**. **Contrast Enhancement in TOF Cerebral Angiography At 7 Tesla Under SAR Constraints: Trading Between Saturation, VERSE & Magnetization Transfer RF Pulses**
Sebastian Schmitter[1], Edward J. Auerbach[1], Gregor Adriany[1], Kamil Ugurbil[1], Pierre-Francois Van de Moortele[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA

15:06 **599**. **Further Reduction of SAR For T_2-Weighted Hyper-TSE Imaging At 7 Tesla**
K. A. Danishad[1], Niravkumar Darji[1], Oliver Speck[1]
[1]Department of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Saxony Anhalt, Germany

15:18 **600**. **Adiabatic Turbo Spin Echo For Human Applications At 7T**
Irene Maria Louise van Kalleveen[1], Vincent O. Boer[1], Peter Luijten[1], Jaco J. M. Zwanenburg[1], Dennis W. J. Klomp[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands

Multiple Sclerosis Human Studies Neuro

Room 710B 13:30-15:30 *Moderators:* Douglas L. Arnold & Maria A. Rocca

13:30 **601**. **Characterizing Brain Oxygen Metabolism in Patients with Multiple Sclerosis with T_2-Relaxation-Under-Spin-Tagging (TRUST) MRI**
Yulin Ge[1], Zhongwei Zhang[1], Hanzhang Lu[2], Lin Tang[1], Hina Jaggi[1], James Babb[1], Joseph Herbert[3], Robert I. Grossman[1]
[1]Department of Radiology, New York University Langone Medical Center, New York City, NY, USA; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center; [3]Department of Neurology, New York University Langone Medical Center, New York City, NY, USA

13:40 **602**. **Evolution of Multiple Sclerosis Ring Lesions: A Serial Phase Imaging Study at 7T**
Wei Bian[1,2], Kristin Harter[3], Kathryn Hammond Rosenbluth[4], Duan Xu[2], Douglas A. C. Kelley[2], Daniel Vigneron[2], Sarah J. Nelson[2,5], Daniel Pelletier[6]
[1]Joint Graduate Program in BioEngineering at UCSF & UCB, University of California San Francisco, San Francisco, CA, USA; [2]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, USA; [3]School of Pharmacy, University of California San Francisco, San Francisco, CA, USA; [4]Department of Neurological Surgery, University of

California San Francisco, San Francisco, CA, USA; [5]Department of BioEngineeing & Therapeutic Sciences, Unviersity of California San Francisco, San Francisco, CA, USA; [6]Department of Neurology, University of California San Francisco, San Francisco, CA, USA

13:50 **603**. **Quantitative Characterization of Cortical Pathology in Multiple Sclerosis using Surface-Based Analysis of T_2* Relaxation At 7T**

Julien Cohen-Adad[1,2], Karl G. Helmer[1,2], Allen Scott Nielsen[3], Doug Greve[1,2], Thomas Benner[1,2], Rip Philip Kinkel[2,3], Bruce R. Rosen[1,2], Caterina Mainero[1,2]

[1]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, USA; [2]Harvard Medical School, Boston, MA, USA; [3]Beth Israel Deaconess Medical Center, Boston, MA, USA

14:00 **604**. **Multiple Sclerosis Alters Intra-cellular Sodium Concentration & Intra-cellular Volume Fraction: An *In-Vivo* 7T MRI study**

Lazar Fleysher[1], Niels Oesingmann[2], Ryan Brown[1], Hina Jaggi[1], Graham Wiggins[1], Daniel Sodickson[1], Joseph Herbert[3], Matilde Inglese[1]

[1]Radiology, NYU School of Medicine, New York, USA; [2]Siemens Medical Solutions USA, Malvern, PA, USA; [3]Neurology, NYU School of Medicine, New York, USA

14:10 **605**. **Atlas-Based Quantification of Brain Normal-Appearing White & Gray Matter Volume, Relaxation Time & Diffusion Tensor Metrics in Multiple Sclerosis**

Khader M. Hasan[1], Indika S. Walimuni[1], Sushmita Datta[1], Flavia Nelson[2], Jerry S. Wolinsky[3], Ponnada A. Narayana[4]

[1]Radiology, UTHSCH, Houston, TX, USA; [2]Neurology, UTHSCH, Houston, TX; [3]Neurology, UTHSCH, Houston, Texasa, USA; [4]Radiology, UTHSCH, Houston, Uexasa, USA

14:20 **606**. **Ten-Year Brain Atrophy Rate & Its Relevance to Disability in Multiple Sclerosis**

Antonio Giorgio[1], Maria Laura Stromillo[1], Maria Letizia Bartolozzi[2], Francesca Rossi[3], Marco Battaglini[3], Anita Blandino[3], Leonello Guidi[2], Patrizia Maritato[2], Antonio Federico[3], Nicola De Stefano[3]

[1]Department of Neurological & Behavioral Sciences , University of Siena, Siena, Italy; [2]Neurology Unit, Hospital of Empoli, Italy; [3]Department of Neurological & Behavioral Sciences, University of Siena, Siena, Italy

14:30 **607**. **Reversible NAA Decreases in Active MS Lesions Are Not Due Solely to Water Content Changes**

Irene Vavasour[1], Cornelia Laule[1,2], Madeleine Hodgson[3], David Li[1], Anthony Traboulsee[4], Burkhard Maedler[5], Alexander MacKay[1,3]

[1]Radiology, University of British Columbia, Vancouver, British Columbia, Canada; [2]Pathology & Laboratory Medicine, University of British Columbia, Vancouver, British Columbia, Canada; [3]Physics & Astronomy, University of British Columbia, Vancouver, British Columbia, Canada; [4]Medicine (Neurology), University of British Columbia, Vancouver, British Columbia, Canada; [5]Neurosurgery, University of Bonn, Germany

14:40 **608**. **Quantitative Assessment of Iron in Multiple Sclerosis Lesions**

Christian Langkammer[1], Michael Khalil[1], Christian Enzinger[1], Mirja Wallner-Blazek[1], Margit Jehna[1], Siegried Fuchs[1], Franz Fazekas[1], Stefan Ropele[1]

[1]Department of Neurology, Medical University of Graz, Graz, Austria

14:50 **609**. **Longitudinal Tract-Based Spatial Statistics Analysis Reveals Left & Right Asymmetric DTI Alterations in Relapsing Remitting Multiple Sclerosis**

Salem Hannoun[1], Francoise Durand-Dubief[1,2], Christian Confavreux[2], Francois Cotton[1], Dominique Sappey-Marinier[1,3]

[1]CREATIS, University of Lyon, Lyon, Rhone-Alpes, France; [2]Neurological Hospital, Lyon, Rhone-Alpes, France; [3]CERMEP-Imagerie du Vivant, Lyon, Rhone-Alpes, France

15:00 **610**. **Axonal Damage in the Making: Neurofilament Phosphorylation & Magnetization Transfer in MS Non-Lesional White Matter**

Klaus Schmierer[1,2], Dan Tozer[2], Axel Petzold[2,3]

[1]Barts and the London School of Medicine & Dentistry, London, England, United Kingdom; [2]Neuroinflammation, UCL Institute of Neurology, London, United Kingdom; [3]Free University Medical Centre, Amsterdam, Netherlands

Mouse Imaging: How to Do It Faster, Cheaper & Better

Room 510 16:00-18:00 *Moderators:* Klaas Nicolay & Ivan Tkac

16:00 **Multimodal Imaging of Mice**
Natalie J. Serkova

16:20 **Tips for Advanced MRI Screening of Mice**
Rui V. Simões

16:40 **Single & Multiple Mouse Imaging on a Clinical Scanner using Receiver Coil Arrays**
Marcelino L. Bernardo

17:00 **MRI & Stem Cell Trafficking**
Karen C. Briley-Saebo

17:20 **Cost Effective, High Performance MRS Screening of Rodents**
Olli J. H. Gröhn

17:40 **Heart Imaging in Mice**
David E. Sosnovik

MR Physics & Techniques for Clinicians

Room 516A-C 16:00-18:00

16:00 **Diffusion & Perfusion Weighted Imaging**
Matthias Weigel

16:40 **Contrast Agents**
Michael V. Knopp

17:20 **fMRI**
Karla L. Miller

Myocardial Tissue Characteristics & Spectroscopy: Human Studies

Room 511A-C 16:00-18:00 *Moderators:* Sebastian Kozerke & Robert G. Weiss

16:00 **611**. **Cardiac Magnetic Resonance Quantitative T_2 Mapping For Monitoring of Acute Cardiac Transplant Rejection**
Asad Ali Usman[1], Kirsi Taimen[1], Marie Wasielewski[1], Saurabh Shah[1,2], Jermey D. Collins[1], Jennifer M. McDonald[1], James C. Carr[1]
[1]Radiology - Cardiovascular Imaging, Northwestern University, Chicago, IL, USA; [2]Cardiovascular MR Research & Development, Siemens Healthcare, Chicago, IL, USA

16:12 **612**. **Comparison of the Transverse Relaxation Time of the Left Ventricle during the Mid-Diastolic Rest & the End-systolic Rest Periods**
Brice Fernandez[1,2], Maelene Lohezic[1,2], Lucien Hammen[2,3], Jean-Marie Escanyé[4,5], Damien Mandry[2,4], Jacques Felblinger[2,6], Pierre-André Vuissoz[2,3]
[1]Global Applied Science Laboratory, GE Healthcare, Nancy, France; [2]IADI Lab, Nancy-Université, Nancy, France; [3]U947, INSERM, Nancy, France; [4]CHU de Nancy, Nancy, France; [5]Biophysics Lab, Nancy-Université, Nancy, France; [6]CIT801, INSERM, Nancy, France

16:24 **613**. **Quantitative Myocardial T_2 Measurement For Systemic Sarcoidosis with Cardiac Involvement: Initial Results**
Yuesong Yang[1], Kim A. Connelly[2], Meyer Balter[3], John J. Graham[2], Rhonda Walcarius[1], Bradley Strauss[1], Alexander J. Dick[4], Graham A. Wright[1]
[1]Imaging Research & Cardiology, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Cardiology, St.Michael's Hospital, Toronto, ON, Canada; [3]Medicine, Mount Sinai Hospital, Toronto, ON, Canada; [4]Ottawa Heart Institute, Ottawa, ON, Canada

16:36 **614**. **Design of a Robust Method For Suppression of Ghosting Artifacts Due to Long T_1 Species in Cardiac Imaging**
Elizabeth R. Jenista[1], Wolfgang G. Rehwald[2], Nayla Chaptini[1], Michele A. Parker[1], Raymond J. Kim[1]
[1]Duke University Medical Center, Durham, NC, USA; [2]Cardiovascular MR&D, Siemens Healthcare, Chicago, IL, USA

16:48 **615**. **Human Cardiac T_1 Measured At 7 Tesla**
Christopher Thomas Rodgers[1,2], Stefan Piechnik[1], Lance DelaBarre[2], Pierre-Francois Van de Moortele[2], Carl Snyder[2], Stefan Neubauer[1], Matthew D. Robson[1], J. Thomas Vaughan[2]
[1]University of Oxford, Oxford, United Kingdom; [2]University of Minnesota, Minneapolis, MN, USA

17:00 **616**. **Early Cardiovascular MR Imaging Predicts Late Scar Formation in Pulmonary Vein Isolation**
Dana C. Peters[1], Warren J. Manning[1,2], Mark E. Josephson[1], Jeff Hsing[1]
[1]Cardiology, Beth Israel Deaconess Medical Center, Boston, MA, USA; [2]Radiology, Beth Israel Deaconess Medical Center

17:12 **617**. **Imaging of Hemorrhagic Myocardial Infarction using Susceptibility Weighted Imaging (SWI)**
James William Goldfarb[1]
[1]Saint Francis Hospital, Roslyn, NY, USA

17:24 **618**. **Quantitative Assessment of Aldosterone-Induced Myocardial Fibrosis by Cardiac Magnetic Resonance**
Mao-Yuan Su[1], Vin-cent Wu[2,3], Yen-Hung Line[2,3], Hsi-Yu Yu[4], Wen-Yieh Isaac Tseng[1,5]
[1]Medical Imaging, National Taiwan University Hosptial, Taipei, Taiwan; [2]Internal Medicine, National Taiwan University Hosptial, Taipei, Taiwan; [3]TAIPAI study group; [4]Sugery, National Taiwan University Hosptial, Taipei, Taiwan; [5]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan

17:36 **619**. **Two-dimensional Mapping of Triglyceride & Creatine Content of the Human Heart**
Kilian Weiss[1], Nicola Martini[2], Peter Boesiger[1], Sebastian Kozerke[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Fondazione G. Monasterio CNR-Regione Toscana, Massa, Italy

17:48 **620**. **Three-Dimensional Local-Look Spectroscopic Imaging of the Heart**
Kilian Weiss[1], Nicola Martini[2], Peter Boesiger[1], Sebastian Kozerke[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Fondazione G. Monasterio CNR-Regione Toscana, Massa, Italy

Novel RF & Other Systems

Room 511D-F 16:00-18:00 *Moderators:* Richard W. Bowtell & Michael S. Poole

16:00 **621**. **Enhancement of RF Field By High Dielectric Constant Pad At 3T: Cervical Spine Imaging**
Qing X. Yang[1,2], Zachary George Herse[1], Mathew Ketterman[3], Jianli Wang[1], Chris Sica[1], Christopher Collins[1,2], Jinhua Wang[4], Michael Lanagan[3]
[1]Radiology, the Pennsylvania State University College of Medicine, Hershey, PA, USA; [2]Bioengineering, the Pennsylvania State University College of Medicine, Hershey, PA, USA; [3]Materials Research Institute, the Pennsylvania State University, University Park, PA, USA; [4]Diagnostic Radiology, Yale School of Medicine

16:12 **622**. **New Barium Titanate Based Dielectric Materials For High Field Imaging**
Wouter M. Teeuwisse[1], Kristina N. Haines[2], Nadine B. Smith[1], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Electrical Engineering, Penn State University, University Park, USA

16:24 **623**. **B_1 Shimming using Phase Shifts For Travelling Wave MRI with a Coaxial Waveguide**
Stefan Alt[1], Marco Müller[1], Reiner Umathum[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

16:36 **624**. **Improved RF Control of the Travelling Wave MR using a Multi-Mode Coaxial Waveguide**
Anna Andreychenko[1], Hugo Kroeze[1], Peter Luijten[1], Jan J. W. Lagendijk[1], Cornelis A. T. van den Berg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

16:48 **625**. **Sideband Excitation for Concurrent RF Transmission & Reception**
David Otto Brunner[1], Matteo Pavan[1], Benjamin Dietrich[1], Daniel Rothmund[1], Alexander Heller[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

17:00 **626**. **Integrated Detection, Amplification & Wireless transmission of MRI Signals using a Parametric Amplifier**
Chunqi Qian[1], Joseph Murphy-Boesch[1], Stephen Dodd[1], Alan Koretsky[1]
[1]LFMI/NINDS, National Institute of Health, Bethesda, MD, USA

17:12 **627**. **Development of an MRI System using a High T_c Bulk Superconducting Magnet**
Kyohei Ogawa[1], Takashi Nakamura[2], Yasuhiko Terada[1], Katsumi Kose[1], Tomoyuki Haishi[3]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, 305-8573, Japan; [2]RIKEN, Wako, 351-0198, Japan; [3]MRTechnology, Tsukuba, 305-0047, Japan

17:24 **628**. **Ultrasound/MR Hybrid Imaging: Truly Simultaneous Motion Monitoring in the Abdomen & Image Co-Registration**
Lorena Petrusca[1], Valeria De Luca[2], Patrik Arnold[3], Zarko Celicanin[4], Thomas Goget[5], Vincent Auboiroux[5], Magalie Viallon[5], Francesco Santini[4], Sylvain Terraz[5], Klaus Scheffler[4], Christine Tanner[2], Philippe Cattin[3], Rares Salomir[5]
[1]Radiology Department, University Hospitals of Geneva , Geneva , Switzerland; [2]Computer Vision Laboratory, Zurich, Switzerland; [3]Center for Medical Images Analysis, Basel, Switzerland; [4]Radiological Physics, University of Basel Hospital, Switzerland; [5]Radiology Department, University Hospitals of Geneva, Geneva, Switzerland

17:36 **629**. **Results on Rapid 3D Magnetic Particle Imaging with a Large Field of View**
Jürgen Rahmer[1], Bernhard Gleich[1], Claas Bontus[1], Ingo Schmale[1], Joachim Schmidt[1], Jürgen Kanzenbach[1], Oliver Woywode[2], Jürgen Weizenecker[3], Jörn Borgert[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Philips Medical Systems DMC GmbH, Hamburg, Germany; [3]University of Applied Sciences, Karlsruhe, Germany

17:48 **630**. **A Combined MR-Fluorescence Tomography System For Quantitative Small Animal Imaging: *In Vivo* Validation**
Yuting Lin[1], Michael Ghijsen[1], Orhan Nalcioglu[1], Gultekin Gulsen[1]
[1]University of California, Irvine, CA, USA

Pushing the Bounds of fMRI Resolution

Room 512A-G 16:00-18:00 *Moderators:* Nan-Kuei Chen & Seong-Gi Kim

16:00 **631**. **Ultra-Fast fMRI of Human Visual Cortex using Echo-Shifted Magnetic Resonance Inverse Imaging**
Wei-Tang Chang[1], Thomas Witzel[2], Kevin Wen-Kai Tsai[1], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [3]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan

16:12 **632**. **Dynamic Magnetic Resonance Multi-Projection Inverse Imaging (Mini) with Isotropic Spatial Resolution**
Kevin Wen-Kai Tsai[1], Aapo Nummenmaa[2], Thomas Witzel[2,3], Wei-Tang Chang[4], Wei-Jui Kuo[5], Fa-Hsuan Lin[1,2]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]A. A. Martinos Center, Massachusetts General Hospital, Charlestown, MA, USA; [3]Harvard-MIT Divisions of Health Sciences & Technique, Charlestown, MA, USA; [4]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan; [5]Cognitive Neuropsychology Laboratory, National Yang-Ming University, Taipei, Taiwan, Taiwan

16:24 **633**. **Single-Shot Whole Brain Echo Volume Imaging for Temporally Resolved Physiological Signals in fMRI**
Thomas Witzel[1,2], Jonathan R. Polimeni[1], FaHsuan Lin[1,3], Aapo Nummenmaa[1], Lawrence L. Wald[1,2]
[1]A. A. Martinos Center MGH Department of Radiology, Harvard Medical School, Boston, MA, USA; [2]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, USA; [3]Biomedical Engineering, National Taiwan University, Taipei, Taiwan

16:36 **634**. **Tracking Dynamic Resting-State Networks with High Temporal Resolution fMRI**
Hsu-Lei Lee[1], Benjamin Zahneisen[1], Thimo Grotz[1], Pierre LeVan[1], Jürgen Hennig[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany

16:48 **635**. **Multiplexed Echo Planar Imaging with Sub-Second Whole Brain FMRI & Fast Diffusion Imaging**
David A. Feinberg[1,2], Steen Moeller[3], Stephen Smith[4], Edward Auerbach[3], Kamil Ugurbil[3], Essa Yacoub[3]
[1]Advanced MRI Technologies, Sebastopol, CA, USA; [2]University of California, Berkeley & San Francisco, CA, USA; [3]Center for Magnetic Resonance Research, University of Minnesota; [4]FMRIB, Oxford University

17:00 **636**. **Resting-state Correlations Between Depths Within Columns of Voxels Radial to the Cortical Surface**
Jonathan Rizzo Polimeni[1], Kyoko Fujimoto[1], Boris Keil[1], Douglas N. Greve[1], Bruce Fischl[1,2], Lawrence L. Wald[1,3]
[1]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, USA; [2]Computer Science & AI Lab (CSAIL), Massachusetts Institute of Technology, Cambridge, MA, USA; [3]Harvard-MIT Division of Health Sciences & Technology, Massachusetts Institute of Technology, Cambridge, MA, USA

17:12 **637**. **High Resolution fMRI of the Functionally-Defined Fusiform Face Area using 7T**
Rankin Williams McGugin[1], Christopher Gatenby[2,3], Isabel Gauthier[1]
[1]Psychology, Vanderbilt University, Nashville, TN, USA; [2]Radiology & Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, USA; [3]Radiology, University of Washington, Seattle, WA, USA

17:24 **638**. **Tonotopic Mapping in Inferior Colliculus using bSSFP fMRI & Sweeping Frequency Auditory Stimulation**
Matthew Man Hin Cheung[1,2], Joe S. Cheng[1,2], Iris Y. Zhou[1,2], Kevin C. Chan[1,2], Condon Lau[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of

17:36 **639**. **Cortical Depth Dependent Temporal Dynamics of the BOLD Response in the Human Brain**
Jeroen Cornelis Willem Siero[1,2], Natalia Petridou[1,2], Johannes Marinus Hoogduin[1,2], Peter R. Luijten[2], Nick F. Ramsey[1]
[1]Rudolf Magnus Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

17:48 **640**. **Ipsilateral fMRI Response in Primary Somatosensory Cortex (Area 3b) of Awake Marmosets**
Junjie V. Liu[1], Matthew Huberty[1], Afonso C. Silva[1]
[1]NINDS, National Institutes of Health, Bethesda, MD, USA

Artifacts & Motion Correction

Room 513A-D 16:00-18:00 *Moderators:* Joseph V. Hajnal & Claudia del Carmen Prieto

16:00 **641**. **Improving Scan Efficiency of Respiratory Gated Imaging using Compressed Sensing with 3D Cartesian Golden Angle Sampling**
Mariya Doneva[1], Christian Stehning[1], Kay Nehrke[1], Peter Börnert[1]
[1]Philips Research Europe, Hamburg, Germany

16:12 **642**. **Metric Optimized Gating for Fetal Cardiac Imaging**
Christopher William Roy[1], Mike Seed[2], Joshua F. van Amerom[3,4], Lars Grosse-Wortmann[2,4], Shi-Joon Yoo[2,4], Christopher K. Macgowan[3,4]
[1]Departments of Medical Biophysics & Medical Imaging, University of Toronto , Toronto, Ontario, Canada; [2]Division of Cardiology, Department of Paediatrics, The Labatt Family Heart Centre, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada; [3]Departments of Medical Biophysics & Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [4]Department of Diagnostic Imaging, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada

16:24 **643**. **3D Non-Rigid Motion Modeling of the Liver from Undersampled Golden-Radial Phase Encoding (G-RPE) Acquisitions**
Christian Buerger[1], Andrew Peter King[1], Tobias Schaeffter[1], Claudia Prieto[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

16:36 **644**. **From Artifact to Merit: Cardiac Gated MRI at 7T & 3T using Magneto-Hydrodynamic Effects for Synchronization**
Tobias Frauenrath[1], Matthias Dieringer[1,2], Nishant Patel[1], Celal Özerdem[1], Jan Hentschel[1], Wolfgang Renz[1,3], Thoralf Niendorf[1,2]
[1]Berlin Ultrahigh Field Facility, MDC Berlin, Berlin, Germany; [2]Charité Campus Buch, Humboldt-University, Experimental & Clinical Research Center (ECRC), Berlin, Germany; [3]Siemens Healthcare, Erlangen, Bayern, Germany

16:48 **645**. **Steady-State B_1 Mapping of Dynamically Changing RF Fields**
Shaihan J. Malik[1], Francesco Padormo[1], Joseph V. Hajnal[1]
[1]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom

17:00 **646**. **Frequency Correction for MR Spectroscopy in the Human Breast At 7 Tesla with External Field Monitoring**
Bart Lowie van de Bank[1], Vincent Oltman Boer[1], Mariska P. Luttje[1], Jannie Petra Wijnen[1], Gerard van Vliet[1], J. M. Hoogduin[1], Peter R. Luijten[1], Dennis W. Klomp[1]
[1]Beeld, University Medical Center Utrecht, Utrecht, Netherlands

17:12 **647**. **Real Time Dynamic Shimming for MR Spectroscopy using 2-Dimensional RF Excitations**
Brian Keating[1], Thomas Ernst[2]
[1]Deptartment of Medicine, University of Hawaii, Honolulu, HI, USA; [2]Department of Medicine, University of Hawaii, Honolulu, HI, USA

17:24 **648**. **Bowtie PROPELLER: A Fast & Efficient Motion Correction Method in MRI**
Hisamoto Moriguchi[1,2], Shin-ichi Urayama[3], Yutaka Imai[1], Manabu Honda[4], Takashi Hanakawa[4,5]
[1]Radiology, Tokai University, Isehara, Kanagawa, Japan; [2]Radiology, Hiratsuka municipal hospital, Hiratsuka, Kanagawa, Japan; [3]Human Brain Research Center, Kyoto University, Kyoto, Japan; [4]Functional Brain Research, National Center of Neurology & Psychiatry, Kodaira, Tokyo, Japan; [5]Precursory Research for Embryonic Science & Technology, Japan Science & Technology Agency, Japan

17:36 **649**. **Prospective Motion Correction for Diffusion Imaging using FID Navigators**
Tobias Kober[1,2], Rolf Gruetter[1,3], Gunnar Krueger[2]
[1]Laboratory for functional & metabolic imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Advanced Clinical Imaging Technology, Siemens Suisse SA - CIBM, Lausanne, Switzerland; [3]Departments of Radiology, Universities of Lausanne & Geneva, Switzerland

17:48 **650**. **A Robust MR-Based Rigid-Body Motion Correction for Simultaneous MR-PET**
Marcus Goerge Ullisch[1], Christoph Weirich[1], Juergen Scheins[1], Elena Rota Kops[1], Avdo Celik[1], Tony Stöcker[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience and Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

Hyperpolarized ^{13}C

Room 518-A-C 16:00-18:00 *Moderators:* Dirk Mayer & Rahim R. Rizi

16:00 **651**. **Hyperpolarized ^{13}C MR Metabolic Imaging Provides an Early Biomarker of MGMT Activity & Response to Temozolomide Treatment**
Ilwoo Park[1], Llewellyn E. Jalbert[1], Tomoko Ozawa[2], C. David James[2], Joanna J. Phillips[2], Daniel B. Vigneron[1,3], Russell O. Pieper[2], Sabrina M. Ronen[1], Sarah J. Nelson[1,3]
[1]Surbeck Laboratory of Advanced Imaging, Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA; [2]Brain Tumor Research Center, Department of Neurological Surgery, University of California, San Francisco, San Francisco, CA, USA; [3]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco, San Francisco, CA, USA

16:12 **652**. **Hyperpolarized ^{13}C magnetic Resonance Spectroscopy Detects Early Changes in Tumor Metabolism Following Treatment with the Anti-Angiogenic Agent Bevacizumab**
Sarah E. Bohndiek[1,2], De-en Hu[1,2], Mikko I. Kettunen[1,2], Kevin M. Brindle[1,2]
[1]Department of Biochemistry, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Cambridge Research Institute, Cancer Research UK, Cambridge, Cambridgeshire, United Kingdom

16:24 **653.** **Monitoring Metabolic Shifts in TRAMP Mice Resulting from Dichloroacetate using Hyperpolarized Pyruvate**
Aaron Keith Grant[1], Pankaj K. Seth[2], Elena Vinogradov[1], Xiaoen Wang[1], Vikas P. Sukhatme[2], Robert E. Lenkinski[1]
[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, USA; [2]Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, USA

16:36 **654**. **Exchange-Linked Dissolution Agents in ^{13}C Metabolic Imaging**
Ralph E. Hurd[1], Daniel Spielman[2], Sonal Josan[3], Yi-Fen Yen[1], Adolf Pfefferbaum[3,4], Dirk Mayer[2,3]
[1]GE Healthcare, Menlo Park, CA, USA; [2]Department of Radiology, Stanford University, Stanford, CA, USA; [3]Neuroscience Program, SRI International, Menlo Park, CA, USA; [4]Psychiatry & Behavioral Sciences, Stanford University, Stanford, CA, USA

16:48 **655**. **Hyperpolarized C-13 Metabolic Activity Decomposition with Stimulated-echoes**
Peder Eric Zufall Larson[1], Adam B. Kerr[2], John M. Pauly[2], Daniel B. Vigneron[1]
[1]Radiology & Biomedical Imaging, UC - San Francisco, San Francisco, CA, USA; [2]Electrical Engineering, Stanford University, Stanford, CA, USA

17:00 **656**. **T_1 Nuclear Magnetic Resonance Dispersion of Hyperpolarized [1-^{13}C] Pyruvate**
Francisco M. Martinez-Santiesteban[1], Lanette Friesen Waldner[2], Timothy James Scholl[1,2]
[1]Department of Medical Biophysics, University of Western Ontario, London, ON, Canada; [2]Imaging Research Laboratories, Robarts Research Institute, University of Western Ontario, London, ON, Canada

17:12 **657**. **Simultaneous Investigation of Cardiac Pyruvate Dehydrogenase Flux, Krebs Cycle Metabolism & Intracellular Ph using Hyperpolarized [1,2-$^{13}C_2$] Pyruvate**
Albert P. Chen[1], Ralph E. Hurd[2], Marie A. Schroeder[3,4], Angus Z. Lau[4,5], Yi-Ping Gu[4], Wilfred W. Lam[4], Jennifer Barry[4], James Tropp[6], Charles H. Cunningham[4,5]
[1]GE Healthcare, Toronto, ON, Canada; [2]GE Healthcare, Menlo Park, CA, USA; [3]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom; [4]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [5]Deptartment of Medical Biophysics, University of Toronto, Toronto, ON, Canada; [6]GE Healthcare, Fremont, CA, USA

17:24 **658**. **Hyperpolarized Butyrate: A Novel Substrate for the Assessment of Cardiac Fatty Acid Metabolism**
Daniel Ball[1], Michael Dodd[1], Helen Atherton[2], Marie Schroeder[1], Carolyn Carr[1], George Radda[1], Kieran Clarke[1], Damian Tyler[1]
[1]Department of Physiology, Anatomy & Genetics, Oxford University, Oxford, Oxfordshire, United Kingdom; [2]Department of Biochemistry, Cambridge University

17:36 **659**. **Metabolic Imaging of the Rat Brain using Hyperpolarized [1-^{13}C]Ketoisocaproate & [1-^{13}C]Pyruvate**
Sadia Asghar Butt[1], Lise Vejby Søgaard[1], Peter Magnusson[1], Mette Lauritzen[1], Per Åkeson[1], Jan Henrik Ardenkjær-Larsen[2]
[1]Danish Research Centre for Magnetic Resonance, Hvidovre, Denmark; [2]GE Healthcare, Broendby, Denmark

17:48 **660**. ***In Vivo* Detection of Brain Krebs Cycle Intermediate By Hyperpolarized MR**
Mor Mishkovsky[1,2], Arnaud Comment[1,2], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging , Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Université de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Universités de Lausanne et de Genève, Lausanne & Genève, Switzerland

Cell Tracking & Gene Expression

Room 520B-F 16:00-18:00 *Moderators:* Eric T. Ahrens & Piotr Walczak

16:00 **661**. **CEST MRI for Monitoring Bacteriolytic Tumor Therapy**
Guanshu Liu[1,2], Chetan Bettegowda[3], Assaf A. Gilad[4,5], Michael T. McMahon[1,2], Kannie W. Y. Chan[2,5], Kenneth W. Kinzler[3], Bert Vogelstein[3], Jeff W. M. Bulte[2,5], Shibin Zhou[3], Peter C. M. van Zijl[1,2]
[1]F. M. Kirby center, Kennedy Krieger Institute, Baltimore, MD, USA; [2]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]Ludwig Center, Howard Hughes Medical Institute & Sidney Kimmel Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [4]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [5]Institute for Cell Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA

16:12 **662**. **Magnetization Transfer Contrast MRI Detects Pseudomonas Aeruginosa Bacterial Infection Bacterial Infection a Mouse Burn Model**
Valeria Righi[1,2], Melissa Starkey[3], Laurence G. Rahme[3], Ronald G. Tompkins[4], Aria A. Tzika[1,2]
[1]Department of Surgery, NMR Surgical Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, USA; [2]Department of Radiology, Athinoula A. Martinos Center of Biomedical Imaging, Boston, MA, USA; [3]Department of Surgery, Molecular Surgery Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, USA; [4]Department of Surgery, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, USA

16:24 **663**. **High-Efficiency Targeting of Glial Precursor Cells to Inflammatory Brain Lesions using the VLA4-VCAM1 Cell Adhesion Pathway: Real-Time MR Monitoring of Instant Cell Engraftment**
Inema Orukari[1,2], Mike Gorelik[3], Joann Wang[3], Shashikala Galpoththawela[1], Heechul Kim[1], Douglas A. Kerr[4], Michael Levy[5], Andre Levchenko[3], Jeff Bulte[1], Piotr Walczak[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Division of MR Research, Johns Hopkins University, Baltimore, MD, USA; [2] Cellular Imaging Section, Vascular Biology Program, Institute for Cell Engineerin, Johns Hopkins University, Baltimore, MD, USA; [3]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, USA; [4]Biogen-IDEC, Cambridge, MA, USA; [5]Neurology, Johns Hopkins University, Baltimore, MD, USA

16:36 **664**. ***In Vivo* Magnetic Resonance Imaging of Ferritin-Based Reporter Visualizes Native Neuroblast Migration**
Bistra Iordanova[1,2], Eric T. Ahrens[1,3]
[1]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, USA; [2]Pittsburgh NMR Center for Biomedical Research , Pittsburgh, PA, USA; [3]Pittsburgh NMR Center for Biomedical Research, Pittsburgh, PA, USA

16:48 **665**. ***In Vivo* Visualization of Pancreatic Islets in the Mouse**
David Z. Balla[1], Sven Gottschalk[1], G Shajan[1], Sandra Ueberberg[2], Stephan Schneider[2], Rolf Pohmann[1], Jörn Engelmann[1]
[1]High-Field MR Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Universitätsklinikum Bergmannsheil, Ruhr-Universität Bochum, Bochum, Germany

17:00 **666**. **Monitoring of Transplanted Pancreatic Islets in Humans By MRI**
Daniel Jirak[1], Frantisek Saudek[2], Monika Dezortova[1], Peter Girman[2], Vit Herynek[1], Jan Kriz[2], Zuzana Berkova[2], Klara Zacharovova[2], Jan Peregrin[1], Milan Hajek[1]
[1]Department of Diagnostic & Interventional Radiology, Institute for Clinical & Experimental Medicine, Prague, Czech Republic; [2]Diabetes Center, Institute for Clinical & Experimental Medicine, Prague, Czech Republic

17:12 **667**. **Divalent Metal Transporter, DMT1: A Novel MRI Reporter**
Benjamin Bay Bartelle[1], Kamila Urzula Szulc[2], Daniel H. Turnbull[2,3]
[1]Structural Biology, Skirball Institute for Biomolecular Medicine, New York, NY, USA; [2]Skirball Institute of Biomolecular Medicine; [3]Radiology, New York University School of Medicine

17:24 **668**. **Electron Paramagnetic Resonance as a New Sensitive Tool to Assess the Iron Content in Cells & Tissues For MRI Cell Labeling Studies**
Pierre Danhier[1], Geraldine Depraeter[1], Sebastien Boutry[2], Isabelle Mahieu[2], Robert N. Muller[2], Pierre Sonveaux[3], Caroline Bouzin[3], Olivier Feron[3], Philippe Leveque[1], Julie Magat[1], Benedicte Jordan[1], Bernard Gallez[1]
[1]Louvain Drug Research Institute, Biomedical Magnetic Resonance Research Group, University of Louvain, Brussels, Belgium; [2]University of Mons, Mons, Belgium; [3]Institute of Experimental & Clinical Research, University of Louvain, Brussels, Belgium

17:36 **669**. ***In Vivo* Monitoring of Anti-Inflammatory Atorvastatin-Effects in Reperfused Myocardial Infarction using Integrated Cellular Fluorine ^{19}F-MRI & ^{1}H-Cardiac MRI**
Yu-Xiang Ye[1], Thomas Christian Basse-Luesebrink[1], Paula Arias[2], Thomas Kampf[1], Vladimir Kocoski[3], Elisabeth Bauer[2], Kai Hu[2], Valerie Jahns[4], Peter M. Jakob[1,5], Karl-Heinz Hiller[1,5], Roland Jahns[2], Wolfgang Rudolf Bauer[2]
[1]Department for Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany; [2]Department of Internal Medicine I, University Hospital Würzburg; [3]Institute for Virology & Immunobiology; [4]Institute for Pharmacology & Toxicology, University of Würzburg; [5]MRB Research Center, Magnetic Resonance Bavaria

17:48 **670**. ***In Vivo* MRI Signal Features of Transgenic Grafts Overexpressing Ferritin in the Murine Myocardial Infarction Model**
Anna Naumova[1,2], Vasily Yarnykh[1,2], Hans Reinecke[2,3], Charles Murry[2,3], Chun Yuan[1,2]
[1]Radiology, University of Washington, Seattle, WA, USA; [2]Center for Cardiovascular Biology, University of Washington, Seattle, WA, USA; [3]Pathology, University of Washington, Seattle, WA, USA

Tractography

Room 710A 16:00-18:00 *Moderators:* Jonathan D. Clayden & Derek K. Jones

16:00 **671**. **Tensor Based Morphometry of White Matter Tracts using Fibre Orientation Distributions**
David Raffelt[1,2], Olivier Salvado[1], Stephen Rose[3], Robert Henderson[4], Alan Connelly[5,6], Stuart Crozier[2], J.-Donald Tournier[5,6]
[1]The Australian E-Health Research Centre, CSIRO, Brisbane, QLD, Australia; [2]Biomedical Engineering, School of ITEE, University of Queensland, Brisbane, QLD, Australia; [3]Centre for Advanced Imaging, University of Queensland, Brisbane, QLD, Australia; [4]Department of Neurology, Royal Brisbane & Women's Hospital, Brisbane, QLD, Australia; [5]Brain Research Institute, Florey Neuroscience Institutes (Austin), Melbourne, VIC, Australia; [6]Department of Medicine, University of Melbourne, Melbourne, VIC, Australia

16:12 **672**. **The fiber Pathways of the Brain Organized As a Highly Curved Woven Grid**
Van Wedeen[1], Douglas Rosene[2], Guangping Dai[1], Ruopeng Wang[1], Jon Kaas[3], Isaac Tseng[4]
[1]Radiology, Martinos Center/ MGH, Charlestown, MA, USA; [2]Anatomy & Neurobiology, Boston University Medical, Boston, MA, USA; [3]Cell & Developmental Biology, Vanderbilt University, Nashville, TN, USA; [4]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan

16:24 **673**. **A Novel Paradigm For Automated Segmentation of Very Large Whole-Brain Probabilistic Tractography Data Sets**
Robert Elton Smith[1,2], Jacques-Donald Tournier[1,2], Fernando Calamante[1,2], Alan Connelly[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Heidelberg West, Victoria, Australia; [2]Department of Medicine, The University of Melbourne, Melbourne, Victoria, Australia

16:36 **674**. **A Study of Effect of Compiling Method on Interregional Connectivity Maps of Brain Networks via Diffusion Tractography**
Longchuan Li[1], James Rilling[2], Todd Preuss[3], Frederick Damen[4], Xiaoping Hu[4]
[1]School of Medicine, Emory University/Georiga Institute of Technology, Atlanta, GA, USA; [2]Division of Psychobiology, Yerkes National Primate Research Center, Atlanta, GA, USA; [3]Division of Neuroscience, Yerkes National Primate Research Center, Atlanta, GA, USA; [4]Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, USA

16:48 **675**. **Inter-Subject Variability of Structural Network: A DTI Study**
Hu Cheng[1], Jinhua Sheng[2], Yang Wang[2], Olaf Sporns[1], Andrew Saykin[2], William Kronenberger[2], Vincent Mathews[2], Thomas Hummer[2]
[1]Indiana University, Bloomington, IN, USA; [2]Indiana University, Indianapolis, IN, USA

17:00 **676**. **Mapping Hubs in the Neocortical Structural Network of the Human Brain Shows Lateralization**
Emil Harald Jeroen Nijhuis[1,2], Anne-Marie van Cappellen van Walsum[2,3], David G. Norris[1,4]
[1]Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, Netherlands; [2]MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Netherlands; [3]Department of Anatomy, Radboud University Nijmegen Medical Center, Netherlands; [4]Erwin L Hahn Institute for MRI, Universität Duisburg-Essen, Germany

17:12 **677**. **Track Density Imaging (TDI): Validation of Super-Resolution Property**
Fernando Calamante[1,2], Jacques-Donald Tournier[1,2], Robin M. Heidemann[3], Alfred Anwander[3], Graeme D. Jackson[1,2], Alan Connelly[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Heidelberg West, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia; [3]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

17:24 **678**. **"Tractometry" – Comprehensive Multi-modal Quantitative Assessment of White Matter Along Specific Tracts**
Sonya Bells[1], Mara Cercignani[2], Sean Deoni[3,4], Yaniv Assaf[5], Ofer Pasternak[6], C John Evans[7], a Leemans[8], Derek K. Jones[7]
[1]CUBRIC , School of Psychology, Cardiff, United Kingdom; [2]Santa Lucia Foundation, Neuroimaging Laboratory, Rome, Italy; [3]School of Engineering, Brown University, Providence, RI, USA; [4]Centre of Neuroimaging Sciences-Institute of Psychiatry, King's College, London, United Kingdom; [5]Department of Neurobiology, Tel Aviv University, Tel Aviv, Israel; [6]Brigham & Women's Hospital, Harvard Medical School, Bostan, MA, USA; [7]CUBRIC, School of Psychology, Cardiff, United Kingdom; [8]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

17:36 **679**. **Microstructure Tracking (MicroTrack): An Algorithm for Estimating a Multiscale Hierarchical White Matter Model from Diffusion-Weighted MRI**
Anthony Jacob Sherbondy[1], Tim B. Dyrby[2], Matthew C. Rowe[3], Maurice Ptito[2,4], Brian A. Wandell[1], Daniel C. Alexander[3]
[1]Psychology Department, Stanford University, Stanford, CA, USA; [2]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [3]Centre for Medical Image Computing, University College London, London, United Kingdom; [4]School of Optometry, University of Montreal, Montreal, Canada

17:48 **680**. **Reliability of Tract-Specific Q-Space Imaging Metrics in Healthy Spinal Cord**
Torben Schneider[1], Olga Ciccarelli[2], Carolina Kachramanoglou[2], David L. Thomas[2], Claudia AM Wheeler-Kingshott[1]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

Dementia Diagnosis - What Can We Learn from Structural Analysis

Room 710B 16:00-18:00 *Moderators:* Vincent A. Magnotta & Pia C. Maly Sundgren

16:00 **681**. **T_2-VBM is More Sensitive to Alzheimer's Disease Pathology Than Conventional T_1-VBM**
Julio Acosta-Cabronero[1], Lara Z. Diaz-de-Grenu[1], Joao MS Pereira[1], George Pengas[1], Guy B. Williams[1], Peter J. Nestor[1]
[1]Department of Clinical Neurosciences, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

16:12 **682**. **HARDI-Based Microstructural Complexity Mapping Reveals Distinct Subcortical & Cortical Grey Matter Changes in Mild Cognitive Impairment & Alzheimer's Disease**
Hamied Ahmad Haroon[1,2], Heather Reynolds[1], Stephen F. Carter[2,3], Karl V. Embleton[2,4], Karl G. Herholz[2,3], Geoff J. Parker[1,2]
[1]Imaging Science & Biomedical Engineering, School of Cancer & Enabling Sciences, The University of Manchester, Manchester, England, United Kingdom; [2]Biomedical Imaging Institute, The University of Manchester, Manchester, England, United Kingdom; [3]Wolfson Molecular Imaging Centre, School of Cancer & Enabling Sciences, The University of Manchester, Manchester, England, United Kingdom; [4]School of Psychological Sciences, The University of Manchester, Manchester, England, United Kingdom

16:24 **683**. **Anatomical Connectivity to Assess Brain Tissue Modifications in Alzheimer's Disease**
Marco Bozzali[1], Geoff Parker[2], Laura Serra[1], Roberta Perri[3], Franco Giubilei[4], Camillo Marra[5], Carlo Caltagirone[3], Mara Cercignani[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]Imaging Science & Biomedical Engineering, University of Manchester, Manchester, United Kingdom; [3]Department of Clinical & Behavioural Neurology, Santa Lucia Foundation, Rome, Italy; [4]Department of Neurology, II Faculty of Medicine, "Sapienza" University of Rome, Rome; [5]Institute of Neurology, Università Cattolica, Rome, Italy

16:36 **684**. **Robust High-Dimensional Morphological Metric: Application to the ADNI Multi-Centric Dataset**
Nicolas Robitaille[1], Abderazzak Mouiha[1], Simon Duchesne[1,2]
[1]Centre de recherche Université Laval Robert-Giffard, Québec, QC, Canada; [2]Radiology, Université Laval, Quebec, QC, Canada

16:48 **685**. **Automated Imaging Classification Based On Volumetric Analysis: Application On Primary Progressive Aphasia**
Andreia Vasconcellos Faria[1,2], Kyrana Tsapkini[3], Jennifer Crinion[4], Hangyi Jiang[1], Xin Li[1], Kenichi Oishi[1], Peter van Zijl[1], Michael Miller[5], Argye Hillis[3], Susumu Mori[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, USA; [2]Radiology, State University of Campinas, Campinas, SP, Brazil; [3]Neurology, Johns Hopkins University, Baltimore, MD, USA; [4]Institute of Cognitive Neuroscience, University College London; [5]Biomedical Engineering, Johns Hopkins University, Baltimore, MD, USA

17:00 **686**. **Magnetization Transfer Imaging of Individual Beta-Amyloid Plaques in Alzheimer's Disease**
Mark David Meadowcroft[1, 2], Zachary George Herse[1], James R. Connor[3], Qing X. Yang[1]
[1]Radiology - Center for NMR Research, Pennsylvania State University - College of Medicine, Hershey, PA, USA; [2]DMCP - Neuroimaging, Bristol-Myers Squibb, Wallingford, CT, USA; [3]Neurosurgery, Pennsylvania State University - College of Medicine, Hershey, PA, USA

17:12 **687**. **Structural Differences Can Be Found Between MCI Converters & Non-Converters More Than 2 Years Prior to Conversion to AD**
Gwenaelle Douaud[1], Ricarda Menke[1], Achim Gass[2], Andreas Monsch[3], Marc Sollberger[2,3], Anil Rao[4], Brandon Whitcher[4], Paul Matthews[4], Stephen Smith[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Departments of Neurology & Neuroradiology, University Hospital Basel, Switzerland; [3]Memory Clinic, Department of Geriatrics, University Hospital Basel, Switzerland; [4]GlaxoSmithKline,Clinical Imaging Centre, Hammersmith Hospital London

17:24 **688**. **Multi-Modal MRI Analysis with Disease Specific Spatial Filtering: Initial Testing to Predict Mild Cognitive Impairment Patients Who Convert to Alzheimer's Disease**
Kenichi Oishi[1], Michelle M. Mielke[2], Andreia V. Faria[1], Michael I. Miller, Perer C. M. van Zijl[3], Marilyn Albert[4,5], Constantine G. Lyketsos[2,5], Susumu Mori[1,3]
[1]Radiology, Johns Hopkins University, Baltimore, MD, USA; [2]Psychiatry & Behavioral Sciences, Johns Hopkins University; [3]Kennedy Krieger Institute; [4]Neurology, Johns Hopkins University; [5]The Johns Hopkins Alzheimer's Disease Research Center

17:36 **689**. **Joint Analysis of Structural & Quantitative Magnetization Transfer MRI For Classification of Alzheimer's Disease & Normal Aging**
Giovanni Giulietti[1], Marco Bozzali[1], Viviana Figura[1], Roberta Perri[2], Camillo Marra[3], Franco Giubilei[4], Mara Cercignani[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]Department of Clinical & Behavioural Neurology, Santa Lucia Foundation, Rome, Italy; [3]Institute of Neurology, Cattolica University, Rome, Italy; [4]Department of Neurology, Sapienza University, Rome, Italy

17:48 **690**. **Decreased Brain Stiffness in Alzheimer's Disease Determined by Magnetic Resonance Elastography**
Matthew C. Murphy[1], John Huston, III[1], Clifford R. Jack, Jr. [1], Kevin J. Glaser[1], Armando Manduca[1], Joel P. Felmlee[1], Richard L. Ehman[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, USA

Sunrise Educational Course
Hot Topics in Body MRI

Room 510 07:00-08:00 *Moderators:* Evis Sala & Herbert A. Vargas

Male & Female Pelvis

07:00 **Non-oncological Imaging of the Male Pelvis**
Ulrich G. Mueller-Lisse

07:30 **MRI of the Female Pelvic Floor**
Katarzyna J. Macura

Sunrise Educational Course
Image Analysis

Room 511A-C 07:00-08:00 *Moderator:* Joseph V. Hajnal

07:00 **DCE MRI**
Steven P. Sourbron

07:30 **Future Needs - Panel Discussion: Unsolved Problems & Unmet Needs**
Panel

Sunrise Educational Course
Translational Imaging: Animal Models in MSK

Room 511D-F 07:00-08:00 *Moderator:* Bernard J. Dardzinski

07:00 **Use of Animal Models: Pharmaceutical Perspective**
John C. Waterton

07:30 **Use of Animal Models: The CRO Perspective**
Michael D. Cockman

Sunrise Educational Course
Fast & Furious: The New Era of Rapid Imaging

Room 512A-G 07:0-08:00

Fast Fetal/Neonatal Imaging

07:00 **Current Clinical Practices & Needs: Fetal Imaging**
Daniela Prayer

07:20 **Current Clinical Practices & Needs: Neonatal Imaging**
Jeffrey Joseph Neil

07:40 **Emerging Techniques**
Roland Bammer

Sunrise Educational Course
Molecular Imaging & Contrast Agents

Room 513A-D 07:00-08:00

07:00 **Physico Chemical Principles of Hyperpolarized CA**
Walter Kockenberger

07:30 **Preclinical & Clinical Applications of Hyperpolarized CA**
Sarah J. Nelson

Sunrise Educational Course
Neuro MRI from Start to Finish

Room 516A-C

The End (Necropsy)

07:00 **Rationale behind Post-Mortem MR of the Fetal CNS & Methodology**
Paul D. Griffiths

07:30 **Forensic/Research Indications**
Eva Scheurer

Sunrise Educational Course
Cardiovascular MR Imaging: Bridging the Gap Between Research & Clinical Problems

Room 518A-C 07:00-08:00

Endogenous Contrast in CMR

07:00 **Non-Contrast MRA**
Ruth P. Lim

07:20 **BOLD & ASL**
Krishna S. Nayak

07:40 **Vessel Function**
Allison G. Hays

Sunrise Educational Course
MRS - Metabolite Profiling & Metabolism

Room 520B-F 07:00-08:00 *Moderators:* Kevin M. Brindle & Ivan Tkac

07:00 **Spectroscopy of Prostate Cancer**
John Kurhanewicz

07:30 **Imaging Cancer Metabolism with Hyperpolarized Substances**
Kevin M. Brindle

Sunrise Educational Course
Image Reconstruction

Room 710A 07:00-08:00

Chemical Shift & Motion

07:00 **Separating Water & Fat**
Walter F. Block

07:30 **Motion Correction**
David Atkinson

Sunrise Educational Course
Absolute Beginners' Guide to Anatomical & Functional MRI of the Brain

Room 710B 07:00-08:00 *Moderator:* Thomas T. Liu

07:00 **Perfusion Imaging**
Matthias Günther

07:30 **Perfusion Processing**
Michael A. Chappell

Plenary Lectures
MRI in the Compromised Pregnancy

Plenary Hall 08:15-09:30 *Organizers:* Penny Anne Gowland & Evis Sala

08:15 **691**. **The Problems of Managing the Compromised Pregnancy**
Phillip N. Baker
University of Alberta, Edmonton, AB, Canada

One in five first pregnancies is complicated by a major pregnancy complication, often without preceding signs or symptoms. the placenta is key to the pathogenesis of two of these complications, preeclampsia and fetal growth restriction (FGR), and this provides the opportunity for predictive and diagnostic tests. Current methodologies include placental hormone measurement, ultrasound assessment of placental morphology and uterine artery Doppler. Once a diagnosis of preeclampsia/FGR has been made, ultrasound assessment of fetal growth and wellbeing is a crucial determinant of the timing of delivery. the role of MR assessment of the placenta is unproven.

08:35 **692**. **Novel MR for Fetal Morphometry**
Colin Studholme
University of Washington, Seattle, WA, USA

Advances in MRI and post processing have revolutionized our ability to quantify early human brain growth in-utero. Motion correction of fast multi-slice imaging permits the formation of true 3D images of the moving fetal head in the majority rather than a fraction of cases, and allows large scale studies of normal human fetal brain growth. New methods allow automated morphometric analysis of transient tissue zones. These studies reveal the process of early sulcal formation, the emergence of brain asymmetry in-utero and promise to provide a host of focal biomarkers that can be used to probe neurological development in clinical cases.

09:05 **693**. **Fetal MR- Beyond Morphology**
Daniela Prayer
Medical University of Vienna, Vienna, Austria

Diffusion-tensor imaging and tractography, fMRI diffusion-based perfusion measurements, spectroscopy, and dynamic movement studies can be used prenatally to acquire information about normal and pathological maturational processes that exceed the visualization of pure morphological details. These applications have become possible as a consequence of speeding up sequences that may be used in unsedated fetuses. the additional information provided by these methods do not only enhance the understanding of normal developmental processes, they also offer opportunities to recognize disorders of normal development earlier, describe them more accurately, and thus improve the quality of counseling and perinatal management.

Animal Models of Brain Disease Other than Stroke

Room 510 10:30-12:30 *Moderators:* Emmanuel L. Barbier & Youssef Z. Wadghiri

10:30 **694**. **Neuroanatomical Abnormalities in a Neuroligin$_3$ R451C Knockin Mouse Model of Autism**
Jacob Ellegood[1], Jason P. Lerch[1], R. M. Henkelman[1]
[1]Mouse Imaging Centre, the Hospital for Sick Children, Toronto, Ontario, Canada

10:42 **695**. **High-Field (9.4 T) MRI of Brain Dysmyelination by Quantitative Mapping of Magnetic Susceptibility**
Chunlei Liu[1,2], Wei Li[1], G. Allan Johnson[2], Bing Wu[1]
[1]Brain Imaging and Analysis Center, Duke University, Durham, NC, USA; [2]Radiology, Duke University, Durham, NC, USA

10:54 **696**. ***In Vivo* Longitudinal ^{1}H MRS Study of Transgenic Mouse Models of Prion Disease in the Hippocampus & Cerebellum at 14.1T**

Cristina Cudalbu[1], Melanie Craveiro[2], Vladimir Mlynárik[2], Juliane Bremer[3], Adriano Aguzzi[3], Rolf Gruetter[2,4]
[1]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL) , Lausanne, Switzerland; [2]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Institute of Neuropathology, University Hospital of Zurich, Zurich, Switzerland; [4]Departments of Radiology, Universities of Lausanne and Geneva, Geneva, Switzerland

11:06 **697**. **Nanoantioxidants in the Treatment of Diabetic Complications**

Taeko Inoue[1], John P. Leach[1], Daniela Marcano[2], Jacob Berlin[2], Thomas A. Kent[3,4], James M. Tour[2,5], Robia G. Pautler[1]
[1]Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, TX, USA; [2]Department of Chemistry, Rice University, Houston, TX, USA; [3]Department of Neurology, Baylor College of Medicine, Houston, TX, USA; [4]Translational Biology & Molecular Medicine, Baylor College of Medicine, Houston, TX, USA; [5]Smalley Institute for Nanoscale Science & Technology, Rice University, Houston, TX, USA

11:18 **698**. **Age-Dependent Neurovascular Changes in C57BL/6 Wild Type Mice using Contrast Enhanced Micro-MR Angiography**

Lindsay K. Hill[1], Karen C. Briley-Saebo[2], Dung M. Hoang[1], Asad Baig[1], Brian J. Nieman[3], Zahi A. Fayad[2], Youssef Z. Wadghiri[1]
[1]Radiology, New York University School of Medicine, New York, NY, USA; [2]Radiology, Mount Sinai School of Medicine, New York, NY, USA; [3]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Canada

11:30 **699**. **Proton & Phosphorus MRS of a 5xfad Mouse Model of Alzheimer's Disease**

Vladimir Mlynarik[1], Lili Sun-Reimer[1], Sharon Janssens[1], Matthias Cacquevel[2], Hongxia Lei[1], Bernard Schneider[2], Patrick Aebischer[2], Rolf Gruetter[1,3]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Brain Mind Institute, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Departments of Radiology, Universities of Lausanne & Geneva, Switzerland

11:42 **700**. **Calcification Imaging with SWIFT in Rat Brain**

Lauri Juhani Lehto[1], Alejandra Sierra[1], Curtis Andrew Corum[2], Djaudat Idiyatullin[2], Michael Garwood[2], Olli Heikki Gröhn[1]
[1]Department of Neurobiology, A. I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Eastern Finland, Finland; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, USA

11:54 **701**. **Longitudinal *In Vivo* MRI-Based Spatiotemporal Mapping of Brain Atrophy in the R6/2 Mouse Model of Huntington's Disease**

Manisha Aggarwal[1], Susumu Mori[1], Michael I. Miller[2], Wenzhen Duan[3], Jiangyang Zhang[1]
[1]Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Center for Imaging Science, Johns Hopkins University, Baltimore, MD, USA; [3]Department of Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD, USA

12:06 **702**. **Tensor Based Morphometry on the Tc_1 Mouse Model of Down Syndrome Highlights Previously Undetected Phenotypes**

Benjamin Sinclair[1,2], Jon Cleary[2], Marc Modat[1], Francesca Norris[2,3], Frances Wiseman[4], Victor Tybulewicz[5], Elizabeth Fisher[4], Mark Lythgoe[2], Sebastien Ourselin[1]
[1]Centre for Medical Image Computing, UCL, London, United Kingdom; [2]Centre for Advanced Biomedical Imaging, UCL, London, United Kingdom; [3]Centre for Mathematics & Physics in the Life Sciences & Experimental Biology (CoMPLEX); [4]UCL, Institute of Neurology, London, United Kingdom; [5]MRC National Institute for Medical Research, London, United Kingdom

12:18 **703**. **Diffusion Kurtosis - a Sensitive Marker For Traumatic Brain Injury (TBI)**

Jiachen Zhuo[1,2], Jake Mullins[2,3], Julie Hazelton[4], Jonathan Simon[5], Su Xu[1,2], Tuo Li, Gary Fiskum[4], Rao Gullapalli[1,2]
[1]Radiology, University of Maryland School of Medicine, Baltimore, MD, USA; [2]Core for Translational Research in Imaging at Maryland (C-TRIM), University of Maryland School of Medicine, Baltimore, MD; [3]Neuroscience, University of Maryland Baltimore, Baltimore, MD; [4]Anesthesiology & Center for Shock Trauma & Anesthesiology Research, University of Maryland School of Medicine, Baltimore, MD; [5]Electrical & Computer Engineering, University of Maryland, College Park, College Park, MD

Endogenous Contrast Mechanisms: CEST & Relaxation

Room 511A-C 10:30-12:30 *Moderators:* R. Mark Henkelman & Ravinder Reddy

10:30 **704**. **Could Lipids Contribute to the Exchange-Induced Resonance Frequency Contrast in Brain Tissue?**
Karin Shmueli[1], Stephen J. Dodd[2], Christian Wunder[3], Jeff H. Duyn[1]
[1]Advanced MRI Section, Laboratory of Functional & Molecular Imaging, National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, USA; [2]Functional & Molecular Metabolism Section, Laboratory of Functional & Molecular Imaging, National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, USA; [3]Traffic, Signaling & Delivery Laboratory, Curie Institute, France

10:42 **705**. **Amide Proton Transfer (APT) MR Signal As a Novel Imaging Biomarker for Charactering Radiation Necrosis in Rats**
Silun Wang[1], Erik Tryggestad[2], Michael Armour[2], Eric Ford[2], Tingting Zhou[1], Kun Yan[1], Zhibo Wen[1], Peter C. M. van Zijl[1,3], Jinyuan Zhou[1,3]
[1]Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [2]Radiation Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute

10:54 **706**. **CESTrho: A New Method for Studying Chemical Exchange at Intermediate Exchange Rates**
Feliks Kogan[1,2], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, USA

11:06 **707**. **Respiratory Triggered Chemical Exchange Saturation Transfer MRI for pH Mapping in the Kidneys at 3T**
Jochen Keupp[1], Edwin Heijman[2], Sander Langereis[2], Holger Grüll[2], Dario L. Longo[3], Enzo Terreno[3], Silvio Aime[3]
[1]Philips Research Europe, Hamburg, Germany; [2]Philips Research Europe, Eindhoven, Netherlands; [3]Center for Molecular Imaging, University of Turino, Turino, Italy

11:18 **708**. **Water-metabolite Hydroxyl Proton Exchange Studied using Spin-Locking & Chemical Exchange Saturation Transfer Approaches**
Tao Jin[1], Seong-Gi Kim[1]
[1]Neuroimaging laboratory, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, USA

11:30 **709**. **Detection of paraCEST Agents with Reduced MT Interference using Frequency Labeled Exchange Transfer (FLEX)**
Chien-Yuan Lin[1,2], Nirbhay N. Yadav[2,3], Joshua I. Friedman[4], S. James Ratnakar[1], A. Dean Sherry[1,5], Peter C. M. van Zijl[2,3]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]F. M. Kirby Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, USA; [3]Division of MR Research, Russell H. Morgan Dept. of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, USA; [4]Pharmacology & Molecular Sciences, Johns Hopkins University, Baltimore, MD, USA; [5]University of Texas at Dallas, Dallas, TX, USA

11:42 **710**. **Parallel RF Transmission based MRI Technique for Highly Sensitive Detection of Amide Proton Transfer in the Human Brain at 3T**
Jochen Keupp[1], Christof Baltes[2], Paul R. Harvey[2], Johan van den Brink[2]
[1]Philips Research Europe, Hamburg, Germany; [2]Philips Healthcare, Best, Netherlands

11:54 **711**. **Examining the Accuracy of Dual Echo B_0 Map for Field Inhomogeneity Correction with the Application of gagCEST in Articular Cartilage at 3T**
Wenbo Wei[1], Guang Jia[1], David C. Flanigan[2], Christopher C. Kaeding[2], Jinyuan Zhou[3], Steffen Sammet[1], Peter Arjan Wassenaar[1], Michael V. Knopp[1]
[1]Wright Center of Innovation in Biomedical Imaging & Department of Radiology, The Ohio State University, Columbus, OH, USA; [2]Department of Orthopedics, The Ohio State University, Columbus, OH, USA; [3]Department of Radiology, Johns Hopkins University, Baltimore, MD, USA

12:06 **712**. **MRI Detection of Brain Glucose Uptake using Gluco-CEST**
Kai-Hsiang Chuang[1], Cai Xian Yong, Ying Min Wang, George K. Radda, Xavier Golay[2]
[1]MRI Group, Singapore Bioimaging Consortium, A*STAR, Singapore, Singapore; [2]Institute of Neurology, University College of London, United Kingdom

12:18 **713**. **Dependence of CEST Effect from Amine Protons of Glutamate on pH**
Anup Singh[1], Kejia Cai[1], Mohammad Haris[1], Joel H. Greenberg[2], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, USA; [2]Department of Neurology, University of Pennsylvania, Philadelphia, PA, USA

Gradients & Shims

Room 511D-F 10:30-12:30 *Moderators:* Dennis L. Parker & Florian Wiesinger

10:30 **714**. **First *In-Vivo* Results with a PatLoc Gradient Insert Coil for Human Head Imaging**
Chris A. Cocosco[1], Daniel Gallichan[1], Andrew J. Dewdney[2], Gerrit Schultz[1], Anna M. Welz[1], Walter R. T. Witschey[1], Hans Weber[1], Juergen Hennig[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg (i.Br.), B.W., Germany; [2]Siemens Healthcare Imaging, Erlangen, Germany

10:42 **715**. **B_0 Shimming in 3T Bilateral Breast Imaging with Local Shim Coils**
Seung-Kyun Lee[1], Lorne Hofstetter[1], Ileana Hancu[1]
[1]GE Global Research, Niskayuna, NY, USA

10:54 **716**. **Dynamic Multi-Coil Shimming of the Human Brain at 7 Tesla**
Christoph Juchem[1], Terence W. Nixon[1], Scott McIntyre[1], Vincent O. Boer[2], Douglas L. Rothman[1], Robin A. de Graaf[1]
[1]MR Research Center, Yale University, New Haven, CT, USA; [2]Department of Radiology, UMC, Utrecht, Netherlands

11:06 **717**. **First O-Space Images using a High-Power, Actively-Shielded, 12-Cm Z2 Gradient Insert On a Human 3T Scanner**
Jason Peter Stockmann[1], Gigi Galiana[2], Leo Tam[1], Terry Nixon[3], Robert Todd Constable[1,2]
[1]Biomedical Engineering, Yale University, New Haven, CT, USA; [2]Diagnostic Radiology, Yale University, New Haven, CT, USA; [3]Diagnostic Radiology, Yale University, New Have, CT, USA

11:18 **718**. **Advances in Software Compensation of Eddy Current Fields in Multislice Higher Order Dynamic Shimming.**
Saikat Sengupta[1,2], Malcolm Avison[2,3], John Gore[2,3], Edward Brian Welch[2,3]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, USA; [2]Vanderbilt University Institute of Imaging Science, Nashville, USA; [3]Radiology & Radiological Sciences, Vanderbilt University, Nashville, USA

11:30 **719**. **Fast Characterization of Higher-Order Shim Dynamics By Impulse Response Measurements with a Dynamic Field Camera**
Johanna Vannesjö[1], Ariane Fillmer[1], Christoph Barmet[1], Peter Boesiger[1], Anke Henning[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Technology, University & ETH Zurich, Zurich, Switzerland

11:42 **720**. **Fourier Series Network Method for 3D Simulations of Eddy Currents Induced in Multilayer Cryostats by Arbitrary Coils**
Michael Stephen Poole[1], Hector Sanchez Lopez[1], Shin-ichi Urayama[2], Hitohsi Kitaguchi[3], Osamu Ozaki[4], Stuart Crozier[1]
[1]ITEE, University of Queensland, Brisbane, QLD, Australia; [2]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan; [3]National Institute for Materials Science, Tsukuba, Japan; [4]Kobe Steel Ltd., Kobe, Japan

11:54 **721**. **Magnetic Gradient Shape Optimization for Highly Accelerated Null Space Imaging**
Leo K. Tam[1], Jason P. Stockmann[1], Gigi Galiana[2], Robert Todd Constable[1]
[1]Biomedical Engineering, Yale University, New Haven, CT, USA; [2]Diagnostic Radiology & Neurosurgery, Yale University, New Haven, CT

12:06 **722**. **Distortion of Gradient Coils Performances in Presence of Iron**
Alice Borceto[1], Andrea Viale[1], Franco Bertora[1], Leonardo Bertora[2], Richard Bowtell[3]
[1]Robotics,Brain & Cognitive Science, Italian Institute of Technology, Genoa, GE, Italy; [2]Paramed Medical system, Genoa, (GE), Italy; [3]Sir Peter Mansfield Magnetic Resonace Center, University of Nottingham, Nottingham, United Kingdom

12:18 **723**. **A Target Field Approach to the Design of RF Phase-Gradient Coils**
Jesse Bellec[1], Chen-Yi Liu[1], Scott B. King[2], Christopher Paul Bidinosti[1,3]
[1]Physics & Astronomy, University of Manitoba, Winnipeg, Manitoba, Canada; [2]MR Technology, NRC Institute for Biodiagnostics, Winnipeg, Manitoba, Canada; [3]Physics, University of Winnipeg, Winnipeg, Manitoba, Canada

Flow Quantification & Cardiovascular Image Processing

Room 512A-G 10:30-12:30 *Moderators:* John N. Oshinski & Smita Sampath

10:30 **724**. **Assessment of Left Ventricular 2D Pseudo Flow Pathway during Early Diastole using SPAMM-PAV**
Ziheng Zhang[1], Donald P. Dione[2], Ben A. Lin[2], Albert J. Sinusas[2], Smita Sampath[1]
[1]Department of Diagnositc Radiology, Yale University, School of Medicine, New Haven, CT, USA; [2]Section of Cardiovascular Medicine, Yale University, School of Medicine, New Haven, CT, USA

10:42 **725**. **3D Aortic Blood Flow in Patients with Marfan Syndrome: Changes in Hemodynamics & Correlation with Aortic Geometry**
Michael Markl[1], Julia Geiger[2], Lena Herzer[3], Brigitte Stiller[3], Raoul Arnold[3]
[1]Radiology, Medical Physics, University Medical Center, Freiburg , Germany; [2]Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [3]Pediatric Cardiology, University Medical Center, Freiburg, Germany

10:54 **726**. **Assessment of Blood Flow Patterns in the Pulmonary Artery with 4D Flow MRI**
Pablo Bächler[1], Natalia Pinochet[1], Gérard Crelier[2], Cristián Tejos[3,4], Pablo Irarrazaval[3,4], Sergio Uribe[4,5]
[1]School of Medicine, Pontificia Universidad Católica, Santiago, Chile; [2]Institute for Biomedical Engineering, University & ETH, Zurich, Switzerland; [3]Electrical Engineering Department, Pontificia Universidad Católica, Chile; [4]Biomedical Imaging Center, Pontificia Universidad Católica, Chile; [5]Radiology Department, Pontificia Universidad Católica, Chile

11:06 **727**. **Absolute Quantification of Pulmonary Pressure Waveforms with MRI in Pulmonary Hypertension Patients**
Octavia Biris[1,2], Sanjiv Shah[3,4], Jeremy Collins[1], Amir Davarpanah[1], James Carr[1,3], Timothy J. Carroll[1,2]
[1]Radiology, Northwestern University, Chicago, IL, USA; [2]Biomedical Engineering, Northwestern University, Evanston, IL, USA; [3]Feinberg School of Medicine, Northwestern University, Chicago, IL, USA; [4]Cardiology, Northwestern University, Chicago, IL, USA

11:18 **728**. **4D MR Velocity Mapping using PC VIPR to Quantify Blood Flow in Portal Hypertension**
Alejandro Roldán-Alzate[1], Alex Frydrychowicz[1], Eric J. Niespodzany[1], Benjamin R. Landgraf[1], Oliver Wieben[1,2], Scott B. Reeder[1,2]
[1]Radiology, University of Wisconsin, Madison, WI, USA; [2]Medical Physics, University of Wisconsin, Madison, WI, USA

11:30 **729**. **4-Dimensional Magnetic Resonance Velocity Mapping of Blood Flow Patterns in Chronic Aortic Dissections at 3T**
Alex Frydrychowicz[1], Michael Markl[2], Eric Niespodzany[1], Christian Schlensak[3], Mark Schiebler[1], Christopher J. François[1]
[1]Department of Radiology, University of Wisconsin - Madison, Madison, WI, USA; [2]Department of Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany; [3]Department of Cardiac Surgery, University Hospital Freiburg, Freiburg, Germany

11:42 **730**. **Analysis of Reynolds, Strouhal & Womersley Numbers in the Healthy Thoracic Aorta**
Aurelien F. Stalder[1,2], Alex Frydrychowicz[3], Max F. Russe[4], Jan G. Korvink[5,6], Jürgen Hennig[4], Kun Cheng Li[1], Michael Markl[4]
[1]Dept. of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, People's Republic of; [2]Dept. of Radiology - Medical Physics, University Hospital Freiburg, N/A , Germany; [3]Dept. of Radiology, University of Wisconsin, Madisson, USA; [4]Dept. of Radiology - Medical Physics, University Hospital Freiburg, Germany; [5]Dept. of Microsystems Engineering, University of Freiburg, Germany; [6]Freiburg Institute for Advanced Studies (FRIAS), Freiburg, Germany

11:54 **731**. **Accelerated Phase-Contrast MRI using Compressed Sensing & Parallel Imaging**
Daniel Kim[1], Hadrien A. Dyvorne[1], Ricardo Otazo[1], Daniel K. Sodickson[1], Vivian S. Lee[1]
[1]Radiology, Center for Biomedical Imaging, New York University School of Medicine, New York, USA

12:06 **732**. **Pulse Wave Velocity Assessment in a Single Breathhold using Compartment k-t PCA**
Daniel Giese[1,2], Tobias Schaeffter[1], Sebastian Kozerke[1,2]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Institute for Biomedical Engineering, Univeristy & ETH Zurich, Zurich, Switzerland

12:18 **733**. **Automated Cardiac Strain Estimation from 2D Cine DENSE MRI**
Andrew D. Gilliam[1], Xiaodong Zhong[2], Kenneth C. Bilchick[3], Frederick H. Epstein[4]
[1]Andrew D. Gilliam Consulting, Providence, RI, USA; [2]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, USA; [3]Cardiology, University of Virginia, Charlottesville, VA, USA; [4]Radiology & Biomedical Engineering, University of Virginia, Charlottesville, VA, USA

Diabetes & Obesity

Room 513A-D 10:30-12:30 *Moderators:* Scott B. Reeder & Amita Shukla-Dave

10:30 **734**. **Liver Fat & Water MR T_2 Values at 3T: Dependence Upon Steatosis Level**
Andrew James Gilman[1], Aliya Qayyum[1], Michelle Nystrom[1], Susan Moyher Noworolski[1]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, USA

10:42 **735**. ***In Vivo* Detection & Quantification of Diet Induced Changes in Adipose Tissue Composition by Non Linear NMR Spectroscopy**
Rosa Tamara Branca[1], Warren Sloan Warren[2]
[1]Chemistry, Duke University, Durham, NC, USA; [2]Chemistry Department, Duke University

10:54 **736**. **Direct Multi-Tissue Assessment of *In Vivo* Postprandial Lipid Handling in ZDF Rats using Localized ^{1}H-[^{13}C] MRS**
Richard Jonkers[1], Luc van Loon[2], Klaas Nicolay[1], Jeanine Prompers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Human Movement Sciences, Maastricht University Medical Centre+, Maastricht, Netherlands

11:06 **737**. **Longitudinal Hepatocellular Lipid Levels (IHCL) On Ob/Ob Mice & the Correlation to Insulin Levels**
Qiong Ye[1], Carsten Friedrich Danzer[2], Divya Vats[1], Markus Rudin[1,3]
[1]University & ETH Zürich, Institute for Biomedical Engineering, Zürich, 8093, Switzerland; [2]Institute of Cell Biology, Zürich, Switzerland; [3]Institute of Pharmacology & Toxicology, Zürich, Switzerland

11:18 **738**. **Compartmental Analysis of R_2 measurements of Hepatic Lipid & Iron *In Vivo* using Breath-Hold Multi-Echo ^{1}H Spectroscopy (HISTO)**
Puneet Sharma[1], Hiroumi D. Kitajima[1], Xiaodong Zhong[2], Bobby Kalb[3], Diego R. Martin[3]
[1]Radiology, Emory Healthcare, Atlanta, GA, USA; [2]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, USA; [3]Radiology, Emory University, Atlanta, GA, USA

11:30 **739**. **Differences in Insulin Sensitivity & Adipose Tissue Distribution in Obese Subjects – Is there a Benign Form of Adiposity?**
Jürgen Machann[1], Norbert Stefan[2], Nina Schwenzer[1], Fabian Springer[1], Hans-Ulrich Häring[2], Claus Claussen[3], Andreas Fritsche[2], Fritz Schick[1]
[1]Section on Experimental Radiology, University Hospital Tübingen, Tübingen, Germany; [2]Department of Internal Medicine IV, University Hospital Tübingen, Tübingen, Germany; [3]Department for Diagnostic & Interventional Radiology, University Hospital Tübingen, Tübingen, Germany

11:42 **740**. **Reversal of Type 2 Diabetes is Associated with Decrease in Pancreas & Liver Fat**
Kieren G. Hollingsworth[1], Ee Lin Lim[1], Benjamin S. Aribisala[1], Mei Jun Chen[1], John C. Mathers[2], Roy Taylor[1]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [2]Institute of Human Nutrition, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom

11:54 **741**. **Model for Manganese Dynamic Contrast-Enhanced MRI of Passive & Glucose-Stimulated Active Pancreatic β Cell Function**
Anita Himansu Dhyani[1], Xiaobing Fan[1], Lara Leoni[1], Brian B. Roman[1]
[1]Radiology, University of Chicago, Chicago, IL, USA

12:06 **742**. **Validation of Imaging Biomarkers of Steatosis in ob/ob Mice with Multiple SPIO Injections**
Catherine D. G. Hines[1], Ian Rowland[2], Calista Roen[1], Diego Hernando[1], Debra Horng[2], Huanzhou Yu[3], Jean Brittain[4], Scott B. Reeder[1]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, USA; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, USA; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [4]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, USA

12:18 **743**. **Quantitative Pancreatic B-Cell MRI using Manganese-Enhanced Look-Locker Imaging & Two-Site Water Exchange Analysis**
Patrick F. Antkowiak[1], Moriel Vandsburger, Frederick H. Epstein
[1]University of Virginia, Charlottesville, VA, USA

Advanced Topics in Image Reconstruction

Room 516A-C 10:30-12:30 *Moderators:* David O. Brunner & Craig H. Meyer

10:30 **744**. **The Variable-Order Fractional Fourier Transform: A New Tool For Efficient Reconstruction of Images Encoded By Linear & Quadratic Gradients with Reduced Sensitivity to Calibration Errors**
Jason Peter Stockmann[1], Gigi Galiana[2], Vicente Parot[3,4], Leo Tam[1], Robert Todd Constable[1,2]
[1]Biomedical Engineering, Yale University, New Haven, CT, USA; [2]Diagnostic Radiology, Yale University, New Haven, CT, USA; [3]Biomedical Imaging Center, Pontificia Universidad Católica de Chile, Santiago, Chile; [4]Department of Electrical Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile

10:42 **745**. **Correlation-Based Reconstruction For Parallel Imaging**
Yu Li[1], Charles L. Dumoulin[1]
[1]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

10:54 **746**. **Quantitative Susceptibility Map Reconstruction with Magnitude Prior**
Berkin Bilgic[1], Audrey P. Fan[1], Elfar Adalsteinsson[1,2]
[1]EECS, MIT, Cambridge, MA, USA; [2]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, USA

11:06 **747**. **Anomalous Noise Behaviour in ZTE Imaging**
Markus Weiger[1,2], Klaas Paul Pruessmann[3]
[1]Bruker BioSpin AG, Faellanden, Switzerland; [2]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [3]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

11:18 **748**. **Highly-Accelerated Real-Time Cine MRI using Compressed Sensing & Parallel Imaging with Cardiac Motion Constrained Reconstruction**
Li Feng[1], Ricardo Otazo[2], Monvadi B. Srichai[2,3], Ruth P. Lim[2], Daniel K. Sodickson[2], Daniel Kim[2]
[1]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, USA; [2]Radiology, New York University School of Medicine, New York, USA; [3]Medicine, New York University School of Medicine, New York, USA

11:30 **749**. **High Spatial & Temporal Resolution Cardiac Imaging Reconstructed from Real-Time Golden Angle Radial Acquisitions using Motion Correction & Parallel Imaging**
Michael Schacht Hansen[1], Thomas Sangild Sørensen[2], Peter Kellman[1]
[1]National Heart, Lung & Blood Institute, National Institutes of Health, Bethesda, MD, USA; [2]Department of Computer Science, Aarhus University, Aarhus, Denmark

11:42 **750**. **Correction of Signal Loss in HYPR FLOW Reconstruction**
Yijing Wu[1], Steven Kecskemeti[1], Patrick A. Turski, Charles A. Mistretta
[1]Medical Physics, University of Wisconsin, Madison, MADISON, WI, USA

11:54 **751**. **Closed-Form Solution for the Three-Point Dixon Method with Advanced Spectrum Modeling**
Johan Berglund[1], Håkan Ahlström[1], Lars Johansson[1], Joel Kullberg[1]
[1]Oncology, Radiology & Clinical Immunology, Uppsala University, Uppsala, Sweden

12:06 **752**. **Spiral Water-Fat Imaging with Integrated Off-Resonance Correction on a Clinical Scanner**
Holger Eggers[1], Peter Boernert[1], Peter Koken[1]
[1]Philips Research, Hamburg, Germany

12:18 **753**. **Addressing Phase Errors in Fat-Water Imaging using a Mixed Magnitude/Complex Fitting Method**
Diego Hernando[1], Catherine D. G. Hines[1], Huanzhou Yu[2], Scott B. Reeder[1,3]
[1]Radiology, University of Wisconsin, Madison, WI, USA; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, USA; [3]Medical Physics, University of Wisconsin, Madison, WI, USA

Cancer: Multi Modal Imaging Including PRI/MRI

Room 518-A-C 10:30-12:30 *Moderators:* Zahi A. Fayad & Martin O. Leach

10:30 **754**. **Introduction**
Zahi A. Fayad

10:42 **755**. **FDG-PET Imaging with First Combined Whole-Body MR-PET vs. Conventional PET/CT: Qualitative & Quantitative Comparison of Results**
DAVID IZQUIERDO-GARCIA[1], VALENTIN FUSTER[2,3], JEFFREY KASTE[4], TROY HAVENS[4], GARY MUSWICK[5], NAVDEEP OJHA[4], ZHIQIANG HU[4], JOSEF MACHAC[6], ZAHI A. FAYAD[1,2]
[1]Translational & Molecular Imaging Institute, Mount Sinai School of Medicine, New York, NY, USA; [2]Department of Cardiology, Zena & Michael A. Weiner Cardiovascular Institute, Mount Sinai School of Medicine, New York, NY, USA; [3]Department of Cardiology, Marie-Josée & Henry R. Kravis Cardiovascular Health Center, Mount Sinai School of Medicine, New York, NY, USA; [4]Philips Healthcare, Cleveland, OH, USA; [5]Philips Healthcare, Cleveland, OH, USA; [6]Division of Nuclear Medicine, Department of Radiology, Mount Sinai School of Medicine, New York, NY, USA

10:54 **756**. **The Effect of MR Acoustic Noise on FDG-PET Uptake in a Simultaneous MR/PET System**
Daniel Burje Chonde[1,2], Nasreddin Abolmaali[3], Alma Gregory Sorensen[1], Ciprian Catana[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, USA; [2]Department of Biophysics, Harvard University, Cambridge, MA; [3]OncoRay - Center for Radiation Research in Oncology, Dresden, Germany

11:06 **757**. **Comparison of Diffusion Weighted Imaging with [^{18}F]-FLT Uptake in a Human Colon Cancer Xenograft Model using Treatment Strategies**
Valerie Simone Honndorf[1], Sally-Ann Ricketts[2], Jane Halliday[2], Hans F. Wehrl[3], Stefan Wiehr[3], Damaris Kukuk[3], Maren K. Koenig[3], Mareike Lehnhoff[3], Julia Mannheim[3], Gerald Reischl[4], Bernd J. Pichler[3]
[1]Laboratory for Preclinical Imaging and Imaging Technology of the Werner Siemens-Foundation , University of Tuebingen, Tuebingen, Germany; [2]Imaging, Translational Sciences, AstraZeneca, Alderley Park, Macclesfield, Cheshire, United Kingdom; [3]Laboratory for Preclinical Imaging & Imaging Technology of the Werner Siemens-Foundation, University of Tuebingen, Tuebingen, Germany; [4]Radiopharmacy & PET-Center, University of Tuebingen, Tuebingen, Germany

11:18 **758**. **Multi-Scale Imaging of Angiogenesis in a Breast Cancer Model**
Jana Cebulla[1], [2], Eugene Kim[3], Jiangyang Zhang[4], Arvind P. Pathak[5]
[1]University Halle-Wittenberg, Halle, Germany; [2]Johns Hopkins University School of Medicine, Baltimore, MD, USA; [3]Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, USA; [4]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University Shool of Medicine, Baltimore, MD, USA; [5]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, USA

11:30 **759**. **Multimodal Imaging of a Dual PI3K/mTOR Inhibitor Demonstrates Strong Effects on Vascular Function**
Shelby Katherine Wyatt[1], Kai H. Barck[1], Jason R. Oeh[2], Hani Bou-Reslan[1], Tim C. Cao[1], Hartmut Koeppen[3], Lori S. Friedman[2], Deepak Sampath[2], Richard A. D. Carano[1]
[1]Biomedical Imaging, Genentech, Inc, South San Francisco, CA, USA; [2]Translational Oncology, Genentech, Inc, South San Francisco, CA, USA; [3]Pathology, Genentech, Inc, South San Francisco, CA, USA

11:42 **760**. **Molecular Imaging of Breast Lesions with PET-MRI: Proof of Concept**
Katja Pinker[1], Stephan Gruber[1], Wolfgang Bogner[1], Siegfried Trattnig[1], Thomas H. Helbich[1]
[1]Department of Radiology, Medical University Vienna, Vienna, Austria

11:54 **761**. **Whole Body PET-MRI Scanner: First Experience in Oncology**
Osman Ratib[1], Magalie Viallon[2], Habib Zaidi[1], Minerva Becker[3], Jean-Paul Vallée, Michael Wissmeyer[1], Jean-pierre Willi[1], Pierre Loubeyre[4], Navdeep Ojha[5], Piotr Maniawski[5], Christoph Becker[3]
[1]Nuclear Medicine, Hopital Universitaire de Genève, GENEVE, Switzerland; [2]Radiology, Hopital Universitaire de Genève, GENEVA, Switzerland; [3]Radiology, Hopital Universitaire de Genève, GENEVE, Switzerland; [4]Breast Oncology, Hopital Universitaire de Genève, GENEVE, Switzerland; [5]Philips Healthcare, Cleveland, USA

12:06 **762**. **Diffusion Weighted MR Imaging: Predictive Capability for Chemoradiotherapeutic Effect in Non-Small Cell Lung Cancer Patients as Compared with FDG-PET/CT**
Keiko Matsumoto[1], Yoshiharu Ohno[2], Hisanobu Koyama[2], Takeshi Yoshikawa[2], Mizuho Nishio[2], Yumiko Onishi[2], Nobukazu Aoyama[3], Daisuke Takenaka[2], Kazuro Sugimura[2]
[1]Radiology, Yamanashi Hospital of Social Insurance, Kofu, Yamanashi, Japan; [2]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [3]Radiology, Kobe University Hospital, Kobe, Hyogo, Japan

12:18 **763**. **Combined use of DWI, DCE-MRI & PET/CT in Treatment Response For Preoperative Chemoradiation in Primary Rectal Adenocarcinoma**
Jing Gu[1], Tao Chan[1], Wailun LAW[2], JingBo Zhang[3], Pek-Lan Khong[1]
[1]Diagnostic Radiology, The University of Hong Kong, Hong Kong, China, People's Republic of; [2]Colorectal Surgery, Queen Mary Hospital, the University of Hong Kong, Hong Kong, China, People's Republic of; [3]Radiology, Memorial Sloan-Kettering Cancer Center, USA

Quantitative & Calibrated fMRI

Room 520B-F 10:30-12:30 *Moderators:* Daniel P. Bulte & Hanzhang Lu

10:30 **764**. **Assessing the Accuracy of Calculations of the Functional Changes in $CMRO_2$ From Blood Oxygenation Data**
Alberto L. Vazquez[1], Mitsuhiro Fukuda[1], Seong-Gi Kim[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, USA

10:42 **765**. **Effect of Graded O_2 Challenge On Vascular & Metabolic Parameters**
Feng Xu[1], Peiying Liu[1], Hanzhang Lu[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, USA

10:54 **766**. **Hyperoxic versus Hypercapnic BOLD Calibration Under Precise End-Tidal Control to Improve the Estimation of Oxygen Consumption**
Clarisse Ildiko Mark[1], Gilbert Bruce Pike[1]
[1]McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada

11:06 **767**. **Elevated CO_2 Mitigates the Rise in $CMRO_2$ During Acute Hypoxia & Improves Cerebral Tissue Oxygenation**
Zachary Myles Smith[1], John S. Hunt, Jr. [1], Ethan Li[1], Jia Guo[1], David D. Shin[1], Richard B. Buxton[1], David J. Dubowitz[1]
[1]Radiology, University of California San Diego, La Jolla, CA, USA

11:18 **768**. **Can the Calibrated BOLD Scaling Factor M Be Estimated Just From R_2′ in the Baseline State Without Administering Gases?**
Nicholas P. Blockley[1], Valerie E M Griffeth[1], Richard B. Buxton[1]
[1]Center for fMRI, Department of Radiology, University of California San Diego, La Jolla, CA, USA

11:30 **769**. **Comparative Oxidative Demands in Cortex & Subcortex Revealed By High Field Calibrated fMRI**
Basavaraju G. Sanganahalli[1,2], Peter Herman[1,2], Douglas L. Rothman[2,3], Hal Blumenfeld[2,4], Fahmeed Hyder[2,3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, USA; [2]Quantitative Neuroscience with Magnetic Resonance in Medicine (QNMR), Yale University, New Haven, CT, USA; [3]Diagnostic Radiology & Biomedical Engineering, Yale University, New Haven, CT, USA; [4]Neurology, Neurosurgery, Neuroscience, Yale University, New Haven, CT, USA

11:42 **770**. **The Ratio of CBF to $CMRO_2$ Change with Brain Activation Remains Unchanged between Simple & Complex Stimuli in the Human Visual Cortex**
Valerie Griffeth[1], Richard Buxton[2]
[1]Department of Bioengineering, UC San Diego, La Jolla, CA, USA; [2]Department of Radiology, UC San Diego, La Jolla, CA, USA

11:54 **771**. **Calibration & Validation of TRUST MRI for the Estimation of Cerebral Blood Oxygenation**
Hanzhang Lu[1], Feng Xu[1], Ksenija Grgac[2,3], Peiying Liu[1], Qin Qin[2,3], Peter van Zijl[2,3]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Department of Radiology, Johns Hopkins University, Baltimore, MD, USA; [3]F.M. Kirby Center, Kennedy Krieger Institute, Baltimore, MD, USA

12:06 **772**. **A Generalized Procedure for Calibrated MRI Incorporating Hyperoxia & Hypercapnia**
Claudine Joëlle Gauthier[1], [2], Richard D. Hoge[1], [2]
[1]Physiology/Biomedical Engineering, Université de Montréal, Montreal, Quebec, Canada; [2]CRIUGM, Montreal, Quebec, Canada

12:18 **773**. **Evolution of the Dynamic Changes in Cerebral Oxidative Metabolism Evoked by Somato-Sensory Stimulation**
Alberto L. Vazquez[1], Mitsuhiro Fukuda[1], Seong-Gi Kim[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, USA

Normal Aging Brain

Room 710A 10:30-12:30 *Moderators:* Christopher P. Hess & Patrik Zamecnik

10:30 **774**. **Age Effects on the Amplitude & Frequency of Resting-State BOLD Fluctuations**
J. Jean Chen[1,2], Tyler D. Triggs[1], H. Diana Rosas[1,3], David H. Salat[1,2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [2]Department of Radiology, Massachusetts General Hospital, Boston, MA, USA; [3]Department of Neurology, Massachusetts General Hospital, Boston, MA, USA

10:42 **775**. **Association between Cerebral Blood Flow & Age-Related Changes in White Matter Microstructure**
J. Jean Chen[1,2], H. Diana Rosas[1,3], David H. Salat[1,2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, USA; [2]Department of Radiology, Massachusetts General Hospital, Boston, MA, USA; [3]Department of Neurology, Massachusetts General Hospital, Boston, MA, USA

10:54 **776**. **Aging Effect on Human Brain Transverse Relaxation Since Preadolescence**
Jianli Wang[1], Megha Patel[1], Deborah Dossick[1], Michele L. Shaffer[2], Christopher W. Weitekamp[1], Xiaoyu Sun[1], Jeffrey Vesek[1], Paul J. Eslinger[3], David J. Jill[3], James R. Connor[4], Qing X. Yang[1,4]
[1]Radiology, Penn State College of Medicine, Hershey, PA, USA; [2]Public Health Sciences, Penn State College of Medicine, Hershey, PA, USA; [3]Neurology, Penn State College of Medicine, Hershey, PA, USA; [4]Neurosurgery, Penn State College of Medicine, Hershey, PA, USA

11:06 **777**. **Genetic Influences on White Matter Microstructure in 280 Twins Scanned with 4 Tesla High Angular Resolution Diffusion Imaging (HARDI)**
Agatha D. Lee[1], Natasha Lepore[2], Caroline C. Brun[3], Marina Barysheva, Arthur Toga, Katie L. McMaho[4], Greig I. de Zubicaray[5], Nicholas G. Martin, Margaret Wright, Paul M. Thompson
[1]Neurology, LONI-UCLA, Los Angeles, CA, USA; [2]CHLA -USC; [3]UPENN; [4]Centre for Magnetic Resonance, University of Queensland; [5]Queensland Institute of Medical Research,

11:18 **778**. **Preliminary Evidence of Increased Brain Acetate Uptake & Oxidation in Heavy Drinkers Probed by ^{13}C-MRS**
Lihong Jiang[1], Barbara Gulanski[2], Stuart Weinzimer[3], Ismene Petrakis[3], Elizabeth Guidone[3], Julia Koretski[3], Graeme Mason
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, USA; [2]Internal Medicine, Yale University School of Medicine; [3]Psychiatry, Yale University School of Medicine

11:30 **779**. **Age & Gender Related Alterations in Brain Perfusion Dynamics**
Yinan Liu[1,2], Xiaoping Zhu[1], David Feinberg[2,3], Matthias Guenther[4,5], Howard Rosen[6], Michael W. Weiner[1,2], Norbert Schuff[1,2]
[1]Center for Imaging of Neurodegenerative Diseases, Department of Veterans Affairs Medical Center, San Francisco, CA, USA; [2]Department of Radiology & Biomedical Imaging, University of California, San Francisco, CA, USA; [3]Advanced MRI Technology

LLC, Sebastopol, CA, USA; [4]Mediri GmbH, Heidelberg, Germany; [5]Department of Neurology, Klinikum Mannheim, University Heidelberg, Mannheim, Germany; [6]Department of Neurology, University of California, San Francisco, CA, USA

11:42 **780**. **Regional Changes of Cortical Mean Diffusivity with Ageing & Alzheimer Disease after Correction of Partial Volume Effects**

Tina Jeon[1], Virendra Mishra[1], Myron Weiner[2], Kristin Martin-Cook[3], Kimmo Hatanpaa[4], Chan Foong[4], Hao Huang[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, USA; [3]Department of Neurology, University of Texas Southwestern Medical Center, Dallas, TX, USA; [4]Department of Pathology, University of Texas Southwestern Medical Center, Dallas, TX, USA

11:54 **781**. **Effect of Aging on CBF Mapping of Default Mode Network : An fMRI Study**

Ying Hao[1], Jing Liu[2], Yue Zhang[3], Xiaoying Wang[1,4], Jue Zhang[1,3], Jing Fang[3,5]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, People's Republic of; [2]Dept. of Radiology, Peking University First Hospital, Beijing, China, People's Republic of; [3]College of Engineering, Peking University, Beijing, China, People's Republic of; [4]Dept. of Radiology, Peking University First Hospital, Beijing, Beijing, China, People's Republic of; [5] Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, People's Republic of

12:06 **782**. **Multi Modal MRI Reveals Early Life Brain Changes in Human Apoe-E4 Carriers**

Ory Levy[1], Anat Bar-Shira[2], Avi Orr-Urtreger[2,3], Yaniv Assaf[1]
[1]Department of Neurobiology, Life Sciences Faculty, Tel aviv University, Tel Aviv, Israel; [2]The Genetic Institute, Tel-Aviv Sourasky Medical Center, Tel-Aviv, Israel; [3]The Sackler Faculty of Medicine, Tel aviv University, Tel Aviv, Israel

12:18 **783**. **Paradoxically Reduced Cerebral Vascular Reactivity in Masters Athletes**

Binu P. Thomas[1,2], Uma Sreekumar Yezhuvath[1], Rong Zhang[3,4], Benjamin Yichen Tseng[3,4], Benjamin Levine[3,4], Hanzhang Lu[1,5]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, USA; [2]Biomedical Engineering, University of Texas Southwestern Medical Center/University of Texas at Arlington, TX, USA; [3]Institute for Exercise & Environmental Medicine, Texas Health Presbyterian Hospital, Dallas, TX, USA; [4]Internal Medicine-Cardiology, University of Texas Southwestern Medical Center, Dallas, TX, USA; [5]Biomedical Engineering , University of Texas Southwestern Medical Center/University of Texas at Arlington, TX, USA

Perfusion MRI: DSC & DCE MRI

Room 710B 10:30-12:30 *Moderators:* Geoffrey J. M. Parker & Matúš Straka

10:30 **784**. **Separation of Intra- & Extra-Vascular Spaces in Human Brain with DCE-MRI & ^{11}C- Verapamil PET**

Xiaoping Zhu[1], John R. Cain[1], Shaonan Wang[1], Maria Feldmann[1,2], Gerry Thompson[1], Ka-Loh Li[1], Marie Claude Asselin[1], Alan Jackson[1]
[1]Wolfson Molecular Imaging Centre, University of Manchester, Manchester, United Kingdom; [2]Department of Clinical & Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom

10:42 **785**. **Whole-Brain CBF Measurements using DCE-MRI & 3D k-t PCA**

Henrik Pedersen[1], Adam E. Hansen[1], Henrik B. W. Larsson[1]
[1]Functional Imaging Unit (KFNA), Glostrup Hospital, Glostrup, Denmark

10:54 **786**. **Accurate Brain Tumor Blood Volume Estimation using DCE-MRI with Bookend T_1 Measurements & Phase-Derived AIFs**

Greg O. Cron[1], Claire Foottit[1], Jean Francois Mercier[1], Rebecca Thornhill[1], Viviane Thanh-Van Nguyen[2], Ian Cameron[1], Mark E. Schweitzer[1], J. J. Shankar[1], John Sinclair[1], John Woulfe[1], Matthew J. Hogan[3], Thanh B. Nguyen[1]
[1]The Ottawa Hospital, Ottawa, Ontario, Canada; [2]University of Montreal; [3]Neuroradiology, University of Ottawa, Ottawa, Ontario, Canada

11:06 **787**. **Discriminant Analysis to Classify the Glioma Grading using DCE MRI & Immunohistochemical Markers**

Rishi Awasthi[1], Prativa Sahoo[2], Nuzhat Husain[3], Priyanka Soni[3], Ashish Awasthi[4], Rohit Kumar Singh[5], Sanjay Behari[5], Chandra M. Pandey[4], Ram Kishan Singh Rathore[6], Rakesh Kumar Gupta[1]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; [3]Pathology, Chatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [4]Biostatistics, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Neurosurgery, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [6]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India

11:18 **788**. **Spin- & Gradient-Echo EPI for Imaging of Brain Perfusion with MRI**
Heiko Schmiedeskamp[1], Matus Straka[1], Greg Zaharchuk[1], Nancy J. Fischbein[1], Marteen G. Lansberg[2], Jean-Marc Olivot[2], Greg W. Albers[2], Michael E. Moseley[1], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Stanford, CA, USA; [2]Department of Neurology, Stanford University, Stanford, CA, USA

11:30 **789**. **Independent Component Analysis of Dynamic Susceptibility Contrast MRI in Brain Tumor: A New Biomarker for Measuring Tumor Perfusion Patterns**
Peter Sherman LaViolette[1], Alex D. Cohen[1], Scott D. Rand[2], Wade Mueller[3], Kathleen M. Schmainda[1,2]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, USA; [2]Radiology, Medical College of Wisconsin, Milwaukee, WI, USA; [3]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, USA

11:42 **790**. **Improved Differentiation of Brain Tumors by Phase Contrast Calibration of Dynamic Susceptibility Contrast MRI: Combined Use with Extravasation Correction**
David Bonekamp[1], Peter B. Barker[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, USA

11:54 **791**. **Does DSC-Derived CA Extravasation Correlate with DCE K^{trans}?**
Kyrre E. Emblem[1,2], Kim Mouridsen[1], Ronald J. H. Borra[1], Gregory Sorensen[1], Tracy T. Batchelor[3], Rakesh K. Jain[4], Atle Bjornerud[2,5]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, USA; [2]The Interventional Center, Oslo University Hospital - Rikshospitalet, Oslo, Norway; [3]Pappas Center for Neuro-Oncology, Massachusetts General Hospital, Boston, MA, USA; [4]Department of Radiation Oncology, Massachusetts General Hospital, Boston, MA, USA; [5]Department of Physics, University of Oslo, Oslo, Norway

12:06 **792**. **Can We Separate the Contributions of Permeability & Diffusion of Contrast Agent? A Simulation Study**
Clément Stephan Debacker[1,2], Nicolas Pannetier[1,2], Franck Mauconduit[1,2], Thomas Christen[1,3], Emmanuel Luc Barbier[1,2]
[1]INSERM - U836, Grenoble, France; [2]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [3]Department of Radiology, Stanford University, Stanford, CA, USA

12:18 **793**. **Dynamic Ratio $\Delta r_{2ge}/\Delta r_{2se}^{3/2}$ in DSC Perfusion Imaging Reveals the Relative Arterial & Venous Blood Volume Fraction**
Chao Xu[1], Valerij Kiselev[2], Peter Brunecker[1], Jochen Fiebach[1]
[1]Center for Stroke Research Berlin (CSB), Berlin, Germany; [2]Department of Diagnostic Radiology, University Hospital Freiburg, Freiburg, Germany

Traditional Poster

Liver - Pancreas

Exhibition Hall Monday 14:00-16:00

794. Quantifying Blood Flow & Perfusion in Liver Tissue using Phase Contrast Angiography & Arterial Spin Labelling
Caroline Hoad[1], Carolyn Costigan[1], Luca Marciani[2], Philip Kaye[3], Robin Spiller[2], Penny Gowland[1], Guru Aithal[2], Susan Francis[1]
[1]School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Nottingham Digestive Diseases Centre, NIHR Biomedical Research Unit, University Hospitals NHS Trust, Nottingham, Nottinghamshire, United Kingdom; [3]Department of Cellular Pathology, University Hospitals NHS Trust, Nottingham, Nottinghamshire, United Kingdom

795. Toward Non-Invasive Estimation of Portal Pressure Via MR Elastography
Sara Aristizabal[1], Meng Yin[1], Kevin J. Glaser[1], Arunark Kolipaka[1], Armando Manduca[1], Richard L. Ehman[1]
[1]Mayo Clinic, Rochester, MN, United States

796. Multiexponential T_2 Analyses in a Murine Model of Hepatic Fibrosis at 11.7T MRI
Jonathan Scalera[1], Hernan Jara[1], Jorge a Soto[1], James A. Hamilton[2], Michael O'Brien[3], Stephan William Anderson[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States; [2]Physiology & Biophysics, Boston University Medical Center; [3]Pathology & Laboratory Medicine, Boston University Medical Center

797. Assessment of Liver Fibrosis in Rats with MR Imaging & Elastography
Heiko G. Niessen[1], Michael Neumaier[1], Thomas Kaulisch[1], Ingolf Sack[2], Dieter Klatt[3], Thomas Klein[4], Juergen Braun[3], Detlef Stiller[1]
[1]*In-Vivo* Imaging, Target Discovery Research, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany; [2]Dept. of Radiology, Charite-University Medicine Berlin; [3]Dept. of Medical Informatics, Charite-University Medicine Berlin; [4]CardioMetabolic Diseases Research, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany

798. Time-Resolved Qualitative & Quantitative Analysis of Normal & Altered 3D Portal Venous Hemodynamics in Liver Cirrhosis Patients
Zoran Stankovic[1], Zoltan Csatari[1], Peter Deibert[2], Wulf Euringer[1], Susanne Eggerking[2], Philipp Blanke[1], Zahra Abdullah Zadeh[1], Mathias Langer[1], Michael Markl[1]
[1]Radiology, University Hospital Freiburg, Freiburg, Ba.-Wü., Germany; [2]Gastroenterology, University Hospital Freiburg, Freiburg, Ba.-Wü., Germany

799. Evaluation of Normal & Altered Hepatic Arterial Und Portal Venous 4D Hemodynamics in Patients with Liver Cirrhosis Before & After Treatment with TIPS
Zoltan Csatari[1], Zoran Stankovic, Peter Deibert, Wulf Euringer, Julia Geiger, Wolfgang Kreisel, Mathias Langer, Michael Markl
[1]University Hospital Freiburg, Freiburg, Baden Württemberg, Germany

800. Performance & Limitations of R_2* Relaxometry Liver Iron Measurements
Greg Colin Brown[1], David James Taylor[1], Donald McRobbie[2]
[1]Radiology, Royal Adelaide Hospital, Adelaide, South Australia, Australia; [2]Radiological Sciences Unit, Imperial College Healthcare NHS Trust, London, United Kingdom

801. Influence of a Connected & Inactive Coil on a MR Exam: Liver Iron Load Measurement
Anou Sewonu[1,2], Marine Beaumont[3,4], Fanny Carbillet[1], Maélène Lohezic[2], René Anxionnat[4], Jacques Felblinger[2,4], Gabriel Hossu[3,4]
[1]Alara-Solutions, Strasbourg, France; [2]IADI Lab., Nancy-Université, Nancy, France; [3]CIT801, INSERM, Nancy, France; [4]IADI Lab., CHU Nancy, Nancy, France

802. Blood-Suppressed T_2* Mapping in Liver with Motion Sensitized Driven Equilibrium (MSDE)
Rexford D. Newbould[1], Giulio Gambarota[1]
[1]GSK Clinical Imaging Centre, Hammersmith Hospital, London, United Kingdom

803. Evaluation of Individual Versus Average T_2* Decay Correction & Single Slice Versus Multislice Sampling in the Two-Point Dixon Method for Liver Fat Quantification
Cemil Kirbas[1], Eric Zalusky[1], Stefan Czerwinski[2], Miryoung Lee[2], Ke Cheng Liu[3], Jason G. Parker[1]
[1]Innovation Center, Kettering Health Network, Kettering, OH, United States; [2]Department of Community Health, Wright State University, Kettering, OH, United States; [3]Siemens Medical Solutions, United States

804. **Quantification of Hepatic Steatosis with MRI: Histological Validation**
Thomas David Reed[1], Rashmi Agni[2], Catherine Hines[1], Richard Bruce[1], Mona Ranade[1], Benjamin Soriano[3], Kiyarash Mohajer[1], Scott B. Reeder[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Pathology, University of Wisconsin, Madison , WI, United States; [3]Pathology, University of Wisconsin, Madison, WI, United States

805. **Relationship Between Proton-Density Fat-Fraction & True Fat Concentration for *In Vivo* Fat Quantification with Magnetic Resonance Imaging**
Scott Brian Reeder[1], Catherine D. Hines[1], Huanzhou Yu[2], Charles A. McKenzie[3], Jean H. Brittain[4]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [4]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States

806. ***In Vivo* Application of Breath-Hold Single-Voxel ^{1}H Spectroscopy for T_2-Corrected Hepatic Lipid Measurement: Evaluation of Accuracy & Reproducibility**
Puneet Sharma[1], Hiroumi D. Kitajima[1], Xiaodong Zhong[2], Bobby Kalb[3], Alton B. Farris[4], Miriam B. Vos[5], Diego R. Martin[3]
[1]Radiology, Emory Healthcare, Atlanta, GA, United States; [2]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States; [3]Radiology, Emory University, Atlanta, GA, United States; [4]Pathology, Emory University, Atlanta, GA, United States; [5]Hepatology, Children's Hospital of Atlanta, Atlanta, GA, United States

807. **Respiratory Gated Contrast Enhanced Imaging of the Liver**
Pascal Spincemaille[1], Doug Brylka[1], Martin R. Prince[1], Yi Wang[1,2]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States

808. **Development of MRI-Guided Intrabiliary Local Agent Delivery Technique**
Feng Zhang[1], Jiakai Li[1], Yanfeng Meng[1], Jihong Sun[1], Stephanie San Juan Soriano[1], Huidong Gu[1], Patrick Willis[1], Xiaoming Yang[1]
[1]Image-Guided Bio-Molecular Intervention Section, Department of Radiology, University of Washington School of Medicine, Seattle, WA, United States

809. **Evaluating the Effects of Various Food Ingredients on Gallbladder Contraction**
Eleanor F. Cox[1], Caroline L. Hoad[1], John J. Totman[1], Carolyn Costigan[1], Luca Marciani[2], Robin C. Spiller[2], Penny A. Gowland[1]
[1]SPMMRC, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]NDDC NIHR BRU, Nottingham University Hospitals, Nottingham, United Kingdom

810. **Investigating the Pancreatic Function: Robust 3D MR Imaging of Mouse Abdomen**
Ekkehard Küstermann[1], Anke Meyer[2], Amod Godbole[2], Wolfgang Dreher[3], Kathrin Maedler[2]
[1]ZKW, University of Bremen, Bremen, Germany; [2]CBIB, University of Bremen; [3]FB2, University of Bremen

811. **MRI of Paraduodenal Pancreatitis: Clinical Performance in Distinction from Carcinoma**
Bobby Kalb[1], Juan M. Sarmiento[2], N. Volkan Adsay[3], James Costello[1], Hiroumi Kitajima[1], Puneet Sharma[1], Christina Lurie[1], Diego R. Martin[1]
[1]Radiology, Emory University School of Medicine, Atlanta, GA, United States; [2]Surgery, Emory University School of Medicine, Atlanta, GA, United States; [3]Pathology, Emory University School of Medicine, Atlanta, GA, United States

812. **Assessment of Chronic Pancreatitis with MR Elastography**
Yogesh Kannan Mariappan[1], Kevin Glaser[1], Naoki Takahashi[1], Phillip Young[1], Richard L. Ehman[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, United States

813. **Ethnic Implications of Pancreatic Steatosis**
Lidia S Szczepaniak[1], Edward W Szczepaniak[1], Qi Peng[2], Ildiko Lingvay[3]
[1]The Heart Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Radiology, University of Texas, Health Science Center, San Antonio, TX, United States; [3]Endocrinology, University of Texas, Southwestern Medical Center, Dallas, TX, United States

Kidneys/Adrenals

Exhibition Hall Tuesday 13:30-15:30

814. **Variation in GFR Estimates Derived from DCE-MRI Renography Studies in the Presence of Reduced Signal to Noise Ratio**
Saeed Kiani[1], Isky Gordon[2], Iosif Mendichovszky[3], Marica Cutajar[2], Kevin Wells[1]

[1]CVSSP, Faculty of Engineering & Physical Sciences, University of Surrey, Guildford, Surrey, United Kingdom; [2]UCL Institute of Child Health, London, United Kingdom; [3]Wolfson Molecular Imaging Centre, University of Manchester, Manchester, United Kingdom

815. A Variational Approach to Image Registration in DCE-MRI of Human Kidney

Andreas D. Merrem[1], Frank G. Zoellner[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany

816. A Robust Method for Reducing Inflow Artifacts in the Arterial Input Function of Dynamic Contrast Enhanced Data Sets

Yutong Duan[1,2], Ralf Berthold Loeffler[1], Ruitian Song[1], Aaryani Tipirneni[1], Sheri Spunt[3], Niels Oesingmann[4], Anne Viano[2], Claudia Maria Hillenbrand[1]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Physics, Rhodes College, Memphis, TN, United States; [3]Oncology, St. Jude Children's Research Hospital, Memphis, TN, United States; [4]Siemens Medical Solutions USA, Inc., New York, NY, United States

817. Quantification of Renal DCE-MRI with BLADE: Initial Experience

Florian Lietzmann[1], Frank G. Zoellner[1], Ulrike Attenberger[2], Henrik J. Michaely[2], Stefan Haneder[2], Stefan O. Schoenberg[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Institute of Clinical Radiology & Nuclear Medicine, University Medical Centre Mannheim, Mannheim, Germany

818. Comparison of ASL & DCE-MRI for Renal Perfusion Measurements

Jeff D. Winter[1,2], Keith S. St. Lawrence[3,4], Hai-Ling Margaret Margaret Cheng[1,5]
[1]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Research & Development, IMRIS, Winnipeg, Manitoba, Canada; [3]Imaging Division, Lawson Research Institute, London, Ontario, Canada; [4]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [5]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

819. A Comparative Study of Arterial Spin Labeling & Dynamic Contrast Enhanced Perfusion Magnetic Resonance Imaging in the Kidneys

Mao-Yuan Su[1], Chin-Chen Chang[1], Kao-Lang Liu[1], Ting-Fang Tiffany Shih[1], Wen-Chau Wu[1,2]
[1]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [2]Graduate Institute of Oncology, National Taiwan University, Taipei, Taiwan

820. High Resolution Respiratory Triggered Multiphase TrueFISP ASL

Eleanor F. Cox[1], Caroline L. Hoad[1], Susan T. Francis[1]
[1]SPMMRC, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

821. Model-Based Registration for Motion Correction of Inversion Recovery & Multiple-Time Point Renal ASL

Mark Stephen Dobbs[1,2], Neil Woodhouse[3], Geoff J. M. Parker[1,2], Josephine H. Naish[1,2]
[1]Imaging Science & Biomedical Engineering, the University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]The Biomedical Imaging Institute, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [3]AstraZeneca, Macclesfield, Cheshire, United Kingdom

822. k-Means Segmentation of Kidney Cortex & Medulla for BOLD Images

Yin Huang[1], Nathan Hanson[1], Elizabeth Sadowski[2], David Niles[1], Nathan Artz[1], Arjang Djamali[3], Thomas Grist[1,2], Sean Fain[1,2]
[1]Medical Physics, University of Wisconsin Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin Madison, Madison, WI, United States; [3]Nephrology, University of Wisconsin Madison, Madison, WI, United States

823. Longitudinal Evaluation of Renal Oxygenation in Kidney Donors & Recipients using BOLD MRI

David Joseph Niles[1], Sean B. Fain[1,2], Nathan S. Artz[1], Yin Huang[1], Karl K. Vigen[2], Arjang Djamali[3], Thomas M. Grist[1,2], Elizabeth A. Sadowski[2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States; [3]Nephrology, University of Wisconsin, Madison, WI, United States

824. *In Vivo* $T_1\rho$ Study on Human Kidney

Xiang He[1], Chan-Hong Moon[1], Jung-Hwan Kim[1], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

825. Quantification of Renal T_1 using a Modified Respiratory Triggered Inversion Recovery TrueFISP Scheme

Eleanor F. Cox[1], Caroline L. Hoad[1], Susan T. Francis[1]
[1]SPMMRC, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

826. Study of Kidney SWI Under Oxygenation Variation After Water Uptake - Initial Results

Moritz Bernhard Mie[1], Frank Gerrit Zoellner[1], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

827. ^{23}Na MRI of the Human Kidney at 3T: Improving Image Quality by Different Image Filters

Frank G. Zoellner[1], Holger Best[1], Simon Konstandin[1], Stefan Haneder[2], Stefan O. Schoenberg[2], Henrik J. Michaely[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Institute of Clinical Radiology & Nuclear Medicine, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany

828. Non-Invasive CEST-MRI Measurement of Ph in the Human Kidneys using an Approved CT Contrast Agent

Jochen Keupp[1], Ivan Dimitrov[2,3], Sander Langereis[4], Osamu Togao[3], Masaya Takahashi[3], A. Dean Sherry[3]
[1]Philips Research Europe, Hamburg, Germany; [2]Philips Healthcare, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [4]Philips Research Europe, Eindhoven, Netherlands

829. MR Phantom Validation of Adrenal Adenoma Signal Intensity Index Normalization

Cory R. Wyatt[1], Brian Dale[2], Elmar Merkle[1], James MacFall[1], Brian Soher[1]
[1]Radiology, Duke University, Durham, NC, United States; [2]Siemens Medical Solutions, Inc., Morrisville, NC, United States

830. Fat Quantification of Adrenal Adenomas using 3D 3-Point Dixon MR Imaging: Comparison with Conventional 2D Dual Echo Chemical Shift MR Imaging

Tomohiro Namimoto[1], Kosuke Morita, Toshinori Hirai, Shinichi Nakamura, Seitaro Oda, Daisuke Utsunomiya, Yasuyuki Yamashita, Makoto Obara[2]
[1]Radiology, Kumamoto University, Kumamoto, Japan; [2]Philips Medical Systems

Fetal & Female Pelvis

Exhibition Hall Wednesday 13:30-15:30

831. MR Spectroscopy of Endometrial Cancer - Initial Results at 3T
Geoff Charles-Edwards[1,2], Robert Johnstone[1], Sarah Natas[1], Audrey Jacques[1]
[1]Guy's & St Thomas' NHS Foundation Trust, London, United Kingdom; [2]King's College London, London, United Kingdom

832. Uterine Fibroids: Quantitative Assessment of Baseline T_1, ADC & Microvascular Properties with T_1w DCE-MRI
Lucy Elizabeth Kershaw[1], Yuexi Huang[1], Hallie Taylor[2,3], Elizabeth David[2], Kullervo Hynynen[1,4], Greg Stanisz[1,4], Laurent Milot[2,3]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Radiology, Sunnybrook Research Institute, Toronto, Ontario, Canada; [3]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [4]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

833. Improved T_2-Weighted Imaging of the Pelvis using T_2-Prepared Single-Slab 3D TSE (SPACE)
John P. Mugler, III[1], Talissa A. Altes[1], Wilhelm Horger[2], Berthold Kiefer[2]
[1]Radiology, University of Virginia, Charlottesville, VA, United States; [2]Siemens Healthcare, Erlangen, Germany

834. Normal Liver T_2* Values in the Fetus
Tammar Kushnir[1], Chen Hoffmann[1], Lisa Raviv-Zilka[1], Yishay Salem[1], Eli Konen[1], Orly Goitein[1]
[1]Dept. of Diagnostic Imaging, MRI Unit, The Chaim Sheba Medical Center, Tel Hashomer, Israel

Body Diffusion: Technique & Clinical Applications

Exhibition Hall Thursday 13:30-15:30

835. ADC Quantification of Continuously Moving Table Whole-Body Diffusion-Weighted Imaging
Yeji Han[1], Sandra Huff[2], HyunWook Park[1], Ute Ludwig[2]
[1]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of; [2]Medical Physics, University Hospital Freiburg, Freiburg, Germany

836. Quantification Accuracy of ADC Measurements from Whole-Body DWIBS
Alan John Stone[1,2], Jacinta E. Browne[3], Brian Lennon[4], James F. Meaney[5], Andrew J Fagan[1,6]
[1]Centre for Advanced Medical Imaging (CAMI), St. James's Hospital / Trinity College,, University of Dublin, Ireland; [2]Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff, United Kingdom; [3]School of Physics, Dublin Institute of Technology, Dublin, Ireland; [4]Dept. Medical Physics & Bioengineering, St. James's Hospital, Dublin, Ireland; [5]Centre for Advanced Medical Imaging (CAMI), St. James's Hospital / Trinity College, University of Dublin, Ireland; [6]School of Medicine, Trinity College, University of Dublin, Ireland

837. Correlation of Urinary Bladder Cancer with Stalk Observed on 3-Tesla MRI with Histopathological T Staging & Cystoscopic Findings: Comparison of Diffusion- & T_2-Weighted Imaging in Stalk Detectability
Yoshimitsu Ohgiya[1], Jumpei Suyama[1], Syouei Sai[1], Masaaki Kawahara[1], Jirou Munechika[1], Makoto Saiki[1], Noritaka Seino[1], Masanori Hirose[1], Takehiko Gokan[1]
[1]Showa University School of Medicine, Tokyo, Japan

838. NdH/dT: A New Quantitative Measure for Diffusion Weighted Imaging Based Evaluation of Abdominal Tumor Response to Therapy
Moti Freiman[1], Stephan Voss, Simon K. Warfield[1]
[1]Computational Radiology Laboratory, Dept. of Radiology, Children's Hospital, Harvard Medical School, Boston, MA, United States

839. Simultaneous Compensation of Respiratory & Cardiac Motion Effect on Liver DWI
Tetsuo Ogino[1,2], Tomohiko Horie[3], Hayato Takano[4], Thomas Kwee[5], Taro Takahara[6,7], Marc Van Cauteren[8], Tosiaki Miyati[9]
[1]Healthcare Division, Philips Electronics Japan, LTD, Minato-ku, Tokyo, Japan; [2]Graduate School of Medical Sciences, Kanazawa University, Kanazawa-shi, Ishikawa-ken, Japan; [3]Dept. of Radiology, Tokai Univiersity Hospital, Isehara-shi, Kanagawa, Japan; [4]Dept. of Radiology, Tokai University Hospital, Isehara-shi, Kanagawa, Japan; [5]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [6]Biomedical Engineering, Tokai University School of Engineering, Hiratsuka-shi, Kanagawa, Japan; [7]Dept. of Radiology, UMC Utrecht, Utrecht , Netherlands; [8]Philips Healthcare; [9]Department of Quantum Medical Technology, Kanazawa University, Kanazawa, Ishikawa, Japan

840. Comparison of Breath-Hold Versus Free-Breathing Versus Respiratory Triggered & Navigator Triggered Diffusion Weighted Imaging of the Liver
Moritz Florian Kircher[1,2], Alan Xu[1], Anja C. Brau[3], Martin Laufik[1], Yuji Iwadate[4], Jarrett Rosenberg[1], Bruce L. Daniel[1], Robert J. Herfkens[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [4]Global Applied Science Laboratory, GE Healthcare, Hino, Japan

841. Comparison of Breath-Hold & Free-Breathing Diffusion-Weighted Techniques for Liver MR Diffusivity in Healthy Volunteers & Patients
Mamak Eatesam[1], Susam M. Noworolski[1,2], Phyllis C. Tien[3], Michelle Nystrom[1], Jennifer L. Dodge[4], Raphael B. Merriman[5], Aliya Qayyum[1]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Graduate Group in Bioengineering, UC San Francisco & Berkeley, San Francisco & Berkeley, CA, United States; [3]Department of Medicine, UCSF & San Francisco Veterans Affairs Medical Center, San Francisco, CA, United States; [4]Department of Internal Medicine, UCSF, Fresno, CA, United States; [5]Department of Medicine, California Pacific Medical Center, San Francisco, CA, United States

842. Diffusion-Weighted MRI of the Liver at 3T MRI: Effect of Steatosis on ADC at Low & High B Values
Andrew James Gilman[1], Susan Moyher Noworolski[1], Mamak Eatesam[1], Jennifer Lynne Dodge[1], Raphael Brendan Merriman[2], Aliya Qayyum[1]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Division of Gastroenterology, California Pacific Medical Center, San Francisco, CA, United States

843. Reliability Analysis of Liver Apparent Diffusion Coefficient Measurement: Importance of ROI Size & Image Threshold
Mamak Eatesam[1], Michelle Nystrom[1], Susan M. Noworolski[1,2], Jennifer L. Dodge[3], Raphael B. Merriman[4], Aliya Qayyum[1]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Graduate Group in Bioengineering, UC San Francisco & Berkeley, San Francisco & Berkeley, CA, United States; [3]Department of Internal Medicine, UCSF, Fresno, CA, United States; [4]Department of Medicine, California Pacific Medical Center, San Francisco, CA, United States

844. Icewater for Quality Control of Diffusion Measurements in Multi-Center Trials
Thomas L. Chenevert[1], Craig J. Galbán[1], Frank J. Londy[1], Charles R. Meyer[1], Timothy D. Johnson[2], Alnawaz Rehemtulla[3], Brian D. Ross[1]
[1]Radiology - MRI, University of Michigan, Ann Arbor, MI, United States; [2]Biostatistics, University of Michigan, Ann Arbor, MI, United States; [3]Radiation Oncology, University of Michigan, Ann Arbor, MI, United States

845. Monitoring Acellular Matrix-Based Soft Tissue Regeneration: Multiexponential Diffusion & T_2* for Improved Specificity
Hai-Ling Margaret Cheng[1,2], Yasir Loai[2], Walid A. Farhat[2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Hospital for Sick Children, Toronto, Ontario, Canada

846. Efficient EPI Distortion Correction using Non-Phase Encoded Reference Data
Anne-Sophie Glantenay[1], Chiel J. Den Harder[1], Johan S. Van Den Brink[1], Gwenael Herigault[2], Jos Koonen[3]
[1]Advanced Development, Philips Healthcare, Best, Netherlands; [2]MR Cliniclal Science, Philips Healthcare, Best, Netherlands; [3]MR Development, Philips Healthcare, Best, Netherlands

Body Fat & Body MRS

Exhibition Hall Monday 14:00-16:00

847. Fully Automated Measurement of Total Adipose Tissue Volume using Quantitative Chemical Shift MRI: Phantom Validation
Aziz H. Poonawalla[1], Catherine D. G. Hines[1], Diego Hernando[1], Pablo Irarrazaval[1,2], Scott Brian Reeder[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Biomedical Engineering, Pontificia Universidad Catolica de Chile, Santiago, Chile

848. Software for Fully Automatic Quantification of Abdominal Fat with Manual Correction Option
Henriette Bertram[1], Gregor Thörmer[1], Florian Dazinger[1], Matthias Raschpichler[1], Nikita Garnov[1], Thomas Kahn[1], Matthias Blüher[2], Harald Busse[1]
[1]Department of Diagnostic & Interventional Radiology, University Hospital of Leipzig, Leipzig, Saxony, Germany; [2]Department of Endocrinology & Nephrology, University Hospital of Leipzig, Leipzig, Saxony, Germany

849. General Methodology for Accurate MRI Abdominal Adipose Tissue Quantification
Anqi Zhou[1], Horacio Murillo[1], Qi Peng[1]

[1]Radiology, UT Health Science Center at San Antonio, San Antonio, TX, United States

850. Visceral Fat Saturation is Positively Correlated with Liver Fat Content
Jesper Lundbom[1], Antti Hakkarainen, Sanni Söderlund[2], Jukka Westerbacka[2], Nina Lundbom[1], Marja-Riitta Taskinen[2]
[1]HUS Medical Imaging Center, Helsinki, Finland; [2]Department of Medicine, Helsinki University

851. Rapid, Volumetric Segmentation of Visceral Adipose Tissue with Quantitative Chemical Shift MRI at 3T
Aziz H. Poonawalla[1], Brett P. Sjoberg[1], Michael Schroeder[1], Diego Hernando[1], Pablo Irarrazaval[1,2], Scott Brian Reeder[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Biomedical Engineering, Pontificia Universidad Catolica de Chile, Santiago, Chile

852. Observation of TCA Cycle Metabolism in Human Liver by Dynamic ^{13}C-MRS
Douglas E. Befroy[1,2], Kitt Falk Petersen[2], Peter B. Brown[1], Douglas L. Rothman[1,3], Gerald I. Shulman[2,4]
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Internal Medicine, Yale University School of Medicine, New Haven, CT, United States; [3]Biomedical Engineering, Yale University School of Medicine, New Haven, CT, United States; [4]Howard Hughes Medical Institute, New Haven, CT, United States

853. ^{13}C-Labelling & Non-Invasive Detection of Glutathione in Human Liver
Peter Edward Thelwall[1], Fiona Elizabeth Smith[1], Matthew Clemence[2], Kieren G. Hollingsworth[1], Roy Taylor[1], Michael P. Gamcsik[3]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [2]Philips Healthcare - Clinical Science, Guildford, United Kingdom; [3]Joint Department of Biomedical Engineering, University of North Carolina / NC State University, United States

854. Assessment of Liver Fat using Magnetic Resonance Spectroscopic Imaging (MRSI)
Shing-Ru Chen[1], Yi-Ru Lin[2], Posse Stefan[3,4], Shang-Yueh Tsai[5]
[1]Graduate Institute of Biomedical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [2]Department of Electronic Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [3]Department of Neurology, School of Medicine, University of New Mexico, Albuquerque, NM, United States; [4]Department of Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, United States; [5]Department of Electrical Engineering, Chang Gung University, Taoyuan, Taiwan

855. *In Vivo* Characterization of Liver Fat Composition by ^{1}H MR Spectroscopy
Gavin Hamilton[1], Michael S. Middleton[1], Takeshi Yokoo[1], Lisa G. Clark[1], Claude B. Sirlin[1]
[1]Department of Radiology, University of California, San Diego, San Diego, CA, United States

856. Serial ^{1}H Magnetic Resonance Spectroscopy Detects Liver Steatosis Associated with Chemotherapy in Advanced Colorectal Cancer Patients
Kristen Zakian[1], Jing Qi[1], Lawrence Schwartz[2], Yuman Fong[3], Leonard Saltz[4], Nancy Kemeny[4], Michael D'Angelica[3], William Jarnagin[3], Jason Koutcher[1]
[1]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Radiology, Columbia University Medical School; [3]Surgery, Memorial Sloan-Kettering Cancer Center; [4]Medicine, Memorial Sloan-Kettering Cancer Center

857. ^{1}H MRS Methodology, Dietary Effects & Impact of Surgical Stress on Hepatic Lipids in NAFLD Animal Models
Jan-Bernd Hövener[1], Uta Dahmen[2], Bernd Merkel[3], Olaf Dirsch[4], Jürgen Hennig[1], Dominik von Elverfeldt[1]
[1]Department of Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]Experimentelle Transplantationschirurgie, Klinik für Allgemein-, Viszeral- & Gefäßchirurgie, Jena, Germany; [3]Fraunhofer MEVIS, Germany; [4]Institut für Pathologie, Jena, Germany

858. Reproducibility & Diagnostic Accuracy of *In Vivo* Proton Magnetic Resonance Spectroscopy in Detection of Hepatic Steatosis
Jing Qi[1], Mithat Gönen[2], Jinru Shia[3], Lawrence Schwartz[4], Nancy Kemeny[5], Michael D'Angelica[6], Yuman Fong[6], Jason Koutcher[1], Kristen Zakian[1]
[1]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Epidemiology-Biostatistics, Memorial Sloan-Kettering Cancer Center; [3]Pathology, Memorial Sloan-Kettering Cancer Center; [4]Radiology, Columbia University Medical School; [5]Medicine, Memorial Sloan-Kettering Cancer Center; [6]Surgery, Memorial Sloan-Kettering Cancer Center

859. Assessment of Hepatic Lipid Content by MRS in Patients on Home Parenteral Nutrition
Marinette van Der Graaf[1,2], Geert J. Wanten[3]
[1]Clinical Physics Lab of Dept of Pediatrics, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Dept of Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Dept of Gastroenterology & Hepatology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

860. Fatty Liver Disease in Overweight Adolescent Girls Measured with Quantitative MRI & MR Spectroscopy
Jennifer Leigh Rehm[1], Vanessa A. Curtis[1], Catherine D. G. Hines[2], Ellen L. Connor[1], Aaron L. Carrel[1], David B. Allen[1], Scott B. Reeder[2,3]

[1]Pediatrics, University of Wisconsin Hospital & Clinics, Madison, WI, United States; [2]Radiology, University of Wisconsin Hospital & Clinics, Madison, WI, United States; [3]Biomedical Engineering, University of Wisconsin Hospital and Clinics, Madison, WI, United States

861. ***In Vivo* Liver ^{31}P MRS at 7T: Initial Experience**

Marek Chmelik[1], Stephan Gruber[1], Siegfried Trattnig[1], Wolfgang Bogner[1]
[1]MR Centre of Excellence, Department of Radiology, Medical University Vienna, Vienna, Austria

862. **Comparison of *In Vivo* Hepatic Localized Proton Magnetic Resonance Spectroscopy at 9.4T on Ob/ob & Ob/+ Mice**

Qiong Ye[1], Alexander Fuchs[1], Markus Rudin[1,2]
[1]University & ETH Zürich, Institute for Biomedical Engineering, Zürich, 8093, Switzerland; [2]University of Zürich, Institute of Pharmacology & Toxicology, Zürich, Switzerland

863. **Hepatic Fatty Acid Quantification using MRS & GC in a Mouse Model of GSD1A Under Two Different Diets**

Nirilanto Ramamonjisoa[1], Helene Ratiney[1], Elodie Mutel[2], Herve Guillou[3], Gilles Mithieux[2], Frank Pilleul[1,4], Fabienne Rajas[2], Olivier Beuf[1], Sophie Cavassila[1]
[1]CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Université de Lyon, Lyon, France; [2]Inserm U855, Université Lyon 1, Université de Lyon, France; [3]INRA ToxAlim – Integrative Toxicology & Metabolism, Toulouse, France; [4]Imagerie Digestive - CHU, Hospices Civils de Lyon, France

864. **Glucose & Intralipid Infusion in Rats: Comparative Quantification of Liver Steatosis by MRI, MRS & Histopathology**

Gaspard d'Assignies[1,2], Ghislaine Fontés[3,4], Louis Gaboury, Yvan Boulanger[5], Gilles Soulez[3], Vincent Poitout[3,4], An Tang[6]
[1]Department of Medical Imaging, Hôpital Saint-Luc, Montreal, Quebec, Canada; [2]Department of Radiology, Beaujon Hospital, Université Paris VII, Paris, France; [3]CRCHUM, Canada; [4]Montréal Diabetes Research Center, Canada; [5]Hôpital Saint-Luc, University of Montreal; [6]Department of Medical Imaging, CRCHUM, Montreal, Quebec, Canada

865. **Properties of Brown & White Adipose Tissues Measured by ^{1}H MRS**

Gavin Hamilton[1], Daniel L. Smith[2], Mark Bydder[1], Krishna S. Nayak[3], Houchun H. Hu[3]
[1]Department of Radiology, University of California, San Diego, San Diego, CA, United States; [2]Department of Nutrition Sciences, University of Alabama at Birmingham, Birmingham, AL, United States; [3]Ming Hsieh Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States

866. ***In Vivo* ^{1}H/^{13}C MR Analysis Reveals Visceral Obesity, Hepatic Steatosis & Disorders in Body Fat Composition Upon Long-Term Medium Chain Triglyceride Diet in Mice with a Defect in Fatty Acid Oxidation**

Ulrich Flögel[1], Sara Tucci[2], Jürgen Schrader[1], Ute Spiekerkoetter[2]
[1]Institute for Cardiovascular Physiology, Heinrich Heine University, Düsseldorf, NRW, Germany; [2]Department of General Pediatrics

867. **Changes in Body Tissue Composition During the Transeuropean Footrace 2009 Assessed by Whole-Body MRI in 12 Finishers**

Jürgen Machann[1], Christian Billich[2], Kathrin König[1], Christian Würslin[1], Fritz Schick[1], Uwe Schütz[2]
[1]Section on Experimental Radiology, University Hospital Tübingen, Tübingen, Germany; [2]Department of Diagnostic & Interventional Radiology, University Hospital Ulm, Ulm, Germany

868. **Evaluation of High Fat Diet Induced Obesity in Rats by Longitudinal MRI & MRS in Abdomen, Liver & Skeletal Muscle**

Arunima Pola[1], Sandra Tan[2], Terry Yew Shze Keong[3], Zhihong Zhou[2], Mika Murabayashi[4], Yoshihide Nakano[4], Naoki Furuyama[4], Nicholas Hird[4], Sendhil Sambashivam Velan[3]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, , Singapore, Singapore; [2]Takeda Singapore Pte Ltd, Singapore; [3]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore; [4]Takeda Pharmaceutical Company Ltd, Japan

869. **^{1}H MRS of Pancreatic Juice: An MRS-Based Diagnostic Approach for the Detection of Pancreatic Cancer**

Tedros Bezabeh[1], Omkar B. Ijare[1], Nils Albiin[2], Matthias Lohr[2], Annika Bergquist[2], Urban Arnelo[2], Ian C. P. Smith[1]
[1]National Research Council Institute for Biodiagnostics, Winnipeg, MB, Canada; [2]Karolinska University Hospital, Karolinska Institutet, Huddinge, Stockholm, Sweden

870. ***In Vivo* ^{1}H MRS of Human Gallbladder Bile using an Optimized 16-Channel Phased Array at 3T**

Sanaz Mohajeri[1,2], Tedros Bezabeh[1], Scott B. King[1], Omkar B. Ijare[1], M. A. Thomas[3], Gerald Minuk[2], Jeremy Lipschitz[2], Iain Kirkpatrick[2], Ian C. P. Smith[1]
[1]National Research Council Institute for Biodiagnostics, Winnipeg, Manitoba, Canada; [2]University of Manitoba, Winnipeg, Manitoba, Canada; [3]University of California, Los Angeles, CA, United States

871. **Spectroscopic Water-Fat Quantification in Human Kidney at 3T**

Qing Yuan[1], Ivan Dimitrov[2], Naim M. Maalouf[3], Khashayar Sakhaee[3], Paul T. Weatherall[1]

[1]Radiology, University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States; [2]Philips Medical Systems, Cleveland, OH, United States; [3]Internal Medicine, University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States

872. 1.5T & 7T MR Spectroscopy of Tissue Specific Changes in Ectopic Fat Content in Response to Exercise Training in Type 2 Diabetes Mellitus Patients: The ATLAS-Study

Jacqueline T. Jonker[1], Ralph L. Widya[2], Sebastiaan Hammer[2], Linda D. van Schinkel[1], Rutger W. van Der Meer[2], Eelco J. P. de Koning[3], Henk J. G. Bilo[4], Andrew Webb[2], Hermien E. Kan[2], Hildo J. Lamb[2]

[1]Endocrinology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [3]Nephrology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [4]Internal Medicine, Isala klinieken (Sophia), Zwolle, Netherlands

Bowel Motion & Gas

Exhibition Hall Tuesday 13:30-15:30

873. Assessment of Motion Patterns in Free Breathing MRI of the Abdomen using Continuously Tagged Imaging

Andre M. J. Sprengers[1], Matthan W. A. Caan[1], Aart J. Nederveen[1], Jaap Stoker[1], Rolf M. Lamerichs[2]

[1]Radiology, Academic Medical Centre, Amsterdam, Netherlands; [2]Research, Philips, Eindhoven, Netherlands

874. Motility Assessment using Continuously Tagged Imaging

Andre M. J. Sprengers[1], Marije P. van Der Paardt[1], Frank Zijta[1], Matthan W. A. Caan[1], Rolf M. Lamerichs[1,2], Aart J. Nederveen[1], Jaap Stoker[1]

[1]Radiology, Academic Medical Centre, Amsterdam, Netherlands; [2]Research, Philips, Eindhoven, Netherlands

875. Non-Invasive MRI-Based 3D Volumetric Serial Assessments of Physiologic Large Intestine Gas - Proof of Principle

John Butler[1], Jodi Miller[1,2], Harry Marshall[1,2], Ally Silavi[1], John Patrick[1,2], William Pavlosky[3], Gregor Reid[1,4], Don Taves[3], Jamie Gregor[5], Khaleel Sultan[5], Deanna Carlsen[6], Artem Khlebnikov[6], Denis Guyonnet[7], Sophie Legrain-Raspaud[7], Frank S. Prato[1,2], R. Terry Thompson[1,2], Robert Z. Stodilka[1,2]

[1]Lawson Health Research Institute, London, Ontario, Canada; [2]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]Nuclear Medicine, St. Joseph's Hospital, London, Ontario, Canada; [4]Microbiology, University of Western Ontario, London, Ontario, Canada; [5]Gastroenterology, London Health Sciences Center, London, Ontario, Canada; [6]The Dannon Company, White Plains, NY, United States; [7]Danone Research, Palaiseau, Cedex, France

876. Feasibility of 3.0T MR Angiography for Pre-Operative Vascular Evaluation of Pediatric Patients Undergoing Liver/Small Bowel Transplantations.

Conor Meehan[1], Saeed Mirsadrae[1,2], Paul Finn[1]

[1]Department of Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Clinical Research Imaging Centre, University of Edinburgh, Edinburgh, United Kingdom

877. Akt_1 Deficient Mice Show Resistance to DSS-Colitis Induced Leak of Albumin-Based Contrast Media from the Colon Vasculature

Katrien Vandoorne[1], Tegest Aychek[2], Hagit Dafni[1], Brian A. Hemmings[3], Steffen Jung[2], Michal Neeman[1]

[1]Biological Regulation, Weizmann Institute, Rehovot, Israel; [2]Immunology, Weizmann Institute, Rehovot, Israel; [3]Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland

Hyperpolarized Gas: Techniques & Applications

Exhibition Hall Wednesday 13:30-15:30

878. Single-Acquisition Imaging of Hyperpolarized ^{129}Xe in the Gas & Dissolved Phases using an Interleaved 3D-Radial Sequence

Suryanarayanan Sivaram Kaushik[1,2], Gary P. Cofer[2], Matthew S. Freeman[2,3], Zackary I. Cleveland[2], Bastiaan Driehuys[2]

[1]Biomedical Engineering, Duke University, Durham, NC, United States; [2]Center for *In Vivo* Microscopy, Duke University Medical Center, Durham, NC, United States; [3]Medical Physics, Duke University Medical Center, Durham, NC, United States

879. 3D MRI of the Hyperpolarized ^{129}Xe Distribution in the Rat Brain

John Nouls[1,2], Zackary I. Cleveland[1,2], Matthew S. Freeman[3], Harald E. Moeller[4], Laurence W. Hedlund[1,2], Bastiaan Driehuys[1,2]

[1]Department of Radiology, Duke University, Durham, NC, United States; [2]Center for *In Vivo* Microscopy, Duke University, Durham, NC, United States; [3]Medical Physics, Duke University; [4]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

880. Quantitative Assessment of Emphysema with Dissolved-Phase & Gas-Phase Hyperpolarized ^{129}Xe MRI in Mice
Hirohiko Imai[1], Atsuomi Kimura[1], Satoshi Iguchi[1], Hideaki Fujiwara[1]
[1]Department of Medical Physics & Engineering, Division of Health Sciences, Graduate School of Medicine, Osaka University, Suita, Osaka, Japan

881. Regional Ventilation Mapping of the Rat Lung using Hyperpolarized ^{3}He & ^{129}Xe Magnetic Resonance Imaging
Marcus John Couch[1,2], Alexei V. Ouriadov[1], Giles E. Santyr[1,3]
[1]Imaging Research Laboratories, Robarts Research Institute, The University of Western Ontario, London, ON, Canada; [2]Department of Physics & Astronomy, the University of Western Ontario, London, ON, Canada; [3]Department of Medical Biophysics, The University of Western Ontario, London, ON, Canada

882. Quantifying Pulmonary Gas Transport Efficiency using Hyperpolarized Xenon-129
Kai Ruppert[1], Jaime F. Mata[1], Isabel M. Dregely[2], Talissa A. Altes[1], G. Wilson Miller[1], Stephen Ketel[3], Jeff Ketel[3], Iulian C. Ruse[2,3], F. William Hersman[2,3], John P. Mugler III[1]
[1]University of Virginia, Charlottesville, VA, United States; [2]University of New Hampshire, Durham, NH, United States; [3]Xemed LLC, Durham, NH, United States

883. 3D Imaging of Pulmonary Ventilation & Perfusion in Rats using Hyperpolarized ^{129}Xe
Zackary I. Cleveland[1], Harald E. Moller[1,2], Laurence W. Hedlund[1], John Nouls[1], Matthew Freeman[1,3], Yi Qi[1], Bastiaan Driehuys[1]
[1]Center for *In Vivo* Microscopy, Duke University Medical Center, Durham, NC, United States; [2]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [3]Graduate Program in Medical Physics, Duke University, Durham, United States

884. Improved Separation & Quantification of Xe-129 Dissolved-Phase Resonances in the Lung
Jaime Mata[1], Kai Ruppert[1], Peter Sylvester[1], Isabel Dregely[2], Talissa Altes[1], Iulian Ruset[2], William Hersman[2], Grady Miller[1], Steve Ketel[2], Jeff Ketel[2], John Mugler III[1]
[1]Radiology, University of Virginia, Charlottesville, VA, United States; [2]Xemed, LLC, Durham, NH, United States

885. Measurement of ^{129}Xe Gas Apparent Diffusion Coefficient Anisotropy in an Elastase-Instilled Rat Model of Emphysema
Mathieu Boudreau[1,2], Xiaojun Xu[3], William Dominguez-Viqueira[4], Giles Santyr[1,5]
[1]Imaging Research Laboratories, John. P. Robarts Research Institute, London, Ontario, Canada; [2]Dept. of Physics & Astronomy, University of Western Ontario, London, Ontario, Canada; [3]University of Sheffield, Sheffield, United Kingdom; [4]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [5]Dept. of Medical Biophysics, University of Western Ontario, London, Ontario, Canada

886. Hyperpolarized ^{129}Xe Gas & Dissolved Phase Lung Imaging using IDEAL
Alexei V. Ouriadov[1], Matthew Fox[2,3], Lanette Friesen-Waldner[4], Charles McKenzie[4,5], Giles Santy[4]
[1]Robarts Research Institute, The University of Western Ontario , London, Ontario, Canada; [2]Robarts Research Institute, The University of Western Ontario, London, Ontario, Canada; [3]The Department of Physics, Tthe University of Western Ontario; [4]The Department of Medical Biophysics, The University of Western Ontario; [5]Biomedical Engineering Program, The University of Western Ontario

887. Recovery & Purification of ^{3}He Gas from Pulmonary MRI
Sean Alexander Lourette[1], Allen W. Che[2], Jason C. Woods[1,2], Mark S. Conradi[1,2]
[1]Physics, Washington University, St. Louis, MO, United States; [2]Radiology, Washington University, St. Louis, MO, United States

888. Xenon Hyperpolarized by the Dissolution-DNP Method
Jan Henrik Ardenkjaer-Larsen[1], Haukur Johannesson[1], Jan Wolber[2], Nick Kuzma[3], Rahim Rizi[3]
[1]GE Healthcare, Broendby, Denmark; [2]GE Healthcare, United Kingdom; [3]University of Pennsylvania, United States

889. Enhancement of ^{129}Xe Polarisation by Off-Resonant Optical Pumping
Steven Richard Parnell[1], Martin H. Deppe[1], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

890. Spectrally Narrowed 1.5 KW Optical Pumping Laser for Large-Scale SEOP Production of Hyperpolarized Gases
F. W. Hersman[1,2], Jan H. Distelbrink[2], Jeff Ketel[2], David Watt[2], Stephen Ketel[2], Walter Porter[2], Steve Bryn[2], Aaron Hope[2], Iulian Constantin Ruset[2]
[1]Department of Physics, University of New Hampshire, Durham, NH, United States; [2]Xemed LLC, Durham, NH, United States

891. Hyperpolarized Helium Measurements of P_AO_2 Correlate with Neutrophil Inflammation in the Rat Bleomycin Model
Puttisarn Mongkolwisetwara[1], Evguenia Borissova Arguiri[2], Kiarash Emami[1], Yi Xin[1], Nicholas N. Kuzma[1], Stephen J. Kadlecek[1], Yinan Xu[1], Harilla Profka[1], Melpo Christofidou-Solomidou[2], Milton D Rossman[2], Masaru Ishii[3], Rahim R. Rizi

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Pulmonary Division, University of Pennsylvania, Philadelphia, PA, United States; [3]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

892. Quantitative Assessment of Chronic Exposure to Cigarette Smoke in Mouse Lungs by Hyperpolarized Gas MRI

Yi Xin[1], Kiarash Emami[1], Stephen J. Kadlecek[1], Puttisarn Mongkolwisetwara[1], Nicholas N. Kuzma[1], Harilla Profka[1], Yinan Xu[1], Hooman Hamedani[1], Benjamin M. Pullinger[1], Rajat K. Ghosh[1], Jennia N. Rajaei[1], Stephen Pickup[1], Masaru Ishii[2], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

893. Non-Invasive Assessment of Pulmonary Developmental Deficiency in a Model of Transgenic Mice using Hyperpolarized Gas Diffusion MRI

Amy Barulic[1], Kiarash Emami[2], Yi Xin[1], Puttisarn Mongkolwisetwara[1], Harilla Profka[1], Nicholas N. Kuzma[1], Jeanine M. D'Armiento[3], Takayuki Shiomi[4], Stephen J. Kadlecek[1], Yinan Xu[1], Hooman Hamedani[1], Benjamin Michael Pullinger[1], Rajat Ghosh[1], Jennia Rajaei[1], Stephen Pickup[1], Masaru Ishii[5], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, PA, PA, United States; [3]Departments of Medicine & Surgery, Columbia University, New York, NY, United States; [4]Department of Molecular Medicine, Columbia University, New York, NY, United States; [5]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

894. Imaging of Airway Remodeling in a Murine Model of Bronchial Hyper-Responsiveness using Hyperpolarized Gas MRI

Kiarash Emami[1], Jennia N. Rajaei[1], Yi Xin[1], Puttisarn Mongkolwisetwara[1], Harilla Profka[1], Stephen J. Kadlecek[1], Hooman Hamedani[1], Yinan Xu[1], Amy Barulic[1], Stephen Pickup[1], Nicholas N. Kuzma[1], Blerina Ducka[2], Angela Haczku[2], Masaru Ishii[3], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Pulmonary & Critical Care Division, University of Pennsylvania Medical Center, Philadelphia, PA, United States; [3]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

895. Imaging Lung Microstructure in Mice with Hyperpolarized ^{3}He Diffusion MRI

Wei Wang[1,2], Nguyet M. Nguyen[3], Dmitriy A. Yablonskiy[1,2], Alexander L. Sukstanskii[2], Emir Osmanagic[2], Richard A. Pierce[3], Mark S. Conradi[1,2], Jason C. Woods[1,2]

[1]Physics, Washington University in St. Louis, St. Louis, MO, United States; [2]Radiology, Washington University in St. Louis, St. Louis, MO, United States; [3]Internal Medicine, Washington University in St. Louis, St. Louis, MO, United States

896. Ventilation Strategy to Minimize the Effect of Residual Gas Volume on ADC in Rat Lungs

Laura Carrero-Gonzalez[1,2], Thomas Kaulisch[1], Jesus Ruiz-Cabello[2,3], Jose Manuel Perez-Sanchez[4], German Peces-Barba[5], Detlef Stiller[1], Ignacio Rodriguez[2,3]

[1]Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Baden-Württemberg, Germany; [2]Universidad Complutense de Madrid, Madrid, Spain; [3]CIBER de Enfermedades Respiratorias, Madrid, Spain; [4]Unité de Recherche en Résonance Magnétique Médicale (UMR 8081), Univ.Paris-Sud, CNRS, Orsay, France; [5]Fundación Jiménez-Díaz, Madrid, Spain

897. Deflation-Induced Changes in Alveolar-Duct Geometry Via ^{3}He Lung Morphometry, with Histological Validation

Adam J Hajari[1,2], Alex L Sukstanskii[2], Dmitriy a Yablonskiy[1,2], Richard a Pierce[3], Gaetan Deslee[4], Jason C Woods[1,2]

[1]Physics, Washington University, St. Louis, MO, United States; [2]Radiology, Washington University, St. Louis, MO, United States; [3]Internal Medicine, Washington University, St. Louis, MO, United States; [4]Service de Pneumologie, INSERM U903, Reims, France

898. Single Lobe Emphysema Induction in the Rat Lung Detected with Diffusion-Weighted ^{3}He-MRI

Laura Carrero-Gonzalez[1,2], Thomas Kaulisch[1], Jesus Ruiz-Cabello[2,3], Detlef Stiller[1], Ignacio Rodriguez[2,3]

[1]Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Baden-Württemberg, Germany; [2]Universidad Complutense de Madrid, Madrid, Spain; [3]CIBER de Enfermedades Respiratorias, Madrid, Spain

899. Quantitative Imaging of Alveolar Recruitment with Hyperpolarized Gas MRI

Maurizio F. Cereda[1], Kiarash Emami[2], Stephen J. Kadlecek[2], Yi Xin[2], Puttisarn Mongkolwisetwara[2], Harilla Profka[2], Amy Barulic[2], Stephen Pickup[2], Nicholas N. Kuzma[2], Masaru Ishii[3], Hooman Hamedani[2], Benjamin M. Pullinger[2], Rajat Ghosh[2], Jennia Rajaei[2], Clifford S. Deutschman[1], Rahim R. Rizi[2]

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900. Imaging Regional Alterations of Gas Exchange in a Murine Model of Emphysema

Puttisarn Mongkolwisetwara[1], Kiarash Emami[1], Hooman Hamedani[1], Harilla Profka[1], Yi Xin[1], Yinan Xu[1], Nicholas N. Kuzma[1], Stephen J. Kadlecek[1], Masaru Ishii[2], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

901. 3D ^{3}He & ^{1}H MR Imaging of Regional Pulmonary Injury Induced by Ozone

John Nouls[1,2], Erin Potts[3], W Michael Foster[3], Bastiaan Driehuys[1,2]
[1]Department of Radiology, Duke University, Durham, NC, United States; [2]Center for *In Vivo* Microscopy, Duke University, Durham, NC, United States; [3]Department of Pulmonary and Critical Care Medicine, Duke University

902. Signal Distribution in Dissolved ^{129}Xe MR Images of Healthy Subjects & Subjects with Chronic Obstructive Pulmonary Disease

Zackary I. Cleveland[1], S. Sivaram Kaushik[1,2], Gary P. Cofer[1], John Nouls[1], Monica Kraft[3], Jan Wolber[4], H. Page McAdams[5], Bastiaan Driehuys[1]
[1]Center for *In Vivo* Microscopy, Duke University Medical Center, Durham, NC, United States; [2]Department of Biomedical Engineering, Duke University, Durham, NC, United States; [3]Department of Medicine, Duke University Medical Center, Durham, NC, United States; [4]GE Healthcare, Amersham, United Kingdom; [5]Department of Radiology, Duke University Medical Center, Durham, NC, United States

903. Towards Very High Net Acceleration Factors in Hyperpolarized ^{3}He Human Lung Parallel Imaging using SPIRiT

Martin H. Deppe[1], Salma Ajraoui[1], Jim M. Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

904. Helium-3 Magnetic Resonance Imaging of Treatment Response in Exercise Induced Bronchoconstriction

Stanley John Kruger[1], David Niles[1], Grace Parraga[2], Sean Fain[1], Bernard Dardzinski[3], Marcella Ruddy[3], Amy Harman[3], Stephen Choy[2], Scott Nagle[4], Christopher Francois[4], David G. McCormack[2], Nizar Jarjour[5]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Robarts Imaging Institution, University of Western Ontario, London, ON, Canada; [3]Merck Research Labs, West Point, PA, United States; [4]Radiology, University of Wisconsin, Madison, WI, United States; [5]Medicine & Public Health, University of Wisconsin, Madison, WI, United States

905. Test-Retest & Inter-Reader Reliability of Hyperpolarized Helium-3 MRI in Patients with Exercise-Induced Bronchoconstriction

David Joseph Niles[1], Stanley J. Kruger[1], Grace Parraga[2,3], Bernard Dardzinski[4], Marcella Ruddy[4], Nizar N. Jarjour[5], David G. McCormack[6], Amy Harman[4], Sean B. Fain[1,7]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Imaging Research Laboratories, Robarts Research Institute, University of Western Ontario, London, ON, Canada; [3]Medical Biophysics, University of Western Ontario, London, ON, Canada; [4]Merck Research Laboratories, West Point, PA, United States; [5]Pediatrics, University of Wisconsin, Madison, WI, United States; [6]Division of Respirology, Department of Medicine, University of Western Ontario, London, ON, Canada; [7]Radiology, University of Wisconsin, Madison, WI, United States

906. Evaluating Bronchodilator Effects in Chronic Obstructive Pulmonary Disease using Hyperpolarized Helium-3 Magnetic Resonance Imaging

Miranda Kirby[1,2], Roya Etemad-Rezai[3], David G. McCormack[4], Grace Parraga[1,5]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, the University of Western Ontario, London, Ontario, Canada; [3]Department of Medical Imaging, the University of Western Ontario, London, Ontario, Canada; [4]Division of Respirology, Department of Medicine, the University of Western Ontario, London, Ontario, Canada; [5]Graduate Program in Biomedical Engineering, the University of Western Ontario, London , Ontario, Canada

907. Evaluation of Short Term Reproducibility of Hyperpolarized Helium-3 Magnetic Resonance Imaging of Adult Cystic Fibrosis using a Semi-Automated Segmentation Tool

Sarah Svenningsen[1,2], Miranda Kirby[1,2], Hassaan Ahmed[1,2], Nigel Paterson[3], Grace Parraga[1,4]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, The University of Western Ontario, London, Ontario, Canada; [3]Division of Respirology, Department of Medicine, the University of Western Ontario, London, Ontario, Canada; [4]Graduate Program in Biomedical Engineering, The University of Western Ontario, London, Ontario, Canada

908. Quantitative Evaluation of Ventilation Dynamics in Asthma During Methacholine Challenge using Hyperpolarized ^{3}He Magnetic Resonance Imaging

Stephen Costella[1,2], Andrew Wheatley[1], David McCormack[3], Grace Parraga[1,2]
[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Graduate Program in Biomedical Engineering, University of Western Ontario, London, Ontario, Canada; [3]Medicine, Division of Respirology, University of Western Ontario, London, Ontario, Canada

909. Gas Diffusion Image Reduction Metric with Improved Sensitivity to Heterogeneous Lung Disease

Ahsan Samiee[1], Stephen J. Kadlecek[2], Kiarash Emami[2], Yinan Xu[2], Hooman Hamedani[3], Yi Xin[2], Puttisarn Mongkolwisetwara[2], Nicholas N. Kuzma[2], Peter Magnusson[4], Lise Vejby Søgaard[4], Sandra Diaz[5], Wilson Miller[6], Milton D. Rossman[7], Masaru Ishii[8], Rahim R. Rizi[2]
[1]Mechanical & Aerospace Engineering, University of California, San Diego, San Diego, CA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Radiology, University of Pennsylvania, Philadelphia, United States; [4]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [5]Department of Clinical Sciences,

Malmö University Hospital, Malmö, Sweden; [6]Department of Radiology, University of Virginia, Charlottesville, VA, United States; [7]Pulmonary, Allergy & Critical Care Division, University of Pennsylvania, Philadelphia, PA, United States; [8]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

910. Imaging of Localized Inert Gas Washout Rates with ^{3}He MRI
Martin Heiner Deppe[1], Xiaojun Peggy Xu[1], Steven R. Parnell[1], Jim M. Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

911. Exploring Ventilation & Perfusion Matching in COPD with ^{3}He Ventilation & DCE ^{1}H Perfusion MRI
Helen Marshall[1], Martin H. Deppe[1], Juan Parra Robles[1], Steve R. Parnell[1], Rob H. Ireland[1], David Capener[1], Sue Hillis[1], Smitha Rajaram[1], Catherine Billings[2], David A. Lipson[3], Rod Lawson[2], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Respiratory Medicine, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [3]GlaxoSmithKline, King of Prussia, PA, United States

912. Improved Phase-Based Transmitter Calibration for Hyperpolarized-Gas MRI using Shinnar-Le Roux RF Pulses
Kun Qing[1], Grady Wilson Miller[2,3], Talissa Altes[2], Jaime F. Horta Coelho Mata[2], Eduard E. De Lange[2], William A. Tobias[3], Gordon D. Cates[3], James R. Brookeman[2], John Philip Mugler[1,2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia; [3]Physics, University of Virginia

913. Sensitivity of Transmit Coil B_1+ to Lung Inflation in Hyperpolarised ^{3}He MRI
Jim M. Wild[1], Martin H. Deppe[1], Salma Ajraoui[1], Helen Marshall[1], Graham Norquay[1], Titus Lanz[2], Matthias Behr[2], Francesco Padormo[3], Juan Parra-Robles[1], Sebastian Kozerke[4]
[1]University of Sheffield, Sheffield, Yorkshire, United Kingdom; [2]Rapid Biomedical; [3]Imperial College, United Kingdom; [4]Imaging Sciences, Kings College London

914. Quantification of Aerosol Deposition in the Upper Airways: A Multimodality Study
Mathieu Sarracanie[1], Denis Grebenkov[2], Soule Coulibaly[1], Andrew Martin[3], Kyle Hill[4], Jose Manuel Perez-Sanchez[1], Redouane Fodil[5], Lionel Martin[1], Emmanuel Durand[1], Georges Caillibotte[3], Daniel Isabey[5], Luc Darrasse[1], Jacques Bittoun[1], Xavier Maitre[1]
[1]IR4M (UMR8081), Univ Paris-Sud, CNRS, Orsay, France; [2]Laboratoire de Physique de la Matiere Condensee (UMR7643), Ecole Polytechnique, CNRS, Palaiseau, France; [3]Centre de Recherche Claude Delorme (CRCD), Air Liquide, Les Loges-en-Josas, France; [4]Radiology Research Group, Oxford MRI Centre, Oxford University, Oxford, United Kingdom; [5]Biomecanique Cellulaire et Respiratoire (U955), IMRB, Inserm, Creteil, France

915. Analytical Description of Long Time Scale Diffusion MRI of the Human Lung
Niels Buhl[1,2], Sune Nørhøj Jespersen[2]
[1]Department of Physics & Astronomy, Aarhus University, Aarhus, Denmark; [2]Center of Functionally Integrative Neuroscience, Aarhus University Hospital, Aarhus, Denmark

916. Finite Element Simulations of ^{129}Xe Gas Diffusion in Models of Lung Airways
Juan Parra-Robles[1], Steven R. Parnell[1], Salma Ajraoui[1], Xiaojun Xu[1], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

917. Finite Element Simulations of Short-Range ^{3}He Diffusion in a Model of Branching Acinar Airways: Implications for *In Vivo* Lung Morphmetry
Juan Parra-Robles[1], Steven R. Parnell[1], Salma Ajraoui[1], Xiaojun Xu[1], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, South Yorkshire, United Kingdom

918. The Impact of Sub-Optimal Pulse Sequence Implementations on XTC MRI Measurements
Kai Ruppert[1], Ching-Ling Teng[1], Isabel M. Dregely[2], Jaime F. Mata[1], Talissa A. Altes[1], G. Wilson Miller[1], John P. Mugler III[1]
[1]University of Virginia, Charlottesville, VA, United States; [2]University of New Hampshire, Durham, NH, United States

Lung MRI

Exhibition Hall Thursday 13:30-15:30

919. Magnetic Resonance Elastography of the Lung Parenchyma: Correlation of Shear Stiffness with Airway Opening Pressures
Yogesh Kannan Mariappan[1], Arunark Kolipaka[1], Rolf D. Hubmayr[2], Richard L. Ehman[1], Phillip Araoz[1], Kiaran P. McGee[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [2]Department of Pulmonary & Critical Care medicine, Mayo Clinic, Rochester, MN, United States

920. Manganese: A New Contrast Agent for Lung Imaging?
Oliviero Gobbo[1], Magdalena Zurek[2], Frederic Tewes[1], Carsten Ehrhardt[1], Yannick Crémillieux[2]
[1]School of Pharmacy & Pharmaceutical Sciences, Trinity College Dublin, Dublin 2, Ireland; [2]University of Lyon, CREATIS-LRMN, Lyon, France

921. ^{3}He & ^{19}F MRI of High Frequency Oscillatory Ventilation (HFOV)
Laura Schreiber[1], Maxim Terekhov[1], Uschi Wolf[2], Alexander Scholz[1], Julien Rivoire[1], Rainer Köbrich[3], Janet Friedrich[1], Florian Meise[1], Sergej Karpuk[4], Lars Krenkel[5], Claus Wagner[5]
[1]Section of Medical Physics, Johannes Gutenberg University Medical Center, Mainz, Germany; [2]Department of Radiology, Johannes Gutenberg University Medical Center, Mainz, Germany; [3]Maquet GmbH, Rastatt, Germany; [4]Institute of Physics, Mainz University, Mainz, Germany; [5]Institute of Aerodynamics & Flow Technology, German Aerospace Center, Göttingen, Germany

922. Oxygen-Enhanced MRI of the Lungs: Intraindividual Comparison between 1.5 & 3 Tesla
Olaf Dietrich[1], Sven F. Thieme, Daniel Maxien, Konstantin Nikolaou, Stefan O. Schoenberg[2], Maximilian F. Reiser[1], Christian Fink[2]
[1]Josef Lissner Laboratory for Biomedical Imaging, Department of Clinical Radiology, Ludwig Maximilian University of Munich, Munich, Germany; [2]Department of Clinical Radiology & Nuclear Medicine, University Medical Center Mannheim, Medical Faculty Mannheim - Heidelberg University, Mannheim, Germany

923. Quantification of Regional Lung Dysfunction in Distal Airway Disease with Tissue Tracking MRI
Ding Xia[1], Elan J. Grossman[1,2], Ke Zhang[1], Jian Xu[3], Kenneth I. Berger[4], Roberta M. Goldring[4], Alexandra Stabile[4], Larry Daugherty[5], Kellyanne McGorty[1], Qun Chen[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, United States; [2]Department of Physiology & Neuroscience, NYU School of Medicine, New York, United States; [3]Siemens Medical Solutions, Malvern, PA, United States; [4]Department of Medicine, NYU School of Medicine, New York, United States; [5]Dept of Radiology, University of Pennsylvania, Philadelphia, PA, United States

924. Improved Retrospective Self-Gated Human Lung Imaging using a Quasi Random Sampling Scheme
Stefan Weick[1], Philipp Ehses[2], Martin Blaimer[2], Felix A. Breuer[2], Peter M. Jakob[1,2]
[1]Experimental Physics 5, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Research Center for Magnetic Resonance Bavaria (MRB), Wuerzburg, Germany

925. Ventilation Dependent Blood Volume in Fourier Decomposition ^{1}H Lung Imaging
Samuel Patz[1], James P. Butler[1,2]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Environmental Health, Harvard School of Publich Health, Boston, MA, United States

926. k-T PCA Reconstruction for Functional Lung MRI by Fourier Decomposition
Grzegorz Bauman[1], Sebastian Kozerke[2,3]
[1]Division of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Division of Imaging Sciences, King's College London, London, United Kingdom; [3]Institute for Biomedical Engineering, University & ETH Zurich, Switzerland

927. Block Paradigm Optimization for Dynamic Oxygen-Enhanced MRI of the Lung
Olaf Dietrich[1], Michael Ingrisch[1], Michael Peller[1], Konstantin Nikolaou, Maximilian F. Reiser[1]
[1]Josef Lissner Laboratory for Biomedical Imaging, Department of Clinical Radiology, Ludwig Maximilian University of Munich, Munich, Germany

928. Physiological Modelling of Dynamic Oxygen-Enhanced MRI in the Lung: Model Fitting & Parameter Interpretation
Chris James Rose[1,2], Penny Louise Hubbard[1,2], Caleb Roberts[1,2], Simon S. Young[3], Josephine H. Naish[1,2], Geoffrey J. Parker[1,2]
[1]The University of Manchester Biomedical Imaging Institute, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Manchester Academic Health Science Centre, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [3]AstraZeneca R&D Charnwood, Loughborough, Leicestershire, United Kingdom

929. Longitudinal & Non-Invasive Assessment of Emphysema Evolution in a Murine Model using Proton MRI
Magdalena Zurek[1], Laurent Boyer[2], Philippe Caramelle[2], Jorge Boczkowski[2], Yannick Crémillieux[1]
[1]University of Lyon, CREATIS-LRMN, Lyon, France; [2]INSERM U955, Paris, France

930. Reproducibility Assessment of High Resolution Imaging of Alveolar Oxygen Tension in Human Subjects
Hooman Hamedani[1], Kiarash Emami[1], Stephen J. Kadlecek[1], Yinan Xu[1], Yi Xin[1], Puttisarn Mongkolwisetwara[1], Amy Barulic[1], Nicholas N. Kuzma[1], Peter Magnusson[2], Lise Vejby Søgaard[2], Sandra Diaz[3], Per Åkeson[2], Milton D. Rossman[4], Masaru Ishii[5], G. Wilson Miller[6], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [3]Department of Clinical Sciences, Malmö University Hospital, Malmö, Sweden; [4]Pulmonary, Allergy & Critical Care Division, University of Pennsylvania, Philadelphia, PA, United States;

[5]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States; [6]Radiology, University of Virginia, Charlottesville, VA, United States

931. An Improved Scheme for a Robust High Resolution Measurement of Alveolar Oxygen Tension in Human Lungs

Hooman Hamedani[1], Kiarash Emami[1], Stephen J. Kadlecek[1], Yinan Xu[1], Yi Xin[1], Amy Barulic[1], Puttisarn Mongkolwisetwara[1], Nicholas N. Kuzma[1], Peter Magnusson[2], Lise Vejby Søgaard[2], Sandra Diaz[3], Per Åkeson[2], G. Wilson Miller[4], Milton D. Rossman[5], G. Wilson Miller[6], Rahim R. Rizi[1]

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932. Imaging Regional Heterogeneity of Pulmonary Oxygen Tension as a Diagnostic Tool for Obstructive Lung Diseases

Yinan Xu[1], Hooman Hamedani[1], Kiarash Emami[1], Stephen J. Kadlecek[1], Yi Xin[1], Puttisarn Mongkolwisetwara[1], Amy Barulic[1], Nicholas N. Kuzma[1], Peter Magnusson[2], Lise Vejby Søgaard[2], Sandra Diaz[3], Wilson Miller[4], Milton D. Rossman[5], Masaru Ishii[6], Rahim R. Rizi[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [3]Department of Clinical Sciences, Malmö University Hospital, Malmö, Sweden; [4]Department of Radiology, University of Virginia, Charlottesville, VA, United States; [5]Pulmonary, Allergy & Critical Care Division, University of Pennsylvania, Philadelphia, PA, United States; [6]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

933. Pulmonary T_2* Dependence on the Lung Volume: Preliminary Results

Iga Muradyan[1], Mirko Hrovat[2], Mikayel Dabaghyan[3], James Butler[4], Hiroto Hatabu[3], Samuel Patz[3]

[1]Brigham & Women's Hospital, Boston, MA, United States; [2]Mirtech, Inc.; [3]Brigham & Women's Hospital; [4]Harvard School of Public Health

934. Fast T_2 Mapping of the Lung Within One Breathhold using Radial TSE Acquisition & PCA Aided Image Reconstruction

Michael Völker[1], Felix Breuer[1], Philipp Ehses[1], Simon Michael Triphan[1], Martin Blaimer[1], Peter Michael Jakob[1,2]

[1]Research Center for Magnetic Resonance Bavaria (MRB), Würzburg, Bavaria, Germany; [2]Department of Experimental Physics 5, University of Würzburg, Germany

935. Accelerating Pixel-By-Pixel Non-Linear Curve Fitting using Parallel Computation on Graphic Processing Units: Application to Pulmonary Perfusion Mapping.

Wei-Min Tseng[1], Teng-Yi Huang[2], Yi-Ru Lin[3], Ming-Ting Wu[4]

[1]Department of Electrical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [2]Department of Electrical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [3]Department of Electronic Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [4]Department of Radiology, Kaohsiung Veterans General Hospital, Kao-Hsiung, Taiwan

936. Qualitative & Quantitative Lung Perfusion Imaging of Children with Congenital Diaphragmatic Hernia at 3T: Initial Results

Frank G. Zoellner[1], Katrin Zahn[2], Thomas Schaible[3], Stefan O. Schoenberg[4], Lothar R. Schad[1], K. W. Neff[4]

[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Dept. of Pediatric Surgery, University Medical Center Mannheim, Heidelberg University, Mannheim; [3]Dept. of Pediatrics, University Medical Center Mannheim, Heidelberg University, Mannheim; [4]Institute of Clinical Radiology & Nuclear Medicine, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany

937. Pulmonary Arterial Hypertension: First-Pass Contrast Bolus Kinetics Contain Information on RV Function, Remodeling & Lung Resistance

Jens Vogel-Claussen[1,2], Jan Skrok[2], Monda Shehata[2], David A. Bluemke[3], Reda Girgis[2], Paul M. Hassoun[2]

[1]Tübingen University, Tübingen, BW, Germany; [2]Johns Hopkins University, Baltimore, MD, United States; [3]National Institutes of Health

NSF & Contrast Media

Exhibition Hall Monday 14:00-16:00

938. Incidence of Immediate Gadolinium Contrast Media Reactions

Martin R. Prince[1,2], Honglei Zhang[1], Zhitong Zou[1], Ronale B. Staron[2], Paula W. Brill[1]

[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Radiology, Columbia College of Physicians & Surgeons, New York, NY, United States

939. Gadolinium Exposure Before or After Liver Transplantation: No Excess Risk of Nephrogenic Systemic Fibrosis (NSF)?
Elise Eva Saddleton[1], Anne Laumann[2], Dennis P. West[2], Steven M. Belknap[3], Brenda Schmitz[1], Beatrice J. Edwards[3], Nicole Papariello[2], Michael I. Abecassis[4], Frank H. Miller[1]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Dermatology, Northwestern University, Chicago, IL, United States; [3]Medicine, Northwestern University, Chicago, IL, United States; [4]Transplant Surgery, Northwestern University, Chicago, IL, United States

940. Nephrogenic Systemic Fibrosis: Portrait in the Medical Literature
Gianpaolo Pirovano[1], Cindy Schultz[2], John R. Parker[2], Miles A. Kirchin[3], Alberto Spinazzi[1]
[1]Worldwide Medical Affairs, Bracco Diagnostics Inc., Princeton, NJ, United States; [2]Medical Communications, Bracco Diagnostics Inc., Princeton, NJ, United States; [3]Medical Communications, Bracco Imaging, Milan, Italy

941. Combined Off-Resonance Imaging & Relaxation in the Rotating Frame for Positive Contrast Imaging of Infection in a Murine Burn Model Testing a Novel Anti-Infective Compound
Valeria Righi[1,2], Melissa Starkey[3], Jianxin He[3], George Dai[2], Vitaliano Tugnoli[4], Laurence G. Rahme[3], Ronald G. Tompkins[5], Aria A. Tzika[1,2]
[1]Department of Surgery, NMR Surgical Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Athinoula A. Martinos Center of Biomedical Imaging, Boston, MA, United States; [3]Department of Surgery, Molecular Surgery Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [4]Departement of Biochemistry, University of Bologna, Bologna, Italy; [5]Department of Surgery, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States

942. Development of Nanoparticle-Based Magnetic Resonance Colonography
Jihong Sun[1,2], Weiliang Zheng[1], Hong Yuan[3], Tao Wu[1], Xiaoming Yang[1,2], Shizheng Zhang[1]
[1]Radiology, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China, People's Republic of; [2]Radiology, University of Washington School of Medicine, Seattle, WA, United States; [3]College of Pharmaceutical Science, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of

Body - Animal Models

Exhibition Hall Tuesday 13:30-15:30

943. ^{1}H-MRS Can Be Used to Investigate Creatine Metabolism in Multiple Organs Within a Single Examination in the Mouse
Kiterie Maud Faller[1], Craig A. Lygate[1], Stefan Neubauer[1], Jurgen E. Schneider[1]
[1]Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

944. Characterization of Liver Fibrosis by ^{1}H- & ^{31}P-MRS in CCl4-Treated Rats
Yunjung Lee[1], Hyungjoon Noh[1], Keunhyung Kang[1], Ok-Hee Kim[1], Byung-Chul Oh[1], Hyeonjin Kim[2]
[1]Lee Gil Ya Cancer & Diabetes Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of; [2]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

945. A New Technique for the Detection of Liver Damage by Evaluation of Impaired Exocytotic Activity of Kupffer Cells; an Experimental Study of Gadolinium Chloride-Induced Liver Injury in Rats
Toshihiro Furuta[1,2], Masayuki Yamaguchi[1], Ryutaro Nakagami[1,3], Masaaki Akahane[2], Manabu Minami[4], Kuni Ohtomo[2], Hirofumi Fujii[1]
[1]Functional Imaging Division, Research Center for Innovative Oncology, National Cancer Center Hospital East, Kashiwa, Japan; [2]Department of Radiology, The University of Tokyo Hospital, Tokyo, Japan; [3]Graduate School of Human Health Sciences, Tokyo Metropolitan University, Tokyo, Japan; [4]Department of Radiology, Tsukuba University Hospital, Tsukuba, Japan

946. Imaging of Hepatic Steatosis & Hyperpolarized Carbon Metabolism at 14T - Applications to a Murine Model of Non-Alcoholic Fatty Liver Disease
Andrew G. Taylor[1], Kayvan Keshari[1], Robert Bok[1], Subramaniam Sukumar[1], Aliya Qayyum[1], John Kurhanewicz[1]
[1]Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States

947. Comparison of Gd-DTPA & Gd-BOPTA for Studying Renal Perfusion & Filtration
Mike Notohamiprodjo[1], Michael Pedersen[2], Christian Glaser[3], Andreas D. Helck, Klaus-Peter Lodemann[4], Bente Jespersen[5], Michael Fischereder[6], Maximilian F. Reiser, Steven P. Sourbron[7]
[1]Department of Clinical Radiology, University Hospitals Munich, Munich, Bavaria, Germany; [2]MR Research Centre, Aarhus University Hospital; [3]Department of Radiology, NYU Langone Medical Center; [4]Bracco Imaging Germany; [5]Department of Nephrology, Aarhus University Hospital; [6]Department of Nephrology, University Hospitals Munich; [7]Division of Medical Physics, University of Leeds

948. MRI Biomarkers for Monitoring Progression in CKD: Preliminary Experience in a Reversible UUO Mouse Model

Muhammad E. Haque[1], Tammy Franklin[1], Ujala Bokhary[1], Liby Mathew[2], Anthony Chang[3], Tipu Puri[2], Pottumarthi V. Prasad[1,4]

[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Nephrology, University of Chicago, Chicago, IL; [3]Pathology, University of Chicago, Chicago, IL; [4]Radiology, University of Chicago, Chicago, IL, United States

949. MRI Characterization of Pathophysiological Changes in a Mouse Model of Acute Kidney Injury (AKI)

Andreas Pohlmann[1], Lajos Marko[2], Babette Wagenhaus[1], Uwe Hoff[3], Erdmann Seeliger[4], Dominik N Mueller[5], Thoralf Niendorf[1]

[1]Berlin Ultrahigh Field Facility, Max Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Experimental & Clinical Research Center , Charité University Medicine, Berlin, Germany; [3]Clinic for Nephrology, Charité University Medicine, Berlin, Germany; [4]Institute of Vegetative Physiology, Charité University Medicine, Berlin, Germany; [5]Experimental & Clinical Research Center, Charité University Medicine, Berlin, Germany

950. Real-Time Multi-Slice MRI of Renal Filtration in the Mouse

Amir Moussavi[1], Martin Uecker[1], Tilman Johannes Sumpf[1], Roland Tammer[1,2], Jens Frahm[1], Susann Boretius[1]

[1]Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany; [2]DFG Research Center for Molecular Biology of the Brain (CMPB), Goettingen, Germany

Cancer Animal Models - Characterization & Response

Exhibition Hall Wednesday 13:30-15:30

951. *In Vivo* Imaging & Metabolism of Hyperpolarized ^{13}C Diethyl Succinate in Mice

Niki Zacharias[1,2], Napapon Sailasuta[3], Henry Chan[3], Meng Wei[3], Robert W. Grubbs[1], Brian D. Ross[3], Pratip Bhattacharya[3]

[1]California Institute of Technology, Pasadena, CA, United States; [2]Enhanced Magnetic Resonance Laboratory, Huntington Medical Research Institutes, Pasadena, CA, United States; [3]Enhanced Megnetic Resonance Laboratory, Huntington Medical Research Institutes

952. Hyperpolarized ^{13}C MR Imaging & Corresponding Histopathology for the Non-Invasive Characterization of Metabolism in the TRAMP Model

Kayvan R. Keshari[1], Robert Bok, Subramaniam Sukumar, Mark Van Criekinge, Daniel Vigneron, John Kurhanewicz

[1]UCSF, San Francisco, CA, United States

953. Optimized SPION Formulations for Molecular MRI of the Lung using Hyperpolarized Gases

Rosa Tamara Branca[1], Simone Degan, John Nouls[2], Challa Kumar[3], Sanchita Biswas[3], Bastiaan Driehuys[2]

[1]Chemistry, Duke University, Durham, NC, United States; [2]Center for *In Vivo* Microscopy, Duke University; [3]Center for Advanced Microstructures & Devices, Louisiana State University, United States

954. Bifunctional Iron Oxide Nanoparticles for MR Imaging & Hyperthermia Therapy in Cancer

Katherine Louise Parcell[1,2], Tammy Louise Kalber[1,2], Paul Southern[3], Quentin a Pankhurst[3], Sam M Janes[2], Mark F. Lythgoe[1]

[1]UCL Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Centre for Respiratory Research, University College London, London, United Kingdom; [3]Davy-Faraday Research Laboratories, the Royal Institution of Great Britain, London, United Kingdom

955. Extra-Cranial Measurements of Amide Proton Transfer using Exchange-Modulated Point-Resolved Spectroscopy (EXPRESS)

Simon Walker-Samuel[1], Peter Johnson[2], Barbara Pedley[2], Mark F. Lythgoe[1], Xavier Golay*[3]*

[1]UCL Centre for Advanced Biomedical Imaging, Department of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Institute of Cancer, University College London, United Kingdom; [3]Institute of Neurology, University College London, United Kingdom

956. Promoted Growth of Brain Tumor with Severe Hemorrhage by the Transplantation of Neural Progenitor Cells Facilitated by SDF-1

Nai-Wei Yao[1,2], Chiao-Chi V Chen[1,3], Chen Chang[1,3]

[1]Functional & Micro-magnetic Resonance Imaging Center, Academic Sinica, Taipei, Taiwan; [2]Institute of Zoology, National Taiwan University, Taipei, Taiwan; [3]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan

957. High Resolution Magnetic Resonance Elastography of Orthotopic Murine Glioma *In Vivo*

Yann Jamin[1], Jessica K. R. Boult[1], Jeffrey C. Bamber[1], Ralph Sinkus[2], Simon P. Robinson[1]

[1]CRUK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research & Royal Marsden NHS Trust, Sutton, United Kingdom; [2]INSERM U773, CRB3, Centre de Recherches Biomédicales Bichat-Beaujon, Paris, France

958. MRI-Guided Electrochemotherapy (ECT) in a Rat Model of Hepatocellular Carcinoma
Yang Guo[1], Yue Zhang[2,3], Ning Jin[2,4], Jodi Nicolai[2], Rachel Klein[2], Guang-Yu Yang[5], Reed Omary[2,4], Andrew Larson[2,4]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Department of Radiology, Northwestern University, Chicago, IL, United States; [3]Biomedical Engineering , University of Illinois at Chicago, Chicago, IL, United States; [4]Department of Biomedical Engineering , Northwestern University, Chicago, IL, United States; [5]Department of Pathology, Northwestern University, Chicago, IL, United States

959. Characterizing Breast Tumor Lipid Metabolism by Integrating Magnetic Resonance Spectroscopic Imaging with MALDI Mass Spectrometric Imaging
Lu Jiang[1], Kamila Chughtai[2], Dmitri Artemov[1], Paul Winnard Jr.[1], Venu Raman[1], Zaver Bhujwalla[1], Ron Heeren[2], Kristine Glunde[1]
[1]ICMIC, Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins Medical School, Baltimore, MD, United States; [2]FOM-Institute for Atomic & Molecular Physics, Amsterdam, Netherlands

960. Trifluoromisonidazole Detects Hypoxia - An *In Vivo & In Vitro* Multimodality Study
Ellen Ackerstaff[1], Makiko Suehiro[1], Natalia Kruchevsky[1], Sean Carlin[1], Eric H. Rosenfeld[1], Paul Burgman[1], Guangbin Yang[1], Geralda Torchon[1], Ouathek Ouerfelli[1], Pat B. Zanzonico[1], Kristen L. Zakian[1], Clifton C. Ling[1], Jason A. Koutcher[1]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, United States

961. Chronic Administration of MRSI Agent IEPA Increases Tumor PH; Has Potential to Bias PH Measurement
Heather H. Cornnell[1], Ihor Luhach[1], Gary Martinez[1], Arig Ibrahim Hashim[1], Robert A. Gatenby[2], Robert J. Gillies[1]
[1]Department of Imaging, Moffitt Cancer Center & Research Instutite, Tampa, FL, United States; [2]Department of Radiology, Moffitt Cancer Center & Research Instutite, Tampa, FL, United States

962. Assessment of Tumour Glucose Uptake using Gluco-CEST
Simon Walker-Samuel[1], Peter Johnson[2], Barbara Pedley[2], Mark F. Lythgoe[1], Xavier Golay*[3]*
[1]UCL Centre for Advanced Biomedical Imaging, Department of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Institute of Cancer, University College London, United Kingdom; [3]Institute of Neurology, University College London, United Kingdom

963. Localized Hypoxia Results in Spatially Heterogeneous Metabolic Signatures in Breast Tumor Models
Lu Jiang[1], Dmitri Artemov[1], Paul Winnard Jr.[1], Venu Raman[1], Zaver Bhujwalla[1], Kristine Glunde[1]
[1]ICMIC, Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins Medical School, Baltimore, MD, United States

964. Metabolic Characterization of the Cachectic Phenotype
Marie-France Penet[1], Paul T. Winnard Jr.[1], Radharani Marik[1], Sridhar Nimmagadda[1], Martin G. Pomper[1], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

965. *In Vivo* Magnetic Resonance Studies of Glycine Metabolism & Glutathione Distribution in a Rat Mammary Tumour
Peter Edward Thelwall[1], Nicholas E. Simpson[2], Zahid N. Rabbani[3], Daniel Clark[2], Roxana Pourdeyhimi[4], Jeffrey M. Macdonald[4], Stephen J. Blackband[2], Michael P. Gamcsik[4]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [2]University of Florida, United States; [3]Duke University Medical Centre, United States; [4]University of North Carolina / NC State University, United States

966. Characterization of Macromolecular Transport in Hypoxic Tumor Environments with Disrupted Collagen I Fibers
Samata M. Kakkad[1], Marie-France Penet[1], Arvind Pathak[1], Meiyappan Solaiyappan[1], Venu Raman[1], Kristine Glunde[1], Zaver M. Bhujwalla[1]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States

967. Arterial Spin Labeling Perfusion Measurements Reflect Histologic Microvessel Density in an Experimental Model of Tumor Response & Eventual Resistance to Antiangiogenic Therapy
Xiaoen Wang[1], Liang Zhang[2], Michael P. Collins[3], Brittany Bahamon[3], Sabina Signoretti[3], Michael B. Atkins[2], David C. Alsop[4], Rupal S. Bhatt[2]
[1]Department of Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School , Boston, MA, United States; [2]Division of Hematology-Oncology & Cancer Biology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [3]Department of Pathology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [4]Department of Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

968. Evaluation of MR Imaging Biomarkers of the Infiltrative & Vascular Phenotype in Orthotopic Murine RG2 Gliomas

Jessica K. R. Boult[1], Lara Perryman[2], Gary Box[3], Chris Jones[2], Suzanne A. Eccles[3], Simon P. Robinson[1]
[1]Cancer Research UK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research & Royal Marsden NHS Trust, Sutton, Surrey, United Kingdom; [2]Paediatric Oncology, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Cancer Research UK Cancer Therapeutics Unit, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

969. A Dynamic Contrast-Enhanced MRI Comparison of the Perfusion of Spontaneous & Transplanted Pancreatic Ductal Adenocarcinoma in Genetically Engineered Mice

Leanne Bell[1], Davina Honess[2], Dominick McIntyre[2], David Tuveson[2]
[1]CRUK Cambridge Research Institute, Cambridge, United Kingdom; [2]CRUK Cambridge Research Institute, United Kingdom

970. Distribution of DCE-MRI Pharmacokinetic Parameter Maps in Early Murine Mammary Cancer

Xiaobing Fan[1], Sanaz A. Jansen[2], Erica J. Markiewicz[1], Gillian M. Newstead[1], Gregory S. Karczmar[1]
[1]Radiology, The University of Chicago, Chicago, IL, United States; [2]Mouse Cancer Genetics Program, National Cancer Institute, Frederick, MD, United States

971. Development of a Spin Echo Gradient Echo Sequence for Simultaneous Assessment of the Biomarkers Vessel Size Index, Relative Blood Volume & Perfusion

Stefan Zwick[1], Wilfried Reichardt[1], Claudia Weidensteiner[1], Dominik von Elverfeldt[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center, Freiburg, Germany

972. Evaluation of Gd-DTPA Contrast Enhancement of Lung & Metastatic Tumor with Ultra-Short Echo-Time Imaging

Daisuke Kokuryo[1], Ichio Aoki[1], Tsuneo Saga[1]
[1]Molecular Imaging Center, National Institute of Radiological Sciences, Chiba, Japan

973. DCE-MRI of Genetic Mouse Model of Lung Cancer

Kai Henrik Barck[1], Anthony Lima[2], Tim Cao[1], Rafael Molina[2], William F. Forrest[3], Weilan Ye[4], Leisa Johnson[2], Richard A. D. Carano[1]
[1]Biomedical Imaging, Genentech, South San Francisco, CA, United States; [2]Molecular Biology, Genentech, South San Francisco, CA, United States; [3]Biostatistics, Genentech, South San Francisco, CA, United States; [4]Tumor Biology & Angiogenesis, Genentech, South San Francisco, CA, United States

974. Therapeutic Targeting of NG_2 Proteoglycan with MAb & Pre-Armed NK Cells in Human GBM Evaluated with Dynamic Enhanced & Diffusion Weighted MRI in Rats

Marte Thuen[1], Jien Wang[2], Per Øyvind Enger[2], Aurelie Poli[3,4], Guro Løkka[2], Else Marie Huuse[1], Frits Thorsen[2], Cecilie Brekke Rygh[2], Martha Chekenya[2]
[1]Dep of Circulation & Medical Imaging, Norwegian University of Science & Technology, Trondheim, Norway; [2]Department of Biomedicine, University of Bergen, Bergen, Norway; [3]Translational Cancer Research, University of Bergen, Norway; [4]Lab for Immunology & Allergology, CRP sante, Luxembourg, Luxembourg

975. Timing of Anti-Angiogenic Therapy in Brain Tumors using MRI Measures of Relative Cerebral Blood Volume & Apparent Diffusion Coefficient

Kimberly R. Pechman[1,2], Deborah L. Donohoe[2,3], Devyani Bedekar[2,3], Kathleen M. Schmainda[2,4]
[1]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Translational Brain Tumor Research Program, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Radiology & Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

976. Optimization of Combined Bevacizumab Plus Temozolomide Therapy in Brain Tumor Xenograft Models using MRI Measures of Relative Cerebral Blood Volume

Kimberly R. Pechman[1,2], Deborah L. Donohoe[2,3], Devyani P. Bedekar[2,3], Kathleen M. Schmaind[2,4]
[1]Neurosurgery, Medical College of Wisconsin, Millwaukee, WI, United States; [2]Translational Brain Tumor Research Program, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Radiology & Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

977. MR Visualization of Depot Vaccines & Immune Activation for Cancer Therapies

Drew R. DeBay[1], Sarah A. LeBlanc[1], Genevieve M. Weir[2], Marc Mansour[2], Chris V. Bowen[1,3]
[1]National Research Council - Institute for Biodiagnostics (Atlantic), Halifax, Nova Scotia, Canada; [2]Immunovaccine Inc., Halifax, Nova Scotia, Canada; [3]Department of Physics & Atmospheric Science, Dalhousie University, Halifax, Nova Scotia, Canada

978. DMSO-Based Contrast as a Potential Intermediate Endpoint Biomarker of GBM Response to Therapy.

Teresa Delgado-Goñi[1,2], Juana Martin-Sitjar[1,2], Rui V. Simões[1,2], Milena Acosta[1,2], Silvia Lope-Piedrafita[2,3], Carles Arús[1,2]

[1]Bioquimica i Biologia Molecular, Universitat Autònoma Barcelona, Cerdanyola del Vallès, Barcelona, Spain; [2]Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Cerdanyola del Vallès, Barcelona, Spain; [3]Servei de Ressonància Magnètica Nuclear, Universitat Autònoma de Barcelona, Cerdanyola del Valles, Barcelona, Spain

979. Can T_1 or T_2-Weighted MRI Measurements Detect Irreversible Electroporation Ablation Zones in Liver Tumors?

Yue Zhang[1,2], Yang Guo[2], Jodi Nicolai[2], Rachel A. Klein[2], Reed A. Omary[2,3], Andrew C. Larson[2,3]
[1]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Robert H. Lurie Comprehensive Cancer Center, Northwestern University, Chicago, IL, United States

980. Multi-Parametric MRI Assessment of the Anti-Angiogenic Effects of Liposome-Encapsulated Glucocorticoids

Ewelina Kluza[1], Marieke Heisen[2], Sophie Schmid[1], Daisy W. J. van Der Schaft[3], Raymond M Schiffelers[4], Gert Storm[4], Bart M. ter Haar Romeny[2], Gustav J. Strijkers[1], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Image Analysis, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Biomechanics & Tissue Engineering, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [4]Department of Pharmaceutical Sciences, Utrecht University, Utrecht, Netherlands

981. High Resolution Pre-Clinical MRI in Murine Braf-Induced Thyroid Tumor Targeted Therapy

Aime T. Franco[1], Ronald A. Ghossein[2], H. Carl Le[3], Jason A. Koutcher,[4], Jame Fagin[5]
[1]Medicine & Human Human Oncology & Pathogenesis Program, MSKCC, New York, NY, United States; [2]Pathology, MSKCC, New York, NY, United States; [3]Medical Physics, MSKCC, New York, NY, United States; [4]Medicine, MSKCC; [5]Medicine & Human Oncology & Pathogenesis Program, MSKCC

982. A Multifunctional Nanoparticle Platform for Imaging Guided Therapy of Cancer

Anita Gianella[1,2], Peter A. Jarzyna[1], Venkatesh Mani[1], Sarayu Ramachandran[1], Claudia Calcagno[1], Gert Storm[3], David P. Cormode[1], Victor L. Thijssen[4], Arjan W. Griffioen[4], Zahi A. Fayad[1], Willem J. M. Mulder[1]
[1]Translational & Molecular Imaging Institute, Mount Sinai School of Medicine, New York, NY, United States; [2]Centro Cardiologico Monzino, Milano, Italy; [3]Utrecht Institute for Pharmaceutical Science, Utrecht, Netherlands; [4]Department of Medical Oncology, VU University Medical Center, Amsterdam, Netherlands

983. Evaluation of Gemcitabine as an Alternative Treatment to Temozolomide for High Grade Gliomas.

Benjamin Lemasson[1], Stefanie Galbán[2], Terence M.Willians[2], Fei Li[1], Kevin A. Heist[1], Timothy D. Johnson[3], Alnawaz Rehemtulla[1,2], Craig J. Galbán[1], Brian Dale Ross[1]
[1]Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Radiation Oncology, University of Michigan, Center for Molecular Imaging, Ann Arbor, MI, United States; [3]Biostatistics, University of Michigan, Ann Arbor, MI, United States

984. Comparison of Response to OXi4503 Therapy in Subcutaneous & Orthotopic Liver Metastasis Models using Susceptibility & Diffusion MRI

Peter Johnson[1], Simon Walker-Samuel[2], Vineeth Rajkumar[3], Mathew Robson[3], Mark F. Lythgoe[2], Barbara Pedley*[3]*
[1]Institute of Cancer, University College London, London, United Kingdom; [2]UCL Centre for Advanced Biomedical Imaging, Department of Medicine & Institute of Child Health, University College London, London, United Kingdom; [3]Institute of Cancer, University College London, United Kingdom

985. Combining DCE-MRI & DW-MRI for Evaluating the Early Response of a Hypoxia-Activated Chemotherapy

Julio Cardenas[1], Yuguo Li[2], Christine a Howison[3], Jean-Philippe Galons[4], Amanda F Baker[5], Mark D Pagel[6]
[1]Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Arizona Research Laboratories, University of Arizona, Tucson, AZ, United States; [4]Radiology, University of Arizona, Tucson, AZ, United States; [5]Hematology/Oncology, Arizona Cancer Center, University of Arizona, Tucson, AZ, United States; [6]Biomedical Engineering & Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States

986. Integration of Diffusion Weighted Magnetic Resonance Imaging Data Into a Simple Mathematical Model of Tumor Growth

Nkiruka C. Atuegwu[1], Daniel C. Colvin[1], Mary E. Loveless[1,2], Lei Xu[3], John C. Gore[1,4], Thomas E. Yankeelov[1,4]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [3]Biostatistics, Vanderbilt University, Nashville, TN, United States; [4]Radiology, Vanderbilt University, Nashville, TN, United States

987. Native T_1 is a Generic Imaging Biomarker of Response to Chemotherapy in Neuroblastoma

Yann Jamin[1], Elizabeth R. Cullis[2], Lynsey Vaughan[2], Hannah Webber[2], Jessica K. R. Boult[1], Lauren C. Baker[1], Dow-Mu Kow[1], Louis Chesler[2], Simon P. Robinson[1]
[1]CRUK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research & Royal Marsden NHS Trust, Sutton, United Kingdom; [2]Paediatric Oncology, The Institute of Cancer Research, Sutton, United Kingdom

988. The Effect of Cediranib on the Vascular Structure & Function of C_6 Rat Xenografts with Combined Carbogen USPIO (CUSPIO) Imaging
Jake Samuel Burrell[1], Jane Halliday[2], Simon Walker-Samuel[3], Jessica K. R. Boult[1], Yann Jamin[1], John C. Waterton[2], Simon P. Robinson[1]
[1]The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]AstraZeneca, Manchester, United Kingdom; [3]Centre for Advanced Biomedical Imaging, UCL, London, United Kingdom

989. Assessment of Early Treatment Response using a Fast & Robust MRI Protocol in Genetically Engineered Mouse Lung Cancer Models
Yanping Sun[1], Juan Wang[1], Amy M. Saur[1], Zandra Walton[2], Val Monrose[1], Kwok-Kin Wong[2], Andrew L. Kung[1,3]
[1]Lurie Family Imaging Center, Dana-Farber Cancer Institute & Harvard Medical School, Boston, MA, United States; [2]Department of Medical Oncology, Dana-Farber Cancer Institute & Harvard Medical School, Boston, MA, United States; [3]Pediatric Oncology, Children's Hospital Boston, Boston, MA, United States

990. Proton & Sodium MRI Follow-Up of Human Colorectal Tumors Implanted in Mice. Comparison between Two Photodynamic Therapy Protocols.
Carole Danielle Thomas[1,2], Florent Poyer[1,2], Philippe Maillard[2,3], Andreas Volk[1,2], Guillaume Garci[2,3], Alain Croisy[1,2], Mihaela Lupu[1,2], Joel Mispelter[1,2]
[1]Research, Curie Institute/INSERM U759, Orsay, France, Metropolitan; [2]University Paris XI, Orsay, France, Metropolitan; [3]Research, Curie Institute/CNRS UMR176, Orsay, France, Metropolitan

991. EPR Study of the Tumor Reoxygenation Following Inhibition of the MAPKinase Pathway: Underlying Mechanisms & Radiosensitizing Effects
Oussama Karroum[1], Julie Kengen[1], Pierre Danhier[1], Julien Verrax[2], Pedro Buc Calderon[2], Pierre Sonveaux[3], Vincent Gregoire[4], Bernard Gallez[1], Benedicte F. Jordan[1]
[1]Louvrain Drug Research Institute, Biomedical Magnetic Resonance Group, Universite Catholique de Louvain, Brussels, Belgium; [2]Louvrain Drug Research Institute, Pharmacokinetics, Metabolism, Nutrition, & Toxicology Group, Universite Catholique de Louvain; [3]IREC, Pole of Pharmacology & Therapeutics, Universite Catholique de Louvain; [4]IREC, Molecular Imaging & Radiotherapy, Universite Catholique de Louvain

992. *In Vivo* MRI of Rat Thyroid Glands for Non-Invasive Virtual Histopathology
Basil Künnecke[1], Barbara Lenz[1], Markus Stephan-Güldner[1], Anna Maria Brändli-Baiocco[1], Jürgen Funk[1], Thomas Pfister[1], Markus von Kienlin[1]
[1]Pharmaceuticals Division, F. Hoffmann-La Roche Ltd, Basel, Switzerland

993. Early Response Assessment Treatment in Metastatic Prostate Cancer to the Bone using Diffusion MRI.
Jean-Christophe Brisset[1], Stefanie Galbán[2], Alnawaz Rehemtulla[2], Kenneth James Pienta[3], Craig J. Galbán[1], Brian Dale Ross[1]
[1]Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Department of Radiation Oncology, University of Michigan, Ann Arbor, MI, United States; [3]Department of Internal Medicine & Urology, University of Michigan, Ann Arbor, MI, United States

994. Multiparametric MR Mapping of Tissue Response to Photodynamic Therapy in an Intramuscular Model of Murine Squamous Cell Carcinoma
Mirabelle Sajisevi[1,2], David A. Bellnier[3], Nestor Rigual[2], Mukund Seshadri[1,4]
[1]Preclinical Imaging Facility, Roswell Park Cancer Institute, Buffalo, NY, United States; [2]Head & Neck Surgery, Roswell Park Cancer Institute, Buffalo, NY, United States; [3]Cell Stress Biology, Roswell Park Cancer Institute; [4]Pharmacology & Therapeutics, Roswell Park Cancer Institute, Buffalo, NY, United States

Cancer - Cells, Biopsies & Biofluids

Exhibition Hall Thursday 13:30-15:30

995. Inhibition of Phosphatidylcholine-Specific Phospholipase C Induces Down-Regulation of CXCR4 Overexpression & Reduction of ^{1}H-MRS-Detected PCho in Human Lymphoblastoid Cells
Alessandro Ricci[1], Serena Cecchetti[1], Maria Elena Pisanu[1], Luisa Paris[1], Luigi Portella[2], Stefania Scala[2], Egidio Iorio[1], Franca Podo[1]
[1]Cell Biology & Neurosciences, Istituto Superiore di Sanità, Rome, RM, Italy; [2]Department of Clinical Immunology, National Cancer Institute, Naples, NA, Italy

996. Effects of Downmodulation of Choline Kinase on MRS Choline Profile & Transcriptome in Ovarian Cancer Cells
Anna Granata[1], Egidio Iorio[2], Maria Teresa Comito[1], Alessandro Ricci[2], Maria Elena Pisanu[2], Zaver M. Bhujwalla[3], Franca Podo[2], Silvana Canevari[1], Delia Mezzanzanica[1], Marina Bagnoli[1]

[1]Fondazione IRCCS Ist. Nazionale Tumori, Milano, Mi, Italy; [2]Cell Biology & Neurosciences, Istituto Superiore di Sanità, Roma, RM, Italy; [3]John Hopkins University, Baltimore, MA, United States

997. **Endothelial Cell Proliferation is Not Affected by Downregulation of Choline Kinase**

Noriko Mori[1], Mayur Gadiya[2], Flonne Wildes[2], Balaji Krishnamachary[2], Zaver M. Bhujwalla[2]
[1]JHU ICMIC Program, The Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University, School of Medicine , Baltimore, MD, United States; [2]JHU ICMIC Program, The Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University, School of Medicine, Baltimore, MD, United States

998. **Inflammation & Choline Metabolism Are Linked in Breast Cancer**

Ioannis Stasinopoulos[1], Tariq Shah[1], Yelena Mironchik[1], Balaji Krishnamachary[1], Zaver M. Bhujwalla[1,2]
[1]JHU ICMIC Program, Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]The Sidney Kimmel Comprehensive Cancer Center, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

999. **Comparison of NMR Lipid Profiles in Mitotic Arrest & Apoptosis as Indicators of Drug Resistance.**

Dominik Zietkowski[1], Eszter Nagy[2], Margaret A. Mobberley[3], Geoffrey S. Payne[4], Timothy A. Ryder[3], Nandita M. de Souza[4]
[1]CRUK & EPSRC Cancer Imaging Centre , The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Section of Molecular Carcinogenesis, The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [3]Department of Cellular Pathology, Imperial College Healthcare NHS Trust, London, United Kingdom; [4]CRUK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

1000. **The Metabolic Profile of Drug-Induced Autophagy in Cancer**

Gigin Lin[1], Helen Troy[1], Lauren Elizabeth Jackson[1], Ian R. Judson[2], John R. Griffiths[3], Dow-Mu Koh[1], Simon P. Robinson[1], Martin O. Leach[1], Yuen-Li Chung[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CRUK Centre of Cancer Therapeutics Unit, Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [3]CRUK Cambridge Research Institute, Li Ka Shing Centre, Cambridge, United Kingdom

1001. **The Pi3K Inhibitor Ly294002 Downregulates Akt Phosphorylation & Reduces Cell Proliferation Without Decreasing the Phosphocholine Level in Ovarian Cancer Cells**

Egidio Iorio[1], Chiara Alberti[2], Paola Alberti[2], Alessandro Ricci[1], Maria Elena Pisanu[1], Patrizia Pinciroli[2], Silvana Canevari[2], Franca Podo[1], Antonella Tomasetti[2]
[1]Cell Biology & Neurosciences, Istituto Superiore di Sanità, Roma, RM, Italy; [2]Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

1002. **Potential of ^{31}P Magnetic Resonance Spectroscopy of Bile in the Detection of Cholestatic Diseases**

Omkar B. Ijare[1], Tedros Bezabeh[1], Nils Albiin[2], Annika Bergquist[2], Urban Arnelo[2], Matthias Lohr[2], Ian C. P. Smith[1]
[1]National Research Council Institute for Biodiagnostics, Winnipeg, Manitoba, Canada; [2]Karolinska University Hospital, Karolinska Institutet, Huddinge, Stockholm, Sweden

1003. **Investigation of Mobile Lipid Resonances in Cervical Tissue Biopsies & Correlation with Cytoplasmic Lipid Droplets.**

Dominik Zietkowski[1], Geoffrey Payne[2], Nandita deSouza[2]
[1]CRUK & EPSRC Cancer Imaging Centre , The Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]CRUK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research, Sutton, Surrey, United Kingdom

1004. **Intracellular Selective Acidification of Human Melanoma Xenografts by Lonidamine: a ^{31}P Magnetic Resonance Spectroscopy Study**

Kavindra Nath[1], David S. Nelson[1], Andrew Ho[1], Brian P. Weiser[2], Rong Zhou[1], Stephen Pickup[1], Lin Z. J. Li[1], Deenis Leeper[3], Jerry D. Glickson[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Pharmacology, University of Pennsylvania, Philadelphia, PA, United States; [3]Radiation Oncology, Thomas Jefferson University, Philadelphia, PA, United States

Breast

Exhibition Hall Monday 14:00-16:00

1005. **Magnetization Transfer Imaging of the Healthy Breast at 3T**

Lori R. Arlinghaus[1,2], Richard D. Dortch[1,2], Adrienne N. Dula[1,2], Seth A. Smith[1,2], John C. Gore[1,2], Thomas E. Yankeelov[1,2]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

1006. Consistency of Breast Density Measured from the Same Women using Different MR Scanners at 1.5T & 3.0T
Jeon-Hor Chen[1,2], Siwa Chan[3], Daniel H-E Chang[1], Muqing Lin[1], Orhan Nalcioglu[1], Min-Ying L. Su[1]
[1]Center for Functional Onco-Imaging & Department of Radiological Science, University of California Irvine, Irvine, CA, United States; [2]Department of Radiology, China Medical University Hospital, Taichung, Taiwan; [3]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan

1007. Different Types of Errors in Segmentation of Breast Density using Computer-Aided Algorithms
Jeon-Hor Chen[1,2], Muqing Lin[1], Fu-Ju Lei[2], Jia-Pei Wu[2], Siwa Chan[3], Orhan Nalcioglu[1], Min-Ying L. Su[1]
[1]Center for Functional Onco-Imaging & Department of Radiological Science, University of California Irvine, Irvine, CA, United States; [2]Department of Radiology, China Medical University Hospital, Taichung, Taiwan; [3]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan

1008. Rapid Dixon Estimation of Water & Fat Equilibrium Magnetisation for Breast Density Measurements
Maria a Schmidt[1], Antonio de Stefano[2], Erica Scurr[1], James d'Arcy[1], Martin O. Leach[1]
[1]Cancer Research UK & EPSRC Cancer Imaging Centre, Royal Marsden NHS Foundation Trust & Institute of Cancer Research, Sutton, England, United Kingdom; [2]Medical Physics, Portsmouth NHS Hospitals Trust, Portsmouth, England, United Kingdom

1009. Bilateral Breast Imaging using IDEAL Fat-Water Separation & an Undersampled 3D Radial BSSFP Acquisition
Leah C. Henze-Bancroft[1], Catherine J. Moran[2], Scott B. Reeder[3,4], Frederick Kelcz[4], Walter F. Block[3]
[1]Department of Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Department of Radiology, Stanford University, Stanford, CA; [3]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI; [4]Department of Radiology, University of Wisconsin - Madison, Madison, WI

1010. Associations of Breast MR Derived Vascular, Shape & Texture Parameters with Histological Prognostic Indicators
Martin D. Pickles[1], Peter Gibbs[1], Martin Lowry[1], Lindsay W. Turnbull[1]
[1]Centre for MR Investigations, University of Hull, Hull, East Yorkshire, United Kingdom

1011. Diffusion Tensor Based Reconstruction of the Ductal Tree
Marco Reisert[1], Matthias Weigel[1], Erez Eyal[2], Dov Grobgeld[2], Hadassa Degani[2], Jürgen Hennig[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Baden Württemberg, Germany; [2]Biological Regulation Dept., Weizmann Institute of Science, Rehovot, Israel

1012. Dynamic Contrast-Enhanced Breast MRI using Flexible Radial Undersampling with Compressed Sensing Reconstruction
Rachel Waichung Chan[1], Elizabeth Anne Ramsay[2], Edward Yiuwah Cheung[3], Donald Bruce Plewes[1,2]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [3]University of Waterloo, Waterloo, Ontario, Canada

1013. Novel DCE-MRI Technique: Application to Breast Cancer
Dmitri Artemov[1], Wenlian Zhu[1], Yoshinori Kato[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States

1014. Quantitative Magnetic Susceptibility Mapping (QSM) in Breast Disease Reveals Additional Information for MR-Based Characterization of Carcinoma & Calcification
Ferdinand Schweser[1,2], Karl-Heinz Herrmann[1], Andreas Deistung[1], Marie Atterbury[1,3], Pascal A. Baltzer, Hartmut Peter Burmeister, Werner Alois Kaiser, Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]Dept. of Physics, Brown University, Providence, RI, United States

1015. Multicenter, Double-Blind, Randomized, Intraindividual Crossover Comparison of Gadobenate Dimeglumine & Gadopentetate Dimeglumine for MR Imaging of the Breast (DETECT)
Laura Martincich[1], Matthieu Faivre-Pierret[2], Christian M. Zechmann[3], Stefano Corcione[4], Harrie C. M. van Den Bosch[5], Wei-Jun Peng[6], Antonella Petrillo[7], Katja Siegmann[8], Johannes T. Heverhagen[9], Pietro Panizza[10], Hans-Björn Gehl[11], Felix Diekmann[12], Federica Pediconi[13], Lin Ma[14], Fiona J. Gilbert[15], Francesco Sardanelli[16], Paolo Belli[17]
[1]Department of Diagnostic Imaging, Institute for Cancer Research & Treatment (IRCC), Candiolo, Torino, Italy; [2]Center Oscar Lambret, Lille, France; [3]German Cancer Research Center, Heidelberg, Germany; [4]University Hospital "S. Anna", Ferrara, Italy; [5]Catharina Hospital, Eindhoven, Netherlands; [6]Cancer Hospital, Fudan University, Shanghai, China, People's Republic of; [7]National Cancer Institute, Fondazione G. Pascale, Napoli, Italy; [8]University Hospital Tuebingen, Tuebingen, Germany; [9]University Hospital, Philipps University, Marburg, Germany; [10]Ospedale San Raffaele, Milano, Italy; [11]Klinikum Bielefeld, Bielefeld, Germany; [12]Universitätsklinikum Charité, Berlin, Germany; [13]University of Rome "La Sapienza", Rome, Italy; [14]Chinese People's Liberation Army (PLA) General Hospital, Beijing, China, People's Republic of; [15]Aberdeen Biomedical Imaging Centre, Aberdeen, United Kingdom; [16]Policlinico San Donato, San Donato Milanese, Italy; [17]Institute of Radiology, "A. Gemelli", Rome, Italy

1016. Ultrafast Dynamic Imaging of the Breast at Diagnostic Spatial Resolution using TWIST
Ritse M. Mann[1], Roel D. M. Mus[1], Christian Geppert[2], Jelle O. Barentsz[1], Henkjan Huisman[1]

[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gld, Netherlands; [2]MR Oncology, Siemens Healthcare, Erlangen, Germany

1017. Prospective Motion Correction for T_2- & Diffusion-Weighted Breast Imaging with FADE

Kristin L. Granlund[1,2], Ernesto Staroswiecki[1,2], Catherine J. Moran[1], Marcus T. Alley[1], Bruce L. Daniel[1], Brian A. Hargreaves[1]

[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

1018. T_1 Mapping for Breast DCE-MRI using Inversion Recovery TrueFISP: Assessment of Phantom & *In Vivo* Data

David Broadbent[1], Peter Wright[1], Daniel Wilson[1]

[1]Medical Physics, Leeds Teaching Hospitals, Leeds, United Kingdom

1019. Analysis of the Normalized Radial Length Reveals Differences in Morphology Between Hormone Receptor Positive & Negative Breast Lesions Imaged with DCE-MRI

Fang Liu[1,2], Anat Kornecki[3], Olga Shmuilovich[3], Yves Bureau[1,2], Neil Gelman[1,2]

[1]Imaging Division, Lawson Health Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]Department of Diagnostic Imaging, St. Joseph's Health Center, London, Ontario, Canada

1020. Dynamic Contrast-Enhanced MRI in Triple Negative Breast Carcinomas: is there a Distinct Imaging Phenotype?

Sonia P. Li[1], N. Jane Taylor[2], J. James Stirling[2], Mei-Lin W. Ah-See[1], Mark J. Beresford[1], David J. Collins[3], James A. d'Arcy[3], Andreas Makris[1], Anwar R. Padhani[2]

[1]Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [2]Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [3]CRUK-EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey SM2 5PT, United Kingdom

1021. Detection of Breast Cancer Aggressiveness with Metabolomic Profiles

Elita DeFeo[1], Elena Brachtel, Yannick Berker, Nathalie Strittmatter, Julia Hein, Dennis Sgroi, Barbara Smith[2], Leo L. Cheng[3]

[1]Pathology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Surgical Oncology, Massachusetts General Hospital; [3]Radiology, Pathology, Massachusetts General Hospital

1022. Utility of Pre-Treatment MR Derived Vascular, Shape & Texture Parameters in the Prediction of Response to Neoadjuvant Chemotherapy in a Cohort of Breast Cancer Patients

Martin D. Pickles[1], Peter Gibbs[1], Martin Lowry[1], Lindsay W. Turnbull[1]

[1]Centre for MR Investigations, University of Hull, Hull, East Yorkshire, United Kingdom

1023. Digital "proximity Mapping" to Assess Radial Dependence of Breast Stromal Enhancement Associated with Response to Neoadjuvant Chemotherapy.

Catherine Klifa[1], David Newitt[2], Catherine Park[3], Sachiko Suzuki[2], Lisa Wilmes[2], Ying Lu[4], Nola Hylton[2]

[1]Radiology & Biomedical Imaging , University of California San Francisco, San Francisco , CA, United States; [2]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]Department of Radiation Oncology, University of California San Francisco, San Francisco, CA, United States; [4]Department of Health Research & Policy, Stanford University, Stanford, CA, United States

1024. Diagnostic Performance of MRI for Assessing Tumor Response in Her-2 Negative Breast Cancer Receiving Neoadjuvant Chemotherapy

Aida Kuzucan[1], Jeon-Hor Chen[1,2], Rita S. Mehta[3], Shadfar Bahri[1], Philip M. Carpenter[4], Hon J. Yu[1], Orhan Nalcioglu[1], Min-Ying L. Su[1]

[1]Center for Functional Onco-Imaging & Department of Radiological Science, University of California Irvine, Irvine, CA, United States; [2]Department of Radiology, China Medical University Hospital, Taichung, Taiwan; [3]Department of Medicine, University of California Irvine, CA, United States; [4]Department of Pathology, University of California Irvine, CA, United States

1025. Early DCE-MRI Changes Predict Residual Enhancing Volume in Breast Cancer Patients Undergoing Neoadjuvant Chemotherapy

Xia Li[1], Lori R. Arlinghaus[1], E. Brian Welch[1], A. Bapsi Chakravarthy[1], Lei Xu[1], Jaime Farley[1], Ingrid Mayer[1], Mark Kelley[1], Ingrid Meszoely[1], Julie Means-Powell[1], Vandana Abramson[1], Ana Grau[1], Mia Levy[1], John C. Gore[1], Thomas E Yankeelov[1]

[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

1026. Diffusion Weighted MRI of the Breast: Is there a Role for Apparent Diffusion Coefficient Values in the Prediction of Response & in the Early Assessment of Response to Neoadjuvant Chemotherapy?

Jyoti Parikh[1], Geoff Charles-Edwards[2]

[1]Clinical Radiology, Guys & St Thomas' Hospitals, London , England, United Kingdom; [2]Medical Physics, Guys & St Thomas' Hospitals, London, England, United Kingdom

1027. Optimisation of B-Values for Diffusion-Weighted Imaging of the Breast
Marco Borri[1], Maria a Schmidt[1], Matthew Blackledge[1], Erica Scurr[1], Elizabeth O'Flynn[1], David Collins[1], Matthew Orton[1], Veronica Morgan[1], Nandita de Souza[1], Martin O. Leach[1]
[1]Cancer Research UK and EPSRC Cancer Imaging Centre, Royal Marsden NHS Foundation Trust and Institute of Cancer Research, Sutton, United Kingdom

1028. Improved Diagnostic Accuracy of Breast MRI through Combined Apparent Diffusion Coefficients & Dynamic Contrast-Enhanced Kinetics
Savannah C. Partridge[1], Habib Rahbar[1], Revathi Murthy[2], Xiaoyu Chai[3], Brenda Kurland[3], Wendy DeMartini[1], Constance Lehman[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Bioengineering, University of Washington, Seattle, WA, United States; [3]Clinical Statistics, Fred Hutchinson Cancer Research Center, Seattle, WA, United States

1029. Magnetization Transfer Rate & Amide Proton Transfer of Dissected Axillary Lymph Nodes of Breast Cancer Patients at 7T MRI
Mies A. Korteweg[1], Daniel L. Polders[1], Willem P. Th. M. Mali[1], Peter R. Luijten[1], Jaco J. M. Zwanenburg[1], Wouter B. Veldhuis[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

1030. 'Real Time' Identification of the Sentinel Lymph Node in Breast Cancer using Dynamic MRI Sequences Following Subcutaneous Injection with Superparamagnetic Nanoparticles
Laura Johnson[1], Geoff Charles-Edwards[2], Jyoti Parikh[3], Margaret Hall-Craggs[4], Tobias Schaeffter[5], Quentin Pankhurst[6], Michael Douek[1]
[1]Research Oncology, Kings College London, London, United Kingdom; [2]Medical Physics, Guy's & St Thomas' NHS Foundation Trust; [3]Radiology, Guy's & St Thomas' NHS Foundation Trust; [4]Department of Imaging & Medical Physics & Bioengineering, University College London; [5]Imaging sciences, Kings College London; [6]Royal Institution of Great Britain

1031. Histological Distribution of Magnetic Nanoparticles in Sentinel Lymph Nodes in Breast Cancer
Laura Johnson[1], Sarah Pinder[1], Margaret Hall-Craggs[2], Michael Douek[1]
[1]Research Oncology, Kings College London, London, England, United Kingdom; [2]Department of Imaging & Medical Physics & Bioengineering, University College London

1032. Detection of Lipid Composition by 7T Proton Spectroscopy of *Ex Vivo* Axillary Lymph Nodes of 10 Breast Cancer Patients
Mies A. Korteweg[1], Suzanne C. E. Diepstraten[1], Willem P. Th. M. Mali[1], Peter R. Luijten[1], Paul J. van Diest[2], Ivan Dimitrov[3], Wouter B. Veldhuis[1], Dennis W. J. Klomp[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Pathology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

1033. TE-Averaged PRESS for Breast Spectroscopy - Increased Flexibility by using Fractional NEX Averaging
Ralph Noeske[1], Timo Schirmer[2]
[1]Global Applied Science Laboratory, GE Healthcare, Berlin, Germany; [2]Global Applied Science Laboratory, GE Healthcare, Munich, Germany

1034. Validation of Susceptibility-Based Models with Field Map Measurements in the Breast
Caroline D. Jordan[1,2], Bruce L. Daniel[1], Kevin M. Koch[3], Huanzhou Yu[4], Steve Conolly[5], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States; [3]Applied Science Laboratory, GE, Waukesha, WI, United States; [4]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [5]Bioengineering, UC Berkeley, Berkeley, CA, United States

1035. B_0 Shimming in the Human Breast for 7 Tesla MR Spectroscopy
Mariska Petra Luttje[1], Jannie Petra Wijnen[1], Wybe J. M. van Der Kemp[1], Peter R. Luijten[1], Dennis W. J. Klomp[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

1036. 7T Versus 3T Contrast-Enhanced Magnetic Resonance Imaging of Invasive Breast Cancer
Bertine Luus Stehouwer[1], Dennis W. J. Klomp[1], Mies A. Kortweg[1], Peter R. Luijten[1], Willem P. Th. M. Mali[1], Maurice A. AJ. van Den Bosch[1], Wouter B. Veldhuis[1]
[1]Radiology, UMCU, Utrecht, Netherlands

1037. Distinction of Invasive Lobular Carcinoma, Invasive Ductal Carcinoma & Healthy Breast Tissue *In Vivo* with L-COSY at 3T
Saadallah Ramadan[1], Hayden Nicholas Box[1], Pascal Baltzer[2], Alexander Lin[1], Peter Stanwell[3,4], Eva Gombos[1], Werner a Kaiser[2], Carolyn Mountford[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Radiology, Institute of Diagnostic & Interventional Radiology, Jena, Germany; [3]School of Health Sciences, The University of Newcastle, Newcastle, NSW, Australia; [4]Radiology, Brigham & Women's Hospital, Boston, MA, United States

1038. Quantitative ^{1}H MRS of the Normal Human Breast
Patrick J. Bolan[1], Navneeth Lakkadi[1]
[1]Radiology/CMRR, University of Minnesota, Minneapolis, MN, United States

1039. Lactate Detection in Inducible & Orthotopic Breast Cancer Models
Sergey Magnitsky[1], George Belka[2], Christopher Sterner[2], Lewis A. Chodosh[2], Jerry D. Glickson[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Cancer Biology, University of Pennsylvania, Philadelphia

1040. High-Resolution 3D T_2-Weighted Spin-Echo Imaging with a 16-Channel Breast Coil
Catherine Judith Moran[1], Anderson N. Nnewihe[1,2], Bruce L. Daniel[1], Kristin L. Granlund[1,3], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States

1041. Automated Breast Ultrasound: MRI & Ultrasound CT Imaging Similarities
Marco Vicari[1,2], Ulrich Saueressig[3], James W. Wiskin[4,5], Paolo Pellegretti[6], Michele Zani[6], Vera Ivanovas[3], Marisa Windfuhr-Blum[3], Jonathan Kroschel[3], Elmar Kotter[3], Mathias Langer[3]
[1]Esaote S.p.A. , Genova, Italy; [2]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [3]Dept. of Radiology, Clinical Radiology, University Medical Center Freiburg, Freiburg, Germany; [4]Dept. of Bioengineering, University of Utah, Salt Lake City, UT, United States; [5]Techniscan, Inc., Salt Lake City, UT, United States; [6]Esaote S.p.A., Genova, Italy

1042. Quantitative DCE-MRI in Breast with Direct Measurement of AIF using Tofts & ATH Models: A Simulation Study
Bing Wen Zheng[1], Dennis Lai-Hong Cheong[1,2], Christopher Au[1], Eileen Ng[1], Soo Chin Lee[3], Thian chor Ng[1,4]
[1] Clinical Imaging Research Center, A*STAR & National University of Singapore, 117456, Singapore; [2]Neuroradiology Department, National Neuroscience Institute, 308433, Singapore; [3]Departments of Hematology & Oncology, National University of Singapore, 119074, Singapore; [4]Departments of Radiology, National University of Singapore, 119074, Singapore

1043. Diagnostic Performance of DCE-MR Imaging of the Breasts as a Function of Contrast Dose
Lawrence Dougherty[1], Mark Alan Rosen[1], Hee Kwon Song[1], Mitchell D. Schnall[1]
[1]Radiology, Hospital of the University of Pennsylvania, Philadelphia, PA, United States

1044. The Time-to-Peak Hot Spot Volume as an Indicator of Lesion Malignancy in Breast Dynamic Contrast Enhanced-MRI
Fang Liu[1,2], Anat Kornecki[3], Olga Shmuilovich[3], Neil Gelman[1,2]
[1]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Imaging Division, Lawson Health Research Institute, London, Ontario, Canada; [3]Department of Diagnostic Imaging, St. Joseph's Health Center, London, Ontario, Canada

1045. Multi-Modality Compressed Breast Imaging
Stefan Alexandru Carp[1], Christy M. Wanyo[1], David Alan Boas[1]
[1]Radiology, Massachusetts General Hospital, Charlestown, MA, United States

Prostate Cancer (Clinical Studies)

Exhibition Hall Tuesday 13:30-15:30

1046. Correlation of Histology from MR Guided Transperineal Prostate Biopsy with Multiparametric MR Imaging: A Feasibility Study
Felipe Franco[1], Fiona Fennessy[1], Andriy Fedorov[1], Kemal Tuncali[1], Junichi Tokuda[1], Sandeep Gupta[2], Clare Tempany[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Functional Imaging Lab, General Global Research Center

1047. Geometric Distortion in Diffusion Weighted MR Imaging of the Prostate using Air vs. Per-Fluorocarbon Filled Endorectal Coil at 3.0 T
Maysam Jafar[1], Veronica A. Morgan[1], Sharon Giles[1], David J. Collins[1], Maria A. Schmidt[1], Nandita M. deSouza[1]
[1]Clinical MR, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Belmont, Sutton SM2 5NG, United Kingdom

1048. Combining Amide-Proton-Transfer MRI with DCE-MRI to Improve Prostate Cancer Detection
Guang Jia[1], Ronney Abaza[2], Joanna D. Williams[3], Debra L. Zynger[3], Jinyuan Zhou[4], Zarine K. Shah[1], Mitva Patel[1], Steffen Sammet[1], Lai Wei[5], Robert R. Bahnson[2], Michael V. Knopp[1]
[1]Wright Center of Innovation in Biomedical Imaging & Department of Radiology, The Ohio State University, Columbus, OH, United States; [2]Department of Urology, The Ohio State University, Columbus, OH, United States; [3]Department of Pathology, The Ohio State University, Columbus, OH, United States; [4]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [5]Center for Biostatistics, The Ohio State University, Columbus, OH, United States

1049. Symmetry Based Prostate Cancer Detection

Yi Xie[1,2], Yi Dang[1], Feiyu Li[3], Bing Fan[3], Ling Yang[2], Jue Zhang[1,4], Xiaoying Wang[1,3], Jing Fang[1,4]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, People's Republic of; [2]Dept. of Electronic Engineering, Chengdu University of Information Technology, Chengdu, Sichuan, China, People's Republic of; [3]Dept. of Radiology, Peking University First Hospital, Beijing, China, People's Republic of; [4]College of Engineering, Peking University, Beijing, China, People's Republic of

1050. Quantitative & Qualitative Sodium Imaging of the Prostate at 3T

Daniel Hausmann[1], Simon Konstandin[2], Stefan Haneder[1], Frank Zoellner[2], Friedrich Wetterling[2], Stefan O. Schönberg[1], Dietmar J. Dinter[1], Lothar R. Schad[2]
[1]Institute of Clinical Radiology & Nuclear Medicine, University Medical Center Mannheim, Mannheim, Baden-Württemberg, Germany; [2]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

1051. High Resolution *Ex Vivo* MRI of Prostate Specimen, Correlation with Whole-Mount Histology & *In Vivo* MRI

Chad R. Haney[1], Xiaobing Fan[1], Garima Agrawal[1], Charles A. Pelizzari[2], Gregory S. Karczmar[1], Jonathan Bakst[3], Tatjana Antic[3], Scott E. Eggener[4], Aytekin Oto[1]
[1]Radiology, University of Chicago, Chicago, IL, United States; [2]Radiation & Cellular Oncology, University of Chicago, Chicago, IL, United States; [3]Pathology, University of Chicago, Chicago, IL, United States; [4]Urology/Surgery, University of Chicago, Chicago, IL, United States

1052. Apparent Diffusion Coefficient Values During Magnetic Resonance -Guided Biopsy of the Prostate: Correlation with Histological Results

Martijn Gerjan Schouten[1], N. A. Nagel[1], Thomas Hambrock[1], Caroline M. Hoeks[1], Joyce Gerda Riek Bomers[1], Pieter C. Vos[1], Jurgen J. Futterer[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands

1053. Non-Monoexponential Diffusion Signal Decay in Prostate Cancer

Stephan E. Maier[1], Yi Tang[1], Lawrence P. Panych[1], Robert V. Mulkern[2], Clare M. Tempany[1]
[1]Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Radiology, Children's Hospital, Harvard Medical School, Boston, MA

1054. Predicting Gleason Scores of Prostate Cancer using Combined Trace Apparent Diffusion Coefficient & Tumor Volume

Yu-Jen Chen[1], Y-S Pu[2], Woei-Chyn Chu[1], W-Y Isaac Tseng[3,4]
[1]Institute of Biomedical Engineering, National Yang-Ming University, Taipei, Taiwan; [2]Department of Urology; [3]Department of Medical Imaging, National Taiwan University Hospital; [4]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan

1055. Characterization of the Human Prostate by *In Vivo* ^{31}P MR Spectroscopic Imaging at 7 Tesla

Miriam Lagemaat[1], Thiele Kobus[1], Stephan Orzada[2], Andreas Bitz[2], Arend Heerschap[1], Tom Scheenen[1,2]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

1056. Zonal & Age-Related Differences of Prostate Spectra at 3 T

Jan Weis[1], Francisco Ortiz-Nieto[1], Håkan Ahlström[1]
[1]Uppsala University Hospital, Uppsala, Sweden

1057. Correlation between Cancer & Altered Proton MR Spectroscopic Imaging in the Prostate's Central Gland

Angel Moreno-Torres[1], Antonia Blanch[2], Cesar Arribas[3], Jose-Maria Gil-Vernet Sedò[4], Isidro Bonet-Palau
[1]Research Department, Cetir Grup Medic, Esplugues de Llobregat, Spain; [2]Unitat Clinica El Pilar, Cetir Grup Medic, Barcelona; [3]Unitat Clinica El Pilar, Cetir Grup Medic, Barcelona, Spain; [4]Centro Gil-Vernet de Urología, Centro Médico Teknon, Barcelona, Spain

1058. Three Dimensional Spectroscopic Imaging in the Prostate with a Surface Combined Endorectal Coil at 7 Tesla

Gregory John Metzger[1], Eddie J Auerbach[1], Gregor Adriany[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1059. Evaluations of Human Prostate Cancer Metabolomic Profiles with a Testing Cohort.

Elita DeFeo[1], Johannes Kurth[1], Chin-Lee Wu, Shulin Wu, W. Scott McDougal[2], Leo L. Cheng[3]
[1]Pathology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Urology, Massachusetts General Hospital; [3]Radiology, Pathology, Massachusetts General Hospital

1060. Transrectal MRI-Guided Prostate Biopsy: Evaluation of a Novel Robotic Technique

Martijn Gerjan Schouten[1], Joyce Gerda Riek Bomers[1], Derya Yakar[1], Henkjan Huisman[1], Tom W. J. Scheenen[1], Sarthak Misra[2], Jurgen J. Futterer[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Control Engineering Group, MIRA-Institute of Biomedical Technology & Technical Medicine, Enschede, Overijssel, Netherlands

Gastrointestinal & Hepatobiliary Cancer (Clinical Studies)

Exhibition Hall Wednesday 13:30-15:30

1061. Repeatability of Perfusion & Pure Diffusion Parameters in a Bi-Exponential, Multi-B Diffusion Imaging Approach

Sabrina Doblas[1], Mathilde Wagner[1,2], Jean-Luc Daire[1,2], Nathalie Haddad[1,2], Helena Leitao[2,3], Ralph Sinkus[1], Bernard E. Van Beers[1,2], Valérie Vilgrain[1,2]

[1]Centre de Recherche Biomédicale Bichat-Beaujon, INSERM U773, Clichy, France; [2]Department of Radiology, Beaujon University Hospital, University Paris Diderot, Clichy, France; [3]Department of Radiology, Hospitais de Universidade de Coimbra, Coimbra, Portugal

1062. The Added Value of a Bi-Exponential Approach for Processing Multi-B Diffusion-Weighted Imaging Data in the Diagnosis of Hepatic Tumors

Sabrina Doblas[1], Mathilde Wagner[1,2], Jean-Luc Daire[1,2], Nathalie Haddad[1,2], Helena Leitao[2,3], Ralph Sinkus[1], Valérie Vilgrain[1,2], Bernard E. Van Beers[1,2]

[1]Centre de Recherche Biomédicale Bichat-Beaujon, INSERM U773, Clichy, France; [2]Department of Radiology, Beaujon University Hospital, University Paris Diderot, Clichy, France; [3]Department of Radiology, Hospitais de Universidade de Coimbra, Coimbra, Portugal

1063. MRI is Superior to 64-Slice CT in Detection of HCC in the Cirrhotic Liver

Robert F. Hanna[1], Stephen M. Lagana[2], Roger K. Moreira[2], Jean C. Emond[3], Inna Postolov[4], Martin R. Prince[1,5]

[1]Diagnostic Radiology, Columbia University - New York Presbyterian Hospital, New York, NY, United States; [2]Pathology, Columbia University - New York Presbyterian Hospital; [3]Surgery, Columbia University - New York Presbyterian Hospital; [4]Diagnostic Radiology, Columbia University - New York Presbyterian Hospital, New York, NY , United States; [5]Diagnostic Radiology, Weill Cornell Medical Center, New York, NY, United States

1064. Reproducibility of T_2* MR Imaging & Correlation with Diffusion MR Imaging in Liver Metastasis of Colorectal Cancer

E. G. W. ter Voert[1], L. Heijmen[2], W. J. G. Oyen[3], J. H. W. de Wilt[4], C. J. A. Punt[2], L. F. de Geus-Oei[3], H. W. M. van Laarhoven[2], A. Heerschap[1]

[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Medical Oncology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Nuclear Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [4]Surgery, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

1065. Reproducibility of the Apparent Diffusion Coefficient in Liver Metastases of Colorectal Cancer & Assessment of Correlation with FDG-PET.

Linda Heijmen[1], Arend Heerschap[2], Edwin ter Voert[2], Wim Oyen[3], Hans de Wilt[4], Cees Punt, Lioe-Fee de Geus- Oei[3], Hanneke van Laarhoven[1]

[1]Medical Oncology, Radboud University Nijmegen, Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Radiology, Radboud University Nijmegen, Medical Centre, Nijmegen, Netherlands; [3]Nuclear Medicine, Radboud University Nijmegen, Medical Centre; [4]Surgery, Radboud University Nijmegen, Medical Centre

1066. Diffusion-Weighted MRI of the Liver: Parameters of Acquisition & Analysis & Predictors of Chemotherapy Response

Renu M. Stephen[1], Denise J. Roe,[12], Abhinav K. Jha[3], Haiyan Cui[1], Georgette Frey[1], Scott Squire[4], Ted P. Trouard,[45], Jean P. Galons[4], Jeff J. Rodriquez[6], Mathew A. Kupinski[3,4], Eric Outwater[7], Robert J. Gillies[7], Alison T. Stopeck[1]

[1]Arizona Cancer Center, University of Arizona, Tucson, AZ, United States; [2]Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson; [3]College of Optical Sciences, University of Arizona, Tucson; [4]Department of Radiology, University of Arizona, Tucson; [5]Biomedical Engineering, University of Arizona, Tucson; [6]Electrical & Computer Engineering, University of Arizona, Tucson; [7]H.Lee Moffitt Cancer Center & Research Institute, Tampa, FL

1067. An Initial Evaluation of the Role of Diffusion Weighted Imaging in the Nodal Staging of Rectal MRI

Gillian Macnaught[1], Fat-Wui Poon[2], S. Viswanathan[1], Y-T Sim[3], M. Digby[3]

[1]Radiology Department, Glasgow Royal Infirmary, NHS Greater Glasgow & Clyde, Glasgow, Scotland, United Kingdom; [2]Radiology Department , Glasgow Royal Infirmary, NHS Greater Glasgow & Clyde, Glasgow, Scotland, United Kingdom; [3]Radiology Department, Stobhill Ambulatory Care Hospital, NHS Greater Glasgow and Clyde, Glasgow, Scotland, United Kingdom

1068. Dynamic Contrast-Enhanced MRI in Rectal Tumours – Initial Reproducibility Measurements at 3T with & Without Bowel Relaxant

Geoff Charles-Edwards[1,2], Jyoti Parikh[1], Nyree Griffin[1], Robert Johnstone[1], David Landau[1], Andrew Gaya[1]

[1]Guy's & St Thomas' NHS Foundation Trust, London, United Kingdom; [2]King's College London, London, United Kingdom

1069. Rectal Cancer Neoadjuvant Therapy Assessment with Quantitative Diffusion Imaging ?

Olivia Moens[1], Julie Absil[1], Anne Demols[2], Thierry Metens[1], Celso Matos[1]

[1]Magnetic Resonance-Radiology, Université Libre de Bruxelles Hôpital Erasme, Brussels, Belgium; [2]Gastroenterology, Université Libre de Bruxelles Hôpital Erasme, Brussels, Belgium

Tumor Perfusion & Permeability

Exhibition Hall Thursday 13:30-15:30

1070. DCE-MRI in Tumors at 11.7 Tesla Requires the Estimation of Arterial Input Function by Phase Imaging Instead of Magnitude Imaging
Anne-Catherine Fruytier[1], Julie Magat[1], Benedicte F. Jordan[1], Gregory Cron[2], Bernard Gallez[1]
[1]Louvain Drug Research Institute, Biomedical Magnetic Resonance Research Group, University of Louvain, Brussels, Belgium; [2]Ottawa Health Research Institute, Ottawa, Canada

1071. Using DCE-MRI Data to Constrain & Simplify PET Kinetic Modeling
Jacob U. Fluckiger[1], Xia Li[1], Jennifer Whisenant[1], Lei Xu[1], Junzhong Xu[1], Todd E. Peterson[1], John C. Gore[1], Thomas Yankeelov[1]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1072. Comparison of the Standard Gadolinium Concentration & Signal Difference Methodologies for Computation of Perfusion Parameters in DCE-MRI at Various SNRs
Hee Kwon Song[1], Yiqun Xue[1], Jiangsheng Yu[1], Sarah Englander[1], Hyunseon C Kang[1], Mark a Rosen[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1073. Precision & Accuracy of K^{trans} Estimated by Fitting the Extended Kety Model Parameters to DCE-MRI Time Course Data is Unaffected by the Choice of Optimisation Algorithm or Estimation of T_1 using Linearisation
Anita Banerji[1,2], Josephine H. Naish[1,2], Giovanni A. Buonaccorsi[1], Geoff J. M. Parker[1,2]
[1]Imaging Sciences & Biomedical Engineering, Manchester University, Manchester, United Kingdom; [2]Biomedical Imaging Institute, Manchester, United Kingdom

1074. Anti-Angiogenic Therapy Follow-Up in a Mouse Tumor Model by a Novel 3D Radial Multi-Gradient Echo DCE MRI Technique with Individual AIF Measurement
Nadine El Tannir El Tayara[1,2], Nidhal Ben Achour[1,2], Christine Walczak[1,2], Fariba Nemati[3], Joel Mispelter[1,2], Didier Decaudin[3], Julien Vautier[1,2], Andreas Volk[1,2]
[1]Research Center, Institut Curie, Orsay, France; [2]U759 INSERM, Orsay, France; [3]Translational Research Department, Institut Curie, Paris, France

1075. Model Fitting of Spatially Smoothed DCE-CT & DCE-MRI Data in Bladder Tumours
Penny Louise Hubbard[1,2], Josephine H. Naish[1,2], Caleb Roberts[1,2], Yvonne Watson[1,2], Karen Davies[1,2], John C. Waterton[1,3], Helen Young[3], John P. Logue[4], M. Ben Taylor[4], Geoff J. M. Parker[1,2]
[1]Imaging Sciences & Biomedical Engineering, The University of Manchester, Manchester, United Kingdom; [2]The Biomedical Imaging Institute, The University of Manchester, Manchester, United Kingdom; [3]AstraZeneca R & D, Alderley Park, Macclesfield, Cheshire, United Kingdom; [4]Christie Hospital, Manchester, United Kingdom

1076. Effects of Flip Angle Variations on the Accuracy of Perfusion Parameters in DCE-MRI
Jiangsheng Yu[1], Yiqun Xue[1], Mark a Rosen[1], Christina S. Chu[2], Hee Kwon Song[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Obstetrics & Gynecology, University of Pennsylvania, Philadelphia, PA, United States

1077. Feasibility of Dual Pharmacokinetic Modeling using Gd-DTPA/MRI & ^{18}F-FDG/PET
Éric Poulin[1], Étienne Croteau[1], Réjean Lebel[1], Luc Tremblay[1], Roger Lecomte[1], M'Hamed Bentourkia[1], Martin Lepage[1]
[1]Nuclear Medicine & Radiobiology, Université de Sherbrooke, Sherbrooke, Quebec, Canada

1078. Use of an Individually Measured Hematocrit in DCE-MRI Studies
Caleb Roberts[1,2], Sarah Hughes[3], Josephine H. Naish[1,2], Katherine Holliday[1,2], Yvonne Watson[1,2], Sue Cheung[1,2], Giovanni A. Buonaccorsi[1,2], Helen Young[4], Noel Clarke[3,5], Geoff J. M. Parker[1,2]
[1]Imaging Science & Biomedical Engineering, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Biomedical Imaging Institute, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [3]Paterson Institute for Cancer Research, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [4]AstraZeneca, Macclesfield, Cheshire, United Kingdom; [5]Department of Urology, Salford Royal Hospital NHS Foundation Trust, Salford, Greater Manchester, United Kingdom

1079. Analysis of Signal-Adaptive K-Space Acquisition Schemes in Quantitative Dynamic Contrast-Enhanced MRI
Ina Nora Kompan[1,2], Claudia Prieto[3], Benjamin Richard Knowles[4], Hendrik Laue[1], Geoff Charles-Edwards[3], Matthias Guenther[1,2], Tobias Schaeffter[3]

[1]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany; [2]Faculty of Physics & Electronics, University of Bremen, Bremen, Germany; [3]Division of Imaging Sciences, Kings's College London, St. Thomas' Hospital, London, United Kingdom; [4]Cardiovascular Division, Beth Israel Deaconess Medical Center, Harvard School of Medicine, Boston, MA, United States

1080. Improving the Accuracy & Precision of DCE-MRI Tracer Kinetic Modelling by Imposing Inter-Variable Constraints

Leonidas Georgiou[1,2], Chris James Rose[1,2]
[1]The University of Manchester Biomedical Imaging Institute, The University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Manchester Academic Health Science Centre, The University of Manchester, Manchester, Greater Manchester, United Kingdom

1081. Modeling the Effect of Diffusion on the Assessment of K^{trans} & v_e in DCE-MRI

Stephanie Lynne Barnes[1,2], John C. Gore[1,2], Thomas E. Yankeelov[1,2]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Sciences, Vanderbilt University, Nashville, TN, United States

1082. Analysis of DCE-MRI in Oncology: When Should We Use the Tofts Models?

Steven Sourbron[1], David L. Buckley[1]
[1]Division of Medical Physics, University of Leeds, Leeds, United Kingdom

1083. Quantitative Perfusion MRI of Tumor Model in Mouse

Reshmi Rajendran[1], Jie Ming Liang[1], Torsten Reese[2], Hannes Hentze[2], Susan van Boxtel[2], Brian Henry[2], Kai-Hsiang Chuang[1]
[1]Magnetic Resonance Imaging Group, Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore; [2]Translational Medicine Research Centre, MSD, Singapore

1084. The Assessment of Tumor Cellularity using DSC-MRI

Natenael B. Semmineh[1], Junzhong Xu[1], John C. Gore[1], Christopher C. Quarles[1]
[1]Radiology & Radiological Sciences, Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

1085. Intracellular Water Lifetime Measured by Diffusion Weighted & Dynamic Contrast Enhanced MRI

Jin Zhang[1], Lindsey Decarlo[2], Robert Schneider[3], Sungheon Kim[1]
[1]Center for Biomedical Imaging, Radiology, New York University School of Medicine, New York, United States; [2]Microbiology, New York University School of Medicine, New York, NY, United States; [3]Microbiology, New York University School of Medicine, New York, United States

1086. Comparison of DCE-MRI & Dual Echo DSC-MRI Derived Measures of K^{trans} & v_e

Christopher Chad Quarles[1], John Christopher Gore[1], Thomas Edison Yankeelov[1]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

1087. Combining Nonlinear Least Squares & Random Forest Regression to Increase the Accuracy & Precision of DCE-MRI Tracer Kinetic Model Parameter Estimates

Jakub Palowski[1,2], Chris James Rose[1,2]
[1]The University of Manchester Biomedical Imaging Institute, the University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Manchester Academic Health Science Centre, Tthe University of Manchester, Manchester, Greater Manchester, United Kingdom

1088. The Effects of Platelet-Derived Growth Factor on Vascular Permeability Studied by MRI

Yann Jamin[1], Jessica K. R. Boult[1], Lauren C. Baker[1], Simon Walker-Samuel[2], Arne Östman[3], Simon P. Robinson[1]
[1]CRUK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research & Royal Marsden NHS Trust, Sutton, United Kingdom; [2]UCL Centre for Advanced Biomedical Imaging, Department of Medicine & Institute of Child Health, University College London, United Kingdom; [3]Cancer Center Karolinska, Karolinska Institutet, Stockholm, Sweden

1089. Quantitative T_1 & T_2* Assessment of VX_2 Tumour Oxygenation in Response to Hyperoxia & Hypercapnia: Comparison with Invasive Measures & DCE-MRI

Jeff D. Winter[1,2], Margarete K. Akens[3], Hai-Ling Margaret Margaret Cheng[1,4]
[1]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Research & Development, IMRIS, Winnipeg, Manitoba, Canada; [3]Orthopaedic Surgery, Sunnybrook Health Sciences, Toronto, Ontario, Canada; [4]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

1090. Nitrite Induces the Extravasation of Iron Oxide Nanoparticles in C_6 Brain Tumors

Nilesh N. Mistry[1], Jame Van Gambrell[2], Christopher Chad Quarles[2]
[1]Dept of Radiation Oncology, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Dept. of Radiology & Radiological Sciences, Vanderbilt University Institute of Imaging Sciences, Nashville, TN, United States

1091. Tracer-Kinetic Model-Driven Registration Improves Data-Driven Tumour Sub-Segmentation of DCE-MRI Data
Giovanni Alessandro Buonaccorsi[1], Caleb Roberts[1], James P. B. O'Connor[1], Chris J. Rose[1], Susan Cheung[1], Yvonne Watson[1], Alan Jackson[2], Gordon C. Jayson[3], Geoff J. M. Parker[1]
[1]ISBE, University of Manchester, Manchester, United Kingdom; [2]WMIC, University of Manchester, Manchester, United Kingdom; [3]Cancer Research UK Dept of Medical Oncology, Christie Hospital, Manchester, United Kingdom

1092. Improved T_1 Quantification using Post-Gd Contrast Variable Flip Angle Data
Keiko Miyazaki[1], James A. d'Arcy[1], Matthew R. Orton[1], Dow-Mu Koh[2], David J. Collins[1], Martin O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, The Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]Department of Radiology, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

1093. Enhanced Perfusion Measurement Accuracy in DCE-MRI Via Improved Baseline Signal Estimation
Yiqun Xue[1], Jiangsheng Yu[1], Mark A. Rosen[1], Ramesh Rengan[2], Hyun Seon Kang[1], Sarah Englander[1], Rosemarie Mick[3], Hee Kwon Song[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiation Oncology, University of Pennsylvania, Philadelphia, PA, United States; [3]Department of Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, PA, United States

1094. Primed Infusion of Gd.DTPA for Enhanced Imaging of Diffuse Lung Metastasis
Tammy Louise Kalber[1,2], Adrienne E. Campbell[1], Katy L. Parcell[1], Bernard M. Siow[1], Anthony Neil Price[1,3], Simon Walker-Samuel[1], Quentin A. Pankhurst[4], Sam M. Janes[2], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Centre for Respiratory Research, Department of Medicine, University College London, University College London, London, United Kingdom; [3]Robert Steiner MRI Unit, Imaging Sciences Department, Hammersmith Hospital, Imperial College London, London; [4]Davy-Faraday Research Laboratories, The Royal Institution of Great Britain, London, United Kingdom

1095. Diagnosis of Ovarian Masses with Multi-Parametric Magnetic Resonance Methods: Preliminary Results
Jori S. Carter[1], Navneeth Lakkadi[2], Jessica E. Kuehn-Hajder[3], Isabelle V. Iltis[2], Levi S. Downs, Jr.[1], Patrick J. Bolan[2]
[1]Obstetrics, Gynecology, & Women's Health, University of Minnesota, Minneapolis, MN, United States; [2]Radiology/CMRR, University of Minnesota, Minneapolis, MN, United States; [3]Radiology, University of Minnesota, Minneapolis, MN, United States

1096. MR Imaging of Early Stage Uterine Cervical Cancer: Diagnostic Impact of Diffusion-Weighted Imaging & 3D-Dynamic Contrast-Enhanced MRI at 3T
Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

1097. Diffusion-Weighted Imaging at 3T for Response Prediction to Chemoradiotherapy in Cervical Cancer
Martine I. Dujardin[1], Abdullah Aldosary[1], Peter Gibbs[1], Martin D. Pickles[1], Lindsay W. Turnbull[1]
[1]Centre for MR Investigations, University of Hull in association with Hull York Medical School, Hull, East Yorkshire, United Kingdom

Articular Cartilage: Quantitative & MRI Analysis

Exhibition Hall Monday 14:00-16:00

1098. T_1 Quantification in the Cartilage of the Knee with a Modified IR-FSE Technique
Gyula Kotek[1], Marcel J. B. Warntjes[2], Piotr Wielopolski[1], Jasper van Tiel[3], Edwin Oei[1], Gabriel P. Krestin[1]
[1]Radiology, Erasmus MC, Rotterdam, Netherlands; [2]Center for Medical Image Science & Visualization (CMIV), Linköping University, Linköping, Sweden; [3]Orthopedics/Radiology, Erasmus MC, Rotterdam, Netherlands

1099. Consistency of $T_1\rho$ Measurements: A Phantom Study
Daniel Ross Thedens[1], Noelle F. Klocke[2], James A. Martin[2], Thomas E. Baer[2], Douglas R. Pedersen[2]
[1]Radiology, University of Iowa, Iowa City, IA, United States; [2]Orthopaedics & Rehabilitation, University of Iowa

1100. Repeatability of Multi-Component T_2* Mapping on Human Knee Cartilages at 3T
Yongxian Qian[1], Ashley A. Williams[2], Constance R. Chu[2], Fernando E. Boada[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA, United States

1101. Reproducibility of Magnetic Resonance $T_{1\rho}$ & T_2 Relaxation Time & Morphological Measurements of Articular Hip Cartilage at 3T
Alexander Balcar Dillon[1], Gabby Blumenkrantz Joseph[1], Xiaojuan Li[1], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Radiology and Biomedical Imaging, UCSF, San Francisco, CA, United States

1102. Texture Analysis of $T_1\rho$ Relaxation Times in Knee Osteoarthritis

Joseph Alan Schooler[1], Samuel Paran Yap[2], Gabby Blumenkrantz Joseph[2], Xiaojuan Li[2], Thomas M. Link[2], Sharmila Majumdar[2]
[1]Musculoskeletal & Quantitative Imaging Research, Department of Radiology & Biomedical Imaging, UCSF , San Francisco, CA, United States; [2]Musculoskeletal & Quantitative Imaging Research, Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

1103. T_1rho MRI of Menisci & Cartilage in Osteoarthritic Patients at 3T
Ligong Wang[1], Gregory Chang[1], Jian Xu[2], Renata L. R. Vieira[1], Svetlana Krasnokutsky[3], Steven Abramson[3], Michael P. Recht[1], Ravinder R. Regatte[1]
[1]Radiology, NYU Langone Medical Center, New York, United States; [2]Siemens HealthCare, New York, United States; [3]Division of Rheumatology, NYU Langone Medical Center, New York, United States

1104. $T_1\rho$ MRI Quantification of Arthroscopically Confirmed Cartilage Focal Lesions in Knees with Acute ACL Injuries
Riti Gupta[1], Daniel Kuo[2], Warapat Virayavanich[2], Benjamin Ma[3], Xiaojuan Li[2]
[1]University of California, Berkeley, Berkeley, CA, United States; [2]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [3]Orthopedic Surgery, UCSF, San Francisco, CA, United States

1105. $T_{1\rho}$ Imaging of Articular Cartilage After Implantation of Tibial Fracture Plate
Matthew Fenty[1], Anup Singh[1], Samir Mehta[2], Jaimo Ahn[2], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Division of Orthopaedic Trauma & Fracture Surgery, Department of Orthopaedic Surgery, Hospital of the University of Pennsylvania, Philadelphia, PA, United States

1106. A Fractional-Order Model for T_2 Relaxation in Normal & Degraded Cartilage
David a Reiter[1], Richard L. Magin[2], Weiguo Li[2], Maria Pilar Velasco[3], Juan Trujillo[4], Richard G. Spencer[1]
[1]NIH/NIA, Baltimore, MD, United States; [2]University of Illinois at Chicago; [3]Universidad Complutense de Madrid; [4]Universidad de La Laguna

1107. Mapping Cartilage Degradation through Support Vector Machine Probabilistic Classification
Ping-Chang Lin[1], Onyi Irrechukwu[1], Richard G. Spencer[1]
[1]National Institute on Aging, National Institutes of Health, Baltimore, MD, United States

1108. Multi-Parametric MRI Assessment of Articular Cartilage Degeneration
Elli-Noora Salo[1], Mikko J. Nissi[1], Timo Liimatainen[2], Olli Gröhn[3], Silvia Mangia[4], Shalom Michaeli[4], Jutta Ellermann[4], Miika T. Nieminen[5,6]
[1]Department of Physics & Mathematics, University of Eastern Finland, Kuopio, Finland; [2]Department of Biotechnology & Molecular Medicine, A.I. Virtanen Institute for Molecular Medicine, University of Eastern Finland, Kuopio, Finland; [3]Department of Neurobiology, A.I. Virtanen Institute for Molecular Medicine, University of Eastern Finland, Kuopio, Finland; [4]Center for Magnetic Resonance Research, University of Minnesota, MN, United States; [5]Department of Medical Technology, University of Oulu, Oulu, Finland; [6]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland

Ultrashort TE: MSK Applications

Exhibition Hall Tuesday 13:30-15:30

1109. Bi-Component Analysis of UTE Images: A Feasibility Study
Jiang Du[1], Eric Diaz[1], Michael Carl[2], Won Bae[1], Christine Chung[1], Graeme Bydder[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]GE Healthcare, United States

1110. Inverted Double Half RF Pulses: Improved Selective Excitation of Short T_2 Components in 3T Joint Imaging
Habib Al Saleh[1], Kevin Johnson[1], Richard Kijowski[2], Walter F. Block[1,3]
[1]Medical Physics, University of Wisconsin, School of Medicine & Public Health, Madison, WI, United States; [2]Radiology, University of Wisconsin, School of Medicine & Public Health, Madison, WI, United States; [3]Biomedical Engineering, University of Wisconsin, Madison, WI, United States

1111. Comparison of UTE Ratios Based on Magnetization Transfer & T_2 for Quantification of Achilles Tendinopathy
Richard J. Hodgson[1], Peter Wright[2], Andrew J. Grainger[2], Phillip O'Connor[2], Dennis McGonagle, Phillip Helliwell, Paul Emery, Matthew D. Robson[3]
[1]LMBRU, University of Leeds, Leeds, Yorkshire, United Kingdom; [2]Leeds Teaching Hospitals NHS Trust; [3]University of Oxford

1112. Dipolar Anisotropy Fiber Imaging Reveals Structure in a Meniscus Specimen
Nikolaus M. Szeverenyi[1], Won C. Bae[1], Graeme M. Bydder[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States

1113. Ultra-High Resolution UTE Imaging on Human Knee at 3T
Yongxian Qian[1], Ashley A. Williams[2], Constance R. Chu[2], Fernando E. Boada[1,3]

[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA, United States; [3]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

1114. Susceptibitliy Weighted Imaging of Tendons, Ligaments, Menisci & Cortical Bone using Ute Sequences
Michael Carl[1], Nikolaus M. Szeverenyi[2], Jiang Du[2], Olivier M. Girard[2], Won Bae[2], Graeme M. Bydder[2]
[1]Global Applied Science Laboratory, GE Healthcare, San Diego, CA, United States; [2]University of California, San Diego, United States

1115. Demonstration of Meniscal Fiber Structure *In Vivo* by Radial Imaging with Minimal Phase Excitation & Adiabatic Fat Suppression Pulses at High Field
Ping-Huei Tsai[1], Cheng Li[2], Jeremy Magland[2], Teng-Yi Huang[3], Felix W. Wehrli[2], Hsiao-Wen Chung[1]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Department of Electrical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan

1116. MRI Derived CT Substitute
Adam Johansson[1], Joakim Jonsson[1], Mikael Karlsson[1], Tufve Nyholm[1]
[1]Department of Radiation Sciences, Umeå University, Umeå, Sweden

1117. Selective Imaging of Bound & Pore Water in Human Cortical Bone
Robert Adam Horch[1,2], Daniel Frank Gochberg[2,3], Jeffry S. Nyman[4,5], Mark D. Does[1,2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]VA Tennessee Valley Healthcare System; [5]Department of Orthopaedics & Rehabilitation, Vanderbilt University

Spine, Intervertebral Disc, Bone

Exhibition Hall Wednesday 13:30-15:30

1118. *In Vivo* Sodium MR Imaging of Rabbit Lumbar Disc using Dual-Tuned Coil at 3T
Chan Hong Moon[1], Lloydine Jacobs[2,3], Jung-Hwan Kim[1], Bernard Bechara[2,3], Tiejun Zhao[4], James Kang[2,3], Kyongtae Ty Bae[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, United States; [3]Ferguson Laboratory for Orthopaedic & Spine Research; [4]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

1119. MRI-Based Assessment of Vertebral Deformity
Eual A. Phillips[1], Chamith S. Rajapakse[1], Michael J. Wald[1], Yusuf A. Bhagat[1], Mary B. Leonard[2], Felix W. Wehrli[1], Mary B. Leonard[2]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Childrens Hospital of Philadelphia, Philadelphia, PA, United States

1120. *In Vivo* MRI of the Cartilaginous Endplate of the Intervertebral Disc
Sung M. Moon[1,2], Jon H. Yoder[1], Dawn M. Elliott[1], Felix W. Wehrli[2], Alexander C. Wright[2]
[1]Department of Orthopaedic Surgery, School of Medicine, University of Pennsylvania, Philadelphia, PA, United States; [2]Laboratory for Structural NMR Imaing, Department of Radiology, University of Pennsylvania Medical Center, Philadelphia, PA, United States

1121. Quantification of Intervertebral Disc Tears by High-Resolution 3D MRI at 7T
Sung M. Moon[1,2], Jon H. Yoder[1], Edward J. Vresilovic[3], Dawn M. Elliott[1], Alexander C. Wright[2]
[1]Department of Orthopaedic Surgery, School of Medicine, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania Medical Center, Philadelphia, PA, United States; [3]Department of Orthopaedics & Rehabilatation, Penn State University, Hershey, PA, United States

1122. Automated Segmentation of Lumbar Vertebral Bodies & Intervertebral Discs from MRI using Statistical Shape Models
Ales Neubert[1,2], Jurgen Fripp[1], Kaikai Shen[1], Craig Engstrom[2], Raphael Schwarz[3], Lars Lauer[3], Olivier Salvado[1], Stuart Crozier[2]
[1]The Australian E-Health Research Centre, CSIRO, Brisbane, QLD, Australia; [2]Department of Biomedical Engineering, University of Queensland, Brisbane, QLD, Australia; [3]Siemens Healthcare, Erlangen, Germany

1123. Combined Implications of Bone's Structural & Material Impairment Following Renal Transplantation Assessed by µMRI Based Finite-Element Modeling
Chamith S. Rajapakse[1], Yusuf A. Bhagat[1], Mary B. Leonard[2], Jeremy F. Magland[1], James H. Love[1], Wenli Sun[1], Felix W. Wehrli[1]
[1]University of Pennsylvania School of Medicine, Philadelphia, PA, United States; [2]The Children's Hospital of Philadelphia, Philadelphia, PA, United States

1124. A Longitudinal Study of Trabecular Bone in Knees with Acute Anterior Cruciate Ligament (ACL) Injuries at 3T
Jin Zuo[1], Jenny Folkesson[1], Xiaojuan Li[1], Samuel Paran Yap[1], Sharmila Majumdar[1]
[1]Radiology & Biomedical Imaging, Univ. of California, San Francisco, San Francisco, CA, United States

1125. Comparisons of Bone Density Measurements between Quantitative Computed Tomography & Magnetic Resonance IDEAL Imaging
Kai-Yu Ho[1], Houchun Harry Hu[1], Joyce H. Keyak[2], Patrick M. Colletti[1], Christopher M. Powers[1]
[1]University of Southern California, Los Angeles, CA, United States; [2]University of California, Irvine, CA, United States

1126. DDIF: A Novel Contrast for MRI of Trabecular Bone
Dionyssios Mintzopoulos[1], Jerome L. Ackerman[1], Yi-Qiao Song[2]
[1]Martinos Center, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Schlumberger-Doll Research, Cambridge, MA, United States

1127. Enhanced Algorithm for Desktop PC-Based Micro-Finite Element Modeling of Whole-Section Stiffness from *In Vivo* MR Images
Ning Zhang[1], Jeremy F. Magland[1], Chamith S. Rajapakse[1], Yusuf A. Bhagat[1], Felix W. Wehrli[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1128. Predicting Osteoporosis from T_1-Weighted MR Images
Heather Ting Ma[1,2], James F. Griffith[2], Alvin F. W. Li[2], David K. Yeung[2], Jason Leung[2], Yi-Xiang Wang[2], Ping-Chung Leung[2]
[1]Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, Guangdong, China, People's Republic of; [2]The Chinese University of Hong Kong, Hong Kong, China, People's Republic of

1129. A New Method to Predict Structural Parameters of Trabecular Bone at a Standardized SNR Level in High-Resolution MRI Studies of Distal Tibia
Wenli Sun[1], Chamith S. Rajapakse[1], Yusuf A. Bhagat[1], Jeremy F. Magland[1], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

1130. IDEAL Fat Image in Bone Marrow: Comparison of Metastatic Neoplasm & Benign Marrow Abnormalities
Shuji Nagata[1], Yusuke Uchiyama[1], Norimitu Tanaka[1], Toshi Abe[1], Masafumi Uchida[1], Kimberly K. Amrami[2], Naofumi Hayabuchi[1]
[1]Kurume University Hospital, Kurume, Fukuoka, Japan; [2]Radiology, Mayo Clinic, Rochester, MN, United States

1131. Implications of Soft-Tissue Suppression on Cortical Bone Water Signal in Ultrashort Echo-Time Imaging
Maximilian James Smith[1], Cheng Li[1], Yusuf A. Bhagat[1], Shing Lam[1], James H. Love[1], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

1132. Perfusion of the Femoral Head Following Fracture using Dynamic Contrast Enhanced MRI
Jonathan P. Dyke[1], Carolyn Hettrich[2], Keith Hentel[1], Sreevathsa Boraiah[3], Dean Lorich[4]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Orthopedics, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Orthopedics, Westchester Medical Center, Hawthorne, NY, United States; [4]Orthopedic Trauma, Hospital for Special Surgery, New York, NY, United States

1133. USPIO-Enhanced δR_2* MR-Relaxometry for *In-Vivo* Monitoring of Fracture Healing
Thorsten Persigehl[1,2], Britta Wieskötter[3], Stefanie Remmele[4], Hannah Tiggemann[3], Janine Ring[1], Jochen Keupp[4], Walter Heindel[1], Christoph Bremer[1], Richard Stange[3], Volker Vieth[1]
[1]Department of Clinical Radiology, University Hospital Muenster, Münster, NRW, Germany; [2]Department of Radiology, Columbia University Medical Center, New York, NY, United States; [3]Department of Trauma, Hand & Reconstructive Surgery, University Hospital Muenster, Münster, NRW, Germany; [4]Philips Research Hamburg, Hamburg, HH, Germany

1134. Perfusion Measurements of Subchondral Bone in Patellofemoral Joint of Rats with Experimental OA Model
Ping-Huei Tsai[1], Cheng-Chieh Cheng[1], Ming-Huang Lin[2], Chien-Yuan Lin[2], Herng-Sheng Lee[3], Hsiao-Wen Chung[1], Guo-Shu Huang[4]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Functional & Micro-Magnetic Resonance Imaging Center, Institute of Biomedical Science, Academia Sinica, Taipei, Taiwan; [3]Department of Pathology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [4]Department of Radiology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan

1135. 3D Geodesic Topological Analysis of Trabecular Bone Micro-Architecture of the Proximal Femur
Julio Carballido-Gamio[1], Jenny Folkesson[2], Thomas Baum[2], Thomas M. Link[2], Sharmila Majumdar[2], Roland Krug[2]
[1]Grupo Tecnológico Santa Fe, Mexico, DF, Mexico; [2]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States

MSK, MRS & MRI I

Exhibition Hall Thursday 13:30-15:30

1136. Is Free Carnitine Visible in ^{1}H-MR Spectra of Skeletal Muscle?
Andreas Boss[1], Roland Kreis[1], Pierre Saillen[1], Chris Boesch[1], Peter Vermathen[1]
[1]Department of Clinical Research, University of Bern, Bern, Switzerland

1137. ^{1}H-MRS Detects Differences of Carnosine Profile in Skeletal Muscle of Rats Fed with High-Fat & Placebo Diets
Yew S. K. Terry[1], Arunima Pola[1], Bhaskaran David Prakash[1], Mehdy Ghaeminia[1], S. S. Velan[1]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore

1138. Mitochondrial Energy Metabolism in Skeletal Muscle in a Murine Cancer Cachexia Model
Cibely Cristine Fontes De Oliveira[1], Dionyssios Mintzopoulos[2,3], Caterina Constantinou[2,4], Valeria Righi[2,3], Nikolaos Psychogios[3,5], Michael N. Mindrinos[6], Yong-Ming Yu, Alexander A. Shestov[7], Ronald G. Tompkins, Francois Lepine[8], Laurence G. Rahme[9], Josep M. Argiles[1], Aria A. Tzika[2,3]
[1]Cancer Research Group, Departament de Bioquimica i Biologia Molecular, Facultat de Biologia, Universitat de Barcelona, Barcelona, Spain; [2]NMR Surgical Laboratory, Department of Surgery, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [3]Department of Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [4]Molecular Surgery Laboratory, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [5]Dept. of Surgery, Massachusetts General Hospital, Boston, MA, United States; [6]Department of Biochemistry, School of Medicine, Stanford University, Stanford, CA, United States; [7]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States; [8]Institut National de la Recherche Scientifique-Institut Armand-Frappier, Quebec, QC, Canada; [9]Molecular Surgery Laboratory, Department of Surgery, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States

1139. Direct Comparison of Parameters of Skeletal Muscle Energy Metabolism
Albrecht Ingo Schmid[1,2], Vera Schrauwen-Hinderling[3], Martin Andreas[4,5], Michael Wolzt[4], Ewald Moser[1,2], Michael Roden[6,7]
[1]MR Center of Excellence, Medical University of Vienna, Wien, Austria; [2]Centre of Medical Physics & Biomedical Engineering, Medical University of Vienna, Wien, Austria; [3]Department of Radiology & Human Biology, Maastricht University Medical Center, Wien, Netherlands; [4]Department of Clinical Pharmacology, Medical University of Vienna, Wien, Austria; [5]Department of Surgery, Medical University of Vienna, Wien, Austria; [6]Institute for Clinical Diabetology, German Diabetes Center, Department of Metabolic Diseases, Heinrich-Heine University, DÃ¼sseldorf, Germany; [7]Karl-Landsteiner Institute of Endocrinology & Metabolism, Wien, Austria

1140. Measuring Energy Diffusion: Phosphocreatine in Human Skeletal Muscle
Refaat E. Gabr[1], AbdelMonem M. El-Sharkawy[1], Michael Schär[2], Robert G. Weiss[1,3], Paul A. Bottomley[1]
[1]Division of MR Research, Johns Hopkins University, Baltimore, MD, United States; [2]Philips Healthcare, Cleveland, OH, United States; [3]Division of Cardiology, Johns Hopkins University, Baltimore, MD, United States

1141. *In Vivo* Assessment of the Effects of Pioglitazone on Muscle Oxidative Capacity & Intramyocellular Lipid Content in Diabetic Rats using ^{31}P & ^{1}H MRS
Bart Wessels[1], Jolita Ciapaite[1], Klaas Nicolay[1], Jeanine Prompers[1]
[1]Biomedical NMR, Eindhoven University of Technology, Eindhoven, Netherlands

1142. Effects of Maltodextrin on Liver & Muscle Glycogen Synthesis During Short-Term Recovery & on Post-Recovery Cycling Performance
Fiona Elizabeth Smith[1], Eva Detko[2], Peter E. Thelwall[3], John O'Hara[2], Rodney King, Michael I. Trenell[4]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyneside, United Kingdom; [2]Carnegie Research Centre, Leeds Metropoliton University, Leeds, United Kingdom; [3]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle Upon Tyne, Tyneside, United Kingdom; [4]MRC Centre for Brain Ageing & Vitality, Newcastle University, Newcastle upon Tyne, United Kingdom

1143. Morphological & Metabolic Characterization of a New Model of Spinal Cord Injury Without Reloading using ^{1}H MRI & ^{31}P NMR Spectroscopy
Celine Baligand[1], Ravneet S. Vohra[2], Fan Ye[2], Jonathon Keener[3], Wootaek Lim[2], Sean Charles Forbes[2], Prithvi K. Shah[2], Prodip Bose[3,4], Glenn A. Walter[1], Floyd Thompson[3,4], Krista H. E. Vandenborne[2]
[1]Physiology & Functional Genomics, University of Florida, Gainesville, FL, United States; [2]Physical Therapy, University of Florida, Gainesville, FL, United States; [3]North Florida/South Georgia Veterans Health System of Florida, Gainesville, FL, United States; [4]Departments of Physiological Science & Neurology, University of Florida, Gainesville, FL, United States

1144. 'Functional Muscle-Bone Unit' in Osteoporotic Patients
Heather Ting Ma[1,2], James F. Griffith[2], Li Xu[3], Ping-Chung Leung[2]

[1]Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, Guangdong, China, People's Republic of; [2]The Chinese University of Hong Kong, Hong Kong, China, People's Republic of; [3]Beijing Jishuitan Hospital, Beijing, China, People's Republic of

1145. Ischemia-Reperfusion Injury in Rat Skeletal Muscle Assessed with T_2-Weighted & Dynamic Contrast-Enhanced MRI

Sandra Loerakker[1], Cees W. J. Oomens[1], Emmy Manders[1], Tim Schakel[2], Dan L. Bader[1,3], Frank P. T. Baaijens[1], Klaas Nicolay[2], Gustav J. Strijkers[2]

[1]Soft Tissue Biomechanics and Engineering, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Department of Engineering and IRC in Biomedical Materials, Queen Mary, University of London, London, United Kingdom

1146. Interethnic Differences in Fat Metabolism of Overweight Chinese, Malays & Indians by MRI & MRS Approaches

Suresh Anand Sadananthan[1,2], Melvin Khee-Shing Leow[1,3], Chin Meng Khoo[4], Yung Seng Lee[1,4], E. Shyong Tai[1,4], Sambasivam Sendhil Velan[1,5]

[1]Singapore Institute for Clinical Sciences, A*STAR, Singapore; [2]Dept. of Obstetrics & Gynaecology, National University of Singapore, Singapore; [3]Dept. of Endocrinology, Tan Tock Seng Hospital, Singapore; [4]Dept. of Medicine, National University of Singapore, Singapore; [5]Singapore BioImaging Consortium, A*STAR, Singapore

1147. Probing Tissue Microstructure using Oscillating Diffusion Gradients in the Human Calf

Damien Joseph McHugh[1,2], Penny L. Hubbard[1,2], Sha Zhao[1,2], David M. Higgins[3], Geoff J. Parker[1,2], Josephine H. Naish[1,2]

[1]Imaging Sciences & Biomedical Engineering, University of Manchester, Manchester, United Kingdom; [2]The University of Manchester Biomedical Imaging Institute, Manchester, United Kingdom; [3]Philips Healthcare, Guildford , United Kingdom

1148. Evaluation of B_1 Receive Non-Uniformity Correction Techniques for Quantitative Musculoskeletal Nmr Imaging.

Noura Azzabou[1,2], Paulo Loureiro De Sousa[3,4], Pierre G. Carlier[4,5]

[1]NMR Laboratory, , Institute of Myology, Paris, France; [2]NMR Laboratory, CEA, I2BM, MIRCen, IdM,, Paris, France; [3]NMR Laboratory, Institute of Myology, Paris, France; [4]NMR Laboratory, CEA, I2BM, MIRCen, IdM, Paris, France; [5]NMR Laboratory, Institute of Myology, Paris, France

1149. Correlation Between BMLs & Quadriceps Arthogenous Muscle Inhibition

Charles Edward Hutchinson[1,2], David Felson, Michael Callaghan

[1]Radiology, University of Warwick, Coventry, Warkwickshire, United Kingdom; [2]Cancer & Enabling Science, University of Manchester, Manchester, Lancashire, United Kingdom

1150. Gene Transfer of Arginine Kinase to Skeletal Muscle using Adeno-Associated Virus

Sean C. Forbes[1], Larry T. Bish[2], Elizabeth R. Barton[3], Fan Ye[1], Celine Baligand[4], H. L. Sweeney[2], Glenn A. Walter[4]

[1]Department of Physical Therapy, University of Florida, Gainesville, FL, United States; [2]Department of Physiology, University of Pennsylvania, Philadelphia, PA; [3]Department of Anatomy & Cell Biology, University of Pennsylvania, Philadelphia, PA; [4]Department of Physiology & Functional Genomics, University of Florida, Gainesville, FL

1151. *In Vivo* High-Resolution Magic Angle Spinning Proton NMR Spectroscopy of Drosophila Melanogaster Flies as a Model System to Investigate Mitochondrial Dysfunction in Trauma

Nikolaos Psychogios[1,2], Yiorgos Apidianakis[3], Valeria Righi[1,2], Hazel Szeto[4], Ronald G. Tompkins, Laurence G. Rahme[3], Aria A. Tzika[1,2]

[1]NMR Surgical Laboratory, Department of Surgery, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [3]Molecular Surgery Laboratory, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [4]Department of Pharmacology, Joan & Sanford I. Weill Medical College of Cornell University, New Yor, Joan & Sanford I. Weill Medical College of Cornell University, New York, NY, United States

MSK, MRS & MRI II

Exhibition Hall Monday 14:00-16:00

1152. Reduced FOV Spinal Muscle DWI with Single-Shot Interleaved Multi-Slice Inner Volume Stimulated Echo DW-EPI

Dimitrios C. Karampinos[1], Suchandrima Banerjee[2], Kevin F. King[3], Roland Krug[1], Thomas M. Link[1], Sharmila Majumdar[1]

[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

1153. ***In Vivo* Measurement of Membrane Permeability & Fiber Size in Calf Muscle using Time-Dependent DWI**

Els Fieremans[1], Dmitry S. Novikov[1], Eric E. Sigmund[1], Kecheng Liu[2], Jens H. Jensen[1], Joseph A. Helpern[1,3]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, United States; [2]Siemens Medical Systems, United States; [3]Center for Advanced Brain Imaging, Nathan S. Kline Institute, Orangeburg, NY, United States

1154. **Reconstruction of 3-D Fabric Structure & Fiber Nets in Skeletal Muscle Via *In Vivo* DTI**

Armen Alex Gharibans[1], Curtis Laurence Johnson[1], Danchin Daniel Chen[1], John G. Georgiadis[1]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

1155. **Imaging Regeneration in Dystrophic Muscle using T_2 & Diffusion Mri**

Nathan David Bryant[1], Ravneet Vohra[2], Sunita Mathur[3], Krista Vandenborne[4], Glenn A. Walter[5]
[1]Radiology, Vanderbilt University, Nashville, TN, United States; [2]Physical Therapy, University of Florida; [3]Department of Physical Therapy, University of Toronto, Canada; [4]Department of Physical Therapy, University of Florida; [5]The Department of Physiology & Functional Genomic, University of Florida

1156. **A Novel Bootstrap Approach for Reducing Noise-Induced Error in DTI-Based Measurements of Muscle Architecture**

Amanda K. Wake[1,2], Bruce M. Damon[1,2]
[1]Department of Radiology & Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Vanderbilt University Medical Center

1157. **Use of Probabilistic Diffusion Tractography to Improve Visualization in Skeletal Muscle Tractography**

Yoshikazu Okamoto[1], Kiichi Tadano[2], Tomohiko Masumoto[3], Yuji Hirano[3], Tomonori Isobe[2], Manabu Minami[3]
[1]University of Tsukuba Hospital , Tsukuba, Ibaraki, Japan; [2]University of Tsukuba, Tsukuba, Ibaraki, Japan; [3]University of Tsukuba Hospital, Tsukuba, Ibaraki, Japan

1158. **Muscle Architecture Measurements from DT-MRI Fiber Tracking: Tract Smoothing & Voxel Size Considerations**

Bruce M. Damon[1,2]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1159. **MRI & MRS in the Assessment of Dietary-Induced & Age-Related Changes of the Muscle in an Animal Model for Sarcopenic Obesity**

Claudia Fellner[1], Christine Hechtl[2], Marianne Vorbuchner[3], Roland Büttner[2], Christian Stroszczynski[1], Okka W. Hamer[1], Cornelius Bollheimer[2]
[1]Institute of Radiology, University Medical Center Regensburg, Regensburg, Germany; [2]Department of Internal Medicine I, University Medical Center Regensburg, Regensburg, Germany; [3]Siemens Healthcare, Erlangen, Germany

1160. **Quantification of Myocellular Lipids Via ^{1}H-MR Spectroscopy in Elderly Women: Effect of Adiposity & Physical Activity**

Danchin Daniel Chen[1], Diego Hernando[2], Curtis Laurence Johnson[1], Armen Alex Gharibans[1], Dolores D. Guest[3], Christie Ward[4], Bhibha Das[3], Ellen M. Evans[4], John G. Georgiadis[1,5]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Department of Radiology, University of Wisconsin, Madison, WI, United States; [3]Department of Kinesiology & Community Health, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [4]Department of Kinesiology, University of Georgia, Athens, GA, United States; [5]Beckman Institute for Advanced Science & Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

1161. **Using Long Echo Times in Proton Magnetic Resonance Spectroscopy in the Vastus Lateralis Muscle**

Lucas Lindeboom[1], M. Eline Kooi[1], Matthijs Hesselink[2], Patrick Schrauwen[3], Joachim Wildberger[1], Vera Schrauwen-Hinderling[1,3]
[1]Radiology, Maastricht University Medical Center, Maastricht, Netherlands; [2]Human Movement Sciences, Maastricht University Medical Center, Maastricht, Netherlands; [3]Human Biology, Maastricht University Medical Center, Maastricht, Netherlands

1162. **Modeling the Hyperemic Response in Skeletal Muscle fMRI**

Kiril Schewzow[1,2], Martin Andreas[2,3], Ewald Moser[1,4], Michael Wolzt[2], Albrecht Ingo Schmid[1,4]
[1]MR Center of Excellence, Medical University of Vienna, Wien, Austria; [2]Dpt. of Clinical Pharmacology, Medical University of Vienna, Wien, Austria; [3]Dpt. of Surgery, Medical University of Vienna, Wien, Austria; [4]Centre of Medical Physics & Biomedical Engineering, Medical University of Vienna, Wien, Austria

1163. Fourier Analysis of Muscle BOLD Data After Exercise
Andrew D. Davis[1], Michael D. Noseworthy[2,3]
[1]Medical Physics & Applied Radiation Sciences, McMaster University, Hamilton, ON, Canada; [2]Electrical & Computer Engineering, School of Biomedical Engineering, & Department of Radiology, McMaster University, Hamilton, Ontario, Canada; [3]Brain Body Institute, St. Joseph's Healthcare, Hamilton, Ontario, Canada

1164. Muscle Functional MRI of Exercise-Induced Rotator Cuff
Noriyuki Tawara[1], Osamu Nitta[2], Hironobu Kuruma[2], Mamoru Niitsu[3], Naoyuki Tamura[4], Hideyuki Takahashi[4], Atsuto Hoshikawa[1], Kakuko Nakamura[1], Toru Okuwaki[1], Akiyoshi Itoh[5]
[1]Department of Sports Medicine, Japan Institute of Sports Sciences, Tokyo, Japan; [2]Department of Physical Therapy, Faculty of Health Sciences, Tokyo Metropolitan University, Tokyo, Japan; [3]Department of Radiology, Saitama Medical University, Saitama, Japan; [4]Department of Sports Sciences, Japan Institute of Sports Sciences, Tokyo, Japan; [5]Graduate Course of Computer Sciences, College of Sciences & Technology, Nihon University, Chiba, Japan

1165. Correlation Study Between ^{31}P Magnetic Resonance Spectroscopy & Electromyogram on Muscle Fatigue
Kang-Soo Kim[1], Do-Beom Son[2], Heung-Ho Choi[1], Choong-Ki Eun[3], Chi-Woong Mun[1,4]
[1]Biomedical Engineering, Inje University, Gimhae, Gyoungnam, Korea, Republic of; [2]Radiology, Haeundae Paik Hospital, Busan, Gyoungnam, Korea, Republic of; [3]Medicine, Radiology, Haeundae Paik Hospital, Busan, Gyoungnam, Korea, Republic of; [4]UHRC , Inje University, Gimhae, Gyoungnam, Korea, Republic of

1166. Muscle Boundary Estimation using Interpolated Image Masks
Amanda K. Wake[1,2], Wyatt M. Rose[2,3], Bruce M. Damon[1], Amanda K Wake[1]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

1167. Parametric MRI for Muscle Degeneration & Regeneration
Donghoon Lee[1], Shu Feng[1], Daniel Chen[1], Martin Kushmerick[1]
[1]University of Washington, Seattle, WA, United States

1168. Detection of Changes in Quadrupolar Peaks by FFC-MRI in Skeletal Muscle
Lionel M. Broche[1], Henning Wackerhage[2], David J. Lurie[1]
[1]ABIC, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom; [2]School of Medical Sciences, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom

1169. The Reliability of Repeated Measures of the Time Constant for Post-Exercise Phosphocreatine Recovery using a Weighted Intraclass Correlation Coefficient
Howard Smithline[1,2], Long Ngo[3,4], Elyse Linson[1], Robert Greenman[4,5]
[1]Emergency Medicine, Baystate Medical Center, Springfield, MA, United States; [2]Tufts University Medical School, Boston, MA, United States; [3]General Medicine & Primary Care, Beth Israel Deaconess Medical Center, Boston, MA, United States; [4]Harvard Medical School, Boston, MA, United States; [5]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States

1170. 3Tesla Gradient-Echo 3-Point Dixon Imaging for Robust Water-Only Imaging of the Extra-Ocular Muscles
Christopher David James Sinclair[1,2], Robert D. S. Pitceathly[1], Indran Davagnanam[2], Michael G. Hanna[1], Mary M. Reilly[1], Tarek A. Yousry[1,2], Xavier Golay[2], John S. Thornton[1,2]
[1]MRC Centre for Neuromuscular Diseases, UCL Institute of Neurology, London, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

Cardiovascular Image Processing

Exhibition Hall Tuesday 13:30-15:30

1171. Observation of Cardiovascular Dynamics by Field Recording with an NMR Probe
Klaas Paul Pruessmann[1], Benjamin Emanuel Dietrich[1], Christoph Barmet[1]
[1]Institute for Biomedical Engineering, University and ETH Zürich, Zurich, Switzerland

1172. Automatic Segmentation of Short-Axis Cardiac MRI using a Biventricular Deformable Model with an Explicit Thickness Prior
Paul A. Yushkevich[1], Hui Sun[1], Federico M. Sukno[2], Catalina Tobon-Gomez[2], Hongzhi Wang[1], Alejandro F. Frangi[2]
[1]PICSL, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]CISTIB, Universitat Pompeu Fabra, CIBER-BBN, Barcelona, Spain

1173. Myocardial T_1 Mapping with Synthetic Image Estimation Based Motion Correction
Hui Xue[1], Saurabh Shah[2], Andreas Greiser[3], Christoph Guetter[1], Christophe Chefdhotel[1], Marie-Pierre Jolly[1], Sven Zuehlsdorff[2], Jens Guehring[1], Peter Kellman[4]

[1]Imaging & Visualization, Siemens Corporate Research, Princeton, NJ, United States; [2]CMR Research & Development, Siemens Medical Solutions USA, Inc., Chicago, IL, United States; [3]Imaging & IT Division, Siemens AG, Healthcare Sector, Erlangen, Germany; [4]National Heart, Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States

1174. Cardiac Diffusion Tensor Imaging Registration

Carla S. Gil[1], Niall Colgan[1], A. J. Bakermans[2], B. J. van Nierop[2], G. J. Strijkers[2], H. C. van Assen[3], Kathleen M. Curran[1]

[1]School of Medicine & Medical Sciences, University College of Dublin, Dublin, Belfield, Dublin 16, Ireland; [2]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Biomedical Image Analysis, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1175. Accuracy of Automatic Contour Detection for Quantification of Left Ventricular Volumes, Mass & Ejection Fraction

Gilion Hautvast[1], Carol Salton[2], Michael Chuang[2,3], Marcel Breeuwer[1,4], Christopher O'Donnell[3,5], Warren Manning[2]

[1]Philips Healthcare, Best, Netherlands; [2]Beth Israel Deaconess Medical Center, Boston, MA, United States; [3]National Heart, Lung & Blood Institute, Framingham, MA, United States; [4]Eindhoven University of Technology, Eindhoven, Netherlands; [5]Massachusetts General Hospital, Boston, MA, United States

1176. Dark Regions of No-Reflow on LGE-MRI Result in Permanent Scar Post Atrial Fibrillation Ablation

Christopher J. McGann[1], Eugene G. Kholmovski[1], Joshua J. E. Blauer[1], Sathya Vijayakumar[1], Thomas S. Haslam[1], Joshua E. Cates[1], Nazem W. Akoum[1], Edward V. R. Dibella[1], Nathan S. Burgon[1], Alton J. Alexander[1], Marcelinus Prastawa[1], Dennis Parker[1], Rob MacLeod[1], Nassir F. Marrouche[1]

[1]CARMA Center, Salt Lake City, UT, United States

1177. Preserved Ejection Fraction in the Presence of Reduced LV Wall Strain in Hypertension: A Geometric Explanation Validated by MRI

Wei Zha[1], Steven Lloyd[2], Himanshu Gupta[2], Louis Dell'Italia[2], Thomas S. Denney[1]

[1]ECE, Auburn University, Auburn, AL, United States; [2]Medicine & Radiology, University of Alabama at Birmingham, Birmingham, AL, United States

1178. Improved Cardiac MRI of Preterm Infants using Retrospective Cardiac & Respiratory Gating

Anthony N. Price[1], Shaihan J. Malik[1], Kathryn M. Broadhouse[1], Francesco Padormo[1], Giuliana Durighel[1], David J. Cox[1], A. David Edwards[1], Alan M. Groves[1], Jo V. Hajnal[1]

[1]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom

1179. Segmentation of Carotid Plaque using Multi-Contrast 3D Gradient Echo MR Imaging

Wenbo Liu[1,2], Niranjan Balu[2], Xihai Zhao[1], Huijun Chen[2], Chun Yuan[1,2], Huilin Zhao[3], Jianrong Xu[3], Guangzhi Wang[1], William S. Kerwin[2]

[1]Biomedical Engineering & Center for Biomedical Imaging Research, School of Medicine, Tsinghua University, Beijing, China, People's Republic of; [2]Radiology, University of Washington, Seattle, WA, United States; [3]Radiology, Shanghai Jiao Tong University, Shanghai, China, People's Republic of

1180. Free-Breathing Technique for Myocardial T_2* Measurement with GRE Multi-Echoes Pulse Sequence

Suwit Saekho[1,2], Uten Yarach[1], Petai Buttakote[1], Siriphan Luxsakhum[1], Arintaya Phrommintikul[3], Nipon Chattipakorn[4]

[1]Radiological Technology, Chiang Mai University, Muang, Chiang mai, Thailand; [2]Biomedical Engineering Center, Chiang Mai University, Muang , Chiang Mai University, Thailand; [3]Internal Medicine, Chiang Mai University, Muang, Chiang Mai, Thailand; [4]Cardiac Electrophysiology Research & Training Center , Chiang Mai University, Muang, Chiang Mai, Thailand

1181. Optimal Image Combination with Minimal Total Deformation (MTD) Constrain to Improve Signal-Noise-Ratio (SNR) for Free-Breathing Cardiac Magnetic Resonance Imaging

Hui Xue[1], Ding Yu[2], Saurabh Shah[3], Christoph Guetter[1], Marie-Pierre Jolly[1], Orlando P. Simonetti[2], Peter Kellman[4], Jens Guehring[1]

[1]Imaging & Visualization, Siemens Corporate Research, Princeton, NJ, United States; [2]The Ohio State University, Columbus, OH, United States; [3]CMR Research & Development, Siemens Medical Solutions USA, Inc., Chicago, IL, United States; [4]National Heart, Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States

1182. Calculation of Mechanical Properties of the Inter-Luminal Septum in DeBakey Type III Aortic Dissection from the Behavior of P-Waves Detected by Cine MRI : Application of Seismic Technology onto Medical Image Data

Pietro Valsecchi[1], Christof Karmonik[2,3], Jean Bismuth[2], Mark G. Davies[2], Dipan J. Shah[2], Bill E. Kline[1], Alan B. Lumsden[2]

[1]ExxonMobil Upstream Research Company, Houston, TX, United States; [2]The Methodist DeBakey Heart & Vascular Center, Houston, TX, United States; [3]The Methodist Hospital Neurological Institute, Houston, TX, United States

1183. Clinical T_1 Mapping in the Heart - Improved T_1 Map Image Quality by Automated Motion Correction for Modified Look-Locker Inversion-Recovery (MOLLI)
Martin Ugander[1], Hui Xue[2], Jens Guehring[3], Saurabh Shah[4], Li-Yueh Hsu[1], Andrew E. Arai[1], Peter Kellman[1]
[1]National Heart, Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Siemens Corporate Research, Princeton, NJ, United States; [3]Siemens AG Healthcare Sector, Erlangen, Germany; [4]Siemens Medical Solutions, Chicago, IL, United States

1184. Phase Unwrapping of PCMRI Data
Johann Baptist Drexl[1], Ola Friman, Anja Hennemuth, Jelena Bock[2], Michael Markl[2], Horst Karl Hahn[1]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Department of Radiology, Medical Physics, University Hospital Freiburg, Germany

1185. Noise Reduction in Real-Time Phase Velocity Images Via the Karhunen-Loeve Transform
Samuel Ting[1], Yu Ding[2], Yiu-Cho Chung[3], Orlando P. Simonetti[1,2]
[1]Department of Biomedical Engineering, The Ohio State University, Columbus, OH, United States; [2]Dorothy M. Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH, United States; [3]Siemens Medical Systems, Columbus, OH, United States

1186. Characterization of Carotid Plaque in Three-Dimensional Ultrasound by Registration with Multicontrast MRI
Bernard Chiu[1], Vijay Shamdasani[2], Robert Entrekin[2], Chun Yuan[1], William S. Kerwin[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Ultrasound Investigations, Philips Healthcare, Bothell, WA, United States

1187. Comparison of the Region-Based & Pixel-Wise Methods for Cardiac T_2* Analysis in 50 Transfusion-Dependent Thai Thalassemia Patients
Pairash Saiviroonporn[1], Vip Viprakasit[2], Thananya Boonyasirinant[3], John C. Wood[4], Rungroj Krittayaphong[3]
[1]Radiology Department, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; [2]Haematology/Oncology Division, Department of Pediatrics & Thalassemia Center, Faculty of Medicine Siriraj Hospital, Mahidol University; [3]Division of Cardiology, Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University; [4]Divisions of Cardiology, Department of Pediatrics, Children's Hospital Los Angeles, Keck School of Medicine, University of Southern California, United States

1188. Cardiac Image Segmentation using Level Sets with Preserved Topology
Cristobal Arrieta[1,2], Sergio Uribe[2,3], Vicente Parot[1,2], Pablo Irarrazaval[1,2], Carlos Sing-Long[2], Cristian Tejos[1,2]
[1]Department of Electrical Engineering, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [2]Biomedical Imaging Center, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile; [3]Department of Radiology, Pontificia Universidad Catolica de Chile, Santiago, RM, Chile

1189. Inter-Site Validation of the Pixel-Wise Method for Cardiac T_2* Analysis in 50 Transfusion-Dependent Thai Thalassemia Patients
Pairash Saiviroonporn[1], Vip Viprakasit[2], Thananya Boonyasirinant[3], Archrob Khuhapinant[4], John C. Wood[5], Rungroj Krittayaphong[3]
[1]Radiology Department, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; [2]Haematology/Oncology Division, Department of Pediatrics & Thalassemia Center, Faculty of Medicine Siriraj Hospital, Mahidol University; [3]Division of Cardiology, Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University; [4]Haematology/Oncology Division, Department of Internal Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University; [5]Divisions of Cardiology, Department of Pediatrics, Children's Hospital Los Angeles, Keck School of Medicine, University of Southern California, United States

Flow Quantification & Vessel Function

Exhibition Hall Wednesday 13:30-15:30

1190. Quantitative Assessment of Blood Flow with 4D Phase-Contrast MRI & Autocalibrating Parallel Imaging Compressed Sensing
Albert Hsiao[1], Michael Lustig[2], Marcus T. Alley[1], Mark Murphy[2], Shreyas S. Vasanawala[1,3]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering and Computer Science, University of California, Berkeley, CA, United States; [3]Radiology, Lucile Packard Childrens Hospital, Stanford, CA, United States

1191. 4D Aortic Pressure Difference Mapping: An Approach for the Detection of Pressure Wave Changes Associated with Atherosclerosis?
Jelena Bock[1], Ramona Lorenz[2], Andreas Harloff[3], Michael Markl[2]
[1]Radiology, Medical Physics, University Medical Center , Freiburg, Germany; [2]Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [3]Neurology, University Medical Center, Freiburg, Germany

1192. Comparison of Accelerated Velocity Encoded MRI with SENSE & Kt-BLAST in a Beating Heart Phantom
Anja Lutz[1], Fabian Sauter[1], Axel Bornstedt[1], Patrick Etyngier[2], Robert Manzke[3], Wolfgang Rottbauer[1], G. Ulrich Nienhaus[4], Volker Rasche[1]

[1]University Hospital of Ulm, Ulm, BW, Germany; [2]Medisys Research Lab, Philips Healthcare, Sureness, France; [3]Philips Research NA, Briarcliff Manor, United States; [4]Karlsruhe Institute of Technology, Karlsruhe, Germany

1193. Image Based Correction of Phasewraps in 4D PC-MRI Data using Fast Reference Scans

Daniel Stucht[1], Michael Markl[2], Rocco Gasteiger[3], Oliver Speck[1]

[1]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany; [2]Dept. of Diagnostic Radiology, Medical Physics, University Hospital, Freiburg, Germany; [3]Institute of Simulation & Graphics, Otto-von-Guericke University, Magdeburg, Germany

1194. Measurement of Morphological & Functional Changes of the Vessel Wall During the Progression of Atherosclerosis in the ApoE-/- Mouse Model by MR-Microscopy at 17.6T

Alexander Gotschy[1,2], Volker Herold[2], Gunthard Lykowsky[2], Elisabeth Bauer[1], Eberhard Rommel[2], Peter M. Jakob[2], Wolfgang Rudolf Bauer[1]

[1]Department of Internal Medicine I, University Hospital Wuerzburg, Julius-Maximilians-University, Wuerzburg, Germany; [2]Department of Experimental Physics 5,, Julius-Maximilians-University, Wuerzburg, Germany

1195. Quantification of Ductus Arteriosus Shunt Volume in Preterm Infants using Phase Contrast CMR

Kathryn Mary Broadhouse[1], Anthony N. Price[1], Giuliana Durighel[1], David J. Cox[1], A. D. Edwards[1], J. V. Hajnal[1], Alan M. Groves[1]

[1]Robert Steiner Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom

1196. Evaluation of Nth Order Polynomial Phase Correction in Reprojected Line Scan Phase Contrast MRA

Erik J. Offerman[1], Ioannis Koktzoglou[1,2], Christopher Glielmi[3], Robert R. Edelman[1,4]

[1]Radiology, Northshore University HealthSystem, Evanston, IL, United States; [2]Radiology, The University of Chicago, Chicago, IL, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Radiology, Northwestern University, Chicago, IL, United States

1197. PC Velocity Encoding: Temporal Characteristics of 1-Sided, 2-Sided Non-SVE & 2-Sided SVE

Jacob Bender[1,2], Yu Ding[2], Yiu-Cho Chung[3], Subha Ramen[4], Orlando Simonetti[2,5]

[1]Biomedical Engineering, The Ohio State University, Columbus, OH, United States; [2]Dorothy M. Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH, United States; [3]Siemens Medical Systems, Inc, Malvern, PA, United States; [4]The Ohio State University, Dorothy M. Davis Heart & Lung Research Institute, Columbus, OH, United States; [5]The Ohio State University, Biomedical Engineering, Columbus, OH, United States

1198. Comparison of Pulse Wave Velocity Measurements from 2D PC Slices & Radially Undersampled 4D PC MR

Andrew Louis Wentland[1,2], Oliver Wieben[1], Kevin M. Johnson[1], Chris J. Francois[2], Thomas M. Grist[2], Alex Frydrychowicz[2]

[1]Medical Physics, University of Wisconsin School of Medicine & Public Health, Madison, WI, United States; [2]Radiology, University of Wisconsin School of Medicine & Public Health, Madison, WI, United States

1199. Accuracy of the Cylinder Approximation for Susceptometric Measurement of Intravascular Oxygen Saturation Versus Numerical Calculation of Induced Field

Cheng Li[1], Michael C. Langham[1], Jeremey F. Magland[1], Charles L. Epstein[1,2], Jue Wu[1], James C. Gee[1], Felix W. Wehrli[1]

[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Mathematics, University of Pennsylvania, Philadelphia, PA, United States

1200. Distensibility Measurements Along Carotid Atherosclerotic Plaques: How Can We Improve the Mechanical Modeling of Atherosclerosis?

Gador Canton[1], Daniel Scott Hippe[1], Jie Sun[1], Dongxiang Xu[1], Hunter R. Underhill[1], William Sean Kerwin[1], Dalin Tang[2], Chun Yuan[1]

[1]Radiology, University of Washington, Seattle, WA, United States; [2]Mathematical Sciences Department, Worcester Polytechnic Institute, Worcester, MA, United States

1201. Improving 3D MR Velocity-Vector Field Mapping by Divergence-Free Image Reconstruction

Julia Busch[1,2], Daniel Giese[1,3], Lukas Wissmann[1], Sebastian Kozerke[1,3]

[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Ruprecht-Karls University Heidelberg, Heidelberg, Germany; [3]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

1202. Loss of Hemodynamic Information in Intracranial Aneurysms: Phase Contrast MRI in a Real-Size Phantom at Different Spatial Resolutions

Pim van Ooij[1,2], Annetje Guédon[1,2], Joppe Schneiders[1], Marcel C. M. Rutten[3], Henk Marquering[1,2], Charles B. Majoie[1], Ed vanBavel[2], Aart J. Nederveen[1]

[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Biomedical Engineering & Physics, Academic Medical Center, Amsterdam, Netherlands; [3]Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1203. Reprojected Line Scan Phase Contrast MRA of Peripheral Arterial Disease

Robert R. Edelman[1,2], Erik Offerman, Christopher Glielmi[3], Eugene Dunkle, Navyash Gupta, Ioannis Koktzoglou,[4]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Siemens Healthcare; [4]Radiology, University of Chicago, Chicago, IL, United States

1204. Complex Flow in a Real-Size Intracranial Aneurysm Phantom: Phase Contrast MRI Compared with CFD
Pim van Ooij[1,2], Annetje Guédon[1,2], Joppe Schneiders[1], Marcel C. M. Rutten[3], Henk Marquering[1,2], Charles B. Majoie[1], Ed vanBavel[2], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Biomedical Engineering & Physics, Academic Medical Center, Amsterdam, Netherlands; [3]Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1205. The Effects of Chemically Shifted Perivascular Fat in Quantitative Phase Contrast MRI
Matthew J. Middione[1,2], Abbas N. Moghadam[1,3], Yutaka Natsuaki[4], Daniel B. Ennis[1,5]
[1]Department of Radiological Sciences, Diagnostic Cardiovascular Imaging Section, University of California,, Los Angeles, CA, United States; [2]Biomedical Physics Interdepartmental Program, University of California, Los Angeles, CA, United States; [3]Department of Biomedical Engineering, Amirkabir University of Technology (Tehran Polytechnic),, Tehran, Iran; [4]Siemens Medical Solutions, Malvern, PA, United States; [5]Biomedical Physics Interdepartmental Program, University of California,, Los Angeles, CA, United States

1206. Blood Flow Dynamics in DeBakey Type III Aortic Dissections using Phase Contrast MRI & 4D MRA: Quantification of Inter-Luminal Pressure Differences & Contrast Arrival Times
Christof Karmonik[1,2], Pietro Valsecchi[3], Jean Bismuth[1], Cassidy Duran[1], Dipan J. Shah[1], Mark G. Davies[1], David Purdy[4], Bill E. Kline[3], Alan B. Lumsden[1]
[1]The Methodist DeBakey Heart & Vascular Center, Houston, TX, United States; [2]The Methodist Hospital Neurological Institute, Houston, TX, United States; [3]ExxonMobil Upstream Research Company, Houston, TX, United States; [4]Siemens Healthcare, Malvern, PA, United States

1207. Arterial Pulmonary Flow Analysis Post Bi-Directional Glenn Procedure
Eric Niespodzany[1], Oliver Wieben[1,2], Christopher Francois[2]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States

1208. Imaging CSF Flow using Spin Echo Phase Contrast Velocity Encoded MRI at 3T
Bruce Shawn Spottiswoode[1,2], Michael Markl[3]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, Western Cape, South Africa; [2]Radiology, University of Stellenbosch, Cape Town, Western Cape, South Africa; [3]Department of Radiology, Medical Physics, University Medical Center, Freiburg University, Freiburg, Germany

1209. Disagreement Between Cardiovascular Magnetic Resonance & Echo-Doppler Transvalvular Pressure Gradients
Julio Garcia[1], Lyes Kadem[2], Eric Larose[1], Philippe Pibarot[1]
[1]Medicine, Quebec Heart & Lung Institute, Quebec, Canada; [2]Mechanical & Industrial Engineering, Concordia University, Montreal, Quebec, Canada

1210. MRI Assessment of the Arterio-Venous Fistula
Monica Sigovan[1], Vitaliy Rayz[1], Petter Dyverfeldt[1], Warren Gasper[2], Christopher Owens[2], David Saloner[1]
[1]Radiology, UCSF, San Francisco, CA, United States; [2]Vascular Surgery, UCSF, San Francisco, CA, United States

1211. Velocity-Encoded MRI for Assessment of Pulmonary Arterial Stiffness: Comparison of Techniques
Elsayed H. Ibrahim[1], Jean M. Shaffer[1], Richard D. White[1]
[1]Department of Radiology, University of Florida, Jacksonville, FL, United States

1212. Quantification of Blood Oxygenation & Flow in Response to Apneic Challenge
Zachary B. Rodgers[1], Michael C. Langham[1], Jeremy F. Magland[1], Felix W. Wehrli[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1213. Assessment of the Clinical Feasibility of Phase Contrast Ultrashort TE
Kieran R. O'Brien[1,2], Brett R. Cowan[1], Matthew D. Robson[3], Mohammad Latif[4], Andrew J. Kerr[4], Alistair A. Young[1,5]
[1]Centre of Advanced MRI, University of Auckland, Auckland, New Zealand; [2]Université de Genève, Geneva, Switzerland; [3]Oxford University Centre for Clinical Magnetic Resonance Research, University of Oxford, Oxford, United Kingdom; [4]Cardiology, Middlemore Hospital, Auckland, New Zealand; [5]Radiology & Anatomy, University of Auckland, Auckland, New Zealand

1214. Multiparameter Functional MRI Assessment of Vascular Reactivity
Michael Charles Langham[1], Cheng Li[1], Emile R. Mohler III[2], Jeremy Magland[1], Felix Werner Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Medicine, University of Pennsylvania, Philadelphia, PA, United States

1215. Probabilistic Streamline Estimation from Accelerated Fourier Velocity Encoded Measurements
Verena Knobloch[1], Julia Kowalski[2], Peter Boesiger[1], Sebastian Kozerke[1]

[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Institute for Technical & Macromolecular Chemistry, RWTH Aachen, Germany

1216. ***In Vivo*** **Measurement of Local Pulse-Wave Velocity in the Right Common Carotid Artery in Mice with PC-Cine-MRI at 17.6 T**
Volker Herold[1], Alexander Gotschy[1], Christian Herbert Ziener[1], Eberhard Rommel[1], Wolfgang Rudolf Bauer[2], Peter Michael Jakob[1]
[1]University of Würzburg, Würzburg, Bayern, Germany; [2]Medizinische Universitätsklinik, University of Würzburg

1217. **Scan Time Reduction for Three-Directional Phase Contrast Sequences: A Signal Processing Approach**
Francesco Santini[1], Michael Markl[2], Klaus Scheffler[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Medical Physics, University Hospital Freiburg, Freiburg, Germany

1218. **Improved Time-Resolved, 3D Phase Contrast Imaging through Variable Poisson Sampling & Partial Respiratory Triggering**
Marcus T. Alley[1], Mark J. Murphy[2], Kurt Keutzer[2], Michael Lustig[2], Shreyas S. Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering & Computer Science, University of California, Berkeley, CA, United States

1219. **Retrograde Flow in the Vena Cava Superior is Associated with Increased Right Atrium Pressure in Pulmonary Arterial Hypertension**
J. Tim Marcus[1], Anton Vonk-Noordegraaf[2]
[1]Physics & Medical Technology, VU University Medical Center, Amsterdam, Netherlands; [2]Pulmonary Diseases, VU University Medical Center, Amsterdam, Netherlands

1220. **Voxel-Wise Quantitative Assessment of Myocardial Perfusion: A Comparison of Four Different Deconvolution Algorithms using Real Flow Values**
Niloufar Zarinabad Nooralipour[1], Amedeo Chiribiri[1], Gilion Hautvast[2], Aruna Vishnu Arujuna[1], Eike Nagel[1], Philip Batchelor[3]
[1]The Centre of Excellence in Medical Engineering, Kings College London, London, United Kingdom; [2]Imaging Systems- MR, Philips Healthcare, Netherlands; [3]The Centre of Excellence in Medical Engineering, Kings College London, London, United Kingdom

1221. **MR Flow Imaging Beyond the Mean Velocity: Estimation of the Skew & Kurtosis of Intravoxel Velocity Distributions**
Petter Dyverfeldt[1,2], Andreas Sigfridsson[1], Hans Knutsson[1], Tino Ebbers[1]
[1]CMIV & Linköping University, Linköping, Sweden; [2]University of California San Francisco, San Francisco, CA, United States

1222. **Acclerated Dual Venc Phase Contrast VIPR in Healthy Volunteers**
Elizabeth Janus Nett[1], Alex Frydrychowicz[2], Kevin M. Johnson[1], Christopher J. Francois[2], Eric Schrauben[1], Oliver Wieben[1,2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States

1223. **Hemodynamic Simulations of Subjects with Vertebro-Basilar Anomalies**
Amanda K. Wake[1], James Christopher Gatenby[2], John C. Gore[1]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Department of Radiology, University of Washington, United States

1224. **Can a Single Phase Contrast Aortic Flow Acquisition Be Used to Define a Surrogate Marker of Cardiac Index?**
Frederique Frouin[1,2], Muriel Lefort[1,2], Mourad Bensalah[1,3], Alain De Cesare[1,2], Claire Pellot-Barakat[1,2], Elie Mousseaux[1,3], Alain Herment[1,2]
[1]UMR_S 678, Inserm, Paris, France; [2]UMR_S 678, UPMC, Paris, France; [3]HEGP, AP-HP, Paris, France

1225. **MRI Estimate of Central & Peripheral Pulse-Wave Velocity Via Velocity-Encoded Projections**
Michael Charles Langham[1], Cheng Li[1], Jeremy Magland[1], Felix Werner Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

Vessel Wall Imaging (Non Coronary)

Exhibition Hall Thursday 13:30-15:30

1226. Inflammatory Atherosclerotic Plaque Can Be Reproducibly Assessed by 3T Dynamic Contrast Enhanced MRI for Multi-Center Studies

Huijun Chen[1], Jie Sun[1], William S. Kerwin[1], Niranjan Balu[1], Daniel S. Hippe[1], Daniel Isquith[1], Yunjing Xue[1], Suzanne Peck[1], Chun Yuan[1], Kevin O'Brien[1], Xue-Qiao Zhao[1]
[1]University of Washington, Seattle, WA, United States

1227. Intracranial Arterial Wall Imaging using 3D High Isotropic-Resolution Black Blood MRI at 3.0 T

Ye Qiao[1], David A. Steinman[2], Qin Qin[1], Maryam Etesami[1], Michael Schär[1,3], Brad C. Astor[1], Bruce A. Wasserman[1]
[1]The Johns Hopkins Hospital, Baltimore, MD, United States; [2]University of Toronto, Toronto,, ON, Canada; [3]Philips Healthcare, Cleveland, OH, United States

1228. Association between Carotid Plaque Characteristics & Cerebral White Matter Lesions

Robert Kwee[1], Paul Hofman[1], Ed Gronenschild[2], Robert van Oostenbrugge[2], Werner Mess[2], Johannes ter Berg[3], Cees Franke[4], Arthur Korten[5], Bé Meems[6], Jos van Engelshoven[2], Joachim Wildberger[2], Eline Kooi[2]
[1]Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Maastricht University Medical Center, Netherlands; [3]Orbis Medical Center Sittard, Netherlands; [4]Atrium Medical Center Parkstad Heerlen, Netherlands; [5]Laurentius Hospital Roermond, Netherlands; [6]VieCuri Medical Center, Netherlands

1229. Dynamic Contrast Enhanced MRI of Carotid Plaque: Comparison of Pharmacokinetic Models

Michaela Elisabeth Gaens[1], Stefan Rozel[1], Matthijs Lipperts[1,2], Robert M. Kwee[1], Karolien Jaspers[1], Mat J. A. P. Daemen[1], Joachim E. Wildberger[1], Walter H. Backes[1], Marianne Eline Kooi[1]
[1]Department of Radiology, Cardiovascular Research Institute Maastricht (CARIM), Maastricht University Medical Center, Maastricht, Netherlands; [2]Department of ICMT, Atrium Medical Center, Heerlen, Netherlands

1230. Characterization of Morphological Features & Critical Mechanical Condition Along Carotid Plaques using *In Vivo* MRI & Finite Element Simulation

Chengcheng Zhu[1], Zhongzhao Teng[1], Umar Sadat[1], Victoria E. Young[1], Martin J. Graves[1], Zhiyong Li[1,2], Jonathan H. Gillard[1]
[1]Department of Radiology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]School of Biological Science & Medical Engineering, Southeast University, Nanjing, Jiangsu, China, People's Republic of

1231. *In Vivo* Singleshot T_1 & T_2* Measurements of Atherosclerosis Plaques in Symptomatic & Asymptomatic Patients using 2D Ss-SGSTEPI Technique

Seong-Eun Kim[1], Eun-Kee Jeong[1], Xianfeung Shi[2], Gerald S. Treiman[3], Dennis L. Parker[1]
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Brain Research Institute, University of Utah; [3]Department of Veterans Affairs, VASLCHCS, Salt Lake City, UT

1232. Increasing Spatial Resolution Alters Measurement Variability of Carotid Plaques

Diederik Frank van Wijk[1], Raphael Duivenvoorden[1], D. F. Enklaar[1], Rob J. van Der Geest[2], Eric de Groot[1], Erik S. G. Stroes[1], Aart J. Nederveen[3]
[1]Vascular Medicine, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Radiology, Academic Medical Center, Amsterdam, Netherlands

1233. Scan-Rescan Reproducibility of Carotid Geometric Parameters using Bright Blood MRI at 3.0T

Yunjing Xue[1], Daniel S. Hippe[1], Hunter R. Underhill[1], Marina S. Ferguson[1], Niranjan Balu[1], Rui Li[2], Huijun Chen[1], Li Dong[3], Feiyu Li[4], Gador Canton[1], Chun Yuan[1]
[1]Vascular Imaging Laboratory, Radiology, University of Washington, Seattle, WA, United States; [2]Center for Bio-Medical Imaging Research, Tsinghua University, Beijing, China, People's Republic of; [3]Department of Radiology, Beijing Anzhen Hospital, Beijing, China, People's Republic of; [4]Department of Radiology, Peking University First Hospital, Beijing, China, People's Republic of

1234. Interleaved LOcal Excited Black Blood (LOBBI) & Bright Blood MRI for Improved Vessel Wall DCE

Jinnan Wang[1], Huijun Chen[2], Gregory J. Wilson[3], Niranjan Balu[2], William S. Kerwin[2], Chun Yuan[2], Peter Boernert[4]
[1]Clinical Sites Research Program, Philips Research North America, Seattle, WA, United States; [2]University of Washington; [3]Philips Healthcare; [4]Philips Research Europe

1235. Carotid Plaques in TIA & Stroke Patients: One-Year Follow-Up Study by Magnetic

Robert Kwee[1], Robert van Oostenbrugge[2], Werner Mess[2], Martin Prins[2], Rob van Der Geest[3], Johannes ter Berg[4], Cees Franke[5], Arthur Korten[6], Bé Meems[7], Jos van Engelshoven[2], Joachim Wildberger[2], Eline Kooi[2]
[1]Maastricht University Medical Center, Maastricht, Limburg, Netherlands; [2]Maastricht University Medical Center, Netherlands; [3]Leiden University Medical Center, Netherlands; [4]Orbis Medical Center Sittard, Netherlands; [5]Atrium Medical Center Parkstad Heerlen, Netherlands; [6]Laurentius Hospital Roermond, Netherlands; [7]VieCuri Medical Center Venlo, Netherlands

1236. T_2-Prepared Segmented 3D-Gradient-Echo for Fast T_2-Weighted High-Resolution Three-Dimensional Imaging of the Carotid Artery Wall at 3T: A Feasibility Study
Jian Zhu[1,2], Axel Bornstedt[1], Genshan Ma[2], Nico Merkle[1], Naifeng Liu[2], Wolfgang Rottbauer[1], Volker Rasche[1]
[1]Internal Medicine II, University of Ulm, Ulm, Germany; [2]Department of Cardiology, Zhongda Hospital, Nanjing, Jiangsu, China, People's Republic of

1237. MRI-Detected Intraplaque Hemorrhage in an Animal Model
Stephanie Elaine GarWai Chiu[1], Alan R. Moody[1,2], James Q. Zhan[2], General Leung[1]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Medical Imaging, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

1238. MRI of Bone Marrow Cell-Mediated Interleukin-10 Gene Therapy of Atherosclerosis
Jihong Sun[1,2], Xubin Li[1], Hongqing Feng[1], Huidong Gu[1], Tiffany Blair[1], Jiakai Li[1], Yanfeng Meng[1], Feng Zhang[1], Xiaoming Yang[1,2]
[1]Image-Guided Bio-Molecular Interventions Section, Radiology, University of Washington School of Medicine, Seattle, WA, United States; [2]Radiology, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China, People's Republic of

1239. Local Excitation Black Blood Imaging (LOBBI) for Local Transmission Coil at High Field MRI (7T & Above)
Jinnan Wang[1], Niranjan Balu[2], Gregory J. Wilson[3], Chun Yuan[2], Peter Boernert[4]
[1]Clinical Sites Research Program, Philips Research North America, Seattle, WA, United States; [2]University of Washington; [3]Philips Healthcare; [4]Philips Research Europe

1240. Reproducibility of T_2-Measurements in Human Carotid Plaques
Diederik Frank van Wijk[1], S. Gonçalves[2], Raphael Duivenvoorden[3], D. F. Enklaar[3], Paul F. Groot[2], J. B. Warntjes[4,5], Erik S. Stroes[3], Aart J. Nederveen[2]
[1]Vascular medicine, Acedemic Medical Center, Amsterdam, Netherlands; [2]Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Vascular Medicine, Academic Medical Center, Amsterdam, Netherlands; [4]Center for Medical Imag Science & Visualization , Linköping University, Linköping, Sweden; [5]SyntheticMR AB, Linköping, Sweden

1241. ECG–triggering Improves Blood Suppression in Abdominal Aortic Imaging using the Quadruple Inversion Recovery Sequence.
Sarah Anne Peel[1], Tarique Hussain[1], Marina Cecelja[2], Abeera Abbas[3], Gerald Greil[1], René M Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]NIHR Comprehensive Biomedical Research Centre, Guy's & St Thomas' NHS Foundation Trust / King's College London, United Kingdom; [3]Academic Department of Surgery, Cardiovascular Division, King's College London, United Kingdom

1242. Enhanced Intraplaque Hemorrhage Delineation Method in Slab-Selection Phase-Sensitive Inversion-Recovery (SPI) Sequence with MRI
Dongxiang Xu[1], Jinnan Wang[2], Jie Sun, Chun Yuan
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Philips Research North America

1243. *In Vivo* 3D High Resolution Apparent Diffusion Coefficient (ADC) Maps of Carotid Artery Atherosclerosis Plaques using 3D Singleshot Inner Volume Stimulated EPI (3D Ss-IV-STEPI) Technique
Seong-Eun Kim[1], Eun-Kee Jeong[1], Xianfeng Shi[2], Gerald S. Treiman[3], Dennis L. Parker[1]
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Brain Research Institute, University of Utah; [3]Department of Veterans Affairs, VASLCHCS, Salt Lake City, UT

1244. Gd-Based Protein Cage Nanoparticles for Vascular Wall MRI at 3T
Hisanori Kosuge[1], Toshiro Kitagawa[1], Masaki Uchida[2], Lars Liepold[2], David Morris[3], Peter E. Prevelige Jr.[3], Trevor Douglas[2], Michael V. McConnell[1]
[1]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [2]Chemistry & Biochemistry, Montana State University, Bozeman, MT, United States; [3]Microbiology, the University of Alabama at Birmingham, Birmingham, AL, United States

1245. *In Vivo* Assessment of Abdominal Aortic Aneurysm in the Elastase-Induced Mouse Model
Michel a Bartoli[1], Frank Kober[1], Patrick J Cozzone[1], Monique Bernard[1]
[1]Centre de Resonance Magnetique Biologique et Medicale, Faculte de Medecine, Universite de la Mediterranee, Marseille, Provence, France

1246. Zoom Accelerated Quadruple Inversion Recovery Imaging for Fibrous Cap Visualization in the Abdominal Aortic Aneurysm
Tarique Hussain[1], Sarah Peel[1], Abeera Abbas[1], Matthew Waltham[1], Gerald Greil[1], Rene Botnar[1]
[1]King's College London, Westminster, London, United Kingdom

1247. Comparison of SWI & DIR-Prepared TSE Femoral Artery Wall Imaging
Qi Liu[1,2], Qi Yang[3], Zhaoyang Fan[1], Debiao Li[1,4]
[1]Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Northwestern University, Chicago, IL, United States; [3]Xuanwu Hospital, Beijing, China, People's Republic of; [4]UCLA, Los Angeles, CA, United States

1248. Evaluation of Aortic Distensibility in Wild Type & ApoE-Knock-Out Mice at 9.4 T.
Peter Fries[1], Florian Custodis[2], Andreas Müller[1], Roland Seidel[1], Alexander Massmann[1], Arno Bücker[1], Günther Schneider[1]
[1]Clinic of Diagnostic & Interventional Radiology, Saarland University Hospital, Homburg, Saarland, Germany; [2]Department of Cardiology, Saarland University Hospital, Homburg, Saarland, Germany

1249. Low B-Value DWI in Assessment of Large Vessel Vasculitis
James F Glockner[1], Christine U Lee[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

1250. Identification & Quantification of Atherosclerosis in Arterial Vessels using an Interventional 3T Loopless Detector
Di Qian[1,2], Paul A Bottomley[1,2]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]Electrical & Computer Engineering, Johns Hopkins University, Baltimore, MD, United States

1251. Dynamic T_2prep for Flow-Independent Vessel Wall Imaging
Marcelo E. Andia[1], Rene M. Botnar[1]
[1]Division of Imaging Sciences and Biomedical Engineering, Kings College London, London, United Kingdom

Coronary Artery & Vessel Wall Imaging

Exhibition Hall Monday 14:00-16:00

1252. Simultaneous Left & Right Coronary Artery Wall Imaging with Highly Efficient Beat-To-Beat Respiratory Motion Correction
Andrew David Scott[1,2], Jennifer Keegan[1,2], David Firmin[1,2]
[1]Cardiovascular Magnetic Resonance Unit, Imperial College London, London, United Kingdom; [2]Cardiovascular Magnetic Resonance Unit, The Royal Brompton & Harefield NHS Foundation Trust, London, United Kingdom

1253. Self-Gated Free Breathing 3D Coronary Cine Imaging with Enhanced Artery Contrast by Exploiting the Simultaneously Obtained Water & Fat Visualization
Jing Liu[1], Thanh D. Nguyen[1], Yanchun Zhu[1], Pascal Spincemaille[1], Jonathan W. Weinsaft[1], Martin R. Prince[1], Yi Wang[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States

1254. Cross-Sectional Dixon-Enhanced Spiral Cine Coronary Artery Magnetic Resonance Imaging at 3T
Harsh Kumar Agarwal[1], Peter Koken[2], Michael Schär[3], Jing Yu[1], Allison G. Hays[1], Holger Eggers[2], Robert G. Weiss[1], Peter Börnert[2], Matthias Stuber[4,5]
[1]Johns Hopkins University, Baltimore, MD, United States; [2]Philips Research Laboratories, Hamburg, Germany; [3]Philips Healthcare, Cleveland, OH, United States; [4]Department of Radiology, Centre Hospitalier Universitaire Vaudois and University of Lausanne, Lausanne, Switzerland; [5]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

1255. Respiratory Navigator with Adaptive Acceptance Gating Window Size & Fixed Scan Time for Coronary MRI
Mehdi Hedjazi Moghari[1], Alan O'connor[1], Warren J. Manning[1], Reza Nezafat[1]
[1]Dept. of Medicine (Cardiovascular Div.), Beth Israel Deaconess Medical Center, Harvard Medical Sch., Boston, MA, United States

1256. 2D Image-Based Respiratory Motion Estimation for Free-Breathing Coronary MRA
Taehoon Shin[1], Holden H. Wu[1,2], Michael V. McConnell[1,2], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Cardiovascular Medicine, Stanford University, Stanford, CA, United States

1257. Prospective Respiratory Motion Correction with an Image Based Navigator
Markus Henningsson[1], Jouke Smink[2], Rene M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Philips Healthcare, Best, Netherlands

1258. Self-Navigation with a 1D Pencil Beam Navigator
Markus Henningsson[1], Rene M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

1259. Robust & Fully Integrated One Dimensional Respiratory Self-Navigation for Whole-Heart Coronary MRI
Davide Piccini[1], Arne Littmann[2], Sonia Nielles-Vallespin[2], Michael O. Zenge[2]
[1]Pattern Recognition Lab, University of Erlangen-Nuremberg, Erlangen, Germany; [2]MR Applications & Workflow Development, Healthcare Sector, Siemens AG, Erlangen, Germany

1260. Reduction of Pulmonary Vein Blood Inflow Artifact in Free Breathing Left Atrial Late Gadolinium Enhancement MRI
Mehdi Hedjazi Moghari[1], Dana C. Peters[1], Jouke Smink[2], Lois Goepfert[1], Kraig V. Kissinger[1], Beth Goddu[1], Thomas H. Hauser[1], Mark E. Josephson[1], Warren J. Manning[1], Reza Nezafat[1]
[1]Dept. of Medicine (Cardiovascular Div.), Beth Israel Deaconess Medical Center, Harvard Medical Sch., Boston, MA, United States; [2]Philips Healthcare, Netherlands

1261. Multi-Phase Coronary MR Angiography using a 3D Cones Trajectory
Holden H. Wu[1,2], Bob S. Hu[2,3], Dwight G. Nishimura[2], Michael V. McConnell[1,2]
[1]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Palo Alto Medical Foundation, Palo Alto, CA, United States

1262. Estimation of Respiratory Tracking Factor Between Pulmonary Vein & Right Hemi-Diaphragm for Free-Breathing PV LGE
Mehdi Hedjazi Moghari[1], Beth Goddu[1], Kraig K. Kissinger[1], Lois Goepfert[1], Warren J. Manning[1], Reza Nezafat[1]
[1]Dept. of Medicine (Cardiovascular Div.), Beth Israel Deaconess Medical Center, Harvard Medical Sch., Boston, MA, United States

1263. Design & Evaluation of an MR Compatible Pneumatic Non-Rigid Moving Heart Phantom for Simulating Respiratory & Cardiac Motion
Doug Stanton[1], Neha Dobhal[1], Michele Casanova[2], Mehdi Hedjazi Moghari[2], Ameet Jain[1], Robert Manzke[1], Warren J. Manning[2], Chris Hall[1], Reza Nezafat[2]
[1]Philips Research, Briarcliff Manor, NY, United States; [2]Dept. of Medicine (Cardiovascular Div.), Beth Israel Deaconess Medical Center, Harvard Medical Sch., Boston, MA, United States

1264. Minimization of Imaging Artifacts from Profile Ordering of Randomly Selected k_y-K_z Lines for Prospective Compressed-Sensing Acqusition in 3D Segmented SSFP & GRE Imaging
Tamer Ahmed Basha[1], Mehmet Akcakaya[1], Mehdi H. Moghari[1], Kraig V. Kissinger[1], Beth Goddu[1], Lois Goepfert[1], Warren J. Manning[1], Reza Nezafat[1]
[1]Dept of Medicine, Cardiovascular Division, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

1265. Time-Resolved Contrast-Enhanced Coronary Vessel Wall Imaging
Jingsi Xie[1,2], Xiaoming Bi[3], Debiao Li[1,4]
[1]Northwestern University, Chicago, IL, United States; [2]Cedars-Sinai Medical Center , Los Angeles, CA, United States; [3]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, United States; [4]Cedars-Sinai Medical Center, Los Angeles, CA, United States

1266. Diagnostic Accuracy of Different Image Postprocessing Methods for the Detection of Coronary Artery Stenoses by using Contrast Enhanced Coronary MRA at 3.0T
Qi Yang[1], Kuncheng Li[1], Xiangying Du[1], Lixin Jin[2], Jing An[2], Renate Jerecic[2], Debiao Li[3]
[1]Radiology, Xuanwu Hospital, Beijing, China, People's Republic of; [2]Siemens Healthcare, MR Collaboration NE Asia; [3]Cedars-Sinai Medical Center & UCLA, Los Angeles, CA

1267. Characterization of Plaque with SWI Approach: *Ex Vivo* Study
David Muccigrosso[1], Adil Bashir[1], Dongsi Lu[1], Jie Zheng[1]
[1]Washington University School of Medicine, St. Louis, MO, United States

1268. Improving Fat Suppression in Radial Coronary MRA using a Weighted Golden Ratio Acquisition
Claudia Prieto[1], Rene Botnar[1], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

1269. Coronary Vein Imaging is Optimal During the Systolic Rest Period in CRT Patients
Jonathan Suever[1], Pierre Watson[2], John Oshinski[1,2]
[1]Biomedical Engineering, Georgia Institute of Technology / Emory University, Atlanta, GA, United States; [2]Radiology, Emory University School of Medicine, Atlanta, GA, United States

1270. Accelerated Contrast-Enhanced Whole Heart Coronary MRI using Low-Dimensional-Structure Self-Learning & Thresholding (LOST), an Improved Compressed Sensing Reconstruction
Mehmet Akcakaya[1], Tamer Basha*[1], Kraig V. Kissinger[1], Beth Goddu[1], Lois Goepfert[1], Warren J. Manning[1], Reza Nezafat[1]*
[1]Dept. of Medicine (Cardiovascular Division), Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

1271. The Next Step in Self-Navigated Coronary MRI: A Hybrid Approach for Affine Motion Correction
Davide Piccini[1], Arne Littmann[2], Hui Xue[3], Jens Guehring[3], Michael O. Zenge[2]

[1]Pattern Recognition Lab, University of Erlangen-Nuremberg, Erlangen, Germany; [2]MR Applications & Workflow Development, Healthcare Sector, Siemens AG, Erlangen, Germany; [3]Imaging & Visualization, Siemens Corporate Research, Princeton, NJ, United States

1272. Flexible Phase-Encoding in 3D Coronary MRA with Balanced SSFP

Ek Tsoon Tan[1], Luca Marinelli[1], Thomas K. Foo[1], Christopher J. Hardy[1]
[1]GE Global Research, Niskayuna, NY, United States

1273. MR Detects Coronary Vessel Wall Imaging with Age in Healthy Subjects

Andrew David Scott[1,2], Jennifer Keegan[1,2], Raad H Mohiaddin[1,2], David Firmin[1,2]
[1]Cardiovascular Magnetic Resonance Unit, Imperial College London, London, United Kingdom; [2]Cardiovascular Magnetic Resonance Unit, The Royal Brompton & Harefield NHS Foundation Trust, London, United Kingdom

1274. Monitoring Statin Therapy in Atherosclerotic Rabbits using USPIO-Enhanced MRI & FDG-PET on a New PET/MRI System

Ahmed Klink[1], Steve Davis Dickson[1], David Izquierdo[1], Jason Bini[2], Eric Lancelot[3], Jesus Mateo[4], Phlippe Robert[5], Claire Corot[3], Zahi A. Fayad[6]
[1]Radiology, Translational and Molecular Imaging Institute, New York, NY, United States; [2]Radiology, Translational & Molecular Imaging Institute, New York, 10029, United States; [3]Guerbet, Paris, France; [4]Epidemiology, Atherothrombosis & Imaging, CNIC, Madrid, Spain; [5]Research Department, Guerbet, Paris, France; [6]Radiology, Translational & Molecular Imaging Institute, New York, United States

1275. Accuracy of Magnetic Resonance Imaging to Identify the Coronary Artery Plaque: A Comparative Study with Intravascular Ultrasound

Yi He[1], Zhaoqi Zhang[1], Qinyi Dai[1], Jing An[2], Lixin Jin[3], Renate Jerecic[3], Debiao Li[4]
[1]Department of Radiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China, People's Republic of; [2]Siemens Mindit Magnetic Resonance, Siemens Healthcare, MR Collaboration NE Asia, Shenzhen, China, People's Republic of; [3]Siemens Limited China, Siemens Healthcare, MR Collaboration NE Asia, Shanghai, China, People's Republic of; [4]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, United States

Unenhanced MRA

Exhibition Hall Tuesday 13:30-15:30

1276. A Comparison Between Ankle-Brachial Index & Quiescent-Interval Single Shot Non-Enhanced MRA for the Evaluation of Hemodynamically-Significant Peripheral Arterial Disease

Emily V. M. Ward[1,2], Asad a Usman[2], Philip a Hodnett[3], James C. Carr[2], Robert R. Edelman[1]
[1]Department of Radiology, Northshore University HealthSystem, Evanston Hospital, Chicago, IL, United States; [2]Department of Radiology, Northwestern Memorial Hospital, Chicago, IL, United States; [3]Department of Radiology, NYU Langone Center, New York, United States

1277. Non Contrast Enhanced (NCE)-MRA of the Renal Transplant Vessels: A Comparison Between IFIR & VIPR-SSFP

Eric M. Bultman[1], Jessica Klaers[2], Christopher J. François[3], Mark L. Schiebler[3], Scott B. Reeder[1,3], Walter F. Block[1,2]
[1]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [3]Radiology, University of Wisconsin-Madison, Madison, WI, United States

1278. Peripheral Angiography using Non-Contrast Enhanced NATIVE SPACE MRI at 3T. a Feasibility Study in a Clinical Setting.

Elise Bannier[1,2], Isabelle Corouge[1,2], Nicolas Wiest-Daesslé[1,2], Delphine Pelletier[3], Pierre-Axel Lentz[3], Antoine Larralde[3], Bernard Langella[3], Nashiely Pineda Alonso[4], Jean-François Heautot[3], Valérie Croisé-Laurent[3,5]
[1]Neurinfo Platform, University Hospital of Rennes, Rennes, France; [2]INRIA, VisAGeS Project-Team, Rennes, France; [3]Radiology Dept., University Hospital of Rennes, Rennes, France; [4]Siemens Healthcare, Paris, France; [5]Laboratoire IADI INSERM 947, CIC IT INSERM 807, University Henri Poincaré, Nancy, France

1279. Diagnostic Quality Assessment of the BSSFP Dixon Method for NCE MRA

Randall B. Stafford[1,2], M. Louis Lauzon[2,3], Mohammad Sabati[4], Linda B. Andersen[2,3], Houman Mahallati[2,5], Richard Frayne[2,3]
[1]Department of Physics & Astronomy, University of Calgary, Calgary, Alberta, Canada; [2]Seaman Family MR Research Centre, Foothills Medical Centre, Calgary, Alberta, Canada; [3]Departments of Radiology & Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [4]Department of Radiology, University of Miami, Miami, FL, United States; [5]Department of Radiology, University of Calgary, Calgary, Alberta, Canada

1280. Non-Contrast-Enhanced Flow-Independent Peripheral Angiography using a 3D Concentric Cylinders Trajectory
Kie Tae Kwon[1], Holden H. Wu[1,2], Taehoon Shin[1], Tolga Çukur[3], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [3]Helen Wills Neuroscience Institute, University of California at Berkeley, Berkeley, CA, United States

1281. 3D-Rotational Phase-Contrast MR Angiography
Axel Bornstedt[1], Eberhard Hansis[2], Michael Grass[3], Wolfgang Rottbauer[1], Volker Rasche[1]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Philips Healthcare; [3]Philips Research Europe

1282. High-Contrast & High-SNR SWI Venography with Multiple Echo Datasets
Tae Han Kim[1], Ung Jang[1], Dosik Hwang[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

1283. High-Field MR Venography using Adiabatic T_2 Magnetization Preparation
Ruud B. van Heeswijk[1,2], Simone Coppo[1,2], Tobias Kober[2,3], Matthias Stuber[1,2]
[1]Department of Radiology, Centre Hospitalier Universitaire Vaudois & University of Lausanne, Lausanne, VD, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland; [3]Advanced Clinical Imaging Technology, Siemens Suisse SA - CIBM, Lausanne, Switzerland

1284. Hybrid Reconstruction Method for Flow-Sensitive Dephasing Non-Contrast MRA
Andrew J. Wheaton[1], Mitsue Miyazaki[2]
[1]Toshiba Medical Research Institute USA, Mayfield, OH, United States; [2]Toshiba Medical Research Institute USA, Vernon Hills, IL, United States

1285. Continuously Moving Table Vessel Scout Imaging using Variable Flip Angles & Autocorrelation Analysis
Sandra Baumann[1], Michael Markl[1], Ute Ludwig[1]
[1]Dept. of Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany

1286. Quiescent-Interval Single-Shot Unenhanced Magnetic Resonance Angiography Featuring Continuous Table Movement
Michael O. Zenge[1], Christopher Glielmi[2], Peter Weale[2], Ioannis Koktzoglou[3], Robert R. Edelman[3], Manuela Rick[1], Peter Schmitt[1], Xiaoming Bi[2]
[1]MR Applications Development, Siemens AG, Erlangen, Germany; [2]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, United States; [3]Department of Radiology, NorthShore University HealthSystem, Evanston, IL, United States

1287. Improving TOF Angiography Contrast Homogeneity with B_1+ Shimming at 7 Tesla: Benefits & Challenges
Sebastian Schmitter[1], Edward J. Auerbach[1], Gregor Adriany[1], Kamil Ugurbil[1], Pierre-Francois Van De Moortele[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1288. Non-Contrast-Enhanced MR Angiography of the Renal Arteries with Inversion-Prepared B-SSFP: A Comparison of Different Imaging Protocols
Peter Schmitt[1], Michaela Schmidt[1], Manuela Rick[1], Michael O. Zenge[1], Peter Weale[2], Xiaoming Bi[2], Edgar Müller[1]
[1]MR Application & Workflow Development, Siemens AG, Healthcare Sector, Erlangen, Germany; [2]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, United States

1289. MR Leg Venography: Improved Methodology & Impact of Subject Positioning
Andew Nicholas Priest[1], Martin J. Graves[1], David J. Lomas[1]
[1]Department of Radiology, Addenbrookes Hospital and University of Cambridge, Cambridge, United Kingdom

1290. Magnetic Resonance Angiography (MRA) of the Calf Station at 3T: Intraindividual Comparison between Non-Enhanced ECG-Gated Flow-Dependent MRA, Continuous Table Movement MRA & Time-Resolved MRA
Stefan Haneder[1], Ulrike I. Attenberger[2], Philipp Riffel[2], Thomas Henzler[2], Stefan O. Schönberg[2], Henrik J. Michaely[2]
[1]Institute of Clinical Radiology & Nuclear Medicine , University Medical Center Mannheim, Mannheim, Germany; [2]Institute of Clinical Radiology & Nuclear Medicine, University Medical Center Mannheim, Mannheim, Germany

1291. Non-Contrast-Enhanced 4D MRA using Compressed Sensing Reconstruction
Ti-Chiun Chang[1], Mariappan S. Nadar[1], Jens Guehring[2], Michael O. Zenge[2], Kai Tobias Block[2], Peter Schmitt[2], Edgar Mueller[2]
[1]Siemens Corporate Research, Princeton, NJ, United States; [2]MR Applications Development, Siemens AG, Erlangen, Germany

1292. High-Quality Venography from Multi-Echo MR Dataset using T_2* Relaxation Model
Ung Jang[1], Dosik Hwang[1]
[1]School of Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

Contrast Enhanced MRA (Non Coronary)

Exhibition Hall Wednesday 13:30-15:30

1293. Magnetic Resonance T_1 Mapping Predicts Successful Venous Thrombolysis

Prakash Saha[1], Marcelo E. Andia[2], Ulrike Blume[2], Andrea J. Wiethoff[2,3], Tobias Schaeffter[2], Colin Evans[1], Anwar Ahmad[1], Ashish Patel[1], Bijan Modarai[1], Rene M. Botnar[2], Albert Smith[1], Matthew Waltham[1]

[1]Academic Department of Surgery, Cardiovascular Division, Kings College London, London, United Kingdom; [2]Division of Imaging Sciences & Biomedical Engineering, Kings College London, London, United Kingdom; [3]Philips Healthcare, Guildford, United Kingdom

1294. MRI Pulmonary Perfusion Imaging as a Quantitative Predictor of Regional Pulmonary Vascular Resistance in Pulmonary Hypertension

Adam Telfer[1], Robin Condliffe[2], David Capener[1], Andrew Swift[1], Smitha Rajaram[1], Helen Marshall[1], Judith Hurdman[2], Charles Elliot[2], David Kiely[2], Jim Wild[1]

[1]Academic Radiology Unit, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; [2]Pulmonary Vascular Diseases Unit, Sheffield Teaching Hospitals, Sheffield, South Yorkshire, United Kingdom

1295. Method for High Spatial Resolution of Proximal Stations in 3D Time-Resolved Fluoroscopically-Triggered Bolus Chase MRA

Thomas W. Polley[1], Casey P. Johnson[2], Stephen J. Riederer[2]

[1]Electrical Engineering, Brigham Young University, Provo, UT, United States; [2]MR Research Laboratory, Mayo Clinic, Rochester, MN, United States

1296. Assessment of Glenn-Fontan Shunts in Congenital Heart Disease using Low-Dose Time-Resolved & Multi-Phase High Spatial Resolution CEMRA

Moritz Wagner[1,2], Saeed Mirsadraee[3], Pierangelo Renella[4], Gary M. Satou[4], Jamil Aboulhosn[4], John S. Child[4], Carissa Fonseca[2], Roya Saleh[2], Paul Finn[2]

[1]Radiology, Charite - University Hospital, Berlin, Germany; [2]Department of Radiological Sciences, David Geffen School of Medicine, University of California, Los Angeles, CA, United States; [3]Clinical Research Imaging Centre, University of Edinburgh, Edinburg, United Kingdom; [4]Division of Pediatric Cardiology, Mattel Children's Hospital, University of California, Los Angeles, CA, United States

1297. *In Vivo* Fluorine-19 MR Angiography in a Mouse Model

Ruud B. van Heeswijk[1,2], Yves Pilloud[2,3], Ulrich Flögel[4], Juerg Schwitter[5], Matthias Stuber[1,2]

[1]Department of Radiology, Centre Hospitalier Universitaire Vaudois & University of Lausanne, Lausanne, VD, Switzerland; [2]Center for Biomedical Imaging (CIBM), Lausanne, VD, Switzerland; [3]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [4]Institute for Cardiovascular Physiology, Heinrich Heine University, Düsseldorf, Germany; [5]Center for Cardiac Magnetic Resonance & Cardiology Service, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland

1298. A Universal Timing Strategy for Moving Table Peripheral MRA

Jeffrey Harold Maki[1,2], George Rachid Oliveira[2], Gregory J. Wilson[3]

[1]Radiology, Puget Sound VAHCS, Seattle, WA, United States; [2]Radiology, University of Washington, Seattle, WA, United States; [3]MR Clinical Science, Philips Healthcare, Cleveland, OH, United States

1299. Accuracy of MRI for the Assessment of the Geometry of Thoracic Stent Grafts

Volker Rasche[1], Stephan Trumpp[1,2], Alexander Oberhuber[2], Nico Merkle[1], Karl Heinz Orend[2], Martin Hoffmann[3], Wolfgang Rottbauer[1], Axel Bornstedt[1]

[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Thorax & Vascular Surgery, University Hospital Ulm, Ulm, Germany; [3]Radiology, University Hospital Ulm, Ulm, Germany

1300. Improved Spatial & Temporal Resolution using Parallel Imaging & SOS Trajectory for HYPR Reconstruction

Lauren Ashley Keith[1], Kang Wang[1], James H. Holmes[2], Philip Beatty[2], Frank Korosec[3]

[1]Medical Physics, UW - Madison, Madison, WI, United States; [2]Global Applied Science Laboratory, GE Healthcare; [3]Radiology, UW - Madison, Madison, WI, United States

1301. Time-Resolved Calf-Foot Bolus Chase MRA with Sub-Millimeter Resolution & Real-Time Table Motion Triggering using 3D MR Fluoroscopy

Casey P. Johnson[1], Eric A. Borisch[1], James F. Glockner[1], Petrice M. Mostardi[1], Thomas W. Polley[2], Paul T. Weavers[1], Phillip M. Young[1], Stephen J. Riederer[1]

[1]MR Research Laboratory, Mayo Clinic, Rochester, MN, United States; [2]Electrical Engineering, Brigham Young University, Provo, UT, United States

1302. Total Atherosclerotic Burden by Whole Body Magnetic Resonance Angiography Predicts Future Major Adverse Cardiovascular Events
Christina Lundberg[1], Lars Johansson[1], Charlotte Ebeling Barbier[1], Lars Lind[2], Håkan Ahlström[1], Tomas Hansen[1]
[1]Radiology, Uppsala University, Uppsala, Sweden; [2]Medicine, Uppsala University, Uppsala, Sweden

1303. A Magnetic Resonance Imaging Contrast Agent Targeted Towards Activated Platelets Allows Detection of Platelets on Symptomatic Human Carotid Plaques
Fabian Meixner[1], Constantin von Zur Mühlen[2], Dominik Paul[1], Irene Neudorfer[2], Annette Merkle[1], Mirko Meissner[1], Christoph Bode[2], Jürgen Hennig[1], Dominik von Elverfeldt[1]
[1]Department of Radiology, University Medical Center Freiburg, Freiburg, Baden-Württemberg, Germany; [2]Department of Cardiology & Angiology, University Medical Center Freiburg

1304. Improved Reconstruction of Highly Under-Sampled MR Angiography Images using Modified Nonlocal Means
Yanqiu Feng[1], Yingjie Mei[1], Cong Wang[1], Wufan Chen[1]
[1]School of Biomedical Engineering, Southern Medical University, Guangzhou, Guangdong, China, People's Republic of

1305. Technical Feasibility of Three-Station Time-Resolved Bolus Chase MRA
Casey P. Johnson[1], Eric A. Borisch[1], James F. Glockner[1], Thomas W. Polley[2], Phillip M. Young[1], Stephen J. Riederer[1]
[1]MR Research Laboratory, Mayo Clinic, Rochester, MN, United States; [2]Electrical Engineering, Brigham Young University, Provo, UT, United States

1306. Detection of Renal Dysfunction by Point of Care Creatinine Testing in Patients Undergoing Peripheral MR Angiography
Kevin Kalisz[1], Amir H. Davarpanah[1], Asad A. Usman[1], Jeremy Collins[1], Timothy J. Carroll[1], James C. Carr[1]
[1]Department of Radiology, Northwestern University, Chicago, IL, United States

Myocardial Function: Experimental Models & Human Studies

Exhibition Hall Thursday 13:30-15:30

1307. Detecting Myocardial Hemorrhage in the Setting of Ischemia-Reperfusion Injury: T_2 vs. T_2*
Avinash Kali[1], Andreas Kumar[2], Xiangzhi Zhou[3], Veronica L. M. Rundell[3], Ying Liu[3], Rachel A. Klein[3], Richard L. Q. Tang[3], Rohan Dharmakumar[3]
[1]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Department of Medicine, Laval University, Quebec, QC, United States; [3]Radiology, Northwestern University, Chicago, IL, United States

1308. Cardiac MR Elastography Reveals Increased Stiffness of the Left Ventricular Myocardium in Age & Pathology.
Thomas Elgeti[1], Mark Beling[2], Sebastian Hirsch[1], Bernd Hamm[1], Jürgen Braun[3], Ingolf Sack[1]
[1]Department of Radiology, Charité Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Cardiology, Angiology, Pulmonology, Charité Universitätsmedizin Berlin, Berlin, Germany; [3]Institute of Medical Informatics, Charité Universitätsmedizin Berlin, Berlin, Germany

1309. Inhibition of the Sodium-Calcium Exchanger by SEA0400 Inhibits Manganese Efflux from Isolated Hearts
Ya Chen[1], Kevin Payne[1], Bharath Atthe[1], Akemichi Baba[2], Toshio Matsuda[2], Xin Yu[1]
[1]Department of Biomedical Engineering & Case Center for Imaging Research, Case Western Reserve University, Cleveland, OH, United States; [2]Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan

1310. Three Dimensional Digital Polyhedral Phantom Framework with Analytical Fourier Transform & Application in Cardiac Imaging
Tri Minh Ngo[1], George S. K. Fung[2], Benjamin M.W. Tsui[1,2], Elliot McVeigh[1], Daniel A. Herzka[1]
[1]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]Division of Medical Imaging Physics, Department of Radiology, Johns Hopkins School of Medicine, Baltimore, MD, United States

1311. Navigator Gated Volumetric Spiral Cine DENSE MRI using Outer Volume Suppression
Bhairav Bipin Mehta[1], Xiaodong Zhong[2], Frederick H. Epstein[1]
[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States

1312. A Comprehensive Quantitative Comparison of Regional Cardiac Motion in Mice & Humans
Bernd André Jung[1], Erica Dall'Armellina[2], Stefan Neubauer[2], Michael Markl[1], Jurgen E. Schneider[2]
[1]Dept. of Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]Dept. of Cardiovascular Medicine, University of Oxford, United Kingdom

1313. AAV6-Mediated Delivery of a U7 Exon Skipping Construct Improves Regional Cardiac Function in Golden Retriever Muscular Dystrophy Dogs
Sean C. Forbes[1], Larry T. Bish[2], Meg M. Sleeper[3], Wil Mai[4], H. Sweeney[2], Glenn A. Walter[5]

[1]Department of Physical Therapy, University of Florida, Gainesville, FL, United States; [2]Department of Physiology, University of Pennsylvania, Philadelphia, PA; [3]Department of Clinical Studies, University of Pennsylvania, Philadelphia, PA; [4]School of Veterinary Medicine, University of Florida, Philadelphia, PA; [5]Department of Physiology & Functional Genomics, University of Florida, Gainesville, FL

1314. MR Imaging of Hypertrophy & Cardiac Recovery in the Mouse Aorta & Heart

Bernd Jung[1], Nadine Beetz[2], Michael Markl[1], Annette Merkle[1], Lutz Hein[2], Dominik von Elverfeldt[1]
[1]Dept. of Radiology Medical Physics, University Medical Center, Freiburg, Germany; [2]Dept. Phamacology 2, Institute for Pharmacology, Freiburg, Germany

1315. Three-Dimensional Principal Strain Patterns in Acute Myocardial Infarction

Sahar Soleimanifard[1], Khaled Z. Abd-Elmoniem[2], Emi Z. Murano[1], M. R. Abraham[1], Theodore P. Abraham[1], Jerry L. Prince[1]
[1]The Johns Hopkins University, Baltimore, MD, United States; [2]National Institute of Diabetes & Digestive and Kidney Disease, Bethesda, MD, United States

1316. Estimate of Global Radial, Circumferential & Longitudinal Strain from SSFP Cines: A Study in Controls & Patients with Low to Normal Ejection Fraction

June Cheng-Baron[1], Michael D. Nelson[2], Corey R. Tomczak[3], Kelvin Chow[1], Justin A. Ezekowitz[4], Mark J. Haykowsky[3], D. Ian Paterson[4], Richard B. Thompson[1]
[1]Department of Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Faculty of Physical Education & Recreation, University of Alberta, Edmonton, Alberta, Canada; [3]Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, Canada; [4]Division of Cardiology, University of Alberta, Edmonton, Alberta, Canada

1317. Left Ventricular Concentric Hypertrophy & Strain Redirection in M.3243A>G Mutation Carriers: Cardiomyopathy Correlates with Mutation Load

Kieren G. Hollingsworth[1], Grainne S. Gorman[2], Michael I. Trenell[1], Robert McFarland[2], Robert W. Taylor[2], Douglass M. Turnbull[2], Guy A. MacGowan[3], Patrick F. Chinnery[4], Andrew M. Blamire[1]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [2]Mitochondrial Research Group, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [3]Department of Cardiology, Freeman Hospital, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [4]Institute of Human Genetics, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom

1318. Spiral DENSE with Short Breath Hold Duration

Shinichi Takase[1], Andreas Sigfridsson[2], Hajime Sakuma[3]
[1]Department of Radiology, Mie University Hospital, Tsu, Mie, Japan; [2]IMH/Cardiovascular Medicine, Linkoping University, Linkoping, Sweden; [3]Department of Radiology, Mie University, Tsu, Mie, Japan

1319. Mechanically Altering Infarct Properties Improves Regional & Global Function Secondary to Acute Myocardial Infarction

Kevin J. Koomalsingh[1], Chun Xu[1], Larry Dougherty[2], Masahito Minakawa[1], Takashi Shuto[1], Joseph H. Gorman, III[1], Robert C. Gorman[1], James J. Pilla[1]
[1]Surgery, University of Pennsylvania, Glenolden, PA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States

1320. The Second Generation (2G) K-T GRAPPA: Faster & More Accurate

Feng Huang[1], Wei Lin[1], George Randy Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Gainesville, FL, United States

1321. Quantification of *InVivo* Left Ventricular Torsion & Principal Strains in Mouse Models of Hypertrophic & Dilated Cardiomyopathy

Candida Laura Desjardins[1], Yong Chen[2], Julian Stelzer[1], Xin Yu[2,3]
[1]Physiology, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Case Center for Imaging Research, University Hospitals, Cleveland, OH, United States

1322. 7 Tesla Cardiac Imaging with a Phonocardiogram Trigger Device

Stefan Maderwald[1], Stephan Orzada[1,2], Zimin Lin[3], Lena C. Schäfer[1,2], Andreas K. Bitz[1,2], Oliver Kraff[1], Irina Brote[1,2], Lars Häring[3], Andreas Czylwik[3], Michael O. Zenge[4], Susanne C. Ladd[1,2], Mark E. Ladd[1,2], Kai Nassenstein[1,2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany; [3]Department of Communication Systems, University of Duisburg-Essen, Essen, Germany; [4]MR Application Developement, Siemens AG, Erlangen, Germany

1323. Right Ventricular Geometric Shortening in Pulmonary Arterial Hypertension: Follow-Up in Survivors & Non-Survivors

J. Tim Marcus[1], Gert Jan Mauritz[2], T. Kind[2], Marielle van De Veerdonk[2], Nico Westerhof[2], Anton Vonk-Noordegraaf[2]
[1]Physics & Medical Technology, VU University Medical Center, Amsterdam, Netherlands; [2]Pulmonary Diseases, VU University Medical Center, Amsterdam, Netherlands

1324. A Left Ventricular Motion Phantom for Cardiac MRI
Mehmet Ersoy[1,2], Melanie S. Kotys[3], Xiaopeng Zhou[1,2], George P. Chatzimavroudis[2], Randolph M. Setser[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Cleveland State University, Cleveland, OH, United States; [3]Philips Healthcare, Cleveland, OH, United States

1325. Accelerating Global Cardiac Function Assessment in Mice using Compressed Sensing
Tobias Wech[1], Angela Lemke[2], Debra Medway[2], Lee-Anne Stork[2], Craig A. Lygate[2], Stefan Neubauer[2], Herbert Köstler[1], Jürgen E. Schneider[2]
[1]Institute of Radiology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Cardiovascular Medicine, University of Oxford, Oxford, Oxon, United Kingdom

1326. 4D MR Velocity Mapping using PC VIPR to Investigate the Hemodynamics of Acute Pulmonary Hypertension in a Dog Model
Alejandro Roldán-Alzate[1], Heidi B. Kellihan[2], Daniel W. Consigny[1], Eric J. Niespodzany[1], Christopher J. François[1], Oliver Wieben[1,3], Naomi C. Chesler[4], Alex Frydrychowicz[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Veterinary Medicine, University of Wisconsin, Madison, WI, United States; [3]Medical Physics, University of Wisconsin, Madison, WI, United States; [4]Biomedical Engineering, University of Wisconsin, Madison, WI, United States

1327. Complementary Radial Tagging for the Assessment of Left Ventricular Function
Zhe Wang[1,2], Abbas N. Moghadam [2,3], Meral Reyhan [2,4], J. Paul Finn [2,4], Daniel B. Ennis[1,2]
[1]Biomedical Engineering Interdepartmental Program, University of California, Los Angeles, CA, United States; [2]Department of Radiological Sciences, Diagnostic Cardiovascular Imaging Section, University of California, Los Angeles, CA, United States; [3]Department of Biomedical Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; [4]Biomedical Physics Interdepartmental Program, University of California, Los Angeles, CA, United States

1328. Cardiac Magnetic Resonance Imaging in Peripartum Cardiomyopathy: A Comprehensive Imaging Approach
Thomas Elgeti[1], Dietmar E. Kivelitz[2], Dirk Habedank[3], Bernd Hamm[1], Rainer Röttgen[1], Diane Miriam Renz[1]
[1]Department of Radiology, Charité Universitätsmedizin Berlin, Berlin, Germany; [2]Albers-Schönberg-Institut für Strahlendiagnostik, AK St. Georg, Hamburg, Germany; [3]Department of Cardiology, Charité Universitätsmedizin Berlin, Berlin, Germany

1329. Assessment of Cardiac Functions & Inflammation Burden of Ischemic Injury with Integrated Functional & Cellular MRI
Yijen Lin Wu[1], Qing Ye[1], Fang-Cheng Yeh[1,2], Brent D. Barbe[1], Lesley M. Foley[1], Li Liu[1], T. Kevin Hitchens[1], Chien Ho[1,3]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; [3]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States

1330. Cardiac Magnetic Resonance Imaging of the Ts65Dn Murine Model of Down Syndrome
Lucas Abraham Citro[1], Sarah E. Sansom[2], Mahmood Khan[2,3], Mickey Mizzell Martin[2], Periannan Kuppusamy[1,2], Terry S. Elton[2,4]
[1]Internal Medicine, The Ohio State University, Columbus, OH, United States; [2]Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH, United States; [3]Internal Medicine, Division of Cardiovascular Medicine, The Ohio State University, Columbus, OH, United States; [4]College of Medicine, Department of Pathology, The Ohio State University, Columbus, OH, United States

1331. Cardiac Function in an Experimental Model of the Metabolic Syndrome through Pressure Conductance Analysis & Cine MRI
Wouter Oosterlinck[1], Tom Dresselaers[2], Vincent Geldhof[1], Uwe Himmelreich[2], Paul Herijgers[1]
[1]Experimental Cardiac Surgery, K.U.Leuven, Leuven, Belgium; [2]Biomedical NMR unit - MoSAIC, K.U.Leuven, Leuven, Belgium

1332. Non-Invasive Evaluation of Allograft Rejection After Heart Transplantation with Integrated Cellular & Functional MRI
Yijen Lin Wu[1], Qing Ye[1], Brent D Barbe[1], Fang-Cheng Yeh[1,2], Lesley M Foley[1], Li Liu[1], T. Kevin Hitchens[1], Chien Ho[1,3]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; [3]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States

Myocardial Perfusion: Experimental Models & Human Studies

Exhibition Hall Monday 14:00-16:00

1333. Quantification of Myocardial Blood Flow & Flow Reserve in Rats using Arterial Spin Labeling MRI, Comparison with a Fluorescent Microsphere Technique
Frank Kober[1], Alexis Jacquier[1], Soksithikun Bun[1], Patrick J. Cozzone[1], Monique Bernard[1]
[1]Centre de Resonance Magnetique Biologique et Medicale, Faculte de Medecine, Universite de la Mediterraneee, Marseille, Provence, France

1334. The Effect of Myocardial Contour Errors on Myocardial Blood Flow Estimates in Cardiac DCE-MRI Perfusion.
John David Biglands[1], Abdulghani Larghat[2], Sven Plein[2], Derek R. Magee[3], Roger D. Boyle[3], Aleksandra Radjenovic[4,5]
[1]Division of Medical Physics, University of Leeds, LEEDS, Yorkshire, United Kingdom; [2]Division of Cardiovascular & Neuronal Remodelling, University of Leeds, LEEDS, Yorkshire, United Kingdom; [3]School of Computing, University of Leeds, LEEDS, Yorkshire, United Kingdom; [4]School of Medicine, University of Leeds, LEEDS, Yorkshire, United Kingdom; [5]Academic Section of Musculoskeletal Disease, University of Leeds, LEEDS, Yorkshire, United Kingdom

1335. Myocardial Contour Error Distance Metrics Do Not Correlate with Myocardial Blood Flow Estimate Errors in DCE-MRI Cardiac Perfusion.
John David Biglands[1], Abdulghani Larghat[2], Sven Plein[2], Derek R. Magee[3], Roger D. Boyle[3], Aleksandra Radjenovic[4,5]
[1]Division of Medical Physics, University of Leeds, LEEDS, Yorkshire, United Kingdom; [2]Division of Cardiovascular & Neuronal Remodelling, University of Leeds, LEEDS, Yorkshire, United Kingdom; [3]School of Computing, University of Leeds, LEEDS, Yorkshire, United Kingdom; [4]School of Medicine, University of Leeds, LEEDS, Yorkshire, United Kingdom; [5]Academic Section of Musculoskeletal Disease, University of Leeds, LEEDS, Yorkshire, United Kingdom

1336. Myocardial Blood Flow Measurement using DCE-MRI: Comparison of Region-Of-Interest & Voxelwise Analysis
Steven Sourbron[1], William Morton[1], David L. Buckley[1], John P. Greenwood[2], Sven Plein[2]
[1]Division of Medical Physics, University of Leeds, Leeds, United Kingdom; [2]Division of Cardiovascular & Neuronal Remodelling, University of Leeds, Leeds, United Kingdom

1337. Comparison of 3D Stress Cardiac Magnetic Resonance PerfusionImaging & Invasive Fractional Flow Reserve Measurements for the Detection of Coronary Artery Disease
Robert Manka[1,2], Cosima Jahnke[3], Peter Boesiger[1], Thomas F. Lüscher[2], Ingo Paetsch[3], Sebastian Kozerke[1]
[1]Institute for Biomedical Engineering University & ETH Zürich, Zürich, Switzerland; [2]Cardiology, Unispital Zürich, Zürich, Switzerland; [3]Cardiology, University Hospital RWTH Aachen, Aachen, Germany

1338. Myocardial Microvascular Function at Rest & Under Adenosine Stress Measured with Dynamic Contrast-Enhanced MRI
David L. Buckley[1], John D. Biglands[1], Abdulghani Larghat[2], Steven P. Sourbron[1], Aleksandra Radjenovic[3], John P. Greenwood[2], Sven Plein[2]
[1]Division of Medical Physics, Leeds Institute of Genetics, Health & Therapeutics, University of Leeds, Leeds, West Yorkshire, United Kingdom; [2]Division Cardiovascular & Neuronal Remodelling, Leeds Institute of Genetics, Health & Therapeutics, University of Leeds, Leeds, West Yorkshire, United Kingdom; [3]Section of Musculoskeletal Disease, Leeds Institute of Molecular Medicine, University of Leeds, Leeds, West Yorkshire, United Kingdom

1339. Mapping of Myocardial ASL Perfusion & Perfusion Reserve Data
Terrence Jao[1], Zungho Zun[2], Padmini Varadarajan[3], Ramdas Pai[3], Krishna Nayak[2]
[1]Keck School of Medicine, University of Southern California, Los Angeles, CA, United States; [2]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [3]Division of Cardiology, Loma Linda University Medical Center, Loma Linda, CA, United States

1340. High Resolution Whole Heart Cardiac Perfusion Imaging using CAIPIRINHA
Daniel Stäb[1], Felix A. Breuer[2], Christian Oliver Ritter[1], Dietbert Hahn[1], Herbert Köstler[1]
[1]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany; [2]Research Center Magnetic Resonance Bavaria, Würzburg, Germany

1341. AIF Determination for Quantitative Myocardial Perfusion Imaging using a Model Based Reconstruction of Radially Acquired Data
Daniel Stäb[1], Johannes Tran-Gia[1], Christian Oliver Ritter[1], Dietbert Hahn[1], Herbert Köstler[1]
[1]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany

1342. Myocardial Blood Flow Estimates Depend on the Location of the Arterial Input Function Within the Cardiac Cycle in First-Pass DCE-MRI Studies of Myocardial Perfusion
Aleksandra Radjenovic[1,2], John Biglands[1], Abdulghani Larghat[1], John Ridgway[1], John Greenwood[1], Sven Plein[1]

[1]School of Medicine, University of Leeds, Leeds, United Kingdom; [2]Academic Section of Musculoskeletal Disease, University of Leeds, NIHR Leeds Musculoskeletal Biomedical Research Unit, Leeds, United Kingdom

1343. Cardiac Perfusion MRI at 3T for the Assessment of Endothelial Dysfunction in Diabetic Patients
Alessia Tognolini[1], Wanda Marfori[1], Cesar Arellano[1], Golnaz Heidari[1], Christine Darwin[2], Yutaka Natsuaki[1,3], Gerhard Laub[1,3], Mayil Krishnam[4], Stefan Ruehm[1]
[1]Diagnostic Cardiovascular Imaging, UCLA, Los Angeles, CA, United States; [2]Medicine, Endocrinology, UCLA, Los Angeles, CA, United States; [3]Siemens Medical Solution, Los Angeles, CA, United States; [4]Cardiovascular & Thoracic Imaging, UCI, Irvine, CA, United States

1344. An Area-Based Imaging Biomarker for the Characterization of Coronary Artery Stenosis with Blood Oxygen-Sensitive MRI
Sotirios Athanasios Tsaftaris[1,2], Richard Tang[2], Xiangzhi Zhou[2], Debiao Li[2], Rohan Dharmakumar[2]
[1]Electrical Engineering & Computer Science, Northwestern University, Evanston, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States

1345. Quantitative Myocardial Perfusion using Conventional Single-Bolus Contrast Imaging Overestimates Absolute Myocardial Blood Flow Compared with Dual-Bolus or Dual-Sequence Cardiac MR Methods
Li-Yueh Hsu[1], Peter Kellman[1], Peter Gatehouse[2], Sven Zuehlsdorff[3], Christopher B. Glielmi[4], Andrew E. Arai[1]
[1]National Heart Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]CMR Unit, Royal Brompton Hospital, London, United Kingdom; [3]CMR Research & Development, Siemens Medical Solutions, Chicago, IL, United States; [4]CMR Research & Development, Siemens Medical Solutions, Chicago, IL, United States

1346. Quantification of Myocardial Blood Volume & Water Exchange with Intravascular Contrast Agent
Octavia Biris[1,2], Neil Chatterjee[3], Daniel C. Lee[4,5], James Carr[1,3]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Biomedical Engineering, Northwestern University, Evanston, IL, United States; [3]Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [4]Feinberg School of Medicine, Northwestern University , Chicago, IL, United States; [5]Cardiology, Northwestern University, Chicago, IL, United States

1347. Myocardial Perfusion Study of Heart Failure Swine with Semi-Quantitative Analysis
Ting Song[1,2], Maureen N. Hood[2,3], Jeffrey A. Stainsby[4], Vincent B. Ho[2,3]
[1]Global Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States; [2]Radiology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [3]Radiology, National Naval Medical Center, Bethesda, MD, United States; [4]Global Applied Science Laboratory, GE Healthcare, Toronto, ON, Canada

1348. Improved Clinical Performance of a New Myocardial Adenosine Stress Perfusion Technique with SW-CG-HYPR at 3.0T: A Comparison to Conventional IR-Turbo-FLASH Perfusion MRI & X-Ray Angiography in Patients with Suspected Coronary Artery Disease
Heng Ma[1], Lan Ge[2], Jing An[3], David Chen[2], Lixin Jin[4], Xiaoming Bi[5], Renate Jerecic[4], Kuncheng Li[1], Debiao Li[2,6]
[1]Xuanwu Hospital, Capital Medical University, Beijing, China, People's Republic of; [2]Northwestern University; [3]Siemens Healthcare, MR Collaboration NE Asia, Siemens Mindit Magnetic Resonance; [4]Siemens Healthcare, MR Collaboration NE Asia, Siemens Limited China; [5]Siemens Healthcare, Cardiovascular MR R&D, USA; [6]Cedars-Sinai Medical Center and UCLA

1349. Rapid Cardiac T_1 Mapping Within Two Heartbeats
Elodie Breton[1,2], Daniel Kim[1], Sohae Chung[1], Leon Axel[1]
[1]Center for Biomedical Imaging - Radiology Research, New York University Langone Medical Center, New York, NY, United States; [2]LSIIT - eAVR, University of Strasbourg, Strasbourg, France

Myocardial Imaging & Spectroscopy

Exhibition Hall Tuesday 13:30-15:30

1350. Towards Quantification of Tissue Sodium Concentration in Mice with Acute Myocardial Infarction
Mahon L. Maguire[1], L. Stork[1], Kiterie Faller[1], Debra Medway[1], Craig A. Lygate[1], Stefan Neubauer[1], Jurgen E. Schneider[1]
[1]Dept Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

1351. *In Vivo* Temperature Threshold for Myocardial Thermal Damage
Peter Nabil Costandi[1], Ramez Emile Necola Shehada[1], Neha Bharat Butala[1], Ben Anthony Coppola[1], Kevin Jurkowski[1], Ali Dianaty[1]
[1]Cardiac Rhythm Management Division, St. Jude Medical, Sylmar, CA, United States

1352. Direct Detection of Postinfarction Myocardial Fibrosis with Ultrashort TE (UTE) MRI
Sanne de Jong[1], Jaco J. M. Zwanenburg[2,3], Fredy Visser[2,4], Roel van Der Nagel[1], Harold V. M. van Rijen[1], Marc A. Vos[1], Jacques M. T. de Bakker[1,5], Peter R. Luijten[2]

[1]Department of Medical Physiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [4]Philips Healthcare, Best, Netherlands; [5]Interuniversity Cardiology Institute of the Netherlands, Utrecht

1353. **^{23}Na Chemical Shift Imaging of Myocardial Edema**

Eissa Aguor[1], Cees W. A. van De Kolk[1], Marcel G. J. Nederhoff[1], Pieter A. F. M. Doevendans[1], Gerard Pasterkamp[1], Gustav J. Strijkers[2], Fatih Arslan[1], Cees J. A. van Echteld[1]

[1]Department of Cardiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1354. **Sensitive MRI Markers for Systemic Amyloidosis: Amide Proton Transfer & Equilibrium Contrast**

Adrienne E. Campbell[1,2], Anthony N. Price[1,3], Simon Walker-Samuel[1], Stephan Ellmerich[4], Paul Simons[4], Raya Al-Shawi[4], Philip N. Hawkins[4], Xavier Golay[5], James C. Moon[6], Roger J. Ordidge[2], Mark B. Pepys[4], Mark F. Lythgoe[1]

[1]Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Department of Medical Physics & Bioengineering, University College London, London, United Kingdom; [3]Robert Steiner MRI Unit, Imaging Science Department, Hammersmith Hostpital, Imperial College London, London, United Kingdom; [4]Centre for Amyloidosis & Acute Phase Proteins, Division of Medicine, University College London, London, United Kingdom; [5]Institute of Neurology, University College London, London, United Kingdom; [6]Heart Hospital & Division of Medicine, University College London, London, United Kingdom

1355. **Serial Quantitative MRI of Post-Infarct Macrophage Infiltration of the Mouse Heart using Gd-Liposomes & R1-Mapping**

Nivedita K. Naresh[1], Alexander L. Klibanov[1,2], Moriel H. Vandsburger[1,3], Jonathan Leor[4], Yaqin Xu[1], Brent A. French[1,5], Frederick H. Epstein[1,5]

[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Division of Cardiovascular Medicine, University of Virginia, Charlottesville, VA, United States; [3]Department of Biological Regulation, Weizmann Institute of Science, Rehovot, Israel; [4]Tel-Aviv University, Israel; [5]Department of Radiology, University of Virginia, Charlottesville, VA, United States

1356. **Passive Targeting of Paramagnetic Lipid-Based Contrast Agents to Acute Mouse Cardiac Ischemia/reperfusion Injury**

Tessa Geelen[1], Leonie E. Paulis[1], Bram F. Coolen[1], Klaas Nicolay[1], Gustav J. Strijkers[1]

[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1357. **Characterization of Rodent Heterotopic Heart Transplantation Models with Cellular & Functional MRI**

Qing Ye[1], Yijen L. Wu[1], Brent D. Barbe[1], Fang-Cheng Yeh[1], Li Liu[1], Lesley M. Foley[1], T. Kevin Hitchens[1], Chien Ho[1]

[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States

1358. **Contrast-Enhanced Cardiac MRI of Vascular Remodeling After Myocardial Infarction using Lipid-Based Nanoparticles**

Leonie E. Paulis[1], Tessa Geelen[1], Michael Kuhlmann[2], Bram F. Coolen[1], Klaas Nicolay[1], Gustav J. Strijkers[1]

[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]European Institute for Molecular Imaging, University of Muenster, Muenster, Germany

1359. **Multi-Channel Proton Spectroscopy of the Heart**

Nicola Martini[1], Kilian Weiss[2], Peter Boesiger[2], Dante Chiappino[1], Sebastian Kozerke[2]

[1]Fondazione G. Monasterio CNR-Regione Toscana, Massa, Italy; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich,, Switzerland

1360. **Identification of Two Myocardial Lipid Pools in Muscular Dystrophy Patients by ^{1}H MRS at 3T**

Belen Rial[1], Joseph J Suttie[1], Stefan Neubauer[1], Matthew D. Robson[1], Jurgen E. Schneider[1]

[1]Dept of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom

1361. ***In Vivo* Assessment of the Effects of Pioglitazone on Myocardial Triglyceride Content & Cardiac Function in Diabetic Mice using ^{1}H MRS & MRI**

Desiree Abdurrachim[1], Klaas Nicolay[1], Jeanine J Prompers[1]

[1]Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1362. **Six Hours of Hyperglycemia & Hyperinsulinemia Affects Cardiac Function & Increase Myocardial Lipid Accumulation.**

Martin Krssak[1,2], Yvonne Winhofer[3], Drazenka Jankovic[3], Christian Anderwald[3], Gert Reiter[4], Siegfried Trattnig[2,5], Anton Luger[3], Michael Krebs[3]

[1]Center for Medical Physics & Biomedical Engineering, Medical University of Vienna, Wien, Austria; [2]Center of Exellence, HF MR, Medical University of Vienna, Wien, Austria; [3]Internal Medicine III, Medical University of Vienna, Wien, Austria; [4]Siemens AG Healthcare, Wien, Austria; [5]Radiology, Medical University of Vienna, Wien, Austria

1363. Longitudinal Assessment of T_2* Changes in Mouse Myocardium Following Ischemia-Reperfusion Injury

Eissa Aguor[1], Fatih Arslan[1], Cees W. A. van De Kolk[1], Marcel G. J. Nederhoff[1], Pieter A. F. M Doevendans[1], Cees J. A. van Echteld[1], Gerard Pasterkamp[1], Gustav J. Strijkers[2]

[1]Department of Cardiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1364. Detection of Focal Inflammation on Myocardial Disorder using T_2 Contrast Agent-Based MRI: Comparison to Late-Enhanced MRI with T_1 Contrast Agent

Hyeyoung Moon[1,2], Hyo Eun Park[3], Jongeun Kang[1,4], Hee-Seok Kwon[5], Kiyuk Chang[3], Kwan Soo Hong[1,4]

[1]MR Research, Korea Basic Science Institute, Cheongwon, Chungcheongbuk-Do, Korea, Republic of; [2]University of Science & Technology, Daejeon, Korea, Republic of; [3]Department of Internal Medicine, Catholic University, Seoul, Korea, Republic of; [4]Graduate School of Analytical science & Technology, Chungnam National University, Daejeon, Korea, Republic of; [5]Division of Electron Microscopic Research, Korea Basic Science Institute

1365. Free Breathing Independent Respiratory Navigator-Gated Imaging: Concurrent PSIR & T_2-Weighted 3D Imaging of the Left Ventricle

Sangjune Laurence Lee[1], Michael Schär[2,3], M. Muz Zviman[4], Valeria Sena-Weltin[4], Ahmed A. Harouni[5], Sebastian Kozerke[6], Elliot R. McVeigh[1], Henry Halperin[4], Daniel A. Herzka[7]

[1]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]Philips Healthcare, Cleveland, OH, United States; [3]Radiology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [4]Division of Cardiology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [5]Department of Electrical & Computer Engineering, Johns Hopkins University, Baltimore, MD, United States; [6]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [7]Department of Biomedical Engineering , Johns Hopkins School of Medicine, Baltimore, MD, United States

1366. High-Resolution Localization of Fibrosis in a Mouse Model of Viral Chronic Myocarditis using T_2* Weighted MRI

Xavier Helluy[1], Martina Sauter[2], Yu-Xiang Ye[3], Roland Jahns[3], Ali Yilmaz[4], Karin Klingel[2], Karl-Heinz Hiller[1], Peter M. Jakob[1]

[1]Magnetic Resonance Bavaria, Wuerzburg, Germany; [2]Department of Molecular Pathology, University of Tuebingen, Germany; [3]Department of Internal Medicine I, University Hospital of Wuerzburg, Germany; [4]Division of Cardiology, Robert-Bosch-Krankenhaus, Stuttgart, Germany

1367. T_2 Mapping of the Mouse Heart using Segmented MLEV Supercycle Preparation

Bram F. Coolen[1], Frank F. J. Simonis[1], Rik P. M. Moonen[1], Tessa Geelen[1], Leonie E. M. Paulis[1], Klaas Nicolay[1], Gustav J. Strijkers[1]

[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1368. Improved T_2-Weighted Cardiac Imaging using Retrospective Motion Correction & Optimal Image Combination

Hui Xue[1], Xiaoming Bi[2], Christoph Guetter[1], Sven Zuehlsdorff[2], Marie-Pierre Jolly[1], Jens Guehring[1], Peter Kellman[3]

[1]Imaging and Visualization, Siemens Corporate Research, Princeton, NJ, United States; [2]CMR Research and Development, Siemens Medical Solutions USA, Inc., Chicago, IL, United States; [3]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States

1369. Myocardial ECV Imaging by MRI Compared to Myocardial ECV Imaging by CT – Validation in Experimental Acute Myocardial Infarction

Martin Ugander[1], Marcus Y Chen[1], Billy Chen[1], Li-Yueh Hsu[1], Peter Kellman[1], Andrew E Arai[1]

[1]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, United States

1370. Quantitative MRI Can Distinguish Remodeling Mechanisms After Acute Myocardial Infarction Based on the Severity of Ischemic Insult

Nilesh R. Ghugre[1], Mihaela Pop[1], Jennifer Barry[1], Beiping Qiang[1], John J. Graham[2], Kim Connelly[2], Alexander J. Dick[1,3], Graham A. Wright[1]

[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Division of Cardiology, St. Michael's Hospital, Toronto, ON, Canada; [3]University of Ottawa Heart Institute, Ottawa, ON, Canada

1371. A Real-Time Cine Late Gadolinium Enhancement Imaging Method at 3T

Mo Kadbi[1], Hui Wang[1], Mohammadjavad Negahdar[1], Melanie Kotys[2], Stefan Fischer[2], Amir A. Amini[1]

[1]Department of Electrical & Computer Engineering, University of Louisville, Louisville, KY, United States; [2]Philips Healthcare, Cleveland, OH, United States

1372. Free-Breathing T_1 Mapping MRI for Quantification of Myocardial T_1 Pre & Post Contrast in Swine with Non-Ischemic Heart Failure

Maureen N. Hood[1,2], Ting Song[1,3], Peter Bedocs[4], John Capacchione[4], Mark Haigney[5,6], Christine E. Kasper[7], Vincent B. Ho[1,2]

[1]Radiology, Uniformed Services University, Bethesda, MD, United States; [2]Radiology, National Naval Medical Center, Bethesda, MD, United States; [3]Global Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States; [4]Anesthesiology, Uniformed

Services University, Bethesda, MD, United States; [5]Medicine, Uniformed Services University, Bethesda, MD, United States; [6]Cardiology, National Naval Medical Center, Bethesda, MD, United States; [7]Graduate School of Nursing, Uniformed Services University, Bethesda, MD, United States

1373. Characterization of Myocardial T_1 & Partition Coefficient as a Function of Time After Gadolinium Delivery in Healthy Subjects

Kelvin Chow[1], Jacqueline Flewitt[2], Jordin Green[3], Matthias Friedrich[2,4], Richard Thompson[1]
[1]Department of Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada; [2]Stephenson CMR Centre at the Libin Institute of Alberta, Department of Cardiac Sciences, University of Calgary, Calgary, Alberta, Canada; [3]Siemens Healthcare, Calgary, Alberta, Canada; [4]Department of Radiology, University of Calgary, Calgary, Alberta, Canada

1374. Myocardial T_1 Mapping at 3T using Variable Flip Angle Method: A Pilot Study

Hélène Poinsignon[1,2], Maelene Lohezic[2,3], Hai-Ling Margaret Cheng[4,5], Pierre-Yves Marie[6], Jacques Felblinger[2,7], Marine Beaumont[1,6]
[1]CIT 801, INSERM, Nancy, France; [2]IADI, Nancy-Université, Nancy, France; [3]Global Applied Science Laboratory., GE Healthcare, Nancy, France; [4]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [5]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [6]CHU de Nancy, Nancy, France; [7]U947, INSERM, Nancy, France

1375. Quantitative Measurement of Myocardial T_1 with a Modified Cine Inversion Recovery Pulse Sequence

Matteo Milanesi[1,2], Andrea Barison[3], Vincenzo Positano[1], Luca Marinelli[4], Pier Giorgio Masci[1], Daniele De Marchi[1], Christopher James Hardy[4], Thomas K. Foo[4], Luigi Landini[1], Massimo Lombardi[1]
[1]MRI Laboratory, Fondazione "G. Monasterio" CNR – Regione Toscana, Pisa, Tuscany, Italy; [2]Magnet Technology Center, Agilent Technologies UK Ltd, Oxford, Oxfordshire, United Kingdom; [3]Scuola Superiore Sant'Anna, Pisa, Italy; [4]General Electric Global Research, Niskayuna, NY, United States

1376. Novel Pilot Data - Cardiac MR Imaging Post Catheter Ablation: Does T_2 & DE Ratios Matter in Predicting Clinical Outcome?

Aruna Arujuna[1], Rashed Karim[1], Benjamin Knowles[1], Dennis Caulfield[1], Mark O'Neill[1], Aldo Rinaldi[1], Michael Cooklin[2], Jaswinder Gill[1], Tobias Schaeffter[1], Kawal Rhode[1], Reza Razavi[1]
[1]Imaging Sciences, King's College London, London, United Kingdom; [2]Cardiothoracic Department, Guy's &St Thomas' Hospital, London, United Kingdom

1377. 3D Spiral LGE for Reduced Enhancement Artifacts in PV Imaging of Pre- & Post-Ablation Scar.

Benjamin R. Knowles[1], Warren J. Manning[1], Dana C. Peters[1]
[1]Cardiovascular Research, Havard Medical School, Beth Israel Deconess Medical Center, Boston, MA, United States

1378. Self-Navigated 3D Late Gadolinium Enhancement Imaging of the Left Atrium

Ganesh Adluru[1], Liyong Chen[1], Seong-Eun Kim[1], Eugene Kholmovski[1], Nassir Marrouche[2], Edward V. R. DiBella[1]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Internal Medicine, University of Utah, Salt Lake City, UT, United States

1379. Patients with Histologically Abnormal Left Atrial Myocardium Demonstrate Greater Left Atrial Late Gadolinium Enhancement

Jaime L. Shaw[1], Susie N. Hong-Zohlman[1], Robert C. Hagberg[1], Benjamin R. Knowles[1], Warren J. Manning[1,2], Dana C. Peters[1]
[1]Cardiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]Radiology, Beth Israel Deaconess Medical Center

1380. Left Atrial Scar Imaging using 3D Dixon Late Gadolinium Enhancement

Jaime L. Shaw[1], Benjamin R. Knowles[1], Warren J. Manning[1], Dana C. Peters[1]
[1]Beth Israel Deaconess Medical Center, Boston, MA, United States

Spectroscopic Quantification

Exhibition Hall Monday 14:00-16:00

1381. Cerebral Glucose Uptake in Humans at Hypoglycemic Plasma Levels Follows Reversible Michaelis-Menten Kinetics

Kim C. C. van De Ven[1], Marinette van Der Graaf[1,2], Bastiaan E. de Galan[3], Cees J. J. Tack[3], Arend Heerschap[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Paediatrics, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]General Internal Medicine, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

1382. Phase-Adjusted Echo Time (PATE)-Averaging: Application for Glutamine Resolution at 3.0 Tesla

Andrew Paul Prescot[1], Todd L. Richards[2], Stephen R. Dager[2], Perry Franklin Renshaw[1]
[1]Brain Institute, University of Utah, Salt Lake City, UT, United States; [2]Radiology, University of Washington, Seattle, WA, United States

1383. Area-Specific GABA Concentration Predicts Tactile Discrimination Performance in Humans
Richard Anthony Edward Edden[1], Nick Adrianus Johannus Puts[2], Christopher John Evans[3], David John McGonigle[2,3]
[1]Russell H Morgan Department of Radiology & Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]School of Biosciences, Cardiff University, Cardiff, United Kingdom; [3]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom

1384. Quantification of Glycine in the Human Brain by PRESS at 3T
Changho Choi[1], Sandeep Ganji[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

1385. Multi-Channel Spectroscopic Imaging Reconstruction using Water-Referencing with Compressed Sensing
Maryam Vareth[1,2], Eugene Ozhinsky[1,2], Sarah J. Nelson[1,3]
[1]Surbeck Laboratory of Advanced Imaging, Department of Radiology & Biomedical Imaging, Univ. of California, San Francisco, San Francisco, CA, United States; [2]UCSF/UCBerkeley Joint Graduate Group in Bioengineering, Univ. of California, San Francisco, San Francisco, CA, United States; [3]Univ. of California, San Francisco, Department of Bioengineering & Therapeutic Sciences, San Francisco, CA, United States

1386. Quantitative ^{31}P Magnetic Resonance Spectroscopy of the Breast at 7 Tesla.
Jannie Petra Wijnen[1], Mariska P. Luttje[1], Wybe J. M. van Der Kemp[1], Peter R. Luijten[1], Dennis W. J. Klomp[1]
[1]Radiology, University Medical Centre Utrecht, Utrecht, Netherlands

1387. T_2^{CSF} Pitfalls using Water as Internal Reference for Metabolite Quantification
Markus Sack[1], Gabriele Ende[1], Wolgang Weber-Fahr[1]
[1]Neuroimaging, Central Institute of Mental Health, Mannheim, Germany

1388. Impact of the Prior Knowledge on the Quantification of *In Vivo* ^{13}C Spectra using Two Different Algorithms: LCModel & AMARES
Cristina Cudalbu[1], Bernard Lanz[2], Joao M. Duarte[2], Nicolas Kunz[2], Rolf Gruetter[2,3]
[1]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL) , Lausanne, Switzerland; [2]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Departments of Radiology, Universities of Lausanne and Geneva, Geneva, Switzerland

1389. Serial Proton MRS of the Human Brain After Oral Administration of ^{12}C & ^{13}C Enriched Glucose
Arabhi C. Nagasunder[1,2], Ashok Panigrahy[1,3], Fawzi Boumezbeur[4], Marvin D. Nelson[1], Stefan Bluml[1,2]
[1]Radiology, Childrens Hospital Los Angeles, Los Angeles, CA, United States; [2]Rudi Schulte Research Institute, Santa Barbara, CA, United States; [3]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [4]Commissariat à l'Energie Atomique, Institute for Biomedical Imaging, Gif-sur-Yvette, Paris, France

1390. An Objective Method for Automated Classification of Brain Tumors using Proton MR Spectroscopy
Yu Zhang[1], Sanjeev Chawla[1], Sumei Wang[1], Sangeeta Chaudhary[1], Jaroslaw Krejza[1], E. R. Melhem[1], Harish Poptani[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1391. ERETIC Based *In Vivo* ^{1}H MRSI Quantification
Niklaus Zoelch[1], Susanne Heinzer-Schweizer[2], Peter Boesiger[1], Anke Henning[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Philips AG Healthcare, Zurich, Switzerland

1392. The Influence of the External Magnetic Field Strength on Correlations Between Metabolites
Reggie Taylor[1,2], Peter Williamson[1,3], Jean Théberge[1,2]
[1]Medical Biophysics, University of Western Ontario, London, ON, Canada; [2]Lawson Health Research Institute, London, ON, Canada; [3]Psychiatry, University of Western Ontario, London, ON, Canada

1393. Mapping T_2 Relaxation Time of Cerebral Metabolites using Three Dimensional Proton-Echo Planar Spectroscopic Imaging (PEPSI)
Hsiang Wei Ho[1], Shang Yueh Tsai[1], Yi Ru Lin[2], Stefan Posse[3,4], Fa Hsuan Lin[5,6]
[1]Electrical Engineering, Chang Gung University, Tao Yuan, Taiwan; [2]Electronic Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [3]Neurology, University of New Mexico School of Medicine, Albuquerque, NM, United States; [4]Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, United States; [5]Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [6]6 MGH-HST Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States

1394. Modeling MEGA-PRESS Macromolecules for a Better Grasp of GABA
James B. Murdoch[1], Ulrike Dydak[2,3]
[1]Toshiba Medical Research Institute USA, Mayfield Village, OH, United States; [2]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [3]2Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States

1395. *In Vivo* Absolute Quantification for Mouse Muscle Metabolites using an Inductively Coupled Synthetic Signal Injection Method & Newly Developed ^{1}H/^{31}P Dual Tuned Probe

Donghoon Lee[1], Kenneth Marro[1], Mark Mathis[1], Eric Shankland[1], Cecil Hayes[1]
[1]University of Washington, Seattle, WA, United States

1396. Multi-Variate Pattern Analysis for Identification of Metabolites that are Predictive of Malignant Transformation in Gliomas using HRMAS Spectra from Image Guided Tissue Samples
Alexandra Constantin[1], Adam Elkhaled[2], Trey Jalbert[2], Radhika Srinivasan[2], Soonmee Cha[3], Susan M. Chang[3], Ruzena Bajcsy[1], Sarah J. Nelson[2]
[1]Electrical Engineering & Computer Science, University of California, Berkeley, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California, San Francisco, CA, United States; [3]Department of Neurological Surgery, University of California, San Franisco, CA, United States

1397. *Ex Vivo* Ischemic Kidney Damage ^{23}Na Relaxometry
Christoffer Laustsen[1,2], Steffen Ringaard[1], Mads Damkjær[3], Michael Pedersen[1]
[1]Klinisk Institut, The MR Research Centre, Aarhus University, Aarhus, Denmark; [2]Danish Research Centre for Magnetic Resonance, Hvidovre Hospital, Hvidovre, Denmark; [3]Institute of Molecular Medicine, University of Southern Denmark, Odense, Denmark

1398. Improved Data Analysis for Two-Dimensional J-Resolved ^{1}H-MRS: Application in Brain Tumors
Changho Choi[1], Sandeep Ganji[1], Elizabeth Maher[2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Internal Medicine & Neuro-oncology, University of Texas Southwestern Medical Center, Dallas, TX, United States

1399. GABA Fitting for MEGA-PRESS Sequences with Different Selective Inversion Frequencies
Zaiyang Long[1,2], James Brown Murdoch[3], Jun Xu[1,2], Ulrike Dydak[1,2]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Toshiba Medical Research Institute USA, Mayfield Village, OH, United States

1400. Simple Implementation of an Inductively Coupled Synthetic Signal Injection Method on a Clinical MR Scanner for Absolute Quantification
Donghoon Lee[1], Kenneth Marro[1], Eric Shankland[1], Mark Mathis[1], Timothy Wilbur[1], Gregory Wilson[1,2], Jeff Stevenson[1], Cecil Hayes[1], Kenneth Maravilla[1]
[1]University of Washington, Seattle, WA, United States; [2]MR Clinical Science, Philips Healthcare, Cleveland, OH, United States

1401. Synthetic Signal Injection using a Single RF Channel
Kenneth I. Marro[1], Donghoon Lee[1], Eric G. Shankland[1], C. Mark Mathis[1], Cecil E. Hayes[1]
[1]Radiology, University of Washington, Seattle, WA, United States

1402. Quantitative Measurement of N-Acetylaspartyl Glutamate (NAAG) at 3 Tesla using TE-Averaged PRESS Spectroscopy & Lineshape Deconvolution
Yan Zhang[1], Shizhe Li[1], Christine Rebsch[1], Stefano Marenco[1], Jun Shen[1]
[1]National Institute of Mental Health, Bethesda, MD, United States

1403. A Multi-Purpose Simulator of Coupled Spin Systems for MR Localized Spectroscopy & Spectroscopic Imaging
Zenon Starcuk Jr.[1], Jana Starcukova[1], Danielle Graveron-Demilly[2]
[1]Magnetic Resonance & Bioinformatics, Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno, Czech Republic; [2]Creatis-LRMN, Université Claude Bernard Lyon 1, France

1404. The Classification of *In Vivo* Proton Magnetic Resonance Spectroscopy of Brain Abscesses using Principal Component Analysis (PCA)
Ssu-Ying Lu[1], Cheng-Wen Ko, Tzu-Chao Chuang, Ping-Hong Lai[2,3]
[1]National Sun Yat-sen University, Kaohsiung, Taiwan; [2]Veterans General Hospital-Kaohsiung; [3]School of Medicine, National Yang-Ming University, Taipei, Taiwan

1405. Quantification of Rat Brain Metabolites by ProFit: Preliminary Evaluation of High Fat Diet Induced Obesity
Bhaskaran David Prakash[1], Arunima Pola[1], Na Agarwal[1], Sambasivam S. Velan[1]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore

1406. Experimental Errors as Alternative to the Theoretical Cramér-Rao Minimum Variance Bounds in MRS: ER-ARSOS - Error Estimation by Multiple Quantification of Recombined ARSOS-Filtered Output Signals
Johannes Slotboom[1], Dirk van Ormondt[2], Olivier Scheidegger[1], Caspar Brekenfeld[1], Roland Wiest[1], Gerhard Schroth[1], Danielle Graveron-Demilly[3]
[1]DRNN-DIN/SCAN, University Hospital Berne, Berne, Switzerland; [2]Applied Physics, Delft University of Technology, Delft, Netherlands; [3]Laboratoire Creatis-LRMN, Université Claude Bernard LYON 1, Lyon, France

1407. Cross-Validation of PRESS, MEGA-PRESS Editing & 2D JPRESS for Neurotransmitter & Antioxidant Detection at 3T using the ERETIC Reference Standard
Mariska Petra Luttje[1], Michael Wyss[1,2], Niklaus Zölch[1,2], Alexander Fuchs[1], Richard A. E. Edden[3,4], Susanne Heinzer[5], Peter Bösiger[1], Anke Henning[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Contributed equally; [3]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [5]Philips AG, Zurich, Switzerland

1408. Measuring Tissue PH Heterogeneity by ^{31}P NMR Spectroscopy
Norbert W. Lutz[1], Yann LeFur[1], Patrick J. Cozzone[1]
[1]Dept. of Medicine La Timone, Marseille, France

1409. Quantitative *In Vivo* Magnetic Resonance Spectroscopy using Synthetic Signal Injection
Kenneth I. Marro[1], Donghoon Lee[1], Eric G. Shankland[1], C. Mark Mathis[1], Cecil E. Hayes[1], Martin J. Kushmerick[1,2]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Physiology & Biophysics, University of Washington, Seattle, WA, United States

1410. VeSPA: Integrated Applications for RF Pulse Design, Spectral Simulation & MRS Data Analysis
Brian J. Soher[1], Philip Semanchuk[1], David Todd[2], Jeffrey Steinberg[1,3], Karl Young[2]
[1]Radiology, Duke University Medical Center, Durham, NC, United States; [2]Radiology, Northern California Institute of Research & Education, San Francisco, CA, United States; [3]Singapore Bioimaging Consortium, Agency for Science, Technology & Research

1411. Repeatability of 2D Magnetic Resonance Spectroscopic Imaging
Lawrence Kenning[1], Martin Lowry[1], David John Manton[1], Lindsay W. Turnbull[1]
[1]Centre for MR Investigations, University of Hull, Hull, United Kingdom

1412. New Technique for Metabolite Cycled Non-Water-Suppressed Proton Spectroscopy in the Human Brain at 7T
Erin Leigh MacMillan[1], Roland Kreis[1], Alex Fuchs[2], Maarten J. Versluis[3], Chris Boesch[1], Peter Boesiger[2], Anke Henning[2]
[1]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [3]Dept. of Radiology, Leiden University Medical Center, Leiden, Netherlands

1413. Detection Strategies at 7 Tesla using Clinical MRS Pulse Sequences
Subechhya Pradhan[1,2], John C. Gore[2,3], Kevin W. Waddell[3,4]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, 37232, United States; [2]Department of Physics & Astronomy, Vanderbilt University, Nashville, TN, United States; [3]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [4]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

Spectroscopy Localization

Exhibition Hall Tuesday 13:30-15:30

1414. Hadamard Encoding of 2D-Selective RF Excitations for Simultaneous Acquisition of Multiple, Irregularly Shaped Voxel in MR Spectroscopy
Martin G. Busch[1,2], Jürgen Finsterbusch[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

1415. Segmented 2D-Selective RF Excitations with Weighted Averaging & Flip Angle Adaptation for MR Spectroscopy of Irregularly Shaped Voxel
Jürgen Finsterbusch[1,2], Martin G. Busch[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

1416. Lactate Detection using Double Quantum Coherence Filtering with Spectral-Spatial Refocusing RF Pulses in a PRESS Sequence
Haoyang Xing[1,2], Yi Sui[1], Qiyong Gong[3], Xiaohong Joe Zhou[1,4]
[1]Center for MR Research, University of Illinois Medical Center at Chicago, Chicago, IL, United States; [2]College of Physical Science & Technology, Huaxi MR Research Center, Sichuan University, Chengdu, Sichuan, China, People's Republic of; [3]Huaxi MR Research Center, West China Hospital of Sichuan University, Chengdu, Sichuan, China, People's Republic of; [4]Departments of Radiology, Neurosurgery & Bioengineering, University of Illinois Medical Center at Chicago

1417. Accelerated ^{1}H-MRSI: Artifact Reduction by Target-Driven Reconstruction
Thomas Kirchner[1], Anke Henning[1], Klaas Paul Pruessmann[1], Peter Boesiger[1]

[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

1418. Spectroscopic Imaging using Concentrically Circular Echo-Planar Trajectories
Jon Furuyama[1], Neil Wilson[1], M. Albert Thomas[1]
[1]Radiology, UCLA, Los Angeles, CA, United States

1419. Algorithm for Lipid Suppression by Real-Time Isotropic Filter Design in Spectroscopic Brain Imaging
Joonsung Lee[1], Elfar Adalsteinsson[1,2]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Harvard-MIT Division of Health Sciences &, Massachusetts Institute of Technology, Cambridge, MA, United States

1420. Reproducibility & Variance of Serial Short Echo Time ^{1}H Magnetic Resonance Spectroscopic Imaging of the Human Brain at 3T with Automated Planning Software
Sofie Van Cauter[1], Diana Sima[2], Leon ter Beek[3], Jan Luts[2], Yuqian Li[4], Maria Isabel Osorio Garcia[2], Stefan Sunaert[1], Sabine Van Huffel[2], Uwe Himmelreich[5]
[1]Department of Radiology, University Hospitals Leuven, Leuven, Belgium; [2]Department Electrical Engineering – ESAT/SCD, Catholic University Leuven; [3]Philips Medical Systems; [4]School of Electronical Engineering, University of Electronic science & Technology of China, Chengdu, China, People's Republic of; [5]Biomedical NMR Unit/Molecular Small Animal Imaging Center, Department of Medical Diagnostic Sciences, Catholic University Leuven

1421. High-Resolution ^{1}H-FID-MRSI of the Human Brain at 7T
Wolfgang Bogner[1], Stephan Gruber[1], Siegfried Trattnig[1], Marek Chmelik[1]
[1]MR Center of Excellence, Department of Radiology, Medical University of Vienna, Vienna, Austria

1422. Composite Localization with Adiabatic Slice Selective Excitation & Refocusing (CLASER) for Improved ^{1}H MRSI in Non Uniform B_1 Fields
Catalina Sofia Arteaga De Castro[1,2], Uulke A. van Der Heide[1], Marco van Vulpen[1], Peter R. Luijten[2], Dennis W. J. Klomp[2]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands

1423. Short-Echo Spin-Echo Localization MRSI in Gliomas at 7 Tesla
Yan Li[1], Albert P. Chen[2], Peder Larson[1], Eugene Ozhinsky[1], Janine M. Lupo[1], Duan Xu[1], Sarah J. Nelson[1,3]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, CA, United States; [2]GE Healthcare, Toronto, ON, Canada; [3]Department of Bioengineering & therapeutic sciences, University of California, San Francisco, CA, United States

1424. Short Echo-Time MRSI of Human Brain at 7 Tesla with Improved Shimming & Fat-Suppression
Indrajit Saha[1,2], Jay Moore[1,3], Saikat Sengupta[1,4], Subechhya Pradhan[1,3], James M. Joers[5,6], John C. Gore[1,2]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Department of Physics & Astronomy, Vanderbilt University, Nashville, TN, United States; [4]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [5]Department of Radiology, Children's Hospital of Wisconsin, Milwaukee, WI, United States; [6]The Medical College of Wisconsin, Milwaukee, WI, United States

1425. Short Acquisition Time 3D High Resolution (1cc) *In Vivo* Brain ^{1}H MRSI using LASER-RSI
Claudiu Schirda[1], Ovidiu Andronesi[2], Tiejun Zhao[3], Gregory Sorensen[2], Fernando Boada[1]
[1]Radiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [2]Radiology, Massachusetts General Hospital, Boston, MA, United States; [3]Siemens Medical Solutions, United States

1426. Hadamard Encoded 3D MRSI of Human Brain at 7T
Hoby Patrick Hetherington[1], Nikolai I Avdievich[1], Oded Gonen[2], Jullie W Pan[1]
[1]Neurosurgery, Yale University, New Haven, CT, United States; [2]Radiology, New York University, New York, NY, United States

1427. Simultaneous Up- & Downfield Spectroscopy using SPECIAL at 7T
Alexander Fuchs[1], Anke Henning[1], Mariska P. Luttje[2], Maarten J. Versluis[3], Roland Kreis[4], Peter Boesiger[2]
[1]Institute for Biomedical Engineering , University & ETH Zurich, Zurich, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [3]Dept. of Radiology, Leiden University Medical Center, Leiden, Netherlands; [4]Dept. of Clinical Research, University of Bern, Bern, Switzerland

1428. 3D GABA Spectroscopic Imaging using MEGA-PEPSI
Ulrike Dydak[1,2], Jun Sai Xu[1,2], Malgorzata Marjanska[3], Stefan Posse[4,5]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Center for Magnetic resonance Research & Department of Radiology, University of Minnesota, Minneapolis, MN, United States; [4]Department of Neurology, University of New Mexico School of Medicine, Albuquerque, NM, United States; [5]Department of Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, United States

1429. Whole Liver ^{31}P Metabolite Mapping with 3D CSI
Scott Jones[1,2], Anshuman Panda[1,2], Ulrike Dydak[1,2]
[1]Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States

1430. Simultaneous Acquisition of Metabolites & Water Signals using Multi-Coil Sensitivities
Toru Shirai[1], Satoshi Hirata[1], Yoshihisa Soutome[1], Yoshitaka Bito[1]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan

1431. Implementation of GOIA-Wurst Pulse in a SPECIAL Localization Sequence at 7T
Isabell Kristin Steinseifer[1], Ralf Mekle[2], Rolf Gruetter[3], Tom W. J. Scheenen[1], Arend Heerschap[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [3]LIFMET, Ecole Politechnique Federale de Lausanne, Lausanne, Switzerland

1432. MRS Localization in the Human Brain at 7T with Adiabatic Refocusing at Short Echo Time using RF Focusing with a Dual Channel Volume Transmit Coil
Vincent Oltman Boer[1], Astrid L. H. M. W. van Lier[2], Johannes M. Hoogduin[1], Jannie P. Wijnen[1], Peter R. Luijten[1], Dennis W. J. Klomp[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Radiotherapy, UMC Utrecht, Utrecht, Netherlands

1433. Single Voxel Spectroscopy in 5 Year Old Children using an EPI VNav
Aaron T. Hess[1], André J. W. van Der Kouwe[2], Ernesta M. Meintjes[1]
[1]MRC/UCT Medical Imaging Research Unit, Human Biology, University of Cape Town, Cape Town, South Africa; [2]Radiology, Massachusetts General Hospital, Boston, MA, United States

1434. Signal Normalization for MR Spectroscopic Imaging using Brain Tissue Water: Variability & Pathologic Detectability
Mohammad Sabati[1], Varan Govind[1], Andrew a Maudsley[1]
[1]Radiology, University of Miami, Miami, FL, United States

1435. Multi-Echo Based Correlated Spectroscopic Imaging
Jon Furuyama[1], M. Albert Thomas[1]
[1]UCLA, Los Angeles, CA, United States

1436. Spatiotemporal Denoising of MR Spectroscopic Imaging Data by Low-Rank Approximations
Hien Nguyen[1], Xi Peng[2,3], Minh Do[4], Zhi-Pei Liang[4]
[1]Department of Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]School of Electronic Information, Wuhan University, China, People's Republic of; [3]Department of Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, United States; [4]Department of Electrical & Computer Engineering, University of Illinoist at Urbana-Champaign, United States

1437. Non-Linear Concentration Effects in Magnetic Particle Imaging
Volker Christian Behr[1], Thomas Kampf[1], Jan-Philip Gehrcke[1], Martin Andreas Rückert[1,2], Patrick Vogel[1,2], Walter H. Kullmann[2], Peter Michael Jakob[1,3]
[1]Experimental Physics 5, University of Würzburg, Würzburg, Germany; [2]Medical Engineering, University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany; [3]Magnetic Resonance Bavaria e.V., Würzburg, Germany

1438. Encoding of Pre-Selected Compartments Produces Large SNR & Speed Advantages for ^{31}P MRS
Yi Zhang[1,2], Refaat E. Gabr[1], Michael Schär[1,3], Robert G. Weiss[1,4], Paul A. Bottomley[1,2]
[1]Division of MR Research, Johns Hopkins Univesity, Baltimore, MD, United States; [2]ECE, Johns Hopkins University, Baltimore, MD, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Division of Cardiology, Johns Hopkins Univesity, Baltimore, MD, United States

Spectroscopy - Other

Exhibition Hall Wednesday 13:30-15:30

1439. T_2 Relaxation Times in the Human Brain at 7T
Malgorzata Marjanska[1], Edward J. Auerbach[1], Romain Valabregue[2], Pierre-Francois Van De Moortele[1], Gregor Adriany[1], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Hôpital Pitié-Salpêtrière, Paris, France

1440. Precision Evolution of the Neuroglial Metabolic Fluxes with the Experimental Conditions, When using Two-Compartment Modeling Applied to [2-^{13}C] Acetate Dynamic MRS Studies
Bernard Lanz[1], Lijing Xin[1], Rolf Gruetter[1,2]

[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Universities of Lausanne & Geneva, Lausanne & Geneva, Switzerland

1441. ***In Vivo*** **Detection of ^{13}C Isotopomer Turnover in the Human Brain**
Shizhe S. Li[1], Yan Zhang[1], Maria Ferraris Araneta[1], Christopher Johnson[1], Yun Xiang[1], Robert B. Innis[1], Jun Shen[1]
[1]National Institutes of Health, Bethesda, MD, United States

1442. ***In Vivo*** **L-COSY MRS of Healthy Brain & Glioblastoma**
Saadallah Ramadan[1], Ovidiu C. Andronesi[2], Peter Stanwell[1], Alexander Lin[1], Gregory A. Sorensen[2], Carolyn Mountford[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, United States

1443. **Physiological Brain Temperature Change is Detectable by MRS**
Yoshichika Yoshioka[1,2], Hiroshi Oikawa[3], Yoshiyuki Kanbara[4], Yutaka Matsumura[4], Takashi Inoue[5], Tsuyoshi Matsuda[6], Akira Nabetani[6], Junji Seki[7]
[1]Immunology Frontier Research Center, Osaka University, Suita, Osaka, Japan; [2]CREST, JST, Kawaguchi, Saitama, Japan; [3]Radiology, Ninohe Haspital, Iwate, Japan; [4]High Field MRI Research Institute, Iwate Medical University, Iwate, Japan; [5]Neurosurgery, Kohnan Hospital, Sendai, Japan; [6]GE Healthcare Japan Corp., Tokyo, Japan; [7]National Cerebral & Cardiovascular Center Research Institute, Suita, Japan

1444. **2D Diffusion Weighted Chemical Shift Imaging of Brain Metabolites at 7T**
Aranee Techawiboonwong[1], Hermien Kan[2], Maarten Versluis[2], Andrew Webb[2], Itamar Ronen[2]
[1]Electrical Engineering, Mahidol University, Puttamonton, Nakornpathom, Thailand; [2]C. J. Gorter Center for High Field MRI, Radiology, Leiden University Medical Center, Netherlands

1445. **Single Voxel MR Spectroscopy Data Quality & Metabolite Signature of the Isolated Amygdala**
Lisa Angelos[1], Brendon M. Nacewicz[1], Andrew L. Alexander[1,2], Richard J. Davidson[1,3]
[1]Waisman Brain Imaging Laboratory, University of Wisconsin -- Madison, Madison, WI, United States; [2]Department of Medical Physics, University of Wisconsin -- Madison, Madison, WI, United States; [3]Department of Psychology, University of Wisconsin -- Madison, Madison, WI, United States

1446. **Define Impact of Fasting on Human Brain Acid-Base Homeostasis using Natural Abundance ^{13}C & ^{31}P MRS**
Napapon Sailasuta[1], Kent C. Harris[1], Thao Tran[1], Brian D. Ross[1]
[1]Magnetic Resonance Spectroscopy Unit, Huntington Medical Research Institute, Pasadena, CA, United States

1447. **Changes in Foot Orientation Alters Residual Dipolar Couplings of Creatine & Phosphocreatine in the Skeletal Muscle of Rats**
Nikita Agarwal[1], Loyola D'Silva[1], Sambasivam S. Velan[1]
[1]Laboratory of Molecular Imaging, Singapore Bioimaging Consortium, Singapore, Singapore

1448. **Multi Task Bayesian Compressed Sensing in Sparse 2D Spectroscopy**
Trina Kok[1], Berkin Bilgic[1], Elfar Adalsteinsson[1,2]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

1449. **Bringing Quantitative Clinical Routine MR-Spectroscopy & Clinical MR-Image Viewing Together: Novel JMRUI Plug-Ins for DICOM-Network File Transfer DICOM Image Stack Analysis**
Johannes Slotboom[1], Dirk van Ormondt[2], Danielle Graveron-Demilly[3], Dan Stefan[4], Caspar Brekenfeld[1], Roland Wiest[1], Gerhard Schroth[1], Olivier Scheidegger[1]
[1]DRNN-DIN/SCAN, University Hospital Berne, Berne, Switzerland; [2]Applied Physics, Delft University of Technology, Delft, Netherlands; [3]Laboratoire Creatis-LRMN, Université Claude Bernard LYON 1, Lyon, France; [4]Alter Systems

1450. **Highly Resolved 2D ISIS CT-PRESS in Human Brain using Enhanced Window for Shifted Echoes**
Hidehiro Watanabe[1], Nobuhiro Takaya[1], Fumiyuki Mitsumori[1]
[1]Environmental Chemistry Division, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan

1451. **Improved SNR Efficiency in MR Spectroscopy with the Fast Pade Transform**
Sun Kim[1], Glen Morrell[2]
[1]School of Medicine, University of Utah, Salt Lake City, UT, United States; [2]Radiology, University of Utah, Salt Lake City, UT, United States

1452. **Ultrafast High-Resolution J-Resolved Spectroscopy in Inhomogeneous Fields**
Zhong Chen[1], Yulan Lin[1], Zhiyong Zhang[1], Shuhui Cai[1]
[1]Department of Physics, Fujian Key Laboratory of Plasma and Magnetic Resonance, Xiamen University, Xiamen, Fujian, China, People's Republic of

1453. Grid-Based Shimming of Single-Voxel MRS
Judd M. Storrs[1,2], Mohan Jayatilake[1,3], Wen-Jang Chu[1,2], Jing-Huei Lee[1,4]
[1]Center for Imaging Research, University of Cincinnati, Cincinnati, OH, United States; [2]Department of Psychiatry & Behavioral Neuroscience, University of Cincinnati, Cincinnati, OH, United States; [3]Department of Physics, University of Cincinnati, Cincinnati, OH, United States; [4]School of Energy, Environmental, Biological & Medical Engineering, University of Cincinnati, Cincinnati, OH, United States

1454. Analysis of Saturated T_2 Curves for Rapid Relaxometry Measurements in PRESS Localization
Jack Knight-Scott[1]
[1]Radiology, CHOA, Atlanta, GA, United States

MRS of Cells, Body Fluids & Others

Exhibition Hall Thursday 13:30-15:30

1455. A Novel 5mm NMR-Compatible Micro-Spindle Bioreactor for Steady-State & Dynamic in Cell NMR
Kayvan R. Keshari[1], Mark Van Criekinge, Daniel Vigneron, John Kurhanewicz
[1]UCSF, San Francisco, CA, United States

1456. Insight Into Neural Cell Metabolism by NMR – Employing UDP-GlcNAc as a Unique Metabolic Marker
Anika Gallinger[1], Mailin Doepkens[1], Thorsten Biet[1], Luc Pellerin[2], Thomas Peters[1]
[1]Institute of Chemistry, University of Luebeck, Luebeck, Germany; [2]Department of Physiology, University of Lausanne, Lausanne, Switzerland

1457. A New Small-Volume MR-Compatible Hollow-Fiber Bioreactor Cell Culture System
Jean-Philippe Galons[1,2], Logan Robinson[3], Mike Bower[4], Joseph Divijak[4], Greg Russell[5], Ted Trouard[1,4]
[1]Radiology, University of Arizona, Tucson, AZ, United States; [2]Cancer Center, University of Arizona, Tucson, AZ, United States; [3]Chemical Engineering, University of Arizona, Tucson, AZ, United States; [4]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [5]Physics, University of Arizona, Tucson, AZ, United States

1458. Application of Excitation Sculpting in the Quantification of Conjugated Bile Acids in Bile
Omkar B. Ijare[1], Tedros Bezabeh[1], Nils Albiin[2], Annika Bergquist[2], Urban Arnelo[2], Matthias Lohr[2], Ian C. P. Smith[1]
[1]National Research Council Institute for Biodiagnostics, Winnipeg, Manitoba, Canada; [2]Karolinska University Hospital, Karolinska Institutet, Huddinge, Stockholm, Sweden

1459. 'Mycolates & Phenolic Glycolipids as Biomarker for Tubercular Ascites' : A Proton Magnetic Resonance Spectroscopic Approach
Abhinav Arun Sonkar[1], Shatakshi Shrivastav[2], Raghuvendra Kumar[3], Amita Jain[4], Raja Roy[5]
[1]Surgery, CSM Medical University, Lucknow, Uttar pPradesh, India; [2]Center for Bio Magnaetic Resonance , SGPGI, Lucknow, Uttar Pradesh, India; [3]Surgery, CSM Medical University(King Georges Medical University), Lucknow, Uttar Pradesh, India; [4]Microbiology, CSM Medical University, Lucknow, Uttar Pradesh, India; [5]Center for Bio Magnetic Resonance, SGPGI, Lucknow, Uttar Pradeshi, India

1460. *In Vivo* High-Resolution Magic Angle Spinning Proton NMR Spectroscopy of Drosophila Melanogaster Flies as a Model System to Investigate Mitochondrial Dysfunction in Trauma
Valeria Righi[1,2], Georgios Apidianakis[3], Nikos Psychogios[1,2], Laurence G. Rahme[3], Ronald G. Tompkins[4], Aria A. Tzika[1,2]
[1]Department of Surgery, NMR Surgical Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Athinoula A.Martinos Center of Biomedical Imaging, Boston, MA, United States; [3]Department of Surgery, Molecular Surgery Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [4]Department of Surgery, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States

1461. Preliminary Study on MR Spectroscopy Measurements for Metabolomic Change During Adipogenic Differentiation of Human Mesenchymal Stem Cell
Song I. Chun[1], Dong Hwa Kim[1], Jee Hyun Cho[2], Kwan Soo Hong[2], Jung Woog Shin[1], Chi Woong Mun[1,3]
[1]Biomedical Engineering, Inje University, Gimhae, Korea, Republic of; [2]Korea Basic Science Institute, Cheongwon-Gun, Chungcheongbuk-Do, Korea, Republic of; [3]First Research Group, Inje University, Korea, Republic of

Microscopy

Exhibition Hall Monday 14:00-16:00

1462. Balanced SSFP Imaging using a Biplanar MR Microscope
Andrey V. Demyanenko[1], Julian Michael Tyszka[1]

[1]Biology, California Institute of Technology, Pasadena, CA, United States

1463. Ultra-High Resolution 3D Anatomical MRI of the *Ex Vivo* Retina at 10x10x14µm
Bryan H. De La Garza[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, Opthamology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1464. Mitigation of Transmit Crosstalk in Multiple-Mouse MRI
Jonathan Bishop[1], Brige Chugh[2], R. Mark Henkelman[1,2], John G. Sled[1,2]
[1]Hospital for Sick Children, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto

1465. Non-Invasive Monitoring of Alterations in Rabbit Hearts with Aging using MR Microscopy
Min-Sig Hwang[1,2], Katja E. Odening[3], Bum-Rak Choi[3], Gideon Koren[3], Stephen J. Blackband[1,2], John R. Forder[1,4]
[1]McKnight Brain Institute, Gainesville, FL, United States; [2]Neuroscience, University of Florida, Gainesville, FL, United States; [3]Cardiovascular Research Center, the Rhode Island Hospital, Alpert Medical School of Brown University, Providence, RI, United States; [4]Radiology, University of Florida, Gainesville, FL, United States

1466. Histological Confirmation of Aplysia Californica Neuron Structure Observed using MR Microscopy
Choong H. Lee[1,2], Jeremy Joseph Flint[3,4], Michael Fey[5], Franck Vincent[5], Stephen Blackband[4,6]
[1]Electrical Engineering, University of Florida, Gainesville, Fl, United States; [2]McKnight Brain Institute, Gainesville , Fl, United States; [3]Neuroscience, University of Florida, Gainesville, Fl, United States; [4]McKnight Brain Institute, Gainesville, Fl, United States; [5]Bruker Biospin; [6]National High Magnetic Field Laboratory, Tallahassee, Fl, United States

1467. Magnetic Microparticle Size Optimization for Susceptibility Contrast Imaging
Nina Olamaei[1], Frederick Gosselin, Farida Cheriet, Sylvain Martel
[1]École Polytechnique Montréal, Montreal, QC, Canada

1468. *In-Utero* Imaging of the Early Mouse Embryo
Prodromos Parasoglou[1,2], Cesar a Berrios-Otero[2,3], Brian J. Nieman[4], Daniel H. Turnbul[2,3]
[1]Skirball Institute of Biomolecular Medicine, New York University School of Medicine , New York, United States; [2]Department of Radiology, New York University School of Medicine, New York, United States; [3]Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, United States; [4]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada

ESR

Exhibition Hall Tuesday 13:30-15:30

1469. Detection of Blood-Brain Barrier Disruption in a Mouse Model of Transient Cerebral Ischemia by EPR Imaging
Hirotada G. Fujii[1], Katsuya Kawanishi[2], Hideo Sato-Akaba[3], Miho Emoto[1], Hiroshi Hirata[4]
[1]Center for Medical Education, Sapporo Medical Univeristy, Sapporo, Hokkaido, Japan; [2]Health Sciences University of Hokkaido, Japan; [3]Osaka University, Japan; [4]Hokkaido University, Japan

1470. Simultaneous CW-EPR Imaging of Isotopic Nitroxyl Radicals
Anna Pawlak[1], Ryohei Ito[1], Hirotada Fujii[2], Hiroshi Hirata[1]
[1]Division of Bioengineering & Bioinformatics, Graduate School of Information Science & Technology, Hokkaido University, Sapporo, Hokkaido, Japan; [2]Center for Medical Education, Sapporo Medical University, Sapporo, Hokkaido, Japan

1471. EPR-Based PH Mapping with a Method of Partially Scanned Spectral-Spatial Imaging
Shunichi Koda[1], Jonathan Goodwin[1], Valery Khramtsov[2], Hirotada Fujii[3], Hiroshi Hirata[1]
[1]Division of Bioengineering & Bioinformatics, Graduate School of Information Science & Technology, Hokkaido University, Sapporo, Hokkaido, Japan; [2]Davis Heart & Lung Research Institute & The Division of Cardiovascular Medicine, The Ohio State University, Columbus, OH, United States; [3]Center for Medical Education, Sapporo Medical University, Sapporo, Hokkaido, Japan

1472. Effects of a Novel Mitochondrial Peptide on Redox Status as Measured by EPR in Drosophila Melanogaster Post-Trauma
Nikolaos Psychogios[1], Harold M Swartz[2], Hazel Szeto[3], Ronald G. Tompkins, Nadeem Khan[2], Aria A. Tzika[1]
[1]NMR Surgical Laboratory, Department of Surgery, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [2]EPR Center for Viable Systems, Department of Diagnostic Radiology, Dartmouth Medical School, Hanover, NH, United States; [3]Department of Pharmacology, Joan & Sanford I. Weill Medical College of Cornell University, Joan & Sanford I. Weill Medical College of Cornell University, New York, NY, United States

1473. Characterization of Human Melanomas by EPR Imaging
Quentin Godechal[1], Philippe Leveque[1], Liliane Marot[2], Jean-Francois Baurain[2], Bernard Gallez[1]
[1]Louvain Drug Research Institute, Biomedical Magnetic Resonance Research Group, University of Louvain, Brussels, Belgium; [2]Cliniques Universitaires Saint Luc, Brussels, Belgium

Elastography

Exhibition Hall Wednesday 13:30-15:30

1474. Interleaved Spiral Sequence for MR Elastography of the Brain
Curtis L. Johnson[1], Danchin D. Chen[1], Armen A. Gharibans[1], William C. Olivero[2,3], Bradley P. Sutton[3,4], John G. Georgiadis[1,3]
[1]Department of Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Department of Neurosurgery, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Beckman Institute for Advanced Science & Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [4]Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

1475. Revealing the Origin of Attenuation in Tissue: Pure Absorption or Multiple Scattering?
Ralph Sinkus[1], Sverre Holm[2], Bojan Guzina[3], Sven Peter Näsholm[2], Philippe Garteiser[1], Sabrina Doblas[1], Bernard E. Van Beers[1], Valérie Vilgrain[1]
[1]Dept. of Radiology, CRB3, Hôpital Beaujon (U773), INSERM, Clichy, France; [2]Dept. of Informatics, University of Oslo, Norway; [3]Department of Civil Engineering, University of Minnesota, Minneapolis, United States

1476. MR Elastography of Mice in Experimental Autoimmune Encephalitis
Kerstin Riek[1], Isabell Hamann[2], Jason Millwald, Caspar Pfueller, Sebastian Hirsch[1], Dieter Klatt, Jürgen Braun[3], Carmen Infante-Duarte, Ingolf Sack[1]
[1]Department of Radiology, Charité University Medicine, Berlin, Germany; [2]Cecilie-Vogt-Klinik für Neurologie, Charité University Medicine; [3]Institute of Medical Informatics, Charité University Medicine, Berlin, Germany

1477. Prostate MRE at 3T: Trans-Perineal Wave Propagation
Ramin Sebastian Sahebjavaher[1], Ali Baghani[1], Ralph Sinkus[2], Septimiu E. Salcudean[1]
[1]Electrical & Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada; [2]Laboratoire Ondes et Acoustique, ESPCI, Paris, France

1478. Progressive Change in Biomechanical Properties of *Ex Vivo* Prostate with Pathology Fixation as Measured by MR Elastography at 7 Tesla, & Correlation with Changes in T_1, T_2 & ADC
Deirdre Maria McGrath[1], Warren D. Foltz[1], Kristy K. Brock[1,2]
[1]Radiation Medicine Program, Princess Margaret Hospital, Toronto, Ontario, Canada; [2]Department of Radiation Oncology, University of Toronto, Toronto, Ontario, Canada

1479. Combined MRE & SPAMM Tagged MRI for the Analysis of Large Strain Soft Tissue Mechanical Properties
Kevin Mattheus Moerman[1,2], Andre M. J. Sprengers[2], Ciaran Knut Simms[1], Anneloes E. Bohte[2], Rolf M. Lamerichs[3], Ralph Sinkus[4], Aart J. Nederveen[2]
[1]Trinity Centre for Bioengineering, University of Dublin, Trinity College, Dublin, Ireland; [2]Radiology Department, Academic Medical Centre, Amsterdam, Netherlands; [3]Philips Research, Eindhoven, Netherlands; [4]Radiology Department, CRB3, Hôpital Beaujon (U773), INSERM, Clichy, France

1480. Investigation of the Anisotropic Properties of White Matter Tracts in the Human Brain using Waveguide Constrained MR Elastography
Anthony Joseph Romano[1], Michael Scheel[2], Sebastian Hirsch[3], Juergen Braun[4], Ingolf Sack[3]
[1]Physical Acoustics, Naval Research Laboratory, Washington, DC, United States; [2]Department of Radiology, Charite Universitatsmedizin, Berlin, Germany; [3]Department of Radiology, Charite-Universitatsmedizin, Berlin, Germany; [4]Institute of Medical Informatics, Charite-Universitatsmedizin, Berlin, Germany

1481. Magnetic Resonance Elastography of the Cerebellum
John Zhang[1], Michael Green[1,2], Ralph Sinkus[3], Lynne Bilston[1,4]
[1]Neuroscience Research Australia, Randwick, NSW, Australia; [2]University of NSW, Sydney, NSW, Australia; [3]Centre de Recherches Biomédicales Bichat-Beaujon, INSERM U773, CRB3, Paris, France; [4]Prince of Wales Clinical School, University of NSW, Sydney, NSW, Australia

1482. Wide Frequency Range Shear Modulus Dispersion of Soft Tissue Samples Measured by Magnetic Resonance Elastography
Dieter Klatt[1], Kerstin Riek[2], Hassan Nuzha[1], Susanne Müller[3], Ingolf Sack[1], Jürgen Braun[2]
[1]Radiology, Charité - Universitätsmedizin Berlin, Berlin, Germany; [2]Medical Informatics, Charité - Universitätsmedizin Berlin, Berlin, Germany; [3]Neurology, Charité - Universitätsmedizin Berlin, Berlin, Germany

1483. Biomechanical Property Quantification of Prostate Cancer by Quasi-Static MR Elastography at 7 Telsa of Radical Prostatectomy & Correlation with Whole Mount Histology
Deirdre Maria McGrath[1], Warren D. Foltz[1], Navid Samavati[1], Jenny Lee[1], Michael A. Jewett[2], Theodorus H. van Der Kwast[3], Cynthia Ménard[1], Kristy K. Brock[1,4]

[1]Radiation Medicine Program, Princess Margaret Hospital, Toronto, Ontario, Canada; [2]Department of Surgical Oncology, Princess Margaret Hospital, Toronto, Ontario, Canada; [3]Department of Pathology, University Health Network, Toronto, Ontario, Canada; [4]Department of Radiation Oncology, University of Toronto, Toronto, Ontario, Canada

1484. Magnetic Resonance Elastography with an Air Ball-Vibrator
Tomokazu Numano[1], Yoshihiko Kawabata[2], Toshikatsu Washio[3], Kazuyuki Mizuhara[4], Naotaka Nitta[3], Kazuhiro Homma[3]
[1]Radiological Science, Tokyo Metropolitan University, Arakawa,, Tokyo, Japan; [2]Takashima Seisakusho Co.,Ltd., Hino, Tokyo, Japan; [3]National Institute of Advanced Industrial Science & Technology (AIST), Tsukuba, Ibaraki, Japan; [4]TOKYO DENKI UNIVERSITY, Tokyo, Japan

1485. MR Elastography of Liver Transplant Patients using Parallel Imaging Techniques
Dieter Klatt[1], Patrick Asbach[1], Carsten Kamphues[2], Sebastian Hirsch[1], Sebastian Papazoglou[1], Jürgen Braun[3], Ingolf Sack[1]
[1]Institute of Radiology, Charite - University Medicine, Berlin, Germany; [2]Dept Gen Visceral & Transplantat Surg, Charite - University Medicine, Berlin, Germany; [3]Institute of Medical Informatics, Charite - University Medicine, Berlin, Germany

1486. Three Dimensional Shear Wave Scattering MR Elastography.
Sebastian Papazoglou[1], Sebastian Hirsch[1], Dieter Klatt[1], Jürgen Braun[2], Ingolf Sack[1]
[1]Department of Radiology, Charité University Medicine, Berlin, Germany; [2]Institute of Medical Informatics, Charité University Medicine, Berlin, Germany

1487. Validation of Fast Dynamic SPAMM Tagged MRI Based Measurement of Non-Linear 3D Soft Tissue Deformation
Kevin Mattheus Moerman[1,2], Andre M. J. Sprengers[2], Ciaran Knut Simms[1], Rolf M. Lamerichs[3], Jaap Stoker[2], Aart J. Nederveen[2]
[1]Trinity Centre for Bioengineering, University of Dublin, Trinity College, Dublin, Ireland; [2]Radiology Department, Academic Medical Centre, Amsterdam, Netherlands; [3]Philips Research, Eindhoven, Netherlands

1488. Cross-Platform Comparison of Brain MRE
Matthew C. Murphy[1], Kevin .J Glaser[1], Bradley D. Bolster, Jr.[2], Daniel V. Litwiller[3], Scott A. Kruse[1], Richard L. Ehman[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [2]MR R&D Collaborations, Siemens Healthcare, Rochester, MN, United States; [3]Global Applied Science Laboratory, GE Healthcare, Rochester, MN, United States

Non-Proton MRI

Exhibition Hall Thursday 13:30-15:30

1489. *In Vivo* Sodium Imaging of Kidney using 3D Ultrshort Echo Time Sequence
Raffi Kalayciyan[1], Friedrich Wetterling[1], Sabine Neudecker[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Medical Research Center, Heidelberg University, Mannheim, Germany

1490. High Resolution *In-Vivo* Measurement of Sodium T_1 of Human Knee Cartilage
Rebecca Emily Feldman[1], Robb Stobbe[1], Ander Watts[1], Christian Beaulieu[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

1491. Chemical Shift Sodium Imaging of the Rat Brain During $TmDOTP^{5-}$ Infusion
Patrick Michael Heiler[1], Saema Ansar[2], Saskia Grudzenski[2], Friedrich Wetterling[1], Simon Konstandin[1], Stephen Meairs[2], Marc Fatar[2], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Experimental Neurology, Heidelberg University, Mannheim, Germany

1492. Intracellular Volume Fraction Measurements using Single Quantum Sodium MRI.
Lazar Fleysher[1], Donatello Arienzo[1,2], Niels Oesingmann[3], Matilde Inglese[1,4]
[1]Radiology, NYU School of Medicine, New York, United States; [2]Biobehavioral SCI, UCLA, United States; [3]Siemens Medical Solutions USA, Malvern, PA, United States; [4]Neurology, NYU School of Medicine, New York, United States

1493. A Comparison of Imaging Sequences for Sodium MR Imaging on a 9.4T Whole Body Machine
Sandro Romanzetti[1], Christian Carlo Mirkes[1], Daniel Fiege[1], A. A. Celik[1], Jörg Felder[1], N. J. Shah[1,2]
[1]Institute of Neuroscience & Medicine, Research Centre Juelich, 52425 Juelich, NRW, Germany; [2]Department of Neurology, Faculty of Medicine, JARA,, RWTH Aachen University, 52074 Aachen, Germany

1494. Clinically-Constrained Resolution-Optimized FlexTPI Acquisition Parameters for the Tissue Sodium Concentration Bioscale
Ian C. Atkinson[1], AIming Lu[1], Keith R. Thulborn[1]
[1]Center for Magnetic Resonance Research, University of Illinois at Chicago, Chicago, IL, United States

1495. High-Resolution Sodium Imaging of the Human Brain at 4T
Daniel Pascal Fiege[1], Christian Carlo Mirkes[1], Ana-Maria Oros-Peusquens[1], Sandro Romanzetti[1], N. Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine, Forschungszentrum Jülich, Jülich, NRW, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, NRW, Germany

1496. Total Sodium Brain Concentrations in Compartments of Patient with Multiple Sclerosis. a Preliminary *In Vivo* ^{23}Na MRI Study
Wafaa Zaaraoui[1], Simon Konstandin[2], Armin M. Nagel[3], Tobias Wichmann[4], Dominik Berthel[4], Sylviane Confort-Gouny[1], Patrick J. Cozzone[1], Bertrand Audoin[1,5], Jean Pelletier[1,5], Lothar R. Schad[2], Jean-Philippe Ranjeva[1]
[1]CRMBM UMR CNRS 6612, Marseille, France, Metropolitan; [2]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [3]Department of Medical Physics in Radiology, Heidelberg, Germany; [4]Rapid Biomedical GmbH, Rimpar, Germany; [5]Pôle de Neurosciences Cliniques, Service de Neurologie, Hôpital de La Timone, Marseille, France, Metropolitan

1497. Simultaneous Single-Quantum & Triple-Quantum Filtered Sodium Images at 4T *In Vivo*
Daniel Pascal Fiege[1], Sandro Romanzetti[1], N. Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine, Forschungszentrum Jülich, Jülich, NRW, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

1498. *In Vivo* Quantification of Tissue Sodium Concentration in the Human Brain by Means of a Centric SPRITE Sequence at 4T
Sandro Romanzetti[1], N. J. Shah[1,2]
[1]Institute of Neuroscience & Medicine, Research Centre Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, 52074 Aachen, Germany

1499. Intracellular Lithium by ^{7}Li MRS: Effect of Total Li Concentration in Brain
Richard A. Komoroski[1], Diana M. Lindquist[2], John M. Pearce[1]
[1]Center for Imaging Research, University of Cincinnati, Cincinnati, OH, United States; [2]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

1500. Measurement of $CMRO_2$ Changes by Somatosensory Stimulation in Rat using Oxygen-17 at 16.4 T
Hannes Michel Wiesner[1], Rolf Pohmann[1], David Zsolt Balla[1], Wei Chen[2], Kâmil Ugurbil[2], Kamil Uludag[3]
[1]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Radiology, Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [3]MBIC, Department of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands

1501. Simultaneous ^{23}Na/^{1}H Imaging with Dual Excitation & Double Tuned Birdcage Coil
Christian Stehning[1], Jochen Keupp[1], Jürgen Rahmer[1]
[1]Philips Research Laboratories, Hamburg, Germany

1502. Application of Compressed Sensing to ^{19}F Turbo Spin Echo Chemical Shift Imaging
Thomas Christian Basse-Luesebrink[1,2], Johannes Beck[1], Thomas Kampf[1], Andre Fischer[1,3], Gesa Weise[2], Guido Stoll[2], Peter Michael Jakob[1,3]
[1]Experimental Physics 5, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Neurology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [3]Magnetic Resonance Bavaria, Wuerzburg, Bavaria, Germany

Hyperpolarized ^{13}C

Exhibition Hall Monday 14:00-16:00

1503. Comparison of Models for Analysis of Flux Through Lactate Dehydrogenase in Glioblastoma Cells using Hyperpolarized [1-^{13}C]Pyruvate
Crystal Harrison[1], Ralph J. DeBerardinis[2,3], Chendong Yang[2], Ashish K. Jindal[1], A. Dean Sherry[1,4], Craig R. Malloy[1,5]
[1]Advanced Imaging Research Center, UT Southwestern, Dallas, TX, United States; [2]Pediatrics, UT Southwestern, Dallas, TX, United States; [3]McDermott Center for Human Growth & Development, UT Southwestern, Dallas, TX, United States; [4]Chemistry, UT Dallas, Richardson, TX, United States; [5]Veterans Affairs, North Texas Health Care System, Dallas, TX, United States

1504. In Situ Polarization Measurement of Hyperpolarized Solutions Prior to *In Vivo* 9.4T MR Experiments
Tian Cheng[1], Mor Mishkovsky[1,2], Arnaud Comment[1,2]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Université de Lausanne, Lausanne, Switzerland

1505. Hyperpolarized [1-^{13}C]-Lactate as a Tool for the *In Vivo* Investigation of Cardiac Metabolism
Dirk Mayer[1,2], Yi-Fen Yen[3], Ralph Hurd[3], Sonal Josan[1,2], Jae Mo Park[2], Adolf Pfefferbaum[1,4], Daniel Spielman[2]
[1]Neuroscience Program, SRI International, Menlo Park, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]GE Healthcare; [4]Psychiatry & Behavioral Sciences, Stanford University, Stanford, CA, United States

1506. Design & Performance of a Multi-Sample Dissolution Dynamic Nuclear Polarization Setup
Michael Batel[1], Marcin Krajewski[2], Kilian Weiss[2], Oliver With[1], Alexander Däpp[1], Andreas Hunkeler[1], Martin Gimersky[3], Matthias Ernst[1], Sebastian Kozerke[2]
[1]Laboratory of Physical Chemistry, ETH Zürich, Zürich, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zürich, Zürich, Switzerland; [3]Laboratory for Electromagnetic Fields and Microwave Electronics, ETH Zürich, Zürich, Switzerland

1507. Multi-Band Frequency Encoding Method for Metabolic Imaging with Hyperpolarized [1-^{13}C]Pyruvate
Cornelius von Morze[1], Galen Reed[1], Peter J. Shin[1], Peder E. Larson[1], Robert Bok[1], Simon Hu[1], Daniel B. Vigneron[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

1508. The Spin-Lattice Relaxation of Hyperpolarized ^{89}Y Complexes
Ashish K. Jindal[1], Lloyd Lumata[1], Yixun Xing[2], Matthew E. Merritt[1], Piyu Zhao[2], Craig R. Malloy[1], A. Dean Sherry[1,2], Zoltan Kovacs[1]
[1]Advanced Imaging, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Chemistry, University of Texas at Dallas, Richardson, TX, United States

1509. Novel Contrast Mechanism Via ParaHydrogen SElf Rfocussing
Jan Falk Dechent[1,2], Lisandro Buljubasich[2], Laura Maria Scheiber[1], Hans Wolfgang Spiess[2], Kerstin Münnemann[2]
[1]Section of Medical Physics, Johannes Gutenberg University Medical Center, Mainz, Germany; [2]Max Planck Institute for Polymer Research, Mainz, Germany

1510. The Effect of Hyperpolarized [1-^{13}C]Pyruvate Concentration on Metabolism in the Perfused Heart
Daniel Ball[1], Marie Schroeder[1], George Radda[1], Kieran Clarke[1], Damian Tyler[1]
[1]Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, Oxfordshire, United Kingdom

1511. *In Vivo* Measurement of Normal Rat Intracellular Pyruvate & Lactate Levels After Injection of Hyperpolarized [1-^{13}C]Alanine
Simon Hu[1], Hikari Yoshihara[1], Robert Bok[1], Peder E. Larson[1], John Kurhanewicz[1], Daniel B. Vigneron[1]
[1]Dept. of Radiology & Biomedical Imaging, University of California at San Francisco, San Francisco, CA, United States

1512. Effect of Lanthanide Ions on Dynamic Nuclear Polarization Enhancement & Liquid State T_1 Relaxation
Jeremy Gordon[1], Ian Rowland[1,2], Eric Peterson[3], Sean Fain[1,2]
[1]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Department of Radiology, University of Wisconsin-Madison, Madison, WI, United States; [3]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States

1513. Probing the Relaxation Mechanism that Interferes with Polarization Measurement using the C_2 Doublet of 1,2-[^{13}C]$_2$-Pyruvate
Justin Yat Cheong Lau[1,2], Albert P. Chen[3], Jianfeng Zhu[4], Gang Wu[4], Charles H. Cunningham[1,2]
[1]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [3]GE Healthcare, Toronto, Ontario, Canada; [4]Department of Chemistry, Queen's University, Kingston, Ontario, Canada

1514. The Influence of Bovine Serum Albumin on the T_1 Relaxation of [1-^{13}C]Pyruvate – a Study at Low Fields
Benjamin M. Pullinger[1], Stephen J. Kadlecek[1], Nicholas N. Kuzma[1], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States

1515. Optimisation of Murine Cardiac Hyperpolarized Magnetic Resonance Spectroscopy using Dynamic Nuclear Polarization
Michael Samuel Dodd[1], Beat Schuler[1], Vicky Ball[1], Daniel Ball[1], George K. Radda[1], Houman Ashrafian[2], Hugh Watkins[2], Kieran Clarke[1], Damian J Tyler[1]
[1]Physiology, Anatomy & Genetics, Oxford University, Oxford, United Kingdom; [2]Cardiovascular Medicine, Oxford University, Oxford, United Kingdom

1516. Hepatic Hyperpolarized ^{13}C Pyruvate Studies: Origin of Additional *In Vivo* Pyruvate Resonances
Eric T. Peterson[1], Jeremy W. Gordon[2], Sean B. Fain[2], Ian J. Rowland[2]
[1]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

1517. Retaining Polarization by Exploiting Reduced T_1 Relaxation of Hyperpolarized Spins at Low Field in Solution
Mark Van Criekinge[1], Kayvan R. Keshari, Daniel Vigneron, John Kurhanewicz
[1]UCSF, San Francisco, CA, United States

1518. Determination of Optimal Model Sampling Parameters for Hyperpolarized Contrast Agents
Eric T. Peterson[1], Matthew R. Smith[2], Joseph J. Grudzinski[2], Jeremy W. Gordon[2], Sean B. Fain[1,2]
[1]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

1519. Generation of Hyperpolarised Materials for Magnetic Resonance using High-Field Cryogenics
David G. Gadian[1], Kuldeep S. Panesar[2], Angel J. Perez Linde[3], Waldemar Senczenko[3], Anthony J. Horsewill[2], Walter Kockenberger[3], John R. Owers-Bradley[2]
[1]Imaging & Biophysics Unit, UCL Institute of Child Health, London, United Kingdom; [2]School of Physics & Astronomy, University of Nottingham, Nottingham, United Kingdom; [3]Sir Peter Mansfield MR Centre, School of Physics & Astronomy, University of Nottingham, Nottingham, United Kingdom

1520. Surface Coils for Cardiac Imaging using Hyperpolarized ^{13}C at 3T
William Dominguez-Viqueira[1], Angus Z. Lau[1,2], Albert P. Chen[3], Charles H. Cunningham[2,4]
[1]Imaging Research , Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [3]GE Healthcare, Toronto, Ontario, Canada; [4]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

1521. First Step to ^{19}F Hyperpolarization of Biocompatible Substrates Generated Via Parahydrogen-Transfer
Ute Bommerich[1], Thomas Trantzschel[2], Joachim Bargon[3], Gerd Buntkowsky[4], Johannes Bernarding[2]
[1]SLNIB, Leibniz Institute for Neurobiology, Magdeburg, Germany; [2]IBMI, University of Magdeburg, Magdeburg, Germany; [3]Institute of Physical Chemistry, University of Bonn, Bonn; [4]Eduard-Zintl-Institute for Inorganic & Physical Chemistry, Technical University Darmstadt

1522. Advanced Parallel Imaging Techniques for Metabolic Imaging with Hyperpolarised ^{13}C
Rolf F. Schulte[1], Jonathan I. Sperl[1], Axel Haase[2], Marco Irkens[3], Michael Manglberger[3], Eliane Weidl[4], Guido Kudielka[1], Markus Schwaiger[4], Florian Wiesinger[1]
[1]GE Global Research, Munich, Germany; [2]IMETUM, Technische Universitaet Muenchen, Munich, Germany; [3]Rapid Biomedical, Würzburg, Germany; [4]Department for Nuclear Medicine, Technische Universitaet Muenchen, Munich, Germany

Perfusion & Permeability Methodology

Exhibition Hall Tuesday 13:30-15:30

1523. Classification of Two-Site Exchange Models for DCE-MRI
Steven Sourbron[1], David L. Buckley[1]
[1]Division of Medical Physics, University of Leeds, Leeds, United Kingdom

1524. Effect of T_1 & Flip Angle Errors on Hepatic Arterial Fraction Calculation
Daniel Wilson[1]
[1]Medical Physics, Leeds Teaching Hospitals, Leeds, West Yorkshire, United Kingdom

1525. Quantification of Blood-Brain Barrier Permeability in the Mouse Brain *In Vivo*: A Longitudinal Study
Jieun Kim[1], Nancy Berman[2], Phil Lee[1]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Department of Anatomy & Cell Biology, University of Kansas Medical Center, Kansas City, KS, United States

1526. Utility of Cardiac Gating for Pulmonary Perfusion MRI
Kang Wang[1], Mark Schiebler[2], Christopher Francois[2], Alejandro Munoz Del Rio[1,2], Frank Korosec[1], Sean Fain[1], Scott Nagle[2]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States

1527. *In Vitro* Skin Penetration Measurement with Contrast-Enhanced MRI at 7 Tesla
Maximilian N. Voelker[1], Jan M. Burg[2], Peggy Schlupp[3], Ulf Maeder, Alexander M. Koenig[1], Johannes T. Heverhagen[1]
[1]Diagnostic Radiology, Philipps University Marburg, Marburg, Hessen, Germany; [2] Institute of Medical Physics & Radiation Protection, University of Applied Sciences Giessen-Friedberg, Giessen, Germany; [3]Institute of Biopharmaceutical Technology, University of Applied Sciences Giessen-Friedberg, Giessen, Germany

1528. Series Expansion of Multi-Compartment Models for DCE-MRI
Steven Sourbron[1]
[1]Division of Medical Physics, University of Leeds, Leeds, United Kingdom

1529. Pulsed Arterial Spin Labelling Perfusion Imaging at 3T: Estimating the Number of Subjects Required in Common Designs of Clinical Trials
Kevin Murphy[1], Ashley D. Harris[1], Ana Diukova[1], Christopher John Evans[1], David J. Lythgoe[2], Fernando Zelaya[2], Richard G. Wise[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]King's College London, Institute of Psychiatry, Centre for Neuroimaging Sciences, DeCrespigny Park, Denmark Hill, London, United Kingdom

1530. Approximating Water Exchange *In Vivo* in a Rat Model
Colleen Bailey[1,2], Firas Moosvi[1,2], Greg J. Stanisz[1,2]
[1]Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada

1531. The Impact of Water Exchange on Dynamic Contrast Enhanced MRI: Can We Estimate Tissue Water Residence Times *In Vivo*?
Lauren Jean Bains[1,2], Josephine H. Naish[1,2], David L. Buckley[3]
[1]Imaging Sciences Research Group, University of Manchester, Manchester, Greater Manchester, United Kingdom; [2]Biomedical Imaging Institute, Manchester, Greater Manchester, United Kingdom; [3]Division of Medical Physics, University of Leeds, Leeds, United Kingdom

1532. Correction of Base-Line [Gd] Offsets Due to Effective Saturation Pulse Flip-Angle Variations in 3T Liver DCE-MRI
Andrew Brian Gill[1,2], Andrew N. Priest[2], Richard T. Black[1], David J. Bowden[2], Martin J. Graves[2], David J. Lomas[2]
[1]Medical Physics, Addenbrooke's Hospital, Cambridge, United Kingdom; [2]Radiology, University of Cambridge, Cambridge, United Kingdom

Drug Discovery

Exhibition Hall Thursday 13:30-15:30

1533. Pharmacological MRI with Continuous ASL in Conscious Rats: Characterizing the Relationship Between CBF Response to CNS Compounds & Plasma Concentration Levels
Alexandre Coimbra[1], Denise Welsh[1], Diane Posavec[1], Amy Vanko[1], Richard Baumgartner[2], Christopher Regan[3], Andrew Danziger[3], Matthew Baran[3], Kristina Groover[3], Jacquelynn Cook[1], Joseph Lynch[3], Jason Uslaner[3], Donald Williams[1]
[1]Imaging, Merck & Co, Inc, West Point, PA, United States; [2]Biometrics, Merck & Co, Inc, Rahway, NJ, United States; [3]Central Pharm, Merck & Co, Inc, West Point, PA

1534. Assessment of DCEMRI with Gadoxetate as a Biomarker of Drug Induced Cholestasis
Jose Ulloa[1], Simone Stahl[2], Neil Woodhouse[1], Guy Healing[2], Gerry Kenna[2], John C. Waterton[1], Paul Hockings[1]
[1]Translational Sciences, AstraZeneca, Macclesfield, Cheshire, United Kingdom; [2]Safety Assessment, AstraZeneca, Macclesfield, Cheshire, United Kingdom

1535. Antibiotic Minocycline Suppressess the PhMRI Response to Acute Ketamine Challenge
Duncan Jack Hodkinson[1], Diana Cash[2], Steve C. R. Williams[2], Shane McKie[3], John Francis W. Deakin[3], Steve R. Williams[1]
[1]Imaging Science & Biomedical Engineering, University of Manchester, Manchester, United Kingdom; [2]Neuroimaging Research Group, Institute of Psychiatry, King's College London, London, United Kingdom; [3]Neuroscience & Psychiatry Unit, University of Manchester, Manchester, United Kingdom

1536. *In Vivo* Target Analysis by MRI in a Murine Model of Pulmonary Fibrosis
Nicolau Beckmann[1], Anna L. Babin[2], Christelle Gerard[1], Catherine Cannet[1], Helmut Sparrer[3], Pierre Saint-Mezard[4], Gabor Jarai[5], Tetsuya Matsuguchi[6]
[1]Global Imaging Group, Novartis Institutes for BioMedical Research, Basel, Switzerland; [2]Sackler Institute of Pulmonary Pharmacology, Kings College London, London, United Kingdom; [3]Autoimmune Diseases Department, Novartis Institutes for BioMedical Research, Basel, Switzerland; [4]Developmental & Molecular Pathways Department, Novartis Institutes for BioMedical Research, Basel, Switzerland; [5]Respiratory Diseases Department, Novartis Institutes for BioMedical Research, Horsham, United Kingdom; [6]Department of Developmental Medicine, Kagoshima University Graduate School of Medical & Dental Sciences, Kagoshima, Japan

1537. Cerebral Amyloid Angiopathy in APP_{23} Mice Modelling Alzheimer's Disease Studied Non-Invasively by MRI: Application to Passive Amyloid-Beta Immunotherapy
Nicolau Beckmann[1], Christelle Gerard[1], Dorothee Abramowski[2], Catherine Cannet[1], Matthias Staufenbiel[2]
[1]Global Imaging Group, Novartis Institutes for BioMedical Research, Basel, Switzerland; [2]Neuroscience Discovery, Novartis Institutes for BioMedical Research, Basel, Switzerland

1538. ***In Vivo*** **MR Approaches to Validate the Capacity of a New Vanadium Compound as a Promising Anti-Diabetic Drug**
Ana Marguerita Martins Metelo[1], Rocio Pérez-Carro[1], Maria M. C. A. Castro[2], Pilar López-Larrubia[1]
[1]Instituto de Investigaciones Biomédicas "Alberto Sols", CSIC/UAM, Madrid, Spain; [2]Dept. Life Sciences, Faculty of Science and Technology, University of Coimbra, Coimbra, Portugal

fMRI Characteristics

Exhibition Hall Wednesday 13:30-15:30

1539. **Spin Echo Hemodynamic Impulse Response at 7T**
Jeroen Cornelis Willem Siero[1,2], Nick F. Ramsey[1], Johannes Marinus Hoogduin[1,2], Peter R. Luijten[2], Natalia Petridou[1,2]
[1]Rudolf Magnus Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

1540. **Correlation of Post-Stimulus Undershoot with BOLD Response in Event-Related FMRI**
Xiaopeng Zong[1], Jie Huang[1,2]
[1]Department of Radiology, Michigan State University, East Lansing, MI, United States; [2]Neuroscience Program, Michigan State University, East Lansing, MI, United States

1541. **Stimulus-Evoked Response in Cutaneous Veins as Measured by Whole Brain FMRI**
Evgeniya Kirilina[1], Ruediger Bruehl[2], Bernd Ittermann[2], Arthur Jacobs[1]
[1]Free University of Berlin, Berlin, Germany; [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany

1542. **Quantitative OEF Determination by Separate T_2 & T_2* Mapping**
Moritz Bernhard Mie[1], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

1543. **Subtle Physiologic Rate Differences Affect Group fMRI Studies**
Erik B. Beall[1], Lael Stone[2], Robert J. Fox[2], Michael D. Phillips[1], Mark J. Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neurologic Institute, Cleveland Clinic, Cleveland, OH, United States

1544. **Error Analysis of QBOLD Technique for Measurement Brain Hemodynamics**
Xiaoqi Wang[1], Alexander L. Sukstanskii[2], Dmitriy a Yablonskiy[1,2]
[1]Department of Physics, Washington University, St. Louis, MO, United States; [2]Department of Radiology, Washington University, St. Louis, MO, United States

1545. **Relationship between fMRI Signals in the Resting-State (R-fMRI) & Task (T-fMRI)**
Sridhar Kannurpatti[1], Bart Rypma[2], Bharat Biswal[1]
[1]Radiology, UMDNJ-New Jersey Medical School, Newark, NJ, United States; [2]School of Behavioral & Brain Sciences, University of Texas at Dallas, Dallas, TX, United States

1546. **Cerebral Arterial Blood R_2^* & Volume Measurements During Stimulation**
Tae Kim[1], Soeng-Gi Kim[1]
[1]Neuroimaging Laboratory, Radiology, University of Pittsburgh, Pittsburgh, PA, United States

1547. **Arterial Contribution to the BOLD fMRI Response to Somatosensory Stimulation in Rats**
Yoshiyuki Hirano[1], Afonso C. Silva[2]
[1]Cerebral Microcirculation Unit, Laboratory of Functional & Molecular Imaging, National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States; [2]Cerebral Microcirculation Unit, Laboratory of Functional & Molecular Imaging,, National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States

1548. **Functional Changes in Cerebral Blood Flow & Transit-Time to Somatosensory Stimulation Measured with Dynamic Arterial Spin Labeling**
Renata Ferranti Leoni[1,2], Draulio Barros de Araujo[2], Afonso Costa Silva[1]
[1]Cerebral Microcirculation Unit, National Institute of Neurological Disorders & Stroke - NIH, Bethesda, MD, United States; [2]Department of Physics & Mathematics, University of Sao Paulo, Ribeirao Preto, Sao Paulo, Brazil

EEG & fMRI

Exhibition Hall Monday 14:00-16:00

1549. Thalamic & Cortical Substrates of Large-Scale Neuronal Oscillations Assessed with Simultaneous EEG-fMRI
Zhongming Liu[1], Jacco A. de Zwart[1], Peter van Gelderen[1], Li-Wei Kuo[1], Jeff H. Duyn[1]
[1]Advanced MRI section, Laboratory of Functional & Molecular Imaging, NINDS, National Institutes of Health, Bethesda, MD, United States

1550. The Electrophysiological Basis of Negative BOLD in Default Mode Network
Joanne R. Hale[1], Peter G. Morris[1], Matthew J. Brookes[1]
[1]SPMMRC, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

1551. Neuroelectrical Basis of the Resting-State BOLD Global Signal as Determined with Simultaneous EEG-fMRI
Chi Wah Wong[1], Valur Olafsson[1], Omer Tal[1], Anna Leigh Rack-Gomer[1], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California San Diego, La Jolla, CA, United States

1552. Identifying the Sources of the Pulse Artefact in EEG Recordings Made Inside an MR Scanner.
Karen J. Mullinger[1], Jade Havenhand[1], Richard W. Bowtell[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

1553. Morphology of the fMRI Magnitude Response to Interictal Spikes: Timing, Amplitude & the Dip
Padmavathi Sundaram[1,2], William M. Wells[2], Robert V. Mulkern[1], Mukund Balasubramanian[1], Ellen J. Bubrick[3], Darren B. Orbach[1,2]
[1]Radiology, Children's Hospital Boston, Boston, MA, United States; [2]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [3]Neurology, Brigham & Women's Hospital, Boston, MA, United States

1554. A Spatiotemporal Signal Space Projection Method for Artifact Reduction in Simultaneous EEG-fMRI Acquisitions
Valur Olafsson[1], Omer Tal[1], Chi Wah Wong[1], Thomas Liu[1]
[1]Department of Radiology, University of California San Diego, La Jolla, CA, United States

1555. Simultaneous Intracranial EEG-fMRI in Humans: Data Quality
David William Carmichael[1], Serge Vulliemoz[1,2], Roman Rodionov[1], Karin Rosenkranz[1], Andrew McEvoy[3], Louis Lemieux[1,4]
[1]Clinical & Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom; [2]Epilepsy Unit, University Hospital & University of Geneva, Geneva, Switzerland; [3]Victor Horsley Dept. Neurosurgery, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [4]MRI Unit, National Society for Epilepsy, Chalfont St. Peter, United Kingdom

1556. An Empirical Investigation of Motion Effects During EMRI of Interictal Epileptiform Spikes
Padmavathi Sundaram[1,2], Robert V. Mulkern[1], William M. Wells[2], Christina Triantafyllou[3], Tobias Loddenkemper[4], Ellen J. Bubrick[5], Darren B. Orbach[1,2]
[1]Radiology, Children's Hospital Boston, Harvard Medical School, Boston, MA, United States; [2]Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [3]Brain & Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]Neurology, Children's Hospital Boston, Harvard Medical School, Boston, MA, United States; [5]Neurology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States

1557. EEG Acquisition in Ultra-High Static Magnetic Field Up to 9.4T
Irene Neuner[1,2], Tracy Warbrick[1], Martina Reske[1], Jörg Felder[1], Avdo Celik[1], Nadim Jon Shah[1,3]
[1]Institute of Neuroscience and Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Psychiatry & Psychotherapy, JARA, RWTH Aachen University, Aachen, Germany; [3]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

1558. Delayed BOLD in the Somatosensory Cortex & Its Possible Relationship to Beta Band Event Related Synchronisation
Fan Wang[1], Claire Stevenson[1], Matthew Brookes[1], Peter Morris[1]
[1]Sir Peter Mansfield MR Centre, Nottingham, Nottinghamshire, United Kingdom

1559. Spatial & Temporal Characteristics of Evoked & Induced Neural & Vascular Responses Assessed with Simultaneous EEG-fMRI
Zhongming Liu[1], Jacco A. de Zwart[1], Peter van Gelderen[1], Li-Wei Kuo[1], Jeff H. Duyn[1]
[1]Advanced MRI Section, Laboratory of Functional & Molecular Imaging, NINDS, National Institutes of Health, Bethesda, MD, United States

1560. Evoked & Induced Somatosensory EEG Responses Predict Activity in Resting State Networks in Simultaneous fMRI Data During Median Nerve Stimulation.
Stephen D. Mayhew[1], Karen J. Mullinger[2], Andrew P. Bagshaw[1], Richard W. Bowtell[2], Susan T. Francis[2]
[1]Birmingham University Imaging Centre, School of Psychology, University of Birmingham, Birmingham, United Kingdom; [2]Sir Peter Mansfield Magnetic Resonance Centre, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

Human fMRI

Exhibition Hall Tuesday 13:30-15:30

1561. Effects of Autonomic Stimulation on the Brain at Rest & Engaged by Cognitive Task: An fMRI Investigation
Barbara Basile[1], Andrea Bassi[2], Giovanni Calcagnini[3], Pietro Cortelli[4], Carlo Caltagirone[2,5], Marco Bozzali[1]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]Department of Clinical & Behavioural Neurology, Santa Lucia Foundation, Rome, Italy; [3]Department of Technology & Health, Italian Institute of Health, Rome, Italy; [4]Department of Neurological Science, University of Bologna, Bologna, Italy; [5]Department of Neuroscience, University of Rome 'Tor Vergata', Rome, Italy

1562. Effects of Inspiratory & Expiratory Loading Upon Global & Stimulus Evoked CBF
Anja Hayen[1,2], Mari Herigstad[1,2], Richard G. Wise[3], Kyle T. S. Pattinson[1,2]
[1]Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, Oxfordshire, United Kingdom; [3]School of Psychology, Cardiff University, CUBRIC, Cardiff, United Kingdom

1563. Relationship of Basal Cerebral Blood Flow, Thickness of Cortical Gray Matter & Fractional Anisotropy of Cerebral White Matter in Adolescents
Ai-Ling Lin[1], Peter Kochunov[1], Peter T. Fox[1], Amy Ramage[1], Hsiao-Ying Wey[1], Timothy Q. Duong[1], Douglas Williamson[2]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Department of Psychiastry, University of Texas Health Science Center, San Antonio, TX, United States

1564. Cerebral Blood Flow & BOLD MRI During Isometric Exercise-Induced Increase in Blood Pressure
David A. Ravaee[1], Claudia Huerta[1], Hsiao-Ying Wey[1], Ai-Ling Lin[1], Timothy Duong[1]
[1]University of Texas Health Science Center, San Antonio, TX, United States

1565. Transient Neural Plasticity in Human Motor Cortex
Kuang-Chi Tung[1], Feng Xu[1], Jinsoo Uh[1], Hanzhang Lu[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

1566. Performance Related Brain Differences in Real-Time fMRI Neurofeedback of Imagined Hand Motor Activity
Mark Chiew[1,2], Stephen M. LaConte[3], Simon James Graham[1,4]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Rotman Research Institute, Toronto, Ontario, Canada; [3]School of Biomedical Engineering, Virginia Tech, Blacksburg, VA, United States; [4]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

1567. Between-Group Racial Differences in the Relation of Brain Function to Intelligence
Vincent Jerome Schmithorst[1], Scott Kerry Holland[1]
[1]Radiology, Children's Hospital Medical Center, Cincinnati, OH, United States

1568. Is BA 44 Part of the Human Mirror Neuron System? a fMRI Study.
Monia Cabinio[1,2], Gabriella Cerri[3], Paola Borroni[4], Valeria Blasi[1], Antonella Iadanza[1], Andrea Falini[1,2]
[1]Neuroradiology - CERMAC, San Raffaele Scientific Institute, Milan, Italy; [2]Vita-Salute San Raffaele University, Milan, Italy; [3]Department of Human Physiology, University of Milan, Milan, Italy; [4]Department of Medicine, Surgery & Dental Sciences, University of Milan, Milan, Italy

1569. The Functional Selectivity for Lexical Search Guided by Letter, Semantic Category & Sentential Cues: an fMRI Investigation
Yunqing Li[1,2], Prasanna Karunanayaka[1], Jianli Wang[1], Paul J. Eslinger[3], Dana M. Lochman[1], Ping Li[4], Qing Yang[1,5]
[1]Radiology, The Pennsylvania State University, Hershey, PA, United States; [2]Radiology, Tianjin Medical University, Tianjin, China, People's Republic of; [3]Neural & Behavioral Sciences, The Pennsylvania State University, Hershey, PA, United States; [4]Psychology, The Pennsylvania State University, University Park, PA, United States; [5]Neurosurgery, The Pennsylvania State University, Hershey, PA, United States

1570. Probing the Brain's Valuation & Choice Systems with 7T fMRI
Fabian Grabenhorst[1], Stefan Maderwald[2], Frank P. Schulte[2,3], Matthias Brand[2,3]

[1]University of Cambridge, Department of Physiology, Development & Neuroscience, Cambridge, United Kingdom; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [3]University Duisburg-Essen, General Psychology: Cognition, Duisburg, Germany

1571. Brain Activation in Response to Visually Evoked Sexual Arousal Ln Male-To-Female Transsexuals: 3.0 Tesla Functional MRI

Seok-Kyun Oh[1], Gwang-Won Kim[2], Jong-Chul Yang[3], Seok-Kwun Kim[4], Gwang-Woo Jeong[2,5]
[1]Research Institute for Medical Imaging (RIMI), Department of Radiology, Chonnam National University Hospital, Gwangju, Korea, Republic of; [2]Interdisciplinary Program of Biomedical Engineering, Chonnam National University, Gwangju, Korea, Republic of; [3]Department of Psychiatry, Chonbuk National University Medical School, Jeonju, Korea, Republic of; [4]Department of Plastic & Reconstructive Surgery, Dong-A University College of Medicine, Busan, Korea, Republic of; [5]Department of Radiology, Chonnam National University Medical School and Hospital, Gwangju, Korea, Republic of

1572. Cortical Activation in Superior Temporal Gyrus & Fusiform Gyrus Modulated by Congruence of Emotional Content in Music & Face

Jeong-Won Jeong[1], Vaibhav Diwadkar[2], Carla D. Chugani[3], Harry T. Chugani[4], Diane C. Chugani[5]
[1]Pediatrics, Neurology, Wayne State University, Detroit, MI, United States; [2]Psychiatry, Behavioral Neuroscience, Wayne State University, Detroit, MI, United States; [3]Florida Gulf Coast University; [4]Pediatrics, Neurology, Radiology, Wayne State University, Detroit, MI, United States; [5]Pediatrics, Radiology, Wayne State University, Detroit, MI, United States

Non-Human fMRI

Exhibition Hall Wednesday 13:30-15:30

1573. Resting Functional Connectivity Between Amygdala & DlPFC Predicts Anxious Temperament in the Rhesus Monkey

Rasmus Matthias Birn[1], Steven E. Shelton[1], Jonathan A. Oler[1], Andrew S. Fox[2], Richard J. Davidson[1,2], Ned H. Kalin[1]
[1]Department of Psychiatry, University of Wisconsin, Madison, WI, United States; [2]Department of Psychology, University of Wisconsin, Madison, WI, United States

1574. Functional Interpretations of the Resting-State Networks in Nonhuman Primates

Hsiao-Ying Wey[1,2], Angela R. Laird[1,2], Peter T. Fox[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1575. Optimizing Negative fMRI Response in the Rat Striatum Under Isoflurane Anesthesia

Yen-Yu Ian Shih[1], Shiliang Huang[1], Timothy Q Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1576. Layer-Specific fMRI of Visual Stimulation in the Rat Retina: Responses to Different Stimulation Luminance, Frequency & Color

Yen-Yu Ian Shih[1], Bryan H. De La Garza[1], Eric R. Muir[1], Li Guang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1577. Flow-Metabolism Uncoupling & Extended Longevity as Observed with a Transgenic Mice Model

Ai-Ling Lin[1], Peter T. Fox[1], Holly Van Remmen[2], Arlan G. Richardson[2], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Barshop Institute for Logevity & Aging Studies, University of Texas Health Science Center, San Antonio, TX, United States

1578. Facilitation of the BOLD Response to Bilateral Somatosensory Stimulation in Awake Marmosets

Yoshiyuki Hirano[1], Junjie Liu[2], Afonso C. Silva[2]
[1]Cerebral Microcirculation Unit, Laboratory of Functional & Molecular Imaging, National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States; [2]Cerebral Microcirculation Unit, Laboratory of Functional & Molecular Imaging,, National Institute of Neurological Disorders & Stroke, National Institutes of Health,, Bethesda, MD, United States

1579. BOLD fMRI of the Mouse Barrel Cortex

Nathalie Just[1,2], Carl Petersen[3], Rolf Gruetter[1,4]
[1]LIFMET, CIBM/EPFL, Lausanne, Switzerland; [2]Department of Radiology, UNIL, Lausanne, Switzerland; [3]LSENS, EPFL, Lausanne, Switzerland; [4]Department of Radiology, UNIL& HUG, Lausanne & Geneve, Switzerland

1580. Resting-State Functional Connectivity Across Primate Species: Implications of Evolutionary Hemispheric Asymmetry

Hsiao-Ying Wey[1,2], Peter Kochunov[1,2], Peter T. Fox[1,2], Angela R. Laird[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

1581. Analgesic Action Sites of Pregabalin by fMRI of Spinal Cord & Brain in Anesthetized Rats & Its Qualification Against Behavioral Assay in Awake Rats
Fuqiang Zhao[1], Denise Welsh[1], Mangay Williams[1], Hongyu Annie Liang[2], Alexandre Coimbra[1], Mark O. Urban[2], Mark Bowlby[2], Richard Hargreaves[2], Jeffrey L. Evelhoch[1], Donald S. Williams[1]
[1]Imaging, Merck, West Point, PA, United States; [2]Neuroscience, Merck, West Point, PA, United States

1582. Comparing Results of Median Nerve Stimulation between Healthy & C7 Donor Rats Utilizing BOLD fMRI at 9.4T
Jack B. Stephenson, IV[1], Rupeng Li[2], Patrick Hettinger[1], Matthew Runquist[2], Christopher P. Pawela[2], Ji Geng Yan[1], Hani Matloub[1], James Hyde[2]
[1]Plastic Surgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

1583. TRPV1-Mediated Entry of QX-314 Leads to Inhibition of Nociceptive Input as Measured by BOLD fMRI in Mice using Thermal Stimulation
Simone Claudia Bosshard[1], Florian Stuker[1], Constantin von Deuster[1], Markus Rudin[1,2]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Institute of Pharmacology & Toxicology, University Zürich, Zurich, Switzerland

1584. Characterization of Somatosensory BOLD Response Deficit & Recovery after Traumatic Brain Injury in Rat
Juha-Pekka Niskanen[1,2], Antti M. Airaksinen[1], Alejandra Sierra[1], Joanna K. Huttunen[1], Pasi A. Karjalainen[2], Jari Nissinen[1], Asla Pitkänen[1,3], Olli Gröhn[1]
[1]Department of Neurobiology, A. I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland; [2]Department of Physics & Mathematics, University of Eastern Finland, Kuopio, Finland; [3]Department of Neurology, Kuopio University Hospital, Kuopio, Finland

1585. Cocaine-Induced Activity in the Rat Hippocampus using PhMRI
S. K. Hekmatyar[1], Madhu M. Keralapurath[2], Jason Clark[2], Sherri Hammond[2], John J. Wagner[2]
[1]BioImaging Research Center, University of Georgia, Athens, GA, United States; [2]Department of Physiology & Pharmacology, University of Georgia, Athens, GA, United States

1586. Evaluation of Pharmacological Responses by Quantitative T_2 fMRI
Joanna K. Huttunen[1], Antti M. Airaksinen[1], Kimmo Lehtimäki[2], Juha-Pekka Niskanen[1,3], Juha Yrjänheikki[2], Olli Gröhn[1]
[1]A. I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland; [2]Discovery & Imaging Services, Cerebricon Ltd / Charles River Labs, Kuopio, Finland; [3]Department of Physics & Mathematics, University of Eastern Finland, Kuopio, Finland

1587. Pain fMRI Response in Anesthetized Rats Correlates with Behavioral Response to Pain in Awake Rats
Fuqiang Zhao[1], Denise Welsh[1], Mangay Williams[1], Hongyu Annie Liang[2], Alexandre Coimbra[1], Mark O. Urban[2], Mark Bowlby[2], Richard Hargreaves[2], Jeffrey L. Evelhoch[1], Donald S. Williams[1]
[1]Imaging, Merck, West Point, PA, United States; [2]Neuroscience, Merck, West Point, PA, United States

1588. Neural Source of Laminar fMRI Responses Examined with Temporal Frequency Visual Stimuli
Cecil Chern-Chyi Yen[1], Hiro Fukuda[2], Seong-Gi Kim[2]
[1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [2]Neuroimaging Lab Radiology, University of Pittsburgh, Pittsburgh, PA, United States

1589. Direct Imaging of Microvascular & Macrovasular Contributions by Time Resolved BOLD fMRI Allows Better Separation of Whisker Rows in the Rodent Barrel Cortex
Xin Yu[1], Stephen Dodd[1], Afonso Silva[1], Alan Koretsky[1]
[1]NINDS, NIH, Bethesda, MD, United States

1590. Functional Magnetic Resonance Spectroscopy of the Rat Barrel Cortex
Nathalie Just[1], Rolf Gruetter[1]
[1]LIFMET, CIBM/EPFL, Lausanne, Switzerland

1591. Orthogonal Diffusion Measurements in the Mouse Hypothalamus by MRI Reveal Cerebral Activity in the Fed or Fasted States
Blanca Lizarbe[1], Ania Benitez[1], Pilar Lopez-Larrubia[1], Sebastian Cerdan[1]
[1]Instituto Investigaciones Biomedicas "Alberto Sols", Madrid, Spain

Functional Connectivity Studies

Exhibition Hall Thursday 13:30-15:30

1592. Reliability of Functional & Effective Connectivity of the Resting State Motor Network in Healthy Subjects
Tejaswini Kavallappa[1], Steven Roys[2], Anindya Roy[3], Joel Greenspan[2], Rao Gullapalli[2], Alan McMillan[2]
[1]Dept. of Nuclear Medicine & Diagnostic Radiology, Univeristy of Maryland School of Medicine, Baltimore, MD, United States; [2]University of Maryland School of Medicine; [3]University of Maryland Baltimore County

1593. Two New-Discovered Functional Networks of Resting Brains
Yi Chia Li[1], Jyh Horng Chen[2]
[1]Graduate Institute of Biological Engineering & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan

1594. Stimulating Brain Tissue with Light - Resting State fMRI Analysis
Tuomo Starck[1,2], Juuso Nissilä[3], Antti Aunio[3], Ahmed Abou Elseoud[1,2], Jukka Remes[1], Juha Nikkinen[1], Markku Timonen[4,5], Timo Takala[6], Osmo Tervonen[1,2], Vesa Kiviniemi[1,2]
[1]Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [2]Diagnostic Radiology, Oulu University, Oulu, Finland; [3]Valkee Ltd, Finland; [4]Department of Psychiatry, Oulu University, Finland; [5]Institute of Health Sciences, Oulu University, Finland; [6]ODL Health ltd, Oulu, Finland

1595. Self-Organizing Group Level Independent Component Analysis Reveals Task-Related Activity as Well as Resting State Networks During Auditory Stimulation
Elizabeth Quattrocki Knight[1,2], Xiaoying Fan[3], Blaise Frederick[4], Marc Kaufman[4], Bruce Cohen[2,3]
[1]Psychiatry, McLean Hospital, Belmont, MA, United States; [2]Psychiatry, Harvard Medical School, Boston, MA, United States; [3]Frazier Research Institute, McLean Hospital, Belmont, MA, United States; [4]Brain Imaging Center, McLean Hospital, Belmont, MA, United States

1596. Interference of Default Mode Neural Network by Visual Stimulation & Subject's Attention Depending on the Resting Functional MRI
Yasuhiro Funakoshi[1], Tomomi Sumiyoshi, Masafumi Harada[2], Hitoshi Kubo[2]
[1]Medidcal Imaging, University of Tokushima, Tokushima, Japan; [2]Health Biosciences, University of Tokushima

1597. Functional Network of Hand Prehension : Validation by fMRI Network Connectivity
Tzu-Chen Yeh[1,2], Chou-Ming Cheng[1], Bi-Yu Hsu[1], Jo-Mei Huang[2]
[1]Department of Medical Research & Education, Taipei Veterans General Hospital, Taipei, Taiwan; [2]Insitute of Brain Science, National Yang-Ming University, Taipei, Taiwan

1598. Hippocampal Connectivity Modulated by Menstrual Cycle:a Resting State Study
Xinyuan Miao[1], Thomas Zeffiro[2], Yan Zhuo[1]
[1]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, People's Republic of; [2]Neural Systems Group, Massachusetts General Hospital, United States

1599. Task Modulation of Intrinsic Low-Frequency Temporal Connectivity in the Brain Default Mode Network
Jingyuan Chen[1], Catie Chang[2], Kui Ying[1], Yan Zhu[1], Gary Glover[2]
[1]Tsinghua University, Beijing, China, People's Republic of; [2]Stanford University, Stanford, CA, United States

Functional Connectivity Analysis

Exhibition Hall Monday 14:00-16:00

1600. Impact of the Global Average in Resting State Functional Connectivity: Quantification of Anti-Correlations
Felix Carbonell[1], Pierre Bellec[2], Amir Shmuel[1]
[1]Montreal Neurological Institute, Montreal, Quebec, Canada; [2]Centre de recherche de l'institut de Gériatrie de Montréal

1601. A Graph-Theory Approach to Study the Effect of Cognitive Load on Resting State Networks
Tommaso Gili[1], Paolo Barucca[2], Francesco De Santis[2], Guido Caldarelli[3], Emiliano Macaluso[4], Bruno Maraviglia[2], Federico Giove[2]
[1]Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Dipartimento di Fisica, Università di Roma Sapienza, Roma, Italy; [3]CNR-ISC Dipartimento di Fisica, Università di Roma Sapienza, Roma, Italy; [4]Neuroimaging Laboratory, Santa Lucia Foundation, Roma, Italy

1602. Incorporation of Regional Homogeneity in Seed Definition for the Resting-State Functional MRI Analysis
Feng-Xian Yan[1], Yuan-Yu Hsu[2], Shi-Yu Cheng[3], Kun-Eng Lim[2], Ho-Ling Liu[3,4]

[1]Department of Medical Imaging & Radiological Sciences, Chang Gung University, Kwei-Shan, Tao-Yuan, Taiwan; [2]Department of Medical Imaging, Buddhist Tzu Chi General Hospital, Taipei, Taiwan; [3]Department of Medical Imaging & Radiological Sciences, Chang Gung University, Kwei-Shan, Tao-Yuan, Taiwan; [4]Department of Medical Imaging & Intervention, Chang Gung Memorial Hospital, Tao-Yuan, Taiwan

1603. Beyond Thresholding: Fully-Weighted Graph Representations of Brain Functional Connectivity
Adam J. Schwarz[1], John McGonigle[2]
[1]Psychological & Brain Sciences, Indiana University, Bloomington, IN, United States; [2]Computer Science, University of Bristol, Bristol, United Kingdom

1604. A Resting-State Connectivity Index with No Dependence on SNR & CNR
Ali Mohammad Golestani[1], Bradley G. Goodyear[1,2]
[1]Biomedical Engineering, University of Calgary, Calgary, Alberta, Canada; [2]Radiology & Clinical Neuroscience, University of Calgary, Calgary, Alberta, Canada

1605. Estimation of Resting State Network Activity using Multivariate Prediction Analysis Regression (MVPA-R)
Cameron Craddock[1], Stephen M. LaConte[1]
[1]School of Biomedical Engineering & Sciences, Virginia Tech, Blacksburg, VA, United States

1606. Individual Brain Parcellation Based on Single Subject ICA
Erik van Oort[1], David Norris[1]
[1]MR Techniques in Brain Function, Radboud University Nijmegen, Donders Institute, Nijmegen, Gelderland, Netherlands

1607. Principal Components Analysis Reveals the Correlation Structure of Resting-State fMRI Data
Hongjian He[1], Thomas T. Liu[2]
[1]Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of; [2]Center for Functional MRI & Department of Radiology, UC San Diego, La Jolla, CA, United States

1608. On Connectivity Within the Default Mode Network: An ICA & Tractography Approach
Erik van Oort[1], David Norris[1]
[1]MR Techniques in Brain Function, Radboud University Nijmegen, Donders Institute, Nijmegen, Gelderland, Netherlands

1609. Dynamic Functional Connectivity Measures using FcMRI
Thomas W. Allan[1], Matthew J. Brookes[1], Susan T. Francis[1], Penny A. Gowland[1]
[1]SPMMRM, University of Nottingham, Nottingham, United Kingdom

1610. The Spectral Power of Brain Oscillations Predicts the Functions of Brain Networks
Yi Chia Li[1], Jyh Horng Chen[2]
[1]Graduate Institute of Biological Engineering & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan

fMRI Analysis

Exhibition Hall Tuesday 13:30-15:30

1611. Complex & Magnitude-Only Preprocessing of 2D & 3D BOLD fMRI Data at 7 Tesla
Robert L. Barry[1,2], Stephen C. Strother[3,4], John C. Gore[1,2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Department of Radiology & Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Rotman Research Institute, Baycrest, Toronto, ON, Canada; [4]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

1612. Detecting fMRI Activation in K-Space for High Acceleration Factors
Gigi Galiana[1], Robert Todd Constable[1]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States

1613. The Bleeding Artifact of Spatially Constrained Canonical Correlation Analysis in Functional MRI
Dietmar Cordes[1], Mingwu Jin[1], Tim Curran[2], Rajesh Nandy[3]
[1]C-TRIC & Dept. of Radiology, University of Colorado-Denver, Aurora, CO, United States; [2]Dept. of Psychology & Neuroscience, University of Colorado-Boulder, Boulder, CO, United States; [3]Depts. of Biostatistic & Psychology, University of California-Los Angeles, Los Angeles, CA, United States

1614. Investigation of Efficient Implementation of Local Constrained Canonical Correlation Analysis for fMRI
Mingwu Jin[1], Rajesh Nandy[2], Dietmar Cordes[1]
[1]University of Colorada Denver, Aurora, CO, United States; [2]UCLA, Los Angeles, CA, United States

1615. A Multivariate Regression Framework for the Analysis of fMRI Data Accounting for Spatial Correlation
Rajesh Ranjan Nandy[1]

[1]Psychology & Biostatistics, University of California, Los Angeles, CA, United States

1616. Model-Free fMRI Group Analysis using FENICA

Veronika Schöpf[1,2], Christian Windischberger[1,2], Simon Robinson[1,3], Christian Kasess[1,4], Florian Ph. S. Fischmeister[1,5], Rupert Lanzenberger[4], Jessica Albrecht[6], Anna M. Kleemann[6], Rainer Kopietz[6], Martin Wiesmann[6,7], Ewald Moser[1,2]
[1]MR Centre of Excellence, Medical University Vienna, Vienna, Austria; [2]Center of Medical Physics & Biomedical Engineering, Medical University Vienna, Vienna, Austria; [3]Department of Radiology, Division of Neuroradiology, Medical University Vienna, Vienna, Austria; [4]Division of Biological Psychiatry, Department of Psychiatry & Psychotherapy, Medical University Vi, Vienna, Austria; [5]Faculty of Psychology, University of Vienna, Vienna, Austria; [6]Department of Neuroradiology, Ludwig-Maximilians-University, Munich, Germany; [7]Department of Neuroradiology, Technical University Aachen RWTH, Aachen, Germany

1617. Model-Based & Data-Driven Analysis of Whole Brain EVI Demonstrates Increased Statistical Power Compared to EPI at 3T

Radu Mutihac[1,2], Elena Ackley[1], Jochen Rick[3], Akio Yoshimoto[4], Maxim Zaitsev[3], Oliver Speck[5], Stefan Posse[1,6]
[1]Department of Neurology, University of New Mexico, Albuquerque, NM, United States; [2]Department of Electricity & Biophysics, University of Bucharest, Bucharest, Romania; [3]Department of Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [4]Polytechnic Institute of New York University, New York, United States; [5]Department Biomedical Magnetic Resonance, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany; [6]Department of Physics & Astronomy, University of New Mexico, Albuquerque, NM, United States

1618. Use of Independent Component Analysis to Define Regions of Interest for fMRI Studies

Jolinda Carol Smith[1], Scott H. Frey[1,2]
[1]Lewis Center for Neuroimaging, University of Oregon, Eugene, OR, United States; [2]Department of Psychology, University of Oregon, Eugene, OR, United States

1619. One-Step Thresholding for BOLD Signal Detection in Accelerated fMRI

Samir D. Sharma[1], Bosco S. Tjan[2], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States; [2]Psychology, University of Southern California, Los Angeles, CA, United States

1620. Development of a Reasonable Lateralization Index for Functional Magnetic Resonance Imaging

Kayako Matsuo[1], Annabel S.-H. Chen[2], Wen-Yih Isaac Tseng[1]
[1]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Division of Psychology, School of Humanities & Social Sciences, Nanyang Technological University, Singapore

1621. Multivariate Discrimination in Natural & Urban Scene Viewing

Scott James Peltier[1,2], Marc G. Berman[3], Yash Shah[2], Stephen Kaplan[3], John Jonides
[1]Functional MRI Laboratory, University of Michigan, Ann Arbor, MI, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [3]Psychology, University of Michigan, Ann Arbor, MI, United States

1622. Assessing (fMRI) Brain-Computer Interface Stability in ALS with Support Vector Machine

Robert Cary Welsh[1], Laura Jelsone-Swain[1], Veronika Schoepf[2], Scott J. Peltier[3]
[1]Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Radiology, Division of Neuroradiology, Medical University of Vienna, Vienna, Austria; [3]Functional MRI Laboratory, University of Michigan, Ann Arbor, MI, United States

1623. Class-Wise Contributions to Spatio-Temporal SVM Classification of fMRI Data

Rainer Boegle[1,2], Carolin Cyran[3], Stefan Glasauer[1,2], Marianne Dieterich[2,3]
[1]Center for Sensorimotor Research, Ludwig-Maximilians University, Munich, Germany; [2]Integrated Center for Research & Treatment of Vertigo, Ludwig-Maximilians University (IFBLMU), Munich, Germany; [3]Department of Neurology, Ludwig-Maximilians-University, Munich, Germany

1624. Automated Classification of SLE & APL Patients & Normal Controls using fMRI & DTI Features

An Vo[1], Aziz M. Ulug[1,2], E. Kozora[3,4], G. Ramon[5], J. Vega[5], R. D. Zimmerman[6], D. Erkan[5], M. D. Lockshin[5]
[1]The Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]Department of Radiology, Albert Einstein School of Medicine, Bronx, NY, United States; [3]National Jewish Health, Denver, CO, United States; [4]University of Colorado Medical Center, Denver, CO, United States; [5]Hospital for Special Surgery, New York, United States; [6]Weill Medical College of Cornell University, New York, United States

1625. Sub Millimiter Coregistration of Functional Maps Across Imaging Sessions

Jeremy Lecoeur[1], Feng Wang[2], Li Min Chen[2], Benoit M. Dawant[1], Malcolm J. Avison[2]
[1]Electrical Engineering & Computer Science, Vanderbilt University, Nashville, TN, United States; [2]Radiology & Radiological Science, Vanderbilt University Medical Center, Nashville, TN, United States

1626. Spatial Modeling of PhMRI Data with a Functional Basis Set

Adam J. Schwarz[1], Vesa Kiviniemi[2], Sara de Simoni[3], Steven C. R. Williams[3], Mitul A. Mehta[3]
[1]Translational Medicine, Eli Lilly & Company, Indianapolis, IN, United States; [2]Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [3]Centre for Neuroimaging Sciences, Institute of Psychiatry, London, United Kingdom

1627. BOLD Susceptibility Map Reconstruction from fMRI by 3D Total Variation Regularization
Zikuan Chen[1], Arvind Caprihan[1], Vince Calhoun[1,2]
[1]Mind Research Network, Albuquerque, NM, United States; [2]Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, United States

fMRI Acquisition & Artifacts

Exhibition Hall Wednesday 13:30-15:30

1628. Sensitivity & Specificity of MHASTE BOLD fMRI on MT/V5 Activation
Yongquan Ye[1], Jiani Hu[1], Jie Yang[1], Mark Haacke[1]
[1]Radiology, WSU, Detroit, MI, United States

1629. T_2- & T_2*-Weighted High-Resolution fMRI at 7T using Non-Balanced SSFP
Pål Erik Goa[1,2], Peter Jan Koopmans[2,3], Benedikt Andreas Poser[2,3], Markus Barth[2,3], David Gordon Norris[2,3]
[1]Department of Medical Imaging, St.Olav University Hospital, Trondheim, Norway; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [3]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands

1630. fMRI using High Flip-Angle Alternating Steady State Balanced SSFP Supported by Monte Carlo Studies
Steven Andrew Patterson[1,2], Steven Donald Beyea[1,3], Chris Van Bowen[1,3]
[1]Institute for Biodiagnostics (Atlantic), National Research Council Canada, Halifax, Nova Scotia, Canada; [2]Physics, Dalhousie University, Halifax, Nova Scotia, Canada; [3]Physics, Biomedical Engineering & Radiology, Dalhousie University, Halifax, Nova Scotia, Canada

1631. A Real-Time Feedback Optimization Method for Automatic Calibration of Functional Sensitivity-Band of Transition-Band BSSFP fMRI Sequence
Yu-Wei Tang[1], Teng-Yi Huang[1]
[1]Electrical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan

1632. A Novel Approach to Investigate the Impact of RF Pulses on the BOLD Contrast in Steady-State Pulse Sequences
Ute Goerke[1], Kamil Ugurbil[1]
[1]Radiology, Center for Magnetic Resonance Research, Minneapolis, MN, United States

1633. Spectral-Spatial Pulse Design with Spectral Decomposition
Cungeng Yang[1], Victor Andrew Stenger[1]
[1]University of Hawaii, Honolulu, HI, United States

1634. Matched Filter EPI Increases BOLD-Sensitivity in Human Functional MRI
Lars Kasper[1,2], Maximilian Häberlin[1], Christoph Barmet[1], Bertram Jakob Wilm[1], Christian C. Ruff[2,3], Klaas Enno Stephan[2,3], Klaas Paul Prüssmann[1]
[1]University & ETH Zurich, Institute for Biomedical Engineering, Zurich, Switzerland; [2]University of Zurich, Laboratory for Social & Neural Systems Research, Zurich, Switzerland; [3]University College of London, Wellcome Trust Centre for Neuroimaging, London, United Kingdom

1635. Improved Partial Fourier EPI using Tissue Susceptibility Matched Pyrolytic Graphite Foams
Gary Chiaray Lee[1], Caroline Jordan[2], Carlos Ruiz[3], Pamela Tiet[3], Brian Hargreaves[2], Ben Inglis[4], Steven Conolly[1]
[1]Berkeley/UCSF Bioengineering Joint Graduate Group, Berkeley, CA, United States; [2]Radiology, Stanford University; [3]Bioengineering, UC Berkeley, Berkeley, CA, United States; [4]Helen Wills Neuroscience Institute, Berkeley, CA

1636. Human fMRI at 9.4 T: Preliminary Results
Juliane Budde[1], Frank Mühlbauer[1], G. Shajan[1], Maxim Zaitsev[2], Rolf Pohmann[1]
[1]Max Planck Institute for Biological Cybernetics, Tuebingen, Germany; [2]University Hospital Freiburg, Freiburg, Germany

1637. Improved Detection of Functional Connectivity MRI with 32-Channel Phased Array Head Coil
Sheeba Arnold[1], Susan Whitfield-Gabrieli[2], Steven Shannon[1], John D. E. Gabrieli[2], Christina Triantafyllou[1,3]
[1]A.A. Martinos Imaging Center, McGovern Institute for Brain Research, MIT, Cambridge, MA, United States; [2]Deparment of Brain & Cognitive Sciences, Cambridge, MA, United States; [3]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH, Charlestown, MA, United States

1638. Resting-State Networks at Higher Frequencies: A Preliminary Study
Hsu-Lei Lee[1], Benjamin Zahneisen[1], Thimo Grotz[1], Pierre LeVan[1], Jürgen Hennig[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany

fMRI: Respiratory Challenges

Exhibition Hall Thursday 13:30-15:30

1639. Characterization of Static Field Effects of Paramagnetic Molecular Oxygen on BOLD-Modulated Hyperoxic Contrast Studies of the Human Brain

David Thomas Pilkinton[1,2], Santosh R Gaddam[2], Ravinder Reddy[1,2]

[1]Biochemistry & Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Magnetic Resonance & Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1640. Field Shift Due to Paramagnetic Effect of Molecular Oxygen

Kejia Cai[1], Kalli Grasley[1], Anup Singh[1], David Pilkinton[1], Mohammad Haris[1], Hari Hariharan[1], Mark Elliott[1], Ravinder Reddy[1]

[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

1641. Quantifying the Artefacts Caused by Hyperoxic Challenges

Ian Driver[1], Jack Harmer[1], Emma Hall[1], Susan Pritchard[1], Susan Francis[1], Penny Gowland[1]

[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

1642. Quantitation of Changes in Cerebral Blood Flow & Longitudinal Relaxation Rate ($R_1 = 1/T_1$) Induced by Mild Hyperoxia

Hajime Tamura[1], Tatsuo Nagasaka[2], Kazuki Shimada[2], Junki Nishikata[1], Miho Shidahara[1], Shunji Mugikura[3], Yoshio Machida[4]

[1]Department of Medical Physics, Tohoku University, Graduate School of Medicine, Sendai, Miyagi, Japan; [2]Department of Radiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [3]Department of Diagnostic Radiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [4]Department of Medical Imaging & Applied Radiology, Tohoku University, Graduate School of Medicine, Sendai, Miyagi, Japan

1643. Venous Vessel Size MRI in the Human Brain using Transient Hyperoxia

Yuji Shen[1], Trevor Ahearn[1], Matthew Clemence[2], Christian Schwarzbauer[1]

[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, United Kingdom; [2]Clinical Science MRI, Philips Healthcare, Surrey, United Kingdom

1644. Quantitative Evaluation of the Dynamic BOLD & CBF Responses to Breath Hold in Different Brain Territories

Wen-Cheng Chu[1], Yuan-Yu Hsu[2], Kun-Eng Lim[2], Ho-Ling Liu[1,3]

[1]Department of Medical Imaging & Radiological Sciences, Chang Gung University, Taoyuan County, Taiwan; [2]Buddhist Tzu Chi General Hospital, Taipei County, Taiwan; [3]Division of Medical Imaging & Intervention, Chang Gung Memorial Hospital, Taoyuan County, Taiwan

1645. Characterizing the BOLD Response to Transient Respiratory Challenges at 7 Tesla

Molly Gallogly Bright[1,2], Daniel P. Bulte[2], Peter Jezzard[2], Jeff H. Duyn[1]

[1]Advanced MRI Section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

1646. Determination of R_2* Across Multiple Postlabeling Delays in ASL & Comparison with Flow, Arterial Volume & Transit Times in Physiological Challenges

Yi-Ching Lynn Ho[1,2], Esben Thade Petersen[3], Xavier Golay[4]

[1]Center for Functionally Integrative Neuroscience, Aarhus, Denmark; [2]Neuroradiology, National Neuroscience Institute, Singapore, Singapore; [3]Clinical Imaging Research Centre, Singapore; [4]UCL Institute of Neurology, United Kingdom

1647. Hemodynamic Changes Can Be Detected in Rat White Matter using a Hypercapnic Challenge

Erin Lindsay Mazerolle[1,2], Chris V. Bowen[1,3], Drew R. DeBay[1], Kirk W. Feindel[1], James A. Rioux[1], Douglas D. Rasmusson[4], Kazue Semba[5], Ryan C. D'Arcy[1,6]

[1]Institute for Biodiagnostics (Atlantic), National Research Council, Halifax, Nova Scotia, Canada; [2]Neuroscience Graduate Program, Dalhousie University, Halifax, Nova Scotia, Canada; [3]Physics, Dalhousie University, Halifax, Nova Scotia, Canada; [4]Physiology & Biophysics, Dalhousie University, Halifax, Nova Scotia, Canada; [5]Anatomy & Neurobiology, Dalhousie University, Halifax, Nova Scotia, Canada; [6]Neuroscience, Dalhousie University, Halifax, Nova Scotia, Canada

1648. Comparison of Physiologic Modulators in Event-Related fMRI

Peiying Liu[1], Andrew C. Hebrank[2], Blair Flicker[2], Denise C. Park[2], Hanzhang Lu[1]

[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Center for Vital Longevity, University of Texas at Dallas, Dallas, TX, United States

1649. Dynamics of Cerebral Lactate During Acute Hypoxia

Ashley D. Harris[1], Richard A. E. Edden[2,3], Kevin Murphy[1], C. John Evans[1], Victoria Roberton[1], Danielle Huckle[4], Judith E. Hall[4], Neeraj Saxena[4], Damian M. Bailey[5], Richard G. Wise[1]

[1]CUBRIC - School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]Russell H Morgan Department of Radiology & Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [3]FM Kirby Research Centre for Functional MRI, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Department of Anaethetics, Cardiff University, Cardiff, United Kingdom; [5]Department of Health, Sport & Science, University of Glamorgan, Pontypridd, United Kingdom

1650. T_1 & T_2* Responses to Hypercapnic & Hyperoxic Gases in Normal Tissue Are Independent of the Order of Gas Delivery

Jeff D. Winter[1,2], Marvin Estrada[1], Hai-Ling Margaret Margaret Cheng[1,3]
[1]Physiology & Experimental Medicine, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Research & Development, IMRIS, Winnipeg, Manitoba, Canada; [3]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

Targeted Molecular Imaging

Exhibition Hall Monday 14:00-16:00

1651. Brain Tumor Angiogenesis can be Imaged by ^{19}F MRI: High Sensitivity Detection of Targeted PFOB Emulsion in U87 Human Glioblastoma Mouse Model

Céline Giraudeau[1], Françoise Geffroy[1], Aline Perrin[1], Boucif Djemaï[1], Benoît Thézé[2], Philippe Robert[3], Marc Port[3], Caroline Robic[3], Denis Le Bihan[1], Franck Lethimonnier[1], Julien Valette[1]
[1]NeuroSpin, Commissariat à l'Energie Atomique, Gif sur Yvette, France; [2]SHFJ, Commissariat à l'Energie Atomique, Orsay, France; [3]Guerbet, Research Division, Roissy Charles de Gaulle, France

1652. Targeted Iron Oxide Probes for Enhanced Macrophage Visualization by MRI & PET

Thomas S. C. Ng[1,2], Chuqiao Tu[3], Hargun Sohi[1], Heather Palko[3], Adrian House[3], Russell E. Jacobs[1], Angelique Y. Louie[3]
[1]Beckman Institute, California Institute of Technology, Pasadena, CA, United States; [2]Keck School of Medicine, University of Southern California, Los Angeles, CA, United States; [3]Biomedical Engineering, University of California, Davis, Davis, CA, United States

1653. Molecular MRI of Neurovascular Inflammation in a Mouse Stroke Model using Bimodal ICAM-1 Targeted Nanoparticles

Lisette Helene Deddens[1], Geralda A. Van Tilborg[1], Annette Van Der Toorn[1], Leonie E. Paulis[2], Gustav J. Strijkers[2], Klaas Nicolay[2], Gert Storm[3], Willem J. Mulder[4], Helga E. De Vries[5], Rick M. Dijkhuizen[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Biopharmacy & Pharmaceutical Techonology, Utrecht University, Utrecht, Netherlands; [4]Translational & Molecular Imaging Institute, Mount Sinai School of Medicine, New York, United States; [5]Molecular Cell Biology and Immunology, VU University Medical Center, Amsterdam, Netherlands

1654. Ultra-Short Echo Time ^{19}F/^{1}H Imaging of Gadolinium-Free Perfluoro-Carbon Nanoparticles: A Robust Method for in *Vivo* Angiogenesis Imaging

Jochen Keupp[1], Anne H. Schmieder[2], Todd A. Williams[2], J. S. Allen[2], Samuel A. Wickline[2], Gregory M. Lanza[2], Shelton D. Caruthers[2]
[1]Philips Research Europe, Hamburg, Germany; [2]C-TRAIN, Washington University School of Medicine, St. Louis, United States

1655. Dual-Targeting of αvβ3 –integrin & Galectin-1 Improves the Specificity of Paramagnetic, Fluorescent Liposome Association with Tumor Endothelium *In Vivo*

Ewelina Kluza[1], Igor Jacobs[1], Stefanie J. Hectors[1], Kevin H. Mayo[2], Arjan W. Griffioen[3], Gustav J. Strijkers[1], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Biochemistry, Molecular Biology & Biophysics, University of Minnesota, Minneapolis, United States; [3]Angiogenesis Laboratory, Department of Medical Oncology, VU Medical Center, Amsterdam, Netherlands

1656. Combined *In Vivo* Confocal Laser Scanning Microscopy & Magnetic Resonance Imaging to Study an αvβ3-Integrin Targeted Nanoemulsion

Sjoerd Hak[1], Marte Thuen[1], Peter A. Jarzyna[2], Willem J. M. Mulder[2], Tore Syversen[3], Catharina De Lange Davies[4], Olav Haraldseth[1]
[1]Department of Circulation & Medical Imaging, NTNU, Trondheim, Norway, Norway; [2]Translational & molecular imaging institute, Mount Sinai School of Medicine, New York, United States; [3]Department of Neuroscience, NTNU, Trondheim, Norway, Norway; [4]Department of Physics, NTNU, Trondheim, Norway, Norway

1657. αvβ3 -Targeted Nanoemulsions for Tumor Angiogenesis Phenotyping with MRI & NIRF Imaging

Peter Adalbert Jarzyna[1], Lisette Helene Deddens[2], Benjamin H Kann[1], Sarayu Ramachandran[1], Claudia Calcagno[1], Wei Chen[1], Anita Gianella[1], Rick M. Dijkhuizen[2], Arjan W. Griffioen[3], Zahi Adel Fayad[1], Willem J. M. Mulder[1]

[1]Translational & Molecular Imaging Institute, Radiology, Mount Sinai School of Medicine, New York, NY, United States; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [3]Angiogenesis Laboratory, Department of Medical Oncology, VU University Medical Center, Amsterdam, Netherlands

1658. Molecular MR Imaging of Liver Fibrosis with a Collagen-Targeting Gadolinium-Based Contrast Agent
Miloslav Polasek[1], Daniel T. Schühle[1], Bryan C. Fuchs[2], Jamu K. Alford[1], Ronald J. H. Borra[1], Kenneth K. Tanabe[2], Peter Caravan[1]
[1]Radiology, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital/Harvard Medical School, Charlestown, MA, United States; [2]Surgical Oncology, Massachusetts General Hospital/Harvard Medical School, Boston, MA, United States

1659. Multi-Functional Imaging Agents for Site-Specific Detection of Prostate Cancer
Quan-Yu Cai[1,2], Huifang Zhai[1], Prasanta nanda[1,2], Charles Smith[1,2], Lixin Ma[1,2]
[1]Radiology, University of Missouri, Columbia, MO, United States; [2]Harry S. Truman Memorial Veterans' Hospital, Columbia, MO, United States

1660. *In Vivo* Molecular MRI of ICAM-1 Expression in Murine Cardiac Ischemia/Reperfusion using a Liposomal Nanoparticle
Leonie E. Paulis[1], Igor Jacobs[1], Nynke M. van Den Akker[2], Bram F. Coolen[1], Tessa Geelen[1], Klaas Nicolay[1], Gustav J. Strijkers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Cardiology, University of Maastricht, Maastricht, Netherlands

1661. Targeted MnFe2O4-Erbitux-CyTE777 Nanoparticles Toward High EGFR Expressing Cancer Cells for *In Vitro & In Vivo* MR Imaging
Gin-Chung Liu[1,2], Yun-Ming Wang[3], Ming-Hong Chen[3], Kun-Liang Lin[3], Chiao-Yun Chen[1,4]
[1]Department of Medical Imaging, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan; [2]Department of Radiology, Kaohsiung Medical University, Kaohsiung, Taiwan; [3]Biological Science & Technology, National Chiao Tung University, Hsin Chu, Taiwan; [4]Department of Radiology, Kaohsiung Medical University, Taiwan

1662. A Peptide-Targeted MRI Contrast Agent for Cancer Molecular Imaging
Xueming Wu[1], Mingqian Tan[1], Zheng-Rong Lu[1]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

1663. The Binding of CNA-35 Conjugated Nanoparticles to Assembled Versus Disassembled Collagen Fibrils
Honorius M. H. F. Sanders[1,2], M. Iafisco[3], E. M. Pouget[2], P. H. H. Bomans[2], F. Nudelman[2], G. Fallini[3], G. de With[2], Maarten Merkx[4], N. A. J. M. Sommerdijk[2], Gustav J. Strijkers[1], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Laboratory of Materials & Interface Chemistry, Department of Chemistry, Eindhoven University of Technology, Eindhoven, Netherlands; [3]Università del Piemonte Orientale, Novara, Italy; [4]Biomedical Chemistry, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

1664. Multifunctional Nanoparticles Incorporating a Gadolinium Labelled Peptide for Therapuetic Delivery & Switchable MR Contrast Monitoring of Delivery
Gavin D. Kenny[1,2], Katharina Welser[3], Frederick Campbell[3], Aristides D. Tagalakis[1], Helen C. Hailes[3], Alethea B. Tabor[4], Mark F. Lythgoe[2], Stephen L. Hart[1]
[1]Molecular Immunology Unit ICH, University College London, London, United Kingdom; [2]UCL Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [3]Department of Chemistry, University College London, London, United Kingdom; [4]Department of Chemistry, UCL, London, United Kingdom

1665. VEGFR2 Expression in C6 & RG2 Glioma Models using Molecular MRI
Ting He[1], Nataliya Smith[1], Debra Saunders[1], Robert Silasi-Mansat[2], Florea Lupu[2], Megan Lerner[3], Rheal Towner[1]
[1]Advanced Magnetic Resonance Center, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [2]Cardiovascular Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [3]Surgery, University of Oklahoma Health Sciences Center, Oklahoma City, OK, United States

1666. Magnetic Resonance Imaging of c-Fos Gene Transcription After Burn Trauma using a Superior Contrast Agent
Valeria Righi[1,2], Aristarchos Papagiannaros[1,2], Jianxin He[3], George Dai[2], Laurence Rahme[3], Vitaliano Tugnoli[4], Philip K Liu[2], Ronald G. Tompkins[5], Bruce R. Rosen[2], Aria A. Tzika[1,2]
[1]Department of Surgery, NMR Surgical Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [2]Department of Radiology, Athinoula A. Martinos Center of Biomedical Imaging, Boston, MA, United States; [3]Department of Surgery, Molecular Surgery Laboratory, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States; [4]Departement of Biochemistry, University of Bologna, Bologna, Italy; [5]Department of Surgery, MGH & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States

Novel Contrast Agents & Labels

Exhibition Hall Tuesday 13:30-15:30

1667. Reduced Glutathione Rather than Oxygen Concentration Determines the Reduction Rate of Nitroimizadol Probes Used as Hypoxia Markers.

Jesus Pacheco-Torres[1,2], Paloma Ballesteros[2], Pilar Lopez-Larrubia[1], Sebastian Cerdan[1]
[1]Biomedical Research Institute "Alberto Sols" - CSIC/UAM, Madrid, Spain; [2]Laboratory of Organic Synthesis & Molecular Imaging, UNED, Madrid, Spain

1668. *In Vivo* Magnetic Resonance Imaging of Eu^{3+}-Based PARACEST Contrast Agents using SWIFT

Todd C. Soesbe[1], Osamu Togao[1], Masaya Takahashi[1], A. Dean Sherry[1,2]
[1]Advanced Imaging Research Center, The University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Chemistry, The University of Texas at Dallas, Dallas, TX, United States

1669. Nano-Size MR Probe Detects T Cells Infiltration in Bone Marrow & Growth Plate in Rat Model of Rheumatoid Arthritis

Chih-Lung Chen[1], Cheng-Hung Chou[2], Ming-Huang Lin[2], Wen-Yuan Hsieh[1], Hsin-Hsin Shen[1], Shian-Jy Wang[1], C. Chang[2]
[1]Industrial Technology Research Institute, Hsinchu, 310, Taiwan; [2]Academic Sinica, Taiwan

1670. R_2 Enhancement by Formation of a Tungsten-Iron Alloy Crystal in the Apoferritin Cavity

Veronica Clavijo Jordan[1], Kevin M. Bennett[1]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, United States

1671. Dual MRI-SPECT Agent for PH-Mapping

Eliana Gianolio[1], Luca Maciocco[2], Daniela Imperio[3], Giovanni Battista Giovenzana[3], Federica Simonelli[4], Kamel Abbas[4], Gianni Bisi[5], Silvio Aime[1]
[1]Dept. Chemistry IFM & Molecular Imaging Center, University of Torino, Torino, Italy, Italy; [2]Advanced Accelerator Applications (AAA), St. Genis Pouilly, France; [3]DiSCAFF, University of Eastern Piedmont "A. Avogadro", Novara, Italy; [4]European Commission Cyclotron, Institute for Health and Consumer Protection Joint Research Centre, Ispra (VA), Italy; [5], Nucl Med Serv, Azienda Osped San Giovanni Battista, Dipartimento Med Interna, University of Torino, Torino, Italy

1672. Imaging Hypoxia using a Nitroimidazole Based T_1 MR Contrast Agent

Praveen Kumar Gulaka[1], Federico a Rojas-Quijano[2], Zoltan Kovacs[2], Ralph P Mason[1,3], A. D. Sherry[2,3], Vikram D. Kodibagkar[1,3]
[1]Joint graduate program in Biomedical Engineering, UT Arlington & UT Southwestern Medical Center, Dallas, Tx, United States; [2]Advanced Imaging Research Center, UT Southwestern Medical Center; [3]Radiology, UT Southwestern Medical Center

1673. Measuring *In Vivo* Tumor PHe with a PARACEST MRI Contrast Agent

Vipul R. Sheth[1], Yuguo Li[2], Liu Qi Chen[3], Christine A. Howison[4], Mark D. Pagel[5]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States; [4]Arizona Research Laboratories, University of Arizona, Tucson, AZ, United States; [5]Biomedical Engineering and Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States

1674. Targeted Magnetoliposomes for Visualization of Hepatocytes

Ashwini A. Ketkar-Atre[1], Stefaan J. Soenen[2], Philip Roelandt[3], Tineke Notelaers[3], Greetje Vande Velde[4], Catherine Verfaillie[3], Marcel De Cuyper[5], Uwe Himmelreich[4]
[1]Biomedical NMR Unit/MoSAIC, , KULeuven Campus Gasthuisberg, Leuven, Flanders, Belgium; [2]Department of Pharmaceutical Sciences, Ghent University , Belgium; [3]Interdepartmental Stem Cell Institute, KULeuven Campus Gasthuisberg; [4]Biomedical NMR Unit/MoSAIC, KULeuven Campus Gasthuisberg, Leuven, Flanders, Belgium; [5]Lab of BioNanoColloids, KULeuven Campus Kortrijk, IRC, Belgium

1675. A Self-Calibrating PARACEST MRI Contrast Agent That Detects Esterase Enzyme Activity

Yuguo Li[1], Vipul R Sheth[2], Guanshu Liu[3,4], Mark D. Pagel[5]
[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [4]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [5]Biomedical Engineering & Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States

1676. Magnetic Resonance Imaging of Organic Contrast Agents: Applications to Redox Imaging & Radioprotection

Ryan Miller Davis[1], Shingo Matsumoto[1], Marcelino Bernardo[2,3], Anastasia Sowers[1], Ken-Ichiro Matsumoto[4], Murali C Krishna[1], James B Mitchell[1]

[1]Radiation Biology Branch, National Cancer Institute, Bethesda, MD, United States; [2]Molecular Imaging Program, National Cancer Institute, Bethesda, MD, United States; [3]National Cancer Institute-Frederick, Frederick, MD, United States; [4]National Institute of Radiological Sciences, Molecular Imaging Center, Chiba, Japan

1677. Release Activated Iron Oxide Nanoparticles (REACTION) of Cellulose: A Magnetic Relaxation Switch for Environmentally Sensitive MRI

Michael K. Nkansah[1], Erik M. Shapiro[1,2]
[1]Department of Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States

1678. Graphene- Based MRI Contrast Agents: Synthesis, Characterization & *In Vitro* MRI

Bhavna S. Paratala[1], Lindsay K. Hill[2], Lilliane Mujica-Parodi[1], Elisabeth de Castro Caparelli[3,4], Youssef Zaim Wadghiri[2], Balaji Sitharaman[1]
[1]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [2]Department of Radiology, New York University Langone Medical Center, New York, United States; [3]Medical Department, Brookhaven National Laboratory, Upton, NY, United States; [4]Social, Cognitive & Affective Neuroscience Center, Stony Brook University, Stony Brook, NY, United States

1679. Mechanical Release from Paramagnetic Liposomes Triggered by Low Frequency Ultrasound

Enzo Terreno[1], Pierangela Giustetto[1], Daniela Delli Castelli[1], Cinzia Boffa[1], Davide Durando[1], Silvio Aime[1]
[1]Molecular & Preclinical Imaging Center, University of Torino, Torino, Italy

1680. Gd-Complex of Macrocyclic DTPA Conjugate of 2,2'-Diaminobiphenyl: A New MR Contrast Agent for both Angiography & Brain-Tumor Imaging

Ki-Hye Jung[1], Hee-Kyung Kim[2], Min-Kyoung Kang[2], Ji-Ae Park[3], Seung-Tae Woo[4], Joo-Hyun Kim[4], Tae-Jeong Kim[1], Yongmin Chang[2,5]
[1]Department of Applied Chemistry, Kyungpook National University, Daegu, Korea, Republic of; [2]Department of Medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [3]Laboratory of Nuclear Medicine Research, Molecular Imaging Center, Korea Institute of Radiological & Medical Science, Seoul, Korea, Republic of; [4]Bayer Schering Pharma Korea, Seoul, Korea, Republic of; [5]Department of Diagnostic Radiology and Molecular Medicine, Kyungpook National University, Daegu, Korea, Republic of

1681. Gd-Complexes of DOTA Conjugates of Tranexamates: A New Class of Non-Aromatic, Non-Ionic MRI Blood-Pool Contrast Agents

Hee-Kyung Kim[1], Ki-Hye Jung[2], Min-Kyoung Kang[1], Ji-Ae Park[3], Seung-Tae Woo[4], Joo-Hyun Kim[4], Tae-Jeong Kim[2], Yongmin Chang[1,5]
[1]Department of Medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [2]Department of Applied Chemistry, Kyungpook National University, Daegu, Korea, Republic of; [3]Laboratory of Nuclear Medicine Research, Molecular Imaging Center, Korea Institute of Radiological & Medical Science, Seoul, Korea, Republic of; [4]Bayer Schering Pharma Korea, Seoul, Korea, Republic of; [5]Department of Diagnostic Radiology & Molecular Medicine, Kyungpook National University, Daegu, Korea, Republic of

1682. Gadolinium Oxide for Molecular & Cellular MRI: A Cautionary Tale

Simone S. Williams[1,2], Tricia L. Lobo[3], Erik M. Shapiro[1,3]
[1]Department of Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Xavier University of Louisiana, New Orleans, LA, United States; [3]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States

1683. Alginate-Coated Magnetic Nanoparticles as a New Platform for Noninvasive Calcium MR Imaging *In Vivo*

Debbie Anaby[1], Liat Avram[1], Amnon Bar-Shir[2], Ofer Sadan[3], Smadar Cohen[4], Niva Segev-Amzaleg[5], Dan Frenkel[5], Daniel Offen[3], Yoram Cohen[1]
[1]School of Chemistry, Tel Aviv University, Tel Aviv, Israel; [2]Johns Hopkins University, Baltimore, MD, United States; [3]Department of neurology, Rabin Medical Center, Tel Aviv University, Tel Aviv; [4]Avram & Stella Goldstein-Goren Department of Biotechnology Engineering, Ben Gurion University of the Negev, Beer Sheva, Israel; [5]Department of Neurobiology, The Goerge Weiss Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel

1684. Measurement of the Singlet-State Lifetime of N_2O in Rat Blood: Its Potential as an MRI Tracer

Rajat K. Ghosh[1], Stephen J. Kadlecek[1], Kiarash Emami[1], Benjamin M. Pullinger[1], Giuseppe Pileio[2], Malcolm H. Levitt[2], Nicholas N. Kuzma[1,3], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]School of Chemistry, Southampton University, Southampton, Hampshire, United Kingdom; [3]Departments of Biomedical Engineering & Imaging Sciences, University of Rochester, Rochester, NY, United States

1685. Extravasation of a New High Molecular Weight Contrast Agent in Tumour Vasculature, Probed by MRI & Histology

Kelly Catherine McPhee[1], Jennifer E. H. Baker[1,2], Katayoun Saatchi[3], Urs O. Häfeli[3], Stefan a Reinsberg[1]

[1]Physics & Astronomy, University of British Columbia, Vancouver, British Columbia, Canada; [2]Radiation Biology Unit, BC Cancer Research Centre, Vancouver, British Columbia, Canada; [3]Pharmaceutical Sciences, University of British Columbia, Vancouver, British Columbia, Canada

1686. Isostructural Re & ^{99m}Tc Complexes of Gd-DTPA-Histidine for Dual-Modality MR/SPECT Imaging Agents

Ji-Ae Park[1], Jung Young Kim[1], Byoung Soo Kim[1], Wonho Lee[1], In Ok Ko[1], Joo Hyun Kang[1], Sang Moo Lim[2], Hee-Kyung Kim[3], Yongmin Chang[3], Tae-Jeong Kim[4], Kyeong Min Kim[1]

[1]Molecular Imaging Research Center, Korea Institute of Radiological & Medical Science, Seoul, Nowon-Gu, Korea, Republic of; [2]Department of nuclear Medicine, Korea Institute of Radiological & Medical Science; [3]Department of Medical & Biological Engineering, Kyungpook National University; [4]Department of Applied Chemistry, Kyungpook National University, Korea, Republic of

1687. Heteroditopic Binding of MR Contrast Agents for Increased Relaxivity

Zhaoda Zhang[1], Matthew Greenfield[2], Andrew Kolodziej[2], Peter Caravan[1]

[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital & Harvard Medical School, Charlestown, MA, United States; [2]Epix Pharmaceuticals, Lexington, MA, United States

1688. A New R_2/R_1 Ratiometric Method to Measure PH with a Dendrimer-Based PH-Responsive MRI Contrast Agent

Meser M. Ali[1], Parvez Ismail Bhuiyan[1], Hassan Bagher-Ebadian[2,3], Branislava Janic[1], Robert a knight[2,3], James R. Ewing[2,3], Ali Syed Arbab[1]

[1]Radiology, Henry Ford Hospital, Detroit, MI, United States; [2]Neurology, Henry Ford Hospital; [3]Physics, Oakland University

1689. New Biodegradable Multimeric MPIO Contrast Agent Shows Rapid *In Vitro* & *In Vivo* Degradation & High Sensitivity Contrast

Francisco Perez-Balderas[1,2], Benjamin G. Davis[2], Sander IvanKasteren[2], Alexandr Khrapichev[1], Andrew Jefferson[3], Claire Bristow[1], Sebastien Serres[1], Robin P. Choudhury[3], Daniel C. Anthony[4], Nicola R. Sibson[1]

[1]CR/UK Gray Institute for Radiation Oncology & Biology, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Chemistry Research Laboratory, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Department of Cardiovascular Medicine, University of Oxford, Oxford, Oxfordshire, United Kingdom; [4]Department of Pharmacology, University of Oxford, Oxford, Oxfordshire, United Kingdom

1690. Synthesis & Evaluation of PARACEST MRI Contrast Agents Containing an Amino Acid Arginine

Mojmir Suchy[1,2], Alex X. Li[2], Mark Milne[1], Robert Bartha[2], Robert H. E. Hudson[1]

[1]Chemistry, University of Western Ontario, London, Ontario, Canada; [2]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada

1691. A Novel Gadolinium-Based Contrast Agent Targeted to Cathepsin-D

Robert Ta[1,2], Alex X Li[1], Mojmir Suchy[3], Robert H. E. Hudson[3], Stephen Pasternak[4,5], Robert Bartha[1,2]

[1]Imaging Research Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, the University of Western Ontario, London, Ontario, Canada; [3]Chemistry, the University of Western Ontario, London, Ontario, Canada; [4]Molecular Brain Research Group, Robarts Research Institute, London, Ontario, Canada; [5]Clinical Neurological Sciences, the University of Western Ontario, London, Ontario, Canada

1692. Gd-Albumin Relaxivity in the Rat Thalamus *In Vivo* at 11.1 T

Garrett William Astary[1], Svetlana Kantorovich[2], Paul Richard Carney[1,3], Malisa Sarntinoranont[4], Thomas Harold Mareci[5]

[1]Biomedical Engineering, University of Florida, Gainesville, FL, United States; [2]Neuroscience, University of Florida; [3]Division of Pediatric Neurology, University of Florida; [4]Mechanical & Aerospace Engineering, University of Florida; [5]Biochemistry & Molecular Biology, University of Florida

1693. Efficacy of Different Lipid-Coated Nanoclusters of Iron Oxide for Image-Based Detection of Labeled Cells

Geralda A. F. van Tilborg[1], David P. Cormode[2], Peter A. Jarzyna[2], Annette van Der Toorn[1], Susanne M. A. van Der Pol[3], Louis van Bloois[4], Gert Storm[4], Willem J. M. Mulder[2], Helga E. de Vries[3], Rick M. Dijkhuizen[1]

[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Translational & Molecular Imaging Institute, Mount Sinai School of Medicine, New York, United States; [3]3Department of Molecular Cell Biology & Immunology, VU University Medical Center, Amsterdam, Netherlands; [4]Department of Pharmaceutics, Institute for Pharmaceutical Sciences, Utrecht, Netherlands

1694. Copper Nanoparticles for T_1-Weighted MR Molecular Imaging

Shelton D. Caruthers[1], Dipanjan Pan[1], Angana Senpan[1], Anne H. Schmieder[1], Patrick J. Gaffney[2], Samuel A. Wickline[1], Gregory M. Lanza[1]

[1]C-TRAIN, Washington University School of Medicine, St. Louis, MO, United States; [2]Dept. of Surgery, St. Thomas' Hospital, London, United Kingdom

1695. Multi-Modality PET-MR Perfluorocarbon Nanoparticle Contrast Agent for Ligand-Targeted Quantitative Imaging

Shelton D. Caruthers[1], Monica Shokeen[2], Ricardo Ferdani[2], Hua Pan[1], Samuel A. Wickline[1], Carolyn J. Anderson[2]

[1]C-TRAIN, Washington University School of Medicine, St. Louis, MO, United States; [2]Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO, United States

1696. A New Biodegradable MR Contrast Agent with High Kinetic Chelation Stability for Cancer Imaging

Zhen Ye[1,2], Xueming Wu[2], Mingqian Tan[2], Zheng-Rong Lu[2]
[1]Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT, United States; [2]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

1697. Magnetoliposomes Open Up New Horizons as MRI Contrast Agents.

Stefaan Soenen J. H. Soenen[1], Michel Hodenius[1], Marcel De Cuyper[1], Uwe Himmelreich[2]
[1]Lab of BioNanoColloids, IRC, Katholieke Universiteit Leuven Campus Kortrijk, Kortrijk, Belgium; [2]Biomedical NMR Unit/ MoSAIC, Katholieke Universiteit Leuven, Leuven, Flandern, Belgium

1698. Detection of *In Vivo* Enzyme Activity with PARACEST MRI

Byunghee Yoo[1], Vipul R. Sheth[2], Christine A. Howison[3], Matthew Douglas[4], Carlos T. Pineda[5], Amanda F. Baker[6], Mark D. Pagel[7]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Arizona Research Laboratories, University of Arizona, Tucson, AZ, United States; [4]College of Medicine, University of Arizona, Tucson, AZ, United States; [5]Arizona Cancer Center, University of Arizona, Tucson, AZ, United States; [6]Hematology/Oncology, Arizona Cancer Center, University of Arizona, Tucson, AZ, United States; [7]Biomedical Engineering & Chemistry & Biochemistry, University of Arizona, Tucson, AZ, United States

1699. Development of an Activatable MRI T_2 Agent Sensitive to NADH

Elizabeth A. Osborne[1], Angelique Y. Louie[2]
[1]Chemistry, University of California, Davis, Davis, CA, United States; [2]Biomedical Engineering, University of California, Davis, Davis, CA, United States

1700. Measurement of T_1,T_2 Relaxation Time as Assembly Conditions of Gold Nanoparticles

Dong-Hyuk Kim[1], Yong-Hee Han[1], Moo-Young Jang[1], Chi -Woong Mun[1,2]
[1]Biomedical Engineering, Inje University, KimHae, KyeongNam, Korea, Republic of; [2]UHRC

Cell Tracking & Gene Reporters

Exhibition Hall Wednesday 13:30-15:30

1701. Imaging of DIACEST Microcapsules Containing Hepatocytes using Length Variation of Saturation & Principal Component Analysis

Xiaolei Song[1,2], Kannie W. Y. Chan[1,2], Guanshu Liu[1,3], Dian A. Arifin[1,2], Assaf A. Gilad[1,2], Peter C. M. Van Zijl[1,3], Jeff W. M. Bulte[1,2], Mike T. McMahon[1,3]
[1]Division of MR Research, The Russell H. Morgan Department of Radiology & Radiological Science, The Johns Hopkins University, Baltimore, MD, United States; [2]Cellular Imaging Section, Institute for Cell Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States

1702. Longitudinal Evaluation of MPIO-Labeled Stem Cell Biodistribution in a GBM Model using MR Imaging & DCE-MRI at 14.1Tesla

Myriam Marianne Chaumeil[1], Christopher G. Boyd[2], Beatrice Gini[3], Raquel Santos[2], Jacqueline de La Torre[2], Christina Ng[2], Huijan Yang[3], Akio Iwanami[3], Subramanian Sukumar[1], Tomoko Ozawa[2], Russel O. Pieper[2], Paul Mischel[3], C. David James[2], Sabrina M. Ronen[1]
[1]Radiology, University of California, San Francisco, San Francisco, CA, United States; [2]Neurological Surgery, University of California San Francisco, San Francisco, CA, United States; [3]Pathology & Lab. Medicine, University of California Los Angeles, Los Angeles, CA, United States

1703. High Sensitivity ^{19}F MRI Allows Dynamic Biodistribution Study & Oxygen Tension Mapping at Pharmaceutical Doses of a PFOB Emulsion in the Mouse Reticuloendothelial System

Céline Giraudeau[1], Boucif Djemaï[1], Sidi Mohamed Ould Ahmed Ghaly[1], Philippe Robert[2], Marc Port[2], Caroline Robic[2], Denis Le Bihan[1], Franck Lethimonnier[1], Julien Valette[1]
[1]NeuroSpin, Commissariat à l'Energie Atomique, Gif sur Yvette, France; [2]Guerbet, Research Division, Roissy Charles de Gaulle, France

1704. *In Vivo* MRI-Based Cell Tracking using Bio-MPIOs

Michael K. Nkansah[1], Dorit Granot[2], Tricia L. Lobo[2], Erik M. Shapiro[2]
[1]Department of Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States

1705. Bimodal Labelling of S. Aureus for Detection of Bacterial Colonization in Skin Infections by MRI
Verena Hoerr[1], Lorena Tuchscherr[2], Bettina Loeffler[2], Lydia Wachsmuth[1], Klaus Strobel[1], Florian Schmid[1], Cornelius Faber[1]
[1]Department for Clinical Radiology, University Hospital Muenster, Muenster, Germany; [2]Institute of Medical Microbiology, University Hospital Muenster, Muenster, Germany

1706. 3D Ultra-Short TE MRI for Whole Subject Imaging of Perfluorocarbon-Labeled Cell Biodistribution
T. Kevin Hitchens[1,2], Qing Ye[1], Chien Ho[1,2]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States

1707. Cellular MRI for Mapping Proliferation During Tumour Development
Lisa Michelle Gazdzinski[1], Brian J. Nieman[1]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, ON, Canada

1708. Verification of Metabolite Peak Change During Chondrogenesis of Human Mesenchymal Stem Cells using Proton NMR
Moo-Young Jang[1], So-Hee Park[1], Jung-Woog Shin[1,2], Chi-Woong Mun[1,2]
[1]Biomedical Engineering, Inje University, Gimhae, Gyeongnam, Korea, Republic of; [2]UHRC, Inje University, Gimhae, Gyeongnam, Korea, Republic of

1709. Intra-Cellular Sodium Concentration & Intra-Cellular Volume Fraction Quantification in the Human Brain using 7T MRI *In-Vivo*.
Lazar Fleysher[1], Niels Oesingmann[2], Ryan Brown[1], Hina Jaggi[1], Graham Wiggins[1], Daniel Sodickson[1], Matilde Inglese[1,3]
[1]Radiology, NYU School of Medicine, New York, United States; [2]Siemens Medical Solutions USA, Malvern, PA, United States; [3]Neurology, NYU School of Medicine, New York, United States

1710. Improving Detection of Micron Size Magnetic Particles using Linear Phase Ramps
Stephen J. Dodd[1], Gary Zabow[1], James P. Sumner[1], Alan P. Koretsky[1]
[1]Laboratory of Functional & Molecular Imaging, NINDS, National Institutes of Health, Bethesda, MD, United States

1711. Targeting Mesenchymal Stem Cells (MSC) using Pulsed Focused Ultrasound: Implications for Stem Cell Therapy
Ali Ziadloo[1], Scott R. Burks[1], Aneeka Chaudhry[1], Eric M. Gold[1], Dana D. Dean[1], Bobbi K. Lewis[1], Kay Jordan[1], Victor Frenkel[1], Joseph A. Frank[1]
[1]Radiology & Imaging Sciences, Clinical Center, NIH, Bethesda, MD, United States

1712. Non-Invasive Evaluation of Chronic Cardiac Rejection After Heart Transplantation with Multi-Parameter Cellular & Functional MRI
Qing Ye[1], Yijen L. Wu[1], Lesley M. Foley[1], Brent D. Barbe[1], Fang-Cheng Yeh[1], T. Kevin Hitchens[1], Li Liu[1], Chien Ho[1]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States

1713. Enhanced MRI Visualization of Endogenous Neuroblasts Migration by Optimizing MPIO Formulations
Dorit Granot[1], Erik M. Shapiro[1,2]
[1]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Department of Biomedical Engineering, Yale University, New Haven, CT, United States

1714. R_2*-ρ Imaging on Rat Allograft Cardiac Transplantation with Acute Rejection: A Preliminary Study
Fang-Cheng Yeh[1], Yijen L. Wu[2], Qing Ye[2], T. Kevin Hitchens[2], Chien Ho[2]
[1]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Pittsburgh NMR Center for Biomedical Research, Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA

1715. Intralymphatic Cancer Cell Tracking with Two MRI Contrast Agents: SPIO / Quantum Dot Cell Labeling with Gd-Dendrimer Lymphangiography in the Mouse Model
Nobuyuki Kosaka[1], Marcelino Bernardo[1], Makoto Mitsunaga[1], Peter L. Choyke[1], Hisataka Kobayashi[1]
[1]Molecular Imaging Program, National Cancer Institute, Bethesda, MD, United States

1716. *In-Vivo* MRI of Cell Migration Towards QA Induced Lesions in the Mouse Brain
Prodromos Parasoglou[1], Joe J. Rodriguez[2], Cesar A. Berrios-Otero[2], Brian J. Nieman[3], Daniel H. Turnbull[2]
[1]Skirball Institute of Biomolecular Medicine, New York University School of Medicine , New York, United States; [2]Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, United States; [3]Mouse Imaging Centre, the Hospital for Sick Children, Toronto, Ontario, Canada

1717. Repetitive Imaging of Tumor Cell Growth using Gene-Based, Iron Contrast: Maga Vs. Modified Ferritin Subunits

Roja Rohani[1], Rene Figueredo[2], Jim Koropatnick[2], Paula Foster[3], R. Terry Thompson[1], Frank S. Prato[1], Donna Elizabeth Goldhawk[1]
[1]Imaging, Lawson Health Research Institute, London, ON, Canada; [2]London Regional Cancer Program, London, ON, Canada; [3]Imaging, Robarts Research Institute, London, ON, Canada

1718. Modifying Polyethylene Glycol Effects Liposome Relaxivity & Enhances Tumour Cell Uptake for Drug Delivery
Tammy Louise Kalber[1,2], Nick J Mitchell[3], Simon Walker-Samuel[1], Quentin A. Pankhurst[4], Helen C. Hailes[3], Alethea B. Tabor[3], Sam M. Janes[2], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Centre for Respiratory Research, Department of Medicine, University College London, University College London, London, United Kingdom; [3]Department of Chemistry, University College London, London, United Kingdom; [4]Davy-Faraday Research Laboratories, The Royal Institution of Great Britain, London, United Kingdom

1719. Neuralized IPSCs Can Migrate to Gliomas: MRI Findings
Tyler James McKay[1], Samuel E. Nutt[2], Jiakai Li[1], Norman J. Beauchamp[1], Xiaoming Yang[1], Philip J. Horner[2], Bensheng Qiu[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Neurosurgery, University of Washington, Seattle, WA, United States

1720. The Use of Cellular MRI to Study the Role of Cancer Stem Cells in Metastasis Development *In Vivo*
Emeline Julie Ribot[1], Carmen Simedrea[2], Ann F. Chambers[2], Paula J. Foster[1]
[1]Imaging Laboratories, Robarts Research Institute, London, Ontario, Canada; [2]London Regional Cancer Program, London, Ontario, Canada

1721. *In Vivo* Implementation of REACTION (Release Activation of Iron Oxide Nanoparticles)
Dorit Granot[1], Erik M. Shapiro[1,2]
[1]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Department of Biomedical Engineering, Yale University, New Haven, CT, United States

1722. Design of Thymidine Analogs as CEST Reporters for Imaging of HSV1-TK Expression
Amnon Bar-Shir[1,2], Guanshu Liu[1,3], Michael T. McMahon[1,3], Martin G. Pomper[4], Peter C. van Zijl[1,3], Jeff W. Bulte[1,2], Assaf A. Gilad[1,2]
[1]Division of MR Research, The Russel H. Morgan Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Cellular Imaging Section, Institute for Cell Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]The Russel H. Morgan Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States

1723. The Magnetosome Membrane Protein Mms6 Produces MR Contrast *In Vitro*
Xiaoyong Zhang[1], Brenda Robledo[1], Steven Harris[1], Xiaoping Hu[1]
[1]Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States

1724. Monitoring Tissue Response to Hyperbaric Oxygen Intervention using PISTOL
Praveen Kumar Gulaka[1], Edmond Richer[2], Vikram D. Kodibagkar[1,3]
[1]Joint Graduate Program in Biomedical Engineering, UT Arlington & UT Southwestern Medical Center, Dallas, Tx, United States; [2]Mechanical Engineering, Southern Methodist University; [3]Radiology, UT Southwestern Medical Center

1725. Genetic Engineering of Human Protamine-1 for Use as MRI Reporter Gene Based on Proton Exchange
Amnon Bar-Shir[1,2], Guanshu Liu[1,3], Xiaolei Song[1,2], Piotr Walczak[1,2], Michael T. McMahon[1,3], Peter C. van Zijl[1,3], Jeff W. Bulte[1,2], Assaf A. Gilad[1,2]
[1]Division of MR Research, The Russel H. Morgan Department of Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Cellular Imaging Section, Institute for Cell Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

Interventional MRI: MR-Guided Focused Ultrasound

Exhibition Hall Thursday 13:30-15:30

1726. Design & Evaluation of RF Coils for Magnetic Resonance Guided High Intensity Focused Ultrasound
Emilee Shaw Minalga[1], Allison Payne[1], Robb Merrill[1], Dennis L. Parker[1], J. Rock Hadley[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States

1727. Large Aperture Transducer Designed for MR-HIFU Treatment of Breast Tumors
Charles Mougenot[1], Max Köhler[2], Matti Tillander[2], Chrit Moonen[3], Wilbert Bartels[4], Gösta Ehnholm[2]

[1]Philips Healthcare, Suresnes, France; [2]Philips Healthcare, Vantaa, Finland; [3]IMF, CNRS / Univ. Bordeaux 2, Bordeaux, France; [4]University Medical Center Utrecht, Utrecht, Netherlands

1728. Ultrasound-Transparent RF Coil Design for Improved MR Thermometry of HIFU Therapy
Max Oskar Köhler[1], Matti Tillander[1], Antti Syrjä[1], Risto Nakari[1], Mika Ylihautala[1]
[1]Philips Healthcare, Vantaa, Finland

1729. Magnetic Resonance Imaging of Continuous Ultrasound Holograms
Yoni Hertzberg[1,2], Omer Naor[3], Alex Volovick[2], Shy Shoham[3], Gil Navon[4]
[1]School of Physics and Astronomy, Tel-Aviv University, Tel-Aviv, Israel; [2]Insightec Ltd., Tirat Carmel, Israel; [3]Faculty of Biomedical Engineering, Technion, Israel; [4]School of Chemistry, Tel-Aviv University, Israel

1730. Adaptive Volumetric MR-Guided High-Intensity Focused Ultrasound Ablations
Silke Hey[1], Baudouin D. de Senneville[1], Charles Mougenot[2], Max Köhler[3], Chrit Moonen[1], Mario Ries[1]
[1]IMF, CNRS / Univ. Bordeaux 2, Bordeaux, France; [2]Philips Healthcare, Suresnes, France; [3]Philips Healthcare, Vantaa, Finland

1731. MR-ARFI & SWI to Detect Calcifications in the Brain in MRgHIFU Treatments
Rachel Rinat Bitton[1], Elena Kaye[1,2], Kim Butts Pauly[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

1732. Evaluation of Bipolar Encoding Configurations for Spin Echo MR-ARFI
Elena Kaye[1], Kim Butts Pauly[2]
[1]Electrical Engineering, Stanford University, Palo Alto, CA, United States; [2]Radiology, Stanford University, Palo Alto, CA, United States

1733. MRgHIFU Safety Issue: Validation of Targeting Accuracy using an MR Compatible Ballistic Model
Magalie Viallon[1], Lorena Petrusca[1], Sylvain Terraz[1], Thomas Goget[1], Vincent Auboiroux[1], Christoph Becker[1], Patrick Gross[2], Rares Salomir[1]
[1]Radiology, Hopital Universitaire de Genève, GENEVE, Switzerland; [2]Siemens Healthcare, Erlangen, Germany

1734. MRgHIFU Safety Issue: Multi-Layer Protection Against Tissue-To-Air Interface Heating
Magalie Viallon[1], Sylvain Terraz[1], Thomas Goget[1], Lorena Petrusca[1], Denis Morel[2], Vincent Auboiroux[1], Christoph Becker[1], Patrick Gross[3], Rares Salomir[1]
[1]Radiology, Hopital Universitaire de Genève, GENEVE, Switzerland; [2]Anesthesiology, Hopital Universitaire de Genève, GENEVE, Switzerland; [3]Siemens HealthCare, Erlangen, Germany

1735. Online Temperature Control of Focused Ultrasound Heating using an Adaptive PID Feedback Loop
Silke Hey[1], Mario Ries[1], Chrit Moonen[1]
[1]IMF, CNRS / Univ. Bordeaux 2, Bordeaux, France

1736. Full Coverage 3D Temperature Mapping for Transcranial MRgHIFU Applications
Nick Todd[1], Henrik Odeen[1], Allison Payne[1], Laurent Marsac[2], Dorian Chauvet[3], Mathieu Pernot[4], Anne-Laure Boch[3], Jean-Francois Aubry[4], Mickael Tanter[4], Dennis L. Parker[1]
[1]University of Utah, Salt Lake City, UT, United States; [2]SuperSonic Imagine, Aix en Provence, France; [3]Département de Neurochirurgie, Hôpital Pitié Salpêtrière, Paris, France; [4]Institut Langevin, ESPCI ParisTech, France

1737. Investigating the Use of Short Pulses in MRI-Guided Focused Ultrasound Disruption of the Blood Brain Barrier
Meaghan O'Reilly[1], Kullervo Hynynen[1,2]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto

1738. Blood-Brain Barrier Disruption in Pigs by Transcranial Focused Ultrasound: Correlation of Cavitation Signals & MR Imaging for Treatment Monitoring
Yuexi Huang[1], Junho Song[1], Kullervo Hynynen[1,2]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

1739. Changes in Attenuation Coefficient in MRgFUS Treatments of *In-Vivo* Rabbit Thigh Estimated using MRTI-Derived Specific Absorption Rate Patterns
Urvi Vyas[1], Allison Payne[1], Nick Todd[1], Dennis L. Parker[1], Robert B. Roemer[1], Douglas A. Christensen[1]
[1]University of Utah, Salt Lake City, UT, United States

1740. *In-Vivo* MR Guided High Intensity Focused Ultrasound Ablation of Pig Liver Tissues: Preliminary Results of a Survival Study.
Frederic Courivaud[1], Airazat M. Kazaryan[1], Alice Lund[2], Per Steinar Halvorsen[1], Bjørn Edwin[1], Per Kristian Hol[1]
[1]The Intervention Centre, Oslo University Hospital, Oslo, Norway; [2]Department of Pathology, Oslo University Hospital, Oslo, Norway

1741. Detection & Exploitation of Acoustic Cavitation for Enhancement of MR Guided High Intensity Focused Ultrasound Heating in *Ex Vivo* Liver
Delphine Elbes[1], Benjamin Robert[2], Max O Köhler[3], Mickael Tanter[2], Chrit Moonen[1], Bruno Quesson[1]
[1]Laboratory for Molecular and Functional Imaging, UMR 5231, CNRS/Université Bordeaux 2, Bordeaux, France; [2]Inserm U979 physique des ondes pour la médecine, institut Langevin (CNRS UMR 7587), ESPCI ParisTech, Paris, France; [3]Philips healthcare, Vantaa, Finland

1742. MRI-Controlled Focused Ultrasound Hyperthermia in Bone for Thermally Mediated Drug Delivery
Robert Staruch[1,2], Melissa Togtema[1], Rajiv Chopra[1,2], Kullervo Hynynen[1,2]
[1]Centre for Research in Image-Guided Therapeutics, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

1743. Pain Palliation of Bone Metastasis: Initial Clinical Experience using High Intensity Focused Ultrasound Therapy with Magnetic Resonance Guidance
Alessandro Napoli[1], Michele Anzidei[1], Giulia Brachetti[1], Luisa Molisso[1], Carlo Catalano[1], Roberto Passariello[1]
[1]Radiological Sciences, Policlinico Umberto I, Rome, Italy

1744. Quality Assurance of Volumetric Feedback MR-Guided HIFU Ablation Technique in Human Uterine Fibroids
Heikki Juhani Nieminen[1], Charles Mougenot[2], Bilgin Keserci[3], Jouko Soini[1], Sham Sokka[4], Max Oskar Köhler[1], Teuvo Vaara[1]
[1]Philips Healthcare, Vantaa, Finland; [2]Philips Healthcare, Bordeaux, France; [3]Philips Healthcare, Seoul, Korea, Republic of; [4]Philips Healthcare, Andover, MA, United States

Interventional MRI: Instrument Visualization, Guidance & Interfaces

Exhibition Hall Monday 14:00-16:00

1745. Latex-Based Dual Contrast Hybrid Catheter for Passive MR-Guided Angiographic Interventions
Robert R. Edelman[1,2], Wei Li, Anthony Farrell, Eugene Dunkle, Ioannis Koktzoglou,[3]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Radiology, University of Chicago, Chicago, IL, United States

1746. Hyperpolarised Gas Filled MRI Catheter with MR Pressure Measurement Sensitivity
Jim M. Wild[1], Salma Ajraoui[1], X. Xu[1], Martin H. Deppe[1], Andrew J. Swift[1], Smitha Rajaram[1], David J. Kiely[2], Juan Parra-Robles[1]
[1]University of Sheffield, Sheffield, Yorkshire, United Kingdom; [2]Sheffield Pulmonary Vascular Disease Clinic, United Kingdom

1747. Accurate Localization of Active Devices During Interventional MR Imaging
Julien Barbot[1], Tobias Wech[2], Steven Shea[2], Li Pan[2], Klaus Kirchberg[1], Kamal Vij[3], Christine H. Lorenz[2], Sunil Patil[2]
[1]Center for Applied Medical Imaging, Siemens Corporate Research, Princeton, NJ, United States; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [3]SurgiVision, Inc., Irvine, CA, United States

1748. Active MR Tracking using Micro Coils for Both Transmit & Receive
Barret Daniels[1,2], Yu Li[1], Randy Giaquinto[1], Wolfgang Loew[1], Ronald Pratt[1], Charles Dumoulin[1]
[1]Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Bioengineering, University of Cincinnati, Cincinnati, OH, United States

1749. Parallel Transmit with Toroidal Transceiver for Enhanced Visualization & RF Safety
Maryam Etezadi-Amoli[1], Pascal Stang[1], John M. Pauly[1], Adam B. Kerr[1], Greig C. Scott[1]
[1]Stanford University, Stanford, CA, United States

1750. Suppression of RF Heating Due to Intravascular Devices using Non-Resonant In-Line Coaxial Choke Baluns
Krishna N. Kurpad[1], Madhav Venkateswaran[2], Orhan Unal[1,3]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Electrical & Computer Engineering, University of Wisconsin, Madison, WI, United States; [3]Medical Physics, University of Wisconsin, Madison, WI, United States

1751. A Miniaturized Optical Link for an Active Intravascular MR-Device
Stephan Fandrey[1], Steffen Weiss[2], Jörg Müller[1]
[1]Hamburg University of Technology, Hamburg, Germany; [2]Imaging Systems & Intervention, Philips Research Europe, Hamburg, Germany

1752. Optoelectronic CMOS Power Supply Unit for Interventional MRI Devices
Baykal Sarioglu[1], Ozan Aktan[1], Umut Cindemir[1], Gunhan Dundar[1], Cengizhan Ozturk[1], Senol Mutlu[1], Arda Deniz Yalcinkaya[1]
[1]Bogazici University, Istanbul, Turkey

1753. Measurement Accuracy of Different Active Tracking Sequences for Interventional MRI
Tobias Wech[1,2], Steven M. Shea[1], Li Pan[1], Julien Barbot[1], Kamal Vij[3], Christine H. Lorenz[1], Sunil Patil[1]
[1]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [2]Institute of Radiology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [3]SurgiVision Inc, Irvine, CA, United States

1754. Accuracy Evaluation of Phase-Only Cross Correlation (POCC) Guidance Sequence for Real-Time 3T MR-Interventions
Patrik Zamecnik[1], Axel Joachim Krafft[2], Florian Maier[2], Jens Groebner[2], Heinz-Peter Schlemmer[1], Michael Bock[2]
[1]Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

1755. eXTernal Control (XTC): A Flexible, Real-Time, Low-Latency, Bi-Directional Scanner Interface
Jouke Smink[1], Marko Häkkinen[2], Ronald Holthuizen[1], Sascha Krueger[3], Mario Ries[4], Yasmina Berber[4], Chrit Moonen[4], Max Köhler[2], Erkki Vahala[2]
[1]Philips Healthcare, Best, Netherlands; [2]Philips Healthcare, Helsinki, Finland; [3]Philips Research, Hamburg, Germany; [4]IMF, Bordeaux, France

1756. Impact of Reduced K-Space Acquisition on the Visibility of Moving Puncure Needles - a Phantom Study
Jens Christian Rump[1], Martin Jonczyk[1], Christian Jürgen Seebauer[1], Felix Güttler[1], Ulf Teichgräber[1], Bernd Hamm[1]
[1]Radiology, Charité-University Medicine, Berlin, Germany

1757. Direct on Patient Image Display with a Laser PicoP Projector for Medical Device Placement
Andrew B. Holbrook[1,2], Mark Freeman[3], Yoav Medan[4], Kim Butts Pauly[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States; [3]Microvision, Redmond, WA, United States; [4]InSightec, Tirat Carmel, Israel

1758. Catheter Tracking with Phase Information
Kevan James Thompson Anderson[1], Greig Scott[2], Graham A. Wright[1,3]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Electrical Engineering, Stanford University, United States; [3]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

1759. MR Endoscope with Software-Controlled Tuning, Device Tracking & Video
Jerome L Ackerman[1,2], Erez Nevo[3], Evan J. Zucker[1,4], Alec J. Poitzsch[1,5], Katherine Vandenberg[1,6], Andrew Zhigalin[7], Barry Fetics[3]
[1]Martinos Center/Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Robin Medical, Inc., Baltimore, MD, United States; [4]Tufts Medical Center, Boston, MA; [5]Massachusetts Institute of Technology, Cambridge, MA, United States; [6]Florida International University, Miami, FL, United States; [7]Johns Hopkins School of Medicine, Baltimore, MD, United States

Interventional MRI: Thermotherapy & Thermometry

Exhibition Hall Tuesday 13:30-15:30

1760. Feasibility of RF Ablation at the Larmor Frequency for RF Field Visualization
Kim Shultz[1], Pascal Stang[1], John Pauly[1], Greig Scott[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

1761. MR-Mediated Radio Frequency Ablation
Jerome L Ackerman[1,2], Yi K. Kiong Hue[1,2], Erez Nevo[3], Alexander R. Guimaraes[1,2], Martin Polak[1,4], Kyum S. Lee[1], Daniel E. Ackerman[1]
[1]Martinos Center/Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Robin Medical, Inc., Baltimore, MD, United States; [4]Children's Hospital, Boston, MA, United States

1762. Enhanced Intra-Operative Control During Cryoablation by using the PRF Method: *In Vivo* Imaging & Histopathologic Correlation
Eva Rothgang[1,2], Wesley D. Gilson[2], Steffi Valdeig[3], Li Pan[2], Jörg Roland[4], Aaron Flammang[2], Christine H. Lorenz[2], Frank Wacker[3], Bernd Frericks[5]
[1]Pattern Recognition Lab, University Erlangen-Nuremberg, Erlangen, Germany; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [3]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [4]Siemens Healthcare, Erlangen, Germany; [5]Department of Radiology & Nuclear Medicine, Universitätsmedizin Berlin–Charité Campus Benjamin Franklin, Berlin, Germany

1763. Real-Time Hybrid MR Thermometry of Human Ventricular Myocardium with & Without Blood Suppression
Viola Rieke[1], Andrew B. Holbrook[1], William Grissom[2], Juan M. Santos[3], Michael V. McConnell[4], Kim Butts Pauly[1]

[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Imaging Technologies Laboratory, GE Global Research, Munich, Germany; [3]Heart Vista, Inc., Los Altos, CA, United States; [4]Division of Cardiovascular Medicine, Stanford University, Stanford, CA, United States

1764. Limited FOV MR Thermometry using a Local Cardiac RF Coil in Atrial Fibrillation Treatment

Nelly A. Volland[1,2], Eugene G. Kholmovski[1,2], J. R. Hadley[1], Dennis L. Parker[1]
[1]Radiology / Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [2]Comprehensive Arrhythmia Research & Management Center, University of Utah, Salt Lake City, UT, United States

1765. Feasibility of Fast MR-Thermometry During Cardiac RF Ablation

Baudouin Denis De Senneville[1], Sébastien Roujol[1], Pierre Jaïs[2], Chrit T. W. Moonen[1], Gwenaël Herigault[3], Bruno Quesson[1]
[1]Laboratory for Molecular & Functional Imaging: From Physiology to Therapy, CNRS/University of Bordeaux 2, Bordeaux, Gironde, France; [2]Hôpital Cardiologique du Haut-Lévèque, Bordeaux, France; [3]Philips Healthcare, France

1766. Modified Turbo Spin Echo Sequence for PRF Based Thermometry

Mahamadou Diakite[1], Rock Hadley[2], Dennis L. Parker[2]
[1]Physics, University of Utah, Salt Lake City, UT, United States; [2]Radiology, University of Utah, Salt Lake City, UT, United States

1767. Modified EPI Sequence for Improved MR Thermometry

Bruno Madore[1], Renxin Chu[1], Chang-Sheng Mei[1], Jing Yuan[2], Tzu-Cheng Chao[1], Lawrence P. Panych[1]
[1]Department of Radiology, Harvard Medical School, Brigham and Women's Hospital, Boston, MA, United States; [2]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong

1768. Improved Hybrid PRF-T_1 Pulse Sequence for Accurate T_1 Mapping in High Field (3T)

Mahamadou Diakite[1], Nick Todd[2], Dennis L. Parker[2]
[1]Physics, University of Utah, Salt Lake City, UT, United States; [2]Radiology, University of Utah, Salt Lake City, UT, United States

1769. ^{1}H MRS Temperature Calibrations in Tissue-Equivalent Gel Phantoms Show Dependence on Macromolecular Concentration

Nigel Paul Davies[1], Maryam Kalantari Saghafi[2], Xiaoyan Pan[3], Theodoros N. Arvanitis[4], Andrew C. Peet[3]
[1]Medical Physics, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom; [2]School of Physics & Astronomy, University of Birmingham, Birmingham, United Kingdom; [3]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [4]Department of Electrical, Electronic & Computer Engineering, University of Birmingham, Birmingham, United Kingdom

1770. Fat-Referenced MR Thermometry using 3-Echo Phase-Based Fat Water Separation Method

Lorne Hofstetter[1], Desmond Yeo[1], W. Thomas Dixon[1], Cynthia Davis[1], Thomas K. Foo[1]
[1]GE Global Research, Niskayuna, NY, United States

1771. Hybrid Multibaseline & Referenceless PRF-Shift Thermometry using Both Water & Fat Images

William A. Grissom[1], Lorne W. Hofstetter[2], Viola Rieke[3], Yoav Medan[4], Kim Butts Pauly[3], Cynthia E. Davis[2]
[1]GE Global Research, Munich, Germany; [2]GE Global Research, Niskayuna, NY, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]Insightec, Ltd, Tirat Carmel, Israel

1772. Measurement of the T_1 & T_2 Temperature Dependence of Human Breast Adipose Tissue

Paul Baron[1], Roel Deckers[1], Sara M. Sprinkhuizen[1], Laura G. Merckel[2], Ronald L. A. W. Bleys[3], Chris J. G. Bakker[1], L. W. Bartels[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Anatomy, University Medical Center Utrecht, Utrecht, Netherlands

1773. Automatic B_0 Drift Correction for MR Thermometry

Eva Rothgang[1,2], Jörg Roland[3], Wesley D. Gilson[2], Joachim Hornegger[1], Christine H. Lorenz[2]
[1]Pattern Recognition Lab, University Erlangen-Nuremberg, Erlangen, Germany; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [3]Siemens Healthcare, Erlangen, Germany

1774. Correction of Errors in PRFS Thermometry Due to Heat Induced Susceptibility Changes of Fat

Paul Baron[1], Roel Deckers[1], Sara M. Sprinkhuizen[1], Chris J. G. Bakker[1], L. W. Bartels[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

1775. Movement Artifacts in Monitoring the Brain Temperature During Induction of Mild Hypothermia

Jan Weis[1], Lucian Covaciu[2], Sten Rubertsson[2], Mats Allers[3], Anders Lunderquist[3], Francisco Ortiz-Nieto[1], Håkan Ahlström[1]
[1]Department of Radiology, Uppsala University Hospital, Uppsala, Sweden; [2]Department of Surgical Sciences, Anesthesiology & Intensive Care, Uppsala University Hospital, Uppsala, Sweden; [3]Department of Clinical Sciences, Division of Thoracic Surgry, University Hospital, Lund, Sweden

Interventional MRI: Preclinical Drug Delivery & Clinical Applications

Exhibition Hall Wednesday 13:30-15:30

1776. High-Resolution MRI of SPIO-Labeled Yttrium Microsphere Biodistribution in the Rodent Liver at 7T
Weiguo Li[1], Zhuoli Zhang[1], Daniel Procissi[1], Andrew Gordon[1], Jodi Nicolai[1], Reed Omary[1], Andrew Larson[1]
[1]Department of Radiology, Northwestern University, Chicago, IL, United States

1777. Electro-Nanotherapy Enhanced Delivery of Superparamagnetic Iron Oxide Nanoparticles in Liver Tumors: A Novel Means of Locoregional Drug Delivery
Samdeep Mouli[1], Noam Belkind[1], Weiguo Li[1], Jason Sandberg[1], David Magill[1], Rachel Klein[1], Daniel Procissi[1], Jodi Nicolai[1], Yang Guo[1], Andrew Larson[1], Reed Omary[1]
[1]Radiology, Northwestern University, Chicago, IL, United States

1778. A Model for Magnetic Delivery of Cells with an MRI Scanner & its Validation via Confocal Endoscopy
Johannes Riegler[1,2], Baptiste Allain[3,4], Richard J. Cook[4], Quentin A. Pankhurst[5], Mark F. Lythgoe[1]
[1]Centre for Advanced Biomedical Imaging, University College London, London, United Kingdom; [2]Centre for Mathematics & Physics in the Life Sciences & Experimental Biology (CoMPLEX), University College London, London, United Kingdom; [3]Centre for Medical Image Computing (CMIC), University College London, London, United Kingdom; [4]KCL Dental Institute, Biomaterials, Biomimetics & Biophotonics Group, Guy's Hospital Campus, London, United Kingdom; [5]Davy-Faraday Research Laboratory, the Royal Institution of Great Britain, London, United Kingdom

1779. Towards Translation of MRI-Detectable Hydrogels for Cell Therapy & Tissue Regeneration
Bradley D. Hann[1], Kevin M. Bennett[1]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, United States

1780. Pre-Procedural MRI & 3D Finite Element Modeling for Prediction of Irreversible Electroporation Ablation Zones in a Rat Liver Tumor Model
Yue Zhang[1,2], Haitham M. Al-Angari[3], Yang Guo[2], Jodi Nicolai[2], Rachel A. Klein[2], Alan V. Sahakian[3], Reed A. Omary[2,4], Andrew C. Larson[2,4]
[1]Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Radiology, Northwestern University, Chicago, IL, United States; [3]Electrical Engineering & Computer Science, Northwestern University, Evanston, IL, United States; [4]Robert H. Lurie Comprehensive Cancer Center, Northwestern University, Chicago, IL, United States

1781. Using Statistical Fiber Anatomy in Combination with Electromagnetic Field Simulation in Deep Brain Stimulation for Improved Characterization of Specific Target Areas in Tremor & Parkinson's Disease Patients
Burkhard Mädler[1], Kaveh Mehdiani[1], Volker A. Coenen[1]
[1]Dep. of Neurosurgery, Div. of Stereotaxy & MR-based OR-Techniques, University Bonn, Bonn, Germany

1782. Improved Visualization of Brain Anatomy & Function, for Surgery, through Real-Time Non-Rigid Registration
Arne Hans[1], Adam Wittek[2], Grand Joldes[2], Karol Miller[2], Neil I. Weisenfeld[1], Mark Alexiuk[3], John Saunders[3], Einat Liebenthal[4], Garnette R. Sutherland[5], Simon K. Warfield[1]
[1]Radiology, Children's Hospital Boston & Harvard Medical School, Boston, MA, United States; [2]University of Western Australia, Perth, Australia; [3]IMRIS, Winnipeg, Canada; [4]National Research Council Canada, Canada; [5]University of Calgary

1783. MR-Guided Percutaneous Lumbar Mechanical Disc Decompression
Christian Jürgen Seebauer[1], Jens Rump[2], Hermann Josef Bail[3], Felix Güttler[2], Bernd Hamm[2], Carsten Perka, Christian Gross, Ulf Teichgräber[2]
[1]Center for Musculoskeletal Surgery, Charité-Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Radiology, Charité-Universitätsmedizin Berlin, Berlin, Germany; [3]Department of Trauma & Orthopedic Surgery, Clinic Nuremberg, Nuremberg, Germany

1784. Development of a MR-Compatible Cardiotocograph for the Non-Invasive Assessment of the Birth Process Via MRI.
Andreas Heinrich[1], Jens Rump[1], Felix Güttler[1], Christian Seebauer[2], Bernd Hamm[1], Ulf Teichgräber[1]
[1]Department of Radiology, Charité-Universitätsmedizin Berlin, Berlin, Germany; [2]Center for Musculoskeletal Surgery, Charité-Universitätsmedizin Berlin, Berlin, Germany

Safety: Non-RF

Exhibition Hall Wednesday 13:30-15:30

1785. Cardiac Pacing in an MRI Environment
Gene Hilton Payne[1,2], Gaston Vergara[2,3], Ravi Ranjan[2,3], Kamal Vij[4], Nelly Volland[1,2], Eugene Kholmovski[1,2], Sathya Vijayakumar[1,2], Josh Blauer[2,5], Kimberly Johnson[2,3], Greg Gardner[2,5], Glenn Meredith[6], Tongbai Meng[6], Rob MacLeod[2,5], Nassir F. Marrouche[2,3]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]CARMA Center, University of Utah, Salt Lake City, UT; [3]Department of Cardiology, University of Utah, Salt Lake City, UT, United States; [4]SurgiVision, Inc., Irvine, CA, United States; [5]SCI, University of Utah, Salt Lake City, UT, United States; [6]Center for Applied Medical Imaging, Siemens Corporate Research, Princeton, NJ, United States

1786. Increased PNS Thresholds using a Novel Composite Gradient System
Kenneth Craig Goodrich[1], William Bradfield Handler[2], Seong-Eun Kim[1], John Rock Hadley[1], Ulrich A. Rassner[3], Blaine A. Chronik[2], Dennis L. Parker[1]
[1]UCAIR, University of Utah, Salt Lake City, UT, United States; [2]Physics and Astronomy, University of Western Ontario, London, Ontario, Canada; [3]Radiology, University of Utah, Salt Lake City, UT, United States

1787. Threshold for Peripheral Nerve Stimulation with Ultra-Fast Gradients
Irving N. Weinberg[1], Pavel Stepanov, Steven C. Glidden[2], Howard D. Sanders, Daniel Warnow, Alan B. McMillan[3], Rao P. Gullapalli, Piotr M. Starewicz[4], Kai-Ming Lo, Amnon Fisher[5], J. Patrick Reilly[6], Michael S. Niziol[7], Stanley T. Fricke[8]
[1]Weinberg Medical Physics LLC, Bethesda, MD, United States; [2]Applied Pulsed Power Inc., Freeville, NY, United States; [3]Radiology, University of Maryland, Baltimore, MD; [4]Resonance Research, Inc,, Billerica, MA; [5]Physics, Technion-Israel Institute of Technology, Haifa, Israel; [6]Applied Physics Laboratory, Johns Hopkins University, Laurel, MD; [7]Family Practice Associates, Dryden, NY; [8]Radiology, Children's National Medical Center, Washington, DC

1788. Maximum DB/dt & Switching Noise in 1.5T MRI Scanners for Safety Evaluation of Active Implantable Medical Device
Neha Bharat Butala[1], Ramez Emile Necola Shehada[1], Peter Nabil Costandi[1], Ali Dianaty[1], Kevin Jurkowski[1]
[1]Cardiac Rhythm Management Division, St. Jude Medical, Sylmar, CA, United States

1789. Magnetic Field Monitoring using a Novel Wireless Sensor System in an Intra-Operative MRI Workflow
Kirk Champagne[1,2], Tim Hoeppner[2], David Weber[2], Ta-Yung Liu[1], Mehran Fallah-Rad[1], Mark Alexiuk[1,3]
[1]IMRIS, Winnipeg, Manitoba, Canada; [2]Electrical & Computer Engineering, University of Manitoba, Winnipeg, Manitoba, Canada; [3]Institute of Industrial Mathematical Sciences, University of Manitoba, Canada

1790. In-Situ Study of Active Noise Control Applied to MRI Noise
Mingfeng Li[1], Brent Rudd[1], Teik C. Lim[2], Jing-Huei Lee[3,4]
[1]Mechanical Engineering, University of Cincinnati, Cincinnati, OH, United States; [2]Mechanical Engineering, University of Cincinnati, Cincinnati, United States; [3]School of Energy, Environment, Biological & Medical Engineering, University of Cincinnati, Cincinnati, OH, United States; [4]Center for Imaging Reserch, University of Cincinnati, Cincinnati, OH, United States

1791. Methods for the Quantitative Assessment of Image Artifacts Caused by Implantable Devices
Benjamin Anthony Coppola[1], Ramez Emile Necola Shehada[1], Peter Nabil Costandi[1], Kevin Jurkowski[1], Ali Dianaty[1]
[1]Cardiac Rhythm Management Division, St Jude Medical, Sylmar, CA, United States

1792. Evaluation of Magneto Alert Sensor (MALSE) to Improve MR Safety by Decreasing the Incidence of Ferromagnetic Projectile Accidents
Conrad Steven Martin[1], Tobias Frauenrath[1], Celal Özerdem[1], Wolfgang Renz[1,2], Thoralf Niendorf[1,3]
[1]Berlin Ultrahigh Field Facility, Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Siemens Medical Solutions, Siemens, Erlangen, Germany; [3]Charité Campus Buch, Humboldt-University, Experimental & Clinical Research Center (ECRC), Berlin, Germany

1793. How Safe Are Intrauterine Devices at MRI Procedures with Field Strength Beyond 1.5T?
Jaane Rauschenberg[1], Jens Groebner[1], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

1794. Experimental Design to Measure Neurocognitive Effects Due to Static Magnetic Field & to Movement Within the Stray Field at 0T, 1.5T, 3T & 7T
Jaane Rauschenberg[1], Jens Groebner[1], Angela Heinrichs[2], Anne Szostek[2], Patric Meyer[2], Frauke Nees[2], Georgios Paslakis[3], Maria Gilles[3], Michael Bock[1], Michael Deuschle[3], Herta Flor[2], Wolfhard Semmler[1]

[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Department of Cognitive & Clinical Neuroscience, Central Institute of Mental Health, Mannheim, Germany; [3]Department of Psychiatry & Psychotherapy, Central Institute of Mental Health, Mannheim, Germany

1795. Understanding of the Existing & Future Medical Procedures with MR Scanners: A Novel Tool for Estimation of Occupational Exposure
Valentina Hartwig[1], Rossana Tortorelli[2], Nicola Vanello[2], Giulio Giovannetti[1], Vincenzo Positano[3], Luigi Landini[2], Maria Filomena Santarelli[1]
[1]Institute of Clinical Physiology - CNR, Pisa, Italy; [2]Department of Information Engineering, University of Pisa, Italy; [3]Fondazione Toscana Gabriele Monasterio, Pisa, Italy

1796. Subject Tolerance for a Whole Body 7T Scanner
Maarten J. Versluis[1,2], Wouter M. Teeuwisse[1,2], Hermien E. Kan[1,2], Andrew G. Webb[1,2], Matthias J.P. van Osch,[2]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]C .J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands

1797. Development of a Template Driven, Adaptive, Active Noise Cancellation (ANC) System for Reduction of MR Acoustic Noise – Initial Results
Daniel Güllmar[1], Lucas A. Bitzer[1,2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Jena University Hospital, Jena, Thuringia, Germany; [2]School of Physics & Astronomy, Friedrich-Schiller-University, Jena, Thuringia, Germany

1798. Daily Longitudinal Quality Assessment in MRI: From Short-Term Fluctuations to Long-Term Stability
Peter Brunecker[1], Claudia Kunze[1], Anja Grebe[1], Chao Xu[1], Ivana Galinovic[1], Jochen B. Fiebach[1]
[1]Center for Stroke Research Berlin (CSB), Charité, Berlin, Germany

1799. Benchtop Measurements of Gradient Induced Heating
William Bradfield Handler[1], Chad Tyler Harris[1], Blaine Alexander Chronik[1]
[1]Physics & Astronomy, University of Western Ontario, London, Ontario, Canada

MR Engineering: Other

Exhibition Hall Thursday 13:30-15:30

1800. MRI Magnet Coils Stray Capacitance Effects & the Circuit Analysis Method
Yihe Hua[1], Anbo Wu[1], Chao Yang[2], Yan Zhao[1], Ye Bai[2], Fengshun Tan[2], Shike Huang[2]
[1]Global Research Center, GE, Shanghai, China, People's Republic of; [2]GE Healthcare, China, People's Republic of

1801. Initial Performance of a Multiple-Magnet Helium Recovery System
Albert R. Cross[1]
[1]University of Lethbridge, Lethbridge, Alberta, Canada

1802. Development of a Temperature Variable MRI System using a 1.0 Tesla Yokeless Permanent Magnet
Yasuhiko Terada[1], Katsumi Kose[1], Tomoyuki Haishi[2]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; [2]MRTechnology, Tsukuba, Ibaraki, Japan

1803. Performance of SQUID Sensor Arrays for MRI of the Brain
Koos Zevenhoven[1], Risto J. Ilmoniemi[1]
[1]Department of Biomedical Engineering & Computational Science (BECS), Aalto University, Helsinki, Finland

1804. Non-Contact Cardiac Gating with Ultra-Wideband Radar Sensors for High Field MRI
Olaf Kosch[1], Florian Thiel[1], Bernd Ittermann[1], Frank Seifert[1]
[1]Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Germany

1805. Metamaterial Media for MRI Applications
Marcos Alonso Lopez Terrones[1], Jose Miguel Algarín[1], Manuel J. Freire[1], Peter M. Jakob[2,3], Volker C. Behr[2], Ricardo Marques[1]
[1]Electronics & Electromagnetism, University of Seville, Seville, Andalucia, Spain; [2]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany; [3]Research Center Magnetice Resonance Bavaria, Würzburg, Bavaria, Germany

1806. Fast EPR Acquisition with Adaptive Heterogeneous Clocking (AHC)
Zhiyu Chen[1], David Johnson[1], George Caia[1], Ziqi Sun[1], Sergey Petryakov[1], Alexandre Samouilov[1], Jay Zweier[1]
[1]Davis Heart & Lung Research Institute, Ohio State University, Columbus, OH, United States

1807. A Mechanism to Produce Translational & Rotational Motion of a Phantom Inside an MR Scanner
Thomas Prieto[1], Brian Armstrong[2], Michael Brzeski[2], Robert Barrows[2], Todd Kusik[2], Maxim Zaitsev[3], Oliver Speck[4], Thomas Ernst[5]
[1]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Electrical Engineering, University of Wisconsin-Milwaukee, Milwaukee, WI, United States; [3]Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [4]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany; [5]Medicine, University of Hawaii, Honolulu, HI, United States

1808. Feasibility Study of MREIT in Clinical Applications
Volkan Emre Arpinar[1], Mark J. Hamamura[1], Lutfu Tugan Muftuler[1]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, Irvine, CA, United States

1809. Bimodal MRI-Optics Endoluminal Probe for Early Stage Colorectal Cancer Diagnosis: Design & Preliminary *In-Vivo* Results.
Anoop Ramgolam[1], Raphaël Sablong[1], Sandrine Bouvard[2], Hervé Saint-Jalmes[3], Olivier Beuf[1]
[1]CREATIS-LRMN, CNRS UMR 5220; Inserm U1044; INSA-Lyon; Université Lyon 1, Lyon, Rhone-Alpes, France; [2]TIGER/IDEE, Neuroscience Research Center, Lyon, Rhone-Alpes, France; [3]LTSI, Inserm U642, University Rennes1; Département d'Imagerie, centre Eugène Marquis, Rennes, Ille et Vilaine, France

1810. MR-Based Attenuation Correction in an Animal for Radiotracer Quantification
Mark Jason Hamamura[1], Hon J. Yu[1], Seunghoon Ha[1], Werner W. Roeck[1], James W. Hugg[2], Douglas J. Wagenaar[2], Dirk Meier[3], Bradley E. Patt[2], Orhan Nalcioglu[1,4]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Gamma Medica, Inc. (Clinical Division), Northridge, CA, United States; [3]Gamma Medica, Inc. (Industrial Division), Fornebu, Norway; [4]Department of Cogno-Mechatronics Engineering, Pusan National University, Pusan, Republic of Korea

1811. Investigation of a Dual-Function Applicator for RF Hyperthermia & MRI
Desmond Teck Beng Yeo[1], Xing Yang[2], Jing Wu[3], Lorne Wyatt Hofstetter[1], Joseph E. Piel[1], Eric W. Fiveland[1], Keith J. Park[1], Thomas K. Foo[1]
[1]Imaging Technologies, GE Global Research, Niskayuna, NY, United States; [2]Power Conversion Circuits Lab, GE Global Research, Shanghai, China, People's Republic of; [3]Electrical & Computer Engineering, Northeastern University, Boston, MA, United States

1812. An Adaptive MR-Compatible Lens
Julian Maclaren[1], Florian Schneider[2], Michael Herbst[1], Murat Aksoy[3], Daniel Kopeinigg[3], Juergen Hennig[1], Roland Bammer[3], Maxim Zaitsev[1], Ulrike Wallrabe[2]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [3]Dept. of Radiology, Stanford University, Stanford, United States

1813. ^{1}D RF Phase Gradient Coil for TRASE RF Imaging
QunLi Deng[1], Jonathan Sharp[1], Vyacheslav Volotovskyy[2], Boguslaw Tomanek[1], Scott King[2]
[1]Institute for Biodiagnostics (West), National Research Council of Canada, Calgary, AB, Canada; [2]Institute for Biodiagnostics, National Research Council of Canada, Winnipeg, MB, Canada

1814. Efficient Data Compression for Distributed Detection in Wireless High-Density Arrays: A Simulated Study
Jean-David Jutras[1], B. Gino Fallone[1,2], Nicola De Zanche[1,2]
[1]Dept. of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Dept. of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

1815. Quantum Perspectives in Radiation Damping: Rabi Nutation & the Onset of Free Induction Decay
James Tropp[1]
[1]Global Applied Science Lab, GE Healthcare Technologies, Fremont, CA, United States

1816. Evaluation of the Effect of Phase Errors on the Performance of a Butler Matrix
Enrico Pannicke[1], Wolfgang Driesel, Andre Pampel[2], Toralf Mildner[3], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Saxony, Germany; [3]Max Planck Institute for Human Cognitive & Brain Sciences, Germany

Hardware for Animal MRI

Exhibition Hall Monday 14:00-16:00

1817. An 8-Channel Metamaterial T-R Coil at 9.4T
Andreas Senn[1], Andreas Peter[1], Jan G. Korvink[1,2]
[1]Department of Microsystems Engineering (IMTEK), University of Freiburg, Freiburg, Baden-Württemberg, Germany; [2]Freiburg Institute for Advanced Studies (FRIAS), University of Freiburg, Freiburg, Baden-Württemberg, Germany

1818. Novel Orthogonal Double Solenoid (ODS) Volume RF Coil for Small Animal Imaging
Krishna N. Kurpad[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States

1819. Transceiver Double Crossed Saddle for Rodents at 2T
Daniel Papoti[1], *Edson Luis Gea Vidoto*[1], *Mateus José Martins*[1], *Alfredo O. Rodríguez*[2], *Alberto Tannús*[1]
[1]Instituto de Física de São Carlos, São Carlos, São Paulo, Brazil; [2]UAM Iztapalapa, DF, Mexico, Mexico

1820. A 20-Coil Array System for Parallel Imaging-Accelerated Multiple Mouse MRI
Marc Stephen Ramirez[1], *Yunyun Chen*[2], *Stephen Y. Lai*[2], *James Andrew Bankson*[1]
[1]The Department of Imaging Physics, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States; [2]The Department of Head & Neck Surgery, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States

1821. High Throughput Microimaging of Mouse Brain & Embryo
Jun Dazai[1], *Michael Wong*[1], *Christine Laliberté*[1], *R. Mark Henkelman*[1]
[1]Mouse Imaging Centre, the Hospital for Sick Children, Toronto, Ontario, Canada

1822. Improving Whole Brain Coverage & Signal-To-Noise Ratio using Novel Intra-Oral & Over Head Surface Coil Array in Rat Under 9.4T
Rupeng Li[1], *Phillip Bishop, Andrzej Jesmanowicz, Andrew Nencka, J. B. Stephenson IV*[2], *Christopher Pawela, Ji-Geng Yan*[2], *Anthony G. Hudetz*[3], *Hani Matloub*[2], *James S. Hyde*[1]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Plastic Surgery, Medical College of Wisconsin; [3]Anesthesiology, Medical College of Wisconsin

1823. Eight-Channel Array Coil Optimized for Functional Imaging of Awake Monkeys at 7T
Azma Mareyam[1], *James Blau*[1], *Jonathan Polimeni*[1,2], *Boris Keil*[1,2], *Reza Farivar*[1,2], *Thomas Benner*[1,2], *Wim Vanduffel*[1,2], *Lawrence L. Wald*[1,3]
[1]A.A Martinos Center for Biomedical Imaging, Dept. of Radiology, Massachussetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Division of Health Sciences & Technology, Harvard-MIT, Cambridge, MA, United States

1824. A Customized Coil Arrangement for PatLoc Imaging Inside a 9.4 T MRI Spectrometer
Elmar Fischer[1], *Raghad Aal-Braij*[2], *Andreas Peter*[2], *Jürgen Hennig*[1], *Jan Gerrit Korvink*[2,3], *Maxim Zaitsev*[1]
[1]Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany; [3]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany

1825. Quadrature RF Coil & Phased Array Operation at 21.1 T
Jose Antonio Muniz[1,2], *Malathy Elumalai*[1,3], *Ihssan S. Masad*[1,2], *William W. Brey*[1], *Petr L. Gor'kov*[1], *Samuel Colles Grant*[1,2]
[1]National High Magnetic Field Laboratory, the Florida State University, Tallahassee, FL, United States; [2]Chemical & Biomedical Engineering, the Florida State University, Tallahassee, FL, United States; [3]Electrical & Computer Engineering, the Florida State University, Tallahassee, FL, United States

1826. Comparison of Transmit Coil Configurations for Multiple-Mouse MRI with Receive-Only Coils
Marc Filipe Carias[1], *John G. Sled*[1], *Mark R. Henkelman*[1], *Brian J. Nieman*[1]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Onratio, Canada

1827. Mobile Coil Array for Interventional MRI
Meng-Chi Hsieh[1,2], *San-Chao Hwang*[3], *Hsu Chang*[3], *Jyh-Horng Chen*[1,2]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [3]Division of Medical Engineering Research, National Health Research Institutes, Zhunan, Taiwan

1828. Dynamic Imaging of a Minipig's Knee using a Multichannel Array & a Movement Device
Sairamesh Raghuraman[1,2], *Joachim Schrauth*[1], *Daniel Weber*[1], *Frank Resmer*[2], *Peter Michael Jakob*[1], *Titus Lanz*[2], *Daniel Haddad*[3]
[1]University of Wuerzburg, Wuerzburg, Germany; [2]RAPID Biomedical GmbH, Rimpar, Germany; [3]MRB Research Centre, Wuerzburg, Germany

1829. Complementary-Output PIN Diode Driver for Animal Imaging
Barbara L. Beck[1,2], *Joshua E. Slade*[1], *Huadong Zeng*[1,2]
[1]McKnight Brain Institute, University of Florida, Gainesville, FL, United States; [2]National High Magnetic Field Laboratory, Tallahassee, FL, United States

Gradients, Shims & Magnets: Design, Construction & Characterization

Exhibition Hall Tuesday 13:30-15:30

1830. Permanent Magnet Assembly Producing a Strong Tilted Homogeneous Magnetic Field: Towards Magic Angle Field Spinning NMR & MRI
Dimitrios Sakellariou[1], Cedric Hugon[1], Angelo Guiga[1], Aubert Guy[1], Sandrine Cazaux[1], Philippe Hardy[1]
[1]CEA Saclay, Gif sur Yvette, Essonne, France

1831. Influence of Protection Circuit on Quench Characteristics for Clinical MRI Superconducting Magnets
Ran Zhang[1], Feng Liu[2], Xiuhe Wang[1], Stuart Crozier[2]
[1]School of Electrical Engineering, Shandong University, Jinan, Shandong, China, People's Republic of; [2]School of Information Technology & Electrical Engineering, University of Queensland, Brisbane, Queensland, Australia

1832. A Single Magnet Fast Field-Cycling MRI System with Detection at 0.5T
Gareth Reynold Davies[1], Kerrin James Pine[1], David John Lurie[1], Fred Goldie[2]
[1]Bio-medical Physics, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom; [2]Tesla Engineering Ltd., Storrington, United Kingdom

1833. A Field Offset Coil for Spatially Localised *In Vivo* Field-Cycling Relaxometry
Kerrin James Pine[1], Fred Goldie[2], David John Lurie[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Scotland, United Kingdom; [2]Tesla Engineering Ltd, Storrington, West Sussex, United Kingdom

1834. Innovations in Gradient Coil Construction
William Bradfield Handler[1], Brian Dalrymple[1], Craig K. Goodrich[2], Dennis L. Parker[2], Timothy John Scholl[3,4], Frank Van Sas[1], Blaine Alexander Chronik[1]
[1]Physics & Astronomy, University of Western Ontario, London, Ontario, Canada; [2]University of Utah, U.C.A.I.R., Salt Lake City, UT, United States; [3]Robarts Research Institute, Imaging Research Laboratories, London, Ontario, Canada; [4]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada

1835. Insert Gradient Subsystem Tuning by Direct Impedance Measurements
Wesley M. Skeffington[1], Franco M. Martinez-Seantiesteban[2], Bruce D. Collick[3], Andrew Alejski[2], Brian K. Rutt[4], Luis J. Garces[1], Paul M. Szczesny[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [3]GE Healthcare, Waukesha, WI, United States; [4]Radiology Department, Stanford University, Stanford, CA, United States

1836. Experimental Validation of an Improved Analytical Temperature Distribution Model for Gradient Coils
Peter T. While[1], Michael Poole[2], Hector Sanchez Lopez[2], Larry K. Forbes[1], Stuart Crozier[2]
[1]School of Mathematics and Physics, University of Tasmania, Hobart, TAS, Australia; [2]ITEE, University of Queensland, Brisbane, QLD, Australia

1837. Planar Gradient System for Imaging with Non-Linear Gradients
Sebastian Littin[1], Anna Masako Welz[1], Daniel Gallichan[1], Gerrit Schultz[1], Christian Cocosco[1], Jürgen Hennig[1], Willem de Boer[2], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Institute of Experimental nuclear Physics, KIT, Karlsruhe, Germany

1838. Novel Gradient Transparent RF Shielding Technologies for Integrated PET/MR
Daniel Truhn[1], Fabian Kiessling[1], Volkmar Schulz[1,2]
[1]Institute of Experimental & Molecular Imaging, RWTH Aachen, Aachen, NRW, Germany; [2]Philips Research Europe, Aachen, Germany

1839. A Practical Insert Design for DreMR Imaging in the Human Head
Chad Tyler Harris[1], William B. Handler[1], Jamu K. Alford[2], Blaine A. Chronik[1]
[1]Physics & Astronomy, University of Western Ontario, London, Ontario, Canada; [2]Martinos Center for Biomedical Imaging, Massachusetts General Hospital/Harvard Radiology, Boston, MA, United States

1840. Reducing Image Artefacts in Concurrent TMS/fMRI by Passive Shimming
Andreas Bungert[1,2], Christopher Chambers[1], John Evans[1]
[1]Cubric, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]Magnetic Resonance Centre, School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

1841. Autocalibration of Field Monitoring Arrays by Reference Tones
David Otto Brunner[1], Christoph Barmet[1], Maximilian Haeberlin[1], Bertram Jacob Wilm[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

1842. An Autonomous System for Continuous Field Monitoring with Interleaved Probe Sets
Benjamin Emanuel Dietrich[1], Christoph Barmet[1], David Brunner[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

1843. Using Spatio-Temporal Field Monitoring for Iterative Higher Order DSU Pre-Emphasis Calibration
Ariane Fillmer[1], Johanna Vannesjö[1], Christoph Barmet[1], Peter Boesiger[1], Klaas P. Pruessmann[1], Anke Henning[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

1844. Eddy Current Compensation for a PatLoc Gradient Coil
Anna Masako Welz[1], Daniel Gallichan[1], Andrew J. Dewdney[2], Walter R. Witschey[1], Christian A. Cocosco[1], Hans Weber[1], Jürgen Hennig[1], Jan G. Korvink[3,4], Maxim Zaitsev[1]
[1]University Medical Center Freiburg, Department of Radiology, Medical Physics, Freiburg, Baden-Württemberg, Germany; [2]Siemens Medical Solutions, Erlangen, Germany; [3]Dept. of Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany; [4]Freiburg Institute of Advanced Studies (FRIAS), University Freiburg, Freiburg, Germany

1845. A Novel Method of Insert Gradient Field Mapping on a Composite Gradient System
Glen Morrell[1], Joshua Kaggie[2], K. C. Goodrich[2], Seong-Eun Kim[2], Sung Man Moon[2], Dennis Parker[2]
[1]Radiology, University of Utah, Salt Lake City, UT, United States; [2]Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States

1846. Oscillating Magnetic Field Mapping using MRI
Vivek R. Bhatia[1], Luis Hernandez-Garcia[1]
[1]Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

1847. Transmit K-Space Calibration using Magnetic Field Probes
Frederik Testud[1], Christoph Barmet[2], Martin Haas[1], Denis Kokorin[1], Juergen Hennig[1], Klaas P. Pruessmann[2], Maxim Zaitsev[1]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]ETH & University, Zurich, Institute for Biomedical Engineering, Zurich, Switzerland

1848. SAR Reduction using Non-Linear Gradients
Emre Kopanoglu[1,2], Burak Akin[1], Vakur B. Erturk[2], Ergin Atalar[1,2]
[1]National Magnetic Resonance Research Center (UMRAM), Bilkent University, Ankara, Turkey; [2]Department of Electrical & Electronics Engineering, Bilkent University, Ankara, Turkey

RF Circuits & Systems

Exhibition Hall Wednesday 13:30-15:30

1849. Improving UHF Transmit Efficiency with Voltage Baluns
Debra Strick Rivera[1], Carsten Koegler[1], Robert Turner[1]
[1]Neurophysics, Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

1850. High-Efficiency RF Power-Amplifier Module for Magnetic-Resonance Imaging
Frederick H. Raab[1], Martin C. Poppe[2], Daniel P. Myer[3]
[1]Green Mountain Radio Research Company, Colchester, VT, United States; [2]Poppe Associates; [3]Communication Power Corporation

1851. RF Coil Element Mounted Power Amplifiers
John T. Vaughan[1], Daniel Myer[2]
[1]University of Minnesota, Minneapolis, MN, United States; [2]CPC

1852. Silicon Carbide MRI Transmitters
Oliver Heid[1], Timothy Hughes[1]
[1]Corporate Research, Siemens AG, Erlangen, Bavaria, Germany

1853. High Q Reactive Network for Automatic Impedance Matching
Barbara L. Beck[1,2], Sien Wu[3], Walker J. Turner[3], Rizwan Bashirullah[3], Thomas H. Mareci[2,4]
[1]McKnight Brain Institute, University of Florida, Gainesville, FL, United States; [2]National High Magnetic Field Laboratory, Tallahassee, FL, United States; [3]Electrical & Computer Engineering, University of Florida; [4]Biochemistry & Molecular Biology, University of Florida

1854. Time Domain Modeling of MR Linear Balanced Duplexers Switched with Low Magnetic Moment PIN Diodes
Robert H. Caverly[1], William E.Doherty[2], Ronald Watkins[3]
[1]ECE, Villanova University, Villanova, PA, United States; [2]Microsemi-Lowell; [3]Radiology, Stanford University

1855. Tunable Adjustable Inductive Decoupling (TAID) Board
Victor Taracila[1], Aleksey Zemskov[1], Miguel A. Navarro[1], Vijayanand Alagappan[1], Fraser Robb[1]
[1]GE Healthcare, Aurora, OH, United States

1856. Noise Power Reduction Strategy by Matching Receiver Bandwidth to the Coil Sensitivity Profile of the Phased Array Coil
Sergei Obruchkov[1], William O'Reilly[2], Arsen Hajian[3]
[1]University of Waterloo, Waterloo, ON, Canada; [2]Tornado Medical Systems, Toronto, ON, Canada; [3]Systems Design Engineering, University of Waterloo, Waterloo, ON, Canada

1857. Radio Frequency Front-End Circuitry for an Implantable Multiple Frequency Coil
Walker J. Turner[1], Barbara L. Beck[2], Sien Wu[1], Thomas H. Mareci[3], Rizwan Bashirullah[1]
[1]Electrical & Computer Engineering, University of Florida, Gainesville, FL, United States; [2]McKnight Brain Institute , University of Florida; [3]Biochemistry & Molecular Biology, University of Florida

1858. Common-Mode Differential-Mode (CMDM) Method for Quadrature Transmit/receive Surface Coil for Ultrahigh Field MRI
Ye Li[1], Yong Pang[1], Xiaoliang Zhang[1,2]
[1]Department of Radiology & Biomedical Imaging, Univerisity of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

1859. Vertical Loop Decoupling Method for Gapped Phased-Array Coils
Yoshihisa Soutome[1], Yosuke Otake[1], Yoshitaka Bito[1]
[1]Central Research Laboratory, Hitachi Ltd., Kokubunji, Tokyo, Japan

1860. Capacitor/Inductor Decoupling & Its New Application to Microstrip Array
Bing Wu[1], Xiaoliang Zhang[2,3]
[1]Coil Engineering, GE Healthcare, Wauehsha, WI, United States; [2]Radiology & Biomedical Imaging, UCSF; [3]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

1861. Optimised LNAs for 3 T, 7 T & 9.4 T
Andreas Peter[1], Jan G. Korvink[1,2]
[1]Department of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [2]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany

1862. Miniaturized Two-Stage Preamplifiers for Receive-Array Coils at 400 MHz
Elmar Fischer[1], Andreas Peter[2], Daniel Sonner[3], Hermann Massler[3], Jan G. Korvink[2,4], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany; [3]Hochfrequenz-Bauelemente und -Schaltungen, Fraunhofer IAF, Freiburg, Germany; [4]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany

1863. Scalability & Channel Independency of the Digital Broadband DStream Architecture
Cecilia Possanzini[1], Phil van Liere[1], Hans Roeven[1], Jan den Boef[1], Charlie Saylor[2], Jan van Eggermond[1], Paul Harvey[1], Elisabeth Moore[1]
[1]Philips Healthcare, Best, Netherlands; [2]Invivo Corp., Gainsville, FL, United States

1864. Comparison of Three Preamplifier Technologies: Variation of Input Impedance & Noise Figure with B_0 Field Strength
Russell Lagore[1], Brodi Roberts[1], B. Gino Fallone[1,2], Nicola De Zanche[1,2]
[1]Dept. of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Dept. of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

1865. Optical Transmission System for High Field Systems
Taner Demir[1], Lance DeLaBarre[2], Burak Akin[1], Gregor Adriany[2], Kamil Ugurbil[2], Ergin Atalar[1]
[1]National Magnetic Resonance Research Center (UMRAM), Bilkent University, Ankara, Turkey; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

1866. Reducing Element Coupling in Array Coils using Off-Tuned Elements
Boris Keil[1], Veneta Tountcheva[1], Christina Triantafyllou[1,2], Lawrence L. Wald[1,3]
[1]A. A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [2]McGovern Institute for Brain Research, MIT, Cambridge, MA, United States; [3]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

1867. A 32-Channel Parallel Exciter/Amplifier Transmit System for 7T Imaging
Lou Poulo[1], Robert Haefner[1], Bernd Stoeckel[2], Cem Murat Deniz[3], Leeor Alon[3], Daniel K. Sodickson[3], Yudong Zhu[3]

[1]Analogic Corporation, Peabody, MA, United States; [2]Siemens Medical Solutions USA Inc, New York, NY, United States; [3]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States

1868. 8-Channel Parallel Transmit & Receive System for 3 Tesla
Wolfgang Loew[1], Randy Giaquinto[1], Laura Sacolick[2], William Allyn Grissom[2], Mika Vogel[2]
[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]GE Global Research Europe, Germany

Novel Coils & Arrays

Exhibition Hall Thursday 13:30-15:30

1869. A 7T Receive Array for *In Vitro* Studies of Human Brain Tissue
Andreas Peter[1], Matthias Kladeck[2], Oliver Speck[2], Jan G. Korvink[1,3]
[1]Department of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [2]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany; [3]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany

1870. A New Intravascular Loopless Monopole Antenna (ILMA) for MR Imaging
Hong Yang Yuan[1], Xing Lv[1], Rui Zhang[1], Xue Dong Yang[2], Xiao Ying Wang[2,3], Xiao Hai Ma[4], Zhao Qi Zhang[4], Jue Zhang,[3], Jing Fang[1,3]
[1]College of Engineering, Peking University, Beijing, China, People's Republic of; [2]Dept. of Radiology, Peking University First Hospital, Beijing, China, People's Republic of; [3]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, People's Republic of; [4]Dept. of Radiology, Beijing Anzhen Hospital, Beijing, China, People's Republic of

1871. HTS Volume Coil Enhanced SNR in Wideband Mice Whole Body Screening
In-Tsang Lin[1,2], Edzer L. Wu[2,3], Hong -Chang Yang[4], Jyh-Horng Chen[1,2]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, 106, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan Univeristy, Taipei, 106, Taiwan; [3]Department of Biomedical Engineering, National Taiwan University, Taipei, 106, Taiwan; [4]Department of Physics, National Taiwan University, Taipei 106, Taiwan

1872. High-Temperature Superconducting RF Surface Coil Platform for *In-Vivo* Brain Structural Differences
In-Tsang Lin[1,2], Bing-Hsuan Lei[2,3], Hong -Chang Yang[4], Jyh-Horng Chen[1,2]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, 106, Taiwan; [2]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, 106, Taiwan; [3]Department of Electrical Engineering, National Taiwan University, Taipei, 106, Taiwan, Taipei, 106, Taiwan; [4]Department of Physics, National Taiwan University, Taipei 106, Taiwan

1873. A 13-Channel 3 Tesla Shoulder Coil on a Domed Conformable Former
Graham Charles Wiggins[1], Bei Zhang[1], Christian Glaser[1], Bernd Stoeckel[2], Michael P. Recht[1], Daniel Sodickson[1]
[1]Radiology, NYU Medical Center, New York, NY, United States; [2]Siemens Medical Solutions, New York, NY, United States

1874. Multilayer Micro Coil Phased Array for MRI
Oliver Georg Gruschke[1], Lars Clad[2], Vlad Badilita[2], Kai Kratt[2], Mohammad Mohammadzadeh[3], Nicoleta Baxan[3], Dominik von Elverfeld[3], Andreas Peter[2], Jürgen Hennig[3], Ulrike Wallrabe[2], Jan G. Korvink[2,4]
[1]Microsystems Engineering – IMTEK, University of Freiburg , Freiburg, Germany; [2]Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany; [3]Dept. of Radiology Medical Physics , University Medical Center , Freiburg, Germany; [4]Freiburg Institute of Advanced Studies (FRIAS),, University of Freiburg, Freiburg, Germany

1875. A Printed Loop Element with Integrated Capacitors & Co-Planar Shield for 7 Tesla
Mary Preston McDougall[1,2], Steven M. Wright[1,2], Joseph Rispoli[1], Mario Carillo[2], Ivan Dimitrov[3], Sergey Cheshkov[3], Craig Malloy[3]
[1]Biomedical Engineering, Texas A&M University, College Station, TX, United States; [2]Electrical Engineering, Texas A&M University, College Station, TX, United States; [3]University of Texas Southwestern Medical Center, Dallas, TX, United States

1876. High Performance Nanomaterial Coil for Carotid Imaging
Raju Viswanathan[1], Bradley Goldstein, Gabor Mizsei[2], Sushmitha Rajakutty
[1]Tursiop Technologies, LLC, Cleveland, OH, United States; [2]Tursiopp Technologies, LLC

1877. Design & Characterization of a Set of MRI Histology RF Coils Dedicated to Standardized Slide Sections
Dung Minh Hoang[1], Chao Zhang[1], Mesha Shamsie[1], Latifa Fakri-Bouchet[2], Youssef Zaim Wadghiri[1]
[1]Radiology, NYU School of Medicine, New York, NY, United States; [2]CREATIS, Lyon 1 University - Claude Bernard, Lyon, France

1878. Counter Rotating Currents Cryogenic Surface Coils
Jarek Wosik[1,2], Andrzej Jesmanowicz[3], Lian Xue[4], Leiming Xie[1], Flora Suk-Yin Ip[1]

[1]Electrical & Computer Engineering, University of Houston, Houston, TX, United States; [2]Texas Center for Superconductivity, Houston, TX, United States; [3]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Time Medical, Metuchen, NJ, United States

1879. Remote Detection by MRI at 3T using a Waveguide
Fabian Vazquez[1], Rodrigo Martin[1], Sergio E. Solis[2], Alfredo O. Rodriguez[1]
[1]UAM Iztapalapa, DF, Mexico, Mexico; [2]Laboratorio de Neurofisiologia Integrativa, Instituto Nacional de Psiquiatria Ramon de la Fuente, DF, Mexico, Mexico

1880. Simple Quadrature Volume Antenna Transformed from Loop
Hideta Habara[1], Yoshitaka Bito[1], Hisaaki Ochi[1], Yoshihisa Soutome[1], Yukio Kaneko[1], Masayoshi Dohata[1,2], Hiroyuki Takeuchi[2], Tetsuhiko Takahashi[2]
[1]Central Research Lab., Hitachi Ltd., Kokubunji, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

1881. A Method for Increasing Electrical Length of Microstrip Waveguides
Rock Hadley[1], Dennis Parker[1], Glen Morrell[1]
[1]Radiology - UCAIR, University of Utah, Salt Lake City, UT, United States

Array Coil Applications

Exhibition Hall Monday 14:00-16:00

1882. Study on a 3T Head Coil: Channel Reduction from 32 to 24
Bing Wu[1], Haidong Peng[1], Dan Xu[1], Liang Xuan[1]
[1]GE Healthcare, Waukesha, WI, United States

1883. Simulating Array SNR & Effective Noise Figure in Dependance of Noise Coupling
Christian Findeklee[1], Randy Duensing[2], Arne Reykowski[2]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Invivo, United States

1884. 4D Flow-Sensitive MRI of the Thoracic Aorta using 12- & 32-Channel Coils
Aurelien F. Stalder[1], Zhi Yuan Dong[1], Yang Qi[1], Jelena Bock[2], Jürgen Hennig[2], Michael Markl[2], Kun Cheng Li[1]
[1]Dept. of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, People's Republic of; [2]Dept. of Radiology - Medical Physics, University Hospital Freiburg, Germany

1885. Development of a Receiver Coil Array for 2D Accelerated Imaging of the Complete Neurovascular System
Petrice Marie Mostardi[1], Eric G. Stinson[1], Thomas C. Hulshizer[1], Phillip J. Rossman[1], Stephen J. Riederer[1]
[1]MR Research Laboratory, Mayo Clinic, Rochester, MN, United States

1886. The Potentialities of Implantable Micro-Coil for Detection of Brain's Proton Metabolites by NMR Micro-Spectroscopy
Aziz Kadjo[1], Ludovic Martin-Durupty[1], Raymond Cespuglio[2], Danielle Graveron-Demilly[1], Latifa Fakri-Bouchet[1]
[1]University of Lyon, Lyon1,Laboratoire CREATIS-LRMN, UMR CNRS 5220, INSERM U 630, INSA de Lyon, Villerbanne, France; [2]University of Lyon, Lyon1, Laboratoire «Radicaux libres/substrats énergie et physiopatho cérébrale, Lyon cedex 08, France

1887. Experimental Verification of SNR & Parallel Imaging Improvements using Complete Coil Arrays
Adam Maunder[1], Tyler Charlton[1], B. Gino Fallone[1,2], Nicola De Zanche[1,2]
[1]Dept. of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Dept. of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

1888. Comprehensive Neurovascular Evaluation using an Automatic Optimal SNR-Based Channel Combination from a 62-Element Coil Array at 3T
Amol Pednekar[1], Claudio Arena[2], Greg Wilson[3], Cecilia Possanzini[4], Charles Saylor[2], Raja Muthupillai[2]
[1]Philips Healthcare, Houston, TX, United States; [2]Diagnostic & Interventional Radiology, St. Luke's Episcopal Hospital, Houston, TX, United States; [3]Philips Healthcare, Cleveland, United States; [4]Philips Healthcare, Best, Netherlands

Non-Proton Coils & Hardware

Exhibition Hall Tuesday 13:30-15:30

1889. Proton Traps for Multi-Nuclear RF Coils: Design Analysis & Practical Implementation for ^{13}C MRS in Humans at 7T
Martin Meyerspeer[1,2], Rolf Gruetter[1,3], Arthur W. Magill[1,4]

[1]LIFMET, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]MR Centre of Excellence & ZMPBMT, Medical University of Vienna, Vienna, Austria; [3]Radiology, University of Geneva & Lausanne, Switzerland, Switzerland; [4]Radiology, University of Lausanne, Lausanne, Switzerland

1890. RF Field Optimization of 4T Double-Tuned Surface TEM Resonators for $^{1}H/^{23}Na$ MRI

Assunta Vitacolonna[1], Sandro Romanzetti[2], Joerg Felder[2], Nadim Jon Shah[2,3], Antonello Sotgiu[4], Marcello Alecci[1]
[1]Scienze della Salute, University of L'Aquila, L'Aquila, Italy; [2]Inst. of Neuroscience & Medicine, Research Centre, Jülich, Germany; [3]Faculty of Medicine, Department of Neurology, RWTH Aachen University, Aachen, Germany; [4]ITA srl, L'Aquila, Italy

1891. *In Vivo* Quantification of Renal Sodium Concentration with a Dual RF Resonator System

Raffi Kalayciyan[1], Friedrich Wetterling[1], Sabine Neudecker[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Medical Research Center, Heidelberg University, Mannheim, Germany

1892. Double Tunable TxRx $^{1}H/^{19}F$ Helmholtz Pair for MR Imaging & Spectroscopy at 11.7T

Mark Jacobus van Uden[1], Yi Sun[1], Arend Heerschap[1]
[1]Department of Radiology (667), Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

1893. Zig-Zag ^{13}C Surface Coil at 7T for High-Sensitivity Subcutaneous Lipid MRS

Ivan Emilov Dimitrov,[2], Craig R. Malloy[3,4], Andrew G. Webb[5]
[1]Philips Medical Systems, Cleveland, OH, United States; [2]Advanced Imaging Reseach Center (AIRC), UT Southwestern, Dallas, TX, United States; [3]Advanced Imaging Research Center (AIRC), UT Southwestern, Dallas, TX, United States; [4]VA North Texas Health Care System, Dallas, TX, United States; [5]Radiology, Leiden University Medical Center, Leiden, Netherlands

1894. Dual-Tuned $^{1}H/^{13}C$ Orthogonal Double Solenoid Volume Coil for Simultaneous Acquisition in Small Animals *In Vivo*

Laura Claire Bell[1], Eric T. Peterson[1], Jeremy W. Gordon[1], Sean B. Fain[1], Krishna N. Kurpad[1]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

1895. A ^{1}H-^{31}P Array Coil for Human Brain Spectroscopy at 3T

Wolfgang Driesel[1], Andre Pampel[1], Christian Labadie, Toralf Mildner[2], Harald E. Möller[3]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Saxony, Germany; [2]Max Planck Institute for Human Cognitive & Brain Sciences, Germany; [3]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

1896. A 7T Halo Loop Resonator for Registration of ^{31}P MRSI

Thomas Michael Barbara[1], Manoj Sammi[1], John Grinstead[2], William D. Rooney[1]
[1]AIRC, Oregon Health & Sciences University, Portland, OR, United States; [2]Siemens Healthcare, Portland, OR

1897. One Coil to Light Them All: Broadband Body Coil for Multi-Frequency Imaging using a Coaxial Waveguide

Stefan Alt[1], Marco Müller[1], Armin Michael Nagel[1], Florian Meise[1], Reiner Umathum[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

1898. Developement of Multi-Tranceiver Dual-Tuned Knee Coil at 3T

Junghwan Kim[1], Chanhong Moon[1], Bumwoo Park[1], Alessandro Furlan[1], Anthony Defranco[2], Tiejun Zhao[3], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]MR research center, University of Pittsburgh, Pittsburgh, PA, United States; [3]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

1899. A ^{1}H-^{31}P Array Coil for Human Brain Spectroscopy at 3T

Wolfgang Driesel[1], André Pampel[1], Christian Labadie[1], Toralf Mildner[1], Harald E. Moeller[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

1900. A 7-Tesla Transmit with 15-Channel Receive-Only Array Knee Coil for Sodium Imaging

Matthew Finnerty[1], Xiaoyu Yang[1], Tsinghua Zheng[1], Jeremiah Heilman[1], Nicholas Castrilla[1], Joseph Herczak[1], Hiroyuki Fujita[1,2], Graham C. Wiggins[3], Ryan Brown[3], Guillaume Madelin[3], Gregory Chang[3], Ravinder R. Regatte[3], Michael Recht[3], Siegfried Trattnig[4], Vladimir Juras[4], Wolfgang Renz[5], Franz Schmitt[5], Bernd Stoeckel[6], Andreas Potthast[5], Karsten Wicklow[5]
[1]Quality Electrodynamics, Mayfield Village, OH, United States; [2]Departments of Physics & Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Department of Radiology, NYU Langone Medical Center, New York, United States; [4]Department of Radiology, Medical University of Vienna, Vienna, Austria; [5]Siemens Healthcare, Erlangen, Germany; [6]Siemens Medical Solutions USA, Inc., Malvern, PA, United States

1901. $^{1}H/^{19}F$ Large Coverage Homogeneous Transmit Coil with Dedicated Multi-Element Receive Coils.

Mark Jacobus van Uden[1], Fernando Bonetto[1,2], E. G. W. ter Voert[1], Stephan Orzada[3], Ijm de Vries[4], Hanneke van Laarhoven[5], Arend Heerschap[1]
[1]Department of Radiology (667), Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Department of Tumor Immunology , Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Erwin L. Hahn Institute for Magnetic

Resonance Imaging, Essen, Germany; [4]Department of Tumor Immunology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [5]Department of Medical Oncology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

Traveling Waves in MRI

Exhibition Hall Wednesday 13:30-15:30

1902. **Safety Evaluation of a Multiple-Channel Travelling-Wave System at 7T**
Jan Paska[1], David O. Brunner[2], Juerg Froehlich[1], Klaas P. Pruessmann[2]
[1]Laboratory for Electromagnetic Fields & Microwave Electronics, ETH Zurich, Zurich, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

1903. **Traveling Wave Mode Transformation in a Waveguide with High Dielectric Medium for Ultra-High Field MRI**
Alexey Tonyushkin[1,2], Andrew J. M. Kiruluta[1,2]
[1]Radiology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [2]Physics Dept., Harvard University, Cambridge, MA, United States

1904. **MR Experiment Validation of Parallel Traveling-Wave with Quadrature Patch Antenna Transceiver Array**
Yong Pang[1], Daniel Vigneron[1,2], Xiaoliang Zhang[1,2]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco & Berkeley, CA, United States

1905. **Multi-Pass Travelling Wave Volume Coil**
Reiner Umathum[1], Michael Bock[1]
[1]German Cancer Research Center, Heidelberg, B.W., Germany

1906. **Travelling Wave Coil with Limited SAR**
Marco Mueller[1], Stefan Alt[1], Reiner Umathum[1], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

1907. **Experimental Verification of Numerical EM Field Simulations for Ultra-High Field Travelling Wave MRI**
Daniel Brenner[1], Frank Geschewski[1], Joerg Felder[1], Kaveh Vahedipour[1], Nadim Jon Shah[1,2]
[1]Institute of Neurosciene & Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

1908. **Numerical Study of the Waveguide Magnetic Field via the Principal Mode for MRI at 3T**
Fabian Vazquez[1], Rodrigo Martin[1], David Flores[1], Sergio Solis[2], Alfredo O. Rodriguez[1]
[1]UAM Iztapalapa, DF, Mexico, Mexico; [2]Laboratorio de Neurofisiologia Integrativa, Instituto Nacional de Psiquiatria Ramon de la Fuente, DF, Mexico, Mexico

1909. **New Travelling Wave Coil Concepts**
Marco Mueller[1], Reiner Umathum[1], Stefan Alt[1], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

1910. **Improvement of Travelling Wave Excitation for Whole Body 7T MRI with an Extended Gradient Coil RF-Shield of 1.58 M Length**
Tim Herrmann[1], Johannes Mallow[1], Kyoung Nam Kim[1], Johannes Bernarding[1], Joerg Stadler[2]
[1]Department of Biometry & Medical Informatics, OvG University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [2]Leibniz-Institute for Neurobiology, Magdeburg, Saxony-Anhalt, Germany

Diffusion MR: Advanced Signal Models & Reconstruction

Exhibition Hall Monday 14:00-16:00

1911. **A Hierarchy of Analytic Models for the Diffusion MRI Signal in Brain White Matter**
Eleftheria Panagiotaki[1], Torben Schneider[1,2], Bernard Siow[1,3], Mark F. Lythgoe[3], Matt G. Hall[1], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, Dept. of Computer Science, University College London, London, United Kingdom; [2]Institute of Neurology, University College London; [3]Centre for Advanced Biomedical Imaging, University College London

1912. **Statistical Analysis of Apparent Fibre Density: Supra-Threshold Clustering Over Space & Orientation**
David Raffelt[1,2], J-Donald Tournier[3,4], Gerard Ridgway[5], Stephen Rose[6], Robert Henderson[7], Stuart Crozier[2], Alan Connelly[3,4], Olivier Salvado[1]
[1]The Australian E-Health Research Centre, CSIRO, Brisbane, QLD, Australia; [2]Biomedical Engineering, School of ITEE, University of Queensland, Brisbane, QLD, Australia; [3]Brain Research Institute, Florey Neuroscience Institutes (Austin), Melbourne, VIC, Australia; [4]Department of Medicine, University of Melbourne, Melbourne, VIC, Australia; [5]Institute of Neurology, University College

London, London, United Kingdom; [6]Centre for Advanced Imaging, University of Queensland, Brisbane, QLD, Australia; [7]Department of Neurology, Royal Brisbane & Women's Hospital, Brisbane, QLD, Australia

1913. Rapid Diffusion Spectrum Imaging with Partial Q-Space Encoding
Anh Tu Van[1], Rafael O'Halloran[1], Samantha Holdsworth[1], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States

1914. Improved Sampling Patterns for Accelerated Diffusion Spectrum Imaging using Compressed Sensing
Marion Irene Menzel[1], Jonathan Immanuel Sperl[1], Ek Tsoon Tan[2], Kedar Khare[2], Kevin F. King[3], Xiaodong Tao[2], Christopher J. Hardy[2], Luca Marinelli[2]
[1]GE Global Research, Garching bei München, Germany; [2]GE Global Research, Niskayuna, NY, United States; [3]GE Healthcare, Waukesha, WI, United States

1915. Sparsity Characterisation of the Diffusion Propagator
Etienne Saint-Amant[1], Maxime Descoteaux[1]
[1]Computer Science Department, Université de Sherbrooke, Sherbrooke, Québec, Canada

1916. Towards Automated Modelling of Maxillofacial Musculature
Greg Daniel Parker[1,2], Nicholas Drage[3,4], Paul L. Rosin[2], A. David Marshall[2], Stephen Richmond[4], John Evans[1], Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]School of Computer Science, Cardiff University, Cardiff, United Kingdom; [3]Cardiff Vale NHS Trust, United Kingdom; [4]School of Dentistry, Cardiff University, United Kingdom

1917. Interpolation of DWI Prior to DTI Reconstruction, & Its Validation
Tim B. Dyrby[1], Henrik M. Lundell[1], Matthew G. Liptrot[1], Mark W. Burke[2], Maurice Ptito[1,3], Hartwig R. Siebner[1]
[1]Danish Research Centre for MR, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [2]College of Medicine, Howard University, Washington DC, United States; [3]School of Optometry, University of Montreal, Montreal, Canada

1918. Fiber Continuity: An Anisotropic Prior for ODF Estimation
Marco Reisert[1], Valerij Kiselev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Baden Württemberg, Germany

1919. Non-Cartesian Compressed Sensing for Diffusion Spectrum Imaging
Eric Aboussouan[1], Luca Marinelli[2], Ek Tsoon Tan[2]
[1]Barrow Neurological Institute, Phoenix, AZ, United States; [2]GE Global Research, Niskayuna, NY, United States

1920. Characterizing Complex White Matter Structure from Cube & Sphere Diffusion Imaging with a Multi-Fiber Model (CUSP-MFM)
Benoit Scherrer[1], Simon K. Warfield[1]
[1]Radiology, Harvard Medical School, Boston, MA, United States

1921. Fibres at the Magic Angle Generated by Inappropriate Calibration (MAGIC)
Greg Daniel Parker[1,2], Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom; [2]School of Computer Science, Cardiff University, Cardiff, United Kingdom

1922. Robustness of Diffusion Scalar Metrics When Estimated with Generalized Q-Sampling Imaging Acquisition Schemes
Marta Morgado Correia[1], Guy B. Williams[2], Frank Yeh[3], Ian Nimmo-Smith[1], Eleftherios Garyfallidis[1]
[1]MRC Cognition & Brain Sciences Unit, Cambridge, United Kingdom; [2]Wolfson Brain Imaging Centre, Cambridge, United Kingdom; [3]Carnegie Mellon University, Pittsburgh , United States

1923. Optimizing the Metric for Brain White Matter Comparisons
Natasha Lepore[1], Caroline Brun*[2], Maxime Descoteaux[3], Yi-Yu Chou[4], Greig de Zubicaray[5], Katie McMahon[5], Margie Wright[6], Nicholas Martin[6], James Gee[2], Paul Thompson *equal Contribution[7]*
[1]Department of Radiology, Children's Hospital, Los Angeles, Los Angeles, CA, United States; [2]Department of Radiology, Penn Image Computing & Science Laboratory, University of Pennsylvania, Philadelphia, PA, United States; [3]Université de Sherbrooke, Canada; [4]Laboratory of NeuroImaging, UCLA, United States; [5]University of Queensland, Australia; [6]Genetic Epidemiology Lab, QIMR, Australia; [7]Laboratory of NeuroImaging, UCLA, Los Angeles, CA, United States

1924. Compressive Sensing Ensemble Average Propagator Estimation Via L_1 Spherical Polar Fourier Imaging
Jian Cheng[1,2], Sylvain Merlet[2], Aurobrata Ghosh[2], Emmanuel Caruyer[2], Tianzi Jiang[1], Rachid Deriche[2]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, People's Republic of; [2]INRIA Sophia Antipolis, Sophia Antipolis, France

1925. A Bayesian Random Effects Model for Enhancing Resolution in Diffusion MRI
Martin David King[1], Daniel C. Alexander[2], David G. Gadian[1], Chris A. Clark[1]

[1]Institute of Child Health, University College London, London, United Kingdom; [2]Computer Science, University College London, London, United Kingdom

1926. A Riemannian Framework for Ensemble Average Propagator Computing
Jian Cheng[1,2], Aurobrata Ghosh[1], Tianzi Jiang[2], Rachid Deriche[1]
[1]INRIA Sophia Antipolis, Sophia Antipolis, France; [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China, People's Republic of

1927. Bessel Fourier Orientation Reconstruction: Using Heat Equation & Multiple Shell Acquisitions to Reconstruct Diffusion Propagator
Ameer Pasha Hosseinbor[1], Moo K. Chung[2], Yu-Chien Wu[3], Andrew L. Alexander
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Biostatistics, University of Wisconsin-Madison; [3]Radiology, University of Wisconsin-Madison

1928. A High Angular Resolution Diffusion Imaging (HARDI) Template of the Human Brain
Anna Varentsova[1], Shengwei Zhang[2], Konstantinos Arfanakis[2]
[1]Biological, Chemical & Physical Sciences, Illinois Institute of Technology, Chicago, IL, United States; [2]Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States

1929. A Framework for Modelling the Regional Variation of White Matter Microstructure
Gemma L. Morgan[1], Hui Zhang[1], Brandon Whitcher[2], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom; [2]Clinical Imaging Centre, GlaxoSmithKline, London, United Kingdom

1930. Real-Time Rician Noise Correction Applied to Real-Time HARDI & HYDI
Véronique Brion[1], Olivier Riff[1], Irina Kezele[1], Maxime Descoteaux[2], Denis Le Bihan[1], Jean-François Mangin[1], Cyril Poupon[1], Fabrice Poupon[1]
[1]NeuroSpin, CEA/I²BM, Gif-sur-Yvette, France; [2]Sherbrooke University, Sherbrooke, Canada

1931. Multi-Shelled Q-Ball Imaging Without Assuming Inversion Symmetry
Eizou Umezawa[1], Masayuki Yamada[1], Chiaki Tsunetomi[1], Hirofumi Anno[1]
[1]Graduate School of Health Sciences, Fujita Health University, Toyoake, Aichi, Japan

1932. Registration of High B Value Diffusion Images
Shani Ben Amitay[1], Silvia De Santis[2], Derek Jones[2], Yaniv Assaf[3]
[1]Tel Aviv University, Tel Aviv, Israel; [2]CUBRIC, School of Psychology, Cardiff University, Wales, UK, United Kingdom; [3]Tel Aviv University, Israel

Diffusion: DTI & ADC

Exhibition Hall Tuesday 13:30-15:30

1933. Size & Shape Matter: Another Look at Tensor Statistics
Nicholas Lange[1,2], Peter J. Basser[3]
[1]Departments of Psychiatry & Biostatistics, Harvard University, Boston, MA, United States; [2]Neurostatistics Laboratory, McLean Hospital, Belmont, MA, United States; [3]PPITS, STBB, NICHD, National Institutes of Health, Bethesda, MD, United States

1934. Robust & Efficient White Matter Analysis using Tract Shape Modelling & Principal Components Analysis
Jonathan D. Clayden[1]
[1]Institute of Child Health, University College London, London, United Kingdom

1935. Generalizing Diffusion Tensor Model using Probabilistic Inference in Markov Random Fields
Cagatay Demiralp[1], David H. Laidlaw
[1]Brown University, Providence, RI, United States

1936. The Effect of Inflammation on DTI Derived Axial & Radial Diffusivity: A Monte Carlo Simulation Study
Yong Wang[1], Sheng-Kwei Song[2]
[1]Radiology, Washington University, Saint Louis, MO, United States; [2]Radiology, Washington University in St. Louis, Saint Louis, MO, United States

1937. The Relative Sensitvity of Different White Matter Indices to Partial Volume Artefacts
Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom

1938. A New Robust Algorithm for Diffusion Tensor Evaluation
Ivan I. Maximov[1], Farida Grinberg[1], Nadim Jon Shah[1,2]

[1]Institute of Neuroscience & Medicine 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

1939. Bias in Diffusion Tensor-Derived Quantities Depend on the Number of DWIs Composing the DT-MRI Dataset

Firouzeh Tannazi[1], Lindsay Walker[1], Michael Curry[1], Carlo Pierpaoli[1]
[1]STBB/PPITS/NICHD/NIH, Bethesda, MD, United States

1940. DTI Reconstruction: K-Space Average, Image-Space Average, or No Average

Shu-Wei Sun[1,2]
[1]Biophysics & Bioengineering, Loma Linda University, Loma Linda, CA, United States; [2]Radiation Medicine, Loma Linda University, Loma Linda, CA, United States

1941. Diffusion Anisotropy Corrections for Vessel Size & Microvessel Density Imaging

Jens H. Jensen[1]
[1]Department of Radiology, New York University School of Medicine, New York, NY, United States

1942. Correcting the Bias in the ADC Value Due to Local Perturbation Fields: A Physically Informed Model

Siawoosh Mohammadi[1], Zoltan Nagy[1], Harald E. Moeller[2], David Carmichael[3,4], Mark Symms[3], Oliver Josephs[1], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, University College London, London, United Kingdom; [2]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [3]Clinical and Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom; [4]MRI unit, National Society for Epilepsy, Chalfont St. Peter , United Kingdom

1943. Model-Based Reconstruction of Undersampled DTI Data

Christopher L. Welsh[1,2], Edward W. Hsu[1,2], Edward V. R. DiBella[1,2]
[1]Bioengineering, University of Utah, Salt Lake City, UT, United States; [2]UCAIR, University of Utah, Salt Lake City, UT, United States

1944. Registration Based Correction of DWI Gradient Orientations

Ben Jeurissen[1], Maarten Naeyaert[1], Alexander Leemans[2], Jan Sijbers[1]
[1]Vision Lab, Dept. of Physics, University of Antwerp, Antwerp, Belgium; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

1945. The Anisotropic Bias of Fractional Anisotropy in Anisotropically Acquired DTI Data

Sjoerd B. Vos[1], Max A. Viergever[1], Alexander Leemans[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

1946. Diffusion Tensor Imaging Distortion Correction with T_1

Ki Sueng Choi[1,2], Alexandre R. Franco[2], Paul E. Holtzheimer[2], Helen S. Mayberg[2], Xiaoping P. Hu[1]
[1]Bioengineering, Georgia Institute of Technology / Emory University, Atlanta, GA, United States; [2]Psychiatry & Behavioral Sciences, Emory University, Atlanta, GA, United States

1947. The Effect of Atlas Selection on Voxel Based Analyses of DTI Data

Wim Van Hecke[1,2], Louise Emsell[3,4], Alexander Leemans[5], Caroline Sage[6], Jelle Veraart[7], Stefan Sunaert[6], Jan Sijbers[7], Paul M. Parizel[7]
[1]University of Antwerp, Antwerp, Belgium; [2]University of Leuven, Leuven, Belgium; [3]The Murdoch Childrens Research Institute, Australia; [4]NUI Galway, Ireland; [5]Image Sciences Institute, Utrecht, Netherlands; [6]University of Leuven, Belgium; [7]University of Antwerp, Belgium

1948. What is the Component That Appears in Diffusion-Weighted Imaging at Low B Values?

Kimihiro Ogisu[1], Hidetsugu Sakai[2], Toru Yamamoto[2]
[1]Graduate School of Medicine, Hokkaido University, Sapporo, Japan; [2]Graduate School of Health Sciences, Hokkaido University

1949. Diffusion Tensor Imaging Tracks Repair of Retinal Pigment Epithelium (RPE) Layer using Hematopoietic Stem Cells in Mice

Saurav Chandra[1], Sergio Caballero[2], Maria B. Grant[2], John R. Forder[1,3]
[1]Biomedical Engineering, University of Florida, Gainesville, FL, United States; [2]Pharmacology, University of Florida; [3]Radiology, University of Florida

1950. High Angular Resolution Diffusion Microscopy (HARDM) Detects Retinal Disruption in Mice with Diabetic Retinopathy

Saurav Chandra[1], Angelos Barmpoutis[2], Nicholas Simpson[3], John R. Forder[1,4]
[1]Biomedical Engineering, University of Florida, Gainesville, FL, United States; [2]Computer & Information Sciences Engineering, University of Florida; [3]College of Medicine, University of Florida, Gainesville, FL, United States; [4]Radiology, University of Florida, Gainesville, FL, United States

1951. Accounting for Changes in Signal Variance in Diffusion Weighted Images Following Interpolation for Motion & Distortion Correction
Mustafa Okan Irfanoglu[1], Lindsay Walker[2], Raghu Machiraju, Carlo Pierpaoli[2]
[1]Computer Sciences & Engineering, The Ohio State University, Columbus, OH, United States; [2]NIH

Diffusion Acquisition & Pulse Sequences Methods

Exhibition Hall Wednesday 13:30-15:30

1952. High Resolution Multiple Slice Composite Inner Volume Excitation Echo Planar Diffusion Weighted Imaging
Hing-Chiu Chang[1,2], Tzu-Cheng Chao[3], Yi-Jui Liu[4,5], Kuo-Fang Shao[5], Cheng-Chieh Cheng[2], Chao-Chun Lin[2,6], Hsiao-Wen Chung[2,7]
[1]Global Applied Science Laboratory, GE Healthcare, Taipei, Taiwan; [2]Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [4]Department of Automatic Control Engineering, Feng Chia University, Taichung, Taiwan; [5]Master's Program in Biomedical Informatics & Biomedical Engineering, Feng Chia University, Taichung, Taiwan; [6]Department of Radiology, China Medical University Hospital, Taichung, Taiwan; [7]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan

1953. Reduced-FOV Single-Shot Diffusion-Weighted EPI: Extended Slice Coverage with Tailored RF Pulse Design
Emine Ulku Saritas[1], Ajit Shankaranarayanan[2], Greg Zaharchuk[3], Dwight G. Nishimura[4]
[1]Department of Bioengineering, University of California, Berkeley, CA, United States; [2]Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Department of Radiology, Stanford University, Stanford, CA, United States; [4]Department of Electrical Engineering, Stanford University, Stanford, CA, United States

1954. A 3D Radial FSE-Based SPLICE Sequence for MR Diffusion Imaging
Jiangsheng Yu[1], Yiqun Xue[1], Mark A. Rosen[1], Hee Kwon Song[1]
[1]Department of Radiology, University of Pennsylvania School of Medicine, , Philadelphia, PA, United States

1955. Reduction of Image Distortion in Non-Axial Diffusion-Weighted Imaging using Steer-PROP
Girish Srinivasan[1,2], Novena Rangwala[1,2], Xiaohong Joe Zhou[1,3]
[1]Center for MR Research, University of Illinois Medical Center, Chicago, IL, United States; [2]Department of Bioengineering, University of Illinois Chicago, Chicago, IL, United States; [3]Departments of Bioengineering, Radiology, Neurosurgery, University of Illinois Medical Center, Chicago, IL, United States

1956. A Sliding-Window Re-Acquisition Scheme for Multi-Shot, Diffusion-Weighted Imaging with 2D Navigator Correction
David Andrew Porter[1], Keith Heberlein[1], Robin Martin Heideman[2]
[1]Siemens Healthcare, Erlangen, Germany; [2]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

1957. k-Space & Q-Space: Combining Ultra-High Spatial & Angular Resolution in Diffusion Imaging using ZOOPPA at 7T
Robin Martin Heidemann[1], Alfred Anwander[1], Thorsten Feiweier[2], John Grinstead[3], Gabriele Lohmann[1], Thomas R. Knösche[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Siemens Healthcare, Erlangen, Germany; [3]Siemens Medical Solutions, Portland, United States

1958. Distortion Free High Resolution *In Vivo* Whole Brain Diffusion Tensor Image on 7.0T MRI
Se-Hong Oh[1], Jun-Young Chung[1], Sung-Yeon Park[1], Joshua Haekyun Park[1], Dae-Hoon Kang[1], Myung-Ho In[2], Maxim Zaitsev[3], Oliver Speck[2], Young-Bo Kim[1], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of; [2]Department of Biomedical Magnetic Resonance, Institute for Experimental Physics, Otto-von-Guericke University Magdeburg, Magdeburg, Germany; [3]3 Department of Radiologic Research, Medical Physics, University Hospital of Freiburg, Freiburg, Germany

1959. Single-Shot Diffusion-Weighted Spiral Imaging
Bertram Jakob Wilm[1], Christoph Barmet[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland

1960. Motion-Induced Phase Error Correction in 3D Diffusion-Weighted Imaging
Anh Tu Van[1], Diego Hernando[1], Joseph Holtrop[2], Bradley P. Sutton[2,3]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States.

1961. Isotropic High-Resolution 3D Diffusion Weighted SSFP Imaging with Spiral Projection Imaging
Rafael Luis O'Halloran[1], Murat Aksoy[1], Eun Soo Choi[1], Roland Bammer[1]
[1]Radiology, Stanford University, Palo Alto, CA, United States

1962. **Impact of the Point-Spread Function on Parameters Derived from Diffusion-Weighted Imaging: Axial Versus Sagittal Acquisition**
J-Donald Tournier[1,2], Fernando Calamante[1,2], Alan Connelly[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Melbourne, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia

1963. **The Deleterious Effect of Concomitant Gradient Fields on Diffusion Imaging**
Corey Allan Baron[1], Robert Marc Lebel[1], Alan H. Wilman[1], Christian Beaulieu[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, AB, Canada

1964. **Crusher Gradient Reversal to Eliminate Stimulated Echo Artifacts in Dual Spin Echo Diffusion MRI**
Gaohong Wu[1], Sangwoo Lee[1], Xiaoli Zhao[1], Zhu Li[1]
[1]GE Healthcare, Waukesha, WI, United States

1965. **Diffusion-Limited Diffusion MRI & a Universal Optimum B-Value**
Van Wedeen[1], Guangping Dai[1]
[1]Radiology, Martinos Center/ MGH, Charlestown, MA, United States

1966. **Optimised Gradient Waveform Spin-Echo Sequence for Diffusion Weighted MR in a Microstructure Phantom**
Bernard M. Siow[1,2], Ivana Drobnjak[1], Mark F. Lythgoe[2], Daniel C. Alexander[1]
[1]Centre for Medical Image Computing, UCL, London, United Kingdom; [2]Centre for Advanced Biomedical Imaging, UCL, London, United Kingdom

1967. **On the Diffusion Sensitivity of 2D- & 3D-Turbo Spin Echo Sequences**
Matthias Weigel[1], Jürgen Hennig[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

1968. **Simulation of Diffusion Weighted SSFP: Time to Reach the Steady State & Effects on Anisotropic Diffusion**
Eun Soo Choi[1], Rafael O'halloran[2], Ernesto Staroswiecki[2], Roland Bammer[2]
[1]Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States

1969. **Analysis of Diffusion-Weighted SSFP Signal with Computer Simulation**
Eun Soo Choi[1], Rafael O'halloran[2], Ernesto Staroswiecki[2], Roland Bammer[2]
[1]Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States

Perfusion/Permeability: DSC Methods

Exhibition Hall Thursday 13:30-15:30

1970. **Quantitative Perfusion Imaging by USPIO Bolustracking: The Maximum Slope Model**
Peter Roland Seevinck[1,2], Mark J. Bouts[1], Annette van Der Toorn[1], Rick Martin Dijkhuizen[1]
[1]Biomedical MR Imaging & Spectroscopy, Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Physics of MRI, Image Sciences Institute, University Medical center Utrecht, Utrecht, Netherlands

1971. **An Improved Quantification Method to Characterize Cerebral Hemodynamic Changes after Carotid Endarterectomy Surgery: A Dynamic Susceptibility Contrast MRI Study.**
David E. Crane[1], Bradley J. MacIntos[1,2], Ediri Sideso[3], James Kennedy[3], Ashok Handa[4], Manus J. Donahue[5], Peter Jezzard[5]
[1]Heart & Stroke Foundation Centre for Stroke Recovery, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [3]Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom; [4]Nuffield Department of Surgery, University of Oxford, Oxford, United Kingdom; [5]Clinical Neurology, FMRIB Centre, University of Oxford, Oxford, United Kingdom

1972. **Spin-Echo & Gradient-Echo PWI CBF Vs. ASL CBF: An Initial Comparison.**
Matus Straka[1], Heiko Schmiedeskamp[1], Greg Zaharchuk[1], Jalal B. Andre[1], Jean-Marc Olivot[2], Nancy J. Fischbein[1], Maarten G. Lansberg[2], Michael E. Moseley[1], Gregory W. Albers[2], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Stanford Stroke Center, Stanford University, Stanford, CA, United States

1973. **Low-Resolution Cartesian Compressed Sensing MRI: Application to Dynamic Susceptibility MRI**
David S. Smith[1,2], Thomas E. Yankeelov[1,2], Christopher Chad Quarles[1,2]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

1974. **Flow Heterogeneity as a Potential Biomarker of Vascular Normalisation in Tumour Studies**
John David Dickson[1], Richard E. Ansorge[1], Stephen Price[2]

[1]Department of Physics, Cambridge University, Cambridge, Cambridgeshire, United Kingdom; [2]Medical School, Cambridge University

1975. Use of the Relationship between Phase & Magnetic Susceptibility for Assessment of Assumed Contrast Agent Distributions *In Vivo*: Application to δR2* Maps in Dynamic Susceptibility Contrast MRI

Emelie Lindgren[1], Linda Knutsson[1], Danielle van Westen[2], Freddy Ståhlberg[1,3], Ronnie Wirestam[1]
[1]Dept. of Medical Radiation Physics, Lund University, Lund, Sweden; [2]Radiology, Skane University Hospital, Lund, Sweden; [3]Dept. of Diagnostic Radiology, Lund University, Lund, Sweden

1976. Improving CBF Image Contrast with Frequency Extrapolation for DSC-MRI During Acute Stroke

Matthew Ethan MacDonald[1,2], Micheal Richard Smith[1,3], Richard Frayne[2,3]
[1]Departments of Electrical & Biomedical Engineering, University of Calgary, Calgary, AB, Canada; [2]Seaman Family MR Research Centre, Foothills Medical Centre, Calgary, AB, Canada; [3]Departments of Radiology & Clinical Neurosciences, University of Calgary, Calgary, AB, Canada

1977. Determination of Collateral Supply Patterns using Conventional Dynamic Susceptibility Contrast Perfusion Imaging

Cihat Eldeniz[1], Yueh Lee[2], Jeffrey Keith Smith[2], Tyler B. Jones[2], Weili Lin[2,3], Sten Solander[2], James Faber[4], Hongyu An[2]
[1]Biomedical Engineering, University of North Carolina, Chapel Hill, NC, United States; [2]Department of Radiology, University of North Carolina, Chapel Hill, NC, United States; [3]Department of Neurology, University of North Carolina, Chapel Hill, NC, United States; [4]Department of Cell & Molecular Physiology, University of North Carolina, Chapel Hill, NC, United States

1978. A Patient-Specific Global Residue Function Improves Reproducibility in Longitudinal Monitoring of Perfusion Changes in Low-Grade Gliomas

Atle Bjornerud[1,2], Kim Mouridsen[3], Kyrre Eeg Emblem[4,5]
[1]Interventional Centre, Oslo Univeristy Hospital, Oslo, Norway; [2]Dept. of Physics, Univ. of Oslo, Oslo, Norway; [3]Center for Functionally Integrative Neuroscience, Aarhus University Hospital, Denmark; [4]A. A. Martions Center for Biomedical Imaging,, Massachusetts General Hospital; [5]Oslo Univeristy Hospital, Norway

1979. Prediction of Clinical Outcome in Glioma Patients using a Combination of Epidermal Growth Factor Receptor (EGFR) & Relative Cerebral Blood Volume (RCBV) Measured by Dynamic Susceptibility-Weighted Contrast-Enhanced Magnetic Resonance Imaging

Marcel Oei[1], Albert Idema[1], Pieter Vos[1], Sandra Boots-Sprenger[1], Judith Jeuken[1], Mathias Prokop[1]
[1]Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands

1980. Correlation of DSC Parameters with Histopathological Complex Microvasculature in GBM Patients

Emma Essock-Burns[1,2], Joanna J. Phillips[3,4], Janine M. Lupo[2], Soonmee Cha[2,5], Susan M. Chang[5], Sarah J. Nelson[1,6]
[1]UCSF/UCB Joint Graduate Group in Bioengineering, University of California San Francisco, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]Department of Pathology, University of California San Francisco; [4]Department of Laboratory Medicine, University of California San Francisco, San Francisco, CA, United States; [5]Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, United States; [6]Department of Bioengineering & Therapeutic Sciences, University of California San Francisco, San Francisco, CA, United States

1981. Multiparametric Classification of Hyperoxia Challenge & Dynamic Susceptibility Contrast Maps: Study of the Healthy Brain

Moran Artzi[1,2], Orna Aizenstein[3], Talma Hendler[1,2], Rinat Abramovitch[4], Dafna Ben Bashat[1]
[1]Functional Brain Center, Wohl institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Tel-Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel-Aviv, Israel; [3]Radiology Department, Tel Aviv Sourasky Medical Center, Tel-Aviv, Israel; [4]The Goldyne Savad Institute for Gene Therapy, Hadassah Hebrew University Medical Center, Jerusalem, Israel

1982. Dynamic Susceptibility Contrast Imaging Study of the Healthy Brain using Multiparametric Classification

Moran Artzi[1,2], Orna Aizenstein[3], Talma Hendler[1,2], Dafna Ben Bashat[1]
[1]Functional Brain Center, Wohl institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Tel-Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel-Aviv, Israel; [3]Radiology Department, Tel Aviv Sourasky Medical Center, Tel-Aviv, Israel

Non-Gaussian Diffusion

Exhibition Hall Monday 14:00-16:00

1983. Quantifying Non-Gaussian Diffusion in Brain Tissue at High B-Factors

Farida Grinberg[1], Ezequiel Farrher[1], Joachim Kaffanke[1], Ana-Maria Oros-Peusquens[1], N. Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich GmbH, 52425 Juelich, NRW, Germany; [2]Department of Neurology, Faculty of Medicine, RWTH Aachen University, JARA, 52074 Aachen, Germany

1984. A Novel Approach to Give More Insides on Anomalous Diffusion Processes: Diffusion MR Signal at Varying of Diffusion Time Versus Signal at Varying of Gradient Strength
Silvia Capuani[1,2], Marco Palombo[1], Silvia De Santis[1], Andrea Gabrielli[3]
[1]Physics Department Sapienza University of Rome, Rome, Italy; [2]CNR IPCF UOS Roma, Rome, Italy; [3]CNR ISC, Rome, Italy

1985. Internal Gradients Affect the γ Value Arising from Anomalous Diffusion Stretched Exponential Model
Marco Palombo[1], Silvia De Santis[1], Silvia Capuani[1,2]
[1]Physics Department, Sapienza University of Rome, Rome, Italy; [2]IPCF UOS Roma, CNR, Rome, Italy

1986. A Simple Analytical Relationship between WM Tissue Characteristics & DWI Signal
Sharon Peled[1]
[1]Brigham and Women's Hospital, Boston, MA, United States

1987. Spectral Lineshape Reflects Microscopic Structure & Ordering
Alexander Ruh[1], Philipp Emerich[1], Dmitry S. Novikov[2], Valerij G. Kiselev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States

1988. Time-Dependent Diffusion & Kurtosis as a Probe of Tissue Structure
Dmitry S. Novikov[1], Els Fieremans[1], Jens H. Jensen[1], Joseph A. Helpern[2]
[1]Radiology, NYU School of Medicine, New York, NY, United States; [2]Radiology & Radiological Science, Medical University of South Carolina, Charleston, SC, United States

1989. Stroke Analysis by Means of Kurtosis Diffusion Imaging in *In Vivo* Animal Studies
Farida Grinberg[1], Ezequiel Farrher[1], Luisa Ciobanu[2], Françoise Geffroy[2], N. Jon Shah[1,3]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich GmbH, 52425 Juelich, NRW, Germany; [2]Neurospin, CEA, Gif sur Yvette, France; [3]Department of Neurology, Faculty of Medicine, RWTH Aachen University, JARA, 52074 Aachen, Germany

1990. Q-Space Undersampled Diffusional Kurtosis Imaging
Ali Tabesh[1], Jens H. Jensen[1], Els Fieremans[1], Joseph A. Helpern[1,2]
[1]Radiology, New York University School of Medicine, New York, NY, United States; [2]Medical Physics, Nathan Kline Institute, Orangeburg, NY, United States

1991. The Effects of Cross-Sectional Asymmetry & Anisotropy of the Pore Space on Double-PFG MR Signal
Evren Ozarslan[1,2], Peter Joel Basser[1]
[1]STBB / PPITS / NICHD, National Institutes of Health, Bethesda, MD, United States; [2]Center for Neuroscience & Regenerative Medicine, USUHS, Bethesda, MD, United States

1992. Hindered or Restricted Predominance of the Diffusion Weighted Signal Function of the Diffusion Time at Ultra-High Magnetic Field
Yohan van De Looij[1,2], Nicolas Kunz[1,2], Petra S. Hüppi[1], Rolf Gruetter[2,3], Stéphane V. Sizonenko[1]
[1]Division of Child Growth & Development, University of Geneva, Geneva, Switzerland; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Universities of Lausanne & Geneva, Lausanne & Geneva, Switzerland

1993. How White Matter Tracts Cross Determines the DWI Signal
Sharon Peled[1], Carl-Fredrik Westin[1]
[1]Brigham & Women's Hospital, Boston, MA, United States

1994. *In Vivo* Neuroanatomical Segmentation of Human Corpus Callosum Based on Axonal Diameter & Density using Q-Planar MRI
Jun-Cheng Weng[1,2], Wen-Yih Isaac Tseng[3,4]
[1]School of Medical Imaging & Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [2]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan; [3]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

1995. The Displacement Correlation Tensor from Double Wave Vector Diffusion Experiments Encodes Information About Pore Microstructure & Ensemble Properties
Sune Nørhøj Jespersen[1], Niels Buhl[1,2]
[1]CFIN/MINDLab, Aarhus University, Aarhus, Denmark; [2]Department of Physics & Astronomy, Aarhus University, Aarhus, Denmark

1996. A Monte Carlo Study of the Effects of Cell Membrane Permeability on DWI-MRI Contrast with Oscillating Diffusion Gradients
Blake Walters[1], Greg Duane, Jae Kim
[1]Thunder Bay Regional Research Institute, Thunder Bay, Ontario, Canada

1997. Double-PFG MR Reveals Insights Into Compartment Shape, Organization & Morphology in Heterogeneous Specimens
Noam Shemesh[1], Yoram Cohen[1]
[1]School of Chemistry, the Raymond & Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Tel Aviv, Israel

1998. Influence of Boundary Condition on Multiple Exponential Diffusion Phase Transition
Lingchih Lin[1], Jianhui Zhong[1,2]
[1]Department of Physics & Astronomy, University of Rochester, Rochester, NY, United States; [2]Department of Imaging Sciences, University of Rochester, Rochester, NY, United States

Application of Diffusion Sensitive MR

Exhibition Hall Tuesday 13:30-15:30

1999. The Appearance of the Apparent Diffusion Coefficient in Complex Fiber Architecture
Sjoerd B. Vos[1], Derek K. Jones[2], Max A. Viergever[1], Alexander Leemans[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]CUBRIC , Cardiff University Brain Research Imaging Centre, School of Psychology, Cardiff University, Cardiff, United Kingdom

2000. Asymmetry in Multi-Modal White Matter Microstructural Indices
Sonya Bells[1], Sean Deoni[2,3], Mara Cercignani[4], Ofer Pasternak[5], Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff, United Kingdom; [2]School of Engineering, Brown University, Providence, RI, United States; [3]Centre of Neuroimaging Sciences-Institute of Psychiatry, King's College, London, United Kingdom; [4]Santa Lucia Foundation, Neuroimaging Laboratory, Rome, Italy; [5]Brigham & Women's Hospital, Harvard Medical School, Bostan, MA, United States

2001. Sexual Dimorphism in White Matter Development in Pre-Adolescence: A Tract Based Spatial Statistics Study
Kiran Kumar Seunarine[1], Jon Clayden[1], Sebastian Jentschke[1], Monica Muñoz[1,2], Janine Cooper[1], Martin J. Chadwick[1,3], Tina Banks[4], Faraneh Vargha-Khadem[1], Chris A. Clark[1]
[1]Institute of Child Health, University College London, London, United Kingdom; [2]School of Medicine, University of Castilla-La Mancha, Albacete, Spain; [3]Institute of Neurology, University College London, London, United Kingdom; [4]Radiology Department, Great Ormund Street Hospital, London, United Kingdom

2002. Independent Component Analysis of DTI Reveals Multivariate Microstructural Correlations of Human Brain White Matter
Yi-Ou Li[1], Fan-Pei Yang[1], Christopher Nguyen[2], Shelly Cooper[1], Sara LaHue[1], Sandya Venugopal[1], Pratik Mukherjee[1]
[1]University of California San Francisco, San Francisco, CA, United States; [2]University of California Los Angeles

2003. Testing the Variability of Diffusion Spectrum Imaging (DSI): Inter- & Intra-Site Comparison on "Identical" 3T Scanners
Alia Lemkaddem[1], Alessandro Daducci[1], Serge Vulliémoz[2], Margitta Seeck[2], Francois Lazeyras[3], Reto Meuli[4], Gunnar Krueger[5], Jean-Philippe Thiran[1]
[1]Signal Processing Laboratories (LTS5), Ecole Polythechnique Fédéral de Lausanne (EPFL), Lausanne, Switzerland; [2]Presurgical Epilepsy Evaluation Unit, Hôpitaux Universitaires et faculté de médecine de Genève (HUG), Switzerland; [3]Department of Radiology, Hôpitaux Universitaires et faculté de médecine de Genève (HUG), Switzerland; [4]Department of Radiology, University Hospital Center & University of Lausanne (CHUV), Switzerland; [5]Advanced Clinical Imaging Technology, Siemens Medical Solutions-CIBM, Switzerland

2004. A Framework for Analysis of Living Phantom Data in a Multicenter DTI Study
Lindsay Walker[1], Nicholas Lange[2], Lin-Ching Chang[3], Carlo Pierpaoli[1], Tthe Brain Development Cooperative Group[4]
[1]STBB, NICHD, National Institutes of Health, Bethesda, MD, United States; [2]Departments of Psychiatry & Biostatistics, Harvard Schools of Medicine & Public Health, Boston, MA, United States; [3]Department of Electronic Engineering & Computer Science, The Catholic University of America, Washington, DC, United States; [4]www.NIH-PediatricMRI.org

2005. Diffusion Tensor Image Registration using Uncertainty Information
Mustafa Okan Irfanoglu[1,2], Cheng Guan Koay, Sinisa Pajevic, Raghu Machiraju, Peter J. Basser
[1]Computer Sciences & Engineering, The Ohio State University, Columbus, OH, United States; [2]NICHD, NIH, Bethesda, MD, United States

2006. Inter-Subject Correlations between DTI Indices & Tissue Fractions in Human Brain
Wang Zhan[1], Wanyong Shin[2,3], Xiujuan Geng[3], Hong Gu[3], Yihong Yang[3]
[1]Radiology & Medical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Imaging Institute, Cleveland Clinic, Cleveland , OH, United States; [3]Neuroimaging Branch, National Institute on Drug Abuse, Baltimore, MD, United States

2007. **Reproducibility of Automated Measurements of Diffusion Tensor Imaging at 3T using Histogram Analysis**
Ryan Hutten[1], Shawn Sidharthan[2], Christopher Glielmi[2,3], Hongyan Du[4], Fiona Malone[2], Ann Ragin[2,5], Robert Edelman[2,5], Ying Wu[2,5]
[1]Radiology, Northshore University HealthSystem, Evanston , IL, United States; [2]Radiology, Northshore University HealthSystem, Evanston, IL, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Center for Clinical Research Informatics, Northshore University Health Systems, Evanston, IL, United States; [5]Radiology, Feinberg School of Medicine, Chicago, IL, United States

2008. **Diffusion Imaging *In Vivo* with Whole-Body Gradient Amplitude of 65 MT/m**
Ek Tsoon Tan[1], Wesley M. Skeffington[1], Juan Sabate[1], Bruce D. Collick[2], Song Chi[1], Rixin Lai[1], Christopher J. Hardy[1], Luca Marinelli[1], Thomas K. Foo[1]
[1]GE Global Research, Niskayuna, NY, United States; [2]GE Healthcare, Waukesha, WI, United States

2009. **Effects of Sustained High-Altitude Hypoxia on Cerebral Hydration & Diffusion**
John S. Hunt, Jr.[1], Rebecca J. Theilmann[1], Bill C. Hsu[1], Ethan Li[1], Zachary Myles Smith[1], Miriam Scadeng[1], David J. Dubowitz[1]
[1]Radiology, University of California San Diego, La Jolla, CA, United States

2010. **Preparation of Diffusion–Weighted MR Image Data for Cortical Parcellation**
Zoltan Nagy[1], David Lee Thomas[2], Nikolaus Weiskopf[1], Martin Sereno[3,4]
[1]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom; [2]Institute of Neurology, Department of Brain Repair & Rehabilitation, University College London, London, United Kingdom; [3]Department of Psychology, University College London, London, United Kingdom; [4]Department of Psychology, Birkbeck College, London, United Kingdom

2011. **Dual Tensor for Tract-Based Analysis: Towards Application to Routine Clinical Diffusion Images**
Virendra Mishra[1], Hao Huang[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

2012. **Aging-Related Changes in Apparent Diffusion Coefficient Values of the Cerebral Metabolites using Diffusion Weighted MR Spectroscopy**
Dandan Zheng[1], Zhenghua Liu[2], Jing Fang[1,3], Xiaoying Wang[1,2], Jue Zhang[1,3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, BEIJING, China, People's Republic of; [2]Dept. of Radiology, Peking University First Hospital, BEIJING, China, People's Republic of; [3]College of Engineering, Peking University, BEIJING, China, People's Republic of

2013. **Functional Muscle MRI in Human Calf Muscle using IVIM**
Patrick Hiepe[1], Jürgen Reichenbach[2]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital , Jena, Germany; [2]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Germany

2014. **A Novel Method for Automatic Extraction of Apparent Diffusion Coefficients in Breast MRI**
Darryl McClymont[1], Andrew Mehnert[1], Adnan Trakic[1], Dominic Kennedy[2], Stuart Crozier[1]
[1]University of Queensland, Brisbane, QLD, Australia; [2]Queensland X-Ray, Brisbane, QLD, Australia

2015. **Diffusion Weighted Imaging (DWI) of Non-Hodgkin Lymphoma (NHL) Patients Refractory to Previous Treatment(S): Preliminary Results**
Hamed Mojahed[1], Thorsten Persigehl[2], Owen A. O'Connor[3], Ahmed Sawas[3], Truman R. Brown[4], Fernando Arias-Mendoza[2]
[1]Department of Biomedical Engineering, Columbia University, New York, NY, United States; [2]Department of Radiology, Columbia University, New York, NY, United States; [3]NYU Cancer Institute, NYU Langone Medical Center, New York University, New York, NY, United States; [4]Center for Advanced Imaging Research (CAIR), Medical University of South Carolina, United States

2016. **4-Tesla High Angular Resolution Diffusion Tractography Analysis of the Human Connectome in 234 Subjects: Sex Differences & EPI Distortion Effects**
Neda Jahanshad[1], Iman Aganj[2], Christophe Lenglet[2,3], Guillermo Sapiro[2], Arthur W. Toga[1], Katie L. McMahon[4], Greig I. de Zubicaray[5], Nicholas G. Martin[6], Margaret J. Wright[6], Paul M. Thompson[1]
[1]Laboratory of Neuro Imaging, Department of Neurology, UCLA, Los Angeles, CA, United States; [2]Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States; [3]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States; [4]Centre for Advanced Imaging, University of Queensland, Brisbane, Australia; [5]School of Psychology, University of Queensland, Brisbane, Australia; [6]Queensland Institute of Medical Research, Brisbane, Australia

2017. **Evaluation of Fiber Radius Mapping using Diffusion MRI Under Clinical System Constraints**
Chun-Hung Yeh[1,2], Irina Kezele[1], Daniel Alexander[3], Benoit Schmitt[1], Jing-Rebecca Li[1], Denis Le Bihan[1], Ching-Po Lin[2], Cyril Poupon[1]
[1]NeuroSpin, I2BM, CEA, Gif-sur-Yvette, France; [2]National Yang-Ming University, Taipei, Taiwan; [3]University College London, London, United Kingdom

Tractography

Exhibition Hall Wednesday 13:30-15:30

2018. **Accurate Tractography Propagation Mask using T_1-Weighted Data Rather Than FA**
Pamela Guevara[1,2], Delphine Duclap[1,2], Linda Marrakchi-Kacem[1,2], Denis Rivière[1,2], Yann Cointepas[1,2], Cyril Poupon[1,2], Jean-François Mangin[1,2]
[1]Neurospin, CEA Saclay, Gif-sur-Yvette, France; [2]Institut Fédératif de Recherche 49, Gif-sur-Yvette, France

2019. **Effect of Step Size on Probabilistic Streamlines: Implications for the Interpretation of Connectivity Analyses.**
J-Donald Tournier[1,2], Fernando Calamante[1,2], Alan Connelly[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Melbourne, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia

2020. **Potential Importance of Secondary Connections in Tractography**
Kyle Taljan[1,2], Cameron C. McIntyre[1], Ken E. Sakaie[3]
[1]Lerner Research Institute, Biomedical Engineering, Cleveland Clinic, Cleveland, OH, United States; [2]Biomedical Engineering, Cleveland State University, Cleveland, OH, United States; [3]Imaging Institute, Cleveland Clinic

2021. **GPGPU-Computing for the Cluster Analysis of Fiber Tracts: Replacing a $15000 High End PC with a $500 Graphics Card**
Christia Ros[1], Ralph Tandetzky[1], Daniel Güllmar[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Thuringia, Germany

2022. **Validation of DTI-Tractography-Based Measures of Primary Motor Area Cortical Connectivity**
Yurui Gao[1,2], Ann S. Choe[1,2], Xia (Lisa) Li[2], Iwona Stepniewska[3], Adam W. Anderson[1,2]
[1]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [3]Department of Psychology, Vanderbilt University, Nashville, TN, United States

2023. **Gender Effect on the Asymmetries of Brain Pathways in the Human Living Brain**
Michel Thiebaut De Schotten[1,2], Flavio Dell'Acqua[1,3], Stephanie Forkel[1,4], Marco Catani[1,3]
[1]Natbrainlab, Institute of Psychiatry, London, United Kingdom; [2]Hôpital de la Salpêtrière, CRICM-INSERM UMRS 975, Paris, France; [3]Department of Neuroimaging Sciences, Institute of Psychiatry, London, United Kingdom; [4]Department of Forensic & Neurodevelopmental Sciences, Institute of Psychiatry, London, United Kingdom

2024. **Along-Tract Statistics Allow for Enhanced Tractography Analysis**
John B. Colby[1,2], Lindsay Soderberg[1], Catherine Lebel[1], Ivo D. Dinov[1,3], Paul M. Thompson[1,2], Elizabeth R. Sowell[1]
[1]Department of Neurology, UCLA, Los Angeles, CA, United States; [2]Interdepartmental Program for Biomedical Engineering, UCLA; [3]Department of Statistics, UCLA

2025. **Reproducibility of Fiber Bundles from Different Subsampled Q-Space DSI Data Set**
Getaneh Bayu Tefera[1], Yuxiang Zhou[1], Ponnada A. Narayana[1]
[1]Diagnostic & Interventional Imaging, University of Texas at Houston, Houston, TX, United States

2026. **Assessment of Cortico-Cortical Connectivity in the Presence of Image Artifact**
Kerstin Pannek[1,2], Jane Mathias[3], Greg Brown[4], Jamie Taylor[5], Stephen Rose[2]
[1]Centre for Advanced Imaging, The University of Queensland, Brisbane, Queensland, Australia; [2]Centre for Clinical Research, The University of Queensland, Brisbane, Queensland, Australia; [3]School of Psychology, University of Adelaide, Adelaide, South Australia, Australia; [4]MRI Unit, Royal Adelaide Hospital, Adelaide, South Australia, Australia; [5]Radiology, Royal Adelaide Hospital, Adelaide, South Australia, Australia

2027. **Estimation of Anatomical Connection Strength in Diffusion MRI Tractography by a Global Message-Passing Algorithm**
Milos Ivkovic[1], Ashish Raj[2]
[1]Radiology , Weill Cornell Medical School , New York , NY, United States; [2]Radiology, Weill Cornell Medical School, New York, NY, United States

2028. **Human Structural Hand Motor Network Inferred by Probabilistic Q-Ball Tractography & MEG**
Monica Bucci[1], Kelly Westlake[2], Bagrat Amirbekian[2,3], Srikantan Nagarajan[2], Roland G. Henry[2,3]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, United States; [3]Graduate Group in Bioengineering, UCSF, United States

2029. **Normalized Edge Weight Connectivity Measure Derived from Diffusion Weighted Images: Application to the Limbic System.**
Luis Manuel Colon-Perez[1], Remington Horesh[2], William Triplett[3], Mansi Parekh[4], Sachin Talathi[5], Paul Carney[5], Thomas Mareci[3]

[1]Physics, University of Florida, Gainesville, FL, United States; [2]Biology, University of Florida; [3]Biochemistry & Molecular Biology, University of Florida; [4]Neuroscience, University of Florida; [5]Pediatrics, University of Florida

2030. Comparison of Anatomical Connectivity Metrics
Ken E. Sakaie[1], Lael Stone[2], Robert Bermel[2], Micheal D. Phillips[1], Mark J. Lowe[1]
[1]Imaging Institute, The Cleveland Clinic, Cleveland, OH, United States; [2]Mellen Center, The Cleveland Clinic, Cleveland, OH, United States

Diffusion Phantoms

Exhibition Hall Thursday 13:30-15:30

2031. Physical Orientation in the Magnetic Field Affects Diffusion Measures: A Hardware Phantom Study
Pim Pullens[1,2], Alard Roebroeck[1], Matteo Bastiani[1], Rainer Goebel[1,2], Kamil Uludag[1]
[1]Maastricht Brain Imaging Center, Maastricht University, Maastricht, Netherlands; [2]Brain Innovation BV, Maastricht, Netherlands

2032. Noninvasively Diffusion Basis Spectrum Imaging (DBSI): A Phantom Study
Yong Wang[1], Qing Wang[2], Peng Sun[1], Fang-Cheng Yeh[3], Wen-Yih Isaac Tseng[4,5], Sheng-Kwei Song[6]
[1]Radiology, Washington University, Saint Louis, MO, United States; [2]Mechanical Engineering & Material Sciences, Washington University, Saint Louis, MO, United States; [3]Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; [4]Nuclear Engineering, National Taiwan University Medical College; [5]Center for Optoelectronic Biomedicine; [6]Radiology, Washington University in St. Louis, Saint Louis, MO, United States

2033. Novel Artificial Phantom for Studies of Anisotropic Diffusion in the Model Brain Tissue
Ezequiel Farrher[1], Joachim Kaffanke[1], Tony Stoecker[1], Farida Grinberg[1], N. Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich GmbH, 52425 Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, 52074 Aachen, Germany

2034. Novel Anisotropic Diffusion MRI Phantom
Michal E. Komlosh[1], Evren Ozarslan[1], Martin J. Lizak[2], Ferenc Horkay[1], Raisa Z. Freidlin[3], Peter J. Basser[1]
[1]STBB,PPITS,NICHD,NIH, Bethesda, MD, United States; [2]NMRF,NINDS,NIH, Bethesda, MD, United States; [3]CIT,NIH, Bethesda, MD, United States

DCE MRI

Exhibition Hall Monday 14:00-16:00

2035. Effects of Contrast Agent Accumulation on Background Correction of Phase-Based Arterial Input Functions
Anders Garpebring[1], Ronnie Wirestam[2], Mikael Karlsson[1]
[1]Radiation Sciences, Umeå University, Umeå, Sweden; [2]Medical Radiation Physics, Lund University, Lund, Sweden

2036. Comparison between MRI Blood-to-Brain Transfer Rate Constants from Individual MRI & Population Averaged Quantitative Autoradiographic Arterial Input Functions
Kishor Karki[1], Ramesh Paudyal[1], Tavarekere N. Nagaraja[2], James R. Ewing[1,3], Joseph D. Fenstermacher[2], Robert A. Knight[1,3]
[1]Department of Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Department of Anesthesiology, Henry Ford Hospital, Detroit, MI; [3]Department of Physics, Oakland University, Rochester, MI, United States

2037. Dispersion Correction in DCE-MRI Microvascular Parameters using a Recirculating Bolus AIF Model
Ross A. Little[1], Marietta Scott[2], Anita Banerji[1], Yvonne Watson[1], Josephine Naish[1], Geoff J. M. Parker[1]
[1]Imaging Sciences & Biomedical Engineering, University of Manchester, Manchester, United Kingdom; [2]AstraZeneca, Cheshire, United Kingdom

2038. Optimizing Perfusion Imaging of Brain Tumors: Validation of Venous Output Function Used as a Surrogate AIF
Claire Foottit[1], Greg O. Cron[1], Jean Francois Mercier[1], Viviane Thanh-Van Nguyen[2], Ian Cameron[1], Mark E. Schweitzer[1], John Sinclair[1], John Woulfe[1], Matthew J. Hogan[3], Thanh B. Nguyen[1]
[1]The Ottawa Hospital, Ottawa, Ontario, Canada; [2]University of Montreal; [3]Neuroradiology, The University of Ottawa, Ottawa, Ontario, Canada

2039. Intra-Operative Perfusion Imaging of Brain Tumors using Dynamic Contrast Enhanced MRI: A Comparison with Dynamic Susceptibility Contrast MRI
Shy-Chyi Chin[1], Yeng-Peng Liao[2], Ya-Ting Chuang[1], Ho-Ling Liu[2,3]

[1]Department of Medical Imaging & Intervention, Chang-Gung Medical Center, Guei-Shan, Tao-Yuan, Taiwan; [2]Chang Gung University, Department of Medical Imaging & Radiological Sciences, Guei-Shan, Tao-Yuan, Taiwan; [3]Department of Medical Imaging & Intervention, Chang-Gung Medical Center

2040. ***In Vivo* Correlation between Non-Model-Based Parameters & Model-Based Ktrans in Brain Tumors**

Chih-Feng Chen[1], Lin-Wei Hsu[2], Ho-Lin Liu[2]
[1]Department of Radiology, Chang Gung Memorial Hospital, Chiayi, Taiwan, Taiwan; [2]Department of Medical Imaging & Radiological Sciences Institute of Medical Physics & Imaging Sci, Chang Gung University, Taoyuan, Taiwan, Taiwan

2041. **Dynamic Contrast Enhanced & Diffusion Weighted MRI from Primary Tumors & Metastatic Cervical Lymph Nodes in Squamous Cell Carcinomas of the Head & Neck**

Sanjeev Chawla[1], Sungheon Kim[1,2], Larry Dougherty[1], Sumei Wang[1], Laurie a Loevner[1], Harry Quon[3], Harish Poptani[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, New York University, New York, NY, United States; [3]Radiation Oncology, University of Pennsylvania, Philadelphia, PA, United States

2042. **Value of Semi-Quantitative Analysis of Dynamic Contrast-Enhanced MRI for Diagnosing Staging of Nasopharyngeal Carcinoma & Comparison with PET-CT**

Bingsheng Huang[1], Pek Lan Khong[1], Chung-Sing Wong[1], Dora Lai Wan Kwong[2], Queenie Chan[3]
[1]The University of Hong Kong, Hong Kong Island, Hong Kong SAR, Hong Kong; [2]Clinical Oncology, the University of Hong Kong; [3]Philips Healthcare

2043. **MR Renography: Coherence Investigation Between Thin Slab & Whole Kidney Scans**

Bin Chen[1], Yi Dang[1], Xue Dong Yang[2], Jing Fang[1,3], Xiaoying Wang[1,2], Jue Zhang[1,3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, BEIJING, China, People's Republic of; [2]Radiology, Peking University First Hospital, BEIJING, China, People's Republic of; [3]College of Engineering, Peking University, BEIJING, China, People's Republic of

2044. **Three-Dimensional Myocardial Perfusion MRI with an Undersampled 3D Hybrid Radial Sequence**

Liyong Chen[1,2], Ganesh Adluru[1], Matthias C. Schabel[1], Christopher J. McGann[3], Edward V. R. DiBella[1,2]
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States; [3]Division of Cardiology & Radiology, University of Utah, Salt Lake City, UT, United States

2045. **First-Pass Myocardial Perfusion Imaging with Sparse (k,t)-Space Sampling**

Anthony Glenn Christodoulou[1], Cornelius Brinegar[1], Bo Zhao[1], Justin P. Haldar[1], Haosen Zhang[2], Yi-Jen L. Wu[2], T. Kevin Hitchens[2], Chien Ho[2], Zhi-Pei Liang[1]
[1]Department of Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Pittsburgh NMR Center for Biomedical Research, Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States

2046. **3D-Liver Quantitative Perfusion Mapping using EGEE Grid with MR-DCE Imaging & MS-325 Blood Pool Contrast Agent**

Benjamin Leporq[1], Sorina Camarasu[1], Frank Pilleul[1,2], Olivier Beuf[1]
[1]CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Villeurbanne, France; [2]Département d'imagerie digestive, CHU Edouard Herriot, Hospices Civils de Lyon, Lyon, France

2047. **Accessing Changes of Functional Dynamic Magnetic Resonance Imaging in Locally Advanced Breast Cancer Patients Undergo Neoadjuvant Chemotherapy**

Si-Wa Chan[1], Yi-Jui Liu[2,3], Dah-Cherng Yeh[4], Jeon-Hor Chen[5], Fang-Yi Lee[6], Huei-Jen Hsueh[4], Kuo-Fang Shao[7], Hsiao-Wei Peng[1]
[1]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan, Taiwan; [2]Department of Automatic Control Engineering, Feng-Chia University, Taichung, Taiwan, Taiwan; [3]Master's Program in Biomedical Informatics & Biomedical Engineering, Feng-Chia University, Taichung, Taiwan, Taiwan; [4]Division of General Surgery, Taichung Veterans General Hospital, Taichung, Taiwan, Taiwan; [5]Center for Functional Onco Imaging, University of California, Irvine, CA, United States; [6]Department of Physicain, Taichung Veterans General Hospital, Taichung, Taiwan, Taiwan; [7]Master's Program in Biomedical Informatics & Biomedical Engineering, Feng-Chia University, Taichung, Taiwan, Taiwan

2048. **Evaluation of V_e in a Rat Glioma Model with DCE-MRI & Quantitative SPECT**

Jack T. Skinner[1,2], Mary E. Loveless[1,2], Todd E. Peterson[2,3], Thomas E. Yankeelov[2,3], Mark D. Does[1,2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

2049. **Quantitative Perfusion Measurement of Liver Metastasis using DCE-MRI: Comparing a 3D-Flash Vs. a IR-TrueFISP Protocol Within a Clinical Phase II Study**

Martin Büchert[1], Klaus Mross[2]

[1]MRDAC Magnetic Resonance Development & Application Center, University Medical Center Freiburg, Freiburg, Germany; [2]Klinik für Tumorbiologie

2050. Patlak Model Selection using Dynamic Contrast Enhanced T_1-Weighted MR Measurement of Vascular Permeability

Abbas Babajani-Feremi[1], Rajan Jain[1,2], Jayant Narang[1], Ali Syed Arbab[1], Kourosh Jafari-Khouzani[1], Mohammad-Reza Nazem-Zadeh[3], Hamid Soltanian-Zadeh[1,4]

[1]Department of Radiology, Henry Ford Hospital, Detroit, MI, United States; [2]Department of Neurosurgery, Henry Ford Hospital, Detroit, MI, United States; [3]Department of Neurology, Henry Ford Hospital, Detroit, MI, United States; [4]CIPCE, Electrical & Computer Engineering Department, University of Tehran, Tehran, Iran

2051. Early Time Point Perfusion Imaging: Estimating Tissue Transit Time Directly from the Data Time Course

Kenneth K. Kwong[1], Ona Wu[1], Suk-Tak Chan[1], Koen Nelissen[1], David A. Chesler[1]

[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

2052. Quantitative Assessment of Blood-Brain-Barrier Permeability by Patlak Plots After Intraperitoneally Administrated Gadolinium-DOTA

Dana Suciu Poole[1], Johannes Rolf Sikkema[2], Arnoldus M. van Den Maagdenberg[3], Louise van Der Weerd[2,4]

[1]Radiology, Leiden University Medical Centre, Leiden, Netherlands; [2]Radiology, Leiden University Medical Centre, Netherlands; [3]Human Genetics, Leiden University Medical Centre, Netherlands; [4]Anatomy & Embriology, Leiden University Medical Centre, Netherlands

2053. A Modified Generalized Tracer Kinetic Model for Perfusion Parameters in DCE- MRI for High Grade Intracranial Mass Lesions

Ram Kishore Singh Rathore[1], Prativa sahoo[2], Rrishi Awashti[3], Rakesh K. Gupta[4], Sanjay Verma, Divya Rathore

[1]Mathematics & Statistics, IIT Kanpur, KANPUR, U.P., India; [2]Mathematics & Statistics, IIT Kanpur, KANPUR, India; [3]SGPGI; [4]SGPGI, LUCKNOW

2054. Feasibility of Dynamic Contrast Enhanced MRI in Oral Cavity Cancer: A Comparison Between Reference Region Model, General Kinetic Model & Pathological Grading

Shy-Chyi Chin[1], Yeng-Peng Liao[2], Ya-Ting Chuang[1], Ho-Ling Liu[2]

[1]Department of Nedical Imaging & Intervention, Chang-Gung Medical Center, Guei-Shan, Tao-Yuan, Taiwan; [2]Chang Gung University, Department of Medical Imaging & Radiological Sciences, Guei-Shan, Tao-Yuan, Taiwan

2055. 3D Radial Twisted Projection Imaging for DCE-MRI with Variable Flip Angles

Philipp Krämer[1], Simon Konstandin[1], Melanie Heilmann[1], Lothar Rudi Schad[1]

[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

2056. Optimizing Acquisition & Reconstruction for a Narrower Temporal Footprint in Time-Resolved ^{3}DPR Liver Perfusion

Ethan K. Brodsky[1,2], Kevin M. Johnson[3], Walter F. Block[3,4], Scott B. Reeder[1,3]

[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin , Madison, WI, United States; [3]Medical Physics, University of Wisconsin, Madison, WI, United States; [4]Biomedical Engineering, University of Wisconsin, Madison, WI, United States

2057. Feasibility of High Temporal Resolution Compressed Sensing Based DCE-MRI

Haoyu Wang[1], Da Wang[1], Shanglian Bao[1], Jiani Hu[2]

[1]Beijing Key Lab of Medical Physics & Engineering, Peking University, Beijing, China, People's Republic of; [2]Department of Radiology, Wayne State University, Detroit, MI, United States

2058. Dynamic Contrast Enhanced MRI of the Brain at 7T

Lars Gerigk[1], Hendrik Laue[2], Lydia Schuster[1], Thomas Hauser[1], Ann-Kathrin Homagk[3], Armin Nagel[3], Marco Essig[1], Heinz-Peter Schlemmer[1], Michael Bock[3]

[1]Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany; [2]Institute for Medical Image Computing, Fraunhofer MEVIS, Bremen, Germany; [3]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

2059. A Dynamic Lesion Phantom for Quantitative Evaluation of Dynamic Contrast Enhanced MRI

Melanie Freed[1,2], Jacco A. de Zwart[3], Prasanna Hariharan[4], Matthew R. Myers[4], Aldo Badano[1]

[1]CDRH/OSEL/DIAM, Food & Drug Administration, Silver Spring, MD, United States; [2]Dept. Bioengineering, University of Maryland, College Park, MD, United States; [3]Advanced MRI Section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [4]CDRH/OSEL/DSFM, Food & Drug Administration, Silver Spring, MD, United States

2060. Quantitative Perfusion & Permeability Analysis of Animal Brain using Dual Echo DCE-MRI

Yanming Yu[1], Quan Jiang[2], Haoyu Wang[3], Shanglian Bao[3], E. Mark Haacke[4], Jiani Hu[4]

[1]Logging Technique Research Iinstitute, great wall drilling company, China National Petroleum Corporat, Beijing, China, People's Republic of; [2]Department of Neurology, Henry Ford Health Sciences Center, Detroit, MI, United States; [3]Beijing Key Lab of Medical

Physics & Engineering, Peking University, Beijing, China, People's Republic of; [4]Department of Radiology, Wayne State University, Detroit, MI, United States

2061. Modeling of Look-Locker Estimates of the Magnetic Resonance Imaging Estimate of Longitudinal Relaxation Rate in Tissue After Contrast Administration
Ramesh Paudyal[1], Hassan Bagher-Ebadian[1], Robert A. Knight[1,2], Tavarekere N. Nagaraja[3], Joseph D. Fenstermacher[3], James R. Ewing[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physcis, Oakland University, Rochester, MI, United States; [3]Anesthesiology, Henry Ford Hospital, Detroit, MI, United States

2062. Characterizing Cerebral Blood Volume & Permeability with a Undersampled Multiple-Echo 3D Projection Reconstruction Sequence & a Fast T_1 Mapping Method
Aiming Lu[1], Keith R Thulborn[1]
[1]Center for MR Research, University of Illinois, Chicago, IL, United States

2063. T_2*-Correction in DCE-MRI from Double Echo Acquisitions
Magne Mørk Kleppestø[1,2], Oliver Marcel Geier[1], Christopher Larsson[1], Frederic Courivaud[1], Raimo Aleksi Salo[1], Petter Brandal[3], Inge Andre Rasmussen[1], Atle Bjornerud[1]
[1]Interventional Centre, Oslo University Hospital, Oslo, Norway; [2]Dept. of Physics, Univ. of Oslo, Oslo, Norway; [3]Dept. of Oncology, Oslo University Hospital, Oslo, Norway

Perfusion & Diffusion Animal Models

Exhibition Hall Tuesday 13:30-15:30

2064. Continuous Arterial Spin Labeling (CASL) of Cerebral Blood Flow of Mouse at 9.4T
Hongxia Lei[1,2], Yves Pilloud[1], Rolf Gruetter[1,3]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Radiology, Univeristy of Lausanne, Lausanne, Switzerland; [3]Radiology, University of Geneva, Geneva, Switzerland

2065. A New Transcriptionally Driven Oncovirus with $Vstat_{120}$ Expression Has Antiangiogenic & Anti-Tumorigenic Effects
Ji Young Yoo[1], Amy Haseley[1], Anna Bratasz[2], E. Antonio Chiocca[1], J. Y. Zhang[2], Donna Cain[1], Kimerly Powell[2], Balveen Kaur[1]
[1]Department of Neurological Surgery, OSU, Columbus, OH, United States; [2]Department of Biomedical Informatics, OSU, Columbus, OH, United States

2066. Determination of Optimal Parameters for Intra-Arterial Injection & Blood Brain Barrier Disruption in the Mouse using MRI
Conor P. Foley[1], David Rubin[2], Alejandro Santillan[2], Eric Aronowitz[1], Walter Zink[2], Y. Pierre Gobin[2], Douglas Ballon[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Neurosurgery, Weill Cornell Medical College, New York, NY, United States

2067. Pharmacological MRI of the Retina: Blood Flow & BOLD Uncoupling During Nitroprusside Infusion
Yen-Yu Ian Shih[1], Li Guang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2068. An Automatic Protocol to Detect the Fed & Fasted Brain using Multivariate Analysis of Diffusion Weighted Data Sets
Ania Benítez[1,2], Blanca Lizarbe[1], Luis Lago-Fernández[2], Pilar López-Larrubia[1], Sebastian Cerdán[1], Manuel Sánchez-Montañés[2]
[1]Instituto de Investigaciones Biomédicas "Alberto Sols", Madrid, Spain; [2]Departamento de Ingeniería Informática, Escuela Politécnica Superior, Universidad Autónoma de Madrid, Madrid, Spain

2069. Evolving Axon Degeneration in Optic Nerve Crush Mice Assessed using *In Vivo* Diffusion Tensor Imaging
Peng Sun[1], Xu Zhang[1], Qing Wang[2], Sheng-Kwei Song[1]
[1]Radiology, Washington University in St. Louis, Saint Louis, Missouri, United States; [2]Mechanical Engineering & Materials Science, Washington University in St. Louis

2070. White Matter Reorganization & Functional Recovery Following Stroke in Adult Rat
Chrystelle Po[1], Young-Beom Kim[1], Daniel Kalthoff[1], Melanie Nelles[1], Mathias Hoehn[1]
[1]In-vivo-NMR Laboratory, Max-Planck-Institut for Neurological Research, Cologne, Germany

2071. White Matter Quantification in a Model of Schizophrenia Mice using Microscopic Diffusion Tensor Imaging
Franck Mauconduit[1], Jean Christophe Deloulme[1], Annie Andrieux[1], Hana Lahrech[1]
[1]Grenoble Institute of Neuroscience, INSERM U836 - UJF, La Tronche, France

2072. Longitudinal TBSS Reveals Progressing Demyelination in the Mouse Model of Progressive Neurodegenerative Disease EPM1

Otto H. H. Manninen[1], Teemu Laitinen[2], Outi Kopra[1], Olli Gröhn[2], Anna-Elina Lehesjoki[1]
[1]Folkhälsan Institute of Genetics & Neuroscience Center, University of Helsinki, Helsinki, Finland; [2]Department of Neurobiology, University of Eastern Finland, Kuopio, Finland

2073. Accelerated Mouse Spinal Cord Diffusion Measurements with SNR-Enhancing Joint Reconstruction

Justin P. Haldar[1], Joong H. Kim[2], Sheng-Kwei Song[2], Zhi-Pei Liang[1]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Radiology, Washington University in St. Louis, St. Louis, MO, United States

2074. Diffusion Kurtosis Abnormalities in a Pre-Symptomatic α-Synucleinopathy Mouse Model.

Rafael Delgado Y. Palacios[1], Jelle Veraart[2], Greet Vanhoutte[1], Heinrich Schell[3], Marleen Verhoye[1], Philipp Kahle[3], Jan Sijbers[2], Annemie Van Der Linden[1]
[1]Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium; [2]Vision Lab, University of Antwerp, Antwerp, Belgium; [3]Laboratory of Functional Neurogenetics, Hertie Institute for Clinical Brain Research, University Clinics Tübingen, Tübingen, Germany

2075. Recovery of Regional Cerebral Blood Flow & Brain Tissue Oxygenation by 24 Hours After Asphyxial Cardiac Arrest

Lesley M. Foley[1], Mioara D. Manole[2,3], T Kevin Hitchens[1,4], Chien Ho[1,4], Henry L. Alexander[2], Patrick M. Kochanek[2,5], Robert S. Clark[2,3]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Safar Center for Resuscitation Research, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [3]Department of Pediatrics, Children's Hospital of Pittsburgh, Pittsburgh, PA, United States; [4]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States; [5]Departments of Critical Care Medicine, Pediatrics & Anesthesiology, University of Pittsburgh, Pittsburgh, PA, United States

2076. Correlation Between Hyperpolarized ^{13}C MRSI & Perfusion Data from Dynamic Susceptibility Contrast MRI

Ilwoo Park[1], Janine M. Lupo[1], Achuta Kadambi[1], Tomoko Ozawa[2], C. David James[2], Daniel B. Vigneron[1,3], Sarah J. Nelson[1,3]
[1]Surbeck Laboratory of Advanced Imaging, Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Brain Tumor Research Center, Department of Neurological Surgery, University of California, San Francisco, San Francisco, CA, United States; [3]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco, San Francisco, CA, United States

2077. Longitudinal Changes of Diffusion Tensor Imaging in Acute Stages of Post-Mortem Animal Brain Tissue Decomposition

Luis Concha[1], Oscar Méndez[2], Fernando Barrios-Alvarez[1]
[1]Instituto de Neurobiologia, UNAM, Queretaro, Mexico; [2]School of Biological Sciences, University of California - Irvine, Irvine, CA, United States

2078. Susceptibility Weighted Imaging (SWI) of Cerebral Physiology of Non-Human Primate During Carbogen Inhalation

Asamoah Bosomtwi[1], Swati Rane[2], Quan Jiang[3], Leonard L. Howell[1]
[1]Yerkes Primate Center, Emory University, Atlanta, GA, United States; [2]Vanderbilt University; [3]Neurology, Henry Ford Hospital

2079. Language Pathway Homologues in Chimpanzees Reconstructed using Diffusion Tractography

Frederick William Damen[1,2], Longchuan Li[1], William D. Hopkins[3], Todd M. Preuss[4], James K. Rilling[3,5], Govind Nair[1], Xiaodong Zhang[4], Susan Kramer[1], Xiaoping Hu[1,2]
[1]Biomedical Imaging Technology Center, School of Medicine, Emory University, Atlanta, GA, United States; [2]Department of Biomedical Engineering, Georgia Institute of Technology/Emory University, Atlanta, GA, United States; [3]Division of Developmental & Cognitive Neuroscience, Yerkes National Primate Research Center, Atlanta, GA, United States; [4]Division of Neuropharmacology & Neurological Diseases, Yerkes National Primate Research Center, Atlanta, GA, United States; [5]Department of Anthropology, Emory University, Atlanta, GA, United States

2080. T_2* & Phase Contrast in Marmoset Brain

Pascal Sati[1], Afonso C. Silva[2], Maria I. Gaitan[1], Jillian E. Wohler[3], Colin Denis Shea[1], Iordanis E. Evangelou[1], Luca Massacesi[1,4], Peter van Gelderen[5], Jeff H. Duyn[5], Steven Jacobson[3], Daniel Salo Reich[1]
[1]Translational Neuroradiology Unit , Neuroimmunology Branch, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Cerebral Microcirculation Unit, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [3]Viral Immunology Section, Neuroimmunology Branch, NINDS, National Institutes of Health, Bethesda, MD, United States; [4]Department of Neurology, University of Florence, Florence, Italy; [5]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

2081. White-Matter Tract-Based Atlas of the Chimpanzee Brain
Longchuan Li[1], Susan Kramer[1], William Hopkins[2], Todd Preuss[2], James Rilling[3], Govind Nair[1], Xiaodong Zhang[2], Frederick Damen[4], Xiaoping Hu[4]
[1]School of Medicine, Emory University, Atlanta, GA, United States; [2]Division of Neuroscience, Yerkes National Primate Research Center, Atlanta, GA, United States; [3]Division of Psychobiology, Yerkes National Primate Research Center, Atlanta, GA, United States; [4]Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States

2082. Longitudinal Study of the Corpus Callosum Thickness in Developing Monkeys
Chun-Xia Li[1], Anthony M. S. Chan[1,2], Xiaodong Zhang[1,3]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States; [2]Division of Neuropharmacology & Neurologic Diseases, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States; [3]Division of Neuropharmacology & Neurologic Diseases, Yerkes National Primate Research Center, , Emory University, Atlanta, GA, United States

2083. Anatomical Connectivity of the Internal Capsule
Kyle Taljan[1,2], Cameron McIntyre[1], Ken Sakaie[3]
[1]Lerner Research Institute, Biomedical Engineering, Cleveland Clinic, Cleveland, OH, United States; [2]Biomedical Engineering, Cleveland State University, Cleveland, OH, United States; [3]Imaging Institute, Cleveland Clinic

2084. A New Model for Characterizing the Temporal Progression of the Ischemic Penumbra in Acute Ischemic Stroke
Warren Misik[1,2], Andrew Demchuk[1,3], Richard Frayne[1,3], Bijoy Menon[1]
[1]Seaman Family MR Research Centre, Foothills Medical Centre, Calgary, Alberta, Canada; [2]Physics & Astronomy, University of Calgary, Calgary, Alberta, Canada; [3]Radiology & Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada

2085. Validation of Diffusion Weighted Imaging of Cortical Anisotropy by Means of a Histological Stain for Myelin
Michiel Kleinnijenhuis[1,2], Kees Jan Sikma[1,3], Markus Barth[2,4], Pieter Dederen[1], Valerio Zerbi[1,5], Benno Küsters[6], Dirk Ruiter[1,2], Cornelis H. Slump[7], Anne-Marie van Cappellen Van Walsum[1,8]
[1]Department of Anatomy, University Medical Centre St. Radboud, Nijmegen, Netherlands; [2]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands; [3]Signals & Systems, Faculty of Electrical Engineering, Mathematics & Computer Science, University of Twente, Enschede, Netherlands; [4]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [5]Department of Radiology, University Medical Centre St. Radboud, Nijmegen, Netherlands; [6]Department of Pathology, University Medical Centre St. Radboud, Nijmegen, Netherlands; [7]Signals & Systems, Faculty of Electrical Engineering, Mathematics & Computer Science, University of Twente, Enschede, Netherlands; [8]MIRA Institute for Biomedical Technology & Technical Medicine, University of Twente, Enschede, Netherlands

Arterial Spin Labeling

Exhibition Hall Wednesday 13:30-15:30

2086. Parallel Transmit Vessel Selective Arterial Spin Labelling: A Proof of Concept Simulation
Aaron Oliver-Taylor[1], Roger J. Ordidge[1], David L. Thomas[2]
[1]Medical Physics & Bioengineering, University College London, London, England, United Kingdom; [2]Institute of Neurology, University College London, London, England, United Kingdom

2087. Spatially Selective PCASL with Parallel Excitation
Daehyun Yoon[1], Hesamoddin Jahanian[2], Douglas C. Noll[2], Luis Hernandez-Garcia[2]
[1]Electrical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

2088. Multi-Vessel Labeling Approach for Perfusion Territory Imaging in Pseudo-Continuous Arterial Spin Labeling
Michael Helle[1], Susanne Rüfer[1], Matthias van Osch[2], Olav Jansen[1], David Gordon Norris[3,4]
[1]Institute for Neuroradiology, Christian-Albrechts-Universität, UK-SH, Kiel, Germany; [2]C.J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands; [4]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

2089. Mixed Cerebral Perfusion Territories in the Posterior Circulation Investigated using Super-Selective Arterial Spin Labeling MRI
Nolan S. Hartkamp[1], M. Helle[2], J. Hendrikse[1], M. J. P. van Osch[3]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands; [2]Institute of Neuroradiology, Christian-Albrechts-Universität, Kiel, Germany; [3]C.J. Gorter Center, Leiden UMC, Leiden, Netherlands

2090. Regional Perfusion Imaging using PTILT
Cheng Ouyang[1,2], Keith Thulborne[3], Brad P. Sutton[1,2]

[1]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Center for Magnetic Resonance Research, University of Illinois at Chicago, Chicago, IL, United States

2091. Extending the Adaptive Sequential Design (ASD) Approach for Real-Time T_1 Optimisation in Arterial Spin Labelling

Alexander Graeme Gardener[1], Stuart Clare[1], Peter Jezzard[1]
[1]FMRIB, University of Oxford, Oxford, United Kingdom

2092. Adaptive Averaging Improves the Signal to Noise Ration in ASL Experiments Especially at High Inflow Times

Johanna Kramme[1], Johannes Gregori[1], Matthias Günther[1,2]
[1]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany; [2]Faculty of Physics & Electronics, University of Bremen, Germany

2093. Modeling the Effect of Flow Dispersion in Continuous Arterial Spin Labeling

Weiying Dai[1], Ajit Shankaranarayanan[2], David Alsop[1]
[1]Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

2094. Improved 3D TFEPI ASL with Flip Angle Sweep

Fernando F. Paiva[1], Bernd U. Foerster[2], Rafael G. Oliveira[3], Fernanda Tovar-Moll[1], Jorge Moll[1]
[1]D'Or Institute for Research & Education, Rio de Janeiro, RJ, Brazil; [2]Philips Medical Systems; [3]InRad-Hospital das Clinicas, Magnetic Resonance Department, Faculty of Medicine of the University of SÃ£o Paulo

2095. A New Encoding Scheme for Single-Shot 3D GRASE to Double Slice Coverage

Huan Tan[1], W. Scott Hoge[2], Robert A. Kraft[1]
[1]VT-WFU School of Biomedical Engineering & Sciences, Winston-Salem, NC, United States; [2]Brigham & Women's Hospital & Harvard Medical School, Boston, MA, United States

2096. Determining the Optimal Label Duration of Pseudo-Continuous ASL at 7 Tesla

Eidrees Ghariq[1], Wouter M. Teeuwisse[1], Andrew Webb[1], Matthias J. P. van Osch[1]
[1]C.J. Gorter Center for High Field MRI, Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands

2097. Optimization of Pseudo Continuous ASL Tagging for Robust Inversion Efficiency - a Bloch Simulation *& In Vivo* Study at 3T

David Dongsuk Shin[1], Eric C. Wong[1], Youngkyoo Jung[1], Ho-Ling Liu[2], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California, San Diego, La Jolla, CA, United States; [2]Department of Medical Imaging & Radiological Sciences, Chang Gung University, Taiwan

2098. Comparison of CASL Perfusion Signal with & without Velocity Dependent Labeling RF Power Modulation

S. L. Talagala[1], W-M. Luh[2], H. Merkle[3]
[1]NMRF/NINDS, National Institutes of Health, Bethesda, MD, United States; [2]FMRIF/NIMH, National Institutes of Health, Bethesda, United States; [3]LFMI/NINDS, National Institutes of Health, Bethesda, MD, United States

2099. Tagging Efficiency Corrected Pseudo-Continuous Arterial Spin Labeling – a New Approach for Correction of Phase Tracking Errors

David Dongsuk Shin[1], Ho-Ling Liu[2], Ajit Shankaranarayanan[3], Thomas T. Liu[1]
[1]Center for Functional MRI, University of California, San Diego, La Jolla, CA, United States; [2]Department of Medical Imaging & Radiological Sciences, Chang Gung University, Taiwan; [3]GE Healthcare, Waukesha, WI, United States

2100. Feasibility of Arterial Spin Labeling on a 1T Open Bore Scanner

Dennis Franciscus Ramon Heijtel[1], Matthias J. P. van Osch[2], Matthan W. A. Caan[1], Ed van Bavel[3], Aart J. Nederveen[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands; [2]Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Biomedical Engineering & Physics, University of Amsterdam, Amsterdam, Netherlands

2101. Effect of Background Suppression on CBF Quantitation in Pseudo Continuous Arterial Spin Labeling

David Dongsuk Shin[1], Ho-Ling Liu[2], Eric C Wong[1], Thomas T Liu[1]
[1]Center for Functional MRI, University of California, San Diego, La Jolla, CA, United States; [2]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taiwan

2102. Optimizing Perfusion Imaging of PTILT in the Presence of Magnetic Field Inhomogeneity

Cheng Ouyang[1,2], Brad P. Sutton[1,2]
[1]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States

2103. Performance of Capnia-Derived Regressors for ASL Measurement of Cerebral Vasoreactivity to Circulating Gases

Marjorie Villien[1,2], Julien Bouvier[3], Irène Tropres[3], Matthias J. P. van Osch[4], Christoph Segebarth[1,2], Jean-François Le Bas[5], Alexandre Krainik[1,5], Jan Martin Warnking[1,2]

[1]Centre de Recherche Inserm, U836, Grenoble, France; [2]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [3]IFR 1, Université Joseph Fourier, Grenoble, France; [4]Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [5]Service de Neuroradiologie, CHU Grenoble, Grenoble, France

2104. Comparison of Pulsed & Continuous ASL for Measurements of CBF Changes Induced by Hypercapnia

Felipe Tancredi[1,2], Claudine Gauthier[1,2], Cécile Madjar[2], Joseph Fisher[3], Danny J. J. Wang[4], Richard Hoge[1,2]

[1]Université de Montréal, Montreal, Quebec, Canada; [2]Centre de recherche de l'institut universitaire de gériatrie de Montréal, Montreal, Quebec, Canada; [3]University of Toronto, Toronto, Ontario, Canada; [4]Neurology, UCLA, Los Angeles, CA, United States

2105. Detection of Exposure Related Cortical Responses by Amphetamine using PCASL & Pharmacokinetic/pharmacodynamic Dose Modeling

Love Erlandsson Nordin[1], Tie-Qiang Li[1,2], Jacob Brogren[3], Niclas Sjögren[3], Kristin Hannesdottir[3], JiongJiong Wang[4], Per Julin[3,5]

[1]Diagnostic Medical Physics, Karolinska University Hospital, Huddinge, Stockholm, Sweden; [2]Clinical Science, Intervention & Technology, Division of Medical Imaging & Technology, Karolinska Institute, Stockholm, Sweden; [3]AstraZeneca R&D Neuroscience, Södertälje, Sweden; [4]Neurology, UCLA, Los Angeles, CA, United States; [5]Section for Brain Injury Rehabilitation, Department of Rehabilitation Medicine, Danderyd University Hospital, Karolinska Institutet, Stockholm, Sweden

2106. An Improved 3D GRASE PCASL Method for Whole-Brain Resting-State Functional Connectivity

Xiaoyun Liang[1], Jacques-Donald Tournier[1,2], Richard Masterton[1], Alan Connelly[1,2], Fernando Calamante[1,2]

[1]Brain Research Institute, Florey Neuroscience Institutes, Heidelberg West, VIC, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, VIC, Australia

2107. Altered Resting Cerebral Blood Flow in Adults Following Low-Frequency Electronic Acupuncture as Revealed by Perfusion Functional MRI

Ying Hao[1], Yin Jiang[2], Yue Zhang[3], Cailian Cui[4], Xiaoying Wang[1,5], Jue Zhang[1,3], Jing Fang[1,3]

[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, People's Republic of; [2]Neuroscience Research Institute, Peking University , Beijing, China, People's Republic of; [3]College of Engineering, Peking University, Beijing, China, People's Republic of; [4]Neuroscience Research Institute, Peking University, Beijing, China, People's Republic of; [5]Dept. of Radiology, Peking University First Hospital, Beijing, China, People's Republic of

2108. Cerebral Blood Flow & CerebroVascular Reserve of the Brain in Diabetes

Iain D. Wilkinson[1], Nyssa Craig[1], Elaine Cachia[1], Tim J. B. Hughes[1], Dan Warren[1], Solomon Tesfaye[2], Petersen T. Esben[3], Xavier Golay[4], Dinesh Selvarajah[2]

[1]Academic Radiology, University of Sheffield, Sheffield, S Yorkshire, United Kingdom; [2]Diabetes, Sheffield Teaching Hospitals; [3]National University of Singapore; [4]University College London

2109. The Precision of ASL in Measuring Cerebrovascular Reactivity in Cardiovascular Disease Patients.

U. C. Anazodo[1,2], N. Suskin[3], J. Wang[4], J. K. Shoemaker[5], K. St Lawrence[1,2]

[1]Lawson Health Research Institute, St Joseph's Health Care, London, Ontario, Canada; [2]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]London Health Science Cardiology Rehabilitation Program, London, Ontario, Canada; [4]Department of Neurology, UCLA, Almanson-Lovelace Brain Mapping Center, Los Angeles, CA, United States; [5]Neurovascular Research Laboratory, School of Kinesiology, University of Western Ontario, London, Ontario, Canada

2110. Retinal & Choroidal Blood-Flow MRI & Visual Function in Diabetic Retinopathy in Mice

Eric R. Muir[1], René C. Rentería[2,3], Timothy Q. Duong[1]

[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Department of Physiology, University of Texas Health Science Center, San Antonio, TX, United States; [3]Center for Biomedical Neuroscience, University of Texas Health Science Center, San Antonio, TX, United States

2111. Layer-Specific Retinal & Choroidal Blood-Flow MRI of Retinitis Pigmentosa in Mice

Eric R. Muir[1], Bryan H. De La Garza[1], Timothy Q. Duong[1]

[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States

2112. Probing Arterial Spin Labeling MR Signal in Human Brain with T1ρ Technique

Xiang He[1], Kyongtae Ty Bae[1]

[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

2113. Quantification of Arterial & Microvascular Cerebral Blood Volume using Multiphase TrueFISP Based ASL

Lirong Yan[1], Cheng Li[2], Emily Kilroy[1], Felix Werner Wehrli[2], Danny J. J. Wang[1]

[1]Department of Neurology, University of California Los Angeles, Los Angeles, CA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2114. Is Cerebral Microvascular Flow Anisotropic - Preliminary Evidence from Multi-Directional Diffusion Weighted Perfusion MRI

Anitha K. Priya[1], Lirong Yan[1], Danny J. J. Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States

2115. Comparison of Spin Dynamics in Pseudo-Continuous & Velocity-Selective Arterial Spin Labeling with & without Vascular Crushing

Wouter M. Teeuwisse[1], Aart J. Nederveen[2,3], Eidrees Ghariq[1], Dennis F. Heijtel[2,3], Matthias J. P. van Osch[1]
[1]Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [2]Radiology, Amsterdam Medical Center, Amsterdam, Netherlands; [3]Spinoza Center, Amsterdam, Netherlands

2116. Removal of CSF Contamination in VSASL & QUIXOTIC using a Long TE CSF Scan

Jia Guo[1], Eric C. Wong[2]
[1]Bioengineering, University of California San Diego, La Jolla, CA, United States; [2]Department of Radiology & Psychiatry, University of California San Diego, La Jolla, CA, United States

2117. Magnetization "reset" in T_2-Relaxation-Under-Spin-Tagging (TRUST) MRI

Feng Xu[1], Jinsoo Uh, Hanzhang Lu[1]
[1]University of Texas Southwestern Medical Center, Dallas, TX, United States

2118. Arterial Spin Labeling Based T_2 Measurements of Restricted Blood-to-Tissue Water Transfer in Human Brain

Johannes Gregori[1], Norbert Schuff[2,3], Matthias Günther[1,4]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Radiology & Biomedical Imaging, University of California San Francisco, United States; [3]Center for Imaging of Neurodegenerate Diseases (CIND), VA Medical Center, San Francisco, CA, United States; [4]FB1, University Bremen, Bremen, Germany

2119. Optimal Acquisition Strategies for Transit Time Measurement with Continuous ASL

Weiying Dai[1], Ajit Shankaranarayanan[2], David C. Alsop[1]
[1]Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]Global Applied Science Laboratory, GE Healthcare , Menlo Park, CA, United States

2120. Accordance of ASL Delay Time & Bolus Arrival Times in Parenchyma

Kay Jann[1], Martinus Hauf[2], Frauke Kellner-Weldon[2], Marwan Mohamed El-Koussy[2], Claus Kiefer[2], Andrea Federspiel[1], Gerhard Schroth[2]
[1]Department of Psychiatric Neurophysiology, University Hospital of Psychiatry / University of Bern, Bern, Switzerland; [2]University Institute of Diagnostic & Interventional Neuroradiology, Inselspital & University of Bern, Bern, Switzerland

2121. The Influence of Voxel-Wise RCBF Covariates in Pharmacological BOLD-FMRI Studies

Fernando O. Zelaya[1], Astrid Pauls[1], Owen O'Daly[1], Matthew Howard[1], David Alsop[2], Mitul Mehta[1]
[1]Neuroimaging, Institute of Psychiatry, London, United Kingdom; [2]Beth Israel Hospital, United States

2122. Combined Arterial Spin Labelling & Diffusion Weighted Imaging for Estimation of Capillary Volume Fraction & Permeability-Surface Product in the Human Brain

Patrick William Hales[1], Chris A. Clark[1]
[1]Imaging & Biophysics Unit, UCL Institute of Child Health, London, United Kingdom

2123. Whole Brain Quantification of Arterial Transit Time & Perfusion using Multi-Slice Pseudo-Continuous Arterial Spin Labelling

Wayne Lee[1], Rafal Janik[2], Bojana Stefanovic[2,3], John G. Sled[1,3]
[1]Hospital for Sick Children, Toronto, Ontario, Canada; [2]Sunnybrook Health Sciences Center, Canada; [3]Medical Biophysics, University of Toronto, Canada

2124. The B_1 Field & Variability in Left-Right Brain Perfusion with 3D IR-PULSAR & Its Implications on Symmetry Studies

Neville D. Gai[1], John Butman[1]
[1]Radiology & Imaging Sciences, National Institutes of Health, Bethesda, MD, United States

2125. Saturated Label Effects with Multi-Slice Imaging in ASL

Wayne Lee[1], Rafal Janik[2], Bojana Stefanovic[2,3], John G. Sled[1,3]
[1]Hospital for Sick Children, Toronto, Ontario, Canada; [2]Sunnybrook Health Sciences Center, Canada; [3]Medical Biophysics, University of Toronto, Canada

2126. Feasibility & Repeatability of ASL-Based PhMRI After a Single Dose Oral Challenge as a Tool for Assessing 5-HT Function

Anne Klomp[1], Matthan W. Caan[1], Aart J. Nederveen[1], Liesbeth Reneman[1]
[1]Radiology, Academic Medical Center, Amsterdam, Netherlands

2127. Arterial Spin Labeling in Young Adults During Alcohol Infusion
Michael Marxen[1,2], Gabriela Gan[1,2], Christine Monika Zimmermann[1,2], Maximilian Pilhatsch[1,2], Ulrich S. Zimmermann[1], Matthias Guenther[3,4], Michael N. Smolka[1,2]
[1]Department of Psychiatry & Psychotherapy, Technische Universität Dresden, Dresden, Germany; [2]Neuroimaging Center, Technische Universität Dresden, Dresden, Germany; [3]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany; [4]Faculty of Physics & Electronics, Universität Bremen, Bremen, Germany

2128. Comparison of CBF & $CMRO_2$ Measurements using MRI & PET in Large Nonhuman Primates (Baboons)
Hsiao-Ying Wey[1,2], Kihak Lee[1], Peter T. Fox[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2129. Flow-Weighted IVASO-DS for Absolute Arterial CBV Quantification
Kathrin Lorenz[1], Toralf Mildner[1], Andre Pampel[1], Harald E. Möller[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

2130. Late Effects of Cancer Treatment on Gray Matter Perfusion Assessed by Arterial Spin Labeling MRI & Its Association with Neurocognitive Function
Adam Martin Winchell[1,2], Kevin Krull[3], Noah Sabin[4], Jan Sedlacik[4], Ruitian Song[4], Ralf B. Loeffler[4], Melissa Hudson[3], Claudia M. Hillenbrand[4]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis , TN, United States; [2]Biomedical Engineering, University of Memphis, Memphis , TN, United States; [3]Epidemiology & Cancer Control, St. Jude Children's Research Hospital, Memphis, TN, United States; [4]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States

Stroke - Clinical Studies

Exhibition Hall Wednesday 13:30-15:30

2131. Accuracy & Execution Speed of Automatic Voxel-Based Algorithms for Segmenting Stroke Lesions in Clinical DWI Imaging
Steven Mocking[1], Priya Garg[2], Aurauma Chutinet[3], William A. Copen[4], A. Gregory Sorensen, Ona Wu
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA; [3]Department of Neurology, Massachusetts General Hospital, United States; [4]Department of Radiology, Massachusetts General Hospital

2132. Can Hippocampal Size Predict Cognitive Impairment in Post-Stroke Patients?
Efrat Kliper[1,2], Einor Ben Assayag[3], Shani Shenhar-Tsarfaty[2,3], Lodmila Shopin[3], Hen Hallevi[3], Eitan Uriel[3], Amos Korczyn A[3], Natan Meir Bornstein[3], Talma Hendler[1], Orna Aizenstein[4], Dafna Ben Bashat D[5]
[1]The Wohl institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; [3]Departments of Neurology, Tel Aviv Sourasky Medical Center, Israel, Israel; [4]Departments of Radiology, Tel Aviv Sourasky Medical Center, Israel, Israel; [5]The Wohl Institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Israel, Israel

2133. Diffusion Weighted Magnetic Resonance Spectroscopy in Different Stages of Human Cerebral Ischemia
Dandan Zheng[1], Zhenghua Liu[2], Xiaoying Wang[1,2], Jue Zhang[1,3], Jing Fang[1,3]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, BEIJING, China, People's Republic of; [2]Dept. of Radiology, Peking University First Hospital, BEIJING, China, People's Republic of; [3]College of Engineering, Peking University, BEIJING, China, People's Republic of

2134. Non-Invasive Method to Image Cerebral Blood Volume Increases in Acute Ischemic Stroke Patients
Alan J. Huang[1,2], Li An[3], Jun Hua[1], Manus Donahue[4], Steven Warach[3], Peter van Zijl[1]
[1]FM Kirby Research Center, Johns Hopkins University, BALTIMORE, MD, United States; [2]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States; [4]Department of Radiology, Vanderbilt University, Nashville, TN, United States

Animal Models of Stroke

Exhibition Hall Thursday 13:30-15:30

2135. Association Between PH-Weighted Endogenous Amide Proton Transfer (APT) MRI & Tissue Lactic Acidosis During Acute Stroke
Phillip Zhe Sun[1], Jerry S. Cheung[1], Enfeng Wang[1], Eng H. Lo[2]
[1]Radiology, Athinoula. A. Martinos Center for Biomedical Imaging, MGH & Harvard Medical School, Charlestown, MA, United States; [2]Radiology & Neurology, Neuroprotection Research Laboratory, MGH & Harvard Medical School, Charlestown, MA, United States

2136. T_1 Effect on BOLD & CBF Functionl Magnetic Resonance Imaging of Hyperoxic Challenge in Ischemic Stroke
Qiang Shen[1,2], Shiliang Huang[1], Fang Du[1], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2137. Resting State fMRI of Acute Focal Ischemic Rat Brain
Yen-Yu Ian Shih[1], Hsiao-Ying Wey[1], Fang Du[1], Shiliang Huang[1], Qiang Shen[1], Kameel M. Karkar[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2138. MRI-Based Measurement of Longitudinal Contralesional White Matter Volume Changes After Unilateral Stroke in Rat Brain
Willem M. Otte[1,2], Kajo van Der Marel[2], Maurits P. A. van Meer[2], Kees P. J. Braun[1], Rick M. Dijkhuizen[2]
[1]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

2139. Local Blood Oxygen Saturation & Apparent Water Diffusion in Acute Ischemia
Anaïck Moisan[1,2], Pierre Bouzat[1,3], Olivier Detante[1,4], Chantal Remy[1], Emmanuel Luc Barbier[1]
[1]Team 5 - INSERM U836 / Joseph Fourier University, Grenoble Institute of Neurosciences (GIN), Grenoble, France; [2]Cell & Tissue Therapy Unit, Grenoble University Hospital, Grenoble, France; [3]Intensive Care Unit, Grenoble University Hospital, Grenoble, France; [4]Stroke Unit, Department of Neurology, Grenoble University Hospital, Grenoble, France

2140. MRI Detection of Immune Cell Infiltration in Focal Cortical Stroke in Rats using MPIOs
Kevin S. Tang[1], Dorit Granot[2], Shauna L. Quinn[2], Erik M. Shapiro[2,3]
[1]Department of Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [3]Department of Biomedical Engineering, Yale University, New Haven, CT, United States

2141. Early Prediction of Salvageable Tissue with Multiparametric MRI-Based Algorithms After Experimental Ischemic Stroke
Mark J. R. J. Bouts[1], Ivo A. C. W. Tiebosch[1], Rene Zwartbol[1], Emily Hoogveld[1], Ona Wu[1,2], Rick M. Dijkhuizen[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

2142. Negative fMRI Response in the Striatum: A Marker for Striatal Functional Integrity in Ischemic Rat Brain
Yen-Yu Ian Shih[1], Shiliang Huang[1], Fang Du[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2143. Chemical Shift Sodium Imaging in a Mouse Model of Thromboembolic Stroke at 9.4 Tesla
Patrick Michael Heiler[1], Friederike L. Vollmar[2], Friedrich Wetterling[1], Saema Ansar[2], Simon Konstandin[1], Marc Fatar[2], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Department of Neurology, Heidelberg University, Mannheim, Germany

2144. Cerebral Blood Flow Levels During Experimental Ischemic Stroke Influence the Magnitude of Post-Reperfusion Blood-Brain Barrier Opening But Reperfusion After 3 Hours Does Not Reverse the Damage
Robert A. Knight[1,2], Kishor Karki[1], Vijaya Nagesh[1], James R. Ewing[1,2], Joseph D. Fenstermacher[3], Tavarekere N. Nagaraja[3]
[1]Neurology - NMR Research, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Anesthesiology, Henry Ford Hospital, Detroit, MI, United States

2145. A Potential Better Estimation of Penumbra using T_2*-Weighted fMRI of Oxygen Challenge
Qiang Shen[1,2], Shiliang Huang[1], Fang Du[1], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2146. Support Vector Machine Prediction of Ischemic Tissue Fate in Acute Stroke Imaging
Shiliang Huang[1], Qiang Shen[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2147. Neurodengeneration in Optic Tracts of Rats Subjected to Bilateral Common Carotid Artery Occlusion-A Longitudinal DTI Study
Xuxia Wang[1], Fuchun Lin[2], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance & Atomic & Molecular Physics, Wuhan Institute of Physics & Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China, People's Republic of; [2]State Key Laboratory of Magnetic Resonance & Atomic & Molecular Physics , Wuhan Institute of Physics & Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China, People's Republic of

2148. Early Metabolic Biomarkers Identifying Permanent Stroke in Mouse Brain using ^{1}H MRS
Hongxia Lei[1,2], Carole Berthet[3], Lorenz Hirt[3], Rolf Gruetter[1,4]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Radiology, Univeristy of Lausanne, Switzerland; [3]Clinical Neurosciences, Centre Hospitalier Universitaire Vaudois, Switzerland; [4]Radiology, University of Geneva, Geneva, Switzerland

2149. Early Post-Ischemic Neuroprotective Mechanisms: A MR Spectroscopic Imaging Study on PPARβ-Deficient Mice
Mélanie Craveiro[1], Laure Quignodon[2], Carole Berthet[3], Matthew Hall[2], Cristina Cudalbu[1], Lorenz Hirt[3], Béatrice Desvergne[2], Rolf Gruetter[1,4]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Center for Integrative Genomics, University of Lausanne, Lausanne, Switzerland; [3]Department of Neurology, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland; [4]Departments of Radiology, Universities of Lausanne & Geneva, Switzerland

2150. Ischemic Brain Damage & Loss of Ion Homeostasis During Focal Ischemia
Fernando Emilio Boada[1], Edwin Nemoto[2], Yongxian Qian[3], Costin Tanase[3], Charles Jungreis[4], Jonathan Weimer, Vincent Lee
[1]Radiology & Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [2]Neurosurgery, University of New Mexico, Albuquerque, NM, United States; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [4]Radiology, Temple University, Philadelphia, PA, United States

2151. The Effect of Amyloid on Infarct Size in a Rat Model
Simona Nikolova[1], Zareen Amtul[2], David Cechetto[2], Ting-Yim Lee[3], Vladimir Hachinski[4], Robert Bartha[2,3]
[1]Robarts Research Institute, Schulich School of Medicine & Dentistry, University of Western Ontario, London, Ontario, Canada; [2]Department of Anatomy, University of Western Ontario, London, ON, Canada; [3]Robarts Research Institute, Schulich School of Medicine & Dentistry, University of Western Ontario, London, ON, Canada; [4]London Health Sciences Centre, London, ON, Canada

2152. The Importance of Reperfusion Injury in Antenatal Hypoxia-Ischemia: Novel Fetal MRI Diagnostic Parameters & Novel Antioxidant Therapy
Alexander Drobyshevsky[1], Xinhai Ji[1], Matthew Derrick[1], Lei Yu[1], Ines Batinic-Haberle[2], Sidhartha Tan[1]
[1]Pediatrics, Evanston Northshore Healthcare, Evanston, IL, United States; [2]Radiation Oncology, Duke University Medical Center, Durham, NC, United States

2153. MRI Evaluation of Carotid Morphology & Function in a Rabbit Constriction Model of Atherosclerosis: A Feasibility Study
Steve J. Sawiak[1], Valentina Taviani[2], Victoria E. Young[2], Joe L. Bird[3], Hugh K. Richards[4], Andrew J. Patterson[2], Martin J. Graves[2], Adrian T. Carpenter[1], Jonathan H. Gillard[2]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Department of Radiology, University of Cambridge, Cambridge, United Kingdom; [3]Clinical Pharmacology Unit, University of Cambridge, Cambridge, United Kingdom; [4]Department of Anesthesia, University of Cambridge, Cambridge, United Kingdom

2154. T_2*-Weighted Signal Change of Oxygen Challenge as a Potential Better Penumbra Estimation—A Transient Occlusion Study
Fang Du[1], Qiang Shen[1,2], Shiliang Huang[1], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2155. Incorporating ADC Temporal Profiles in Acute Stroke to Predict Ischemic Tissue Fate
Qiang Shen[1,2], Virendra Desai[1], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2156. *In Vivo* Kurtosis Imaging in Murine Cerebral Ischemia
Andreas Lemke[1], Saskia Grudzenski[2], Jörg Döpfert[1], Frederik Bernd Laun[3], Tristan Kuder[3], Marc Fatar[2], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Experimental Neurology, Heidelberg University, Mannheim, Germany; [3]Department of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

Multiple Sclerosis

Exhibition Hall Monday 14:00-16:00

2157. Baseline T_2 MRI Texture Predicts Visual Recovery in Patients with Acute Optic Neuritis
Yunyan Zhang[1], Fiona Costello[1], James N. Scott, Luanne M. Metz[1]

[1]University of Calgary, Calgary, AB, Canada

2158. White Matter Attenuation Sequence Optimization at 7T with Applications in Multiple Sclerosis & Epilepsy
Katharine Teal Bluestein[1], Peter Wassenaar[1], Petra Schmalbrock[1], Michael V. Knopp[1]
[1]Wright Center of Innovation, Department of Radiology, The Ohio State University, Columbus, OH, United States

2159. Relationship between MR Phase & Tissue Microstructure
Saba El-Hilo[1], Stella Atkins, Alexander Rauscher[2]
[1]Simon Fraser University, Vancouver, BC, Canada; [2]UBC MRI Research Centre

2160. Diffusion Tensor MR Spectroscopy to Assess Microstructural Changes in Patients with Multiple Sclerosis
Wafaa Zaaraoui[1], Yann Le Fur[1], Alexandre Vignaud[2], Elisabeth Soulier[1], Patrick Viout[1], Irina Malikova[1,3], Audrey Rico[1,3], Bertrand Audoin[1,3], Sylviane Confort-Gouny[1], Patrick J. Cozzone[1], Jean Pelletier[1,3], Jean-Philippe Ranjeva[1]
[1]CRMBM UMR CNRS 6612, Marseille, France, Metropolitan; [2]Siemens Healthcare, Saint-Denis, France, Metropolitan; [3]Pôle de Neurosciences Cliniques, Service de Neurologie, Hôpital de La Timone, Marseille, France, Metropolitan

2161. Pathobiochemistry of Brain Damage in Multiple Sclerosis: Changes in Choline & Creatine Compounds Measured by ^{1}H and ^{31}P MRSI
Elke Hattingen[1], Ulf Ziemann[2], Jörg Magerkurth[1], Mathias Wahl[2], Ulrich Pilatus[1]
[1]Institute of Neuroradiology, Goethe University Frankfurt/Main, Frankfurt, Germany; [2]Klinik für Neurologie, Goethe University Frankfurt/Main, Frankfurt, Germany

2162. Automatic Segmentation of Gray Matter Multiple Sclerosis Lesions on FLAIR & DIR Images
Elisa Veronese[1], Enrico Grisan[1], Massimiliano Calabrese[2], Alice Favaretto[2], Paolo Gallo[2], Dario Seppi[2], Filippo Rinaldi[2], Irene Mattisi[2], Alessandra Bertoldo[1]
[1]Department of Information Engineering, University of Padova, Padova, Italy; [2]University Hospital of Padova

2163. Statistical Model for Predicting MS Cortical Lesion Detection Rates Based on Lesion Size & MRI Contrast & Resolution
Cherian Renil Zachariah[1], David Pitt[2], Katharine Teal Bluestein[1], Bradley Clymer[3], Michael Knopp[1], Petra Schmalbrock[1]
[1]Wright Center of Innovation, Radiology Department, The Ohio State University, Columbus, OH, United States; [2]Neurology Department, The Ohio Sate University, Columbus, OH, United States; [3]Department of Electrical & Computer Engineering, The Ohio State University, Columbus, OH, United States

2164. Characterization of Functional Homotopy in Multiple Sclerosis using Resting-State Functional MRI
Lin Tang[1], Xinian Zuo[2,3], Clare Kelly[2,3], Yongxia Zhou[1], Hina Jaggi[1], Joseph Herbert[1], Robert I. Grossman[1], Michael Milham[2,3], Yulin Ge[1]
[1]Radiology, Center for Biomedical Imaging of New York University, New York, NY, United States; [2]Phyllis Green & Randolph Cowen Institute for Pediatric Neuroscience; [3]New York University Child Study Center, New York, NY, United States

2165. Is Every Multiple Sclerosis Lesion a "black Hole"? Comparison of T_1-Weighted MRI at 1.5T & 7.0T
Tim Sinnecker[1], Paul Mittelstaedt[1], Jan Markus Doerr[1], Caspar F. Pfueller[1], Lutz Harms[1], Thoralf Niendorf[2,3], Friedemann Paul[1,4], Jens Wuerfel[2,5]
[1]Charité University Medicine, Berlin, Germany; [2]Max-Delbrueck-Center for Molecular Medicin, Berlin, Germany; [3]Berlin Ultrahigh Field Facility, Berlin, Germany; [4]NeuroCure Clinical Research Center , Berlin, Germany; [5]University Luebeck, Berlin, Germany

2166. Susceptibility Contrast in Deep Brain Gray Matter Areas in Multiple Sclerosis Studied with 7T MRI
Bing Yao[1], Francesca Bagnato[2], Karin Shmueli[1], Jeff H. Duyn[1]
[1]Advanced MRI, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Neuroimmunology Branch, NINDS, National Institutes of Health, Bethesda, MD, United States

2167. Contrast Assessment of Synthetic Magnetic Resonance Imaging in Clinical Practice
I. Blystad[1,2], J. B. M. Warntjes[2,3], T. Helmersson[2], P. Lundberg[4,5]
[1]Department of Medical & Health Sciences, Radiology, Linköping, Sweden; [2]Center for Medical Image Science & Visualization, Linköping, Sweden; [3]Division of Clinical Physiology, Linköping, Sweden; [4]Dept of Radiation Physics & Dept of Radiology, IMH, University of Linkoping, Linköping, Sweden; [5]Dept of Radiation Physics & Dept of Radiology, CKOC, University Hospital of Linkoping, Linköping, Sweden

2168. R_2' is Reduced in Normal Appearing White Matter & Lesions & Increased in the Basal Ganglia in Patients with Multiple Sclerosis
David J. Paling[1], Daniel J. Tozer[1], Claudia A. M. Wheeler-Kingshott[1], Xavier Golay[1], Raju Kapoor[1], David H. Miller[1]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom

2169. Similar Cortical Lesion Distribution & Cortical Atrophy Location in Patients with Relapsing-Remitting Multiple Sclerosis.
Marco Battaglini[1], Massimiliano Calabrese[2], Maria Laura Stromillo[1], Alice Favaretto[2], Antonio Giorgio[1], Francesca Rinaldi[2], Paolo Gallo[2], Nicola De Stefano[1]
[1]Neurological & Behavioral Sciences, University of Siena, Siena, Toscany, Italy; [2]Multiple Sclerosis Center of Veneto Region, University of Padua, Padova

2170. Effect of Multiple Sclerosis Lesions on the MTR of Grey & White Matter in the Cervical Spinal Cord
Hugh Kearney[1], Marios C. Yiannakas[1], Rebecca Samson[1], Claudia A. M. Wheeler-Kingshott[1], Olga Ciccarelli[1,2], David H. Miller[1]
[1]Department of Neuroinflammation, UCL institute of Neurology, London, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

2171. Periventricular Venous Density in MS Patients Correlates with T2 Lesion Load - a 7 Tesla MRI Study
Paul Mittelstaedt[1], Tim Sinnecker[1], Jan Markus Doerr[1], Caspar F. Pfueller[1], Lutz Harms[1], Thoralf Niendorf[2,3], Friedemann Paul[1,4], Jens Wuerfel[2,5]
[1]Charité University Medicine, Berlin, Germany; [2]Max-Delbrueck-Center for Molecular Medicin, Berlin, Germany; [3]Berlin Ultrahigh Field Facility, Berlin, Germany; [4]NeuroCure Clinical Research Center , Berlin, Germany; [5]University of Luebeck, Luebeck, Schleswig-Holstein, Germany

2172. Diffusion Tensor Parameters of the Optic Radiations Are Associated with Visual Acuity & Retinal Nerve Fiber Layer Loss Following Optic Neuritis
Robert a Bermel[1], Salim E. Abboud[1], Blessy Mathew[2], Ken E. Sakaie[2], Stephen E. Jones[2], Michael D. Phillips[2], Mark J. Lowe[2]
[1]Neurological Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States

2173. Changes in Diffusion Tensor Eigenvalues in Corpus Callosum in Secondary Progressive Multiple Sclerosis: A Longitudinal DTI Study
Wei Tian[1], Tong Zhu[1], Jianhui Zhong[1], Xiang Liu[1], Praveen Rao[2], Benjamin M. Segal[2], Xiang Liu
[1] Department of Imaging Sciences, University of Rochester Medical Center, Rochester, NY, United States; [2]University of Michigan

2174. Short-Term Stability of T_1 & T_2 Relaxation Measures in Multiple Sclerosis Normal Appearing White Matter
Alice Liang[1], Irene M. Vavasour[2], Anthony L. Traboulsee[3], Joel Oger[3], Donna J. Lang[2], David K. B. Li[2], Alex L. MacKay[1,2], Cornelia Laule[2,4]
[1]Physics & Astronomy, University of British Columbia, Vancouver, BC, Canada; [2]Radiology, University of British Columbia, Vancouver, BC, Canada; [3]Medicine, University of British Columbia, Vancouver, BC, Canada; [4]Pathology & Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada

2175. Estimation of Total Myelin Volume in the Brain
J. B. M. Warntjes[1,2], J. West[1,3], O. Dahlqvist-Leinhard[1,3], G. Helms[4], A.-M. Landtblom[5], P. Lundberg[6,7]
[1]Linköping University, Center for Medical Image Science & Visualization, Linköping, Sweden; [2]Department of Medicine & Health, division of clinical physiology, Linköping, Sweden; [3]Department of Medicine & Health, Division of Radiation Physics, Linköping, Sweden; [4]University Medical Center, MR-Research in Neurology & Psychiatry, Göttingen, Germany; [5]Department of Clinical Neuroscience, Linköping, Sweden; [6]Linköping University, Dept of Radiation Physics & Dept of Radiology, IMH, University of Linkoping, Linköping, Sweden; [7]University Hospital of Linköping, Dept of Radiation Physics & Dept of Radiology, CKOC, University Hospital of Linkoping, Linköping, Sweden

2176. Quantitative Evaluation of Spinal Cord Tissue Damage in MS Patients using Gradient Echo Plural Contrast Imaging
Jie Luo[1], Anne H. Cross[2], Dmitriy A. Yablonskiy[3]
[1]Chemistry, Washington University in St. Louis, St.Louis, MO, United States; [2]Neurology, Washington University School of Medicine, St. Louis, MO, United States; [3]Radiology, Washington University School of Medicine, St. Louis, MO, United States

White Matter Diseases

Exhibition Hall Tuesday 13:30-15:30

2177. Automatic Segmentation of White Matter Hyperintensities Based on Reaction Diffusion with Adaptive Threshold
Shuangxi Ji[1], Yining Huang[2], Jing Fang[1,3], Jue Zhang[1,3]
[1]College of Engineering, Peking University, BEIJING, China, People's Republic of; [2]Dept.of Neurology, Peking University, BEIJING, China, People's Republic of; [3]Academy for Advanced Interdisciplinary Studies, Peking University, BEIJING, China, People's Republic of

2178. Neuromyelitis Optica: Are Cortical Lesions a Common Finding?
Benjamin Bender[1], Lena Zeltner[2], Felix Bischof[2], Uwe Klose[1]
[1]Department of Diagnostic & Interventional Neuroradiology, University Hospital Tübingen, Tübingen, Baden-Württemberg, Germany; [2]Department of Neurology, University Hospital Tübingen, Tübingen, Baden-Württemberg, Germany

Structural & Functional MRI in Parkinson Disease

Exhibition Hall Wednesday 13:30-15:30

2179. 7T MRI Reveals an Inhomogeneous Cortex & Changes in Gray-White Matter Phase in Alzheimer's Disease
Sanneke van Rooden[1], Maarten J. Versluis[1], Julien R. Milles[2], Andrew G. Webb[1], Mark A. van Buchem[1], J. van Der Grond[1]
[1]C.J. Gorter Center for High-Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]LKEB, Department of Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands

2180. 3-D Surface Analysis of the Substantia Nigra in Parkinson's Disease Obtained with 7T MRI
Dae-Hyuk Kwon[1], Jong-Min Kim[2], Se-Hong Oh[1], Hye-Jin Jeong[1], Sung-Yeon Park[1], Je-Geun Chi[1,3], Young-Bo Kim[1], Beom-Seok Jeon[2], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine & Science, Kuwol-dong Namdong-gu, Incheon, Korea, Republic of; [2]Departments of Neurology, Seoul National University, Seoul, Korea, Republic of; [3]Departments of Pathology, Seoul National University, Seoul, Korea, Republic of

2181. Direct Visualization of Parkinson's Disease by *In Vivo* Human Brain Imaging using 7.0T MRI
Se-Hong Oh[1], Jong-Min Kim[2], Sung-Yeon Park[1], Dae-Hyuk Kwon[1], Hye-Jin Jeong[1], Myung-Kyun Woo[1], Young-Bo Kim[1], John Huston III[3], Kendall H. Lee[4], Beom S. Jeon[2], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of; [2]Departments of Neurology, College of Medicine, Seoul National University, Seoul, Korea, Republic of; [3]Department of Radiology, Mayo Clinic, Rochester, United States; [4]4Department of Neurosurgery & Department of Physiology & Biomedical Engineering, Mayo Clinic, Rochester, United States

2182. Quantitative Analysis of the Substantia Nigra in Parkinson's Disease Implementing 3D Modeling at 7.0T MRI
Hye-Jin Jeong[1], Se-Hong Oh[1], Jong-Min Kim[2], Dae-Hyuk Kwon[1], Sung-Yeon Park[1], Joshua H. Park[1], Young-Bo Kim[1], Je-Geun Chi[1,3], Chan-Woong Park[1], Beom S. Jeon[2], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of; [2]Department of Neurology ,College of Medicine, Seoul National University, Seoul, Korea, Republic of; [3]Departments of Pathology,College of Medicine, Seoul National University, Seoul, Korea, Republic of

2183. Improved Sensitivity & Specificity in the Diagnosis of Parkinson's Disease from Diffusion Kurtosis Imaging
JiunJie Wang[1], WeyYil Lin[2], ChinSung Lu[3], Ali Tabesh[4], YiHsin Weng, YauYau Wai
[1]ChangGung University, TaoYuan county, Taiwan, Taiwan; [2]ChangGung Memorial Hospital, TaoYuan county, Taiwan, Taiwan; [3]ChangGung Memorial Hospital; [4]NewYork University Medical School

2184. Grey Matter Loss is Associated with Freezing-Of-Gait in Parkinson's Disease
Federica Agosta[1], Vladimir S. Kostic[2], Michela Pievani[1], Milica Jecmenica-Lukic[2], Elka Stefanova[2], Antonio Scarale[1], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, University of Belgrade School of Medicine, Belgrade, Yugoslavia

2185. Detection & Quantification of Alpha- Synuclein using Fast Field- Cycling Magnetic Resonance Techniques
Saadiya Rashid Ismail[1,2], Sarah Mustafa[2], Samantha Miller[2], Tim Rasmussen[2], David J. Lurie[1], Peter Teismann[2]
[1]ABIC, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom; [2]IMS, University of Aberdeen, Aberdeen, Aberdeenshire, United Kingdom

2186. Neurochemical Profiling of Two Rodent Parkinson's Disease Models: An *In Vivo* MR Spectroscopy Study
Mélanie Craveiro[1], Philippe Coune[2], Bernard Schneider[2], Patrick Aebischer[2], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Neurodegenerative Studies Laboratory, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Universities of Lausanne & Geneva, Departments of Radiology, Switzerland

2187. Perfusion Deficits Predate Grey Matter Atrophy in Cognitively-Impaired Parkinson's Disease
Tracy Robert Melzer[1,2], Richard Watts[1,3], Michael R. MacAskill[1,2], Ross J. Keenan[4], Ajit Shankaranarayanan[5], David C. Alsop[6], Leslie Livingston[1,2], John C. Dalrymple-Alford[1,7], Tim J. Anderson[1,2]
[1]Van der Veer Institute for Parkinson's & Brain Research, Christchurch, New Zealand; [2]Medicine, University of Otago, Christchurch, New Zealand; [3]Physics & Astronomy, University of Canterbury, Christchurch, New Zealand; [4]Christchurch Radiology Group,

Christchurch, New Zealand; [5]GE Healthcare, Menlo Park, CA, United States; [6]Beth Israel Deaconess Medical Center, Boston, MA, United States; [7]Psychology, University of Canterbury, Christchurch, New Zealand

2188. Degeneration of Motor Cortical Areas in Parkinson's Disease: A Follow Up fMRI Study
Mohit Saxena[1], S. Senthil Kumaran[2], Vinay Goyal[1], Madhuri Behari[1]
[1]Department of Neurology, All India Institute of Medical Sciences, New Delhi, India; [2]Department of N.M.R, All India Institute of Medical Sciences, New Delhi, India

2189. Pattern of Alterations in Motor Circuit Resting State FcMRI in Parkinson's Disease Patients Due to Medication & Forced Exercise
Erik B. Beall[1], Anneke M. Frankemolle[2], Jay L. Alberts[3], Michael D. Phillips[1], Mark J. Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Lerner Research Institute, Cleveland Clinic, Cleveland, OH, United States; [3]Center for Neurological Restoration, Cleveland Clinic, Cleveland, OH, United States

2190. Abnormal Spontaneous Neural Activity in Early Parkinson's Disease Revealed by Resting-State fMRI
Hong Yang[1], Xu-Ning Zheng[2], Yi-Lei Zhao[3], Jue Wang[4], Min-Ming Zhang[5]
[1]Department of Radiology, First Affiliated Hospital of College of Medical Science, Zhejiang University, Hangzhou, Zhengjiang, China, People's Republic of; [2]Department of Neurology, First Affiliated Hospital of College of Medical Science, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of; [3]Department of Radiology, First Affiliated Hospital of College of Medical Science, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of; [4]State Key Laboratory of Cognitive Neuroscience & Learning, Beijing Normal University, Beijing, China, People's Republic of; [5]Department of Radiology, The Second Affiliated Hospital of College of Medical Sciences, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of

2191. Decreased Functional Connectivity of Supplementary Motor Area Under Tactile Stimulation in Parkinson's Disease: An fMRI Study
Xiaojun Xu[1], Hengyi Cao[1], Dan Long[1], Minming Zhang[1]
[1]Department of Radiology, No.2 Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China, People's Republic of

Functional MRI in Dementia

Exhibition Hall Thursday 13:30-15:30

2192. Large-Scale Functional Network Reconfiguration Associates with Its Underlying Gray Matter Atrophy in AD
Wenjun Li[1], Gang Chen[1], Xiaolin Liu[1], Chunming Xie[1,2], Guanyu Chen[1], Barney Douglas Ward[1], Joseph Goveas[3], Jennifer Jones[4], Malgorzta Franczak[4], Piero Antuono[4], Shi-Jiang Li[1,3]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]School of Clinical Medicine, Southeast University, Nanjing, Jiangsu, China, People's Republic of; [3]Psychiatry & Behavior Medicine, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

2193. Characterize the Distribution & Behavior Significance of the Global Signal Measured by Resting-State Functional Connectivity in the Elderly
Guangyu Chen[1], Chunming Xie[1], Gang Chen[1], Barney Douglas Ward[1], Wenjun Li[1], Piero Antuono[2], Shi-Jiang Li[3]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States

2194. Effects of Apolipoprotein E-Epsilon 4 Genotype on the Functional Brain Networks Implicated in Cognition in Healthy Middle-Aged Adults
Joseph Goveas[1], Chunming Xie[2,3], Gang Chen[2], Wenjun Li[2], B. Douglas Ward[2], Guangyu Chen[2], Jennifer Jones[4], Malgorzata Franczak[4], Piero Antuono[4], Shi-Jiang Li[2]
[1]Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurology, School of Clinical Medicine, Southeast University, Nanjing, Jiangsu, China, People's Republic of; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

2195. Different Stages in Alzheimer's Disease Target Different Large-Scale Networks, Assessed by Resting-State Functional Connectivity
Gang Chen[1], Barney Douglas Ward[1], Chunming Xie[1], Wenjun Li[1], Guangyu Chen[1], Jennifer L Jones[2], Malgorzata Franczak[2], Piero Antuono[2], Shi-Jiang Li[1,3]
[1]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States

2196. Resting State Network Abnormalities in Alzheimer's Disease: Beyond the Default Mode Network
Federica Agosta[1], Michela Pievani[1,2], Cristina Geroldi[2], Giovanni B. Frisoni[2], Massimo Filippi[1]

[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]IRCCS Centro San Giovanni di Dio - Fatebenefratelli, Brescia, Italy

2197. Metabolite Differences in Small Brain Regions between Mild Cognitive Impairment & Alzheimer Disease Patients by 3D Chemical Shift Imaging
Beatriz Martínez-Granados[1], M. Carmen Martinez-Bisbal[1,2], Vicente Belloch[3], J. M. Lainez[4], Begoña López[4], Miquel Baquero[5], Joaquin Escudero[6], Carol Guillem[6], Bernardo Celda[1,2]
[1]Physical Chemistry, University of Valencia, Burjassot, Valencia, Spain; [2]CIBER Bioengineering, Biomaterials & Nanomedicine. ISC III, Spain; [3]MRI service, Hospital Universitario La Fe - ERESA, Valencia, Spain; [4]Neurology Service, Hospital Clínico Universitario, Valencia, Spain; [5]Neurology Service, Hospital Universitario La Fe, Valencia, Spain; [6]Neurology Service, Hospital Universitario General, Valencia, Spain

2198. Adding MRS to ADNI Criteria for Drug Monitoring Will Reduce Group Size for Clinical Trials
Thao Thanh Tran[1], Napapon Sailasuta[1], Martin Watterson[2], Louis Brenes[3], Brian D. Ross[4]
[1]MRS , Huntington Medical Research Institutes, Pasadena, CA, United States; [2]Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [3]Imaging Specialists of Pasadena; [4]MRS, Huntington Medical Research Institutes, Pasadena, CA, United States

2199. ^{1}H MRS in Mild Cognitive Impairment: What Are We Measuring, & How Good Are We at It?
Ileana Hancu[1], Robert Gillen[2], John Cowan[3], Earl Zimmerman[3]
[1]GE Global Research Center, Niskayuna, NY, United States; [2]Sunnyview Rehabilitation Hospital, Schenectady, NY, United States; [3]Albany Medical Center, Albany, NY, United States

2200. White Matter Cerebral Blood Flow Measurement in Mild Cognitive Impairment & Alzheimer's Disease using an Arterial Spin Labeling Method
Youngkyoo Jung[1], Thomas T. Liu[1], Christina E. Wierenga[2,3]
[1]Radiology, University of California, San Diego, La Jolla, CA, United States; [2]Psychiatry, University of California, San Diego, La Jolla, CA, United States; [3]Veterans Affairs San Diego Healthcare System, San Diego, CA, United States

2201. Cerebral Blood Perfusion Dynamics in Alzheimer's Disease & Mild Cognitive Impairment using Discrete Modeling of Arterial Spin Labeling MRI
Yinan Liu[1,2], Howard Rosen[3], Bruce Miller[3], Michael Weiner[1,2], Norbert Schuff[1,2]
[1]Center for Imaging of Neurodegenerative Diseases, Department of Veterans Affairs Medical Center, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California, San Francisco, CA, United States; [3]Memory & Aging Center, Department of Neurology, University of California, San Francisco, CA, United States

2202. Perfusion Changes in Patients After Cardiac Surgery: Evidence from an N-Back Working Memory Task.
Todd B. Harshbarger[1], Jeff Browndyke[2], Allen W. Song[1], Joseph Mathews[2]
[1]BIAC, Duke University, Durham, NC, United States; [2]ADRC, Duke University, Durham, NC, United States

2203. MRI of Angiogenesis & Vasculature Alternations in Alzheimer's Disease Based on Endogenous BOLD Contrast
Kejia Cai[1], Mohammad Haris[1], Anup Singh[1], Adam Shore[1], Rachelle Berger[1], Ari Borthakur[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

Neurodegenerative Diseases: Miscellaneous

Exhibition Hall Monday 14:00-16:00

2204. Imaging Myelin Water Fraction to Reveal Novel Aspects of Cerebral Pathology in Motor Neuron Disease
Shannon Kolind[1,2], Sean Deoni[2,3], Rakesh Sharma[1,4], Melanie E. Lord[4], Steven Knight[5], Kevin Talbot[4], Heidi Johansen-Berg[1], Martin R. Turner[1,4]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Department of Neuroimaging, Institute of Psychiatry, King's College London, London, United Kingdom; [3]Division of Engineering, Brown University, Providence, RI, United States; [4]Oxford University Nuffield Department of Clinical Neurosciences, John Radcliffe Hospital, Oxford, United Kingdom; [5]OCMR, University of Oxford, Oxford, United Kingdom

2205. The Role of Brain Structure & Executive Function on Visuoconstructional Processing in Late Life Depression
Melissa Lamar[1], Emma Rhodes[2], Olusola Ajilore[2], Aifeng Zhang[2], Maria Caserta[2], Anand Kumar[2]
[1]Psychiatry, University of Illinois at Chicago, Chicago, IL , United States; [2]Psychiatry, University of Illinois at Chicago, Chicago, IL, United States

2206. Whole-Brain Proton MRSI Data Analysis using a Corticospinal Tract Atlas in Amyotrophic Lateral Sclerosis
Varan Govind[1], Khema R. Sharma[2], Sulaiman Sheriff[1], Gaurav Saigal[1], Andrew A. Maudsley[1]
[1]Radiology, University of Miami, Miami, FL, United States; [2]Neurology, University of Miami, Miami, FL, United States

2207. Towards an Imaging-Metric for Pre-Symptomatic Manifestations of ALS

Govind Nair[1], Susan Gronka[2,3], Debbie Lu[2], Joanne Wuu[2], Xiaoping P. Hu[1], Michael Benatar[2]
[1]Biomedical Imaging & Technology Center, Department of Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Neurology, School of Medicine, Emory University, Atlanta, GA, United States; [3]University of Miami, Miami, FL, United States

2208. Do Age & Long-Term HIV Infection Control Affect Brain Metabolites?
Caroline Rae[1], Lucette Adeline Cysique[2], Jae Muyng Lee[3], Tammy Lane[4], Kirsten Moffat[5], Andrew Carr[6], Bruce James Brew[7]
[1]Neurosciences Research Australia, University of New South Wales, Sydney, NSW, Australia; [2]Brain Sciences, University of New South Wales, Sydney, NSW, Australia; [3]Neurosciences Research Australia, University of New South Wales, Sydney, Australia; [4]Psychology, Macquarie University, Sydney, Australia; [5]Medical Imaging, St. Vincent's Hospital, Sydney, Australia; [6]Immunology & Infectious Diseases, St. Vincent's Hospital, Sydney, Australia; [7]Neurology, St. Vincent's Hospital, Sydney, Australia

2209. Assessment of Disease Severity in Late Infantile Neuronal Ceroid Lipofuscinosis using Multiparametric MRI
Jonathan P. Dyke[1], Dolan Sondhi[2], Henning U. Voss[1], Dikoma C. Shungu[1], Xiangling Mao[1], Kaleb Yohay[3], Stefan Worgall[3], Neil R Hackett[2], Charlene Hollmann[2], Mary E. Yeotsas[2], Stephen M. Kaminsky[2], Barry Kosofsky[3], Linda A. Heier[1], Ronald G. Crystal[2], Douglas Ballon[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Genetic Medicine, Weill Cornell Medical College, New York, NY, United States; [3]Pediatrics, Weill Cornell Medical College, New York, NY, United States

2210. Voxel-Based T_2 Relaxometry in Prion Disease
Enrico De Vita[1,2], Harpreet Hyare[3,4], Chris Carswell[3,4], Andrew Thompson[3,4], Ana Lukic[3,4], Tarek Yousry[1,2], Peter Rudge[3,4], Simon Mead[3,4], John Collinge[3,4], John Thornton[1,2]
[1]Lysholm Department of Neuroradiology, National Hospital for Neurology & Neurosurgery, UCLH NHS Foundation Trust, London, United Kingdom; [2]Academic Neuroradiological Unit, Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]MRC Prion Unit, Department of Neurodegenerative Diseases, UCL Institute of Neurology, London, United Kingdom; [4]National Prion Clinic, National Hospital for Neurology & Neurosurgery, UCLH NHS Foundation Trust, London, United Kingdom

2211. Glutamatergic & GABAergic Neurotransmission in Manganism using ^{13}C NMR Spectroscopy
Anant Bahadur Patel[1], Puneet Bagga[1]
[1]NMR Microimaging & Spectroscopy, Centre for Cellular & Molecular Biology, Hyderabad, Andhra Pradesh, India

2212. *In Vivo* L-COSY Identifies Neurochemical Changes in Professional Athletes with Repetitive Head Injuries
Alexander Peter Lin[1], Saadallah Ramadan[1], Robert A. Stern[2,3], Hayden Nicholas Box[1], Peter Stanwell[1], Ann C. McKee[2,3], Robert Cantu[2], Christopher Nowinski[2], Carolyn Elizabeth Mountford[1]
[1]Center for Clinical Spectroscopy, Brigham & Women's Hospital, Boston, MA, United States; [2]Center for the Study of Traumatic Encephalopathy, Boston University School of Medicine, Boston, MA, United States; [3]BU Alzheimer's Disease Center, Boston University School of Medicine, Boston, MA, United States

2213. Distinct Pattern of Atrophy in the Different Phenotypes of Progressive Supranuclear Palsy in Magnetic Resonance Imaging
Adriane Gröger[1], Karin Srulijes[1], Maksym Nechyporenko[1], Elisabeth Dietzel[1], Constantin Mänz[2], Uwe Klose[2], Walter Mätzler[1], Daniela Berg[1]
[1]Department of Neurodegeneration, Hertie Institute for Clinical Brain Research, University Tuebingen, Tuebingen, Germany; [2]Department of Diagnostic & Interventional Neuroradiology, University Hospital Tuebingen, Tuebingen, Germany

2214. Brain Metabolites in Myotonic Dystrophy Type 1: A 3.0 T Proton Magnetic Resonance Spectroscopy Study
Yuhei Takado[1,2], Hironaka Igarashi[1], Kenshi Terajima[1,2], Takayoshi Shimohata[2], Masaki Okubo[1,3], Kouichirou Okamoto[1,4], Masatoyo Nishizawa[1,2], Tsutomu Nakada[1]
[1]Center for Integrated Human Brain Science, Brain Research Institute, University of Niigata, Niigata, Japan; [2]Neurology, Brain Research Institute, University of Niigata, Niigata, Japan; [3]Institute of Medicine & Dentistry Basic Radiological Technology, School of Health Sciences, University of Niigata, Niigata, Japan; [4]Neurosurgery, Brain Research Institute, University of Niigata, Niigata, Japan

2215. Distribution of Diffusivity Changes in Subcortical Deep Gray Matter in Prion Diseases
Raffaele Lodi[1], David Neil Manners[1], Emil Malucelli[1], Claudia Testa[1], Giovanni Rizzo[1], Sabina Capellari[2], Rosaria Strammiello[2], Giulia Pierangeli[2], Pietro Cortelli[2], Pasquale Montagna[2], Bruno Barbiroli[1], Caterina Tonon[1], Piero Parchi[2]
[1]MR Spectroscopy Unit, Dept. Internal Medicine, Aging & Nephrology, University of Bologna, Bologna, Italy; [2]Neurological Sciences, University of Bologna, Bologna, Italy

2216. Changes in Iron Concentration of the Basal Ganglia in Huntington's Disease using Magnetic Field Correlation
Maarten J. Versluis[1,2], Eve M. Dumas[3], Simon J. A. van Den Bogaard[3], Andrew G. Webb[1,2], Mark A. van Buchem[1], Ellen P. T. Hart[3], Matthias J. P. van Osch[1,2], Jeroen van Der Grond[1], Raymund A. C. Roos[3]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [3]Neurology, Leiden University Medical Center, Leiden, Netherlands

2217. Assessment of Cerebral Blood Flow in Amyotrophic Lateral Sclerosis using Arterial Spin Labeling MR Imaging
Sumei Wang[1], Lu Wang[1], Hengyi Rao[2], Zhengjun Li[2], Lauren B. Elman[3], Leo F. McCluskey[3], Elias R. Melhem[1], Danny J. J. Wang[4], John H. Woo[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Neurology, Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States; [3]Neurology, University of Pennsylvania, Philadelphia, PA, United States; [4]Neurology, Ahmanson-Lovelace Brain Mapping Center, University of California, Los Angeles, CA, United States

2218. Asymmetric Characteristics of Hippocampus Perfusion & Its Response to Physostigmine Challenge in Gulf War Veterans
Xiufeng Li[1], Jeffrey Spence[2], David M. Buhner[3], Robert W. Haley[3], Richard W. Briggs[1,3]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Clinical Sciences, UT Southwestern Medical Center, Dallas, TX, United States; [3]Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States

2219. Abnormal Striatal Functional Connectivity in Gulf War Illness: Effects of Modulating FcMRI Continuous States
Kaundinya Gopinath[1,2], Wendy Ringe[3], Luo Ouyang[1], Kirstine Carter[3], Binod Thapa-Chhetry[1], Lisa Butler[1], Aman Goyal[1], Parina Gandhi[1], Yan Fang[1], Sandeep Ganji[1], Lei Jiang[1], Saurabh Vaidya[1], Richard Briggs[1,2], Robert Haley[2]
[1]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States; [3]Department of Psychiatry, UT Southwestern Medical Center, Dallas, TX, United States

2220. ASL Hippocampus Perfusion Imaging of Gulf War Veterans: Preliminary Results for National Survey Studies
Xiufeng Li[1], David M. Buhner[2], Robert W. Haley[2], Richard Briggs[1,2]
[1]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States

2221. fMRI Reveals Abnormal Central Sensory Processing in Gulf War Illness
Kaundinya Gopinath[1,2], Lisa Butler[1], Binod Thapa-Chhetry[1], Aman Goyal[1], Parina Gandhi[1], Yan Fang[1], Luo Ouyang[1], Sandeep Ganji[1], Lei Jiang[1], Saurabh Vaidya[1], David Buhner[2], Wendy Ringe[3], Richard Briggs[1,2], Robert Haley[2]
[1]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States; [3]Department of Psychiatry, UT Southwestern Medical Center, Dallas, TX, United States

2222. Basal Ganglia NAA/Cr Ratio & T_2 Differences in a Population-Representative Sample of Veterans with Gulf War Illness
Sergey Cheshkov[1,2], Audrey Chang[2], Hyeonman Baek[1,2], Jeffrey Spence[3], Sandeep Kumar Ganji[2], Evelyn Babcock[2], Richard Wallace Briggs[2,4], Robert W. Haley[4]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Clinical Sciences, UT Southwestern Medical Center, Dallas, TX, United States; [4]Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States

2223. Fractional Anisotropy is Affected by White Matter Lesions in a TBSS Study of Alzheimer's Disease
Parnesh Raniga[1], David Raffelt[1], Alan Connelly[2,3], Patricia Desmond[4], Olivier Salvado[1]
[1]CSIRO Preventative Health National Research Flagship ICTC, The Australian e-Health Research Centre, Brisbane, Queensland, Australia; [2]Brain Research Institute, Florey Neuroscience Institutes (Austin), Melbourne, Victoria, Australia; [3]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia; [4]Department of Radiology, University of Melbourne, Melbourne, Victoria, Australia

2224. The Standard Deviation (Asd, Normalized Relative Anisotropy at 0 – 1 Scale) Detects Neurodegenerative White Matter Lesions Bettert than the Fractional Anisotropy (FA)
Joong Hee Kim[1], Jeffrey J. Neil[2], Sheng-Kwei Song[1]
[1]Radiology, Washington University, St. Louis, MO, United States; [2]Neurology & Pediatrics, Division of Pediatric Neurology, Washington University, St. Louis, MO, United States

2225. Longitudinal Evolution of MRI Parameters with Disease Progression in ALS
Govind Nair[1], Debbie Lu[2], Margaret Walker[2], John Carew[3], Xiaoping P. Hu[1], Michael Benatar[2]
[1]Biomedical Imaging & Technology Center, Department of Biomedical Engineering, Emory University & Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Neurology, School of Medicine, Emory University, Atlanta, GA, United States; [3]Biostatistics & Epidemiology, Carolinas HealthCare System, Charlotte, NC, United States

2226. Predict the Response of Tinnitus to Cortical Stimulation using Resting-State Functional MRI
Gang Chen[1], Brian Harris Kopell[2], Wolfgang Gaggl[3], Rey Ramirez[4], Klaus Driesslein[4], Sylvain Baillet[1,4], Christopher R. Butson[2,4], Shi-Jiang Li[1,5]
[1]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Radiology, Medical College of Wisconsin, Milwaukee, WI,

United States; [4]Department of Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [5]Department of Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States

Animal Models in Neurodegenerative Diseases

Exhibition Hall Tuesday 13:30-15:30

2227. Early Anatomical & Microstructural Changes Induced in Rat Brain by Vitamin a Deprivation: A Longitudinal MRI Study
Bassem Hiba[1], Bader Chaarani[1], M. C. Beauvieux[1], G. Rafard[1], Michèle Allard[2], Alan Stephant[1], Jean Michel Franconi[1], Jean Louis Gallis[1]
[1]UMR 5536 RMSB, CNRS-UB2, Bordeaux, France; [2]UMR 5231, CNRS-UB2, Bordeaux, France

2228. $T_1\rho$ MRI as a Marker of Neurofibrillary Tangles in a Mouse Model of Alzheimer's Disease
Rachelle Berger[1], Matthew Fenty[2], Michiyo Iba[3], Virginia M.-Y. Lee[3], John A. Detre[4], Ari Borthakur[5]
[1]Biochemistry & Molecular Biophysics, University of Pennsylvania School of Medicine, Philadelphia, PA, United States; [2]CMROI, Department of Radiology, University of Pennsylvania School of Medicine, Philadelphia, PA, United States; [3]CNDR, Department of Pathology & Lab Medicine, University of Pennsylvania School of Medicine; [4]CfN, Department of Neurology, University of Pennsylvania School of Medicine; [5]CMROI, Department of Radiology, University of Pennsylvania School of Medicine, Philadelphia, PA, United States

2229. A Diffusion Kurtosis Imaging (DKI) Based Correlate for Plaque Load in the $APPPS_1$ Mouse Model for Alzheimer's Disease (AD)
Greetje Vanhoutte[1], Sandra Pereson[2], Bob Asselbergh[2], Christine Van Broeckhoven[2], Anne-Marie Van Der Linden[1]
[1]Biomedical Sciences, Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium; [2]Molecular Genetics, VIB & Institute Born-Bunge, University of Antwerp, Antwerp, Belgium

2230. Ultra-High Field Magnetic Resonance Microimaging in Zebrafish Model of Cystic Leukoencephalopathy
Alia Alia[1], Haud Noémie[2], Firat Kara[1], Adam Hurlstone[2]
[1]Leiden Institute of Chemistry, Leiden University, Leiden, South holland, Netherlands; [2]University of Manchester, United Kingdom

2231. Changes in Glucose Level with Age & Its Correlation with Severity of Plaque Deposition in a Transgenic Model of Alzheimer's Disease
Firat Kara[1], Kristin Möbius[1], Mark A. van Buchem[2], Huub J. M. de Groot[1], Reinhard Schliebs[3], Alia Alia[1,4]
[1]Leiden Institute of Chemistry, Leiden University, Leiden, South holland, Netherlands; [2]Department of Radiology, Leiden University Medical Centrum, Leiden, South Holland, Netherlands; [3]Department of Neurochemistry, University of Leipzig, Leipzig, Germany; [4]Department of Radiology, Leiden University Medical Centrum, Leiden, Netherlands

2232. *In Vivo* Neuronal Transport Impairment Reflects the Level of Abnormal Tau in a Mouse Model of Tauopathy : A Track-Tracing Memri Study
Anne Bertrand[1,2], Umer Khan[2], Dung Minh Hoang[2], Dmitry Novikov[2], Pavan Krishnamurthy[3], Hameetha Banu Rajamohamed Sait[3], Benjamin Winthrop Little[2], Einar M. Sigurdsson[3], Youssef Zaim Wadghiri[2]
[1]URA CEA-CNRS 2210, MIRCen, Fontenay-Aux-Roses, France; [2]Radiology, NYULMC, New York, United States; [3]Physiology & Neuroscience, NYULMC, New York, United States

2233. Detection of Treatment Effects with ^{1}H MRS in Transgenic Mouse Model of Alzheimer's Disease
Malgorzata Marjanska[1], Stephen D. Weigand[2], Geoffry L. Curran[2], Thomas M. Wengenack[2], Joseph F. Poduslo[2], Michael Garwood[1], Clifford R. Jack, Jr.[2]
[1]Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Mayo Clinic College of Medicine, Rochester, MN, United States

2234. 3D Quantitative Micro-MRI Mapping of Alzheimer's Plaques in Transgenic Mice using Aβ1-42 Targeted-USPIOs
Dung Minh Hoang[1], Jing Yang[2], Lindsay K. Hill[1], Wai Tsui[3], Yanjie Sun[2], Yongsheng Li[2], Mony De Leon[3], Thomas Wisniewski[2,3], Youssef Zaim Wadghiri[1]
[1]Radiology, NYU School of Medicine, New York, NY, United States; [2]Neurology, NYU School of Medicine, New York, NY, United States; [3]Psychiatry, NYU School of Medicine, New York, NY, United States

2235. Response to Donepezil Challenge in Rat Brain by RCBV-Based PhMRI
Thomas Kaulisch[1], Holger Rosenbrock[2], Detlef Stiller[3]
[1]In-Vivo Imaging, Target Discovery Research , Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany; [2]CNS Diseases Research, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany; [3]In-Vivo Imaging, Target Discovery Research, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany

2236. Automatic Measurement of Atrophy Rates in Hippocampal Subfields from Longitudinal High-Resolution T_2-Weighted MRI
Sandhitsu Das[1], Brian Avants[1], John Pluta[1], Caryne Craige[1], Michael Weiner[2], Susanne Mueller[2], Paul Yushkevich[1]
[1]PICSL, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]VA Medical Center, University of California at San Francisco, San Francisco, CA, United States

2237. Feasibility of Detecting Preclinical Hippocampal Neuronal Cell Loss in Subjects Destined to Develop Alzheimer's Disease
Keith R. Thulborn[1], Debra Fleischman[2], R. Shah[2], Ian C. Atkinson[1], Aiming Lu[1]
[1]Center for Magnetic Resonance Research, University of Illinois at Chicago, Chicago, IL, United States; [2]Rush Alzheimer's Disease Clinic, Rush University Medical Center,, Chicago, IL

2238. A Novel Events-Based Model for Mapping Disease Progression & Its Application to Familial Alzheimer's Disease
Hubert Martinus Fonteijn[1], Matt J. Clarkson[2], Marc Modat[1], Josephine Barnes[2], Manja Lehmann[2], Sebastien Ourselin[1], Nick C. Fox[2], Daniel C. Alexander[1]
[1]Computer Science, Centre for Medical Image Computing, London, United Kingdom; [2]Institute of Neurology, Dementia Research Centre, London, United Kingdom

2239. T_2 Alterations in *Ex Vivo* Human Brains with Alzheimer's Disease Pathology
Robert J. Dawe[1], Julie A. Schneider[2], David A. Bennett[2], Konstantinos Arfanakis[1]
[1]Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States; [2]Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, IL, United States

2240. Quantitative R_2' Mapping to Investigate the Relationship of Brain Iron Deposition & Cognitive Impairment in Alzheimer Disease
Wenzhen Zhu[1], Lingyun Zhao
[1]Department of Radiology, Tongji Hospital,Tongji Medical College, Wuhan, Hubei Province, China, People's Republic of

2241. Automatic Segmentation of the Hippocampus in T_1-Weighted MRI with Multi-Atlas Label Fusion using Open Source Software: Evaluation in 1.5 & 3.0T ADNI MRI
Jung Wook Suh[1], Hongzhi Wang[1], Sandhitsu Das[1], Brian Avants[1], Paul A. Yushkevich[1]
[1]PICSL, Radiology, University of Pennsylvania, Philadelphia, PA, United States

2242. Magnetization Transfer Contrast (MTC) MRI for the Detection of Amyloid Accumulation in Alzheimer's Disease
Carlos J. Pérez-Torres[1,2], Robia G. Pautler[1,2]
[1]Interdepartmental Program in Translational Biology & Molecular Medicine, Baylor College of Medicine, Houston, TX, United States; [2]Department of Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, TX, United States

2243. Patterns of White Matter Tract Damage in Behavioural Variant of Frontotemporal Dementia & Primary Progressive Aphasia: A DT MRI Study.
Elisa Scola[1], Federica Agosta[2], Elisa Canu[2], Lidia Sarro[2], Alessandra Marcone[3], Chiara Cerami[3], Giuseppe Magnani[4], Francesca Caso[4], Stefano Francesco Cappa[3,5], Massimo Filippi[2], Andrea Falini[1,6]
[1]Neuroradiology - CERMAC, San Raffaele Scientific Institute, Milan, Italy; [2]Neuroimaging Research Unit, Scientific Institute & University San Raffaele Hospital, Milan, Italy; [3]San Raffaele Turro Hospital, Department of Clinical Neurosciences, Milan, Italy; [4]Department of Neurology, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University San Raffaele Hospital, Milan, Italy; [5]Vita Salute University & Department of Clinical Neurosciences, San Raffaele Scientific Institute, Milan, Italy; [6]Vita Salute University, San Raffaele Scientific Institute, Milan, Italy

MRS of Animal Brain (except Cancer)

Exhibition Hall Wednesday 13:30-15:30

2244. Combined ^{1}H MRS & Near-Infrared Spectroscopy Measurements of Cerebral Blood Volume, Oxygenation, Cytochrome Oxidase & Intracellular Metabolites During Perinatal Hypoxia-Ischaemia
Alan Bainbridge[1], Ilias Tachtsidis[2], Stuart Faulkner[3], Sonya Mahony[2], David Price[1], David .L Thomas[4], Ernest B. Cady[1], Nicola J. Robertson[3], Xavier Golay[4]
[1]Medical Physics & Bioengineering, UCLH NHS Foundation Trust, London, United Kingdom; [2]Department of Medical Physics & Bioengineering, University College London, London, United Kingdom; [3]Institute for Women's Health, UCL, London, United Kingdom; [4]Institute of Neurology, UCL, United Kingdom

2245. Can ^{1}H MRS Be a Surrogate for ^{31}P MRS in Quantification of Transient Hypoxic-Ischemic Insult Severity in a Neonatal Encephalopathy Model?

Alan Bainbridge[1], Stuart Faulkner[2], Dorottya Kelen[2], Manigandan Chandrasekaran[2], David Price[1], David L. Thomas[3], Ernest B. Cady[1], Nicola J. Robertson[2], Xavier Golay[3]
[1]Medical Physics & Bioengineering, UCLH NHS Foundation Trust, London, United Kingdom; [2]Institute for Women's Health, UCL, London, United Kingdom; [3]Institute of Neurology, UCL, United Kingdom

2246. *In Vivo* Measurements of Cerebral Ascorbate Increases After Systemic Ascorbate Infusion
In-Young Choi[1,2], Wen-Tung Wang[1], Joanne Marcario[1], Mark Levine[3], Phil Lee[1,4]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Department of Neurology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Molecular & Clinical Nutrition Section, National Institute of Health, Bethesda, MD, United States; [4]Molecular & Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States

2247. Isoflurane Elevates Brain Lactate in a Dose-Dependent Manner: A Localized ^{1}H MRS Study of Mouse Brain *In Vivo*
Susann Boretius[1], Roland Tammer[1,2], Thomas Michaelis[1], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut fuer biophysikalische Chemie, Göttingen, Germany; [2]DFG Research Center for Molecular Biology of the Brain (CMPB), Göttingen, Germany

2248. Effect of Nicotine on Glutamatergic & GABAergic Neurotransmission in Developing Brain
Anant Bahadur Patel[1], Mohammad Shameem[1]
[1]NMR Microimaging & Spectroscopy, Centre for Cellular & Molecular Biology, Hyderabad, Andhra Pradesh, India

2249. ^{1}H-MRS Profiling of the Developing Rat Brain
Serguei Liachenko[1], Jaivijay Ramu[1]
[1]FDA / NCTR, Jefferson, AR, United States

2250. Acute Restraint Stress-Induced Change in Glutamate Neurotransmission in Rat Brain: An *In Vivo* ^{1}H-MRS Study
Sang-Young Kim[1], Eun-Ju Jang[2], Kwan-Soo Hong[2], Chul-Hyun Lee[2], Do-Wan Lee[1], Chi-Bong Choi[3], Bo-Young Choe[1]
[1]Department of Biomedical Engineering, The Catholic University of Korea, Seoul, Korea, Republic of; [2]The Korea Basic Science Institute, Korea, Republic of; [3]Department of Radiology, Kyunghee University Medical Center, Korea, Republic of

2251. Neurochemical Changes in Olfactory System & Hippocampus Regions of Tau Transgenic Mice using ^{1}H MRS
Jieun Kim[1], In-Young Choi[1,2], Karen Duff[3], Phil Lee[1,4]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Department of Neurology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Department of Integrative Neuroscience, Columbia University Medical Center, New York, NY, United States; [4]Department of Molecular & Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States

2252. Measurement of Metabolic Rates in Rat Olfactory Bulb by ^{1}H & ^{1}H-[^{13}C] NMR *In Vivo*
Golam M. I. Chowdhury[1], Graeme F. Mason[1], Kevin L. Behar[1], Douglas L. Rothman[1], Robin A. de Graaf[1]
[1]MRRC, Yale University School of Medicine, New Haven, CT, United States

2253. *In Vivo* Assessment of Neuronal Metabolic Fluxes in Mouse Brain by ^{1}H-[^{13}C] NMR Spectroscopy
Lijing Xin[1], Hongxia Lei[2], Bernard Lanz[2], Rolf Gruetter[1,2]
[1]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland; [2]Laboratory of functional & metabolic imaging, École Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland

2254. Simultaneous Dection of Metabolism of [2-^{13}C]lactate & Uniformly Labeled Glucose in the Brain using *In Vivo* ^{13}C MRS
Yun Xiang[1], Jun Shen[1]
[1]Molecular Imaging Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States

2255. Non-Invasive Monitoring of Antioxidant Prodrug Metabolism in Rat Brain by *In Vivo* ^{13}C MRS
Peter Edward Thelwall[1], Daniel Clark[2], Susan M. Ludeman[3], James B. Springer[4], Michael A. D'Alessandro[3], Nicholas E. Simpson[2], Roxana Pourdeyhimi[5], C. Bryce Johnson[5], Stephanie D. Teeter[5], Stephen J. Blackband[2], Michael P. Gamcsik[5]
[1]Newcastle Magnetic Resonance Centre, Newcastle University, Newcastle upon Tyne, Tyne & Wear, United Kingdom; [2]University of Florida; [3]Albany College of Pharmacy & Health Sciences; [4]Duke University Medical Centre; [5]Joint Department of Biomedical Engineering, University of North Carolina / NC State University

2256. Direct Assessment of Increased Pyruvate Carboxylase in the Hyperammonemic Brain using ^{13}C MRS
Bernard Lanz[1], Cristina Cudalbu[1], João Miguel Duarte[1], Rolf Gruetter[1,2]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Universities of Lausanne & Geneva, Lausanne & Geneva, Switzerland

2257. SNR Improvement of a ^{13}C-Cryo-Coil in Comparison with Room-Temperature Coils
Markus Sack[1], Friedrich Wetterling[2], Gabriele Ende[1], L R Schad[2], Wolgang Weber-Fahr[1]
[1]Neuroimaging, Central Institute of Mental Health, Mannheim, Germany; [2]Computer Assisted Clinical Medicine, University Medical Center Mannheim, Mannheim, Germany

2258. Transverse Relaxation Times of Strongly J-Coupled Metabolites with LASER & CP-LASER in the Rat Brain
Dinesh K. Deelchand[1], Pierre-Gilles Henry[1], Kamil Ugurbil[1], Malgorzata Marjanska[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

Animal Models of Brain Disease Other than Stroke

Exhibition Hall Thursday 13:30-15:30

2259. Retrograde Neuronal Injury in Response to Glutaric Acid in Glutaric Acidemia Type 1 (GA-1) Mouse Model
Jelena Lazovic[1], William J. Zinnanti[2], Xiaowei Zhang[3], Russell Jacobs[3]
[1]Radiology, University of California, Los Angeles, Los Angeles, CA, United States; [2]Neurology, Stanford, Palo Alto, CA, United States; [3]California Institute of Technology

2260. Use of Volumetric MRI to Characterize Treatment Effect & Phenotype in a Transgenic Mouse Model of Tau Pathology
Sangeetha Somayajula[1], Belma Dogdas[1], Xiaohai Wang[2], Mansuo Hayashi[2], Shubing Wang[3], Sofia Apreleva[3], Richard Baumgartner[3], Denise Welsh[4], Xiangjung Meng[4], Diane Posavec[4], Amy Vanko[4], Jacquelynn Cook[4], Donald S. Williams[4], Alexandre Coimbra[4]
[1]Informatics IT, Merck & Co., Inc, West Point, PA, United States; [2]Neurology, Merck & Co. Inc, West Point, PA; [3]Biometrics, Merck & Co. Inc; [4]Imaging, Merck & Co. Inc

2261. Microanatomical Correlates of Multi-Exponential T_2 & Quantitative MT in Pathological Rat Spinal White Matter
Kevin D. Harkins[1,2], William M. Valentine[3], Daniel F. Gochberg[1,2], Mark D. Does[1,4]
[1]Institute of Image Science, Vanderbilt University, Nashville, TN, United States; [2]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Pathology, Vanderbilt University; [4]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

2262. Early MRI-Visible Lesions in Plasmodium Berghei ANKA-Induced Cerebral Malaria
Raman Saggu[1], Dorothee Faille[2], Georges Grau[2], Patrick Cozzone[1], Angele Viola[1]
[1]Université de la Méditerranée-Faculté de Médecine, CRMBM UMR CNRS 6612, Marseille, France; [2]Department of Pathology, Sydney Medical School, The University of Sydney, Camperdown, Australia

2263. Preliminary Studies to Assess $CMRO_2$ with Integrated T_1 Rho MRI & Hybrid DRS/DCS Optical Approach in Clinical Scanners
Victor Babu Kassey[1], Wesley Baker[2], Rickson C. Mesquita[2], Erin Buckley Buckley[2], Joel H. Greenberg[3], Eric A. Mellon[1], Damodar C. Reddy[1], Arjun G. Yodth[2], John A. Detre[4], Mark A. Elliott[1], Ravinder Reddy[1]
[1]CMROI-Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Physics & Astronomy, University of Pennsylvania; [3]Department of Neurology, University of Pennsylvania; [4]Cerebrovascular Research Center, University of Pennsylvania, Philadelphia, United States

2264. Reduction in CSF Pulsatility with Altered Intracranial Compliance by Craniectomy in Communicating Hydrocephalus
Shams Rashid[1], James P. McAllister[2], Martin Schuhmann[3], Mark Wagshul[4]
[1]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [2]Primary Children's Medical Center, University of Utah, Salt Lake City, UT, United States; [3]Klinik für Neurochirurgie, Eberhard Karls Universität, Tübingen, Germany; [4]Gruss MRRC, Albert Einstein College of Medicine, Bronx, NY, United States

2265. Mri Analysis of Brain Lesions in a Novel Mouse Model of Multiple Sclerosis
Hilit Levy[1], Yaniv Assaf[1], Dan Frenkel[1]
[1]Neurobiology, Tel Aviv University, Tel Aviv, Israel

2266. Effects of Cortical Spreading Depression on Blood-Brain Barrier Permeability in a Mouse Model of Familiar Hemiplegic Migraine
Dana Suciu Poole[1], Johannes Rolf Sikkema[2], Reinald Shyti[3], Arnoldus M. van Den Maagdenberg[3], Helga Eveline de Vries[4], Louise van Der Weerd[2,5]
[1]Radiology, Leiden University Medical Centre, Leiden, Netherlands; [2]Radiology, Leiden University Medical Centre, Netherlands; [3]Human Genetics, Leiden University Medical Centre, Netherlands; [4]Molecular Cell Biology & Immunology, VU University Medical Centre, Amsterdam, Netherlands; [5]Anatomy & Embriology, Leiden University Medical Centre, Netherlands

2267. MRI Reveals Differences in Neuroanatomy of Mouse Models of NPC Disease
John Totenhagen[1], Eriko Yoshimaru[1], Ivan Borbon[2], Christy Howison[3], Robert Erickson[2], Theodore Trouard[1]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [2]Pediatrics, University of Arizona, Tucson, AZ, United States; [3]Arizona Research Laboratories, University of Arizona, Tucson, AZ, United States

2268. Reduction of Contralateral White Matter Volume After Experimental Focal Epilepsy & Hemispherectomy in Rats
Willem M. Otte[1,2], Kajo van Der Marel[2], Kees P. J. Braun[1], Rick M. Dijkhuizen[2]
[1]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

2269. Long Term Observations on Status-Epilepticus Induced Neurodegeneration: A 7 Tesla MR Study in a Rat Model
Martin Meier[1], Jens P. Bankstahl[2], Marion Bankstahl[2], Xiao-Qi Ding[3]
[1]Small Animal Imaging Facility, Hannover Medical School, Hannover, Germany; [2]Institute for Pharmacology, Toxicology & Pharmacy, University of Veterinary Medicine, Hannover, Germany; [3]Institute of Diagnostic & Interventional Neuroradiology, Hannover Medical School, Hannover, Germany

2270. Metabolic & Morphological Characterization of the Mecp2-308 Truncated Mouse Model of Rett Syndrome: Effects of a Treatment Activating Rho GTPases
Rossella Canese[1], Bianca De Filippis[1], Carla Fiorentini[2], Alessia Fabbri[2], Paola Porcari[1], Laura Ricceri[1], Giovanni Laviola[1]
[1]Cell Biology & Neurosciences Dept., Istituto Superiore di Sanità, Rome, RM, Italy; [2]Therapeutic Research & Medicine Evaluation Dept., Istituto Superiore di Sanità, Rome, RM, Italy

2271. Molecular Imaging of Inflammation in a Cerebrovascular Aneurysm Model.
Alexei A. Bogdanov[1], Matthew J. Gounis, Ronn Walvick, Ajay K. Wakhloo
[1]Radiology, UMASS Medical School, Worcester, MA, United States

2272. Reduced Functional Connectivity in Normal Aging in Non-Human Primates
Alexandre Coimbra[1], Dai Feng[2], Marie Holahan[1], Jacquelynn Cook[1], Donald Williams[1], Richard Baumgartner[2]
[1]Imaging, Merck & Co, Inc, West Point, PA, United States; [2]Biometrics, Merck & Co, Inc, Rahway, NJ, United States

2273. Characterization of Lesions & Regional Brain Tissue of ArcAbeta Mice Based on Magnetic Susceptibility
Andreas Deistung[1], Jan Klohs[2], Ferdinand Schweser[1], Joanes Grandjean[2], Marco Dominietto[2], Conny Waschkies[2], Roger M. Nitsch[3], Markus Rudin[2,4], Jürgen R. Reichenbach[5]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital , Jena, Germany; [2]Institute for Biomedical Engineering, ETH & University of Zürich, Switzerland; [3]Division of Psychiatry Research, University of Zürich, Switzerland; [4]Institute of Pharmacology & Toxicology, University of Zürich , Switzerland; [5]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Germany

2274. Voxel-Based Morphometry Reveals Localised Cerebral Atrophy in a Mouse Lemur Model of Aging
Stephen John Sawiak[1,2], Marc Dhenain[3]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, England, United Kingdom; [2]Behavioural & Clinical Neurosciences Institute, University of Cambridge, Cambridge, United Kingdom; [3]MIRCen, I2BM Institute of Biomedical Imaging, Fontenay aux Roses, France

2275. Cortical Atrophy in Experimental Autoimmune Encephalomyelitis
Allan J. MacKenzie-Graham[1], Gilda A. Rinek[1], Stefan M. Gold[2], Andrew J. Frew[1], Cynthia Aguilar[3], David R. Lin[1], Elizabeth Umeda[1], Rhonda R. Voskuhl[1], Jeffry R. Alger[1]
[1]University of California, Los Angeles, Los Angeles, CA, United States; [2]Universität Hamburg, Hamburg, Germany; [3]Indiana University of Pennsylvania, Indiana, PA, United States

2276. Voxel-Based Morphometry using DARTEL in the Mouse Reveals Differential Impact of Early & Late Prenatal Inflammation on Adult Brain.
Charlton Cheung[1], Qi Li[2,3], Edward X. Wu[2,4], Grainne Mary McAlonan[5,6]
[1]Psychiatry, University of Hong Kong, Pokfulam, Hong Kong; [2]University of Hong Kong, Hong Kong; [3]Centre for Reproduction, Development and Growth; [4]4Laboratory of Biomedical Imaging and Signal Processing; [5]University of Hong Kong, Hong Kong, Hong Kong; [6]State Key Laboratory for Brain and Cognitive Sciences

2277. Axonal Damage Caused by Exposure of Axon Terminals to Amyloid Beta
David Carrick[1], Bruce Campbell[2], Hsiao-Fang Liang[3], Wei-Xing Shi[4], Shu-Wei Sun[5]
[1]Basic Science, School of Medicine, Loma Linda University, Loma Linda, CA, United States; [2]Clinical Laboratory Science, School of Allied Health, Loma Linda University, Loma Linda; [3]Biophysics & Bioengineering, Loma Linda University; [4]Pharmaceutical Sciences & Basic Sciences, Schools of Pharmacy & Medicine, Loma Linda University; [5]Biophysics & Bioengineering, Loma Linda University, Loma Linda, CA, United States

2278. Longitudinal MRI Study to Monitor Brain Changes of RTg4510 Mice Related Tauopathy Suppressed With/without Doxycycline
Dewen Yang[1], Zhiyong Xie[1], David Caouette[2], Carol Hicks[2], Anthony Millici[2], David Raunig[3]
[1]BioImaging COE, Pfizer Worldwide Research & Development, Groton, CT, United States; [2]Neuroscience RU; [3]Neuroscience Research Statistics

2279. Does Decompression Sickness Lead to Brain Injuries?
Marius Widerøe[1], Marianne Havnes[2], Andreas Møllerløkken[2], Alf Brubakk[2], Marte Thuen[2]
[1]Dep of Laboratory Medicine, Children's & Women's Health, Norwegian University of Science & Technology, Trondheim, Norway; [2]Dep of Circulation & Medical Imaging, Norwegian University of Science & Technology, Trondheim, Norway

2280. The Effect of the Ketogenic Diet on Neuroinflammation in an EAE Mouse Model of Multiple Sclerosis
Gregory H. Turner[1], Do-Young Kim[1], Junwei Hao[1], Ruolan Liu[1], Jong M. Rho[1], Fu-Dong Shi[1]
[1]Barrow Neurological Institute, Phoenix, AZ, United States

2281. *In Vivo* Pathological Mapping of the Rat Brain Infected with Angiostrongylus Cantonensis using MRI
Ling-Yuh Shyu[1], Hao-Hung Tsai[2,3], Shin-Tai Chong[2], Tzu-Hua Lee[2], Kwong-Chung Tung[4], Jun-Cheng Weng[2,3]
[1]Department of Parasitology, Chung Shan Medical University, Taichung, Taiwan; [2]School of Medical Imaging & Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [3]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan; [4]Department of Veterinary Medicine, National Chung Hsing University, Taichung, Taiwan

2282. MRI Studies of Neuroprotection in a Mouse Model of Radiation Necrosis
Xiaoyu Jiang[1], John A. Engelbach, Dinesh K. Thotala[2], Robert E. Drzymala[2], Dennis E. Hallahan[2], Joel R. Garbow[3], Joseph J. H. Ackerman[3]
[1]Department of Chemistry, Washington University in St. louis, St. louis, MO, United States; [2]Department of Radiation Oncology, Washington University School of Medicine; [3]Department of Radiology, Washington University School of Medicine

2283. Anatomical Phenotyping of the PML Knockout Mouse
Benjamin Sinclair[1,2], Jon Cleary[2], Joanne Henderson[3], Marc Modat[1], Francesca Norris[2,4], Paolo Salomoni[3], Sebastien Ourselin[1], Mark Lythgoe[2]
[1]Centre for Medical Image Computing, UCL, London, United Kingdom; [2]Centre for Advanced Biomedical Imaging, UCL, London, United Kingdom; [3]UCL Cancer Institute, London, United Kingdom; [4]Centre for Mathematics & Physics in the Life Sciences & EXperimental Biology (CoMPLEX)

2284. Early Metabolic Changes in the Amyotrophic Lateral Sclerosis SOD1 Mouse Brain Are Revealed using ^{1}H MRS Rather Than CASL & ^{18}FDG PET
Hongxia Lei[1,2], Elisabeth Dirren[3], Carol Poitry-Yamate[1], Bernard L. Schneider[3], Patrick Aebischer[3], Rolf Gruetter[1,4]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Radiology, Univeristy of Lausanne, Lausanne, Switzerland; [3]Brain Mind Institute, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Radiology, University of Geneva, Geneva, Switzerland

2285. Rates of Change of ^{1}H & ^{31}P MRS Cerebral Metabolites Vs Lactate/NAA in the 48h Following Global Transient Global Hypoxia-Ischaemia in the Newborn Piglet
Nicola Jayne Robertson[1], Stuart Faulkner[1], Alan Bainbridge[2], Manigandan Chandrasekaran[1], Dorottya Kelen[1], Sudhin Thayyil[1], Ernest Cady[2], Xavier Golay[3], Gennadij Raivich[1]
[1]Institute for Women's Health, University College London, London, United Kingdom; [2]Medical Physics & Bioengineering, University College Hospitals, London, United Kingdom; [3]UCL Institute of Neurology, London, United Kingdom

2286. Acute Hypoglycemia Induces Increased Brain Lactate Uptake & Metabolism in Rats.
Henk M. De Feyter[1], Kevin L. Behar[2], Robin A. de Graaf, Douglas L. Rothman,[3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Department of Psychiatry, Yale University; [3]Department of Biomedical Engineering, Yale University

2287. Multiparametric MR Assays of Spinocerebellar Ataxia 17 Transgenic Mice
Chiao-Chi V. Chen[1,2], Zhi-Xuan Kuo[1,2], Hsiu-Mei Hsieh[3], Chen Chang[1,2]
[1]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan; [2]Functional & Micro-magnetic Resonance Imaging Center, Academic Sinica, Taipei, Taiwan; [3]Department of Life Science, National Taiwan Normal University, Taipei, Taiwan

2288. Longitudinal Study of Neurochemical Changes in Q_{140} Mouse Model of Huntington's Disease
Ivan Tkac[1], Lori Zacharoff[2], Janet M. Dubinsky[2]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Department of Neuroscience, University of Minnesota

2289. Optimal Therapeutic Hypothermia Temperature Following Perinatal Asphyxia: A Magnetic Resonance Spectroscopy Biomarker & Immunohistochemistry Study in the Newborn Piglet.
Nicola Jayne Robertson[1], Stuart Faulkner[1], Manigandan Chandrasekaran[1], Alan Bainbridge[2], David Price[2], Dorottya Kelen[1], Aron Kerenyi[1], Sudhin Thayyil[1], Elizabeth Powell[1], Ernest Cady[2], Gennadij Raivich[1], Xavier Golay[3]

[1]Institute for Women's Health, University College London, London, United Kingdom; [2]Medical Physics & Bioengineering, University College Hospitals, London, United Kingdom; [3]UCL Institute of Neurology, London, United Kingdom

2290. Relation Between ^{1}H & ^{31}P MRS Biomarkers & Immunohistochemical Markers of Cell Death & Inflammation in a Perinatal Asphyxia Piglet Model

Nicola Jayne Robertson[1], Manigandan Chandrasekaran[1], Stuart Faulkner[1], Alan Bainbridge[2], Dorottya Kelen[1], Sudhin Thayyil[1], Ernest Cady[1], Xavier Golay[3], Gennadij Raivich[1]
[1]Institute for Women's Health, University College London, London, United Kingdom; [2]Medical Physics and Bioengineering, University College Hospitals, London, United Kingdom; [3]UCL Institute of Neurology, United Kingdom

2291. *In Vivo* 9.4T ^{1}H MRS for Evaluation of Brain Metabolic Changes in the Ts65Dn Mouse Model of Down Syndrom

Jean-Claude Beloeil[1], William Même[1], Nadir Yousfi[1], Patricia Lospez-Pereira[2], yann Hérault[2,3], Sandra Même[1]
[1]CBM CNRS UPR4301, Orléans, France; [2]TAAM CNRS UPS44, Orléans, France; [3]IGBMC, Strasbourg, France

2292. Non-Invasive Magnetic Resonance Spectroscopy Biomarkers of Oxidative Stress Following Traumatic Brain Injury

William Miles Brooks[1,2], Janna Harris, Hung-Wen Yeh[3], In-Young Choi[1], Sang-Pil Lee,[4]
[1]Hoglund Brain Imaging Center, University of Kansas, Kansas City, KS, United States; [2]Neurology, University of Kansas, Kansas City, KS, United States; [3]Biostatistics, University of Kansas, United States; [4]Molecular & Integrative Physiology, University of Kansas

2293. Effects of Nitrones in Rodent Glioma Models Assessed by ^{1}H MR Spectroscopy

Ting He[1], Sabrina Doblas[1], Debra Saunders[1], Rebba Casteel[1], Robert Floyd[2], Rheal Towner[1]
[1]Advanced Magnetic Resonance Center, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States; [2]Experimental Thearapeutics, Oklahoma Medical Research Foundation, Oklahoma City, OK, United States

2294. Does the Warburg Effect Exist *In Vivo*? Analyzing Glucose Metabolism in FDG-PET-Positive Tumors by ^{13}C-NMR Spectroscopy

Isaac Marin-Valencia[1], Steve K. Cho[2], Levi B. Good[2], Michael Long[3], Xiankai Sun[3], Juan M. Pascual[2,4], Mark Jeffrey[3], Elizabeth A. Maher[5], Craig R. Malloy[3,5], Robert M. Bachoo[2], Ralph J. DeBerardinis[1]
[1]Pediatrics, UT Southwestern Medical Center, Dallas, TX, United States; [2]Neurology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Radiology, UT Southwestern Medical Center, Dallas, TX, United States; [4]Physiology, UT Southwestern Medical Center, Dallas, TX, United States; [5]Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States

2295. Stress During Gestation & Exposure to an Indirect Cannabinoid Agonist During Adolescence Alter Brain Metabolism in Mice

Rossella Canese[1], Simone Macrì[1], Chiara Ceci[1], Emiliano Surrentino[1], Giovanni Laviola[1]
[1]Cell Biology & Neurosciences Dept., Istituto Superiore di Sanità, Rome, RM, Italy

2296. Alternative Pathways of Glucose Metabolism in a Mouse Model of Human Brain Tumors

Isaac Marin-Valencia[1], Steve K. Cho[2], Levi B. Good[2], Ashish Jindal[3], Juan M. Pascual[2,4], Ralph J. DeBerardinis[1], Robert M. Bachoo[2], Elizabeth A. Maher[5], Craig R. Malloy[3,6]
[1]Pediatrics, UT Southwestern Medical Center, Dallas, TX, United States; [2]Neurology, UT Southwestern Medical Center, Dallas, TX, United States; [3]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [4]Physiology, UT Southwestern Medical Center, Dallas, TX, United States; [5]Internal Medicine, UT Southwestern Medical Center, Dallas, TX, United States; [6]Radiology, UT Southwestern Medical Center, Dallas, TX, United States

2297. ASL-MRI Measurement of Cerebral Blood Flow Following Experimental Traumatic Brain Injury & the Role of Human Aβ

Lesley M. Foley[1], Eric E. Abrahamson[2], T. Kevin Hitchens[1,3], Chien Ho[1,3], William R. Paljug[2], John A. Melick[4], Patrick M. Kochanek[4,5], Milos D. Ikonomovic[2]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [3]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States; [4]Safar Center for Resuscitation Research, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [5]Departments of Critical Care Medicine, Pediatrics & Anesthesiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States

2298. Increased Cerebrovascular Complications of Diabetic Mice-A Magnetic Resonance Imaging Study

Qiang Shen[1,2], Eric Muir[1], Edward S. Hui[1], Rene C. Rentería[3], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Ophthalmology/Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [3]Department of Physiology & Center for Biomedical Neuroscience, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2299. Resting-State fMRI & Pharmacological MRI of Changing Dopaminergic Activity in the Developing Rat Brain

Kajo van Der Marel[1], Liesbeth Reneman[2], Rick M. Dijkhuizen[1]

[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, Academical Medical Center, Amsterdam, Netherlands

2300. ***In Vivo*** **Characterization of Developing Rabbit Brain with Diffusion Tensor MRI & Tractography**
Yi-Wen Peng[1], Yong-Jheng Wun[2], Cheng-Hung Lai[1], Jun-Cheng Weng[2,3]
[1]Department of Veterinary Medicine, National Chung Hsing University, Taichung, Taiwan; [2]School of Medical Imaging & Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [3]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan

2301. **Diffusion Tensor Imaging for Evaluation of Radiation-Induced Developmental Abnormalities in the White Matter**
Shigeyoshi Saito[1], Tsuneo Saga[1], Ichio Aoki[1]
[1]Molecular Imaging Center (MIC), National Institute of Radiological Sciences (NIRS), Chiba, Japan

2302. **Diffusion Abnormality in Olfactory Bulbs of Type-I Diabetic Rats**
Li feng Gao[1], Ming Ming Huang[1], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance & Atomic & Molecular Physics, Wuhan Institute of Physics & Mathematics, the Chinese Academy of Science, Wuhan, China, People's Republic of

2303. **Monitoring Myelination by Transplanted Oligodendrocyte Precursors in Dysmyelinated Mice with MT & DT Imaging**
Piotr Walczak[1,2], Jiangyang Zhang[1], Galit Pelled[1,3], Segun Bernard[1,2], Shashikala Galpoththawela[1,2], James T. Campanelli[4], Jeff W. M. Bulte[1,2]
[1]Russel H. Morgan Department of Radiology & Radiological Science, Division of MR Research, Johns Hopkins University, Baltimore, MD, United States; [2]Cellular Imaging Section & Vascular Biology Program, Institute for Cell Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]F. M. Kirby Research Center for Functional Brain Imaging , Kennedy Krieger Institute, Baltimore, MD, United States; [4]Q Therapeutics, Inc., Salt Lake City, UT, United States

2304. **Mouse Embryo Phenotyping with Contrast-Enhanced Micro-Diffusion Tensor Imaging**
Bernard M. Siow[1,2], Jon O. Cleary*[1,3], Nicholas D. Greene[4], Pankaj Daga[3], Marc Modat[2], Roger J. Ordidge[3], Sebastien Ourselin[2], Daniel Alexander[2], Mark F. Lythgoe[1]*
[1]Centre for Advanced Biomedical Imaging, Department of Medicine and Institute of Child Health, UCL, London, United Kingdom; [2]Centre for Medical Image Computing, UCL, London, United Kingdom; [3]Department of Medical Physics and Bioengineering, UCL, London, United Kingdom; [4]Neural Development Unit, Institute of Child Health, UCL, London, * Equal Contribution

2305. **Using Structural MRI & DTI to Map Plastic Changes in the Mouse Brain Resulting from Deep Brain Stimulation**
M. Mallar Chakravarty[1,2], Clement Hamani[3,4], Jacob Ellegood[1], Mustansir Diwan[3], Christine Laliberté[1], Jonathon Bishop[1], Jun Dazai[1], Brian J Nieman[1], Jose N Nobrega[3], R Mark Henkelman[1], Jason P Lerch[1]
[1]Mouse Imaging Centre (MICe), the Hospital for Sick Children, Toronto, Ontario, Canada; [2]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada; [3]Neuroimaging Research Section, Centre for Addiction and Mental Health, Toronto, Ontario, Canada; [4]Division of Neurosurgery, Toronto Western Hospital, Toronto, Ontario, Canada

2306. **Bilateral Enucleation Before & After the Critical Period for the Specification of Interhemispheric Axonal Connectivity Induces Similar Changes on White Matter Fractional Anisotropy**
Christopher D. Kroenke[1], Jaime F. Olavarria[2], Andrew S. Bock[2], Erin N. Taber[1], Byung Park[1]
[1]Oregon Health & Science University, Portland, OR, United States; [2]University of Washington, Seattle, WA, United States

2307. **Superoxide Dismutase Overexpression Improves FA & ADC in the Brains of a Mouse Model of Alzheimer's Disease**
Brittany R. Bitner[1,2], Taeko Inoue[1], Lingyun Hu[1], Chi An Chiang[3], Robia G. Pautler[1,2]
[1]Molecular Physiology & Biophysics, Baylor College of Medicine, Houston, TX, United States; [2]Translational Biology & Molecular Medicine, Baylor College of Medicine, Houston, TX, United States; [3]Neuroscience, Baylor College of Medicine

2308. ***In-Vivo*** **Mouse Brain DT-MRI: Assessment of Gender Specific Response to the Thyroid Hormone Remyelinating Treatment**
Laura-Adela Harsan[1], Alexandru Parlog[1], Neele Hübner[1], Jürgen Hennig[1], Dominik von Elverfeldt[1]
[1]Department of Radiology, Medical Physics, University Hospital Center, Freiburg, Germany

2309. **Correlation between DTI & Visual Evoked Potential in Mice with Optic Neuritis**
Dan Xu[1], Hsiao-Fang Liang[2], Wei-Xing Shi, Shu-Wei Sun[3]
[1]Pharmaceutical Sciences & Basic Sciences, Schools of Pharmacy & Medicine, Loma Linda University, Loma Linda, CA, United States; [2]Biophysics & Bioengineering, Loma Linda University; [3]Biophysics & Bioengineering, Loma Linda University, Loma Linda, CA, United States

2310. **α7 Nicotinic Receptor Mediation of CNS Inflammatory Response Examined by Magnetic Resonance Imaging & Bioluminescence Imaging**

Gregory H. Turner[1], Junwei Hao[2,3], Alain R. Simard[4], Jie Wu[2], Paul Whiteaker[4], Ronald J. Lukas[4], Fu-Dong Shi[2]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States; [2]Neurology, Barrow Neurological Institute, Phoenix, AZ, United States; [3]School of Medicine, Nankai University, Tianjin, China, People's Republic of; [4]Neurobiology, Barrow Neurological Institute, Phoenix, AZ, United States

2311. The Evolution of Traumatic Brain Injury in a Rat Model: Implications for Cell Tracking with MRI
L. Christine Turtzo[1,2], Matthew D. Budde[1,2], Eric M. Gold[1,2], Bobbi K. Lewis[1], Lindsay E. Janes[1,2], William D. Watson[2,3], Joseph A. Frank[1,2]
[1]Laboratory of Diagnostic Radiology Research, National Institutes of Health, Bethesda, MD, United States; [2]Center for Neuroscience & Regenerative Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [3]Neurology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States

2312. Tracking of Neuroprogenitor Cells in Association with Traumatic Brain Injury
Jens Rosenberg[1,2], Ali Darkazalli[3], Cathy W. Levenson[3], Samuel Colles Grant[1,2]
[1]National High Magnetic Field Laboratory, The Florida State University, Tallahassee, FL, United States; [2]Chemical & Biomedical Engineering, The Florida State University, Tallahassee, FL, United States; [3]Biomedical Sciences, The Florida State University, Tallahassee, FL, United States

2313. Use of Endothelial Progenitor Cells as Gene Carrier & Multimodal Imaging Probes
Nadimpalli R. S. Varma[1], Asm Iskander[1], Adarsh Shankar[1], Branislava Janic[1], Kenneth Barton[2], Meser M. Ali[1], Hamid Soltanian-Zadeh[1], Quan Jiang[3], Ali Syed Arbab[1]
[1]Radiology, Henry Ford Hospital, Detroit, MI, United States; [2]Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States; [3]Neurology, Henry Ford Hospital, Detroit, MI, United States

2314. Image-Guided Stereotactic Biopsy System for Small Animal Experiments
Jonathan Douglas Plasencia[1], Kevin M. Bennett[1], Gregory H. Turner[2,3], Leland S. Hu[4], David H. Frakes[1,5]
[1]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, United States; [2]Keller Center for Imaging Innovation, Phoenix, AZ, United States; [3]Barrow Neurological Institute, Phoenix, AZ, United States; [4]Department of Radiology, Mayo Clinic Arizona, Phoenix, AZ, United States; [5]School of Electrical, Computer & Energy Engineering, Arizona State University, Tempe, AZ, United States

Clinical Application of Diffusion Tensor Imaging

Exhibition Hall Monday 14:00-16:00

2315. Voxel Based Analysis of Motor Neurone Disease using Apparent Fibre Density
David Raffelt[1,2], Stephen Rose[3], J.-Donald Tournier[4,5], Robert Henderson[6], Stuart Crozier[2], Olivier Salvado[1], Alan Connelly[4,5]
[1]The Australian E-Health Research Centre, CSIRO, Brisbane, QLD, Australia; [2]Biomedical Engineering, School of ITEE, University of Queensland, Brisbane, QLD, Australia; [3]Centre for Advanced Imaging, University of Queensland, Brisbane, QLD, Australia; [4]Brain Research Institute, Florey Neuroscience Institutes (Austin), Melbourne, VIC, Australia; [5]Department of Medicine, University of Melbourne, Melbourne, VIC, Australia; [6]Department of Neurology, Royal Brisbane & Women's Hospital, Brisbane, QLD, Australia

2316. White Matter Differences between Bilinguals & Monolinguals Revealed by Diffusion Tensor Imaging (DTI)
Seyede Ghazal Mohades[1,2], Esli Struys[1], Robert Luypaert[2]
[1]VUB, Brussels, Belgium; [2]MRI, UZ Brussel, Brussels, Belgium

2317. A Diffusion Spectrum Tractography Study on Fiber Integrity of Fornix & Correlation with Clinical Symptoms in Schizophrenia
Jhih-Wei He[1], C-M Liu[2], H-G Hwu[2], C-C Liu[2], F-H Lin[3], W-Y I Tseng[4]
[1]Institute of Biomedical Engineering, National Taiwan University , Taipei , Taiwan; [2]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [3]Institute of Biomedical engineering, National Taiwan University, Taipei, Taiwan; [4]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan

2318. Temporal Behavior of Diffusion Tensor Properties in *Ex Vivo* Human Brain Hemispheres
Robert J. Dawe[1], Julie A. Schneider[2], David A. Bennett[2], Konstantinos Arfanakis[1,2]
[1]Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States; [2]Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, IL, United States

2319. Abnormalities in the Microstructure of the Fronto-Striatal Fiber Pathways in Children with Attention-Deficit/Hyperactivity Disorder: Preliminary Results using Diffusion Spectrum Imaging Tractography
Yi-Huan Wu[1], Yu-Chun Lo[2], Shur-Fen Susan Gau[3], Wen-Yih Isaac Tseng[4,5]
[1]School of Medicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital & College of Medicine, Taipei, Taiwan; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [5]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan

2320. Evidence for Structural Abnormality in the Optic Radiations in Children with Optic Nerve Hypoplasia

Say Ayala-Soriano[1], Emma Webb[2], Kiran Seunarine[3], Ruth Lions[4], Tessa Mellow[4], Michelle O'Reilly[5], Wk Chong[6], Mehul Dattani[7], Alki Liasis[4], C. A. Clark[3]

[1]Imaging & Physics, Institute of Child health,Department of Neurosurgery, Great Ormond Street Hospital , London, UK, United Kingdom; [2]Imaging & Physics,Institute of Child Health, United Kingdom; [3]Imaging & Physics, Institute of Child Health, London, United Kingdom; [4]Opthalmology, Great Ormond Street Hospital, London, United Kingdom; [5]Neurosciences, Institute of Child Health, London, United Kingdom; [6]Neuroradiology, Great Ormond Street Hospital, London, United Kingdom; [7]Endocrinology, Great Ormond Street Hospital, London, United Kingdom

2321. Investigating the Relationship between the Disruption of Primary Sensorimotor Pathways & Hand Function in Congenital Hemiplegia: An MRI Structural Connectivity Study

Stephen Rose[1], Kerstin Pannek[1], Andrea Guzzetta[2], Roslyn Boyd[3]

[1]Centre for Clinical Research, University of Queensland, Brisbane, Queensland, Australia; [2]Department of Developmental Neuroscience, Stella Maris Scientific Institute, Pisa, Italy; [3]Queensland Cerebral Palsy & Rehabilitation Research Centre, University of Queensland, Brisbane, Queensland, Australia

2322. Identification & Interpretation of Microstructural Abnormalities in Motor Pathways in Adolescents Born Preterm

Samuel Groeschel[1], J.-Donald Tournier[2], Gemma Northam[3], Torsten Baldeweg[3], John Wyatt[4], Brigitte Vollmer[5,6], Alan Connelly[2]

[1]Experimental Pediatric Neuroimaging & Developmental Medicine & Child Neurology, University Children's Hospital, Tuebingen, Germany; [2]Brain Research Institute, Melbourne, Australia; [3]UCL Institute of Child Health, London, United Kingdom; [4]UCL Hospitals, London, United Kingdom; [5]Karolinska Institute, Stockholm, Sweden; [6]University of Southampton, United Kingdom

2323. Robust Subdivision of the Thalamus in Children Based on Probability-Distribution-Functions Calculated from Probabilistic Tractography.

Philip Julian Broser[1], Faraneh Vargha-Khadem[2], Chris A. Clark[1]

[1]Imaging & Biophysics Unit, UCL Institute of Child Health, London, United Kingdom; [2]Developmental Cognitive Neuroscience Unit,, UCL Institute of Child Health

2324. Structural Plasticity in Stroke Inferred by Probabilistic Tractography & MEG

Monica Bucci[1], Kelly Westlake[1], Christopher Nguyen[1], Bagrat Amirbekian[1], Srikantan Nagarajan[1], Roland G. Henry[1]

[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

2325. Diffusion Tensor Metrics Changes in the White Matter of Systemic Lupus Erythematosus Patients

Maria Luisa Mandelli[1], Monica Bucci[1], Eduardo Caverzasi[1], Mehul Sampat[1], Grace Yoon[2], Patricia P. Katz[2], Laura Julian[2], Roland G. Henry[1]

[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Medicine, UCSF, San Francisco, CA, United States

2326. Role of Diffusion-Tensor Imaging in Post-Cardiac Arrest Patients Still Comatose 3-Days Post-Resuscitation

Ona Wu[1], Leonardo M. Batista[2], Thomas Benner[1], A. Gregory Sorensen[1], Karen L. Furie[2], David M. Greer[2,3]

[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Department of Neurology, Massachusetts General Hospital, Boston, MA, United States; [3]Department of Neurology, Yale University, New Haven, CT, United States

2327. Evaluation of Fractional Anisotropy & Apparent Diffusion Coefficient of Broca's Area in Parkinson's Disease using Diffusion Tensor Imaging

Jung-Hoon Lee[1,2], Sang-Young Kim[1], Kyung-Bae Lee[1,2], Do-Wan Lee[1], Youn-Bong Choi[2], Bo-Young Choe[1]

[1]Department of Biomedical Engineering, The Catholic University of Korea, Seoul, Korea, Republic of; [2]Department of Radiology, Kyunghee University Medical Center, Seoul, Korea, Republic of

2328. Diffusion Tensor Imaging of Normal & Pathological Human Optic Nerves using 2D Ss-IVIM-DWEPI & a Custom Designed 20-Channel Phase Array Coil at 3T System.

Seong-Eun Kim[1], John Rose[2], Ji Kang Park[3], Eun-Kee Jeong[1], John Rock Hadley[1], Emilee S. Minalga[1], Dennis L. Parker[1]

[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Neurology, University of Utah; [3]Department of Radiology, Jeju National University Hospital, Jeju, Korea, Republic of

2329. Structural Brain Differences between Patients with Non Hepatic Liver Cirrhosis & HCV-Patients Without Liver Cirrhosis

Peter Raab[1], Kathrin S. Blum[1], Anita B. Tryc[2], Annemarie Goldbecker[2], Ali Tabesh[3], Heinrich Lanfermann[1], Karin Weißenborn[2]

[1]Neuroradiology, Hannover Medical School, Hannover, Germany; [2]Neurology, Hannover Medical School, Hannover, Germany; [3]Radiology, New York University, New York, United States

2330. Anatomical Organization of the Blind's Brain: Combined VBM & DTI Analysis
Zhi Wang[1], William FC Baar[2,3], Ron Kupers[2], Tim Dyrby[2], Olaf Paulson[2], Min Chen[1], Cheng Zhou[1], Maurice Ptito[2]
[1]Radiology, Beijing Hospital, Beijing, China, People's Republic of; [2]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark; [3]Center for Integrated Molecular Brain Imaging , Copenhagen, Denmark

2331. White Matter Network Abnormalities Are Associated with Cognitive Decline in Chronic Epilepsy
Maarten Vaessen[1,2], Jacobus Jansen[1,2], Marielle Vlooswijk[3], Paul Hofman[1,2], Marian Majoie[3,4], Albert Aldenkamp[2,4], Walter Backes[1,2]
[1]Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [2]School for Mental Health & Neurosciences, Maastricht University, Maastricht, Netherlands; [3]Neurology, Maastricht University Medical Centre, Maastricht, Netherlands; [4]Epilepsy Centre Kempenhaeghe, Heeze, Netherlands

2332. Diagnostic Prediction of Language Impairment in Autism Spectrum Disorder using Joint MEG - DTI Classification
Madhura Ingalhalikar[1], Drew Parker[1], Timothy P. L. Roberts[2], Ragini Verma[1]
[1]Section of Biomedical Image Analysis, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Lurie Family Foundations MEG Imaging Center, Childerns Hospital of Philadelphia, Philadelphia, PA

2333. Fiber Tracking of the Arcuate Fasciculus in Autism using High Angular Resolution Diffusion Imaging
Harini Eavani[1,2], Luke Bloy[2,3], John Herrington[1], Timothy L. Roberts[4], Robert T. Schultz[1], Ragini Verma[2]
[1]Center for Autism Research, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [2]Section of Biomedical Image Analysis, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Department of Bioengineering, University of Pennsylvania; [4]Lurie Family Foundations MEG Imaging Center

2334. HARDI Fiber Tracking is Necessary to Delineate the Auditory Radiation
Jeffrey I. Berman[1,2], Timothy P. L. Roberts[1,2]
[1]Radiology, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States

2335. Spatial Analysis of Diffusion Tensor Tractography Depicts Local White Matter Changes
Johanna Mårtensson[1,2], Markus Nilsson[2], Christina Elfgren[3], Maria Landqvist[3], Freddy Ståhlberg[2,4], Christer Nilsson[3], Danielle van Westen[1,4], Jimmy Lätt[1]
[1]Center for Medical Imaging & Physiology, Lund University Hospital, Lund, Skane, Sweden; [2]Department of Medical Radiation Physics, Lund University Hospital, Lund, Skane, Sweden; [3]Geriatric Psychiatry, Department of Clinical Sciences, Lund University Hospital, Lund, Skane, Sweden; [4]Department of Diagnostic Radiology, Lund University Hospital, Lund, Skane, Sweden

2336. Traumatic Brain Injury: Abnormal Fractional Anisotropy in the Corpus Callosum & Its Association with Injury Severity.
Cheuk Ying Tang[1,2], Emily Lauren Eaves[1], Kristen Dams-O'Connor[3], Lap Ho[4], David Carpenter[1], Johnny Ng[1], Wayne Gordon[3], Giulio M. Pasinetti[4,5]
[1]Radiology, Mount Sinai School of Medicine, New York, United States; [2]Psychiatry, Mount Sinai School of Medicine, New York, United States; [3]Rehabilitation Medicine, Mount Sinai School of Medicine, New York, United States; [4]Neurology, Mount Sinai School of Medicine, New York, United States; [5]Psychiatry, Mount Sinai School of Medicine, New York , United States

2337. A Diffusion Spectrum Imaging Study on Mirror Neuron System in Schizophrenia
Chieh-En Jane Tseng[1], Wei-An Wang[1], Yu-Chun Arica Lo[2], Yi-Huan Markus Wu[3], Chih-Min Liu[4], Hai-Gwo Hwu[4], Wen-Yih Isaac Tseng[3,5]
[1]Biomedical Imaging & Radiological Sciences, National Yang-Ming University, Taipei, Taiwan; [2]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [3]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [4]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; [5]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

2338. Changes in Correlations of Regional Visual Cortical Thickness with Optic Radiation Tract in Anisometropic Amblyopia
Shun Qi[1], Hong Yin[2], Feng Yun Mu, Yi Huan
[1]Xijin Hospital,The Fourth Military Medical University, Xi'an, Shaanxi, China, People's Republic of; [2]Xijing Hospital, China, People's Republic of

2339. fMRI & Diffusion Tensor Imaging Biomarkers for Assessing Optic Pathway Structure & Function in Patients with Pituitary Tumours
Andrew David Nichols[1], Brad Moffat[2], Helen Danesh-Meyer[3], Andrew H. Kaye[4]
[1]Department of Surgery RMH/WH, the University of Melbourne, Parkville, Victoria, Australia; [2]Radiology, University of Melbourne, Parkville, Victoria, Australia; [3]Ophthalmology, University of Auckland, Auckland, New Zealand; [4]Department of Surgery (RMH/WH), The University of Melbourne, Parkville, Victoria, Australia

2340. Diffusion Abnormalities Detected by Tract-Based Spatial Statistics in Children with Sickle Cell Disease
Richard Alan Jones[1], Binjian Sun[1], Robert Clark Brown[2], Laura Hayes[1]

[1]Radiology, CHOA, Atlanta, GA, United States; [2]Hematology, CHOA, Atlanta, GA, United States

2341. White Matter Alterations in Euthymic Bipolar I Disorder, a DTI Voxel-Based Analysis
Louise Emsell[1,2], Wim Van Hecke[3,4], Camilla Langan[1], Gareth Barker[5], Alexander Leemans[6], Stefan Sunaert[3], Peter McCarthy[1], Rachel Skinner[1], Dara M. Cannon[1], Colm McDonald[1]
[1]NUI Galway, Galway, Co. Galway, Ireland; [2]Developmental & Functional Brain Imaging, Murdoch Children's Research Institute, Melbourne, Victoria, Australia; [3]Dept of Radiology, University Hospital Leuven, Belgium; [4]University of Antwerp, Belgium; [5]Institute of Psychiatry, London, United Kingdom; [6]Imaging Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

2342. Quality Assessment in a DTI Multicenter Study
Amritha Nayak[1], Lindsay Walker[1], Carlo Pierpaoli[1], The Brain Development Cooperative Group[2]
[1]NICHD, National Institutes of Health, Bethesda, MD, United States; [2]www.NIH-PediatricMRI.org

2343. Probabilistic Tractography Algorithms for Tracking the Optic Radiation (OR): Are They Ready for the Neurosurgeon?
Bradford A. Moffat[1], Jeremy Lim[1], Pramit Phal[1], Christopher Kokkinos[1], Patricia M. Desmond[1]
[1]Radiology, University of Melbourne, Parkville, VIC, Australia

2344. MEG-Guided Diffusion Kurtosis Imaging in Patients with Refractory Epilepsy
Samuel Lapere[1], Evelien Carrette[2], Paul Boon[3], Kristl Vonck[3], Xavier De Tiège[4], Els Fieremans[5], Ali Tabesh[5], Eric Achten[1], Karel Deblaere[1]
[1]Department of Radiology, Ghent University Hospital, Ghent, Belgium; [2]Reference Centre for Refractory Epilepsy , Department of Neurology, Ghent University Hospital, Ghent, Belgium; [3]Reference Centre for Refractory Epilepsy, Department of Neurology, Ghent University Hospital, Ghent, Belgium; [4]Laboratoire de Cartographie Fonctionnelle du Cerveau, ULB-Hôpital Erasme, Brussels, Belgium; [5]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY 10016, United States

2345. Probabilistic Tractography in Patients with Recurrent Malignant Gliomas
Patricia E. Litkowski[1], Victor Liu[1], Kyung Peck[2], Zhigang Zhang[3], Kathryn Beal[4], Robert J. Young[1]
[1]Radiology, Memorial Sloan-Kettering Cancer Center, New York, United States; [2]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, United States; [3]Epidemiology & Biostatistics, Memorial Sloan-Kettering Cancer Center, New York, United States; [4]Radiation Oncology, Memorial Sloan-Kettering Cancer Center, New York, United States

2346. Abnormal White Matter Integrity in Adolescent Students with Internet Addiction Disorder Revealed by Tract-Based Spatial Statistics
Fuchun Lin[1], Yan Zhou[2], Yasong Du[3], Lindi Qin[2], Zhimin Zhao[3], Jianrong Xu[2], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance & Atomic and Molecular Physics, Wuhan Institute of Physics & Mathematics, Chinese Academy of Sciences, Wuhan, Hubei, China, People's Republic of; [2]Department of Radiology, RenJi Hospital, Jiao Tong University Medical School, Shanghai, China, People's Republic of; [3]Department of Child & Adolescent Psychiatry, Shanghai Mental Health Center, Jiao Tong University, Shanghai, China, People's Republic of

2347. Altered Integrity & Asymmetry of Association White Matter Tracts in Epilepsy with Mesial Temporal Sclerosis: Preliminary Results using Diffusion Spectrum Imaging
Y-C. Shih[1], H-H. Liou[2], K-C. Chu[3], P-Y. Chen[4], W-M. Huang[5], F-H. Lin[1], W-Y. I. Tseng[6,7]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Department of Neurology, National Taiwan University Hospital, Taipei, Taiwan; [3]Graduate Institute of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [4]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [5]Graduate Institute of Pharmacology, National Taiwan University College of Medicine, Taipei, Taiwan; [6]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [7]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

2348. Diffusion Abnormalities in Young Drug Naive ADHD Children
Manzar Ashtari[1], Carolyn Mcilree[2], Melissa Naraine[3], Laura Cyckowski, Ruth Milanaik[3], Li Kan[3], Jeffrey Newcorn[4], Josephine Elia[1], Andrew Adesman[3]
[1]Children's Hospital of Philadelphia, Philadelphia, PA, United States; [2]University of Vermont Medical School; [3]North Shore LIJ Health Systems; [4]Mount Sinai School of Medicine

2349. Validation of Reduced Fractional Anisotropy Measures in the Substantia Nigra of Parkinson's Patients using DAT Imaging
Lorna Harper[1,2], Edward Newman[1,2], Donald Hadley[1,2], Donald Grosset[1,2]
[1]University of Glasgow, Glasgow, Scotland, United Kingdom; [2]Institute of Neurological Sciences, Glasgow, Scotland, United Kingdom

2350. Brain White Matter Abnormalities in Paediatric Gaucher Type I & Type III using Diffusion Tensor Imaging
Elin Haf Davies[1], Kiran Seunarine[2], Ashok Vellodi[3], Tina Banks, Chris A. Clark[2]

[1]Metabolics, Institute of Child Health, London, United Kingdom; [2]Neuroimaging & Biophysics, Institute of Child Health, London, United Kingdom; [3]Metabolic, Great Ormond Street Hospital for Children NHS Trust, London, United Kingdom

2351. Longitudinal Tract Atrophy in Normal Aging & Alzheimer's Disease Measured using Probabilistic Tractography
Hojjatollah Azadbakht[1], David M. Morris[1], Hamied A. Haroon[1], Brandon Whitcher[2], Julie Snowden[3], Geoff J. Parker[1]
[1]Imaging Science & Biomedical Engineering, School of Cancer & Imaging Sciences, University of Manchester, Manchester, United Kingdom; [2]Clinical Imaging Centre, GlaxoSmithKline, London, United Kingdom; [3]Greater Manchester Neuroscience Centre, Salford Royal Foundation Trust, Manchester, United Kingdom

2352. Robust Detection of White Matter Injury in Individual Patients After Mild Traumatic Brain Injury
Namhee Kim[1], Miriam Hulkower[1], Young Park[1], Tova Gardin[1], Jeremy Smith[1], Craig Branch[1], Michael Lipton[1,2]
[1]Gruss Magnetic Resonance Research Center, Department of Radiology, Albert Einstein College of Medicine, Bronx, NY, United States; [2]Departments of Psychiatry & Behavioral Sciences, The Dominick P. Purpura Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY, United States

2353. Diffusion Tensor Imaging Detects Axonal Degeneration & Its Extent is Associated with Disability in Chronic Spinal Cord Injury
Torben Schneider[1], Zoltan Nagy[2], Claudia A. M. Wheeler-Kingshott[1], Alan J. Thomson[3], Patrick Freund[2,3]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom; [2]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [3]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

2354. Parahippocampal & Thalamic Diffusion Abnormalities Correlate with Disease Duration in Temporal Lobe Epilepsy with Unknown Cause
Simon Sean Keller[1], Tobias Ahrens[1], Siawoosh Mohammadi[2], Gabriel Möddel[1], Harald Kugel[3], Bernd Weber[4], E. Bernd Ringelstein[1], Michael Deppe[1]
[1]Department of Neurology, University of Münster, Münster, Germany; [2]Wellcome Trust Centre for Neuroimaging, University College London, United Kingdom; [3]Department of Radiology, University of Münster, Münster, Germany; [4]Department of Epileptology, University of Bonn, Germany

2355. Cluster-Based Statistics Along White Matter Tracts
Demian Wassermann[1], Peter Savadjiev[1], Yogesh Rathi[1], Sylvain Bouix[1], Marek Kubicki[1], Ron Kikinis[1], Martha Shenton[1], Carl-Fredrik Westin[1]
[1]Brigham & Women's Hospital & Harvard Medical School, Boston, MA, United States

High Resolution Brain Imaging

Exhibition Hall Tuesday 13:30-15:30

2356. Quantitative Reliability for Extremely Rapid Structural Data Acquisition Across Time, Scanners & Software Upgrade
Ross William Mair[1,2], Thomas Benner[2], Bruce Fischl[2,3], Betsy Hemphill[1,2], Marisa Hollinshead[1,2], Andre J. W. van Der Kouwe[2], Randy L. Buckner[1,2]
[1]Center for Brain Science, Harvard University, Cambridge, MA, United States; [2]Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Computer Science & Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA, United States

2357. High Resolution fMRI for Finger Somatotopic Mapping at 3T using a Novel Vibrotactile Stimulator
Hsiao-Ying Wey[1,2], Sunil K. Valaparla[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2358. Rapid Acquisition of Targeted High Resolution Human Brain Images using a Combined SENSE, Inner Volume Imaging & Multi-Shot EPI Spin Echo Sequence at 7T
Christopher Joseph Wargo[1,2], John Christopher Gore[1,2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

2359. Semi-Automated *In-Vivo* Segmentation of Visual Area V_1 Based on Structural 7 Tesla MRI
Marcel Weiss[1], Gabriele Lohmann[1], Gerik Scheuermann[2], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Saxony, Germany; [2]Institute of Computer Science, University of Leipzig

2360. Quantitative T_1 Mapping at 7 Tesla Identifies Primary Functional Areas in the Living Human Brain
Marcel Weiss[1], Stefan Geyer[1], Gabriele Lohmann[1], Robert Trampel[1], Robert Turner[1]

[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Saxony, Germany

2361. Achieving Heightened Contrast in Magnitude, Phase & Susceptibility-Weighted Brain Images at 7T
Wei Bian[1,2], Kathryn Hammond Rosenbluth[3], Sarah J. Nelson[2,4], Janine M. Lupo[2]
[1]Joint Graduate Program in BioEngineering at UCSF & UCB, University of California San Francisco, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, United States; [4]Department of BioEngineering & Therapeutic Sciences, University of California San Francisco, San Francisco, CA, United States

2362. *In Vivo* Human Brain T_2* Mapping using 3D High Resolution Multiple Echo Susceptibility-Weighted Imaging at 7.0T
Zhongwei Zhang[1], Jens H. Jensen[1], Lin Tang[1], Yudong Zhu[1], Yulin Ge[1]
[1]Department of Radiology, New York University School of Medicine, New York, NY, United States

2363. High Resolution Quantitative Susceptibility Mapping at 9.4T
Andreas Deistung[1], Juliane Budde[2], Ferdinand Schweser[3], Jens Hoffmann[2], Rolf Pohmann[2], Jürgen R. Reichenbach[3]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital , Jena, Germany; [2]Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [3]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Germany

2364. Ultra-Fast Acquisition of High-Resolution Susceptibility-Weighted-Imaging at 3T
Pascal Sati[1], David M. Thomasson[2], Nadia M. Biassou[2], Daniel Salo Reich[1,2], John A. Butman[2]
[1]Translational Neuroradiology Unit , Neuroimmunology Branch, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Radiology & Imaging Sciences, Department of Diagnostic Radiology, Clinical Center, National Institutes of Health, Bethesda, MD, United States

2365. *In-Vivo* Visualization of the Human Basal Ganglia Structure & Connectivity using High Resolution 7T MRI
Christophe Lenglet[1], Aviva Abosch[2], Essa Yacoub[1], Guillermo Sapiro[3], Noam Harel[1]
[1]Department of Radiology - CMRR, University of Minnesota Medical School, Minneapolis, MN, United States; [2]Department of Neurosurgery, University of Minnesota Medical School, Minneapolis, MN; [3]Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States

2366. The Anatomy of Human Substantia Nigra Based on *In Vivo* & Post Mortem Magnetic Resonance Data & Susceptibility Mapping
Anna Izabella Blazejewska[1], Samuel Wharton[1], Alain Pitoit[2], Ashley Kempf[1], Stefan Schwarz[3], James Lowe[4], Dorothee P. Auer[3], Richard Bowtell[1], Penny A. Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom; [2]School of Psychology, University of Nottingham; [3]Division of Academic Radiology, University of Nottingham; [4]Division of Pathology, Nottingham University Hospitals NHS Trust

2367. Characterization of the Human Habenula *In-Vivo* & *Ex-Vivo* at 7T
Barbara Strotmann[1], Marcel Weiss[1], Carsten Kögler[1], Andreas Schäfer[1], Robert Trampel[1], Stefan Geyer[1], Arno Villringer[1], Robert Turner[1]
[1]Max-Planck-Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

2368. Isotropic High Resolution Diffusion Imaging of Human Habenula *In Vivo* at 7T
Barbara Strotmann[1], Alfred Anwander[1], Robin Heidemann[1], Eugenia Solano-Castiella[1], Arno Villringer[1], Robert Turner[1]
[1]Max-Planck-Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

2369. Direct Visualization of Thalamic Structures: Comparison of Super-Resolution Track-Density Imaging to Conventional MRI at 7T
Fernando Calamante[1,2], Se-Hong Oh[3], Jacques-Donald Tournier[1,2], Sung-Yeon Park[3], Jun-Young Chung[3], Young-Don Son[3], Je-Geun Chi[3], Graeme D. Jackson[1,2], Young-Bo Kim[3], Alan Connelly[1,2], Zang-Hee Cho[3]
[1]Brain Research Institute, Florey Neuroscience Institutes, Heidelberg West, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia; [3]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of

2370. Neocortex Organization & Connectivity in Fetal Human Brains Revealed by Diffusion Tractography & Histology
Emi Takahashi[1], Rebecca D. Folkerth[2], P. Ellen Grant[1]
[1]Children's Hospital Boston, Boston, MA, United States; [2]Brigham & Women's Hospital

2371. Visualization of the Orientational Structure of the Human Stria of Gennari with High-Resolution DWI
Christoph Wolfram Ulrich Leuze[1], Bibek Dhital[1], Alfred Anwander[1], Andre Pampel[1], Robin Heidemann[1], Stefan Geyer[1], Marcel Gratz[2], Robert Turner[1]

[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Sachsen, Germany; [2]Universität Leipzig, Leipzig, Sachsen, Germany

2372. Post Mortem Quantitative MRI of the Human Brain in Situ using High-Resolution Multi-Echo FLASH
Gunther Helms[1], Walter J. Schulz-Schaeffer[2], Arne Wrede[2], Niels K. Focke[3], Peter Dechent[1]
[1]MR-Research in Neurology & Psychiatry, Universitymedicine Göttingen, Göttingen, Germany; [2]Neuropathology, Universitymedicine Göttingen, Göttingen, Germany; [3]Clinical Neurophysiology, Universitymedicine Göttingen, Göttingen, Germany

2373. High Resolution Multi-Echo FLASH MRI of Fixated Human Brain with Combined Magnetization Transfer (MT) & T_2* Weighting
Gunther Helms[1], Katrin Brunnquell[1], Arne Wrede[2], Walter J. Schulz-Schaeffer[2], Peter Dechent[1]
[1]MR-Research in Neurology & Psychiatry, Universitymedicine Göttingen, Göttingen, Germany; [2]Neuropathology, Universitymedicine Göttingen, Göttingen, Germany

2374. Intracranial Vessel Wall Imaging with MPIR-TSE at 7.0 Tesla in Ischemic Stroke & TIA Patients
Anja Gwendolyn van Der Kolk[1], Jaco J. M. Zwanenburg[1,2], Manon Brundel[3], Geert Jan Biessels[3], Fredy Visser[1,4], Peter R. Luijten[1], Jeroen Hendrikse[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Science Institute, University Medical Center Utrecht, Utrecht, Netherlands; [3]Department of Neurology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Philips Healthcare, Best, Netherlands

2375. Cortical Thickness in Lupus Patients with Cognitive Impairment
Eduardo Caverzasi[1,2], Laura J. Julian[3], Mehul Sampat[4], Patricia Katz[3], Monica Bucci, Stefano Bastianello[2,5], Roland G. Henry[6]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, San Francisco, CA, United States; [2]Neuroradiology Department, IRCCS C . Mondino Neurological Institute Foundation, Pavia, Italy; [3]Department of Medicine, UCSF, San Francisco; [4]Department of Neurology, UCSF, San Francisco; [5]University of Pavia, Pavia, Italy; [6]Graduate Group in Bioengineering, UCSF

2376. Noninvasive Measurement of TBI using High Resolution Multiecho Susceptibility Weighted MRI at 3T
Haiying Tang[1], Pascal Sati[2], Pinghong Yeh[3], Binquan Wang[3], Hai Pan[3], James Smirniotopoulos[1], Reed Selwyn[1], Terry Oakes[3], Gerard Riedy[3]
[1]Center for Neuroscience & Regenerative Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [2]NINDS, National Institute of Health, Bethesda, MD, United States; [3]Walter Reed Army Medical Center, Washington DC, United States

2377. High Resolution PROPELLER EPI with Reversed Phase Encoding Distortion Correction
Irvin Teh[1]
[1]Clinical Imaging Research Centre, Singapore, Singapore

2378. SNR-Optimized, Fast & High-Resolution Mapping of Whole Brain Tissue Water Content
Mohammad Sabati[1], Andrew A. Maudsley[1]
[1]Radiology, University of Miami, Miami, FL, United States

2379. Wanted Dead or Alive? The Tradeoff between *In-Vivo* Versus *Ex-Vivo* MR Brain Imaging in the Mouse.
Jason Philipp Lerch[1], Jurgen Germann[1], John G. Sled[1], R. Mark Henkelman[1], Brian J. Nieman[1]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada

2380. Imaging Structural Changes of the Mouse Retina in Retinitis Pigmentosa with Balanced Steady State Free Precession
Eric R. Muir[1], Bryan H. De La Garza[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States

2381. A Descriptive Atlas of the Common Marmoset Cortex Based on Anatomical MRI
Nicholas Adam Bock[1], Eyesha Hashim[1], Ara Kocharyan[2], Afonso C. Silva[2]
[1]Medical Physics & Applied Radiation Sciences, McMaster University, Hamilton, Ontario, Canada; [2]National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States

2382. High-Resolution Imaging of Vessels in the Isolated Rat Brain
Matthias F. Valverde Salzmann[1], Nikos Logothetis[1], Rolf Pohmann[2]
[1]Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany

2383. Specificity & Stability of BOLD & CBV-Based Mapping Signals for High Resolution Functional Mapping at Sub-Millimeter Resolution
Feng Wang[1,2], Li Min Chen[1,2], Malcolm J. Avison[1,2]
[1]Radiology, Vanderbilt University, Nashville, TN, United States; [2]VUIIS, Vanderbilt University, Nashville, TN, United States

2384. High Field MR-Elastography of TBI Model
Thomas Boulet[1], Matthew L. Kelso[2], Shadi F. Othman[3]
[1]Engineering Mechanics, University of Nebraska-Lincoln, Lincoln, NE, United States; [2]Pharmacy Practice, University of Nebraska Medical Center, Omaha, NE, United States; [3]Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE, United States

2385. Three-Dimensional Stereotaxic Atlas of the Mozambique Tilapia (Oreochromis Mossambicus) using High-Resolution MRI.
Marleen Verhoye[1], José Miguel Simões[2,3], Magda Teles[2,3], Annemie Van Der Linden[1], Rui F. Oliviera[2,3]
[1]Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium; [2]Unidade de Investigação em Eco-Etologia, Instituto Superior de Psicologia Aplicada, Lisboa, Portugal; [3]Champalimaud Neuroscience Programme, Instituto Gulbenkian de Ciência, Oeiras, Portugal

2386. The Use of High-Resolution MRI to Evaluate Brain Injury in Newborn Mouse
Donghan Yang[1], William M. Spees[2], Joseph J. H. Ackerman[1,2], Philip Verghese[3], David M. Holtzman[3], Jeff J. Neil[2,3]
[1]Department of Chemistry, Washington University in St. Louis, St. Louis, MO, United States; [2]Department of Radiology, Washington University in St. Louis, St. Louis, MO, United States; [3]Department of Neurology, Washington University in St. Louis, St. Louis, MO, United States

2387. High Field MR Microscopy of Progressive Supranuclear Palsy in the *Ex Vivo* Human Globus Pallidus
Parastou Foroutan[1,2], Melissa E. Murray[3], Shinsuke Fujioka[4], Katherine J. Schweitzer[4], Dennis W. Dickson[3], Samuel Colles Grant[1,2], Zbigniew K. Wszolek[4]
[1]National High Magnetic Field Laboratory, the Florida State University, Tallahassee, FL, United States; [2]Chemical & Biomedical Engineering, the Florida State University, Tallahassee, FL, United States; [3]Department of Pathology & Neuroscience, Mayo Clinic, Jacksonville, FL, United States; [4]Department of Neurology, Mayo Clinic, Jacksonville, FL, United States

2388. Anatomical & Metabolic Changes in the Visual Cortex of Streptozotocin-Treated Type 1 Diabetic Rats
Mingming Huang[1], Lifeng Gao[1], Guanjun Zhu[1], Hao Lei[1]
[1]State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics, Wuhan Institute of Physics & Mathematics, Chinese Academy of Sciences, Wuhan, China, People's Republic of

2389. Optimized 3D MPRAGE: Depiction of Thalamic Substructures at 3T
Benjamin Bender[1], Constantin Mänz[1], Thomas Nägele[1], Uwe Klose[1]
[1]Department of Diagnostic & Interventional Neuroradiology, University Hospital Tübingen, Tübingen, Baden-Württemberg, Germany

2390. Evaluation of Brain Stem Anatomy with 3D-FLAIR Imaging at 3T
Mika Kitajima[1], Toshinori Hirai[1], Yoshinori Shigematsu[1], Hiroyuki Uetani[1], Koya Iwashita[1], Kousuke Morita[1], Masuma Akter[1], Yasuyuki Yamashita[1]
[1]Diagnostic Radiology, Kumamoto University, Kumamoto, Japan

2391. Cerebral Microbleeds on MRI: Comparison between 1.5 & 7 Tesla
Mandy M. A. Conijn[1], Mirjam I. Geerlings, Geert-Jan Biessels, Taro Takahara, Theo D. Witkamp, Jaco J. M. Zwanenburg, Peter R. Luijten, Jeroen Hendrikse
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

2392. Global Cerebral Metabolic Oxygen Consumption Rate & Cerebral Blood Flow Can Be Measured Reliably During Oxygen Inhalation
Naranjargal Dashdorj[1], Katherine Corrie[2], Antonio Napolitano[1], Samuel Wharton[3], Esben Thade Petersen[4], Ravi Mahajan[2], Dorothee P. Auer[1]
[1]Academic Radiology, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Division of Anaesthesia, University of Nottingham, Nottingham, United Kingdom; [3]School of Physics & Astronomy, University of Nottingham, Nottingham, United Kingdom; [4]National Neuroscience Institute, Singapore

Manganese Enhanced MRI

Exhibit Hall Wednesday 13:30-15:30

2393. Screening for Manganese-Binding Proteins in the Mouse Brain
Jacqueline A. Gleave[1], Brian J. Nieman[1]
[1]Mouse Imaging Centre, Toronto, Ontario, Canada

2394. Subcellular Distribution of Mn in Neurons Assessed by Synchrotron X-Ray Microprobe
Alexia Daoust[1,2], Sylvain Bohic[1,3], Emmanuel Luc Barbier[1,2]
[1]INSERM U836, Grenoble, France; [2]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [3]European Synchrotron Radiation Facility (ESRF), Grenoble, France

2395. TAT Conjugated MnO@PMAO for Molecular & Cellular MRI

Roger Prades[1], Shauna L, Quinn[2], Ernest Giralt[1], Erik M. Shapiro[2,3]
[1]Department of Chemistry, IRB Barcelona, Barcelona, Spain; [2]Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [3]Department of Biomedical Engineering, Yale University, New Haven, CT, United States

2396. Infusion-Based Manganese-Enhanced MRI: New Imaging Technique to Visualize the Mouse Brain
Stephanie I. Mok[1], Jeeva Munasinghe[2], Afonso C. Silva[2], W. Scott Young[1]
[1]National Institute of Mental Health, Bethesda, MD, United States; [2]National Institute of Neurological Disorders and Stroke, Bethesda, MD, United States

2397. Sex Difference of Regional Activation in the Rat Brain using Manganese-Enhanced Magnetic Resonance Imaging
Hengjun J. Kim[1], Youngkyu Song[1], Gyunggoo Cho[1], Namkug Kim[2]
[1]Division of Magnetic Resonance, Korea Basic Science Institute, Ochang, Chungbuk, Korea, Republic of; [2]Radiology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, Republic of

2398. Effect of Manganese Chloride on the Neurochemical Profile of the Rat Hypothalamus
Nathalie Just[1,2], Cristina Cudalbu[1], Hongxia Lei[1,2], Rolf Gruetter[1,3]
[1]LIFMET, CIBM/EPFL, Lausanne, Switzerland; [2]Department of Radiology, UNIL, Lausanne, Switzerland; [3]Department of Radiology, UNIL&HUG, Lausanne & Geneve, Switzerland

2399. Investigation of Hypothalamic Neuronal & Metabolic Mechanisms of Anorexia with Manganese-Enhanced MRI & Proton MR Spectroscopy
Nathalie Just[1,2], Rolf Gruetter[1,3]
[1]LIFMET, CIBM/EPFL, Lausanne, Switzerland; [2]Department of Radiology, UNIL, Lausanne, Switzerland; [3]Department of Radiology, UNIL& HUG, Lausanne & Geneve, Switzerland

2400. *In Vivo* Detection of Glial Activity After Transient Forebrain Ischemia using Manganese-Enhanced MRI
Yuko Kawai[1], Yuko Yasuda[2], Narito Tateishi[2], Masahiro Umeda[1], Yasuharu Watanabe[1], Toshihiro Higuchi[3], Seiichi Furuya[4], Shoji Naruse[2,5], Setsuya Fujita[2], Chuzo Tanaka[3]
[1]Medical Informatics, Meiji University of Integrative Medicine, Kyoto, Japan; [2]Basic Research, Louis Pasteur Center for Medical Research, Kyoto, Japan; [3]Neurosurgery, Meiji University of integrative Medicine, Kyoto, Japan; [4]Radiology, Japanese Red Cross Kyoto Daiichi Hospita, Kyoto, Japan; [5]Radiology, Kyoto Prefectural University of Medicine, Kyoto, Japan

2401. Dose Dependence of T_1 & Phase Contrast Following Mn^{2+} Systemic Administration at 14.1T
Rajika Maddage[1], José Pedro Marques[2,3], Rolf Gruetter[2,4]
[1]Laboratory for Functional & Metabolic Imaging , Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, University of Lausanne, Lausanne, Switzerland; [4]Department of Radiology, University of Lausanne & Geneva, Switzerland

2402. Dynamic Properties of Manganese-Alginate Gels for Controlled-Release of Mn^{2+}
Øystein Olsen[1], Yanna Sandvig[2], Yrr Mørch[3], Marte Thuen[2], Christian Brekken[2]
[1]Department of Technology, Sør-Trøndelag University College, Trondheim, Norway; [2]Department of Circulation & Medical Imaging, Norwegian University of Science & Technology, Trondheim, Norway; [3]Department of Biotechnology, Norwegian University of Science & Technology, Trondheim, Norway

2403. Manganese-Enhanced MRI of Bilateral Retinas in Rat: Flickering White Light Versus Dark
Bryan H. De La Garza[1], Damon P. Cardenas[1], Yen-Yu Ian Shih[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

2404. Topical Administration of Mn2+ for MEMRI May Not Enter Vitreous Space to Reach Retina
Bruce W. Campbell[1], Eric Won, Hsiao-Fang Liang[2], Shu-Wei Sun[3]
[1]Clinical Laboratory Science, School of Allied Health, Loma Linda University, Loma Linda, CA, United States; [2]Biophysics & Bioengineering, Loma Linda University; [3]Biophysics & Bioengineering, Loma Linda University, Loma Linda, CA, United States

2405. *In Vivo* MEMRI of the Visual Projection of Mice using a Clinical 3T Whole Body Scanner
Karl-Heinz Herrmann[1], Alexandra Kretz[2], Ronny Haenold[3], Ines Krumbein, Falk Weih[3], Otto W. Witte[2], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Germany; [2]Clinic of Neurology, Jena University Hospital, Jena, Germany; [3]Research Group Immunology, Leibnitz Insitute for Age Research, Jena, Germany

2406. MEMRI of the Projections of Periaqueductal Gray Matter to Pontine Reticular Nucleus in Mice
Xiaowei Zhang[1], Russell E. Jacobs[1]
[1]Biological Imaging Center, California Institute of Technology, Pasadena, CA, United States

2407. Comparing Topical Administration & Intravitreal Injection of Mn_2+ for MEMRI on Mouse Visual Pathway
Bruce W. Campbell[1], Eric Won, Chantal Lunderville, Hsiao-Fang Liang[2], Shu-Wei Sun[3,4]

[1]Clinical Laboratory Science, School of Allied Health, Loma Linda University, Loma Linda, CA, United States; [2]Biophysics & Bioengineering, Loma Linda University; [3]Biophysics & Bioengineering, Loma Linda University, Loma Linda, CA, United States; [4]Radiation Medicine, Loma Linda University

2408. ***In Vivo*** **Mapping of Retinal Projections in Rat, Gerbil & Mouse Brains using MEMRI**

Kevin C. Chan[1,2], Joe S. Cheng[1,2], Iris Y. Zhou,[2], Condon Lau[1,2], Kwok Fai So[3,4], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, The University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, The University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [3]Department of Anatomy, The University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [4]State Key Laboratory of Brain & Cognitive Sciences, The University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of

Human Brain Tumors

Exhibit Hall Thursday 13:30-15:30

2409. **Quantification of Edema Reduction using Differential Quantitative T_2 (DQT2) Mapping in Recurrent Glioblastoma Treated with Bevacizumab**

Benjamin M. Ellingson[1], Timothy F. Cloughesy[2], Albert Lai[2], Phioanh L. Nghiemphu[2], Whitney B. Pope[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California Los Angeles, Los Angeles, CA, United States

2410. **CIMPLE Maps Derived from Serial Diffusion MR Images in Recurrent Glioblastoma Treated with Bevacizumab**

Benjamin M. Ellingson[1], Timothy F. Cloughesy[2], Albert Lai[2], Phioanh L. Nghiemphu[2], Whitney B. Pope[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurology, University of California Los Angeles, Los Angeles, CA, United States

2411. **Evaluation of Changes in Gliomas Structural Features After Chemotherapy using DTI-Based Functional Diffusion Maps (FDMs): A Preliminary Study with Intraoperative Correlation.**

Antonella Castellano[1], Marina Donativi[2,3], Lorenzo Bello[4], Giorgio De Nunzio[2,3], Marco Riva[4], Gabriella Pastore[2], Giuseppe Casaceli[4], Roberta Rudà[5], Riccardo Soffietti[5], Giuseppe Scotti[1], Andrea Falini[1]
[1]Neuroradiology Unit & CERMAC, Scientific Institute & University Vita-Salute San Raffaele, Milan, Italy; [2]Department of Materials Science, University of Salento, Lecce, Italy; [3]INFN (National Institute of Nuclear Physics), Lecce, Italy; [4]Neurosurgery, Department of Neurological Sciences, University of Milano, Milan, Italy; [5]Neuro-Oncology, Department of Neuroscience & Oncology, University of Torino, Turin, Italy

2412. **Combination of Sparse & Wrapper Feature Selection from Multi-Source Data for Accurate Brain Tumor Typing**

Vangelis Metsis[1], Ovidiu C. Andronesi[2,3], Heng Huang[1], Michael N. Mindrinos[4], Laurence G. Rahme[5], Fillia Makedon[1], Aria A. Tzika[2,3]
[1]Computer Science & Engineering, University of Texas at Arlington, Arlington, TX, United States; [2]NMR Surgical Laboratory, Dept. of Surgery, Harvard Medical School & Massachusetts General Hospital, Boston, MA, United States; [3]Athinoula A. Martinos Center of Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [4]Dept. of Biochemistry, Stanford University School of Medicine, Stanford, CA, United States; [5]Molecular Surgery Laboratory, Dept. of Surgery, Massachusetts General Hospital & Shriners Burn Institute, Harvard Medical School, Boston, MA, United States

2413. **Preoperative Grading & Subtyping of Meningiomas using Diffusion Tensor Imaging**

Sumei Wang[1], Sungheon Kim[2], Yu Zhang[1], Lu Wang[1], Edward B. Lee[3], Peter Syre[4], John Y. K. Lee[4], Harish Poptani[1], Elias R. Melhem[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, New York University School of Medicine, New York, NY, United States; [3]Pathology & Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, United States; [4]Neurosurgery, University of Pennsylvania, Philadelphia, PA, United States

2414. **Diffusion Tensor Imaging May Be Useful to Differentiate between Intracranial Dural Metastases & Meningiomas**

Xiang Liu[1], Wei Tian[2], Sven Ekholm[2]
[1]Department of Imaging Sciences, University of Rochester Medical Center, Rochester, NY, United States; [2]Department of Imaging Sciences, University of Rochester Medical Cente, Rochester, NY, United States

2415. **Metabolic Differences between Oligodrendroglial Brain Tumors with & Without $^{1}p^{19}q$ Deletion**

Kenneth James Smith[1], Mitchel Berger[2], Susan Chang[3], Rachel Smith, Tracy Richmond McKnight
[1]Radiology & Biomedical Imaging, University of California San Francisco , San Francisco, CA, United States; [2]Neurosurgery, University of California San Francisco; [3]Neuro Oncology, University of California San Francisco

2416. Perfusion Weighted Imaging Directed Proton MR Spectroscopy: A New Approach to Identify Oligodendroglial Genotypes

Sanjeev Chawla[1], Yu Zhang[2], Jaroslaw Krejza[1], Sumei Wang[1], Gurpreet Kapoor[3], Sangeeta Chaudhary[1], Arastoo Vossough[1], Donald O' Rourke[3], Elias R. Melhem[1], Harish Poptani[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania,, Philadelphia, PA, United States; [3]Neurosurgery, University of Pennsylvania, Philadelphia, PA, United States

2417. Exploration of Multi-Exponential Decomposition of T_2 Decay in Gliomas & Its Implications on Targeting for Radiotherapy

Keith Wachowicz[1,2], B. Gino Fallone[2,3]

[1]Medical Physics, Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Medical Physics, Cross Cancer Institute, Alberta Health Services, Edmonton, Alberta, Canada; [3]Departments of Physics & Oncology, University of Alberta, Edmonton, Alberta, Canada

2418. MR Follow-Up of Glioblastoma Patients Treated with Dendritic Cell Immunotherapy: The Role of DWI & PWI

Matej Vrabec[1], Sofie Van Cauter[2], Uwe Himmelreich[3], Stefaan W. Van Gool[2], Stefan Sunaert[2], Steven De Vleeschouwer[2], Dušan Šuput[4], Philippe Demaerel[2]

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2419. Comparison of Perfusion MRI-Based Methods to Estimate Histologic Tumor Fraction & Predict Survival in Recurrent GBM

Leland S. Hu[1,2], Jennifer M. Eschbacher[3], Amylou C. Dueck[4], Seban Liu[5], Kris A. Smith[6], Kasuen Kotagama[5], Stephen W. Coons[3], Joseph E. Heiserman[7], John P. Karis[7], Todd Jensen[8], William Shapiro[9], Josef Debbins[5], Peter Nakaji[6], Burt G. Feuerstein[9], Leslie C. Baxter[5]

[1]Radiology, Mayo Clinic Arizona, Phoenix, AZ, United States; [2]Radiology, Barrow Neurological Institute, Phoenix, AZ, United States; [3]Neuropathology, Barrow Neurological Institute; [4]Biostatistics, Mayo Clinic Arizona; [5]Keller Center for Imaging Innovation, Barrow Neurological Institute; [6]Neurosurgery, Barrow Neurological Institute; [7]Neuroradiology, Barrow Neurological Institute; [8]Imaging Biometrics, LLC; [9]Neurology, Barrow Neurological Institute

2420. T_1, T_2 & ADC as Imaging Biomarkers for Tumor Treatment Response in Brain Tumors

Patrik Brynolfsson[1], Thomas Asklund[2], Anders Garpebring[1], Tufve Nyholm[2]

[1]Umeå University, Umeå, Sweden; [2]Department of Oncology, Norrland University Hospital, Umeå, Sweden

2421. Differentiating between Recurrent Tumor & Post-Treatment Radiation Effects using High-Order Diffusion Imaging

Chu-Yu Lee[1], Leland Hu[2], Leslie C. Baxter[3], Josef P. Debbins[3]

[1]Electrical Engineering, Arizona State University, Tempe, AZ, United States; [2]Department of Radiology, Mayo Clinic Arizona, Phoenix, AZ, United States; [3]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2422. T_1 Intensity: An Indication of ^{1}p ^{19}q Deletion in Oligodendroglial Neoplasms

Carolyn Branecky[1], Devyani Bedekar[2], Kathleen Schmainda[3]

[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Translational Brain Tumor Research Program, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Radiology & Biophysics, Medical College of Wisconsin

2423. ADC-FLAIR Mismatch Excluding Enhancement (AFMEE), a Potential Biomarker of Tumor Invasion

Peter Sherman LaViolette[1], Alex D. Cohen[1], Scott D. Rand[2], Wade Mueller[3], Kathleen M. Schmainda[2]

[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States

2424. *In-Vivo* Biomarkers for Brain Tumor Vasculature & Cellularity Validated with *Ex-Vivo* Tissue

Peter Sherman LaViolette[1], Elizabeth J. Cochran[2], Mona Al-Gizawiy[3], Scott D. Rand[3], Mark G. Malkin[4], Jennifer Connelly[4], Wade Mueller[5], Kathleen M. Schmainda[3]

[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Pathology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [5]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States

2425. Tracking the "DSC-Based Perfusion Abnormality" & Contrast Enhancing Lesion in Patients Newly Diagnosed with GBM Treated with Upfront Anti-VEGF Therapy

Emma Essock-Burns[1,2], Janine M. Lupo[2], Laleh Jalilian[2], Michael D. Prados[3], Soonmee Cha[2,3], Susan M. Chang[3], Sarah J. Nelson[1,4]

[1]UCSF/UCB Joint Graduate Group in Bioengineering, University of California San Francisco, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [3]Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, United States; [4]Department of Bioengineering & Therapeutic Sciences, University of California San Francisco, San Francisco, CA, United States

2426. Demonstration of the Relationship between Oxygen Delivery & Contrast Agent Delivery in Human Glioma using Combined OEMRI & DCE-MRI
Katherine Frances Holliday[1,2], Gerard Thompson[1,2], Samantha Jane Mills[1,2], Giovanni Buonaccorsi[1,2], Alan Jackson[1,2], Josephine H. Naish[1,2], Geoffrey J. M. Parker[1,2]
[1]Imaging Sciences, The University of Manchester, Manchester, United Kingdom; [2]University of Manchester Biomedical Imaging Institute, Manchester, United Kingdom

2427. A Fully Automatic Double-Echo DSC-MRI Routine Can Predict Patient Outcome After a Single Dose of Cediranib in Recurrent Glioblastoma Patients
Kyrre E. Emblem[1,2], Ronald J, H. Borra[1], Kim Mouridsen[1], Atle Bjornerud[2,3], Rakesh K. Jain[4], Tracy T. Batchelor[5], Gregory Sorensen[1]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, United States; [2]The Interventional Center, Oslo University Hospital - Rikshospitalet, Oslo, Norway; [3]Department of Physics, University of Oslo, Oslo, Norway; [4]Department of Radiation Oncology, Massachusetts General Hospital, Boston, MA, United States; [5]Pappas Center for Neuro-Oncology, Massachusetts General Hospital

2428. Initial Experience with Vessel Size Imaging in Recurrent Glioblastoma Multiforme using a Multiple Spin & Gradient Echo (SAGE) Perfusion Bolus Contrast Sequence
Jalal Badi Andre[1], Heiko Schmiedeskamp[1], Greg Zaharchuk[1], Matus Straka[1], Thomas Christen[1], Lawrence Recht[2], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Neuro-Oncology, Stanford University, Stanford, CA, United States

2429. Presurgical Assessment of the Feeding Vasculature in Extra-Axial Tumors with Superselective Arterial Spin Labeling
Michael Helle[1], Susanne Rüfer[1], Matthias van Osch[2], David Gordon Norris[3,4], Olav Jansen[1], Arya Nabavi[5]
[1]Institute for Neuroradiology, Christian-Albrechts-Universität, UK-SH, Kiel, Germany; [2]C.J. Gorter Center for High Field MRI, Department of Radiology, Leiden University Medical Center, Leiden, Netherlands; [3]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands; [4]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [5]Clinic for Neurosurgery, Christian-Albrechts-Universität, UK-SH, Kiel, Germany

2430. Pitfalls of Thresholding Statistical Maps in Presurgical fMRI Mapping
Krzysztof Gorgolewski[1], Mark Bastin[2], Laura Rigolo[3], H. A. Soleiman[4], Cyril Pernet[2], Amos Storkey[1], Alexandra J. Golby[3]
[1]School of Informatics, University of Edinburgh, Edinburgh, United Kingdom; [2]Department of Medical Physics, University of Edinburgh, Edinburgh, United Kingdom; [3]Department of Neurosurgery, Harvard Medical School, Cambridge, MA, United States; [4]Department of Clinical Neurosciences, University of Edinburgh, Edinburgh, United Kingdom

2431. Water Chemical Shift Differences Detected in Childhood Brain Tumours May Indicate Temperature Variations & Fast Exchange Effects
Nigel Paul Davies[1], Maryam Kalantari Saghafi[2], Martin Wilson[3], Yu Sun[3], Theodoros N. Arvanitis[4], Andrew C. Peet[3]
[1]Medical Physics, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom; [2]School of Physics & Astronomy, University of Birmingham, Birmingham, United Kingdom; [3]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [4]Department of Electrical, Electronic, & Computer Engineering, University of Birmingham, Birmingham, United Kingdom

2432. Evaluating Radiation-Induced White Matter Changes in Patients with Recurrent Malignant Gliomas Under Treatment of Stereotactic Radiosurgery using Diffusion Tensor Imaging: Initial Results
Zheng Chang[1], John P. Kirkpatrick[1], Zhiheng Wang[1], Jing Cai[1], Fang-Fang Yin[1]
[1]Department of Radiation Oncology, Duke University, Durham, NC, United States

2433. Assessment of Tumor Perfusion by DSC MRI During Radiation Therapy in Children with Diffuse Intrinsic Pontine Glioma
Adam M. Winchell[1,2], Mehmet Kocak[3], Hoang-Vu Tran[1], Ruitian Song[1], Ralf B. Loeffler[1], Alberto Broniscer[4], Claudia M. Hillenbrand[1]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Biomedical Engineering , University of Memphis, Memphis, TN, United States; [3]Biostatistics, St. Jude Children's Research Hospital, Memphis, TN, United States; [4]Oncology, St. Jude Children's Research Hospital, Memphis, TN, United States

Head & Neck MRI (including Cancer)

Exhibit Hall Monday 14:00-16:00

2434. MR Based Quantification of Global Cerebral Metabolic Rate of Oxygen Consumption During Hypercapnia
Varsha Jain[1], Michael Langham[1], Thomas T. Floyd[2], Jeremy F. Magland[1], Felix W. Wehrli[1]

[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Anesthesiology, University of Pennsylvania, Philadelphia, PA, United States

2435. Dark Blood T_2* Maps in the Carotid Artery

Rexford D. Newbould[1], Andrew P. Brown[1], David R. L. Owen[1], Joseph Shalhoub[2], Giulio Gambarota[1]
[1]GSK Clinical Imaging Centre, Hammersmith Hospital, London, United Kingdom; [2]Department of Vascular Surgery, Imperial College London, London, United Kingdom

2436. Quantification of Regional Cerebral Metabolic Rate of Oxygen Consumption in the Middle Cerebral Artery Territory

Varsha Jain[1], Gaurav Jain[2], Jeremy F. Magland[1], Felix W. Wehrli[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Neurological Surgery, Albert Einstein College of Medicine, Bronx, NY, United States

2437. DWI of Head & Neck Cancer the Effect of B Values on ADC Measurements

Kwok Keung Chow[1], David Ka Wai Yeung[1], Queenie Chan[2], Ann D. King[1]
[1]Department of Imaging & Interventional Radiology, The Chinese University of Hong Kong, Hong Kong, Hong Kong; [2]Philips Healthcare

2438. Measuring Cortical Thickness in Brain MRI Volumes to Detect Focal Cortical Dysplasia

Ljiljana Platisa[1], Anthony De Smet[1], Ivana Despotovic[1], Asli Kumcu[1], Karel Deblaere[2], Aleksandra Pizurica[1], Ewout Vansteenkiste[1], Wilfried Philips[1]
[1]TELIN-IPI-IBBT, Ghent University, Ghent, Belgium; [2]Department of Neuroradiology, Ghent University Hospital, Ghent, Belgium

2439. DCE & DWI Functional Parameters as Indicators of Response to Radical Chemoradiation in Head & Neck Cancer

Marco Borri[1], Maria Schmidt[1], Ceri Powell[2], Dow -Mu Koh[1,3], Angela Riddell[3], K. Harrington[2], Kate Newbold[2], James Darcy[1], Martin O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]Head & Neck Department, The Royal Marsden Hospital; [3]Radiology Department, The Royal Marsden Hospital

2440. Improved Fat Suppression with the Use of CHESS & Natural Rubber Pad

Uten Yarach[1], Suwit Saekho[1,2]
[1]Radiological Technology, Chiang Mai University, Muang, Chiang Mai, Thailand; [2]Biomedical Engineering Center, Chiang Mai University, Thailand

2441. Temporal Evolution of the Irradiated Parotid Glands: Volume & ADC Value

Chun-Jung Juan[1], Cheng-Chieh Cheng[2], Hsiao-Wen Chung[1,2], Yee-Min Jen[3], Hing-Chiu Chang[2,4], Su-Chin Chiu[2], Cheng-Yu Chen[1], Chun-Jen Hsueh[1], Yaoh-Shiang Lin[5], Guo-Shu Huang[1]
[1]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan; [2]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Radiation Oncology, Tri-Service General Hospital, Taipei, Taiwan; [4]Applied Science Laboratory, GE Healthcare, Taipei, Taiwan; [5]Department of Otorhinolaryngology-Head & Neck Surgery, Tri-Service General Hospital, Taipei, Taiwan

2442. Probing the Radiation-Induced Changes of Extravascular Extracellular Space of Parotid Glands using DCE & DW MRI

Cheng-Chieh Cheng[1], Chun-Jung Juan[2], Hsiao-Wen Chung[1], Yee-Min Jen[3], Hing-Chiu Chang[1,4], Su-Chin Chiu[1], Cheng-Yu Chen[2], Chun-Jen Hsueh[2], Yaoh-Shiang Lin[5], Guo-Shu Huang[2]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan; [3]Department of Radiation Oncology, Tri-Service General Hospital, Taipei, Taiwan; [4]Applied Science Laboratory, GE Healthcare, Taipei, Taiwan; [5]Department of Otorhinolaryngology-Head & Neck Surgery, Tri-Service General Hospital, Taipei, Taiwan

2443. H-MRS Study of the Neurochemical Effects of Interferon-α Treatment in Patients with Chronic Hepatitis C

Matthew Taylor[1], Jamie Near[2], Philip Cowen[1]
[1]Department of Psychiatry, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom

2444. Automated Analysis of Craniofacial Morphology using Magnetic Resonance Images

M. Mallar Chakravarty[1,2], Rosanne Aleong[3], Gabriel Leonard[4], Michel Peron[5], G. Bruce Pike[4], Louis Richer[6], Suzanne Veillet[5], Zdenka Pausova[7], Tomas Paus[3,7]
[1]Rotman Research Institute, Baycrest , Toronto, Ontario, Canada; [2]Mouse Imaging Centre, The Hospital for Sick Children, Toronto, Ontario, Canada; [3]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada; [4]Montréal Neurological Institute, McGill University, Montréal, Québec, Canada; [5]CÉGEP de Jonquière, Jonquière, Quebec, Canada; [6]Département des sciences de l'éducation et de psychologie, Université du Québec à Chicoutimi, Chicoutimi, Québec, Canada; [7]School of Psychology, University of Nottingham, Nottingham, United Kingdom

2445. Volume Shrinkage, Perfusion & Diffusion Alterations of Irradiated Parotid Glands

Cheng-Chieh Cheng[1], Chun-Jung Juan[2], Hsiao-Wen Chung[1], Yee-Min Jen[3], Hing-Chiu Chang[1,4], Su-Chin Chiu[1], Cheng-Yu Chen[2], Chun-Jen Hsueh[2], Yaoh-Shiang Lin[5], Guo-Shu Huang[2]

[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan; [3]Department of Radiation Oncology, Tri-Service General Hospital, Taipei, Taiwan; [4]Applied Science Laboratory, GE Healthcare, Taipei, Taiwan; [5]Department of Otorhinolaryngology-Head & Neck Surgery, Tri-Service General Hospital, Taipei, Taiwan

2446. Tumor Diffusion & Metabolism in Head & Neck Cancer: Pretreatment Multimodality Imaging with DW-MRI & ^{18}F-FDG PET

Jacobus F. A. Jansen[1], Heiko Schoder[2], Yonggang Lu[2], Hilda E. Stambuk[2], Dara Srisaranard[2], Nancy Y. Lee[2], Snehal G. Patel[2], Jatin P. Shah[2], Jason A. Koutcher[2], Amita Shukla-Dave[2]

[1]Maastricht University Medical Center, Maastricht, Netherlands; [2]MSKCC, NY, United States

2447. Evaluation of Artefacts Caused by Different Cochlear Implants at 1.5 T & 3T

Irina Mader[1], Markus Treier[1], Christian Schild[2], Hansjörg Mast[1], Stefan Zwick[3], Christian Taschner[1], Susan Arndt[2]

[1]Neuroradiology, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Otorhinolaryngology, University Medical Center Freiburg, Freiburg, Germany; [3]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2448. Changes in the Brain More Than 10 Years After Liver Transplantation

Vít Herynek[1], Monika Dezortová[1], Dita Wagnerová[1], Irena Hejlová[2], Milan Hájek[1]

[1]MR-unit, Department of Diagnostic & Interventional Radiology, Institute for Clinical & Experimental Medicine, Prague, Czech Republic; [2]Hepatogastroenterology Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

2449. Neuroimaging of Mild Traumatic Brain Injury at Acute Stage

Zhifeng Kou[1], Randall Benson[2], Ramtilak Gattu[3], Jie Yang[3], Valerie Mika[4], Robert Welch[4], Scott Millis[5], E. Mark Haacke[1]

[1]Radiology & Biomedical Engineering, Wayne State University, Detroit, MI, United States; [2]Neurology, Wayne State University, Detroit, MI, United States; [3]Radiology, Wayne State University, Detroit, MI, United States; [4]Emergency Medicine, Wayne State University, Detroit, MI, United States; [5]Physical Medicine and Rehabilitation, Wayne State University, Detroit, MI, United States

2450. MR Imaging of the Neck at 3 Tesla using the Periodically Rotated Overlapping Parallel Lines with Enhanced Reconstruction (PROPELLER) (BLADE) Sequence Compared with T_2-Weighted Fast Spin-Echo Sequence

Yoshimitsu Ohgiya[1], Jumpei Suyama[1], Syouei Sai[1], Masaaki Kawahara[1], Jirou Munechika[1], Makoto Saiki[1], Noritaka Seino[1], Masanori Hirose[1], Takehiko Gokan[1]

[1]Showa University School of Medicine, Tokyo, Japan

2451. A Magnetic Resonance Imaging Study of Cortical Thickness & Volumetric Changes in Hepatitis C: Before & After Interferon Therapy

Manoj K. Sarma[1], M. Albert Thomas[1], Rajakumar Nagarajan[1], April Thames[2], Steven Castellon[3], Elyse Singer[4], Jason Smith[5], Linda Croad[6], Lavezza Bhatti[7], Ann Ragin[8], Charles Hinkin[3]

[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Psychiatry, UCLA School of Medicine, Los angeles, CA, United States; [3]Psychiatry, UCLA School of Medicine, Los Angeles, CA, United States; [4]Neurology, UCLA School of Medicine, Los Angeles, CA, United States; [5]VA Greater Los Angeles Healthcare Service, Los Angeles, CA, United States; [6]Kaiser Permanente Lancaster, CA, United States; [7]AIDS Healthcare Foundation, Los Angeles, CA, United States; [8]Radiology, Northwestern University, Chicago, IL, United States

2452. Correlation of Apparent Diffusion Coefficients Measured by Standard (1000 S/mm2) & High B-Value (2000 S/mm2) Diffusion MR Imaging & SUV from FDG PET/CT in Head & Neck Cancer

Seung Hong Choi[1], Chul-Ho Sohn[1], Ji-Hoon Kim[1], Kee-Hyun Chang[1]

[1]Department of Radiology, eoul National University Hospital, Seoul, Korea, Republic of

2453. Dynamic Imaging of the Vocal Tract using a Cine-MRI Sequence: Protocol Optimization & Evaluation

Guillaume Gilbert[1,2], Jon Nissenbaum[3], Gilles Beaudoin[1]

[1]Department of Radiology, Centre Hospitalier de l'Université de Montréal, Montreal, QC, Canada; [2]MR Clinical Science, Philips Healthcare, Cleveland, OH, United States; [3]Department of Languages, Literatures & Linguistics, Syracuse University, Syracuse, NY, United States

2454. Time-Interleaved Imaging of Arbitrary Scan Planes Applied to Real-Time Speech MRI

Yoon-Chul Kim[1], Michael I. Proctor[1], Shrikanth S. Narayanan[1], Krishna S. Nayak[1]

[1]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2455. Determination of Optical Properties of the Rat Eye using *In Vivo* High-Resolution MR Imaging

Wilfried Reichardt[1], Christian van Oterendorp[2], Dominik von Elverfeldt[1], Luis Diaz-Santana[3]

[1]Dept. of Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]University Eye Hospital, University Medical Center, Freiburg, Germany; [3]Optometry & Visual Science, City University London, London, United Kingdom

2456. **Kurtosis Analysis for DWI Improves Prediction of Short-Term Response in Head & Neck Cancer**
Jacobus F. A. Jansen[1], Yonggang Lu[2], Hilda E. Stambuk[2], Nancy Y. Lee[2], Jason A. Koutcher[2], Amita Shukla-Dave[2]
[1]Maastricht University Medical Center, Maastricht, Netherlands; [2]MSKCC, NY, United States

2457. **Evaluation of Pretreatment & Early Response DCE MRI in Head & Neck Cancer: Prediction of Short-Term Outcome**
Jacobus F. A. Jansen[1], Yonggang Lu[2], Hilda E. Stambuk[2], Nancy Y. Lee[2], Jason A. Koutcher[2], Amita Shukla-Dave[2]
[1]Maastricht University Medical Center, Maastricht, Netherlands; [2]MSKCC, NY, United States

Spinal Cord

Exhibit Hall Tuesday 13:30-15:30

2458. ***In Vivo*** **Myelin Water Imaging in Rat Spinal Cord**
Piotr Kozlowski[1,2], Andrew C. Yung[1], Henry S. Chen[1], Jie Liu[2], Wolfram Tetzlaff[2]
[1]UBC MRI Research Centre, Vancouver, BC, Canada; [2]ICORD, Vancouver, BC, Canada

2459. ***Ex Vivo*** **Myelin Water & DTI Measurements of SKP-SC Transplanted Cell Therapy in Contused Rat Spinal Cord: Correlation with Histology**
Andrew C. Yung[1], Peggy Assinck[2], Leo Wu[2], Jie Liu[2], Wolfram Tetzlaff[2], Piotr Kozlowski[1,2]
[1]UBC MRI Research Centre, University of British Columbia, Vancouver, BC, Canada; [2]ICORD, Vancouver, BC, Canada

2460. **Prospects for Quantitative Imaging of Myelin with Dual-Echo Short Inversion Time 3D UTE MRI**
Michael J. Wilhelm[1], Henry H. Ong[1], Suzanne L. Wehrli[2], Ping-Huei Tsai[1], David B. Hackney[3], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]NMR Core Facility, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [3]Department of Radiology & Neurology, Harvard Medical School, Beth Israel Deaconess Medical Center, Boston, MA, United States

2461. ***In Vivo*** **Rat Spinal Cord Relaxation Times Measured at 4.7 T & 11.1 T**
Garrett William Astary[1], Xiaoming Chen[2], Malisa Sarntinoranont[2], Thomas Harold Mareci[3]
[1]Biomedical Engineering, University of Florida, Gainesville, FL, United States; [2]Mechanical & Aerospace Engineering, University of Florida; [3]Biochemistry & Molecular Biology, University of Florida

2462. **MR Nerve Imaging using Blood Suppressed 3D T_2 Weighted Imaging with Uniform Fat Suppression**
Ajit Shankaranarayanan[1], Xhikui Xiao[2], Hao Shen[2], Ananth Madhuranthakam[3]
[1]Global Applied Science Lab, GE Healthcare, Menlo Park, CA, United States; [2]Global Applied Science Lab, GE Healthcare, Beijing, China, People's Republic of; [3]Global Applied Science Lab, GE Healthcare, Boston, MA, United States

2463. **Intra Voxel Incoherent Motion (IVIM) MRI of the Human Spinal Cord: Preliminary Results & Potentiality**
Virginie Callot[1], Guillaume Duhamel[1], Pauline Moulin[1], Patrick J. Cozzone[1]
[1]Centre de Résonance Magnétique Biologique et Médicale (CRMBM, UMR 6612 CNRS), Marseille, France

2464. ***In Vivo*****, High Resolution Diffusion Tensor Imaging (DTI) on Naive Rat Spinal Cord: From Cervial to Sacral Cord**
Joong Hee Kim[1], Kathleen E. Chaffee[1], Sheng-Kwei Song[1]
[1]Radiology, Washington University, St. Louis, MO, United States

2465. **Diffusion & Magnetization Transfer Imaging Detects Spinal Cord Lesions in Amyotrophic Lateral Sclerosis**
Pierre-Francois Pradat[1], Julien Cohen-Adad[2,3], Mohamed Mounir Elmendili[2], Stephane Lehericy[4], Sophie Blancho[5], Vincent Meininger[6], Serge Rossignol[7], Habib Benali[2]
[1]Département des Maladies du Système Nerveux, Hôpital de la Pitié-Salpétrière, Paris, France; [2]UMR-678, INSERM-UPMC, Pitié-Salpêtrière Hospital, Paris, France; [3]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [4]Centre for Neuroimaging Research (CENIR), CRICM,INSERM U975, CNRS UMR 7225, , Pitié-Salpêtrière Hospital, Paris; [5]Institut pour la Recherche sur la Moelle Epinière et l'Encéphale, France; [6]Département des Maladies du Système Nerveux, Pitié-Salpêtrière Hospital, France; [7]GRSNC, Faculty of Medicine, Université de Montréal, Montreal, Canada

2466. **An Investigation of Motion Correction Algorithms for Pediatric Spinal Cord DTI in Normals & Patients with SCI**
Nadia Barakat[1], Devon Middleton[1], Louis Hunter[2], Jürgen Finsterbusch[3], Scott Faro[1], Mj Mulcahey[2], Amer Samdani[2], Feroze Mohamed[1]
[1]Temple University, Philadelphia, PA, United States; [2]Shriners Hospital For Children; [3]University Medical Center Hamburg-Eppendorf, Hamburg, Germany

2467. **MRI of Neural & Vascular Injury Pattern in Contusion Spinal Cord Injury**
Tsang-Wei Tu[1,2], Philip V. Bayly[1], Sheng-Kwei Song[2]

[1]Mechanical Engineering & Materials Science, Washington University in St. Louis, Saint Louis, MO, United States; [2]Radiology, Washington University in St. Louis, Saint Louis, MO, United States

2468. Vascular Stabilization with Angiopoitin-1 Improves Outcome in Experimental Spinal Cord Injury
Juan Herrera[1], Laura M. Sundberg[1], Ponnada A. Narayana[1]
[1]Department of Diagnostic & Interventional Imaging, UTHealth Medical School, Houston, TX, United States

2469. Measures of Quantitative MRI Correlate with Neurological Outcomes in Patients After Acute Spinal Cord Injury
Yunyan Zhang[1], V. Wee Yong[1], R. John Hurlbert[1], Steve Casha[2]
[1]University of Calgary, Calgary, AB, Canada; [2]Dalhousie University, Halifax, Nova Scotia, Canada

2470. Grey Matter & White Matter Volume Measurements in the Cervical Cord *In-Vivo*: A Pilot Study with Application to Magnetisation Transfer
Marios C. Yiannakas[1], Hugh Kearney[1], Rebecca S. Samson[1], Declan T. Chard[1], Olga Ciccarelli[2], David H. Miller[1], Claudia A. M. Wheeler-Kingshott[1]
[1]Neuroinflammation, UCL Institute of Neurology, London, United Kingdom; [2]Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

2471. Novel Lesions in the Spinal Cord of the EAE Model of Multiple Sclerosis Identified with SWI MRI
Nabeela Nathoo[1,2], Ying Wu[1,3], Voon Wee Yong[4,5], Samuel Barnes[6], Andre Obenaus[6,7], Jeff F. Dunn[1,3]
[1]Experimental Imaging Centre, University of Calgary, Calgary, Alberta, Canada; [2]Neuroscience, University of Calgary, Calgary, Alberta, Canada; [3]Radiology, University of Calgary, Calgary, Alberta, Canada; [4]Clinical Neurosciences, University of Calgary, Calgary, Alberta, Canada; [5]Hotchkiss Brain Institute, Calgary, Alberta, Canada; [6]Biophysics and Bioengineering, Loma Linda University, Loma Linda, CA, United States; [7]Radiation Medicine, Loma Linda University, Loma Linda, CA, United States

Developing Brain

Exhibit Hall Wednesday 13:30-15:30

2472. Distinctive Temporal Changes of FA at Different Cortical Areas of Human Fetal Brain
Hao Huang[1], Goran Sedmak[2], Tina Jeon[1], Paul Yarowsky[3], Nenad Sestan[2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Neurobiology, Yale University, New Haven, CT, United States; [3]Department of Pharmacology & Experimental Therapeutics, University of Maryland, Baltimore, MD, United States

2473. Regional Evaluation of White Matter Injury in Children Treated with Cranial-Spinal Radiation for Medulloblastomas
Colleen Dockstader[1], Todd Cunningham[1], Eric Bouffet[2], Nicole Law[1], Normand Laperriere[3], Suzanne Laughlin[4], Douglas Strother[5], Christopher Fryer[6], Marie-Eve Briere[5], Juliette Hukin[7], Dina McConnell[8], Fang Liu[1], Conrad Rockel[9], Donald Mabbott[1]
[1]Psychology, The Hospital for Sick Children, Toronto, Ontario, Canada; [2]Haematology/Oncology, The Hospital for Sick Children, Toronto, Ontario, Canada; [3]Haematology/Oncology, Princess Margaret Hospital, Toronto, Ontario, Canada; [4]Diagnostic Imaging, The Hospital for Sick Children, Toronto, Ontario, Canada; [5]Hematology, Oncology, & Transplant Program, Alberta Children's Hospital, Calgary, Ontario, Canada; [6]Haematology/Oncology, BC Children's Hospital, Vancouver, Ontario, Canada; [7]Pediatric Neurology & Oncology/Hematology/BMT Programs, BC Children's Hospital, Vancouver, BC, Canada; [8]Psychology, BC Children's Hospital, Vancouver, Ontario, Canada; [9]Radiology, McMaster University, Hamilton, Ontario, Canada

2474. Characterisation of the BOLD Signal Haemodynamic Response Function (HRF) in the Neonatal Somatosensory Cortex
Tomoki Arichi[1], Gianlorenzo Fagiolo[2], Alejandro Melendez[3], Nazakat Merchant[1], Nora Tusor[1], Serena J. Counsell[1], Etienne Burdet[3], Christian F. Beckmann[4], A. David Edwards[1]
[1]Neonatal Medicine Group, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom; [2]Imaging Physics Group, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London; [3]Department of Bioengineering, Imperial College London; [4]Mathematical Imaging Neuroscience, Donders Institute, Radboud University, Nijmegen, Netherlands

2475. Differences in Thalamic Activity & in the Temporal Pattern of Bold Signal between Neonates Born at Term & Preterm: A fMRI Study During Passive Auditory Stimulation.
Elisa Scola[1], Silvia Pontesilli[1], Roberta Scotti[1], Valeria Blasi[1], Roberta Longaretti[1], Paola Scifo[1,2], Sara Cirillo[1], Antonella Iadanza[1], Antonella Poloniato[3], Graziano Barera[3], Giuseppe Scotti[1], Cristina Baldoli[1]
[1]Neuroradiology Department - CERMAC, San Raffaele Scientific Institute, Milano, Italy; [2]Department of Nuclear Medicine, San Raffaele Scientific Institute; [3]Neonatology & Neonatological Intensive Care Unit, San Raffaele Hospital, Milan, Italy

2476. A Graph Matching-Based Sulcal Pattern Analysis: Application to the Study of Twin Brains
Kiho Im[1], Rudolph Pienaar[1], Jong-Min Lee[2], Joon-Kyung Seong[3], Yu Yong Choi[2], Kun Ho Lee[4], P. Ellen Grant[1]
[1]Children's Hospital Boston, Boston, MA, United States; [2]Hanyang University; [3]Soongsil University; [4]Chosun University

2477. Automatic Segmentation & Parcellation of Subcortical White & Grey Matter using DTI in the Preterm Neonate
Gareth Ball[1], Serena J. Counsell[1], Ioannis S. Gousias[1], Paul Aljabar[2], Jo V. Hajnal[1], Daniel Rueckert[2], A. David Edwards[1,3], James P. Boardman[1,4]
[1]Imperial College London & MRC Clinical Sciences Centre, London, United Kingdom; [2]Department of Computing, Imperial College London, London, United Kingdom; [3]Division of Neonatology, Imperial College Healthcare NHS Trust, London, United Kingdom; [4]Simpson Centre for Reproductive Health, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

2478. Whole-Brain Oxygen Extraction Fraction is Decreased in Pediatric Traumatic Brain Injury Patients
Dustin Kenneth Ragan[1], Jose A. Pineda[1]
[1]Department of Pediatrics, Washington University School of Medicine, St. Louis, MO, United States

2479. Fast Blood T_1 Measurement in Children & Adults
Ruth L. O'Gorman[1], Cornelia Hagmann[1], Hadwig Speckbacher[1], Ajit Shankaranarayanan[2], Ernst Martin[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

2480. Cerebral Plasticity Induced by Abacus-Based Mental Calculation Training in Children
Yuzheng Hu[1], Fengji Geng[1,2], Yunqi Wang[1,2], Feiyan Chen[1]
[1]BioX lab, Department of Physics, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of; [2]Department of Psychology & Behavioral Sciences, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of

2481. Atypical Development of Dentatothalamic Pathway in Children with Autistic Spectrum Disorders
Jeong-Won Jeong[1,2], Ajay Kumar[1,2], Rajkumar Govindan[1,2], Harry T. Chugani[2,3], Diane C. Chugani[2,4]
[1]Pediatrics, Neurology, Wayne State University, Detroit, MI, United States; [2]PET center, Children's Hospital of Michigan, Detroit, MI, United States; [3]Pediatrics, Neurology, Radiology, Wayne State University, Detroit, MI, United States; [4]Pediatrics, Radiology, Wayne State University, Detroit, MI, United States

2482. Linking Myelination with Behavioural Development in Healthy Infants
Sean C. Deoni[1], Douglas Dean[1], Cara Quigley[1], Frances Liu[1], Beth a Jerskey[2]
[1]School of Engineering, Brown University, Providence, RI, United States; [2]Department of Psychiatry & Human Behavior, Butler Hospital, Providence, RI, United States

2483. MTR & T_1 Measurements in the Very Preterm Brain – Markers for Changes in Tissue Microstructure During Early Development
Revital Nossin-Manor[1,2], Omer Bar-Yosef[3], Margot J. Taylor[1,2], Elizabeth J. Donner[3,4], John G. Sled[5,6]
[1]Diagnostic Imaging, the Hospital for Sick Children, Toronto, ON, Canada; [2]Neurosciences & Mental Health, Research Institute, the Hospital for Sick Children, Toronto, ON, Canada; [3]Neurology, the Hospital for Sick Children, Toronto, ON, Canada; [4]Faculty of Medicine, University of Toronto, Toronto, ON, Canada; [5]Physiology Experimental Medicine, Research Institute, the Hospital for Sick Children, Toronto, ON, Canada; [6]Medical Biophysics, University of Toronto, Toronto, ON, Canada

2484. White Matter Biomarker from DTI for Children with Hereditary Spastic Paraplegia (HSP)
Hao Huang[1], Tien Nguyen[2], Linsley Smith[3], Nancy Clegg[3], Mauricio Delgado[3]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Biomedical Engineering, University of Texas Southwestern Medical Center, Arlington, TX, United States; [3]Department of Neurology, Texas Scottish Rite Hospital, Dallas, TX, United States

2485. Neuroanatomical Associates of the Cognitive & Motor Abnormalities Found in Children with Isolated Growth Hormone Deficiency
Emma A. Webb[1], Michelle O'Reilly, Jon Clayden, Kiran Seunarine, Tina Banks[2], Wk Chong[2], Naomi Dale[2], Alison Salt[2], Mehul Dattani, Chris A. Clark
[1]Institute of Child Health, London, UK, United Kingdom; [2]Great Ormond Street Hospital for Children

2486. Decrease in White Matter Volumes & Commensurate Deficits in Neuropsychological Performance Following Radiation Therapy in Children
Steven A. Messina[1], Rebecca Martin[2], Trisha Hay[2], Gerard Deib[1], E. M. Mahone[2,3], Wendy R. Kates[2,4], Alena Horska[1]
[1]Department of Radiology & Radiological Sciences, Division of Neuroradiology, Johns Hopkins University College of Medicine, Baltimore, MD, United States; [2]Psychiatry & Behavioral Sciences, Johns Hopkins University College of Medicine, Baltimore, MD, United States; [3]Department of Neuropsychology, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Department of Psychiatry & Behavioral Sciences, SUNY Upstate Medical University, Syracuse, NY, United States

2487. Preferential Posterior Damage of Central Visual Pathways in Children with Periventricular Leukomalacia (PVL) : A TBSS & Probabilistic Tractography Study
Rafael Ceschin[1], Arabhi C. Nagasunder[2,3], Marvin D. Nelson[2], Stefan Bluml[2,3], Ashok Panigrahy[1,2]

[1]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [2]Radiology, Childrens Hospital Los Angeles, Los Angeles, CA, United States; [3]Rudi Schulte Research Institute, Santa Barbara, CA, United States

2488. Early Myelination in the Very Preterm Brain – a Combined MTR-DTI Study

Revital Nossin-Manor[1,2], Dallas Card[1], Drew J. Morris[1], Margot J. Taylor[1,2], John G. Sled[3,4]
[1]Diagnostic Imaging, the Hospital for Sick Children, Toronto, ON, Canada; [2]Neurosciences & Mental Health, Research Institute, the Hospital for Sick Children, Toronto, ON, Canada; [3]Physiology Experimental Medicine, Research Institute, the Hospital for Sick Children, Toronto, ON, Canada; [4]Medical Biophysics , University of Toronto, Toronto, ON, Canada

2489. Probing Micro-Structural Information using the CHARMED Model in the Non-Myelinated Human Newborn Brain at 3T

Nicolas Kunz[1], Hui Zhang[2], Kieran R. O'brien[3], Yaniv Assaf[4], Daniel Alexander[2], François Lazeyras[5], Petra S. Hüppi[1,6]
[1]Division of Development & Growth, Fepartment of Pediatrics, Geneva University Hospitals, Geneva, Switzerland; [2]Computer Science, University College London, United Kingdom; [3]Advanced Clinical Imaging Technology, CIBM-Siemens Development group, University of Lausanne, University of Geneva & EPFL; [4]Tel Aviv University, Neurobiology department; [5]Department of Radiology-CIBM, Geneva University Hospitals; [6]Department of Neurology, Children's Hospital

2490. Hippocampal Shape Variations in Very Preterm Infants

Deanne Kim Thompson[1,2], Christopher Adamson[1], Nathan Faggian[2], Stephen J. Wood[3,4], Gehan Roberts[1], Jeremy Lim[1], Simon K. Warfield[5], Marc Seal[1], Peter J. Anderson[1], Lex W. Doyle[1,6], Gary F. Egan[2], Terrie E. Inder[1,7]
[1]Murdoch Childrens Research Institute, Royal Children's Hospital, Parkville, Victoria, Australia; [2]Florey Neurosciences Institute, Centre for Neuroscience, University of Melbourne, Parkville, Victoria, Australia; [3]Melbourne Neuropsychiatry Centre, University of Melbourne, Parkville, Victoria, Australia; [4]School of Psychiatry, University of Birmingham, Birmingham, United Kingdom; [5]Department of Radiology, Children's Hospital, Harvard Medical School, Boston, United States; [6]Department of Obstetrics & Gynecology, Royal Women's Hospital, Parkville, Victoria, Australia; [7]Department of Pediatrics, St Louis Children's Hospital, Washington University in St Louis, St Louis, United States

2491. Cortical Thinning in Children with Frontal Lobe Epilepsy

Elysa Widjaja[1], Sina Zarei Mahmoodabadi[1], O. Carter Snead[1], Abeer Almehdar[1], Mary Lou Smith[1]
[1]Hospital for Sick Children, Toronto, Ontario, Canada

2492. Tract-Based Spatial Statistics Investigation of the Effects of Hypothermic Therapy for Neonatal Encephalopathy in a South Indian Neonatal Unit

David L. Price[1], Suhdin Thayyil[2], Sonya Mahony[1], Alan Bainbridge[1], Frances M. Cowan[3], M. Ayer[4], B. Guhan[4], Neil Marlow[2], S. Shankaran[5], Ernest B. Cady[1], Nicola J. Robertson[2]
[1]Medical Physics & Bioengineering, University College London Hospital Foundation NHS Trust, London, United Kingdom; [2]Institute for Womens Health, University College London, London, United Kingdom; [3]Institute of Clinical Science, Imperial College London, London, United Kingdom; [4]Calicut Medical College, Kerala, India; [5]School of Medicine, Wayne State University, MI, United States

2493. Longitudinal Changes in Infant Brain Metabolites at Age 6 & 13 Months using 3D High-Speed MR Spectroscopic Imaging at 3 Tesla

Chenying Yang[1], Neva Corrigan[2], Mindy Olson[3], Dennis Shaw[3,4], Stefan Posse[5], Stephen Dager[1]
[1]Department of Radiology & Bioengineering, University of Washington, Seattle, WA, United States; [2]Department of Radiology, University of Washington, Seattle, WA, United States; [3]Seattle Children's, Seattle, WA, United States; [4]Department of Radiology , University of Washington, Seattle, WA, United States; [5]Department of Neurology, University of New Mexico School of Medicine, Albuquerque, NM, United States

2494. Development of Cerebellar Connectivity in Fetal Human Brains Revealed by Diffusion Tractography

Emi Takahashi[1], Emiko Hayashi[1], Hannah Kinney[1], Rebecca D Folkerth[2], P. Ellen Grant[1]
[1]Children's Hospital Boston, Boston, MA, United States; [2]Brigham and Women's Hospital

2495. T_2 Layering Pattern Changes in Primary Motor Cortex in the First Two Years of Life: A Study on Normal Children.

Andrea Righini[1], Andreana Ardemagni[1], Thomas J. Re[1], Cecilia Parazzini[1], Chiara Doneda[1], Filippo Arrigoni[1], Fabio Triulzi[1]
[1]Radiology, Children's Hospital V. Buzzi, Milan, Italy

2496. Longitudinal Shape Analysis of Lateral Ventricles During the First Year of Human Life

Shun Xu[1], Hongtu Zhu[2], Martin Styner[1,3], Wei Gao[4], Valerie Jewells[5], Dinggang Shen[1,4], Weili Lin[4,6]
[1]Computer Science, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Biostatistics, University of North Carolina at Chapel Hill, United States; [3]Psychiatry, University of North Carolina at Chapel Hill, United States; [4]Radiology, University of North Carolina at Chapel Hill, United States; [5]Neuroradiology, University of North Carolina at Chapel Hill, United States; [6]Biomedical Engineering, University of North Carolina at Chapel Hill, United States

2497. Atypical White Matter Microstructural Integrity Pattern in Children with High Functioning Autism & Low Functioning Autism Identified with Tract Based Spatial Statistics

Vijay Narayan Tiwari[1,2], Jeong-Won Jeong[1], Senthil K. Sundaram[1], Harry T. Chugani[3], Diane C. Chugani[4]

[1]Pediatrics, Neurology, Wayne State University, Detroit, MI, United States; [2]PET Center, Children's Hospital of Michigan, Detroit, MI, United States; [3]Pediatrics, Neurology, Radiology, Wayne State University, Detroit, MI, United States; [4]Pediatrics, Radiology, Wayne State University, Detroit, MI, United States

2498. Abnormal Diffusivity Changes in White Matter Regions of the Children with Autism Spectrum Disorder: Comparison of TBSS, TSPOON, & SPM Analysis

Jeong-Won Jeong[1], Ajay Kumar[1], Senthil K. Sundaram[1], Harry T. Chigani[1], Diane C. Chugani[2]
[1]Pediatrics, Neurology, Wayne State University, Detroit, MI, United States; [2]Radiology, Wayne State University, Detroit

2499. Quantitative Morphometry Analysis of the Fetal Brain using Clinical MR Imaging

Meritxell Bach Cuadra[1], Gabriele Bonanno[1], Laurent Guibaud[2], Stephan Eliez[3], Jean-Philippe Thiran[1], Marie Schaer[1,3]
[1]Signal Processing Laboratories (LTS5), EPFL, Lausanne, Switzerland; [2]Université Claude Bernard Lyon I, France; [3]Psychiatry Department, University of Geneva School of Medicine, Geneva, Switzerland

2500. Quantitative Proton MRS in a Clinical Setting for Diagnosis & Collection of Reference Data for Children

Marinette van Der Graaf[1,2], Bozena Góraj[1], Cindy P. M. Frentz[1], Arend Heerschap[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Clinical Physics Laboratory of the Dept of Pediatrics, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

2501. DTI Based Tractography of Fetal Association Fiber Tracts *In Utero*

Christian Mitter[1], Peter Christian Brugger[2], Laura Perju-Dumbrava[3], Daniela Prayer[1], Gregor Kasprian[1]
[1]Department of Radiology, Division of Neuroradiology, Medical University of Vienna, Vienna, Austria; [2]Center of Anatomy & Cell Biology, Medical University of Vienna, Vienna, Austria; [3]Institute of Neurology, Medical University of Vienna, Vienna, Austria

2502. Dynamics of the Upper Airway & Application to Sleep Apnea

Raanan Arens[1], Michael L. Lipton[2], Sanghun Sin[1], Mark E. Wagshul[2]
[1]Respiratory & Sleep Medicine, Montefiore Medical Center, Bronx, NY, United States; [2]Radiology, Albert Einstein College of Medicine, Bronx, NY, United States

2503. Towards the "Baby Connectome": Mapping the Structural Connectivity of the Newborn Brain

Olga Tymofiyeva[1], Christopher P. Hess[1], Nan Tian[1], Donna M. Ferriero[2,3], A. James Barkovich[1,3], Duan Xu[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Neurology, UCSF, San Francisco, CA, United States; [3]Department of Pediatrics, UCSF, San Francisco, CA, United States

2504. MRI Evidence of Brain Structure Alterations in Adolescence Prenatally Exposed to Cocaine

Xu Chen[1], Sonia Minnes[2], Miaoping Wu[2], John Jesberger[1], Lynn Singer[3,4], Jean Tkach[1,5]
[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Mandel School of Applies Social Sciences, CWRU; [3]Pediatrics, CWRU; [4]Environmental Health Sciences, CWRU; [5]Radiology, Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, United States

2505. Longitudinal Regional Brain Development in Infants from Four to Nine Months of Age

Arvind Caprihan[1], Mustafa S. Cetin[1], Joy Van Meter[2], Jean R. Lowe[3], John P. Phillips[2,4]
[1]Mind Research Network, Albuquerque, NM, United States; [2]Mind Research Network, Albuquerque, United States; [3]Department of Pediatrics, University of New Mexico, Albuquerque, United States; [4]Department of Neurology, University of New Mexico, Albuquerque, United States

2506. Magnetic Resonance Spectroscopy in the Brain of Adolescent Binge Drinkers

Caroline Rae[1], Maree Teesson[2], Monique Bucci[3], Roland G. Henry[3]
[1]Neuroscience Research Australia, Randwick, NSW, Australia; [2]NDARC, the University of New South Wales, Australia; [3]UCSF, United States

2507. DTI Evaluation of White Matter Integrity in Long Term Survivors of Pediatric Low Grade Gliomas

Fang Liu[1], Frank Wang[1], Uri Tabori[2], Eric Bouffet[2], Katrin Scheinemann[3], Donald J. Mabbott[1]
[1]Neurosciences & Mental Health, the Hospital for Sick Children, Toronto, ON, Canada; [2]Haematology/Oncology, the Hospital for Sick Children, Toronto, ON, Canada; [3]Pediatrics, McMaster University, Hamilton, ON, Canada

2508. Can Magnetic Resonance Imaging R_2* Quantitation Elucidate Acute Cerebral Malaria Pathology?

James E. Siebert[1], Matthew T. Latourette[1], Michael J. Potchen[1], Colleen A. Hammond[1], Gretchen L. Birbeck[2], J. Kevin DeMarco[1], Samuel D. Kampondeni[3], Karl B. Seydel[3,4], Terrie E. Taylor[3,4]
[1]Radiology, Michigan State University, East Lansing, MI, United States; [2]International Neurologic & Psychiatric Epidemiology Program, Michigan State University, East Lansing, MI, United States; [3]Blantyre Malaria Project, University of Malawi, College of Medicine, Blantyre, Malawi; [4]Internal Medicine, Michigan State University, East Lansing, MI, United States

Imaging in Psychiatric Disorders

Exhibition Hall Thursday 13:30-15:30

2509. Similar Traits of White Matter Disruption for Major Depression Disorder (MDD) & High Risk MDD of Adolescents

Hao Huang[1], Xin Fan[1], Uma Rao[2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, United States

2510. Proton MRS Reveals Striatal and Anterior Cingulate GABA Deficits in Adolescents with Tourette's Disorder

Vilma Gabbay[1], Barbara Coffey[1], Xiangling Mao[2], Benjamin Ely[1], Aviva Panzer[1], James S. Babb[3], Nora Weiduschat[2], Dikoma C Shungu[2]
[1]Child Study Center, New York University School of Medicine, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Radiology, New York University School of Medicine, New York, NY, United States

2511. Advanced MRI Detection of Blast-Related Traumatic Brain Injury in US Military Personnel: Early Prediction of Post Traumatic Stress Disorder Severity

Christine MacDonald[1], Dana Cooper[1], Ann Johnson[1], Elliot Nelson[2], Nicole Werner[1], Joshua Shimony[3], Abraham Snyder[3], Marcus Raichle[3], John Witherow[4], Raymond Fang[5], Stephen Flaherty[5,6], David Brody[1]
[1]Neurology, Washington University, Saint Louis, MO, United States; [2]Psychiatry, Washington University, Saint Louis, MO, United States; [3]Radiology, Washington University, Saint Louis, MO, United States; [4]Radiology, Landstuhl Regional Medical Center, Landstuhl, Germany; [5]Trauma Surgery, Landstuhl Regional Medical Center, Landstuhl, Germany; [6]Walter Reed Army Medical Center, Washington, DC, United States

2512. ^{1}H MRS Provides Evidence of Altered Frontal Cortex GABA & Glutamate-Glutamine in Schizophrenia *In Vivo*

Lawrence S. Kegeles[1,2], Xiangling Mao[3], Arielle Stanford[1], Najate Ojeil[1], Beatriz Alvarez[1], Ragy R. Girgis[1], Roberto Gil[1], Anissa Abi-Dargham[1,2], Sarah H. Lisanby[1], Dikoma C. Shungu[3]
[1]Psychiatry, Columbia University, New York, NY, United States; [2]Radiology, Columbia University, New York, NY, United States; [3]Radiology, Weill Cornell Medical Center, New York, NY, United States

2513. Diffusion Tensor Imaging of Intact & Injured Rat Hippocampus–Histopathological Correlates for Alterations Caused by Status Epilepticus & Traumatic Brain Injury

Alejandra Sierra[1], Teemu Laitinen[1], Asla Pitkänen[1,2], Olli Gröhn[1]
[1]Department of Neurobiology, A.I. Virtanen for Molecular Sciences, University of Eastern Finland, Kuopio, Finland; [2]Department of Neurology, Kuopio University Hospital, Kuopio, Finland

2514. Towards a Tract-Based Atlas of Mouse Brain Maturation & Gender Differences

Madhura Ingalhalikar[1], Stathis Kanterakis[1], Drew Parker[1], Christos Davatzikos[1], Ragini Verma[1]
[1]Section of Biomedical Image Analysis, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2515. Importance of Cardiac Rhythm in the Assessment of Flow Rate & Stroke Volume in CSF Flow

Mario Forjaz Secca[1,2]
[1]Cefitec, Dep. of Physics, Univ. Nova de Lisboa, Monte de Caparica, Portugal; [2]Ressonância Magnética de Caselas, Lisboa, Portugal

2516. Simultaneous Perfusion MRI & FET-PET

Ke Zhang[1], Joachim Bernhard Maria Kaffanke[1], Christian Filß[1], Gabriele Stoffels[1], Irene Neuner[1,2], Karl-Josef Langen[1], Hans Herzog[1], N. Jon Shah[1,3]
[1]Institute of Neuroscience & Medicine 4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, 52425, Juelich, Germany; [2]Department of Psychiatry & Psychotherapy, JARA, RWTH Aachen University, Faculty of Medicine, 52074 Aachen, Germany; [3]Faculty of Medicine, Department of Neurology, JARA, RWTH Aachen University, 52074 Aachen, Germany

2517. Cerebral Blood Flow Response to Hypoglycemia in Type 1 Diabetes

Silvia Mangia[1], Federico De Martino[2], Nolawit Tesfaye[3], Anjali Kumar[3], Elizabeth Seaquist[3]
[1]CMRR - Dept. of Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Dept. of Cognitive Neuroscience, University of Maastricht, Maastricht, Netherlands; [3]Dept. of Medicine, University of Minnesota, Minneapolis, MN, United States

2518. Abnormal Resting State Functional Connectivity as a Marker for Diagnosing & Predicting Recovery in Mild Traumatic Brain Injury

Guangyu Chen[1], Thomas Hammeke[2], Gang Chen[1], Michael McCrea[2], Barney Douglas Ward[1], Sarah Miller[3], Shi-Jiang Li[1,4]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Neurology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]St. Mary's Regional Medical Center, St. Mary's Regional Medical Center, Enid, OK, United States; [4]Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States

2519. Brain Bioenergetic Changes Caused by Transcranial Direct Current Stimulation; a ^{31}P MRS Study

Caroline Rae[1], Vincent Lee[2], Colleen Loo[3], Roger Ordidge[4]

[1]Neuroscience Research Australia, Randwick, NSW, Australia; [2]School of Medical Sciences, the University of New South Wales, NSW, Australia; [3]School of Psychiatry, the University of New South Wales, Australia; [4]Dept of Medical Physics, University College London, United Kingdom

2520. Increased Striatal Iron Accumulation in Methamphetamine Users

Yosef A. Berlow[1,2], David L. Lahna[3,4], Daniel L. Schwartz[3,4], Alex D. Mitchell[5], Alexander A. Stevens[2,3], William D. Rooney[1,2], William F. Hoffman[3,5]

[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Department of Behavioral Neuroscience, Oregon Health & Science University, Portland, OR, United States; [3]Department of Psychiatry, Oregon Health & Science University, Portland, OR, United States; [4]Methamphetamine Abuse Research Center, Portland Veterans Affairs Medical Center, Portland, OR, United States; [5]Mental Health & Clinical Neurosciences Division, Portland Veterans Affairs Medical Center, Portland, OR, United States

2521. MRI & Histological Evidence for the Blockade of Cuprizone-Induced Demyelination in C_{57}/B_{l6} Mice by Quetiapine

Prasant Chandran[1], Jaymin Upadhyay[1], Stella Markosyan[2], Andrew Lisowski[3], Wayne Buck[3], Gerard B. Fox[1], Mark Day[1], Feng Luo[1]

[1]Translational Imaging & Biochemistry, Abbott Laboratories, Abbott Park, IL, United States; [2]Neuroscience Discovery, Abbott Laboratories, Abbott Park, IL, United States; [3]Cellular & Molecular Exploratory Toxicology, Abbott Laboratories, Abbott Park, IL, United States

2522. Intra-Orbital Distance as a Record of Social Brain Dysmorphology in Autism.

Charlton Cheung[1], Kevin Yu[1], Antonia Yam[2], Valencia Myint[3], Yan Fung Yee[4], Siew Chua[5,6], Grainne Mary McAlonan[5,7]

[1]Psychiatry, University of Hong Kong, Pokfulam, Hong Kong; [2]Neuroscience, University of Bristol, United Kingdom; [3]Psychology, University of Cardiff, United Kingdom; [4]University of Harvard, United States; [5]Psychiatry, University of Hong Kong, Hong Kong, Hong Kong; [6]State Key Laboratory for Brain & Cognitive Sciences; [7]Key State Laboratory for Brain & Cognitive Sciences

2523. The Siena/FSL Whole Brain Atrophy Measurement Algorithm May Require Substantially Larger Group Sizes at 3T Than 1.5T for Alzheimer's Disease

Keith S. Cover[1], Ronald A. van Schijndel[2], Bob W. van Dijk[3], Alberto Redolfi[4], Dirk L. Knol[5], Giovanni B. Frisoni[4], Frederik Barkhof[2], Hugo Vrenken[2,6]

[1]Physics & Medical Technology, VU University Medical Center, Amsterdam, North Holland, Netherlands; [2]Department of Radiology, VU University Medical Center, Amsterdam, Netherlands; [3]Department of Physics & Medical Technology, VU University Medical Center, Amsterdam, Netherlands; [4]Laboratory of Epidemiology & Neuroimaging, IRCCS San Giovanni di Dio Fatebenefratelli, Brescia, Italy; [5]Department of Epidemiology & Biostatistics, VU University Medical Center, Amsterdam, Netherlands; [6]MS Center Amsterdam & Alzheimer Center, VU University Medical Center, Amsterdam, Netherlands

2524. Dynamic Response Inhibition Network in Heroin Addicts Brain: Evidence from Functional Neuroimaging with GO/Go-Nogo Task

Zheng Yang[1], Chunming Xie[2,3], Yongcong Shao[1], Liping Fu[1], Gang Chen[2], Wenjun Li[2], Joseph Goveas[4], Guangyu Chen[2], Enmao Ye[1], Lin Ma[5], Shi-Jiang Li[2]

[1]Beijing Institute of Basic Medical Science, Beijing, China, People's Republic of; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurology, School of Clinical Medicine, Southeast University, Nanjing, Jiangsu, China, People's Republic of; [4]Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States; [5]The PLA General Hospital, Beijing, China, People's Republic of

2525. Decoupling of Intrinsic Insula Subregional Connectivity was Associated with Episodic Memory Decline in Amnestic Mild Cognitive Impairment

Chunming Xie[1,2], Feng Bai[1,3], Xiaobin Zhang[1], Hui Yu[1], Yongmei Shi[3], Yonggui Yuan[4], Alexander Cohen[2], Joseph Goveas[5], Gang Chen[2], Wenjun Li[2], Guangyu Chen[2], Zheng Yang[6], Zhijun Zhang[3,4], Shi-Jiang Li[2]

[1]Neurology, School of Clinical Medicine, Southeast University, Nanjing, Jiangsu, China, People's Republic of; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurology, Affiliated Zhongda Hospital of Southeast University, Nanjing, Jiangsu, China, People's Republic of; [4]Institute of Neuropsychiatry of Southeast University, Nanjing, Jiangsu, China, People's Republic of; [5]Psychiatry & Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI, United States; [6]Beijing Institute of Basic Medical Science, Beijing, China, People's Republic of

2526. *In Vivo* MRI Detection of $HDAC_5$ During Chronic Amphetamine Stimuli

Christina H. Liu[1], Jinsheng Yang[1], Jia Q. Ren[1], Charng-Ming Liu[1], Huifang Wang[1], Philip K. Liu[1]

[1]Radiology, Massachusetts General Hospital, Charlestown, MA, United States

2527. Multimodal Assessment of Medial Temporal Lobe Function in Schizophrenia

Laura M. Rowland[1], Elena A. Spieker[1], Kimberly Kontson[1], Kathryn W. Buchanan[1], Peter B. Barker[2], Henry H. Holcomb[1,3]

[1]Psychiatry, MPRC, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University School of Medicine; [3]Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD, United States

2528. A ^{1}H-MRS Study of the Auditory Cortex in Persons with Autism Spectrum Disorder (ASD)

Mark Steven Brown[1], Katie Youngpeter[2], Debra Singel[3], Susan Hepburn[2], Don C. Rojas[2]
[1]Radiology, University of Colorado Denver, Aurora, CO, United States; [2]Psychiatry, University of Colorado Denver, Aurora, CO, United States; [3]Brain Imaging Center, University of Colorado Denver, Aurora, CO, United States

2529. Alteration of Brain Metabolites in Patients with Type 2 Diabetes &/or Major Depression Measured by Proton MR Spectroscopy at 3T

Shaolin Yang[1,2], Olusola Ajilore[1], Minjie Wu[3], Melissa Lamar[1], Anand Kumar[1]
[1]Department of Psychiatry, University of Illinois at Chicago, Chicago, IL, United States; [2]Department of Radiology, University of Illinois at Chicago, Chicago, IL, United States; [3]Department of Neuology, Northwestern University, Chicago, IL, United States

2530. Glutamate Correlations between the Anterior Cingulate & Cerebellar Vermis

Kevin Wayne Waddell[1], Subechhya Pradhan[2], Malcolm Avison[1], John Gore[3]
[1]Radiology, Vanderbilt, Nashville, TN, United States; [2]Physics, Vanderbilt University, Nashville, TN, United States; [3]Radiology, Vanderbilt University, Nashville, TN, United States

2531. Brain-Derived Neurotrophic Factor (BDNF) Genotype is Associated with Frontal Gray & White Matter Volume Recovery in Abstinent Alcohol Dependent Individuals

Anderson Mon[1], Timothy C. Durazzo[1], Kent Hutchison[2], Dieter J. Meyerhoff[1]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Psychology, the MIND Institute, University of New Mexico, Albuquerque, NM, United States

2532. Quantification of Cerebral Gene Activities *In Vivo* by Gene-Targeting MRI

Christina Liu[1], Jinsheng Yang[1], Jia Q Ren[1], Charng-Ming Liu[1], Philip Liu[1]
[1]Radiology, Massachusetts General Hospital, Charlestown, MA, United States

2533. Anterior Cingulate Metabolic Abnormalities in Late-Life Major Depression

Olusola Ajilore[1], Aifeng Zhang[1], Rajakumar Nagarajan[2], Albert Thomas[2], Anand Kumar[1]
[1]Psychiatry, University of Illinois-Chicago, Chicago, IL, United States; [2]Unversity of California, Los Angeles

2534. MEG Auditory Evoked Gamma Phase Locking Correlates with ^{1}H-MRS Determined Temporal Lobe GABA Levels

Mark Steven Brown[1], Peter Teale[2], Dan Collins[2], Bryce Pasko[2], Debra Singel[3], Don C. Rojas[2], Martin Reite[2]
[1]Radiology, University of Colorado Denver, Aurora, CO, United States; [2]Psychiatry, University of Colorado Denver, Aurora, CO, United States; [3]Brain Imaging Center, University of Colorado Denver, Aurora, CO, United States

2535. Effects of $DTNBP_1$ (Dysbindin) Gene Variants on Hippocampal Glutamate Concentration Determined by MRS at 3T

Florian Schubert[1], Frank Seifert[1], Christoph Wirth[2], Andreas Klär[2], Thomas Sander[2], Jürgen Gallinat[2]
[1]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]Psychiatry, Charité University Medicine, Berlin, Germany

2536. Effect of Psychostimulants on Basal Ganglia Structures in Young ADHD Children

Laura Cyckowski[1], Carolyn McIlree[2], Brian Avants[3], Philip Cook[3], Melissa Narain[4], Ruth Milanaik[5], Li Kan[5], Jeffrey Newcorn[6], Josephine Elia, James Gee[3], Andrew Adesman[7], Manzar Ashtari
[1]Radiology, Children's Hospital of Philadelphia, Philadelphia, PA, United States; [2]University of Vermont College of Medicine, Burlington, VT, United States; [3]University of Pennsylvania, Philadelphia, PA, United States; [4]Zucker Hillside Hospital, North Shore LIJ Health Systems, Glen Oaks, NY, United States; [5]Schneider Children's Hospital, New Hyde Park, NY, United States; [6]Mount Sinai School of Medicine, New York, NY, United States; [7]Schneider Children's Hospital, New Hyde Park, PA, United States

2537. Voxel-Based Morphometry in Assessing a Rat Model of Impulsivity: Agreement with Targeted Western Blot Analysis

Stephen John Sawiak[1,2], Daniele Caprioli[3], E. Merlo[3], D. Theobald[3], B. J. Everitt[3], T. W. Robbins[2,3], T. A. Carpenter[1], Jeffrey W. Dalley[3,4]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, UK, United Kingdom; [2]Behavioural & Clinical Neurosciences Institute, University of Cambridge, Cambridge, United Kingdom; [3]Department of Experimental Psychology, University of Cambridge, Cambridge, United Kingdom; [4]Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

2538. Probing Axon- & Myelin-Specific White Matter Abnormalities in Schizophrenia using MRI/MRS

Dost Ongur[1], Fei Du[1], Bruce M. Cohen, Alissa Cooper[1], Scott Lukas, Perry F. Renshaw[2]
[1]Psychotic Disorders Division, McLean Hospital/Harvard Medical School, Belmont, MA, United States; [2]Psychiatry, University of Utah, Salt Lake City, UT, United States

2539. Hippocampal Structural MRI Abnormalities in Euthymic Bipolar I Disorder
Louise Emsell[1,2], Camilla Langan[1], Helen Casey[1], Sarah Hehir[1], Rory Nannery[1], Wil Van Der Putten[1], Peter McCarthy[1], Colm McDonald[1], Dara M. Cannon[1]
[1]NUI Galway, Galway, Co. Galway, Ireland; [2]Developmental & Functional Brain Imaging, Murdoch Children's Research Institute, Melbourne, Victoria, Australia

2540. *In Vivo* Assessments of Glutamate, GABA & NAAG in Schizophrenia
Laura M. Rowland[1], Kimberly Kontson[1], Jef T. West[1], He Zhu[2], Elena A. Spieker[1], Henry H. Holcomb[1], Peter B. Barker[2]
[1]Psychiatry, MPRC, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University School of Medicine

2541. Measurement of Creatine-Kinase Reaction Rate Constant in Human Brain using ^{31}P Magnetization Transfer Image Selected *In-Vivo* Spectroscopy (MT-ISIS): A Preliminary Application to Bipolar Disorder
Xianfeng Shi[1,2], Young-Hoon Sung[1,3], Douglas G. Kondo[1,3], Paul Carlson[1,3], Tracy L. Hellem[1], Kristen K. Delmastro[1], SeongEun Kim[2], Chun Zuo[4,5], Eunkee Jeong[2], Perry F. Renshaw[1,3]
[1]The Brain Institute, University of Utah, Salt Lake City, UT, United States; [2]Department of Radiology, University of Utah, Salt Lake City, UT, United States; [3]Department of Psychiatry, University of Utah, Salt Lake City, UT, United States; [4]Brain Imaging Center, Harvard Med School, Belmont, MA, United States; [5]Department of Psychiatry, Harvard Med School, Belmont, MA, United States

2542. White Matter Track Integrity is Not Impaired by Electroconvulsive Therapy
Erik B. Beall[1], Ken E. Sakaie[1], Sarah Szymkowicz[2], David J. Muzina[3], Roman M. Dale[2], Donald A. Malone[2], Michael D. Phillips[1], Mark J. Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Psychiatry & Psychology, Cleveland Clinic, Cleveland, OH, United States; [3]Medco Neuroscience Therapeutic Resource Center, Fort Worth, TX, United States

2543. Lower Glutathione Levels in Methamphetamine Users
Steven Buchthal[1], Linda Chang, Thomas Ernst
[1]Dept. of Medicine, University of Hawaii, Honolulu, HI, United States

2544. Free Water Modulation of White Matter Integrity Measures - with Application to Schizophrenia
Ofer Pasternak[1], Carl-Fredrik Westin[1], Sylvain Bouix[1], Martha E. Shenton[1,2], Marek Kubicki[1,2]
[1]Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]VA Boston Healthcare System, Harvard Medical School, Brockton, MA, United States

G Pulse, Algorithms & Software Tools

Exhibition Hall Wednesday 13:30-15:30

2545. Versatile Higher-Order Reconstruction Accelerated by a Graphics Processing Unit (GPU)
Michael Andreas Bieri[1], Christoph Barmet[1], Bertram Jakob Wilm[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

2546. Accelerating Compressed Sensing MRI Reconstruction with GPU Computing
David S. Smith[1,2], John C. Gore[1,2], Edward Brian Welch[1,2]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

2547. GPU-Accelerated Gridding for Rapid Reconstruction of Non-Cartesian MRI
Nady M. Obeid[1], Ian C. Atkinson[2], Keith R. Thulborn[2], Wen-Mei W. Hwu[1]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Champaign, IL, United States; [2]Center for Magnetic Resonance Research, University of Illinois at Chicago, Chicago, IL, United States

2548. A GPU Implementation of Compressed Sensing Reconstruction of 3D Radial (Kooshball) Acquisition for High-Resolution Cardiac MRI
Seunghoon Nam[1,2], Tamer Ahmed Basha[2], Mehmet Akçakaya[2], Christian Stehning[3], Warren J. Manning[2], Vahid Tarokh[1], Reza Nezafat[2]
[1]SEAS, Harvard University, Cambridge, MA, United States; [2]Dept. of Medicine (Cardiovascular Division), Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [3]Philips Research, Hamburg, Germany

2549. Implementation of Compressed Sensing for Online Reconstruction
Cheng Ouyang[1,2], Tobia Wech[1,3], Li Pan[1,4]
[1]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Institute of Radiology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [4]Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States

2550. Iterative Compressed Sensing Reconstruction for 3D Non-Cartesian Trajectories Without Gridding & Regridding at Every Iteration
Mehmet Akcakaya[1], Seunghoon Nam*[1,2], Tamer Basha[1], Vahid Tarokh[2], Warren J. Manning[1], Reza Nezafat[1]*
[1]Dept. of Medicine (Cardiovascular Division), Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States; [2]School of Engineering & Applied Sciences, Harvard University, Cambridge, MA, United States

2551. Towards Computationally Efficient Autocalibration for Accelerated MRI using Compressed Sensing Parallel Imaging
Anja Brau[1], Peng Lai[1], Srihari Narasimhan[2], Babu Narayanan[3], Vijaya Saradhi[2]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Computing & Decision Sciences Lab, GE Global Research, Bangalore, India; [3]Medical Image Analysis Lab, GE Global Research, Bangalore, India

2552. IceLuva: A Scripting Engine for Fast Development of Reconstruction Algorithms
Francesco Santini[1], Sunil Patil[1,2], Klaus Scheffler[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Center for Applied Medical Imaging, Siemens Corporation, Corporate Research, Baltimore, MD, United States

2553. MeCS – Integrating Prototype Processing Programs into Clinical Routine
Berengar W. Lehr[1], Ferdinand Schweser[1], Andreas Deistung[1], Daniel Güllmar[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Germany

2554. AGILE: An Open Source Library for Image Reconstruction using Graphics Card Hardware Acceleration
Florian Knoll[1], Manuel Freiberger[1], Kristian Bredies[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria; [2]Institute for Mathematics & Scientific Computing, University of Graz, Graz, Austria

Recent Advances in Image Analysis: Techniques

Exhibition Hall Monday 14:00-16:00

2555. A New High-Dimensional Machine Learning Approach for Identifying Alzheimer Disease from MRI Structural Images
Ramon Casanova[1], Benjamin Wagner[2], Christopher T. Whitlow[2], Jeff D. Williamson[3], Sally A. Shumaker[4], Joseph A. Maldjian[2], Mark A. Espeland[1]
[1]Biostatistical Sciences, Wake Forest University Baptist Medical Center, Winston-Salem, NC, United States; [2]Radiology, Wake Forest University Baptist Medical Center, Winston-Salem, NC, United States; [3]Geriatrics & Gerontology, Wake Forest University Baptist Medical Center, Winston-Salem, NC, United States; [4]PHS, Wake Forest University Baptist Medical Center, Wisnton-Salem, NC, United States

2556. Reduction of Amyloid Plaque FP Detections in MR Images of the APP Transgenic Mouse Brain using Unsupervised SVM
Gheorghe Iordanescu[1,2], Palamadai Venkatasubramanian[1,2], Alice Wyrwicz[1,3]
[1]Center for Basic MR Research, Northshore University HealthSystem, Evanston, IL, United States; [2]Pritzker School of Medicine, University of Chicago, Chicago, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States

2557. Universal Score of Structural Abnormality in Alzheimer's Disease
Vitali Zagorodnov[1], O. V. Ramana Murphy[1]
[1]Nanyang Technological University, Singapore, NA, Singapore

2558. Discriminating Schizophrenia & Bipolar Disorder by Unique Patterns of Brain Function & Structure
Jing Sui[1], Vince D. Calhoun[2]
[1]The Mind Research Network, Albuquerque, NM, United States; [2]Dept. of ECE, University of New Mexico, Albuquerque, NM, United States

2559. Semi-Automated Atlas-Based MRI Lung Volumetry
Christina Rose Lurie[1], Eduard Schreibmann[2,3], James Robert Costello[1], Puneet Sharma[1], Hiroumi Kitajima[1], Bobby Kalb[1], Timothy Fox[2,3], Diego Raul Martin[1]
[1]Radiology, Emory University School of Medicine, Atlanta, GA, United States; [2]Radiation Oncology, Emory University School of Medicine, Atlanta, GA, United States; [3]Winship Cancer Institute of Emory University, Atlanta, GA, United States

2560. Semi-Automatic Segmentation of Bony Lesions from Diffusion Weighted MRI to Assess Disease Burden & Quantify Response using Markov Random Fields
Matthew David Blackledge[1], Dow-Mu Koh[1], Anwar R.. Padhani[2], James J. Stirling[2], N. Jane Taylor[2], David J. Collins[1], Martin O. Leach[1]

[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]Paul Strickland Scanner Centre, Mount Vernon Cancer Centre, Northwood, London, United Kingdom

2561. Segmentation of Thalamus by Clustering of Resting-State fMRI
Yi-Ping Chao[1,2], Chun-Yi Lo[3], Ching-Po Lin[4]
[1]School of Applied Information Sciences, Chung Shan Medical University, Taichung, Taiwan; [2]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan; [3]Department of Medical Imaging & Radiological Sciences, National Yang Ming University, Taipei, Taiwan; [4]Institute of Neuroscience, National Yang Ming University, Taipei, Taiwan

2562. Multi Atlas Segmentation of Rat Leg Muscles
Michaël Sdika[1], Anne Tonson[1], Patrick J. Cozzone[1], David Bendahan[1]
[1]CRMBM, CNRS, UMR 6612, Faculté de Médecinede Marseille, Université de la Méditérranée, Marseille, France

2563. Pattern Analysis & Magnetic Resonance Imaging in the Study of Tumor Angiogenesis
Marco Dominietto[1], Steffi Lehmann[1], Ruth Keist[1], Markus Rudin[1]
[1]Institute for Biomedical Engineering, ETHZ, Zurich, Switzerland

2564. Combining Parallel Multiresolution & PCA Initialization for a Fully Automatic PET-MRI Registration
Michaël Bernier[1], Martin Lepage, Roger Lecomte, Luc Tremblay[2], Louis Doré-Savard[2], Maxime Descoteaux[3]
[1]Département d'informatique et Centre d'imagerie moléculaire de Sherbrooke, Université de Sherbrooke, Sherbrooke, QC, Canada; [2]Centre d'imagerie moléculaire de Sherbrooke, Université de Sherbrooke, Canada; [3]Computer Science, Université de Sherbrooke

2565. Towards Robust & Fast Vessel Extraction from MRA Images
Maysa M. Garcia Macedo[1], Choukri Mekkaoui[2], Marcel Parolin Jackowski[1]
[1]Computer Science, University of São Paulo, São Paulo, SP, Brazil; [2]Radiology, Harvard Medical School, Boston, MA, United States

2566. Novel MRI Sequence on 3T Accurately Depicts the Osseous Segments of Cranial Nerves VII-VIII: A Pilot Study
Rivka R. Colen[1], Jr Yuan Chiou[1], Yi Tang[1], Thomas Lee[1], Ferenc A. Jolesz[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States

2567. A Motion Tracking Method Applying Spread Spectrum Communication to Tagging MRI
Yoshiaki Komori[1], Akira Amano[2], Keiko Maehara[1], Jin Li[1], Narazaki Michiko[1], Matsuda Tetsuya[1]
[1]Department of Systems Science, Graduate School of Informatics, Kyoto University, Kyoto, Japan; [2]Department of Bioinformatics, College of Life Science, Ritsumeikan University, Kusatsu, Japan

2568. 3D Variography of Human White Matter & the Influence of Age
Fabian Keil[1], Ana Maria Oros-Peusquens[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungzentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

2569. Dipolar Anisotropy Fiber Imaging of Human Anulus Fibrosus
Won C. Bae[1], Sheronda Statum[1], Richard Znamirowski[1], Koichi Masuda[2], Graeme M. Bydder[1], Nikolaus M. Szeverenyi[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Orthopaedic Surgery, University of California, San Diego, La Jolla, CA, United States

2570. Robust Edge-Directed MRI Interpolation
Zhenhua Mai[1], Wolfgang Jacquet[1], Marleen Verhoye[2], Jan Sijbers[1]
[1]Physics Department, Universiteit Antwerpen, Wilrijk, Antwerpen, Belgium; [2]Biomedical Department, Universiteit Antwerpen

2571. Correlation of Magnetic Susceptibility with Structural Characteristics in White Matter Regions of the Central Nervous System
Cynthia Wisnieff[1], Tian Liu[1], Krishna Surapaneni, MD, MPH[2], Craig I. Horenstein, MD[2], Yi Wang[1,3]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Department of Radiology, Columbia University, New York, NY, United States; [3]Radiology, Weill Cornell Medical College, New York , NY, United States

2572. Intra-Voxel Linear Spectral Mixture Analysis Method for Tissues Quantification in Brain MRI
Hsian-Min Chen[1], Englin Wong[2], Clayton Chi-Chang Chen[3], Jyh-Wen Chai[3], Shih-Yu Chen[4], Ching-Wen Yang[5], San-Kan Lee[3], Chein-I Chang[2]
[1]Department of Biomedical Engineering, HungKuang University, Taichung, Taiwan; [2]Department of Computer Science & Electrical Engineering, University of Maryland, Baltimore, United States; [3]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan; [4]Department of Electrical Engineering, National Chung Hsing University, Taichung, Taiwan; [5]Computer Center, Taichung Veterans General Hospital, Taichung, Taiwan

2573. Iron, Ferritin, Myelin & MR-Contrast: Proton-Induced X-Ray Emission (PIXE) Maps of Cortical Iron Content
Carsten Stueber[1], Markus Morawski[2], Katja Reimann[1], Nirav Barapatre[3], Stefan Geyer[1], Robert Turner[1]

[1]Department of Neurophysics, Max-Planck-Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Paul-Flechsig-Institute of Brain Research, University of Leipzig, Germany; [3]LIPSION Laboratory, Institute of Nuclear Solid State Physics, University of Leipzig, Germany

2574. Automatic Determination of Arterial Input Function for Estimating Tumor Microvessel Density with Dynamic Contrast-Enhanced MRI in Mice Model

Jae-Hun Kim[1], Geun-Ho Im[2], Jehoon Yang[1], Jung Hee Lee[1]
[1]Department of Radiology, Samsung Medical Center, Seoul, Gang-Name, Korea, Republic of; [2]Center for Molecular & Cellular Imaging, Samsung Biomedical Research Institute, Samsung Medical Center, Seoul, Korea, Republic of

Recent Advances in Image Analysis: Applications

Exhibition Hall Tuesday 13:30-15:30

2575. Novel Methods for Assessing the Composition of Colonic Contents in a Model of Diarrhoea

Elisa Placidi[1], Antonio Napolitano[2], Caroline L. Hoad[1], Luca Marciani[3], Klara C. Garsed[3], Robin C. Spiller[3], Penny A. Gowland[1]
[1]SPMMRC, University of Nottingham, Nottingham, United Kingdom; [2]Academic Radiology, QMC, Nottingham, United Kingdom; [3]Nottingham Digestive Diseases Centre Biomedical Research Unit, Nottingham, United Kingdom

2576. Creating a One-Stop Shop? 3D Black Blood Vessel Wall Imaging Would Combine Information of Luminal Severity & Plaque Composition

Li Dong[1], Hao Shen[2], Xiaojie Zhang[1], Wei Yu[1], Zhaoqi Zhang[1], Hua Guo[3], Ren Wang[1], Dongxu Lu[1], Chun Yuan[3,4]
[1]Capital Medical University, Beijing Anzhen Hospital, Beijing, China, People's Republic of; [2]GE Healthcare; [3]School of Medicine, Tsinghua University; [4]University of Washington

2577. Multi-Modal MRI Analysis for Automatic Trajectory Planning of Deep Brain Stimulation Neurosurgery

Silvain Bériault[1], Fahd Al Subaie[2], Kelvin Mok[3], Abbas F. Sadikot[2], G. Bruce Pike[1]
[1]McConnell Brain Imaging Centre, Montreal Neurological Institute, Montréal, Québec, Canada; [2]Department of Neurology & Neurosurgery, Montreal Neurological Institute; [3]Neuronavigation Unit, Montreal Neurological Institute

2578. Investigating the Role of Choroid Plexus in CSF Pulsation by Combining *In-Vivo* & Post-Mortem MRI

Simone Bottan[1], Andri Fritz[1], Vartan Kurtcuoglu[1], Marianne Schmid Daners[2], Verena Knobloch[3], Christian Langkammer[4,5], Nikolaus Krebs[5], Monika Gloor[6], Eva Scheurer[5], Klaus Scheffler[4], Stefan Ropele[4], Peter Boesiger[3], Dimos Poulikakos[1], Michaela Soellinger[4]
[1]Laboratory of Thermodynamics in Emerging Technologies, Department of Mechanical & Process Engineering, ETH Zurich, Zurich, Switzerland; [2]Institute for Dynamic Systems & Control, ETH Zurich, Zurich, Switzerland; [3]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [4]Department of Neurology, Medical University of Graz, Graz, Austria; [5]Ludwig Boltzmann Institute for Clinical-Forensic Imaging, Graz, Austria; [6]Department of Radiology, University Hospital Basel, Basel, Switzerland

2579. A Reproducibility Study in PAD Patient Plaque Burden Analysis Approach with Multi-Contrast Weighting MRI

Dongxiang Xu[1], Aaron Black[2], Yihua Liao[2], Timothy Carroll[2], Debiao Li[2], James Carr[2], Chun Yuan, Mary M. McDermott[2]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Northwestern University

2580. ICA Analysis of Brachial Plexus Injury in an Animal Model Reveals Rapid Brain Plasticity in 9.4 T

Rupeng Li[1], J. B. Stephenson, IV[2], Christopher Pawela, Ji-Geng Yan[2], Andrew Nencka, Anthony G. Hudetz[3], Hani Matloub[2], James .S Hyde[1]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Plastic Surgery, Medical College of Wisconsin; [3]Anesthesiology, Medical College of Wisconsin

2581. Artificial Hematomas in Subcutaneous Fatty Tissue: Volume Estimation by using Different MR Sequences & Manual Segmentation of Pork Belly Phantoms

Kathrin Ogris[1,2], Martin Urschler[1,3], Andreas Petrovic[1,4], Kathrin Yen[1], Eva Scheurer[1]
[1]Ludwig Boltzmann Institute for Clinical- Forensic Imaging, Graz, Austria; [2]Department of Forensic Medicine, Medical University, Graz, Austria; [3]Institute for Computer Graphics & Vision, University of Technology, Graz, Austria; [4]Institute of Medical Engineering, University of Technology, Graz, Austria

2582. Automatic Detection of Cortical Thickness Measurement Errors using Support Vector Regression

Vitali Zagorodnov[1], Kallam Hanimi Reddy
[1]Nanyang Technological University, Singapore, NA, Singapore

2583. The Simultaneous Multiple-Voxel Processing of MRI Data using Bayesian Random Effects Modelling
Martin David King[1], Fernando Calamante[2], Chris A. Clark[1], David Gadian[1]
[1]Institute of Child Health, University College London, London, United Kingdom; [2]Brain Research Institute, Melbourne, Australia

2584. Automatic Brain Tumor Segmentation & Tumor Tissue Classification Based on Multiple MR Protocols
Astrid Franz[1], Henriette Tschampa[2], Andreas Müller[2], Stefanie Remmele[1], Jochen Keupp[1], Jürgen Gieseke[3], Hans Heinz Schild[2], Petra Mürtz[2]
[1]Philips Research, Hamburg, Germany; [2]Department of Radiology, University Hospital Bonn, Bonn, Germany; [3]Philips Healthcare, Hamburg, Germany

2585. Surface Morphometry of Subcortical Structures in Premature Neonates
Yalin Wang[1], Ashok Panigrahy[2,3], Rafael Ceschin[2], Songling Liu[1], Paul M. Thompson[4], Natasha Leporé[3]
[1]Computer Science & Engineering, Arizona State University, Tempe, AZ, United States; [2]Radiology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA, United States; [3]Radiology, Childrens Hospital Los Angeles, Los Angeles, CA, United States; [4]Laboratory of Neuro Imaging, UCLA School of Medicine, Los Angeles, CA, United States

2586. Preliminary Results on the Clinical Relevance of Multiple Sclerosis Lesion Distribution Independent of Lesion Volume
Fahime Sheikhzadeh[1,2], Roger Tam[2,3]
[1]Biomedical Engineering Program, University of British Columbia, Vancouver, BC, Canada; [2]MS/MRI Research Group, University of British Columbia, Vancouver, BC, Canada; [3]Department of Radiology, University of British Columbia, Vancouver, BC, Canada

2587. Improved Susceptibility Quantification with Effective Magnetic Moment
Saifeng Liu[1], Jaladhar Neelavalli[2], Jin Tang[1], Ewart Mark Haacke[2,3]
[1]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]The Magnetic Resonance Imaging Institute for Biomedical Research, Detroit, MI, United States; [3]Academic Radiology, Wayne State University, Detroit, MI, United States

2588. Automated Volumetric Measurements of Posterior Cranial Fossa by MRI: Applications to Chiari I Malformation
Noam Alperin[1], Snag Lee[1], Derek Monette[1], Ahmet Bagci[1], Birgit Ertl-Wagner[2], Raymond Sekula[3]
[1]University of Miami, Miami, FL, United States; [2]University of Munich, Germany; [3]Allegheny General Hospital, Pittsburgh

2589. Atrophy in Rats Induced with Mild TBI and Hemorrhagic Shock: A TBM-Based Analysis
Priya Goel[1], Sushmita Datta[1], Kurt H. Bockhorst[1], Jovany C. Navarro[2], Claudia S. Robertson[2], Ponnada A. Narayana[1]
[1]Diagnostic & Interventional Imaging, Medical School, the University of Texas Health Science Center at Houston, Houston, TX, United States; [2]Neurosurgery, Baylor College of Medicine, Houston, TX, United States

2590. Perceived Dark Rim in First-Pass Myocardial Perfusion MRI Due to Visual Illusion
Taehoon Shin[1], Bosco S. Tjan[2], Krishna S. Nayak[3]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Psychology and Neuroscience, University of Southern California, Los Angeles, CA, United States; [3]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2591. Quantitative Description of Vessel Geometry from Microscopic MR Skin Imaging
Elmar Laistler[1], Ewald Moser[1]
[1]MR Center of Excellence, Center for Medical Physics & Biomedical Engineering, Medical University of Vienna, Vienna, Austria

2592. *In Vivo* MR Quantification of Liver Fat Content in Obese Mice: Comparison of Dual-Echo Dixon Imaging, Chemical Shift Selective Imaging & Hydrogen MR Spectroscopy
Shenghong Ju[1], Xin-Gui Peng[1]
[1]Department of Radiology, Zhongda Hospital, Southeast University, Nanjing, Jiangsu, China, People's Republic of

2593. MR Multiparametric Analysis for Tumour Heterogeneity Characterisation. Framework & Initial Experiment in Liver Metastases.
Rado Andriantsimiavona[1], Martin Leach[1], Simon Doran[1], David Collins[1], Soeren Grimm[2], Dow-Mu Koh[1]
[1]Institute of Cancer Research UK, Sutton, Surrey, United Kingdom; [2]Biotronics3D Ltd., London, United Kingdom

2594. Computation of Structure Model Index in the Spatial Resolution Regime of *In Vivo* Trabecular Bone MRI
Shing Chun Benny Lam[1], Jeremy F. Magland[1], Scott N. Hwang[2], Felix W. Wehrli[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, Emory University, Atlanta, GA, United States

2595. Targeted Coregistration of Abdominal DCE MRI
Artem Mikheev[1], Vivian S. Lee[1], Henry Rusinek[1]
[1]Radiology, NYU School of Medicine, New York, NY, United States

2596. Automatic Registration of Renal Perfusion Image Sequences by Mutual Information & Adaptive Prediction
Vincenzo Positano[1], Ilaria Bernardeschi[1], Virna Zampa[2], Martina Marinelli[3], Maria Filomena Santarelli[3], Luigi Landini[1,4]
[1]MRI Lab, Fondazione G.Monasterio CNR-Regione Toscana, Pisa, Italy; [2]Department of Diagnostic & Interventional Radiology, University of Pisa, Pisa, Italy; [3]Institute of Clinical Physiology, Pisa, Italy; [4]Department of Information Engineering, University of Pisa, Pisa, Italy

2597. Automated Analysis of MRI Data of Patients with ADPKD for the Volume of the Kidneys & of the Enclosed Cysts
Stathis Hadjidemetriou[1], Wilfried Reichardt[1], Juergen Hennig[1], Martin Buechert[2]
[1]Department of Diagnostic Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]MRDAC, University Medical Center Freiburg, Freiburg, Germany

2598. Automatic Mean Transit Time Lesion Outlining in Acute Stroke using Level Sets
Kim Mouridsen[1], Anders Neumann, Lars Riisgaard Ribe, Kristjana Yr Jonsdottir, Leif Østergaard
[1]Center for Functionally Integrative Neuroscience, Aarhus University Hospital, Aarhus University, Aarhus, Denmark

2599. Effect of ISODATA Dimensionality on Spatiotemporal Evolution of Ischemic Brain Injury in Acute Ischemic Stroke
Jerry S. Cheung[1], Enfeng Wang[1,2], Xiaoying Wang[3], Phillip Zhe Sun[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH & Harvard Medical School, Charlestown, MA 02129, United States; [2]Department of Radiology, 3rd Affiliated Hospital, Zhengzhou University, China, People's Republic of; [3]Neuroprotection Research Laboratory, Department of Radiology & Neurology, MGH & Harvard Medical School, Charlestown, MA 02129, United States

2600. How Shaky is MRE? Bootstrap & Monte Carlo Analysis of Reliability
Geng Guangqiang[1], Lynne Bilston[1,2], Ralph Sinkus[3], Roland Henry[4], Caroline Rae[1,5]
[1]Neuroscience Research Australia, Sydney, NSW, Australia; [2]Prince of Wales Clinical School, UNSW, Sydney, Australia; [3]Centre de Recherches Biomédicales Bichat-Beaujon, Paris, France; [4]Departments of Radiology & Biomedical Imaging, Neurology, & Bioengineering Graduate Group, University of California, San Francisco, United States; [5]UNSW, Syndey, Australia

2601. Ideal-Observer Based Metric for MR Image Quality Assessment - Application to Lesion Detection
Christian G. Graff[1], Kyle J. Myers[2]
[1]Division of Imaging & Applied Mathematics, U. S. Food & Drug Administration , Silver Spring, MD, United States; [2]Division of Imaging & Applied Mathematics, U. S. Food & Drug Administration, Silver Spring, MD, United States

2602. Automatic Localization of the Anterior & Posterior Commissures in MRI Brain Images using Artificial Neural Networks
Don C. Bigler[1], Megan Taylor Sutton[1], Gregory J. Moore[2]
[1]Center for Emerging Neurotechnology & Imaging, Penn State Hershey Neuroscience Institute, Hershey, PA, United States; [2]Radiology, Geisinger Medical Center, Danville, PA, United States

2603. Ultra-High Resolution Atlas-Based Segmentation of GPi for Deep Brain Stimulation in Parkinson's Disease
Maria Ida Iacono[1], Nikos Makris[1], Luca Mainardi[2], John Gale[3], Andre Van Der Kouwe[1], Azma Mareyam[1], Jonathan R. Polimeni[1], Lawrence L. Wald[1], Bruce Fischl[1], Emad N. Eskandar[4], Giorgio Bonmassar[1]
[1]Dept. of Radiology,MGH, A. A. Martinos Center for Biomedical Imaging, Charlestow, MA, United States; [2]Bioengineering Department, Politecnico di Milano; [3]Cleveland Clinic, Department of Neuroscience & Center for Neurological Restoration, Cleveland, OH, United States; [4]Neurosurgery, Massachusetts General Hospital, Boston, MA, United States

Mouse MRI

Exhibition Hall Wednesday 13:30-15:30

2604. WASSR Imaging of Iron Oxide Particles at 2.35 & 7T
Jean-Sebastien Raynaud[1], Antony Lee[1], Caroline Robic[1], Eric Giaccomini[2], Isabelle Raynal[1], Philippe Robert[1], Franck Lethimonier[2], Marc Port[1], Claire Corot[1]
[1]Guerbet Research, Paris, France; [2]Neurospin, CEA, Saclay, France

2605. WASSR Imaging of αvβ3 Targeted USPIO at 2.35T on U87 Mice Tumors : Feasibility Study
Jean-Sebastien Raynaud[1], Antony Lee[1], Xavier Violas[1], Robin Santus[1], Gaelle Louin[1], Isabelle Raynal[1], Philippe Robert[1], Marc Port[1], Claire Corot[1]
[1]Guerbet Research, Paris, France

2606. Slice Ordering for Cardio-Respiratory Triggered Imaging of the Whole Liver in the Mouse
Sean Smart[1], Danny Allen[1], John Beech[1], Sally Hill[1], Veerle Kersemans[1], Lei Zhao[1], Ruth Muschel[1]

[1]Gray Institute, Oxford University, Oxford, Oxfordshire, United Kingdom

2607. **Feasibility of High Resolution Mouse Brain Spiral Imaging at Very High Field (11.75T) for Perfusion Studies**
Mohamed Tachrount[1], Virginie Callot[1], Patrick J. Cozzone[1], Guillaume Duhamel[1]
[1]CRMBM / CNRS 6612, Faculté de Médecine, Université de la Méditerranée, Marseille, France

Dental MRI

Exhibition Hall Thursday 13:30-15:30

2608. **Paleo-NMR: Micro-Imaging of Skeletal & Odontoskeletal Remains**
Silvia Capuani[1,2]
[1]Physics Department Sapienza University of Rome, Rome, Italy; [2]CNR IPCF UOS Roma, Rome, Italy

2609. **Assessment of Cortical Bone Resorption & Acute Inflammation in Parodontitis**
Anna-Katinka Bracher[1], Michael Mess[1,2], Axel Bornstedt[1], Erich Hell[3], Johannes Ulrici[3], Bernd Haller[2], Volker Rasche[1]
[1]Department of Internal Medicine II, University Hospital of Ulm, Ulm, Germany; [2]Department of Operative Dentistry, Periodontology & Pedodontics, University of Ulm, Ulm, Germany; [3]Sirona Dental Systems, Bensheim, Germany

2610. **Towards Dental MRI: Zero TE Imaging of Compromised Equine Teeth**
Stefan Zwick[1], Jan-Bernd Hövener[1], Jochen Leupold[1], Frank Schellenberger[2], Dominik V. Elverfeldt[1]
[1]Department of Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany; [2]Dr. Frank Schellenberger Hypo Dental

2611. **Accurate *In Vivo* Assessment of Caries Lesion Extent by UTE MRI**
Anna-Katinka Bracher[1], Chrisitan Hofmann[1,2], Axel Bornstedt[1], Erich Hell[3], Johannes Ulrici[3], Bernd Haller[4], Volker Rasche[1]
[1]Department of Internal Medicine II, University Hospital of Ulm, Ulm, Germany; [2]Department of Operative Dentistry, Periodontology & Pedodontics , University of Ulm, Ulm, Germany; [3]Sirona Dental Systems, Bensheim, Germany; [4]Department of Operative Dentistry, Periodontology & Pedodontics, University of Ulm, Ulm, Germany

2612. **High-Resolution ZTE Imaging of Human Teeth**
Markus Weiger[1,2], Klaas Paul Pruessmann[3], Anna-Katinka Bracher[4], Sascha Köhler[2], Volker Lehmann[5], Uwe Wolfram[6], Volker Rasche[4]
[1]Bruker BioSpin AG, Faellanden, Switzerland; [2]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [3]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [4]Internal Medicine II, University of Ulm, Ulm, Germany; [5]Bruker BioSpin GmbH, Rheinstetten, Germany; [6]Institute of Orthopaedic Research & Biomechanics, University of Ulm, Ulm, Germany

2613. **Assessment of Bone Degradation & Acute Inflammation in Apical Parodontitis**
Anna-Katinka Bracher[1], Axel Bornstedt[1], Erich Hell[2], Johannes Ulrici[2], Leif-Konradin Sailer[3], Volker Rasche[1]
[1]Department of Internal Medicine II, University Hospital of Ulm, Ulm, Germany; [2]Sirona Dental Systems, Bensheim, Germany; [3]DOC, Praxisklinik im Wiley, Neu-Ulm, Germany

2614. **Quantitative UTE MRI of Human Temporomandibular Disc: Relation to Biomechanical Property**
Won C. Bae[1], Sheronda Statum[1], Reni Biswas[2], Robert L. Sah[2], Jiang Du[1], Christine B. Chung[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Bioengineering, University of California, San Diego, La Jolla, CA, United States

Cardiac Sequences: Applications & Evaluations

Exhibition Hall Monday 14:00-16:00

2615. **k-Space Sampling Approaches using TWIST: Implications for Dynamic Contrast Acquisitions**
Xin Li[1], John W. Grinstead[2], Cecily V. Bishop[3], Ian J. Tagge[1], Richard L. Stouffer[3,4], William D. Rooney[1], Gerhard Laub[5]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Siemens Healthcare, Portland, OR, United States; [3]Division of Reproductive Sciences, ONPRC, Oregon Health & Science University, Portland, OR, United States; [4]Department of Obstetrics & Gynecology, Oregon Health & Science University, Portland, OR, United States; [5]Siemens Healthcare, San Francisco, CA, United States

2616. **Improved Motion-Sensitized Driven-Equilibrium (IMSDE) Prepared 3D GRASE for High Field Magnetic Resonance Imaging of Carotid Artery Wall**
Linqing Li[1], Alistair C. Lindsay[2], Matthew D. Robson[1], Peter Jezzard[1]

[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Department of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom

2617. Carotid & Jugular Vessel Wall Imaging - A Study
Karan Dara[1,2], Daniel P. Hsu[2,3], Jamal J. Derakhshan[1,2], John A. Jesberger[2], Jeffrey L. Duerk[1,2], Vikas Gulani[2], Jeffrey L. Sunshine[2], Teresa L. Carman[4], Mark A. Griswold[1,2]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Radiology, University Hospitals of Cleveland, Cleveland, OH, United States; [3]Department of Neurosurgery, University Hospitals of Cleveland, Cleveland, OH, United States; [4]Department of Vascular Medicine, University Hospitals of Cleveland, Cleveland, OH, United States

2618. Comparison of Short Diffusion Preparations for 3D Black Blood Imaging.
Niranjan Balu[1], Jinnan Wang[2], Chun Yuan[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Philips Research North America, Seattle, WA, United States

2619. Validation of Nonrigid Registration for Cardiac Cine MR Time Series
Guyu Li[1], Li Zhang[1], Christoph Guetter[1], Christophe Chefd'hotel[1]
[1]Siemens Corporate Research, Princeton, NJ, United States

2620. Comparison Among Radial, Spiral-Out & Spiral-In/Out Bssfp in Real Time Cardiac Imaging
Xue Feng[1], Michael Salerno[2], Christopher M. Kramer[2,3], Craig H. Meyer[3,4]
[1]University of Virginia, Charlottesville, VA, United States; [2]Medicine, University of Virginia, Charlottesville, VA, United States; [3]Radiology, University of Virginia, Charlottesville, VA, United States; [4]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States

2621. On the Advantages of Retrospectively Gated Radial Acquisitions for Cine Phase Contrast Flow Imaging
Ashley Gould Anderson III[1], Andrew L. Wentland[1,2], Kevin M. Johnson[1], Oliver Wieben[1,2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States

2622. Simultaneous Nulling of Fat & Viable Myocardium in Delayed Enhancement Imaging - a New Approach to Fat Suppression at 1.5 & 3 Tesla Employing Multiple SPAIR Pulses
Wolfgang Gerhard Rehwald[1], Elizabeth R. Jenista[2], Denise L. Morell[2], Nayla Chaptini[2], Deneen M. Spatz[2], Enn-Ling Chen[2], Raymond J. Kim[2]
[1]Cardiovascular MR R&D, Siemens Healthcare, Chicago, Ilinois, United States; [2]Duke Cardiovascular MR Center, Duke University Medical School, Durham, NC, United States

Body MRI: Applications & Evaluations

Exhibition Hall Tuesday 13:30-15:30

2623. Evaluation of the Recipient Vessels After Orthotopic Liver Transplantation by Non-Contrast Magnetic Resonance Angiography: A SLEEK Sequence
Yigang Pei[1], Daoyu Hu[2]
[1]Department of Radiology, Tongji Hospital,Tongji Medical College,Huazhong University of Science & Technology, Wuhan, Hubei, China, People's Republic of; [2]1Department of Radiology, Tongji Hospital,Tongji Medical College,Huazhong University of Science & Technology

2624. Robust Renal MRA using Breath-Hold, IR-Prep, Dixon BSSFP at 3T
Pauline Wong Worters[1], Manojkumar Saranathan[1], Alan Xu[1], Shreyas Vasanawala[1]
[1]Stanford University, Stanford, CA, United States

Analysis of Breast Images

Exhibition Hall Wednesday 13:30-15:30

2625. The Effect of Acquisition Parameter Changes on the Outcome of Texture Analysis using a Clinical Breast MRI Sequence on a Foam Phantom at 1.5T
Shelley Waugh[1,2], Richard Lerski[1,2], L. Bidaut[2], Alastair Thompson[2,3]
[1]Medical Physics, Ninewells Hospital, Dundee, United Kingdom; [2]University of Dundee, Dundee, United Kingdom; [3]Department of Surgery, Ninewells Hospital, United Kingdom

2626. Computerized Classification of Benign & Malignant Breast Lesions on DCE-MRI Utilizing Novel Shape Descriptors
Rachel Evonne Sparks[1], Anant Madabhushi[1]

[1]Biomedical Engineering, Rutgers University, Piscataway, NJ, United States

2627. Two Non-Linear Parametric Models of Enhancement for Breast DCE-MRI That Can Be Fitted using Linear Least Squares

Andrew Mehnert[1], Michael Wildermoth[1], Stuart Crozier[1], Ewert Bengtsson[2], Dominic Kennedy[3]
[1]School of ITEE, the University of Queensland, Brisbane, Qld, Australia; [2]Centre for Image Analysis, Uppsala University, Sweden; [3]Queensland X-Ray, Greenslopes Private Hospital, Greenslopes, Australia

2628. The Influence of Field Strength & Different Clinical Breast MRI Protocols on the Outcome of Texture Analysis using Foam Phantoms

Shelley Waugh[1,2], Richard Lerski[1,2], L. Bidaut[2], Alastair Thompson[2,3]
[1]Medical Physics, Ninewells Hospital, Dundee, Angus, United Kingdom; [2]University of Dundee, Dundee, Angus, United Kingdom; [3]Department of Surgery, Ninewells Hospital, United Kingdom

2629. Optimization of Breast Tissue Segmentation: Comparison of Support Vector Machine & Fuzzy C-Mean Clustering Algorithms

Yi Wang[1,2], Glen Morrell[2], Allison Payne[2], Dennis L. Parker[1,2]
[1]Bioengineering, University of Utah, Salt Lake City, UT, United States; [2]Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States

2630. A Comparative Study of Undersampling Schemes for Magnetic Resonance Dynamic Contrast Enhanced Imaging

Sairam Geethanath[1], Praveen K. Gulaka[1], Vikram D. Kodibagkar[1,2]
[1]Joint graduate program in biomedical engineering, UT Arlington & UT Southwestern Medical Center, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center

2631. Image Registration & Pharmacokinetic Parameter Estimation for 3D DCE-MR Mammography

Andrew Melbourne[1], John Hipwell[1], Marc Modat[1], Thomy Mertzanidou[1], Henkjan Huisman[2], Sebastien Ourselin[1], David Hawkes[1]
[1]University College London, London, United Kingdom; [2]Radboud University Nijmegen Medical Centre, Netherlands

2632. Influence of Fat-Sat & Non-Fat-Sat Imaging Sequences, Spatial Resolution, & Breast Morphological Types on Density Measurements

Daniel Han-en Chang[1,2], Jeon-Hor Chen[1,3], Muqing Lin[1,2], Shadfar Bahri[1,2], Hon J. Yu[1,2], Rita S. Mehta[4], Ke Nie[1,2], David J. B. Hsiang[5], Orhan Nalcioglu[1,2], Min-Ying Lydia Su[1,2]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Radiological Sciences, University of California, Irvine, CA, United States; [3]Department of Radiology, China Medical University Hospital, Taichung, Taiwan; [4]Department of Medicine, University of California, Irvine, CA, United States; [5]Department of Surgery, University of California, Irvine, CA, United States

2633. Supervised Multispectral Analysis of Breast Density in MRI

Hsian-Min Chen[1], Siwa Chan[2], Jyh-Wen Chai[2], Clayton Chi-Chang Chen[2], San-Kan Lee[2], Chein-I Chang[3], Min-Ying Su[4], Orhan Nalcioglu[4], Jeon-Hor Chen[4,5]
[1]Department of Biomedical Engineering, HungKuang University, Taichung, Taiwan; [2]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan; [3]Department of Computer Science & Electrical Engineering, University of Maryland, Baltimore, United States; [4]Center for Functional Onco-Imaging, University of California Irvine, California, United States; [5]Department of Radiology, China Medical University Hospital, Taichung, Taiwan

2634. Computational Simulation of Effects of the Morphology of Fibroglandular Tissues on Projected Breast Density Changes After Breast Compression Based on 3D MRI

Tzu-Ching Shih[1,2], Jeon-Hor Chen[2,3], Muqing Lin[4], Daniel Chang[4], Ke Nie[4], Orhan Nalcioglu[4,5], Min-Ying Su[4]
[1]Department of Biomedical Imaging & Radiological Science, China Medical University, Taichung, 40402, Taiwan; [2]Department of Radiology, China Medical University Hospital, Taichung, 40402, Taiwan; [3]Tu & Yuen Center for Functional Onco-Imaging & Department of Radiological Sciences, University of California, Irvine, Irvine, CA 92697 , United States; [4]Tu & Yuen Center for Functional Onco-Imaging & Department of Radiological Sciences, University of California, Irvine, Irvine, CA 92697, United States; [5]Department of Cogno-Mechatronics Engineering, Pusan National University, Busan 609-735, Korea, Republic of

2635. Deformable Registration with Tumor Volume Preservation in Dynamic Contrast Enhanced MR Breast Images

Hyun Hee Jo[1], Helen Hong[1]
[1]Division of Multimedia Engineering, Seoul Women's University, Seoul, Korea, Republic of

2636. Evaluation of Spatial Changes of Fibroglandular Tissue in the Breast between Two Scans using Non-Rigid Registration Method

Muqing Lin[1], Jeon-Hor Chen[1,2], Shadfar Bahri[1], Siwa Chan[3], Tzu-Ching Shih[4], Ke Nie[1], Orhan Nalcioglu[1], Min-Ying Lydia Su[1]
[1]Tu & Yuen Center for Functional Onco-Imaging & Department of Radiological Sciences, University of California, Irvine, CA, United States; [2]Department of Radiology, China Medical University, Taichung, Taiwan; [3]Department of Radiology, Taichung

Veterans General Hospital, Taichung, Taiwan; [4]Department of Biomedical Imaging & Radiological Science, China Medical University, Taichung, Taiwan

2637. Novel Variable Voxel Intensity Correction Scheme and Application to Breast Imaging
Anderson N. Nnewihe[1,2], Kyung H. Sung[1], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Bioengineering, Stanford University, Stanford, CA, United States

Analysis of Prostate Images

Exhibition Hall Thursday 13:30-15:30

2638. Prostate Cancer Probability Estimation Based on DCE-DTI Features & Support Vector Machine Classification
Mehdi Moradi[1], Septimiu E. Salcudean[1], Silvia D. Chang[2], Edward C. Jones[3], S. Larry Goldenberg[4,5], Piotr Kozlowski[2,6]
[1]Electrical & Computer Engineering, University of British Columbia, Vancouver, BC, Canada; [2]Radiology, University of British Columbia; [3]Pathology & Laboratory Medicine, University of British Columbia; [4]Urologic Sciences, University of British Columbia; [5]Vancouver Prostate Centre, University of British Columbia; [6]MRI Research Centre, University of British Columbia, Vancouver, Canada

2639. Multifarious Kinetic Analysis for Differentiation of Prostate Cancer & Benign Prostatic Hyperplasia in DCE-MRI
Sang Ho Lee[1], Jong Hyo Kim[1,2], Jeong Yeon Cho[2,3], Sang Youn Kim[2,3], in Chan Song[3], Hyeon Jin Kim[3], Seung Hyup Kim[2,3],
[1]Interdisciplinary Program in Radiation Applied Life Science, Seoul National University College of Medicine, Seoul, Korea, Republic of; [2]Department of Radiology, Seoul National University College of Medicine, Seoul, Korea, Republic of; [3]Department of Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

2640. Computerized Quantitative Data Integration of Multi-Protocol MRI for Identification of High Grade Prostate Cancer *In Vivo*.
Pallavi Tiwari[1], John Kurhanewicz[2], Anant Madabhushi[1]
[1]Biomedical Engineering, Rutgers University, Piscataway, NJ, United States; [2]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, United States

2641. Accuracy Enhancement of Automatic Prostate Tumor Detection using Additional Deformable Registration Based Atlas Information: Automated Classifier using Permeability Parameters.
Namkug Kim[1], JeongKon Kim[1]
[1]Radiology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, Republic of

2642. EMPrAvISE: A Computerized Decision Support System for Automated Prostate Cancer Detection from Multi-Protocol MRI
Satish Viswanath[1], B. Nicolas Bloch[2], Jonathan Chappelow[1], Pratik Patel[1], Neil Rofsky[3], Robert Lenkinski[4], Elisabeth Genega[4], Anant Madabhushi[1]
[1]Biomedical Engineering, Rutgers University, Piscataway, NJ, United States; [2]Boston Medical Center; [3]UT Southwestern Medical Center; [4]Beth Israel Deaconess Medical Center

2643. Accurate Prostate Volume Determination from T_2-W MRI using Statistical Shape Models
Robert James Toth[1], B. Nicholas Bloch[2], Elizabeth M. Genega[3], Neil M. Rofsky[3], Robert E. Lenkinski[3], Mark A. Rosen[4], Anant Madabhushi[1]
[1]Biomedical Engineering, Rutgers University, New Brunswick, NJ, United States; [2]Boston Medical Center, Bostom, MA, United States; [3]Beth Israel Deaconess Medical Center, Boston, MA, United States; [4]Hospital at the University of Pennsylvania, Philadelphia, PA, United States

2644. Exploration of BOLD-MRI in Prostate Cancer using Principal Component Analysis
Aravinthan Jegatheesan[1], Michael D. Noseworthy[1,2], Colm Boylan[3], Robert Shayegan[4], John F. MacGregor[5]
[1]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]Electrical & Computer Engineering, McMaster University, Hamilton, Ontario, Canada; [3]St. Joseph's Healthcare, Hamilton, Ontario, Canada; [4]Dept. of Urology, St. Joseph's Healthcare, Hamilton, Ontario, Canada; [5]Chemical Engineering, McMaster University, Hamilton, Ontario, Canada

2645. Determining Histology-MRI Slice Correspondences for Mapping Prostate Cancer Extent *In Vivo*
Gaoyu Xiao[1], B. Nicolas Bloch[2], Jonathan Chappelow[1], Elizabeth Genega[3], Neil Rofsky[3], Robert Lenkinski[3], John Tomaszewski[4], Michael Feldman[4], Mark Rosen[4], Arjun Kalyanpur[5], Anant Madabhushi[1]
[1]Rutgers University, Piscataway, NJ, United States; [2]Boston Medical Center, MA, USA; [3]Beth Israel Deaconess Medical Center, MA, USA; [4]University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA, USA.; [5]Teleradiology Solutions Pvt. Ltd. Whitefield, Bangalore, 560048, India

2646. Automatic Arterial Input Function Detection for Prostate Dynamic Contrast Enhanced MRI
Yingxuan Zhu[1], Ming-Ching Chang[2], Fiona M. Fennessy[3], Sandeep Narendra Gupta[4]
[1]Dept. of EECS, Syracuse University, Syracuse, NY, United States; [2]Vis. & Comp. Vision Lab, GE Global Research Center, Niskayuna, NY, United States; [3]Dept. of Radiology, Brigham & Women's Hospital, Boston, MA, United States; [4]Functional Imaging Lab, GE Global Research Center, Niskayuna, NY, United States

2647. CADOnc: A Computerized Decision Support System for Quantifying Radiation Therapy Changes in the Prostate Via Multi-Parametric MRI
Satish Viswanath[1], Jonathan Chappelow[1], Pallavi Tiwari[1], John Kurhanewicz[2], Anant Madabhushi[1]
[1]Biomedical Engineering, Rutgers University, Piscataway, NJ, United States; [2]University of California, San Francisco

2648. Rapid Quantitative T_2 Imaging of Prostate Cancer using a Reduced FOV Single-Shot Fast-Spin-Echo Sequence
Lawrence Patrick Panych[1], Renxin Chu[1], Yi Tang[1], Stephan E. Maier[1], Clare M. Tempany[1], Robert V. Mulkern[2]
[1]Radiology, Brigham & Womens Hospital, Boston, MA, United States; [2]Radiology, Children's Hospital, Boston, MA, United States

Neuro MRI: Applications & Evaluations

Exhibition Hall Monday 14:00-16:00

2649. Real-FLAIR: Real-Part Imaging for Fluid Attenuated Inversion Recovery Sequence
Tokunori Kimura[1], Mitsukazu Kamata[1]
[1]MRI Development Department, Toshiba Medical Systems corp., Otawara, Tochigi, Japan

2650. 3D Flow-Dephased Fast Spin Echo for MR Neurography: A Feasibility Study
Zhikui Xiao[1], Lou Xin[2], Shen Hao[1], Cao Guang[1]
[1]Global Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of; [2]Department of Radiology, PLA General Hospital, Beijing, China, People's Republic of

2651. Evaluation of Neonatal Pathology using T_1 Weighted Techniques, Snapir & Gradient Echo
Amy Kathleen McGuinness[1], Christina Malamateniou[1], Joanna M. Allsop[1], Serena J. Counsell[1], Rita G. Nunes[1], Zhi Q. Wu[1], Nora Tusor[2], Ash Ederies[2], Jo V. Hajnal[1], Mary A. Rutherford[1]
[1] Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom; [2]Neonatal Imaging Group, Hammersmith Hospital, Imperial College London, London, United Kingdom

2652. 3D DIR: 3D Double Inversion Recovery in Multiple Sclerosis
Paul Polak[1], Robert Zivadinov[1,2], Guy Poloni[1]
[1]Buffalo Neuroimaging Analysis Center, Department of Neurology, University at Buffalo, State University of New York, Buffalo, NY, United States; [2]The Jacobs Neurological Institute, Department of Neurology, University at Buffalo, State University of New York, Buffalo, NY, United States

2653. 3D FLAIR-ED: 3D Fluid Attenuated Inversion Recovery for Enhanced Detection of Lesions in Multiple Sclerosis
Paul Polak[1], Robert Zivadinov[1,2], Guy Poloni[1]
[1]Buffalo Neuroimaging Analysis Center, Department of Neurology, University at Buffalo, State University of New York, Buffalo, NY, United States; [2]The Jacobs Neurological Institute, Department of Neurology, University at Buffalo, State University of New York, Buffalo, NY, United States

2654. Signal & Contrast Optimized Inversion Prepared Imaging
Albert Kir[1,2], Alan Blair McMillan[1]
[1]Magnetic Resonance Research Center, Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Electrical Engineering & Computer Science, University of Maryland Baltimore County, Baltimore, MD, United States

2655. Correlation of Phase Values with CT Hounsfield & R_2* Values in Calcified Neurocysticercosis
Bhashwati Roy[1], Sanjay Verma[2], Rishi Awasthi[1], Ram K. S. Rathore[2], Ramesh Venkatesan[3], Sa Yoganathan[4], Kj Maria Das[4], Kashi Nath Prasad[5], Rakesh Kumar Gupta[1]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; [3]Wipro-GE Healthcare, Bangalore, Karnataka, India; [4]Radiotherapy, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India

2656. Single Phase 3D Contrast-Enhanced Intracranial Magnetic Resonance Angiography with Undersampled SWIRLS Trajectory at 3T
Yunhong Shu[1], Joshua D. Trzasko[1], John III Huston[1], Armando Manduca[1], Matt A. Bernstein[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Susceptibility MRI: Applications & Evaluations

Exhibition Hall Tuesday 13:30-15:30

2657. Harmonic Phase Subtraction Methods Are Prone to B_1 Background Components
Ferdinand Schweser[1,2], Marie Atterbury[1,3], Andreas Deistung[1], Berengar Wendel Lehr[1], Karsten Sommer[1,4], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]Dept. of Physics, Brown University, Providence, RI, Germany; [4]School of Physics & Astronomy, Friedrich Schiller University of Jena, Jena, Germany

2658. Whole-Brain Voxel-Based Susceptibility-Weighted Imaging (SWI) Analysis: Normal Cortical & Subcortical Values, & Preliminary Results in Post-Traumatic Epilepsy
Hugo Alexandre Ferreira[1], Alexandre Andrade[1], Rui M. Manaças[2,3], Pedro Miguel Gonçalves-Pereira[3,4]
[1]Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal; [2]Serviço de Neurorradiologia, Hospital dos Capuchos, Lisboa, Portugal; [3]Serviço de Radiologia, Hospital dos Lusíadas, Lisboa, Portugal; [4]Escola Superior de Tecnologias da Saúde, Instituto Politécnico de Lisboa, Lisboa, Portugal

2659. Comparison of Susceptibility Gradient Mapping & Off-Resonance Excitation for Quantitative Positive Contrast MRI of Magnetotactic Bacteria
Sonal Josan[1,2], Amanda Hamilton[3], Michael Benoit[3], Charles Cunningham[4], Daniel Spielman[2], A. C. Matin[3], Dirk Mayer[1,2]
[1]SRI International, Menlo Park, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Microbiology & Immunology, Stanford University, Stanford, CA, United States; [4]Sunnybrook Health Sciences Center, Toronto, ON, Canada

2660. Orientation Effects on the Local Magnetic Field or Phase & T_2*-Weighted Hypointensity of Gradient Echo Imaging & Their Removal in Quantitative Susceptibility Mapping
Jianqi Li[1], Tian Liu[2,3], Deqi Cui[2,4], Qianfeng Wang[1], Mengchao Pei[1], Ming Zhang[1], Yi Wang[2,3]
[1]Shanghai Key Laboratory of Magnetic Resonance, East China Normal University, Shanghai, China, People's Republic of; [2]Radiology, Weill Medical College of Cornell University, New York, NY, United States; [3]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [4]Biomedical Engineering,, Cornell University , Ithaca, NY, United States

2661. Fast Whole Brain Susceptibility Imaging using 3D Spiral
Bing Wu[1], Wei Li[1], Alex Avram[1], Arnaud Guidon[1], Chunlei Liu[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States

2662. Quantitative Susceptibility Mapping of Cerebral Microbleeds
Tian Liu[1,2], Krishna Surapaneni[3], Min Lou[4], Liuquan Cheng[5], Jianzhong Sun[6], Cynthia Wisnieff[1,2], Craig Horenstein[3], Minming Zhang[6], Yi Wang[1,2]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Radiology, Columbia University, New York, NY, United States; [4]Neurology, the Second Affiliated Hospital, Zhejiang University School of Medicine, Hang Zhou, Zhe Jiang, China, People's Republic of; [5]Radiology, PLA General Hospital, Beijing, China, People's Republic of; [6]Radiology, the Second Affiliated Hospital, Zhejiang University School of Medicine, Hang Zhou, Zhe Jiang, China, People's Republic of

Artifacts & Correction: Phase Processing & SWI

Exhibition Hall Wednesday 13:30-15:30

2663. Improved Forward Calculation for Phase Artifacts Removal in Susceptibility Mapping
Saifeng Liu[1], Jaladhar Neelavalli[2], Weili Zheng[3], Ewart Mark Haacke[2,4]
[1]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]The Magnetic Resonance Imaging Institute for Biomedical Research, Detroit, MI, United States; [3]Biomedical Engineering, Wayne State University, Detroit, MI, United States; [4]Academic Radiology, Wayne State University, Detroit, MI, United States

2664. Matching Pursuit Iterative Dipole Based Filter of Background Fields in Phase Imaging
José P. Marques[1,2], Yves Wiaux[3,4], Rolf Gruetter[1,5]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland; [3]Signal Processing Laboratory 5, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Medical Image Processing Laboratory, University of Geneva, Geneva, Switzerland; [5]Department of Radiology, University of Lausanne and Geneva, Switzerland

2665. Reducing Artifacts in SWI Based MR Venography - Post Processing Technique to Compensate for the Signal Loss
Se Rim Park[1], Ung Jang[1], Dosik Hwang[1]

[1]School of Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

2666. CAMPUS: A Catalytic Multiecho Phase Unwrapping Scheme
Wei Feng[1], Jaladhar Neelavalli[1], E. M. Haacke[1]
[1]Wayne State University, Detroit, MI, United States

2667. On the Impact of Regularization & Kernel Type on SHARP-Corrected GRE Phase Images
Ferdinand Schweser[1,2], Karsten Sommer[1,3], Marie Atterbury[1,4], Andreas Deistung[1], Berengar Wendel Lehr[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]School of Physics & Astronomy, Friedrich Schiller University of Jena, Jena, Germany; [4]Dept. of Physics, Brown University, Providence, RI, United States

Artifacts & Corrections: Imaging Near Metal

Exhibition Hall Thursday 13:30-15:30

2668. Investigations on Imaging Near Metal with Combined 3D UTE-MAVRIC
Michael Carl[1], Jiang Du[2], Kevin Koch[3]
[1]Global Applied Science Laboratory, GE Healthcare, San Diego, CA, United States; [2]University of California, San Diego, United States; [3]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

2669. Predicting Pileup Artifacts Around Magnetized Spheres in SWIFT Images
Robert O'Connell[1], Steen Moeller, Curt Corum, Djaudat Idiyatullin, Michael Garwood
[1]University of Minnesota, Minneapolis, MN, United States

2670. MRI Artifacts Due to Ingestion of Iron Supplements
Jennifer Stoneburgh[1], Ali Fatemi-Ardekani[2], Barry Smith[3], Michael D. Noseworthy[4,5]
[1]Electrical & Computer Engineering, McMaster University, Hamilton, Ontario, Canada; [2]Medical Physics, McMaster University, Hamilton, Ontario, Canada; [3]Department of Diagnostic Imaging, Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada; [4]Biomedical Engineering; Electrical & Computer Engineering, McMaster University, Hamilton, Ontario, Canada; [5]Brain Body Institute, St. Joseph's Healthcare, Hamilton, Ontario, Canada

2671. 3D MRI Impression of Metal Implant Scan Abutment in Dental Implantology
Andreas Johannes Hopfgartner[1], Julian Boldt[2], Kurt Rottner[2], Ernst Jürgen Richter[2], Peter Michael Jakob
[1]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany; [2]Prosthodontics, Dental School, University of Würzburg, Würzburg, Bavaria

2672. Metal-Induced Artifacts in Computed Tomography & Magnetic Resonance Imaging: Comparison of Biodegradable Magnesium Alloy Versus Titanium and Stainless Steel Control
Gustav Andreisek[1], Thomas Frauenfelder[1], Roger Luechinger[2]
[1]Department of Radiology, University Hospital Zurich, Zurich, ZH, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, ZH, Switzerland

Artifacts & Motion: Correction

Exhibition Hall Monday 14:00-16:00

2673. Validation of DC Self-Navigation for Breath-Hold Period Identification in Contrast-Enhanced 3D Radial Liver Perfusion Imaging
Debra E. Horng[1,2], Ethan K. Brodsky[1,2], Scott B. Reeder[1,2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

2674. *In-Vivo* Tagged-MR Based Motion Correction in Combined MR-PET
Se Young Chun[1,2], Timothy G. Reese[2,3], Bastien Guerin[1,2], Ciprian Catana[2,3], Georges El Fakhri[1,2]
[1]Division of Nuclear Medicine & Molecular Imaging, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [2]Radiology, Harvard Medical School, Boston, MA, United States; [3]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States

2675. Respiratory Gating with Measurement Time Constraints Applied to MRI with Continuously Moving Table
Matthias Honal[1], Tobias Baumann[2]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology, University Medical Center Freiburg, Germany

2676. Virtual Template Registration for DCE-MRI Renography
Michael Hofer[1], Gernot Reishofer[2], Stephen Keeling[3], Michael Riccabona[4], Manuela Aschauer[5], Rudolf Stollberger[6]
[1]Institute of Medical Engineering, University of Technology, Graz, Austria; [2]Department of Radiology, Medical University, Graz, Austria; [3]Institute for Mathematics & Scientific Computing, Karl Franzens University Graz, Austria; [4]Department of Pediatric Radiology, Medical University Graz, Austria; [5]Department of Radiology, Medical University Graz, Austria; [6]Institute of Medical Engineering, University of Technology Graz, Austria

2677. Bias Correction for Respiration Detection in Radial 3D Gradient-Echo Imaging
Robert Grimm[1], Kai Tobias Block[2], Berthold Kiefer[2], Joachim Hornegger[1,3]
[1]Pattern Recognition Lab, Department of Computer Science, University of Erlangen-Nuremberg, Erlangen, Germany; [2]Siemens Healthcare MR, Erlangen, Germany; [3]Erlangen Graduate School in Advanced Optical Technologies (SAOT)

2678. Continuous Fat Suppression During Respiratory Triggering
Alto Stemmer[1], Berthold Kiefer[1]
[1]Healthcare Sector, Siemens AG, Erlangen, Germany

2679. Mouse Cardiac MRI: Comparison of Prospective Synchronization using Optical & ECG Signals with a Retrospective Technique
Raphaël Sablong[1], Adrian Rengle[1], Audrey Pouzin[1], Olivier Beuf[1]
[1]CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Villeurbanne, France

2680. Two Degree-Of-Freedom (DOF) MRI-Compatible Motion Generation System for MRI Motion Compensated Algorithms Evaluation
Slavisa Jovanovic[1,2], Laure Rousselet[1,2], Lucas Albouy[1,2], Pierre-André Vuissoz[1,2], Cédric Pasquier[3,4], Jacques Felblinger[1,2]
[1]Imagerie Adaptative Diagnostique et Interventionnelle, Nancy-Université, Nancy, France; [2]U947, INSERM, Nancy, France; [3]CIT801, INSERM, Nancy, France; [4]CIC-IT,CHU-Nancy, Nancy, France

2681. Motion Degradation in 3D µMRI of Trabecular Bone: Relevance to Quantitative Analysis of Clinical Data
Yusuf A. Bhagat[1], Chamith S. Rajapakse[1], Jeremy F. Magland[1], Michael J. Wald[1], Hee K . Song[1], Mary B. Leonard[2], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, University of Pennsylvania, Philadelphia, PA, United States; [2]Nephrology, the Children's Hospital of Philadelphia, United States

2682. Characterisation of Motion-Induced Field Distortions in Spectroscopic Imaging with Prospective Motion Correction
Thomas Lange[1], Daniel Nicolas Splitthoff[1], Maxim Zaitsev[1], Julian Maclaren[1]
[1]Department of Radiology, University Medical Center Freiburg, Freiburg, Germany

2683. A Practical Tracking System to Avoid Motion Artifacts
Michael Herbst[1], Julian Maclaren[1], Jan Gerrit Korvink[2,3], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [3]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany

2684. Error Evaluation & Data Correction for the Outlier Signals in Q-Ball Imaging: Comparison of Orientation Distribution Function
Yen-Wei Cheng[1], Ming-Choung Chou[2], Nai-Yu Cho[3], Cheng-Yu Chen[3], Hsiao-Wen Chung
[1] Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [2]Department of Medical Imaging & Radiological Sciences, Kaohsiung Medical University, Kaohsiung, Taiwan; [3]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan

Artifacts & Correction: B_0 Estimation & Distortion Correction

Exhibition Hall Tuesday 13:30-15:30

2685. Improved Frequency Selective Fat Suppression using Tissue Susceptibility Matched Pyrolytic Graphite Foams
Gary Chiaray Lee[1,2], Caroline Jordan[3,4], Pamela Tiet[2], Carlos Ruiz[2], Brian Hargreaves[3], Steven Conolly[1,2]
[1]Berkeley/UCSF Bioengineering Joint Graduate Group, Berkeley, CA, United States; [2]Bioengineering, UC Berkeley, Berkeley, CA, United States; [3]Radiology, Stanford University; [4]Bioengineering, Stanford University

2686. Accurate B_0 Mapping with Sparse TE Stepping & K-Space Energy Spectrum Analysis
Pei-Hsin Wu[1], Nan-Kuei Chen[2], Hsiao-Wen Chung[1,3]
[1]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States; [3]Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan

2687. Off-Resonance Artifact Correction with Convolution in K-Space (ORACLE)
Wei Lin[1], Feng Huang[1], George R. Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Philips Healthcare, Gainesville, FL, United States

2688. Frequency Filtered SENSE Shimming for B_0 Inhomogeneity Detection
Daniel Nicolas Splitthoff[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, Unversity Medical Center Freiburg, Freiburg, Germany

2689. Correcting B_0 Induced Signal Loss using Echo Planar Imaging Reference Data
Dan Xu[1], Joe K. Maier, Kevin F. King[1], Gaohong Wu
[1]Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

2690. Shim Navigators for Accurate Detection of the B_0 Magnetic Field Inhomogeneities using Reference MGE Images
Iulius Dragonu[1], Daniel Nicolas Splitthoff[1], Nicoleta Baxan[1], Paul Freitag[2], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freibug, Baden-Wuerttemberg, Germany; [2]Bruker Biospin, Ettlingen, Baden-Wuerttemberg, Germany

2691. R_2* Estimation in the Presence of Fat & Macroscopic B_0 Field Variations
Diego Hernando[1], Catherine D. G. Hines[1], Scott B. Reeder[1,2]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States

2692. Single-Scan T_2* Measurements with Alternating Compensation Gradients for Linear Background Gradients
Yoonho Nam[1], Hahnsung Kim[1], Dong-Hyun Kim[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

2693. MR-Based Field-Of-View Extension: Compensation of Field Imperfections
Jan Ole Blumhagen[1,2], Ralf Ladebeck[1], Matthias Fenchel[1], Jürgen Kampmeier[1], Klaus Scheffler[2]
[1]Magnetic Resonance, Siemens Healthcare, Erlangen, Bavaria, Germany; [2]Division of Radiological Physics, University of Basel Hospital, Basel, Switzerland

2694. MR-Based Field-Of-View Extension: Gradient & B_0 Correction Post-Processing
Jan Ole Blumhagen[1,2], Ralf Ladebeck[1], Matthias Fenchel[1], Jürgen Kampmeier[1], Klaus Scheffler[2]
[1]Magnetic Resonance, Siemens Healthcare, Erlangen, Bavaria, Germany; [2]Division of Radiological Physics, University of Basel Hospital, Basel, Switzerland

2695. EPI Distortion Correction using Magnitude Difference Map
Hao Lv[1], Yong Chuan Lai[1]
[1]MR Engineering, GE Healthcare, Beijing, China, People's Republic of

2696. Dynamic Unwarping of Multi Echo EPI Data
Eelke Visser[1,2], Benedikt A. Poser[3], Markus Barth[1,4], Marcel P. Zwiers[1,2]
[1]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands; [2]Department of Cognitive Neuroscience, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Department of Medicine, Queen's Medical Center, Honolulu, HI, United States; [4]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany

2697. First *In Vivo* Results using Decoupled Projection Based Shimming
Daniel Nicolas Splitthoff[1], Maxim Zaitsev[1]
[1]Dept. of Radiology, Medical Physics, Unversity Medical Center Freiburg, Freiburg, Germany

2698. A Novel Correction Method for Distortion Correction in EPI at Ultra-High Field MRI using PSF Mapping Technique
Se-Hong Oh[1], Jun-Young Chung[1], Myung-Ho In[2], Maxim Zaitsev[3], Oliver Speck[2], Young-Bo Kim[1], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, Korea, Republic of; [2]Department of Biomedical Magnetic Resonance, Institute for Experimental Physics, Otto-von-Guericke University Magdeburg, Magdeburg, Germany; [3]Department of Radiologic Research, Medical Physics, University Hospital of Freiburg, Freiburg, Germany

2699. View Angle Tilting in Echo Planar Imaging for Distortion Correction
Sinyeob Ahn[1], Xiaoping Hu[1]
[1]Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States

Denotsing

Exhibition Hall Wednesday 13:30-15:30

2700. Evaluation of Image Quality Improvement using Wavelet Denoising Based on Stein's Unbiased Risk Estimate (SURE)
Tao Zhang[1], Peng Lai[2], Shreyas Vasanawala[3], Robert Herfkens[3], Kedar Khare[4], Luca Marinelli[4], Kevin F. King[5], Anja Brau[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]GE Global Research Center, Niskayuna, NY, United States; [5]GE Healthcare, Waukesha, WI, United States

2701. Controlled Denoising for fMRI using Adaptive Overcomplete Dictionaries
Rajesh Venkataraman[1], Steen Moeller, Essa Yacoub
[1]University of Minnesota, Minneapolis , MN, United States

2702. A Simple Fast Method of Gibbs Ringing Artifact & Noise Reduction with Edge Enhancement using Low-Pass, Band-Pass, & High-Pass K-Space Windowing Functions
Leping Zha[1], Tsutomu Hoshino[1], Yuichi Yamashita[2]
[1]Toshiba Medical Research Institute USA, Inc., Vernon Hills, IL, United States; [2]Toshiba Medical Systems Corporation, Nasu, Tochigi, Japan

2703. Three Dimensional Restoration of Cardiac Magnetic Resonance Diffusion Weighted Images Based on Sparse Denoising
Lijun Bao[1], Wanyu Liu[2], Changwei Hu[1], Xiaobo Qu[3], Shuhui Cai[1], Zhong Chen[1]
[1]Department of Physics, Xiamen University, Xiamen, Fujian, China, People's Republic of; [2]Departments of Automatic Measurement & Control, Harbin Institute of Technology, Harbin, China, People's Republic of; [3]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China, People's Republic of

Fat & Water

Exhibition Hall Thursday 13:30-15:30

2704. Accelerated Water-Fat Imaging using Restricted Subspace Fieldmap Estimation
Samir D. Sharma[1], Houchun H. Hu[1], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2705. Joint Inhomogeneitiy Estimation for Water-Fat Separation with Multi-Peak Fat Modeling
Wenmiao Lu[1], Yi Lu[2]
[1]Electrical & Electronic Engineering, Nanyang Technological University, Singapore, SG, Singapore; [2]Electrical & Computer Engineering, University of Illinois, Urbana Champaign, Urbana, IL, United States

2706. Feasibility of Water-Fat Separation with Diffusion Weighted EPI
Ken-Pin Hwang[1,2], Jingfei Ma[2]
[1]Global Applied Science Laboratory, GE Healthcare, Houston, TX, United States; [2]Department of Imaging Physics, University of Texas M.D. Anderson Cancer Center, Houston, TX, United States

2707. Two-Point Dixon Imaging with Flexible Echo Times & a Region Growing-Based Postprocessing Algorithm
Jingfei Ma[1]
[1]Imaging Physics, University of Texas MD Anderson Cancer Center, Houston, TX, United States

2708. A Networked GPU Reconstructor Within the Clinical Workflow for Rapid Fat Quantification.
Grzegorz Kowalik[1,2], Jennifer Anne Steeden[1,2], David Atkinson[2], Vivek Muthurangu[1]
[1]Centre for Cardiovascular MR, UCL Institute of Child Health, London, United Kingdom; [2]Centre for Medical Image Computing, UCL Department of Medical Physics & Bioengineering, London, United Kingdom

2709. Combining Phase Images from Multi-Channel RF Coils using 3D Phase Offset Maps Derived from a Dual-Echo Scan
Simon Robinson[1], Günter Grabner[1], Stephan Witoszynskyj[1], Siegfried Trattnig[1]
[1]Department of Radiology, Medical University of Vienna, Vienna, Austria

Fat-Water MRI

Exhibition Hall Monday 14:00-16:00

2710. Fat Fraction Bias Correction using Estimated T_1 Values
Issac Yiqun Yang[1], Curtis Nathan Wiens[2], Lanette Friesen-Waldner[1], Charles Andrew McKenzie[1,2]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Physics & Astronomy, University of Western Ontario, London, Ontario, Canada

2711. Fat Water Classification of Symmetrically Sampled Two-Point Dixon Images using Biased Partial Volume Effects
Thobias Romu[1,2], Olof Dahlqvist Leinhard[2,3], Mikael F. Forsgren[3,4], Sven Almer[4], Nils Dahlström[3,5], Stergios Kechagias[3], Fredrik Nyström[3], Örjan Smedby[2,3], Peter Lundberg[1,2], Magnus Borga[2,6]
[1]Department of Radiation Physics, Center for Surgery, Orthopedics & Oncology, Linköping University Hospital, Linköping, Sweden; [2]Center for Medical Imaging Science & Visualization (CMIV), Linköping University, Sweden; [3]Department of Medical & Health Sciences, Linköping University, Sweden; [4]Department of Clinical & Experimental Medicine Faculty of Health Science, Linköping University, Sweden; [5]Department of Radiology, Diagnostic Imaging Center, Linköping University Hospital, Sweden; [6]Department of Biomedical Engineering, Linköping University, Sweden

2712. Simultaneous Quantification of Fat Fraction & Fatty Acid Composition using MRI
Pernilla Peterson[1], Sven Månsson[1]
[1]Medical Radiation Physics, Lund University, Malmö, Sweden

2713. Assessment of Accuracy, Repeatability, Reproducibility & Robustness of Fat Quantification in a Water-Fat Phantom
Huanzhou Yu[1], Catherine D. G. Hines[2], Ann Shimakawa[1], Charles A. McKenzie[3], Scott B. Reeder[4], Jean H. Brittain[5]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Departments of Radiology, Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [3]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [4]Departments of Radiology, Medical Physics, Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [5]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States

2714. Mapping the Double Bonds in Triglyceride
Mark Bydder[1], Gavin Hamilton[1], Michael S. Middleton[1], Claude B. Sirlin[1]
[1]University of California San Diego, San Diego, CA, United States

2715. Noise Performance of Magnitude-Based Water-Fat Separation is Sensitive to the Echo Times
Huanzhou Yu[1], Ann Shimakawa[1], Diego Hernando[2], Catherine D. G. Hines[3], Charles A. McKenzie[4], Scott B. Reeder[5], Jean H. Brittain[6]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Departments of Radiology, University of Wisconsin, Madison, WI, United States; [3]Departments of Radiology, Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [4]Department of Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [5]Departments of Radiology, Medical Physics, Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [6]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States

2716. Water Fat Opposed Phase (WFOP) Sequence is a Robust Fat Suppression Technique Under the Presence of B_0 Inhomogeneity in Abdominal MRI at 3.0 T.
Koji Fujimoto[1], Tomohissa Okada[1], Aki Kido[1], Hiroshi Kusahara[2], Andrew Wheaton[3], Mitsue Miyazaki[3], Kaori Togashi[1]
[1]Diagnostic Imaging & Nueclear Medicine, Kyoto university, Kyoto, Japan; [2]Toshiba Medical Systems Corporation, Otawara, Tochigi, Japan; [3]Toshiba Medical Research Institute, USA, OH, United States

2717. Fully Automated Quantification of Subcutaneous & Visceral Abdominal Adipose Tissue using Water & Fat Acquisition & Graph Cuts
Vitali Zagorodnov[1], Sarayu Parimal[2], Michael W. L. Chee[2]
[1]Nanyang Technological University, Singapore, Singapore; [2]Duke-NUS Graduate Medical School

2718. Image-Based Weighted B_0 Shimming using a Fast Multi-Echo DIXON Technique: Feasibility for Abdominal Imaging
Arjan Willem Simonetti[1], Gabriele Beck[1], Hans Hoogduin[2], Jeroen C. W. Siero[3], Gwenael Herigault[4]
[1]MR CTO, Philips Healthcare, Best, Netherlands; [2]Brain Division University Medical Center Utrecht, Utrecht, Netherlands; [3]Rudolf Magnus Institute, University Medical Center Utrecht, Utrecht, Netherlands; [4]Clinical Science, Philips Healthcare, Best, Netherlands

New Methods for Generating Contrast

Exhibition Hall Tuesday 13:30-15:30

2719. Cube Cx2: Free 3D T_2w Dataset Along with 3D T_2FLAIR Acquisition
Donglai Huo[1], Xiaoli Zhao[1]
[1]GE Healthcare, Waukesha, WI, United States

2720. Variable Flip Angle Single-Slab 3D GRASE with Phase-Independent Image Reconstruction
Hahnsung Kim[1], Suhyung Park[2], Dong-Hyun Kim[1], Jaeseok Park[3]
[1]Electrical & Electronic Engineering, Yonsei University, Shinchon-Dong, Seoul, Korea, Republic of; [2]Medical Science, Yonsei University, Seoul, Korea, Republic of; [3]Radiology, Yonsei University, Seoul, Korea, Republic of

2721. High-Resolution 3D Volumetric Nerve-Sheath Weighted RARE Imaging (3D SHINKEI)
Masami Yoneyama[1], Masnobu Nakamura[1], Tomoyuki Okuaki[1], Takashi Tabuchi[1], Junko Ogura[1]
[1]Medical Satellite Yaesu Clinic, Tokyo, Japan

2722. Bipolar TSE & Bipolar 3D GRASE for Rapid Multi-Slice (Multi-Slab) High Field Magnetic Resonance Imaging Acquisition of Carotid Artery Wall
Linqing Li[1,2], Peter Jezzard[1,2]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [2]Department of Clicical Neurosciences, University of Oxford, Oxford, United Kingdom

2723. Quiet T_1- & T_2-Weighted Brain Imaging using SWIFT
Ryan Chamberlain[1], Steen Moeller[1], Curt Corum[1], Djaudat Idiyatullin[1], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

2724. Magnetic Resonance Imaging of Tendons, Ligaments & Menisci by Subtraction of Two Steady State Free Precession Signals
Petros Martirosian[1], Christina Schraml[2], Nina Franziska Schwenzer[2], Fabian Springer[2], Fritz Schick[1], Michael Deimling[3]
[1]Section on Experimental Radiology, University of Tübingen, Tübingen, Germany; [2]Department of Diagnostic & Interventional Radiology, University of Tübingen, Germany; [3]Department of Magnetic Resonance, Siemens Healthcare, Erlangen, Germany

2725. Quantitative MR Estimates of Blood Oxygenation Based on T_2*: A Numerical Study of the Impact of Model Assumptions.
Thomas Christen[1], Greg Zaharchuk[1], Nicolas Pannetier[2,3], Raphael Serduc[2,3], Nicolas Joudiou[2,3], Jean Claude Vial[2,3], Chantal Remy[2,3], Emmanuel L. Barbier[2,3]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]U836, INSERM, Grenoble, France; [3]Grenoble Institut des Neurosciences, Grenoble, France

2726. Evaluation of a New Quantitative BOLD Approach to Map Local Blood Oxygen Saturation in Healthy Rat
Pierre Bouzat[1,2], Thomas Christen[1,3], Sébastien Thomas[1,2], Nicolas Pannetier[1,4], Chantal Rémy[1,4], Jean-François Payen[1,2], Emmanuel L. Barbier[1,4]
[1]U836, Inserm, Grenoble, France; [2]CHU, Grenoble, France; [3]Department of Radiology, Standford University, Standford, CA, United States; [4]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France

2727. Is T_2* Enough to Assess Oxygenation? A Quantitative Blood-Oxygen Level Dependent Analysis in Brain Tumors.
Thomas Christen[1], Benjamin Lemasson[2,3], Nicolas Pannetier[3,4], Regine Farion[3,4], Chantal Remy[3,4], Greg Zaharchuk[1], Emmanuel L. Barbier[3,4]
[1]Department of radiology, Stanford University, Stanford, CA, United States; [2]Departments of Radiology, University of Michigan, Center for Molecular Imaging,, Ann Arbor, MI, United States; [3]Grenoble Institut des Neurosciences, Grenoble, France; [4]U836, INSERM, Grenoble, France

2728. Measuring Brain Oxygenation in Humans using a Quantitative BOLD Approach
Thomas Christen[1], Greg Zaharchuk[1]
[1]Department of radiology, Stanford University, Stanford, CA, United States

2729. Rapid Measurement of Oxygen Extraction Fraction (OEF) Maps using a Combined Multiple Gradient & Spin Echo Bolus Contrast Sequence
Thomas Christen[1], Heiko Schmiedeskamp[1], Matus Straka[1], Roland Bammer[1], Greg Zaharchuk[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

2730. Evaluation of a New QBOLD Approach to Map Local Blood Oxygen Saturation in Human Brain
Julien Y. Bouvier[1,2], Irène Tropre,[3], Marjorie Villien[1,4], Sylvie Grand[1,5], Assia Jaillard[3,5], Omer Eker[5], Olivier Detante[1,5], David Chechin[2], Jean-François Le Bas[5], Alexandre Krainik[1,5], Emmanuel L. Barbier[1,4]
[1]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [2]Philips Healthcare, Suresnes, France; [3]IFR1, Grenoble, France; [4]U836, INSERM, Grenoble, France; [5]CHU, Grenoble, France

2731. Acoustic Radiation Contrast to Visualize Viscoelastic Properties in Human Breast
Deniz Ulucay[1], Judith Wild[1], Jessica Mende[2], Michael Dönnebrink[3], Jürgen Finsterbusch[4], Carsten Urbach[1], Karl Maier[1]
[1]HISKP, University of Bonn, Bonn, NRW, Germany; [2]Lavandoo Mobile Solutions GmbH, Bonn, NRW, Germany; [3]Medizin Center Bonn, Bonn, NRW, Germany; [4]University Medical Center Hamburg-Eppendorf, Hamburg, Germany

2732. Towards Direct Neuronal Current Imaging by Resonant Rabi Oscillation Mechanisms
Alexey Tonyushkin[1], Andrew M. Kiruluta[1,2]
[1]Physics, Harvard University, Cambridge, Massachussetts, United States; [2]Radiology, MGH, Boston, Massachussetts, United States

2733. Highly Efficient Localized Distant Dipolar Field & Its Application in MRI
Congbo Cai[1], Zhong Chen[1], Shuhui Cai[1], Jianhui Zhong[2]
[1]Departments of Physics & Communication Engineering, Xiamen University, Xiamen, Fujian, China, People's Republic of; [2]Departments of Radiology & Biomedical Engineering, University of Rochester, Rochester, United States

2734. Reference Free Localization & Quantification of Contrast Agents using Relaxivity Dispersion at 1.5T
Uvo Christoph Hoelscher[1], Steffen Lother[1], Florian Fidler[1], Peter Jakob[1,2]
[1]Research Center Magnetic Resonance Bavaria (MRB), Wuerzburg, Bavaria, Germany; [2]Department for Experimental Physics 5 (Biophysics), University of Wuerzburg, Wuerzburg, Germany

2735. Exchange-Relayed Nuclear Overhauser Effect MRI
Craig Kenneth Jones[1,2], Alan J. Huang[1,3], Peter C. M. van Zijl[1,2]
[1]FM Kirby Center, Kennedy Krieger Institute, Baltimore, MD, United States; [2]Department of Radiology & Radiological Sciences, Johns Hopkins Medical Institutes, Baltimore, MD, United States; [3]Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States

2736. Observation of Intravascular Contrast Enhancement Due to Anesthesia in T_2*-Weighted Imaging at 17.2 T
Luisa Ciobanu[1], Olivier Reynaud[1], Béchir Jarraya[2], Denis Le Bihan[1]
[1]NeuroSpin, CEA, Gif-sur-Yvette, France; [2]NeuroSpin, INSERM-A VENIR unit, Gif-sur-Yvette, France

2737. The Use of Iteratively Reweighted Least Square (IRLS) in the Calculation of Tissue Susceptibility
Tian Liu[1,2], Cynthia Wisnieff[1,2], Craig Horenstein[3], Krishna Surapaneni[3], Yi Wang[1,2]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]Radiology, Columbia University, New York, NY, United States

Relaxometry I

Exhibition Hall Wednesday 13:30-15:30

2738. Improved Single-Shot MR Relaxometry using Principal Component Analysis
Philipp Ehses[1], Xavier Helluy[1], Michael Völker[1], Vikas Gulani[2], Nicole Seiberlich[2], Mark a Griswold[2], Peter M. Jakob[1,3], Felix a Breuer[1]
[1]Research Center for Magnetic Resonance Bavaria (MRB), Würzburg, Germany; [2]Dept. of Radiology, University Hospitals of Cleveland & Case Western Reserve University, Cleveland, United States; [3]Dept. of Experimental Physics 5, Universität Würzburg, Würzburg, Germany

2739. Improving T_2* Mapping at 7T
Weiqiang Dou[1], Ralf Deichmann[2], Oliver Speck[1], Kai Zhong[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Saxon-Anhalt, Germany; [2]Brain Imaging Center, Johann Wolfgang Goethe-University Frankfurt/M., Frankfurt/Main, Hesse, Germany

2740. Accelerating Multi-Component Relaxometry in Steady State with an Application of Constrained Reconstruction in Parametric Dimension
Julia V. Velikina[1], Samuel A. Hurley[1], Andrew L. Alexander[1], Alexey A. Samsonov[1,2]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin - Madison, Madison, WI, United States

2741. Nonlinear Inverse Reconstruction for T_2 Mapping from Highly Undersampled Cartesian Spin-Echo MRI
Tilman Johannes Sumpf[1], Martin Uecker[1], Susann Boretius[1], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Goettingen, Germany

2742. Average Correlation Orthogonal Matching Pursuit for Improved Relaxation Parameter Estimation
Nicole Seiberlich[1], Dan Ma[2], Philipp Ehses[3], Vikas Gulani[1], Mark Griswold[1,2]
[1]Radiology, University Hospitals of Cleveland, Cleveland, OH, United States; [2]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [3]Research Center for Magnetic Resonance Bavaria (MRB), Wuerzburg, Germany

Relaxometry II

Exhibition Hall Thursday 13:30-15:30

2743. Saturation Recovery Modified Look Locker (S-MOLLI) for Cardiac T_1 Mapping
Christian Stehning[1], Daniel Messroghli[2], Michael Frick[3], Bernhard Schnackenburg[3], Jochen Keupp[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Cardiac MRI Unit, Franz-Volhard-Klinik, Charité University Medicine, Berlin, Germany; [3]Department of Internal Medicine/Cardiology, German Heart Institute, Berlin, Germany

2744. A Universal Sampling Scheme for the Method of Slopes (MoS) Allows for Rapid Simultaneous B_1 & T_1 Mapping in 2D
Sofia Chavez[1], Greg Stanisz[1,2]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada

2745. Impact of Three B_1 Mapping Techniques on Variable Flip Angle T_1 Measurements
Christine Lucas Tardif[1], Nikola Stikov[1], Ives R. Levesque[2], G. Bruce Pike[1]
[1]McConnell Brain Imaging Centre, Montreal Neurological Institute, Montreal, Quebec, Canada; [2]Department of Electrical Engineering, Stanford University, Stanford, CA, United States

2746. Accelerated T_1 & T_2 Relaxometry in the Human Brain using UNFOLD
Ana-Maria Oros-Peusquens[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine (INM-4), Research Centre Juelich, Juelich, NA, Germany; [2]2Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

2747. Mapping of Oxygen by Imaging Lipids Relaxation Enhancement (MOBILE): Application to Changes in Liver Oxygenation
Benedicte F. Jordan[1], Julie Magat[1], Elif Ozel[1], Valerie Marchand[1], Patrice Cani[2], Nathalie Delzenne[2], Bernard Gallez[1]
[1]Louvain Drug Research Institute, Biomedical Magnetic Resonance Research Group, University of Louvain, Brussels, Belgium; [2]Louvain Drug Research Institute, Metabolism & Nutrition Research Group, University of Louvain, Brussels, Belgium

2748. Optimization Strategies for Relaxation Based Myelin Water Imaging: 2. Postprocessing & Signal Correction Techniques
Burkhard Mädler[1], Volker A. Coenen[1]
[1]Dep. of Neurosurgery, Div. of Stereotaxy & MR-based OR-Techniques, University Bonn, Bonn, Germany

2749. Improved T_2-Quantification with Slice Selective MSE-Sequences
Andreas Petrovic[1,2], Eva Scheurer[2], Kathrin Yen[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, University of Technology Graz, Graz, Austria; [2]Ludwig Boltzmann Institute - Clincal Forensic Imaging, Graz, Austria

2750. Monte Carlo Analysis of T_1-Mixing Errors for MSE T_2 Mapping
Andreas Petrovic[1,2], Eva Scheurer[2], Kathrin Yen[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, University of Technology Graz, Graz, Styria, Austria; [2]Ludwig Boltzmann Institute - Clincal Forensic Imaging, Graz, Austria

2751. Robust Multicomponent T_2 Imaging in the Brain at 3T using Least Squares Fitting in the Presence of RF Inhomogenities
Sha Zhao[1,2], David L. Buckley[3], Geoff J. M. Parker[1,2]
[1]Imaging Science, the University of Manchester, Manchester, United Kingdom; [2]Biomedical Imaging Institute, the University of Manchester, Manchester, United Kingdom; [3]Division of Medical Physics, University of Leeds, Leeds, United Kingdom

2752. A Simple Method for Increasing the Number of Echoes & Decreasing Echo Spacing in T_2 Spectrum Analysis
Marshall S. Sussman[1]
[1]Medical Imaging, University Health Network, Toronto, Ontario, Canada

2753. Measuring & Imaging T_2 Without Echoes?
Guan Wang[1,2], AbdElMonem M. El-Sharkawy[1,2], William A. Edelstein[1], Michael Schär[1,3], Paul A. Bottomley[1,2]
[1]Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Electrical & Computer Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]Philips Healthcare, Ohio, Cleveland, United States

2754. Multi-Parameter Mapping of the Human Cervical Cord at 3.0T in Less than 20 Minutes
Rebecca Sara Samson[1], Olga Ciccarelli[2], Carolina Kachramanoglou[2], Antoine Lutti[3], David J. L. Thomas[2], Nikolaus Weiskopf[3], Claudia A. M. Wheeler-Kingshott[1]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, England, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, England, United Kingdom; [3]Functional Imaging Laboratory, UCL Institute of Neurology, London, England, United Kingdom

2755. A New 3D Method for Water and Relaxation Time Mapping: Comparison to the 2D "gold Standard"
Ana Maria Oros-Peusquens[1], Fabian Keil[1], Vincent Gras[1], Zaheer Abbas[1], Daniel Brenner[1], Miriam Rabea Kubach[1], Klaus Hans Mannfred Möllenhoff[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

2756. Evaluation of Principal Component Model-Based Algorithm for T_2 Estimation of Small Objects
Chuan Huang[1], Christian G. Graff[2], Ali Bilgin[3,4], Maria I. Altbach[5]
[1]Mathematics, University of Arizona, Tucson, AZ, United States; [2]Division of Imaging & Applied Mathematics, Food & Drug Administration; [3]Biomedical Engineering, University of Arizona; [4]Electrical & Computer Engineering, University of Arizona; [5]Radiology, University of Arizona

2757. Spatially Resolved Two-Dimensional T_1-T_2 Relaxometry in the Human Brain using Inversion-Recovery Spin-Echo Measurements & NNLS
Valentin Gereon Kemper[1], Ana-Maria Oros-Peusquens[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine, Research Centre Juelich, Juelich, 52425, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, 52074, Germany

2758. Fast Proton Density Mapping using Bias Field Correction
Steffen Volz[1], Ulrike Nöth[1], Ralf Deichmann[1]
[1]Brain Imaging Center (BIC), Goethe University Frankfurt, Frankfurt, Germany

2759. A Novel Method for Characterizing T_2 Spectra
Marshall S. Sussman[1], Walter Kucharczyk[1]
[1]Medical Imaging, University Health Network, Toronto, Ontario, Canada

2760. Comparison of Two MRI-UTE Sequences for the Quantification (T_1) of the Human Achilles Tendon
Peter Wright[1], Richard Hodgson[2], Vladimir Jellus[3], Lars Lauer[3], Matthew Robson[4]
[1]LMBRU, Leeds Teaching Hospitals NHS Trust, Leeds, Yorkshire, United Kingdom; [2]LMBRU, University of Leeds, United Kingdom; [3]Siemens AG, Erlangen, Germany; [4]University of Oxford, United Kingdom

2761. Transverse Relaxometry with Non-180° Refocusing Pulses
Julien Sénégas[1], Nicolas Neu[2], Jochen Keupp[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Ecole des Mines de Paris, France

2762. A Four Parameter Fitting Method to Quantify Fully the Sources of Phase Contrast in Gradient Echo MRI
Sam Wharton[1], Richard Bowtell[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

2763. Region Based Joint Bi-Exponential T_2 Fitting for Small Lesions
Chuan Huang[1], Christian G. Graff[2], Eric W. Clarkson[3,4], Ali Bilgin[5,6], Maria I. Altbach[3]
[1]Mathematics, University of Arizona, Tucson, AZ, United States; [2]Division of Imaging & Applied Mathematics, Food & Drug Administration; [3]Radiology, University of Arizona; [4]Optical Sciences, University of Arizona; [5]Biomedical Engineering, University of Arizona; [6]Electrical & Computer Engineering, University of Arizona

2764. Accurate T_1 & T_2 Quantification in Look-Locker 2D SSFP Imaging with Flip Angle Profile Correction
Mitchell Anthony Cooper[1,2], Thanh D. Nguyen[3], Pascal Spincemaille[3], Martin R. Prince[3], Jonathan W. Weinsaft[4], Yi Wang[1,3]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology, Weill Cornell Medical College , New York, United States; [3]Radiology, Weill Cornell Medical College, New York, United States; [4]Cardiology, Weill Cornell Medical College, New York, United States

2765. *In Vivo* T_2 Measurements of the Right Ventricle Inferior Wall: Comparison with the Left Ventricle
Brice Fernandez[1,2], Maelene Lohezic[1,2], Lucien Hammen[2,3], Marine Beaumont[4,5], Damien Mandry[2,4], Pierre-André Vuissoz[2,3], Jacques Felblinger[2,3]
[1]Global Applied Science Laboratory, GE Healthcare, Nancy, France; [2]IADI Lab, Nancy-Université, Nancy, France; [3]U947, INSERM, Nancy, France; [4]CHU de Nancy, Nancy, France; [5]CIT801, INSERM, Nancy, France

Chemical Exchange Saturation Transfer

Exhibition Hall Monday 14:00-16:00

2766. Feasibility of CEST Imaging on the Guinea Pig Stifle at 9.4 T
Matthew Fenty[1], Victor Babu Kassey[1], Feliks Kogan[1], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States

2767. Chemical Exchange Saturation Transfer Effect from Phospho-Creatine (PCr) & Adenosine-Tri-Phosphate (ATP)
Mohammad Haris[1], Kejia Cai[1], Anup Singh[1], Victor Babu Kc[1], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States

2768. Quantitative Modeling of *In-Vivo* Amide Proton Transfer Measurements in the Human Brain Indicates a Dominant Signal Contribution from Proteins with Short T_2 Relaxation Times
Rachel Scheidegger[1,2], Elena Vinogradov[1,3], Weiying Dai[1,3], David C. Alsop[1,3]
[1]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]Health Sciences & Technology, Harvard-MIT, Cambridge, MA, United States; [3]Radiology, Harvard Medical School, Boston, MA, United States

2769. Amide Proton Transfer Imaging with Continuous Wave Dual Frequency Saturation Can Detect the Amide Proton Peak in the Z-Spectrum Acquired at 3T
Rachel Scheidegger[1,2], Elena Vinogradov[1,3], Weiying Dai[1,3], David C. Alsop[1,3]
[1]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [2]Health Sciences & Technology, Harvard-MIT, Cambridge, MA, United States; [3]Radiology, Harvard Medical School, Boston, MA, United States

2770. Optimization of Pulsed-GagCEST at 3.0T
Gopal Varma[1], David C. Alsop[1], Robert E. Lenkinski[1], Elena Vinogradov[1]
[1]Department of Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

2771. Chemical Exchange Transfer Imaging of Creatine
Anup Singh[1], Mohammad Haris[1], Kejia Cai[1], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2772. High Resolution Imaging of Myo-Insitol in Alzhemier's Disease Pathology
Mohammad Haris[1], Anup Singh[1], Kejia Cai[1], Kavindra Nath[2], Rachelle Berger[1], Ari Borthakur[1], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]LMI, Radiology, University of Pennsylvania

2773. CEST MRI of Human Liver at 3T
Kejia Cai[1], Anup Singh[1], Kalli Grasley[1], Mohammad Haris[1], Damodar Reddy[1], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2774. Identification of Endogenous Proteins Correlated with Amide Proton Transfer (APT) Imaging Contrast using Proteomic Analysis
Kun Yan[1], Zongming Fu[2], Jennifer Van Eyk[3], Silun Wang[1], Jinyuan Zhou[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Pediatrics, Johns Hopkins University, Baltimore, MD, United States; [3]Bayview Proteomics Center, Johns Hopkins University, Baltimore, MD, United States

2775. Keyhole Chemical Exchange Saturation Transfer
Gopal Varma[1], Robert E. Lenkinski[1], Elena Vinogradov[1]
[1]Department of Radiology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

2776. 3D Whole Brain Pulsed CEST Acquisition at 7T
Craig K Jones[1,2], Daniel Polders[3], Jun Hua[1], Hans Hoogduin[4], He Zhu[1], Jinyuan Zhou[1,2], Peter C. M. van Zijl[1,2]
[1]FM Kirby Center, Kennedy Krieger Institute, Baltimore, MD, United States; [2]Department of Radiology & Radiological Sciences, Johns Hopkins Medical Institutes, Baltimore, MD, United States; [3]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [4]Brain Division, University Medical Center Utrecht, Utrecht, Netherlands

2777. Computational Modeling & Optimized Detection of PARACEST Contrast Agents with Echo Planar Imaging
Nevin McVicar[1,2], Alex Li[2], Adrienne Campbell[3], Marty Klassen[2], Rob Bartha[1,2]
[1]Medical Biophysics, University of Western Ontario, London, ON, Canada; [2]Centre for Functional & Metabolic Mapping, Robarts Research Institute; [3]Division of Medicine & Institute of Child Health, UCL Centre for Advanced Biomedical Imaging, London, United Kingdom

2778. Modeling MT Effect of Bound Water Pool & Its Use in Correction of CEST Contrast for MT Asymmetry
Anup Singh[1], Kejia Cai[1], Mohammad Haris Haris[1], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2779. Two-Pool Compartmental Modeling of Balanced SSFP & CEST
Kimberly Lara Desmond[1], Sean Deoni[2], Shannon Kolind[2], Greg J Stanisz[1,3]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Oxford University, Oxford, United Kingdom; [3]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada

2780. Optimized CEST Imaging of Intermediate to Fast Exchanging Agents in *In-Vivo* Situations
Anup Singh[1], Hari Hariharan[1], Kejia Cai[1], Mohammad Haris Haris[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2781. MRI of Glutamate Modulation *In-Vivo*
Kejia Cai[1], Mohammad Haris[1], Anup Singh[1], Feliks Kogan[1], Walter R.T. Witschey[1], Prianka Waghray[1], Joel H. Greenberg[2], Hari Hariharan[1], John A. Detre[2], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States

Magnetization Transfer

Exhibition Hall Tuesday 13:30-15:30

2782. Drift in the Magnetization Transfer Signal: Effect on Quantitative MT Experiments
Ives R. Levesque[1], Nikola Stikov[2], G. Bruce Pike[2], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada

2783. Bound Pool Fraction & $T_{1,free}$ Quantification by Non-Linear Parameter Identification of Composite Echoes
Bernhard Neumayer[1], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Steiermark, Austria

2784. Analysis of Magnetization Transfer Ratio Measurements at 3T using Multiple-Acquisition Balanced SSFP
Monika Gloor[1], Klaus Scheffler[1], Oliver Bieri[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland

2785. Preliminary Investigation of the Use of Parallel RF Transmission in MTR Measurement in the Human Cervical Cord
Rebecca Sara Samson[1], Matthew Clemence[2], Xavier Golay[3], Claudia A. M. Wheeler-Kingshott[1]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, England, United Kingdom; [2]Philips Clinical Science Group, Philips Healthcare, Guildford, England, United Kingdom; [3]UCL Institute of Neurology, United Kingdom

2786. Quantitative Magnetization Transfer Imaging of Human Brain at 7 Tesla
Richard D. Dortch[1,2], Jay Moore[2,3], Marcin Jankiewicz[1,2], Adrienne N. Dula[1,2], Ke Li[1,2], Daniel F. Gochberg[1,2], John C. Gore[1,2], Seth A. Smith[1,2]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Physics & Astronomy, Vanderbilt University, Nashville, TN, United States

2787. Magnetization Transfer Effects in Wideband SSFP
Hung Phi Do[1], Robert Marc Lebel[2], Krishna S. Nayak[2]
[1]Department of Physics & Astronomy, University of Southern California, Los Angeles, CA, United States; [2]Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States

2788. Influence of Magnetisation Transfer on Established T_1 Mapping Methods
Miriam Rabea Kubach[1], Kaveh Vahedipour[2], Tony Stoecker[2], N. Jon Shah[2,3]
[1]Forschungszentrum Juelich, Institute of Neuroscience and Medicine , Juelich, NRW, Germany; [2]Forschungszentrum Juelich, Institute of Neuroscience & Medicine, Juelich, NRW, Germany; [3]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

2789. Exchange Resolved Measurements of Extra-Cellular Volume in a Graded Muscle Edema Model
Jack T. Skinner[1,2], Todd E. Peterson[2,3], Mark D. Does[1,2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

2790. Correcting RF Inhomogeneities in Skeletal Muscle Magnetization Transfer Maps
Christopher David James Sinclair[1,2], Jasper M. Morrow[1], Michael G. Hanna[1], Mary M. Reilly[1], Tarek A. Yousry[1,2], Xavier Golay[2], John S. Thornton[1,2]
[1]MRC Centre for Neuromuscular Diseases, UCL Institute of Neurology, London, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

Acquisition Strategies: From 3D to Spectroscopy

Exhibition Hall Wednesday 13:30-15:30

2791. Three Dimensional Imaging with Independent Slab Excitation & Encoding
Amir Eissa[1], Alan H. Wilman[1]
[1]University of Alberta, Edmonton, Alberta, Canada

2792. 2D RF Pulses with Rotating Read Out Direction for Increased FOV with Elevated Central SNR
Andre de Oliveira[1], Tobias K. Block[1], Stephan Kannengiesser[1]
[1]Siemens AG, Erlangen, Germany

2793. GESFIDE-PROPELLER for Simultaneous R_2 & R_2* Measurements in the Abdomen
Ning Jin[1], Yang Guo[2], Jie Deng[3], Andrew C. Larson[1,4]
[1]Departments of Radiology & Biomedical Engineering, Northwestern University, Chicago, IL, United States; [2]Department of Radiology, Northwestern University, Chicago, IL, United States; [3]Department of Medical Imaging, Children's Memorial Hospital, Chicago, IL, United States; [4]Robert H. Lurie Comprehensive Cancer Center, Chicago, IL, United States

2794. Improved Susceptibility Weighted Phase Imaging for the Assessment of Brain Iron Deposition using a Multi-Echo Sequence
Guillaume Gilbert[1,2], Geneviève Savard[1], Céline Bard[1], Gilles Beaudoin[1]
[1]Department of Radiology, Centre Hospitalier de l'Université de Montréal, Montreal, QC, Canada; [2]MR Clinical Science, Philips Healthcare, Cleveland, OH, United States

2795. Multi-Directional High Moment Encoding in Phase Contrast MRI
Nicholas Ryan Zwart[1], James Grant Pipe[1]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2796. Experimental Demonstration of NCPMG Realignment
Patrick H. Le Roux[1], Graeme C. McKinnon[2], Yi-Fen Yen[3], Brice Fernandez[4,5]
[1]Applied Science Lab, GE Healhtcare, Palaiseau, France; [2]Applied Science Lab, GE Healthcare, Waukesha, WI, United States; [3]Applied Science Lab, GE Healthcare, Menlo-Park, CA, United States; [4]Applied Science Lab, GE Healhtcare, Nancy, France; [5]IADI Lab, INSERM, Nancy, France

2797. Two-Fold Phase Encoded SENSE Acceleration with a Single-Channel Coil
Andre Jesmanowicz[1], Andrew S. Nencka[1], James S. Hyde[1]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

2798. Spatially Encoded Ultrafast 2D SECSY in Inhomogeneous Fields
Shuhui Cai[1], Can Wu[1], Zhiyong Zhang[1], Zhong Chen[1]
[1]Department of Physics, Fujian Key Laboratory of Plasma & Magnetic Resonance, Xiamen University, Xiamen, Fujian, China, People's Republic of

2799. ^{31}P T_1 Measurement using ISIS with Simultaneously Measured Spin-Echo & Stimulated-Echo (ISIS-SSESTE)
Xianfeng Shi[1,2], Young-Hoon Sung[3,4], SeongEun Kim[2], Perry Renshaw[3,4], Eunkee Jeong[2]
[1]The Brain Institute, University of Utah, Salt Lake City , UT, United States; [2]Department of Radiology, University of Utah, Salt Lake City, UT, United States; [3]The Brain Institute, University of Utah, Salt Lake City, UT, United States; [4]Department of Psychiatry, University of Utah, Salt Lake City, UT, United States

2800. Optimized Chemical Shift Imaging for Sodium MRI of the Human Brain
Patrick Michael Heiler[1], Benedikt Rieger[1], Philipp Krämer[1], Simon Konstandin[1], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

2801. Echo Planar Based J Resolved & Correlated Spectroscopic Imaging of Human Prostate using External Coil
Rajakumar Nagarajan[1], Jonathan Furuyama[1], Daniel Margolis[1], Steven Raman[1], Manoj Kumar Sarma[1], Michael Albert Thomas[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States

Trajectories & Novel Encoding Methods

Exhibition Hall Thursday 13:30-15:30

2802. A Looping Trajectory for Single-Shot 3D Imaging
Robert Wayne Stobbe[1], Christian Beaulieu[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

2803. Analysis of Variable Density FLORET Trajectories
James Grant Pipe[1], Nicholas Ryan Zwart[1]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2804. Variable Gradient Delay Correction for Spiral MRI
Payal Sharad Bhavsar[1], Jim Pipe[1]
[1]Neuroimaging, Barrow Neurological Institute, Phoenix, AZ, United States

2805. Localization by Nonlinear Phase Preparation & K-Space Trajectory Design (GradLoc)
Walter R.T. Witschey[1], Christian A. Cocosco[1], Daniel Gallichan[1], Gerrit Schultz[1], Hans Weber[1], Anna Masako Welz[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg i. Breisgau, Germany

2806. ExLoc: Excitation & Encoding of Curved Slices
Hans Weber[1], Daniel Gallichan[1], Gerrit Schultz[1], Walter R. Witschey[1], Anna Masako Welz[1], Christian A. Cocosco[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2807. Strategies for Fast 3D Volumetric Coverage using Spatiotemporally-Encoded MRI
Noam Ben-Eliezer[1], Lucio Frydman[1]
[1]Chemical-Physics, Weizmann Institute of Science, Rehovot, Israel

2808. Accelerated MR Imaging with Spread Spectrum Encoding
Gilles Puy[1,2], José Marques[2,3], Rolf Gruetter[2,3], Jean-Philippe Thiran[1], Dimitri Van De Ville[4,5], Pierre Vandergheynst[1], Yves Wiaux[1,5]
[1]Institute of Electrical Engineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Institute of the Physics of Biological Systems, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Department of Radiology, University of Lausanne (UNIL), Lausanne, Switzerland; [4]Institute of Bioengineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [5]Department of Radiology & Medical Informatics, University of Geneva (UniGE), Geneva, Switzerland

2809. Moving through K-Space by Point Reflections – the TRASE Method
Jonathan C. Sharp[1], Scott B. King[2]
[1]Institute for Biodiagnostics (West), National Research Council of Canada, Calgary, AB, Canada; [2]Institute for Biodiagnostics, National Research Council of Canada, Winnipeg, MB, Canada

2810. Spatial Encoding Without Gradient Coils using Field Perturbations from Susceptibility Markers
Hirad Karimi[1], Charles H. Cunningham[1,2]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada

Radial Imaging & Projections

Exhibition Hall Monday 14:00-16:00

2811. Optimized Combination of Parallel MRI & Sliding Window Reconstruction for Accelerated Time Resolved Radial MRI
Alexey A. Samsonov[1], Julia V. Velikina[2], Walter F. Block[2]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States

2812. Efficient Direct Summation Reconstruction for Radial & PROPERLLER MRI using the Chirp Transform Algorithm
Yanqiu Feng[1], Yanli Song[1], Cong Wang[1], Taigang He[2], Xuegang Xin[1], Wufan Chen[1]
[1]School of Biomedical Engineering, Southern Medical University, Guangzhou, China, People's Republic of; [2]Royal Brompton Hospital & Imperial College, London, United Kingdom

2813. A Model-Based Image Reconstruction Algorithm for Saturation Prepared Radially Acquired Data
Johannes Tran-Gia[1], Daniel Stäb[1], Christian Oliver Ritter[1], Dietbert Hahn[1], Herbert Köstler[1]
[1]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany

2814. Filter Implementation into a 2D Radial Trajectory for Sodium MRI
Simon Konstandin[1], Armin Michael Nagel[2], Patrick Michael Heiler[1], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

2815. Ultra-Short Echo Time Imaging using Pointwise Encoding Time Reduction with Radial Acquisition (PETRA)
David Manuel Grodzki[1,2], Peter M. Jakob[1], Bjoern Heismann[2]
[1]Department of Physics EP5, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Magnetic Resonance, Siemens AG, Erlangen, Bavaria, Germany

2816. Simple Method for Adaptive Gradient-Delay Compensation in Radial MRI
Kai Tobias Block[1], Martin Uecker[2]
[1]MR Application & Workflow Development, Healthcare Sector, Siemens AG, Erlangen, Germany; [2]Biomedizinische NMR Forschungs GmbH, Göttingen, Germany

2817. High Resolution 3D Imaging using Multiple Oblique View Acquisitions
MinOh Ghim[1], Sang-Young Zho[1], Eunhae Joe[1], Dong-Hyun Kim[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

Optimization of 3D Fast Spin Echo

Exhibition Hall Tuesday 13:30-15:30

2818. Fat-Signal Suppression in Single-Slab 3D TSE (SPACE) using Water-Selective Refocusing
John P. Mugler, III[1], Dominik Paul[2], Wilhelm Horger[2], Berthold Kiefer[2]
[1]Radiology, University of Virginia, Charlottesville, VA, United States; [2]Siemens Healthcare, Erlangen, Germany

2819. Complementary Use of SPAIR & STIR for Robust Fat Suppression in Single-Slab 3D TSE
Guobin Li[1], Wei Jun Zhang[1], Dominik Paul[2], Lars Lauer[2]
[1]Siemens Mindit Magnetic Resonance Ltd., Shenzhen, Guang Dong, China, People's Republic of; [2]Siemens Healthcare Sector, Erlangen

2820. Variable-Flip Angle 3D-Turbo Spin Echo Imaging Utilizing Spiral Acquisitions
Samuel Fielden[1], Craig Meyer[1,2], John P. Mugler, III[1,2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia

2821. Chemical Shift Induced Slab Boundary Artifacts Reduction in Multi-Slab SPACE
Guobin Li[1], Dominik Paul[2]
[1]Siemens Mindit Magnetic Resonance Ltd., Shenzhen, Guang Dong, China, People's Republic of; [2]Siemens Healthcare Sector, Erlangen

2822. Prosepective Phase Correction for 3D FSE
Kristin L. Granlund[1,2], Weitian Chen[3], Dawei Gui[4], Donglai Huo[4], Shawlee Zhao[4], Kevin M. Koch[5], Richard Scott Hinks[5], Anja C. S. Brau[3]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [4]MR PSD & Applications, GE Healthcare, Waukesha, WI, United States; [5]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

BSSFP: Improvements & Applications

Exhibition Hall Wednesday 13:30-15:30

2823. Use of Simulated Annealing for the Design of Fat-Suppressed Multiple Repetition Time Balanced SSFP
Kuan J. Lee[1], Hsu-Lei Lee[1], Jürgen Hennig[1], Jochen Leupold[1]
[1]Universitätsklinikum Freiburg, Freiburg, Baden-Württemberg, Germany

2824. An Algebraic Solution for Banding Artifact Removal in BSSFP Imaging
Michael Nicholas Hoff[1], Qing-San Xiang[1,2]
[1]Physics, University of British Columbia, Vancouver, British Columbia, Canada; [2]Radiology, University of British Columbia, Vancouver, British Columbia, Canada

2825. Eddy Current Minimization in Selective Flow Suppression BSSFP Sequences
Karan Dara[1], Mark A. Griswold[1], Jamal J. Derakhshan[1], Jeffrey L. Sunshine[2], Jeffrey L. Duerk[1]
[1]Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Department of Radiology, University Hospitals of Cleveland, Cleveland, OH, United States

2826. Time-Resolved 4D MRA using TrueFISP Based Spin Tagging & Dynamic Golden Angle Radial Acquisition
Lirong Yan[1], Jiangsheng Yu[2], Yiqun Xue[2], Rajesh Kumar[3], Hee Kwon Song[2], Danny J. J. Wang[1]
[1]Neurology, UCLA, Los Angeles, CA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Neurobiology, UCLA, Los Angeles, CA, United States

2827. **Simultaneous T_1 & T_2 Quantification using Non-Continuous Balanced SSFP Look-Locker Imaging**
Glenn S. Slavin[1]
[1]Global Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States

2828. **Ultra-Short Echo Time Balanced SSFP for Highly Sensitive Detection & Quantification of Multi-Resonant ^{19}F Imaging Agents for Targeted Molecular MRI**
Jochen Keupp[1], *Samuel A. Wickline*[2], *Gregory M. Lanza*[2], *Shelton D. Caruthers*[2]
[1]Philips Research Europe, Hamburg, Germany; [2]C-TRAIN, Washington University School of Medicine, St. Louis, United States

2829. **SPIO Quantification using Inversion Recovery Prepared BSSFP for Targeted Molecular Imaging**
Chris V. Bowen[1,2], *Nicole A. Pelot*[1,3]
[1]Institute for Biodiagnostics (Atlantic), National Research Council, Halifax, NS, Canada; [2]Physics & Atmospheric Science, Dalhousie University, Halifax, NS, Canada; [3]Physics & Atmospheric Science & Electrical Engineering, Dalhousie University, Halifax, NS, Canada

Undersampling & Compressed Sensing

Exhibition Hall Thursday 13:30-15:30

2830. **Multiscale Dictionary Learning for MRI**
Saiprasad Ravishankar[1], *Yoram Bresler*[1]
[1]Department of Electrical & Computer Engineering & the Coordinated Science Laboratory, University of Illinois, Urbana, IL, United States

2831. **Adaptive Compressed MRI Sampling Based on Wavelet Encoding**
Bo Kou[1], *Guoxi xie*[2], *Bensheng Qiu*[2], *Xin Liu*[2]
[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Science, Shenzhen, China, People's Republic of; [2]Shenzhen Institutes of Advanced Technology, Chinese Academy of Science, China, People's Republic of

2832. **Undersampled MRI Reconstruction using Edge-Weighted ι_1 Norm Minimization**
Changwei Hu[1], *Xiaobo Qu*[2], *Di Guo*[2], *Lijun Bao*[1], *Shuhui Cai*[1], *Zhong Chen*[1]
[1]Department of Physics, Xiamen University, Xiamen, Fujian, China, People's Republic of; [2]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China, People's Republic of

2833. **A Swifter SWIFT using Compressive Sensing**
Sairam Geethanath[1], *Steen Moeller*[2], *Curtis A. Corum*[2], *Matthew A. Lewis*[1,3], *Vikram D. Kodibagkar*[1,3]
[1]Joint graduate program in Biomedical Engineering, UT Arlington & UT Southwestern Medical Center, Dallas, TX, United States; [2]Center for Magnetic Resonance Research, University of Minnesota; [3]Radiology, UT Southwestern Medical Center

2834. **Investigation on Compressed Sensing Regularization Parameter using Case-PDM**
Jun Miao[1], *Feng Huang*[2], *David L. Wilson*[3]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Invivo Corporation, Gainesville, FL, United States; [3]Radiology, University Hospitals of Cleveland, Cleveland, OH, United States

2835. **MR Compressed Sensing using FREBAS Transform**
Satoshi Ito[1], *Koji Miyabayashi*, *Yoshifumi Yamada*
[1]Research Division of Intelligence & Information Sciencs, Utsunomiya University, Utsunomiya, Tochigi, Japan

2836. **The Multiple Transforms Compressed Sensing for MR Angiography**
Joonsung Choi[1], *Yeji Han*[1], *Jinyoung Hwang*[1], *Jun-Young Chung*[2], *Zang-Hee Cho*[2], *HyunWook Park*[1]
[1]Department of Electrical Engineering, KAIST, Daejeon, Korea, Republic of; [2]Neuroscience Research Institute, Gachon University of Medicine and Science

2837. **Acceleration of High Angular Resolution Diffusion Weighted Images using Compressed Sensing**
Merry P. Mani[1], *Tong Zhu*[2], *Jianhui Zhong*[2], *Mathews Jacob*[3]
[1]Rochester Center for Brain Imaging, Electrical & Computer Engineering, University of Rochester, Rochester, NY, United States; [2]Imaging Sciences, University of Rochester, Rochester, NY, United States; [3]Biomedical Engineering, University of Rochester, Rochester, NY, United States

2838. **Gaussian Scale Mixture-Based Joint Reconstruction of Multicomponent MR Images from Undersampled K-Space Measurements**
Xiaobo Qu[1], *Changwei Hu*[2], *Di Guo*[1], *Lijun Bao*[2], *Zhong Chen*[2]
[1]Department of Communication Engineering, Xiamen University, Xiamen, Fujian, China, People's Republic of; [2]Department of Physics, Xiamen University, Xiamen, Fujian, China, People's Republic of

2839. Group Sparse Reconstruction of Vector-Valued Images
Joshua Trzasko[1], Armando Manduca[1]
[1]Mayo Clinic, Rochester, MN, United States

2840. Compressed Sensing Diffusion Tensor Imaging (DTI) with Tensor & Phase Constraints
Yue Li[1], Manisha Aggarwal[1], Jiangyang Zhang[2], Susumu Mori[2]
[1]Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

2841. Separate Magnitude & Phase Regularization Via Compressed Sensing
Feng Zhao[1], Jeffrey A. Fessler[2], Jon-Fredrik Nielsen[1], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Electrical Engineering, University of Michigan

2842. Phase Constrained Compressed Sensing with Applications for PRF Temperature Mapping
Zhipeng Cao[1], Christopher T. Sica[2], Philipp Ehses[3], Sukhoon Oh[2], Yeun C. Ryu[2], Christopher M. Collins[1,2], Mark A. Griswold[4]
[1]Bioengineering, the Pennsylvania State University, Hershey, PA, United States; [2]Radiology, the Pennsylvania State University, Hershey, PA, United States; [3]Research Center for Magnetic Resonance Bavaria (MRB), Würzburg, Germany; [4]Radiology, Case Western Reserve University, Cleveland, OH, United States

2843. Incorporating Support Constraints for Sparse Regularization Reconstruction
Fan Lam[1,2], Raman Subramanian[3], Dan Xu[3], Kevin F. King[3]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]GE Healthcare, Waukesha, WI, United States

2844. Novel Partial Fourier Reconstruction Technique using FOCUSS
Hisamoto Moriguchi[1,2], Shin-Ichi Urayama[3], Yutaka Imai[1], Manabu Honda[4], Takashi Hanakawa[4,5]
[1]Radiology, Tokai University, Isehara, Kanagawa, Japan; [2]Radiology, Hiratsuka Municipal Hospital, Hiratsuka, Kanagawa, Japan; [3]Human Brain Research Center, Kyoto University, Kyoto, Japan; [4]Functional Brain Research, National Center of Neurology & Psychiatry, Kodaira, Tokyo, Japan; [5]Precursory Research for Embryonic Science & Technology, Japan Science & Technology Agency, Japan

2845. Non-Sparse Phantom for Compressed Sensing MRI Reconstruction
David S. Smith[1], Edward Brian Welch[1]
[1]Radiology & Radiological Sciences & Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

2846. Compressed Sensing on TDM-SENSE with Rotating RF Coil
Hua Wang[1], Adnan Trakic[1], Bing Keong Li[1], Yeyang Yu[1], Feng Liu[1], Stuart Crozier[1]
[1]The University of Queensland, Brisbane, QLD, Australia

2847. Compressed Sensing Reconstruction Improves Variable Density Spiral Functional MRI
Daniel Holland[1], Careesa Liu[2], Chris V. Bowen[2], Andy Sederman[1], Lynn Gladden[1], Steven D. Beyea[2]
[1]Department of Chemical Engineering & Biotechnology, University of Cambridge, Cambridge, United Kingdom; [2]Institute for Biodiagnostics (Atlantic), National Research Council Canada, Halifax, Nova Scotia, Canada

2848. Single-Shot Partial-Fourier Spiral Imaging
Bertram Jakob Wilm[1], Christoph Barmet[1], Matthieu Guerquin-Kern[1,2], Max Haeberlin[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Biomedical Imaging Group, EPFL Lausanne, Lausanne, Vaude, Switzerland

2849. Compressed Sensing CPMG with Group-Sparse Reconstruction for Myelin Water Imaging
Henry Szu-Meng Chen[1], Angshul Majumdar[2], Rabab Kreidieh Ward[2], Piotr Kozlowski[1,3]
[1]UBC MRI Research Centre, Vancouver, BC, Canada; [2]Electrical & Computer Engineering, University of British Columbia, Vancouver, BC, Canada; [3]ICORD, Vancouver, BC, Canada

2850. Dynamic Contrast-Enhanced Three-Dimensional Lung Imaging Acceleration using K-T PCA
Yi-Yu Shih[1], Jia-Shuo Hsu[2], Yi-Ru Lin[3], Shang-Yueh Tsai[4], Hsiao-Wen Chung[1,2]
[1]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [2]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Electronic Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [4]Department of Electrical Engineering, Chang Gung University, Taoyuan, Taiwan

2851. A 3D-Plus-Time Radial-Cartesian Hybrid Sampling of K-Space with High Temporal Resolution & Maintained Image Quality for MRI & fMRI
Maria Magnusson[1,2], Olof Dahlqvist Leinhard[2,3], Peter Lundberg[2,3]
[1]Dept. of Electrical Engineering, Linköping University, Linköping, Sweden; [2]Center for Medical Image Science & Visualization (CMIV), Linköping University, Linköping, Sweden; [3]Radiation Physics, Linköping University, Linköping, Sweden

2852. Compressed Sensing in Phase-Encoded Multi-Dimensional Magnetic Resonance Imaging

Peng Cao[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of

Spectroscopic Imaging & Compressed Sensing

Exhibition Hall Monday 14:00-16:00

2853. A Novel Parallel Sparse MRSI Reconstruction Scheme
Ramin Eslami[1], Mathews Jacob
[1]Biomedical Engineering, University of Rochester, Rochester, NY, United States

2854. Undersampled MRSI K-Space for Spectra with Limited Support
Dany Merhej[1,2], Helene Ratiney[3], Chaouki Diab[4], Mohamad Khalil[2], Rémy Prost[1]
[1]CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Université de Lyon, Lyon, France; [2]EDST, Azm Research Center, Lebanese University, Tripoli, Lebanon; [3]CREATIS, CNRS UMR 5220, Inserm U1044, INSA-Lyon, Université Lyon 1, Université de Lyon, Lyon, France; [4]ISAE – Cnam Liban, Beirut, Lebanon

2855. Temporal Acceleration in Hyperpolarization Imaging using Image-Domain Compressed Sensing
Behzad Sharif[1], Debiao Li[1,2], Shawn Wagner[1]
[1]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center, Los Angeles, CA, United States; [2]Northwestern University, Chicago, IL, United States

2856. Accelerated Metabolic Imaging: Application of L_1-SPIRiT to Hyperpolarized ^{13}C Parallel Imaging & Compressed Sensing MRSI
Peter J. Shin[1], Michael A. Ohliger[2], Simon Hu[2], Peder E. Z. Larson[2], Cornelius Von Morze[2], Michael Lustig[3], Daniel B. Vigneron[2]
[1]Joint Graduate Group in Bioengineering, University of California at San Francisco & Berkeley, San Francisco, CA, United States; [2]Department of Radiology & Biomedical Imaging, University of California at San Francisco, San Francisco, CA, United States; [3]Department of Electrical Engineering & Computer Science, University of California at Berkeley, Berkeley, CA, United States

Compressed Sensing & Receive Arrays

Exhibition Hall Tuesday 13:30-15:30

2857. Array Compression for 3D Cartesian Sampling
Tao Zhang[1], Michael Lustig[1,2], Shreyas Vasanawala[3], John Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Electrical Engineering & Computer Science, University of California Berkeley, Berkeley, CA, United States; [3]Radiology, Stanford University, Stanford, CA, United States

2858. k-Space Channel Combination for Non-Cartesian Acquisitions using Direct Virtual Coil (DVC) Calibration
Philip James Beatty[1], Atsushi Takahashi[2], Kevin M. Johnson[3], Jean H. Brittain[4]
[1]Global Applied Science Laboratory, GE Healthcare, Thornhill, Ontario, Canada; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [4]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States

2859. Compressed Sensing with Compressed Channels
Feng Huang[1], Wei Lin[1], George Randy Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Gainesville, FL, United States

2860. GRAPPA Operator Enhanced Initialization for Improved Multi-Channel Compressed Sensing
Feng Huang[1], Wei Lin[1], George Randy Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Gainesville, FL, United States

2861. SpRING: Sparse Reconstruction of Images using the Nullspace Method & GRAPPA
Daniel Stuart Weller[1], Jonathan R. Polimeni[2,3], Leo Grady[4], Lawrence L. Wald[2,3], Elfar Adalsteinsson[1], Vivek Goyal[1]
[1]EECS, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]A. A. Martinos Center, Dept. of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Dept. of Radiology, Harvard Medical School, Boston, MA, United States; [4]Dept. of Image Analytics & Informatics, Siemens Corporate Research, Princeton, NJ, United States

2862. A Method to Combine Compressed Sensing with Auto-Calibrating Parallel Imaging Reconstruction for Cartesian Acquisition
Kang Wang[1], Philip Beatty[2], James Holmes[2], Reed Busse[2], Jean Brittain[2], Frank Korosec[1]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Global Applied Science Laboratory, GE Healthcare

2863. Impact of Coil-Neighbors of Target Points in Autocalibration of ESPIRiT
Anja Brau[1], Peng Lai[1], Srihari Narasimhan[2], Babu Narayanan[3], Vijaya Saradhi[2]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Computing & Decision Sciences Lab, GE Global Research, Bangalore, India; [3]Medical Image Analysis Lab, GE Global Research, Bangalore, India

2864. CS-SENSE Reconstruction using a Two-Level Variable Density Sampling Pattern
Mariya Doneva[1,2], Peter Börnert[1], Alfred Mertins[2]
[1]Philips Research Europe, Hamburg, Germany; [2]University of Luebeck, Luebeck, Germany

2865. Single-Signal Based Parallel Imaging using Compressed Sensing
satoshi Ito[1], Hirotoshi Arai[1], Yoshifumi Yamada[1]
[1]Research Division of Intelligence & Information Sciencs, Utsunomiya University, Utsunomiya, Tochigi, Japan

2866. Parallel Compressed Sensing MRI using Reweighted L_1 Minimization
Ching-Hua Chang[1], Jim Ji[1]
[1]Texas A&M University, College Station, TX, United States

Reconstruction in Parallel Imaging

Exhibition Hall Wednesday 13:30-15:30

2867. Scalable Anti-Aliasing Image Reconstruction in the Presence of a Quadratic "phase-Scrambling" Gradient using the Fractional Fourier Transform
Jason Peter Stockmann[1], Gigi Galiana[2], Vicente Parot[3,4], Leo Tam[1], Robert Todd Constable[2]
[1]Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Diagnostic Radiology, Yale University, New Haven, CT, United States; [3]Biomedical Imaging Center, Pontificia Universidad Católica de Chile, Santiago, Chile; [4]Department of Electrical Engineering , Pontificia Universidad Católica de Chile, Santiago, Chile

2868. Fast Image Reconstruction for Generalized Projection Imaging
Gerrit Schultz[1], Daniel Gallichan[1], Marco Reisert[1], Maxim Zaitsev[1], Jürgen Hennig[1]
[1]University Medical Center Freiburg, Freiburg, Germany

2869. Fast Image Reconstruction in the Presence of Dynamic Higher-Order Fields
Bertram Jakob Wilm[1], Christoph Barmet[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland

2870. Combination of Arbitrary Gradient Encoding Fields using SPACE RIP for Reconstruction (COGNAC)
Jakob Assländer[1,2], Martin Blaimer[2], Felix A. Breuer[2], Maxim Zaitsev[1], Peter M. Jakob[2,3]
[1]Medical Physics, Department of Diagnostic Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Research Center Magnetic Resonance Bavaria (MRB), Würzburg, Germany; [3]Department of Experimental Physics 5, University of Würzburg, Würzburg, Germany

2871. Accelerating Parallel Acquisition Reconstruction with Sparse Matrix Transformations
Josh M. Speciale[1], Charles A. Bouman[1], Thomas M. Talavage[1,2]
[1]School of Electrical & Computer Engineering, Purdue University, West Lafayette, IN, United States; [2]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN, United States

2872. Data Driven Reconstruction of Inconsistent K-Space Data
Kevin Michael Johnson[1], Walter F. Block[1,2], Scott B. Reeder[1,3], Alexey Samsonov[1,3]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin - Madison; [3]Radiology, University of Wisconsin - Madison

2873. An Augmented Lagrangian Method for Regularized MRI Reconstruction using SENSE
Sathish Ramani[1], Jeffrey A. Fessler[1]
[1]EECS Department, University of Michigan, Ann Arbor, MI, United States

2874. Iterative & Joint Reconstruction from Calibration and Image Data for Parallel Imaging
Yu Li[1], Charles L. Dumoulin[1]
[1]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

2875. Highly Accelerated Myocardial Perfusion MRI using K-T SLR with Parallel Imaging
Sajan Goud Lingala[1], Yue Hu[2], Edward Dibella[3], Mathews Jacob[1]
[1]Biomedical Engineering, University of Rochester, Rochester, NY, United States; [2]Electrical & Computer Engineering, University of Rochester, Rochester, NY, United States; [3]Radiology, University of Utah, Salt Lake city, UT, United States

2876. Accelerated Variable Density Spiral at 7 Tesla using Parallel Imaging
Peter Börnert[1,2], Wei Lin[3], Feng Huang[3], Tim Nielsen[1], Andrew Webb[2], Matthias J. P. van Osch[2]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Department of Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [3]Philips Healthcare, Invivo Corporation, Gainesville, United States

Parallel Imaging

Exhibition Hall Thursday 13:30-15:30

2877. Flexible Virtual Coils (FVC) for Faster Channel-By-Channel Partially Parallel Imaging
Feng Huang[1], Wei Lin[1], George Randy Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Gainesville, FL, United States

2878. Impact of Direct Virtual Coil Channel Combination on Reduced Field-Of-View Artifacts
Philip James Beatty[1], James H. Holmes[2], Scott B. Reeder[3], Jean H. Brittain[2]
[1]Global Applied Science Laboratory, GE Healthcare, Thornhill, Ontario, Canada; [2]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States; [3]Departments of Radiology & Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

2879. Combination of Partial k-Space & Direct Virtual Coil Parallel Imaging
Philip James Beatty[1], Ananth Madhuranthakam[2], Shaorong Chang[3], Ersin Bayram[3], Jean H. Brittain[4]
[1]Global Applied Science Laboratory, GE Healthcare, Thornhill, Ontario, Canada; [2]Global Applied Science Laboratory, GE Healthcare, Boston, MA, United States; [3]GE Healthcare, Madison, WI, United States; [4]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States

2880. Phase-Constrained Synthetic Target Algorithm for Non-Cartesian Parallel Image Reconstruction
Meihan Wang[1], Weitian Chen[2], Micheal Lustig[3], Peng Hu[4], Michael Salerno, Christopher Kramer, Craig Meyer[1]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]GE Healthcare; [3]UC Berkeley; [4]University of California, Los Angeles

2881. An Augmented Lagrangian Method for MR Coil Sensitivity Estimation
Michael John Allison[1], Jeffrey A. Fessler[1]
[1]Department of Electrical Engineering & Computer Science, the University of Michigan, Ann Arbor, MI, United States

2882. Improved Parallel Imaging with GRAPPA with Large Virtual Coils Arrays for Time-Resolved Applications
Simon Bauer[1], Bernd Andre Jung[1], Alexey A. Samsonov[2], Matthias Honal[1], Michael Markl[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology, University of Wisconsin, Madison, WI, United States

2883. Iterative Parallel Imaging Reconstruction of Time-Resolved Data using 3D Variational Regularization
Florian Knoll[1], Kristian Bredies[2], Rudolf Stollberger[1]
[1]Institute of Medical Engineering, Graz University of Technology, Graz, Austria; [2]Institute for Mathematics & Scientific Computing, University of Graz, Graz, Austria

2884. PILARS: Parallel Imaging with Large ARrays & Sinc-Interpolation
Shuo Feng[1], Jim Ji[1]
[1]Texas A&M University, College Station, TX, United States

2885. Automatic Coil Selection for Streaking Artifact Reduction in Radial MRI
Yiqun Xue[1], Jiangsheng Yu[1], Hyun Seon Kang[1], Sarah Englander[1], Mark A. Rosen[1], Hee Kwon Song[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

2886. Using RF to Create Nonlinear Virtual Coil Profiles
Gigi Galiana[1], Jason Stockmann[2], Leo K. Tam[2], Robert Todd Constable[1,2]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States

2887. Parallel Imaging using a 3D Concentric Cylinders Trajectory
Kie Tae Kwon[1], Holden H. Wu[1,2], Michael Lustig[1,3], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [3]Electrical Engineering & Computer Science, University of California at Berkeley, Berkeley, CA, United States

2888. Reconstructing Undersampled Non-Cartesian Data with Calibrationless Parallel Imaging
Daniel Neumann[1], Felix A. Breuer[1], Peter M. Jakob[2], Gregory Lee[3], Mark A. Griswold[3], Nicole Seiberlich[3]
[1]Research Center Magnetic Resonance Bavaria (MRB), Würzburg, Germany; [2]Dept. of Experimental Physics 5, University of Würzburg, Würzburg, Germany; [3]Dept. of Radiology, Case Western Reserve University, Cleveland, OH, United States

2889. Non-Cartesian Parallel Imaging Reconstruction using PRUNO-GROG
Jian Zhang[1], Ajit Shankaranarayanan[2]
[1]Global Applied Science Lab, GE HealthCare, Bethesda, MD, United States; [2]Global Applied Science Lab, GE HealthCare, Menlo Park, CA, United States

2890. Prospects of Parallel ZTE Imaging
Thomas Oberhammer[1], Markus Weiger[2,3], Franciszek Hennel[3], Klaas Paul Pruessmann[4]
[1]Institute for Biomedical Engineering, University and ETH Zurich, Zurich, Switzerland; [2]Bruker BioSpin AG, Faellanden, Switzerland; [3]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [4]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

2891. Comparing Gridding &Masking in 3D Parallel Reconstruction
Nicholas Ryan Zwart[1], James Grant Pipe[1]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

2892. Phase Constraints for Parallel Imaging with PEPI
Kenneth Otho Johnson[1], Craig H. Meyer[1]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States

2893. Null Space Imaging with Compressed Sensing for Rapid Parallel Imaging
Leo K. Tam[1], Jason P. Stockmann[1], Gigi Galiana[2], Robert Todd Constable[1,2]
[1]Biomedical Engineering, Yale University, New Haven, CT, United States; [2]Diagnostic Radiology & Neurosurgery, Yale University, New Haven, CT

2894. Virtually Independent Gaussian Channel Nulling (VIPGen) Image Reconstruction for Functional Magnetic Resonance Inverse Imaging (FMRInI)
Shr-Tai Liou[1], Hsiao-Wen Chung[1], Wei-Tang Chang[2], Wen-Kai Tsai[2], Fa-Hsuan Lin[2,3]
[1]Graduate Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan, Taiwan; [2]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan; [3]MGH-HST Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States

2895. Dictionary-Based Sparsification & Reconstruction (DIBSAR)
Berkay Kanberoglu[1], Lina J. Karam[1], David Frakes[1,2]
[1]School of Electrical, Computer & Energy Engineering, Arizona State University, Tempe, AZ, United States; [2]School of Biological & Health Systems Engineering, Arizona State University, Tempe, AZ, United States

2896. Image Deformation Based ABSINTHE
Eric Pierre[1,2], Nicole Seiberlich[3], Vikas Gulani[4], Pierrick Bourgeat[2], Olivier Salvado[2], Mark Griswold[3]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]ICT Centre, CSIRO, Brisbane, QLD, Australia; [3]Radiology, Case Western Reserve University, Cleveland, OH, United States; [4]Radiology, Case Western Reserve University, Cleveland, United States

2897. Parallel Magnetic Resonance Imaging Reconstruction by Image Editing
Jun Shen[1]
[1]NIMH, Bethesda, MD, United States

Parallel Transmission & RF Pulse Design

Exhibition Hall Monday 14:00-16:00

2898. B_1+ Inhomogeneity Compensation using 3D Parallel Excitation is Enhanced by Simultaneous Linear & Nonlinear Gradient Encoding
William A. Grissom[1], Laura Sacolick[1], Mika W. Vogel[1]
[1]GE Global Research, Munich, Germany

2899. A Spatial-Spectral Pulse Approach for Reduced FOV Excitation using Second-Order Gradients
Chao Ma[1], Kevin F. King[2], Dan Xu[2], Zhi-Pei Liang[3]
[1]Electrical & Computer Engineering , University of Illinois, Urbana, IL, United States; [2]Global Applied Science Lab, General Electric Healthcare, Waukesha, WI, United States; [3]Electrical & Computer Engineering, University of Illinois, Urbana, IL, United States

2900. Multi-Dimensional Refocusing Pulses for Parallel Transmission by Optimal Control
Weiran Deng[1], Cungeng Yang[1], V. Andrew Stenger[1]
[1]Medicine, University of Hawaii John A. Burns School of Medicine, Honolulu, HI, United States

2901. Adapted Tx-SENSE Excitation to Account for Inhomogeneous Slice Refocusing at 7T
Tomasz Dawid Lindel[1,2], Frank Seifert[1,2], Martin Dietterle[1,2], Thoralf Niendorf[2], Bernd Ittermann[1,2]

[1]Physikalisch-Technische Bundesanstalt, Braunschweig & Berlin, Germany; [2]Berlin Ultrahigh Field Facility, Max-Delbrück-Centrum für Molekulare Medizin, Berlin, Germany

2902. A Fast Parallel Excitation Pulse Design for Efficient Selection & Ordering of PE Locations with B_0 Field Inhomogeneity

Daehyun Yoon[1], Jeffrey A. Fessler[1], Anna C. Gilbert[2], Douglas C. Noll[3]
[1]Electrical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]Mathematics, University of Michigan, Ann Arbor, MI, United States; [3]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

2903. Localized MR-Spectroscopy in Arbitrarily Shaped Voxels using Parallel Excitation Pulses with Large Spectral Bandwidth

Peter Ullmann[1], Jeff Snyder[2], Martin Haas[2], Johannes Thomas Schneider[1,2], Wolfgang Ruhm[1]
[1]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [2]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

2904. Accounting for B_1 Void using Optimized Transmit Pulses in Ultra-High Field MRI

Ling Xia[1], Tingting Shao[1], Minhua Zhu[1], Guofa Shou[1], Feng Liu[2], Stuart Crozier[2]
[1]Department of Biomedical Engineering, Zhejiang University, Hangzhou, China, People's Republic of; [2]School of Information Technology & Electrical Engineering, University of Queensland, Brisbane, Australia

2905. TOF Angiography in the Human Brain at 7T using 3D Parallel Excitation: Initial Results

Sebastian Schmitter[1], Xiaoping Wu[1], Edward J. Auerbach[1], Michael Hamm[2], Josef Pfeuffer[3], Kamil Ugurbil[1], Pierre-Francois Van De Moortele[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Siemens Healthcare, Charlestown, MA, United States; [3]MR Application Development, Siemens Healthcare, Erlangen, Germany

2906. Improved Navigator Performance by Parallel Transmission

Manuel Walther[1], Kay Nehrke[2], Ingmar Gräßlin[2], Ulrich Katscher[2], Markus Eblenkamp[1], Erich Wintermantel[1], Peter Börnert[2]
[1]Chair of Medical Engineering, Technische Universität München, Garching, Germany; [2]Philips Research Laboratories, Hamburg, Germany

2907. Adiabatic B_1 Shimming Algorithm for Multiple Channel Transmit at 7T

Priti Balchandani[1], Mohammad Mehdi Khalighi[2], Scott Sigao Hsieh[1,3], Kawin Setsompop[4], John Pauly[3], Daniel Spielman[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States; [4]A.A. Martinos Center for Biomedical Imaging, Harvard Medical School, Massachusetts General Hospital, Charlestown, MA, United States

2908. Minimum-Duration Adiabatic Spectral-Spatial Refocusing Pulses

Adam B. Kerr[1], Duan Xu[2], Peder E.Z. Larson[2], Daniel B. Vigneron[2], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

2909. A Low-Power Asymmetrically-Selective Adiabatic Pulse

Adam B. Kerr[1], Duan Xu[2], Peder E. Z. Larson[2], Daniel B. Vigneron[2], John M. Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

2910. Mapping Inversion Efficiencies of Adiabatic Pulses at 7T

Mayur Narsude[1,2], José Marques[1,2], Florent Eggenschwiler[1], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédéral de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Radiology, University of Lausanne, Lausanne, Vaud, Switzerland; [3]Department of Radiology, University of Geneva, Geneva, Switzerland

2911. Nonuniform & Multidimensional Shinnar-Le Roux RF Pulse Design

William A. Grissom[1], Graeme C. McKinnon[2], Mika W. Vogel[1]
[1]GE Global Research, Munich, Bavaria, Germany; [2]GE Applied Science Lab, GE Healthcare, Milwaukee, Wisconsion, United States

2912. B_1^+-Insensitive Slice-Selective Pulses Constructed from Optimized Non-Selective Composite Waveforms

Jay Moore[1,2], Marcin Jankiewicz[1,3], Adam W Anderson[1,4], John C. Gore[1,4]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Physics & Astronomy, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology & Radiological Sciences, Vanderbilt University; [4]Department of Biomedical Engineering, Vanderbilt University

2913. Broadband Refocusing Pulses with B_1 Robustness & Energy Constraints

Martin A. Janich[1,2], Rolf F. Schulte[2], Markus Schwaiger[3], Steffen J. Glaser[1]

[1]Chemistry, Technische Universität München, Munich, Germany; [2]GE Global Research, Munich, Germany; [3]Nuclear Medicine, Technische Universität München, Munich, Germany

2914. Practical Non-Selective Refocusing Pulses for 7T MRI
Marcin Jankiewicz[1,2], Jay Moore[1,3], Adam Anderson[1,4], John Gore[1,4]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Physics & Astronomy, Vanderbilt University, United States; [4]Biomedical Engineering, Vanderbilt University

2915. High Bandwidth Dualband Selective Saturation RF Pulses for Prostate Proton MRSI
Galen D. Reed[1], Adam B. Kerr[2], Peder E. Z. Larson, Eugene Ozhinsky, John Kurhanewicz, Daniel B. Vigneron
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Electrical Engineering, Stanford University, Palo Alto, CA

2916. Global Minimum Peak RF Design for Large Time-Bandwidth Saturation Pulse
Christine Law[1], Sonal Josan[2]
[1]University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]SRI International

2917. Dynamic Gradient Spatial-Spectral Pulse
Xiaocheng Wei[1], Yongchuan Lai[1]
[1]MR, GE Healthcare, Beijing, China, People's Republic of

2918. Time-Efficient Slab Selective Water Excitation
Gregory R. Lee[1], Jean A. Tkach[1,2], Mark A. Griswold[1,3]
[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, Imaging Research Center, Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, United States; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

2919. Maximizing MR Signal for 2D UTE Slice Selection in the Presence of Rapid T_2 Relaxation
Michael Carl[1], Jing-Tzyh Alan Chiang[2], Mark Bydder[2]
[1]Global Applied Science Laboratory, GE Healthcare, San Diego, CA, United States; [2]University of California, San Diego, United States

2920. Hadamard Encoded IMQC High-Resoultion NMR Spectroscopic Method in Inhomogeneous Fields
Yushan Chen[1], Congbo Cai[1], Fenglian Gao[1], Shuhui Cai[1], Zhong Chen[1]
[1]Communication Engineering & Physics, Fujian Key Laboratory of Plasma & Magnetic Resonance, Xiamen University, Xiamen, Fujian, China, People's Republic of

B_0 & B_1: Quantification & Correction

Exhibition Hall Tuesday 13:30-15:30

2921. Spatial Field Monitoring using Navigator Echoes
Maarten J. Versluis[1,2], Andrew G. Webb[1,2], Peter Boernert[2,3], Mark A. van Buchem[1], Matthias J. P. van Osch[1,2]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [3]Philips Research Europe, Hamburg, Germany

2922. Optimised Acquisition of Magnetic Field Correlation Mapping for Improved Precision
Catherine Anusha Mallik[1], Gareth J. Barker[1], David J. Lythgoe[1]
[1]Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College London, London, United Kingdom

2923. Slice-By-Slice Grey Matter Optimised Z-Shimming for fMRI Applications
Stephen James Wastling[1], David John Lythgoe[1], Gareth John Barker[1]
[1]Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College London, London, United Kingdom

2924. Robust Transmitter Calibration During Continuous Table Movement
Alto Stemmer[1], Berthold Kiefer[1]
[1]Healthcare Sector, Siemens AG, Erlangen, Germany

2925. A Fast B_1 Mapping Method for Transmit/Receive Coils for Parallel Transmit (PTx) Applications
Tiejun Zhao[1], Hai Zheng[2], Anthony DeFranco[3], Tamer Ibrahim[2,3], Yongxian Qian[3], Fernando Boada[2,3]
[1]Siemens Healthcare, Siemens Medical Solutions, Pittsburgh, PA, United States; [2]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, United States

2926. Interference Bloch-Siegert B_1 Mapping for Parallel Transmit
Laura Sacolick[1], William A. Grissom[1], Guido Kudielka[1], Wolfgang Loew[2], Mika W. Vogel[1]
[1]GE Global Research, Munich, Germany; [2]Cincinnati Children's Hospital Medical Center, Cincinnatti, OH, United States

2927. **Fast Spin Echo Bloch-Siegert B_1 Mapping**
Laura Sacolick[1], Seung-Kyun Lee[2], William A. Grissom[3], Mika W. Vogel[1]
[1]GE Global Research, Munich, Germany; [2]GE Global Research, Niskayuna, NY, United States; [3]GE Global Research, Munich,, Germany

2928. **Joint B_0 & B_1 Mapping from Tagged Rapid 2D Acquisitions**
Wayne R. Dannels[1], Andrew J. Wheaton[1]
[1]Toshiba Medical Research Institute, Mayfield Village, OH, United States

2929. **Turbo Spin Echo Bloch Siegert Shift B_1^+ Mapping**
Thomas Christian Basse-Lüsebrink[1], Volker Sturm[1], Thomas Kampf[1], Guido Stoll[2], Peter Michael Jakob[1]
[1]Experimental Physics 5, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Neurology, University of Wuerzburg, Wuerzburg, Bavaria, Germany

Electronic Poster

Hepatobiliary/Pancreas

Exhibition Hall Monday 14:00-16:00 Computer 1

14:00 **2930.** **Assessment of Hepatic Perfusion with Diffusion Weighted & Dynamic Contrast Enhanced ^{1}H MRI in CCl_4 Treated Rat Liver**
Andriy Babsky[1], Beena George[1], George Sandusky[2], Navin Bansal[1]
[1]Radiology & Imaging Sciences, Indiana University, Indianapolis, IN, United States; [2]Pathology & Laboratory Medicine, Indiana University, Indianapolis, IN, United States

14:30 **2931.** **Quantification of T_1 Relaxation Time of Liver & Spleen Before & After Oxygen Inhalation in Patients with & Without Liver Cirrhosis**
Kyung Ah Kim[1,2], Mi-Suk Park[2], In Seong Kim Kim[3], Myeong-Jin Kim[2], Ki Whang Kim[2]
[1]Radiology, Inje University Ilsan-Paik Hospital, Goyang-si, Gyeonggi-do, Korea, Republic of; [2]Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of; [3]Simens Medical Solution

15:00 **2932.** **Hepatic Fibrosis by Chronic Viral Hepatitis: Segmental Localization of Degree of Fibrosis using Double Contrast Material-Enhanced MRI**
Jeong-Sik Yu[1], Jae Ho Shim, Jae-Joon Chung, Joo Hee Kim, Ki Whang Kim
[1]Radiology, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea, Republic of

15:30 **2933.** **Effect of Cirrhosis on Portal Venous Flow Reserve**
Hwayoung Kate Lee[1], Zhitong Zou[2], Martin Raymond Prince[2]
[1]Radiology, Columbia University College of Physicians & Surgeons, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States

Exhibit Hall Tuesday 3:30-5:30 Computer 1

13:30 **2934.** **Comparison of Liver Stiffness with MRE & Fibrosis Quantification with Fibro-C Index in Chronic Hepatitis B Patients.**
Sudhakar Kundapur Venkatesh[1], Dean Tai[2], Aileen Wee[3], Shuoyu Xu[4], Hanry Yu[5]
[1]Diagnostic Imaging, National University Health System, Singapore, Singapore; [2]Institute of Bioengineering & Nanotechnology, Singapore, Singapore; [3]Pathology, National University Health System, Singapore, Singapore; [4]Singapore-MIT Alliance, Singapore, Singapore; [5]Physiology, National University Health System, Singapore, Singapore

14:00 **2935.** **Liver Stiffness Assessment by Tagged MRI of Cardiac-Induced Liver Motion**
Sohae Chung[1], Elodie Breton[1], Lorenzo Mannelli[1], Leon Axel[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU Langone Medical Center, New York, NY, United States

14:30 **2936.** **MR Elastography: Reproducibility of Measurements of Mean Liver Stiffness**
Russell N. Low[1,2], Tarek Hassanein[3], Neeraj Panchal
[1]Sharp & Children's MRI Center, San Diego, CA, United States; [2]San Diego Imaging, San Diego, CA, United States; [3]Southern California Liver Centers

15:00 **2937.** **Tag MRI of the Liver as a New Method to Differentiate Normal vs. Cirrhotic Livers**
Lorenzo Mannelli[1], Orpheus Kolokythas[1], Theodore Jay Dubinsky[1], Martin Gunn[1], Christopher A. Potter[1], Jeffrey H. Maki[1]
[1]Radiology, University of Washington, Seattle, WA, United States

Exhibition Hall Wednesday 3:30-5:30 Computer 1

13:30 2938. ***In Vivo*** **^{19} F MRI to Detect Biliary Excretion of ^{19} F-Labeled Drugs in Mice**
Su Xu[1,2], Kunrong Cheng[3], Sandeep Khurana[3], Diana Johnson[4], James Polli[4], Da Shi[1,2], Steven Roys[1,2], Rao Gullapalli[1,2], Jean-Pierre Raufman[3]
[1]Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Core for Translational Research in Imaging @ Maryland University of Maryland School ; [3]Department of Medicine, University of Maryland School of Medicine; [4]Department of Pharmaceutical Sciences, University of Maryland School of Pharmacy

14:00 2939. **Fluid Suppression for MRI Screening by Dual Echo Subtraction**
Ananth J. Madhuranthakam[1], Karen S. Lee[2], Jean H. Brittain[3], Ivan Pedrosa[2], Neil M. Rofsky[4], David C. Alsop[2]
[1]Global Applied Science Laboratory, GE Healthcare, Boston, MA, United States; [2]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States; [4]Radiology, UT Southwestern Medical Center, Dallas, TX, United States

14:30 2940. **Parallel Transmission in Liver MRI at 7T: Initial Results**
Xiaoping Wu[1], Sebastian Schmitter[1], Edwards J. Auerbach[1], J. Pfeuffer[2], Michael Hamm[3], Kamil Ugurbil[1], P-F. Van De Moortele[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States; [2]MR Application Development, Siemens Healthcare, Erlangen, Germany; [3]Siemens Healthcare, Charlestown, MA, United States

15:00 2941. **Ultra-High Spatio-Temporal Resolution Liver Imaging using a New View Ordering Scheme & a 2-Point Dixon Acquisition**
Manojkumar Saranathan[1], Dan Rettmann[2], Anja S. Brau[3], Brian A. Hargreaves[1], Shreyas Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Rochester, MN, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

Exhibition Hall Thursday 3:30-5:30 Computer 1

13:30 2942. **Radial K-Space Sampling for 3D Fat-Suppressed Contrast-Enhanced Imaging of the Liver During Free Breathing**
Hersh Chandarana[1], Andrew B. Rosenkrantz[1], Ruth P. Lim[1], Danny Kim[1], David I. Mossa[1], Konstantinos Arhakis[1], Berthold Kiefer[2], Tobias Kai Block[2], Vivian S. Lee[1]
[1]Department of Radiology, NYU Langone Medical Center, New York, NY, United States; [2]MR Application & Workflow Development, Siemens AG Healthcare Sector, Erlangen, Germany

14:00 2943. **Measurement of Field Inhomogeneity & Susceptibility Effects for Liver Iron Quantification in Patients with Iron Overload**
Brian A. Taylor[1], Ralf B. Loeffler[1], Ruitian Song[1], R. Jason Stafford[2], Beth McCarville[1], Jane S. Hankins[3], Claudia M. Hillenbrand[1]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Imaging Physics, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States; [3]Hematology, St. Jude Children's Research Hospital, Memphis, TN, United States

14:30 2944. **The Secretory Flow of Pancreatic Juice in the Main Pancreatic Duct: Visualization by Means of MRCP with Spatially Selective Inversion Recovery Pulse**
Teruyuki Torigoe[1], Katsuyoshi Ito[2], Tsutomu Tamada[2], Akihiko Kanki[2], Kouji Yoshida[2]
[1]KAWASAKI MEDICAL SCHOOL, Kurashiki, Okayama, Japan; [2]KAWASAKI MEDICAL SCHOOL, Kurashiki, Okayama, Japan

15:00 2945. **Automated Liver Parenchyma & Vessel Segmentation in Radial Gradient & Spin-Echo (GRASE) Datasets for Characterization of Diffuse Liver Disease**
Ali Bilgin[1,2], Rajagopalan Sundaresan, Christian G. Graff[3], Chuan Huang[4], Tomoe Barr[1], Maria I. Altbach[5]
[1]Biomedical Engineering, University of Arizona, Tucson, AZ, United States; [2]Electrical & Computer Engineering, University of Arizona, Tucson, AZ, United States; [3]Division of Imaging & Applied Mathematics, Food & Drug Administration; [4]Mathematics, University of Arizona, Tucson, AZ, United States; [5]Radiology, University of Arizona

Kidney: Functional

Exhibition Hall Monday 14:00-16:00 Computer 2

14:00 2946. ***In Vivo*** **Sodium MR Imaging of Rabbit Kidney using Dual-Tuned RF Coil at 3T**
Chan Hong Moon[1], Alessandro Furlan[1], Jung-Hwan Kim[1], Lloydine Jacobs[2,3], Tiejun Zhao[4], Kyongtae Ty Bae[1]

[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, United States; [3]Ferguson Laboratory for Orthopaedic & Spine Research; [4]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

14:30 **2947.** **Sodium MR Imaging of Human Kidney using a Dual-Tuned (^{23}Na/^{1}H) Body RF Coil at 3T: Quantitative Assessment of Sodium Concentration & Corticomedullary Gradient in Healthy Subjects**

Alessandro Furlan[1], Chan-Hong Moon[1], Jung-Hwan Kim[1], Xiang He[1], Bumwoo Park[1], Tiejun Zaho[2], Kyongtae Ty Bae[1]
[1]Radiology, University of Pittsburgh Medical Center, Pittsburgh, PA, United States; [2]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

15:00 **2948.** **Evaluation of Therapeutic Effect on Renal Fibrosis by Diffusion-Weighted Imaging**

Osamu Togao[1], Shigehiro Doi[2], Makoto Kuro-O[2], Masaya Takahashi[1]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Departement of Pathology, UT Southwestern Medical Center, Dallas, TX, United States

15:30 **2949.** **MR Elastography in Renal Transplant Patients: A Feasibility Study**

Christine U. Lee[1], Kevin J. Glaser[1], James F. Glockner[1], Meng Yin[1], Jun Chen[1], Richard L. Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 2

13:30 **2950.** **Renal Cortico-Medullary Differentiation in Liver Cirrhotic Patients: Is the Pathology Cortical or Medullary or Both?**

Umer Abdur Rahim Khan[1], Pierre Hugues Vivier[1], Pippa Storey[1], Akira Yamamoto[1], Henry Rusinek[1], Lei Zhang[1], Kristopher Tantillo[1], Ruth Lim[1], James Babb[1], John Devon[2], David Stoffel[1], Lewis Teperman[2], Judith Benstein[3], Samuel Sigal[3], Edward Skolnik[3], Vivian S. Lee[1]
[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Surgery, New York University Langone Medical Center, New York, NY, United States; [3]Internal Medicine, New York University Langone Medical Center, New York, NY, United States

14:00 **2951.** **Interleaved T_1- & T_2*-Mapping for Dynamic Abdominal Tissue Oxygenation Applications**

Yao Ding[1], Qing Yuan[2], Rami R Hallac[1], Ralph P. Mason[2], Roderick W. McColl[2], Robert D. Sims[2], Paul T. Weatherall[2]
[1]Radiological Sciences Graduate Program, UT Southwestern Medical Center at Dallas, Dallas, TX, United States; [2]Radiology, UT Southwestern Medical Center at Dallas, Dallas, TX, United States

14:30 **2952.** **Noninvasive Evaluation of Renal Oxygen Extraction Fraction Via Reduced-FOV Asymmetric Spin Echo Approach**

Zhikui Xiao[1], Ajit Shankaranarayan[2], Emine Ulku Saritas[3], Shen Hao[1], Cao Guang[1]
[1]Global Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Department of Bioengineering, University of California, Berkeley, CA, United States

15:00 **2953.** **Quantitative T_2* MRI for Kidneys Iron Overload Assessment in a Large Cohort of Thalassemia Major Patients.**

Antonella Meloni[1], Daniele De Marchi[1], Vincenzo Positano[1], Maria Chiara Dell'Amico[1], Brunella Favilli[1], Petra Keilberg[1], Chiara Tudisca[2], Gianluca Valeri[3], Massimiliano Missere[4], Angelo Zuccarelli[5], Massimo Lombardi[1], Alessia Pepe[1]
[1]Fondazione G.Monasterio CNR-Regione Toscana & Institute of Clinical Physiology, Pisa, Italy; [2]Policlinico “Paolo Giaccone”, Palermo, Italy; [3]Azienda Ospedaliero-Universitaria Ospedali Riuniti "Umberto I-Lancisi-Salesi", Ancona, Italy; [4]Università Cattolica del Sacro Cuore, Campobasso, Italy; [5]Ospedale Civile, Olbia, Italy

Exhibition Hall Wednesday 13:30-15:30 Computer 2

13:30 **2954.** **Reproducibility of R_2* & R_2 Measurements in Human Kidneys**

Jeff Lei Zhang[1], Pippa Storey[1], Henry Rusinek[1], Hersh Chandarana[1], Mervin Wauchope[1], Rajesh Bhatta[1], David Stoffel[1], Eric E. Sigmund[1], Qun Chen[1], Vivian S. Lee[1]
[1]Department of Radiology, New York University, New York, NY, United States

14:00 **2955.** **Quantitative BOLD Response of the Renal Medulla to Hyperoxic Challenge at 1.5T & 3.0T**

Olivio Donati[1], Daniel Nanz[1], Andreas Serra[2], Andreas Boss[1]
[1]Radiology, University Hospital of Zurich, Zurich, Switzerland; [2]Nephrology, University Hospital of Zurich, Zurich, Switzerland

14:30 **2956.** **Evaluation of Intra-Renal Oxygenation by BOLD MRI During Water Diuresis: Race Differences**

Lu-Ping Li[1], Federico Mordini[2], Sarah Halter[1], Eugene Dunkle[1], JoAnn Carbray[1], Ewa Gliwa[1], Hongyan Du[3], Pottumarthi V Prasad[1]
[1]Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL, United States; [2]Radiology / Center for Advanced Imaging, Northshore University Healthsystem, Evanston, IL , United States; [3]Center for Clinical Research Informatics (CCRI), Research Institute, Northshore University Healthsystem, Evanston, IL, United States

15:00 **2957.** **Preliminary Evaluation of Renal BOLD MRI for Monitoring Progression in CKD Patients**
Muhammad E Haque[1], Ujala Bokhary[1], Shonny Fettman[2], Stuart Sprague[2], Pottumarthi Prasad[1]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Nephrology, NorthShore University HealthSystem, Evanston, IL, United States

Exhibition Hall Thursday 13:30-15:30 Computer 2

13:30 **2958.** **DCE MR Renography Measurement of Renal Function in Patients Undergoing Partial Nephrectomy**
Stella K. Kang[1], William C. Huang[2], Jeff L. Zhang[1], Michael Stifelman[2], Mary Bruno[1], Konstantinos Arhakis[1], Edgar F. Suan[1], Vivian S. Lee[1], Hersh Chandarana[1]
[1]Radiology, NYU Langone Medical Center, New York, United States; [2]Urology, NYU Langone Medical Center, New York, United States

14:00 **2959.** **Assessment of Renal Function by ASL in Wilms Tumor Survivors**
Ruitian Song[1], Ralf B. Loeffler[1], Mary Beth McCarville[1], Sheri L. Spunt[2], Claudia Maria Hillenbrand[1]
[1]Radiological Sciences, St Jude Children's Research Hospital, Memphis, TN, United States; [2]Oncology, St Jude Children's Research Hospital, Memphis, TN, United States

14:30 **2960.** **Evaluation of Repeatability of Renal ASL MRI in Healthy Volunteers**
Marica Cutajar[1], David L. Thomas[2], Christopher A. Clark[1], Xavier Golay[3], Isky Gordon
[1]Imaging & Biophysics, UCL Institute of Child Health, London, United Kingdom; [2]Medical Physics & Bioengineering, UCL Neuroscience, London, United Kingdom; [3]UCL Institute of Neurology, London, United Kingdom

15:00 **2961.** **Corticomedullary Differentiation of the Kidney: Evaluation with Non-Contrast-Enhanced Steady-State Free Precession (SSFP) MR Imaging with Time-Spatial Labeling Inversion Pulse (Time-SLIP)**
Akihiko Kanki[1], Tsutomu Tamada[1], Yasufumi Noda[1], Atsushi Higaki[1], Satoko Okamoto[1], Katsuyoshi Ito[1]
[1]Radiology, Kawasaki Medical School, Kurashiki, Okayama, Japan

Fetal & Female Pelvis

Exhibition Hall Monday 14:00-16:00 Computer 3

14:00 **2962.** **MR Manifestations of Ovarian Adenofibromas & Cystadenofibromas: Conventional MR Imaging & High-B Value Diffusion-Weighted MR Imaging with Pathologic Correlatopn**
Kenji Matsuzaki[1], Mayumi Takeuchi[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

14:30 **2963.** **Clinical Significance of Lipid Peak in *In-Vivo* ^{1}H-MR Spectroscopy of Ovarian Thecomas/Fibrothecomas**
Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

15:00 **2964.** **Clinical Significance of Creatine Peak in *In-Vivo* $_{1}$H-MR Spectroscopy of Gynecologic Tumors**
Mayumi Takeuchi[1], Kenji Matsuzaki[1], Masafumi Harada[1]
[1]Department of Radiology, University of Tokushima, Tokushima, Japan

15:30 **2965.** **Evaluation of the Effectiveness of Slice Selective Gradient Reversal Technique in Diffusion Weighted Imaging of the Female Pelvis at 3T MR Imaging**
Akio Tsukabe[1], Izumi Imaoka[1], Tetsurou Araki[1], Kazuhiko Nishimatsu[1], Masahiro Okada[1], Seishi Kumano[1], Kazunari Ishii[1], Ryuuishirou Ashikaga[1], Marc Van Cauteren[2], Takamichi Murakami[1]
[1]Radiology, Kinki University School of Medicine, Osaka-sayama, Osaka, Japan; [2]Philips Healthcare, Asia Pacific

Exhibition Hall Tuesday 13:30-15:30 Computer 3

13:30 **2966.** **Measuring Coherent Blood Flow in the Placenta, Basal Plate & Chorionic Plate**
Devasuda Anblagan[1], Ruta Deshpande[2], Carolyn Costigan[1], Nia W. Jones[2], George Bugg[2], Peter Mansell[2], Nick Raine Fenning[3], Lopa Leach[4], Penny A. Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Nottingham University Hospitals NHS Trust, University of Nottingham, United Kingdom; [3]School of Clinical Sciences, University of Nottingham, United Kingdom; [4]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom

14:00 **2967.** **Oxygen-Enhanced MRI in the Human Placenta: Preliminary Results**
Isaac Huen[1,2], David M. Morris[1,2], Caroline Wright[3], Colin P. Sibley[3], Edward Johnstone[3], Josephine H. Naish[1,2]

[1]Imaging Sciences & Biomedical Engineering, School of Cancer & Imaging Sciences, University of Manchester, Manchester, United Kingdom; [2]The University of Manchester Biomedical Imaging Institute, University of Manchester, Manchester, United Kingdom; [3]Maternal & Fetal Health Research Centre, University of Manchester, Manchester, United Kingdom

14:30 **2968.** **Relaxation Times as Biomarkers of Placental Tissue Morphology in Fetal Growth Restriction (FGR).**
Caroline Wright[1], David M. Morris[2,3], Philip N. Baker[1,4], Ian P. Crocker[1], Penny A. Gowland[5], Geoff Parker[2,3], Colin P. Sibley[1]
[1]Maternal & Fetal Health Research Centre, University of Manchester, Manchester, United Kingdom; [2]Imaging Science & Biomedical Engineering, University of Manchester, Manchester, United Kingdom; [3]Biomedical Imaging Institute, University of Manchester, Manchester, United Kingdom; [4]Faculty of Medicine & Dentistry, Univerity of Alberta, Alberta, Canada; [5]Sir Peter Mansfield Magnetic Resonance Imaging Centre, University of Nottingham, Nottingham, United Kingdom

15:00 **2969.** **Investigation of Multichannel Phased Array Configurations for Fetal MR Imaging at 1.5T**
Ye Li[1], Yong Pang[1], Daniel Vigneron[1,2], Orit Glenn[1], Duan Xu[1], Xiaoliang Zhang[1,2]
[1]Department of Radiology & Biomedical Imaging, Univerisity of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 3

13:30 **2970.** ***In Utero* Fetal Electrocardiogram Gating: Technical Feasibility**
Martyn N. J. Paley[1], Paul Griffiths[1]
[1]Human Metabolism, University of Sheffield, Sheffield, Yorkshire, United Kingdom

14:00 **2971.** **MRI Triggering by a Doppler Ultrasound at 1.5 T for Future Fetal Cardiac Function Investigation**
Jin Yamamura[1], Klaus Valett[2], Roland Fischer[3,4], Gerhard Adam[1], Ulrike Wedegaertner[1]
[1]Diagnostic & Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Positronic Systemtechnik GmbH, Hamburg, Germany; [3]University Medical Center, Germany; [4]Children's Hospital & Research Center Oakland, Oakland, CA, United States

14:30 **2972.** **The Effect of Maternal Diabetes on Fetal Adiposity**
Devasuda Anblagan[1], Ruta Deshpande[2], Alain Pitiot[3], Carolyn Costigan[1], Nia W. Jones[2], George Bugg[2], Peter Mansell[2], Nick Raine Fenning[4], Lopa Leach[5], Penny A. Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Nottingham University Hospitals NHS Trust, University of Nottingham, United Kingdom; [3]School of Psychology, University of Nottingham, United Kingdom; [4]School of Clinical Sciences, University of Nottingham, United Kingdom; [5]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom

15:00 **2973.** **Perfusion of Multiple Embryos in Mouse Pregnancy - Visualization & Characterization using ASL MRI**
Reut Avni[1], Tal Raz[1], Joel Garbow[2], Michal Neeman[1]
[1]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel; [2]Department of Radiology, Washington University, St. Louis, MO, United States

Exhibition Hall Thursday 13:30-15:30 Computer 3

13:30 **2974.** **Uterine Appearance & Uterine Peristalsis During Lactation on MR Imaging**
Sayaka Daido[1], Asako Nakai[1], Aki Kido[1], Koji Fujimoto[1], Hiroshi Kusahara[2], Kaori Togashi[1]
[1]Kyoto University, Kyoto, Japan; [2]Tosiba Medical Systems Corporation

14:00 **2975.** **Reproducibility of Apparent Diffusion Coefficients in the Normal Uterus During the Menstrual Cycle at 3T MR Imaging**
Akio Tsukabe[1], Izumi Imaoka[1], Tetsurou Araki[1], Kazuhiko Nishimatsu[1], Masahiro Okada[1], Seishi Kumano[1], Kazunari Ishii[1], Ryuuishirou Ashikaga[1], Marc Van Cauteren[2], Takamichi Murakami[1]
[1]Radiology, Kinki University School of Medicine, Osaka-sayama, Osaka, Japan; [2]Philips Healthcare, Asia Pacific

14:30 **2976.** **Rudimentary Uteri, the Ovaries & Vaginal Length in MRKH Syndrome**
Margaret Anne Hall-Craggs[1], Alexander Paul Kirkham[1], Sophie Pattison[1], Sarah Creighton[2]
[1]Radiology, University College Hospital, London, United Kingdom; [2]Department of Gynaecology, University College Hospital, London, United Kingdom

15:00 **2977.** **7 Tesla MRI of the Female Pelvis**
Oliver Kraff[1,2], Lale Umutlu[1,2], Sonja Kinner[2], Stefan Maderwald[1,2], Stephan Orzada[1,2], Andreas K. Bitz[1,2], Michael Forsting[2], Mark E. Ladd[1,2], Thomas C. Lauenstein[2]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany

Body Diffusion: Technique & Clinical Applications

Exhibition Hall Monday 14:00-16:00 Computer 4

14:00 2978. **Investigating the Contribution of Osteoblastic Activity to ADC of Bone Metastases by Correlating Changes in ADC with Changes in T_2* & HU**
Christina Messiou[1], David J. Collins[1], Matthew Robson[2], Veronica A. Morgan[1], Catherine Simpkin[1], Diletta Bianchini[3], Johann S. de Bono[3], Nandita deSouza[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Dept. of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom; [3]Dept. of Medicine, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom

14:30 2979. **Improved Diagnostic Accuracy of Whole Body Diffusion Weighted MRI using Computed Imaging.**
Matthew David Blackledge[1], Nina Tunariu[1], David J. Collins[1], Martin O. Leach[1], Dow-Mu Koh[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom

15:00 2980. **Whole-Body MR-Imaging Allows to Differentiate Indolent from Aggressive Systemic Mastocytosis**
Henrik J. Michaely[1], Georgia Metzgeroth[2], Philipp Riffel[1], Stefan Haneder[1], W. K. Hofmann[2], Stefan O. Schoenberg[1], Andreas Reiter[2]
[1]University Medical Center Mannheim, Mannheim, BaWue, Germany; [2]Oncolocy, University Medical Center Mannheim, Mannheim, BaWue, Germany

15:30 2981. **Diffusion-Weighted Imaging of Retroperitoneal Fibrosis & Retroperitoneal Lymphoma: Can Apparent Diffusion Coefficient Values Distinguish the Two?**
Bradley Spieler[1], Caludia Reuben Seuss[1], Daniel Sahlein[1], Sooah Kim[1]
[1]Radiology, New York University, New York, NY, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 4

13:30 2982. **Diffusion-Weighted MRI of Normal Sized Pelvic Lymph Nodes: How to Delineate an Ideal Region of Interest?**
Daniel Guo Quae Chong[1], Giuseppe Petralia[1,2], Michael Ith[1], Johnannes Michael Froehlich[1,3], Harriet Thoeny[1]
[1]Dept. of Diagnostic, Interventional & Pediatric Radiology (DIPR), Inselspital, Bern, Switzerland; [2]Division of Radiology, European Institute of Oncology, Milan, Italy; [3]Guerbet AG, Zurich, Switzerland

14:00 2983. **Longitudinal Follow-Up of Kidneys from Living Donors to their Recipients by DWI.**
Peter Vermathen[1], Tobias Binser[1], Harriet C. Thoeny[2], Chris Boesch[1], Felix J. Frey[3], Ute Eisenberger[3]
[1]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [2]Dept. of Radiology, University & Inselspital, Bern, Switzerland; [3]Dept. of Nephrology, University & Inselspital, Bern, Switzerland

14:30 2984. **Diffusion-Weighted MRI in the Kidney Pre- & Post-Transplantation in Donor-Recipient Pairs**
Karl Kristopher Vigen[1], Sean B. Fain[2], Elizabeth A. Sadowski[1]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States

15:00 2985. **The Effect of Fat Suppression on ADC Values in Murine Liver with Variable Degrees of Fibrosis**
Stephan William Anderson[1], Jorge A. Soto[1], Elizabeth Tang[1], Hernan Jara[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 4

13:30 2986. **Assesment of Liver Blood Flow using a Navigator Echo Respiratory Gated Parallel Imaging Technique at 1.5 T**
Loredana Sorina Truica[1,2], Ian Cameron[2]
[1]Carleton University, Ottawa, ON, Canada; [2]Diagnostic Imaging - MRI research Lab, Ottawa Hospital- General Campus

14:00 2987. **Diffusion-Weighted MRI for the Zonal Characterization of Liver Tumors**
Mathilde Wagner[1,2], Sabrina Doblas[2], Jean-Luc Daire[1,2], Helena Leitao[1,2], Philippe Garteiser[2], Valérie Vilgrain[1,2], Ralph Sinkus[2], Bernard Edgar Van Beers[1,2]
[1]Radiology, Beaujon University Hospital, Clichy, France; [2]Inserm U773, Centre de Recherche Biomédicale Bichat Beaujon, Clichy, France

14:30 2988. **The Effect of Gd-DTPA on the Determination of the Apparent Diffusion Coefficient in Liver Metastases & Healthy Liver Tissue**
Ulrike Fasol[1], Klaus Mross[2], Annette Frost[2], Martin Buechert[1], Valerij Kiselev[1], Juergen Hennig[1]
[1]MR Development & Application Center, University Medical Center Freiburg, Freiburg, Germany; [2]Tumor Biology Center, Albert-Ludwigs-University Freiburg, Freiburg, Germany

15:00 **2989.** **Correlation of Contrast Enhancement Speed of Hepatic Hemangiomas on Gadolinium-Enhanced Dynamic T_1-Weighted Images with Apparent Diffusion Coefficient on Diffusion-Weighted Imaging**
Dal-Mo Yang[1], Hyun-Cheol Kim[1], Geon-Ho Jahng[1]
[1]Radiology, Kyung Hee University, East-West Neo Medical Center, Seoul, Korea, Republic of

Exhibition Hall Thursday 13:30-15:30 Computer 4

13:30 **2990.** **Motion Correction of Multiple B-Values (MCMB) Diffusion-Weighted Imaging**
Yousef Mazaheri[1], Richard Kinh Gian Do[2], Jingbo Zhang[2], Elizabeth Morris[2], Oguz Akin[2], Hedvig Hricak[2]
[1]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, United States; [2]Radiology, Memorial Sloan Kettering Cancer Center

14:00 **2991.** **Investigation of the Theoretical Background of the IVIM Model using Flow Compensated DWI**
Andreas Wetscherek[1], Bram Stieltjes[2], Wolfhard Semmler[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Quantitative Imaging Based Disease Characterization, German Cancer Research Center, Heidelberg, Germany

14:30 **2992.** **Assessment of Position Dependent Eddy Current Distortions in DW EPI Measurements: Monopolar Versus Bipolar Diffusion Preparation**
Verena Ballweg[1], Petros Martirosian[1], Hansjörg Graf[1], Hanne Wojtczyk[1], Fritz Schick[1]
[1]Section on Experimental Radiology, University Hospital Tübingen, Tübingen, Germany

15:00 **2993.** **PCATMIP: Enhancing Signal Intensity in DW-MRI**
Vinay Manjunath Pai[1], Stanislas Rapacchi[2], Peter Kellman[1], Pierre Croisille[2], Han Wen[1]
[1]NHLBI, National Institutes of Health, Bethesda, MD, United States; [2]Laboratoire CREATIS, INSA de Lyon, Lyon, France

Metabolism/Diabetes

Exhibition Hall Monday 14:00-16:00 Computer 5

14:00 **2994.** **Volume Selective MRS of the Liver for Determination of Hepatic Lipids – Is there a Need for Cardiac &/or Respiratory Triggering?**
Jürgen Machann[1], Fritz Schick[1]
[1]Section on Experimental Radiology, University Hospital Tübingen, Tübingen, Germany

14:30 **2995.** **Real-Time Navigator Gating in Proton Liver Spectroscopy at 3T**
Andreas Hock[1], Ladislav Valkovic[2], Ivan Frollo[2], Peter Boesiger[1], Anke Henning[1], Spyros Kollias[3]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Department of Imaging Methods, Institute of Measurement Science, Slovak Academy of Sciences, Bratislava, Slovakia; [3]University Hospital of Zurich, Institute of Neuroradiology, Zurich, Switzerland

15:00 **2996.** **Metabolite Cycled Non-Water-Suppressed Spectroscopy Offers Increased Spectral Quality in Cases of Physiologic & Subject Motion**
Erin Leigh MacMillan[1], Murielle Bortolotti[2], Andreas Boss[1], Chris Boesch[1], Roland Kreis[1]
[1]Dept. of Clinical Research, University of Bern, Bern, Switzerland; [2]Dept. of Physiology, University of Lausanne, Lausanne, Switzerland

Exhibition Hall Tuesday 13:30-15:30 Computer 5

13:30 **2997.** **Fast T_2 Relaxometry in ^{1}H-MRS of Hepatic Water & Fat using Short TR at 3T**
Giulio Gambarota[1], Mark Tanner[1], Marinette van Der Graaf[2], Robert Mulkern[3], Rexford D. Newbould[1]
[1]Clinical Imaging Center, GSK, Imperial College, London, United Kingdom; [2]Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Radiology, Children's Hospital Boston, Boston, United States

14:00 **2998.** **Quantitative Estimation of the Degree of Macrosteatosis in Living Related Liver Donors using IDEAL Gradient Echo Imaging**
Jeong Min Lee[1], Eugene Joe[1], Joon Koo Han[1]
[1]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

14:30 **2999.** **Noninvasive Quantification of Hepatic Steatosis in Rats with 1.5T MRS & MRI: Feasibility, Early Results & Optimization**
Gaspard d'Assignies[1,2], Ghislaine Fontés[3,4], Louis Gaboury[5], Yvan Boulanger[4,6], Gilles Soulez[7], Vincent Poitout[3,4], An Tang[8]

[1]Radiology, Hôpital Saint-Luc, Montreal, France; [2]Beaujon Hospital, Université Paris VII, Canada; [3]Montréal Diabetes Research Center, Canada; [4]CRCHUM, Canada; [5]Department of Anatomo-Pathology, CHUM, Canada; [6]Radiology, Hôpital Saint-Luc, Canada; [7]Radiology, CRCHUM, Canada; [8]Radiology, University of Montreal, Montreal, Quebec, Canada

15:00 **3000.** **MRI Detection of Glycogen *In Vivo* in Diabetic Mice at 3 Tesla: Feasibility & Initial Experience**
Mina Kim[1], Queenie Chan[1,2], James Y. B. Lau[3], Sookja K. Chung[3], Pek-Lan Khong[1]
[1]Departement of Diagnostic Radiology, the University of Hong Kong, Hong Kong, Pokfulam, Hong Kong; [2]Philips Healthcare, Hong Kong; [3]Department of Anatomy, the University of Hong Kong

Exhibition Hall Wednesday 13:30-15:30 Computer 5

13:30 **3001.** **Longitudinal Tracking of Adiposity in a Canine Model of Insulin Resistance**
Edward Brian Welch[1,2], Johan Berglund[3], Joel Kullberg[3], Katie Colbert Coate[4], Phil Williams[4], Alan Cherrington[4], Malcolm J. Avison[1,2]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology, Uppsala University, Uppsala, Sweden; [4]Department of Molecular Physiology & Biophysics, Vanderbilt University, Nashville, TN, United States

14:00 **3002.** **Test-Retest Reproducibility of Whole-Body Fat Water Imaging at 3 Tesla Compared to DEXA**
Edward Brian Welch[1,2], Malcolm J. Avison[1,2], Kevin D. Niswender[3], Johan Berglund[4], Joel Kullberg[4], Lars Johansson[4], Morten Bruvold[5], Heidi J. Silver[3]
[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]School of Medicine, Vanderbilt University, Nashville, TN, United States; [4]Department of Radiology, Uppsala University, Uppsala, Sweden; [5]MR Clinical Science, Philips Healthcare, Best, Netherlands

14:30 **3003.** **Quantitative Analysis of Fat Distribution using Whole-Body Magnetic Resonance Imaging**
Julien Dinkel[1], Diana Wald[2], Heinz-Peter Schlemmer, Hans-Peter Meinzer, Rudolf Kaaks[3], Stefan Delorme
[1]Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Medical & Biological Informatics, German Cancer Research Center; [3]Cancer Epidemiology, German Cancer Research Center

15:00 **3004.** **Correlation of Lipid Profile & Insulin Sensitivity with Body Fat Evaluated using MRI, Dual Energy X-Ray Absorptiometry & Bioimpedance**
Ankur Poddar[1], Rama Jayasundar[1]
[1]NMR, All India Institute of Medical Sciences, New Delhi, Delhi, India

Exhibition Hall Thursday 13:30-15:30 Computer 5

13:30 **3005.** **Determination of ATP Synthesis Exchange Rates in Human Liver & Skeletal Muscle using ^{31}P Magnetization Transfer**
Tania Buehler[1], Andreas Boss[1], Roland Kreis[1], Chris Boesch[1]
[1]Dept. of Clinical Research, University of Bern, Bern, Switzerland

14:00 **3006.** **Regional Variability in Triglyceride Composition of Adipose Tissue Measured by ^{1}H MRS**
Gavin Hamilton[1], Michael S. Middleton[1], Takeshi Yokoo[1], Claude B. Sirlin[1]
[1]Department of Radiology, University of California, San Diego, San Diego, CA, United States

14:30 **3007.** **Influence of Type 2 Diabetes on Intramyocellular Lipids Among Patients with Chronic Kidney Disease**
Jimin Ren[1], Manisha Shah[2], Maram Museitif[2], Lynne Roetzer[2], A. Dean Sherry[1,3], Craig R. Malloy[1,4], Devasmita Choudhury[2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]VA North Texas Health Care System; [3]Department of Chemistry, University of Texas at Dallas, Richardson, TX; [4]VA North Texas Health Care System

15:00 **3008.** **Look-Locker MRI Measurements of Relaxation Rate After Manganese Labeling of Pancreatic β 946; Cells Detect Increments in Disease Progression in a Mouse Model of Type 1 Diabetes**
Patrick Antkowiak[1], Brian Stevens[2], Marcia McDuffie[2], Frederick H. Epstein[3]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Microbiology, University of Virginia; [3]Radiology, University of Virginia

Body Applications of Contrast Media & Bowel MRI

Exhibition Hall Monday 14:00-16:00 Computer 6

14:00 **3009.** **Evaluation of Positive Contrast Around SPIO-Loaded Polymer Threads for Surgical Mesh Delineation by MRI**
Hank C. W. Donker[1], Nils A. Krämer[2], Jens Otto[3], Ioana Slabu[4], Martin Baumann[4], Uwe Klinge[3], Christiane K. Kuhl[2]

[1]Department of Diagnostic Radiology , RWTH Aachen University, Aachen, NRW, Germany; [2]Department of Diagnostic Radiology, RWTH Aachen University, Aachen, NRW, Germany; [3]Department of Chirurgy, RWTH Aachen University, Aachen, NRW, Germany; [4]Helmholtz Institute for Applied Medical Engineering, RWTH Aachen University, Aachen, NRW, Germany

14:30 **3010.** **High-Resolution Interstitial MR Lymphography for the Diagnosis of Sentinel Lymph Nodes: Inhomogeneous Distribution of SPIO within Non-Malignant Lymph Nodes**

Daisuke Suzuki[1,2], Masayuki Yamaguchi[1], Toshihiro Furuta[1,3], Kohki Yoshikawa[2], Hirofumi Fujii[1]
[1]Functional Imaging Division, National Cancer Center Hospital East, Kashiwa, Chiba, Japan; [2]Graduate Division of Health Sciences, Komazawa University, Setagaya, Tokyo, Japan; [3]Department of Radiology, the Tokyo University Hospital, Tokyo, Japan

15:00 **3011.** **Fitting DCE-MRI Data in the Liver with a Dual-Inlet Model: Choice of Venous & Arterial Delay Parameters**

Steven Sourbron[1], Wieland Sommer[2], Christoph J. Zech[2], Maximilian F. Reiser[2], Karin A. Herrmann[2]
[1]Division of Medical Physics, University of Leeds, Leeds, United Kingdom; [2]Department of Clinical Radiology, University of Munich, Munich, Germany

15:30 **3012.** **Initial Experiences Evaluating the Hepatic Arterial Buffer Response with DCE-MRI in Healthy Rats at 9.4T**

Manil Chouhan[1], Shonit Punwani[1], Alan Bainbridge[2], Nathan Davies[3], Raj Mookerjee[3], Rajiv Jalan[3], Stuart Taylor[1]
[1]Centre for Medical Imaging, University College London, London, United Kingdom; [2]Department of Medical Physics, University College London Hospitals NHS Trust; [3]Institute of Hepatology, University College London

Exhibition Hall Tuesday 13:30-15:30 Computer 6

13:30 **3013.** **Clinical Feasibility of High-Resolution Navigator-Gated 3D T_1w Hepatobiliary MRI with Gd-EOB-DTPA Enhancement**

Alan De Lun Xu[1], Anja C. Brau[2], Yuji Iwadate[2], Jarrett Rosenberg[1], Shreyas Vasanawala[1], Robert Herfkens[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]GE Healthcare

14:00 **3014.** **Balanced MR Cholangiopancreatography with Motion-Sensitized Driven-Equilibrium: Feasibility of Post-Contrast Biliary Examination with Gadolinium Ethoxybenzyl Diethylene Triamine Pentaacetic Acid (Gd-EOB-DTPA)**

Tomohiro Nakayama[1], Akihiro Nishie[1], Takashi Yoshiura[1], Yoshiki Asayama[1], Kousei Ishigami[1], Daisuke Kakihara[1], Yukihisa Takayama[1], Makoto Obara[2], Hiroshi Honda[1]
[1]Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [2]Philips Electronics Japan

14:30 **3015.** **Diagnosis of FNH: Comparison of Gd-EOB-DTPA with Gd-BOPTA, Preliminary Results from a Multicentric US Study.**

Christine Iseman[1], Bachir Taouli[1], Rajan T. Gupta[2], John Leyendecker[3], Elmar Merkle[2]
[1]Mount Sinai School of Medicine, New York, NY, United States; [2]Duke University, Durham, NC, United States; [3]Wake Forest University, Winston-Salem, NC, United States

15:00 **3016.** **The First Human Whole Body Pharmacokinetic Minimal Model for the Liver Specific Contrast Agent Gd-EOB-DTPA**

Mikael Fredrik Forsgren[1,2], Olof Dahlqvist Leinhard[1,3], Gunnar Cedersund[2,4], Nils Dahlström[1,3], Örjan Smedby[1,3], Torkel B. Brismar[5], Peter Lundberg[3,6]
[1]Department of Medical & Health Sciences, Division of Radiological Sciences, Linköping University, Linköping, Sweden; [2]Department of Clinical & Experimental Medicine, Diabetes & Integrated Systems Biology, Linköping University, Linköping, Sweden; [3]Center for Medical Image Science & Visualization (CMIV), Linköping University, Linköping, Sweden; [4]School of Life Sciences, Freiburg Institute of Advanced Sciences, Freiburg, Germany; [5]Department of Radiology, Karolinska University Hospital, Stockholm, Sweden; [6]Department of Radiation Physics, CKOC, University Hospital of Linköping, Linköping, Sweden

Exhibition Hall Wednesday 13:30-15:30 Computer 6

13:30 **3017.** **Magnetization Transfer Detects Changes in Intestinal Fibrosis After Anti-TNFα**

Scott D. Swanson[1], Jeremy Adler[2], Phyllissa Schmiedlin-Ren[3], Kinan Rahal[3], Laura Reingold[3], Ellen M. Zimmermann[3]
[1]Department of Radiology, University of Michigan, Ann Arbor, MI, United States; [2]Department of Pediatrics & Communicable Diseases, University of Michigan, Ann Arbor, MI, United States; [3]Department of Internal Medicine-Gastroenterology, University of Michigan, Ann Arbor, MI, United States

14:00 **3018.** **T_2 Relaxometry to Assess Inflammation & Fibrosis in an Acute & Chronic Murine Model of Inflammatory Bowel Diseases**

Tom Dresselaers[1], Christine Breynaert[2], Gert Van Assche[2], Uwe Himmelreich[1]
[1]Biomedical NMR Unit/ MoSAIC, K.U.Leuven, Leuven, Brabant, Belgium; [2]Division of Gastroenterology, K.U.Leuven, leuven, Brabant, Belgium

14:30 **3019.** **Optimising Oral Contrast Agents for Interactive Neonatal Gut Imaging**

Owen John Arthurs[1], Martin John Graves[1], Ilse Joubert[1], David John Lomas[1]

[1]Radiology, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

15:00 **3020.** **Contrast-Enhanced MR Enterography as a Stand-Alone Tool to Evaluate Crohn's Disease in Pediatric Population.**
Bradley Spieler[1], Nicole Hindman[1], Caludia Reuben Seuss[1], Alec J. Megibow[1], Joseph Levy[2], Kerry Zabriskie[2], Daniel Sahlein[1], Rafael Rivera[1], Sooah Kim[1]
[1]Radiology, New York University, New York, NY, United States; [2]Pediatric Gastroenterology, New York University, New York, NY, United States

Exhibition Hall Thursday 13:30-15:30 Computer 6

13:30 **3021.** **Simultaneous Assessment of Gastric Secretion, Mixing & Emptying During Free Breathing**
Jelena Curcic[1], Matthias Sauter[2], Werner Schwizer[2], Peter Boesiger[1], Andreas Steingoetter[1,2]
[1]Institute for Biomedical Engineering, University & ETH, Zurich, Switzerland; [2]Division of Gastroenterology & Hepatology, University Hospital Zurich, Zurich, Switzerland

14:00 **3022.** **Quantitative Assessment of Small Bowel Motility by Nonrigid Registration of Dynamic MR Images**
Freddy Odille[1], Alex Menys[2], Asia Ahmed[2], Shonit Punwani[2], Stuart Taylor[2], David Atkinson[1]
[1]Centre for Medical Image Computing, University College London, London, United Kingdom; [2]Centre for Medical Imaging, University College London, London, United Kingdom

14:30 **3023.** **Defining the Mode of Action of Loperamide & Loperamide Plus Simethicone using an MRI Model of Acute Diarrhoea**
Elisa Placidi[1], Luca Marciani[2], Caroline L. Hoad[1], Klara C. Garsed[2], Susan E. Pritchard[1], Eleanor F. Cox[1], Carolyn Costigan[3], Robin C. Spiller[2], Penny A. Gowland[1]
[1]SPMMRC, University of Nottingham, Nottingham, United Kingdom; [2]Nottingham Digestive Diseases Centre Biomedical Research Unit, Nottingham, United Kingdom; [3]Brain & Body Centre, University of Nottingham, Nottingham, United Kingdom

15:00 **3024.** **Real-Time Imaging & Reconstruction of the Small Bowels Based on Golden Ratio Radial & Regularized SENSE MRI**
Lau Brix[1,2], Steffen Ringgaard[2], Brian Stausbøl-Grøn[2], Bodil Ginnerup Pedersen[2], Yasmina Berber[3], Mario Ries[4], Thomas Sangild Sørensen[5,6]
[1]Department of Clinical Engineering, Aarhus N, Region Midt, Denmark; [2]MR-Centre, Aarhus University Hospital, Skejby, Aarhus N, Region Midt, Denmark; [3]Laboratoire IMF, , Centre National de la Recherche Scientifique/Universite Bordeaux 2, France; [4]Laboratoire IMF, Centre National de la Recherche Scientifique/Universite Bordeaux 2, France; [5]Department of Computer Science, Aarhus University, Denmark; [6]Institute of Clinical Medicine, Aarhus University, Denmark

Pulmonary Structure & Function with Hyperpolarized Gas & Proton MRI

Exhibition Hall Monday 14:00-16:00 Computer 7

14:00 **3025.** **Modeling Hyperpolarized ^{129}Xe Bolus Passage for Quantification of Pulmonary Blood Flow**
Harald E. Möller[1,2], Zackary I. Cleveland[2], Laurence W. Hedlund[2], John Nouls[2], Matthew Freeman[2,3], Yi Qi[2], Bastiaan Driehuys[2]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Center for In Vivo Microscopy, Duke University Medical Center, Durham, NC, United States; [3]Graduate Program in Medical Physics, Duke University, Durham, NC, United States

14:30 **3026.** **A Simple Model of Gas Exchange in the Lung for Hyperpolarized ^{129}Xe**
Yulin V. Chang[1]
[1]Mechanical Engineering, Washington University, St. Louis, MO, United States

15:00 **3027.** **Optimized Diffusion Time for Long-Time-Scale Helium-3 Diffusion MRI**
Chengbo Wang[1], John P. Mugler, III[1,2], Eduard E. de Lange[1], Talissa A. Altes[1]
[1]Radiology, University of Virginia, Charlottesville, VA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States

15:30 **3028.** **Non-Linear Image Registration of ^{3}He Lung Diffusion MRI Acquired at Different Inflation States, Exemplified by Alveolar Ventilation Maps**
Torsten Dorniok[1], Peter Magnusson[1], Frederik Hengstenberg[1,2], Sergei Karpuk[3], Jorgen Vestbo[2], Per Åkeson[1], Lise Vejby Søgaard[1]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark; [2]Department of Cardiology & Respiratory Medicine, Copenhagen University Hospital, Hvidovre, Denmark; [3]Institute of Physics, University of Mainz, Mainz, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 7

13:30 3029. Functional Mapping of Regional Airway Obstruction & Gas Trapping in 3D using Dynamic HP He-3 MRI
Jionghan Dai[1], Eric T. Peterson[2], James H. Holmes[3], Robert V. Cadman[1], Ronald L. Sorkness[4], Sean B. Fain[1,5]
[1]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [3]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States; [4]pharmacy, University of Wisconsin - Madison, Madison, WI, United States; [5]Radiology, University of Wisconsin - Madison, Madison, WI, United States

14:00 3030. Validation of Hyperpolarized ^{3}Helium MRI in Probing Regional Ventilation: A Quantitative Assessment Against MDCT Based Local Air Volume Changes (AVC)
Ahmed Fathi Halaweish[1,2], Youbing Yin[3], Daniel R. Thedens[1], Ching-Long Lin[3], Edwin J. R. vanBeek[4], Eric A. Hoffman[1,2]
[1]Department of Radiology, University of Iowa, Iowa City, IA, United States; [2]Department of Biomedical Engineering, University of Iowa, Iowa City, IA, United States; [3]Department of Mechanical & Industrial Engineering, University of Iowa, Iowa City, IA, United States; [4]Queen's Medical Research Institute, University of Edinburgh, Edinburgh, Scotland

14:30 3031. Development of a Three-Dimensional Visualization & Atlasing Tool for Pulmonary Gas Distribution from Hyperpolarized ^{3}He Magnetic Resonance Imaging
Andrew Wheatley[1], Usaf Aladl[1], Igor Gyacskov[1], Aaron Fenster[1,2], Grace Parraga[1,2]
[1]Imaging, Robarts Research Institute, London, Ontario, Canada; [2]Department of Medical Biophysics, the University of Western Ontario, London, Ontario, Canada

15:00 3032. Improved Compressed Sensing Reconstruction & Optimised Sampling Patterns for Very Fast Acquisition of Hyperpolarised ^{3}He Images
Salma Ajraoui[1], Steven Parnell[1], Juan Parra-Robles[1], Robert Ireland[1], Jim Wild[1]
[1]University of Sheffield, Sheffield, United Kingdom

Exhibition Hall Wednesday 13:30-15:30 Computer 7

13:30 3033. T_2* Measurements of 3.0 T MRI with Ultra-Short TE: Capabilities of Pulmonary Functional Assessment & Clinical Stage Classification in Smokers
Yoshiharu Ohno[1,2], Hisanobu Koyama[1], Takeshi Yoshikawa[1], Nobukazu Aoyama[2], Daisuke Takenaka[1], Keiko Matsumoto[3], Masaya Takahashi[4], Makoto Obara[5], Marc van Cauteren[5], Kazuro Sugimura[1]
[1]Radiology, Kobe University Graduate School of Medicine, Kobe, Hyogo, Japan; [2]Radiology, Kobe University Hospital, Kobe, Hyogo, Japan; [3]Radiology, Yamanashi Hospital of Social Insurance, Kofu, Yamanashi, Japan; [4]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Houston, TX, United States; [5]Philips Healthcare, Tokyo, Japan

14:00 3034. 3D Pulmonary Perfusion MRI with Whole-Chest Coverage, High Temporal & Isotropic Spatial Resolution
Kang Wang[1], Frank Korosec[1,2], Mark Schiebler[2], Christopher Francois[2], Scott Reeder[2,3], Thomas Grist[2], Reed Busse[4], James Holmes[4], Jean Brittain[4], Nathan Artz[1], Sean Fain[1,3], Scott Nagle[2]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [3]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [4]Applied Science Lab, GE Healthcare, Madison, WI, United States

14:30 3035. Automated Airway Lumen Segmentation & Characterization in Patients with Tracheomalacia: A Feasibility Study
Piotr A. Wielopolski[1], Pierluigi Ciet[2,3], Rashindra Manniesing[4], Sandra Lever[2], Martin Lequin[1], Gabriel Krestin[1], Harm A. W. M. Tiddens[1,2]
[1]Radiology, Erasmus Medical Center, Rotterdam, Netherlands; [2]Pulmonology, Erasmus Medical Center, Sophia Children Hospital, Rotterdam, Netherlands; [3]Radiology, Department of Medical-Diagnostic Sciences & Therapies, University of Padua, Padua, Italy; [4]Department of Informatics & Radiology, Erasmus Medical Center, Rotterdam, Netherlands

15:00 3036. Comparative Study of SSFP Lung MRI at 1.5T with High Resolution Computed Tomography in Patients with Interstitial Lung Fibrosis
Smitha Rajaram[1], Andy James Swift[1,2], David Capener[1], Robin Condliffe[3], Charlie Elliot[3], Judith Hurdman[3], Christine Davies[4], Catherine Hill[4], David G. Kiely[3], Jim M. Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, Yorkshire, United Kingdom; [2]NIHR Cardiovascular Biomedical Research Unit, Sheffield, United Kingdom; [3]Pulmonary Vascular Disease Unit, Royal Hallamshire Hospital, Sheffield; [4]Department of Radiology, Royal Hallamshire Hospital, Sheffield

Exhibition Hall Thursday 13:30-15:30 Computer 7

13:30 3037. Accelerated Whole-Lung Specific Ventilation Imaging in Large Species with Hyperpolarized Gas MRI
Kiarash Emami[1], Hooman Hamedani[1], Yinan Xu[1], Stephen J. Kadlecek[1], Yi Xin[1], Puttisarn Mongkolwisetwara[1], Harrila Profka[2], Masaru Ishii[3], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

14:00 3038. Quantification of Regional Lung Microstructure Response to Positive End-Expiratory Pressure by Hyperpolarized Gas MRI in Surfactant-Deficient Rats
Maurizio F. Cereda[1], Kiarash Emami[2], Stephen J. Kadlecek[2], Yi Xin[2], Puttisarn Mongkolwisetwara[2], Harilla Profka[2], Amy Barulic[2], Stephen Pickup[2], Nicholas N. Kuzma[2], Masaru Ishii[3], Hooman Hamedani[2], Benjamin M. Pullinger[2], Rajat Ghosh[2], Jennia Rajaei[2], Clifford S. Deutschman[1], Rahim R. Rizi[2]
[1]Anesthesiology & Critical Care, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Otolaryngology–Head & Neck Surgery, Johns Hopkins University, Baltimore, MD, United States

14:30 3039. Detection of Pulmonary Ischemia using the Oxygen Sensitivity of Hyperpolarized Helium MRI in a Rodent Model of Pulmonary Embolism
Ronn P. Walvick[1,2], Austin L. Reno[2], Mathew J. Gounis[2], Mitchell S. Albert[2]
[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Radiology, University of Massachusetts Medical School, Worcester, MA, United States

15:00 3040. Free vs. Forced : Gas Transport Differences in ^{3}He MRI Dynamic Ventilation Measurements of Lungs Induced by Gas Mixture Application Regime.
Maxim Terekhov[1], Manuela Gueldner[2], Klaus Gast[3], Julien Rivoire[1], Ursula Wolf[3], Janet Friedrich[1], Sergei Karpuk[2], Zahir Salhi[2], Laura Maria Schreiber[1]
[1]Department of Diagnostic & Interventional Radiology. Section of Medical Physics, Johannes Gutenberg University Medical Center Mainz, Mainz, Germany; [2]Institute of Physics, Johannes Gutenberg University Mainz, [3]Department of Diagnostic & Interventional Radiology, Johannes Gutenberg University Medical Center Mainz, Mainz, Germany

Gastrointestinal & Hepatobiliary Cancers (Clinical Studies)

Exhibition Hall Monday 14:00-16:00 Computer 8

14:00 3041. Signal Intensity of Hepatic Nodules Detected by Gadoxetic Acid-Enhanced MR Imaging: Correlation with Arterial & Portal Blood Supply.
Megumi Takechi[1], Takaharu Tsuda[1], Hiroaki Tanaka[1], Shinji Yoshioka[2], Michinobu Nagao[3], Teruhito Mochizuki[1]
[1]Department of Radiology, Ehime University School of Medicine , Shitsukawa,Toon, Ehime , Japan; [2]Department of Radiology, Matsuyama Redcross Hospital, Japan; [3]Department of Molecular Imaging & Diagnosis, Kyushu University School of Medicine, Japan

14:30 3042. Hepatobiliary Phase of Gadoxetic Acid-Enhanced MRI in the Diagnosis of Hepatocellular Carcinoma in Patients with Impaired Liver Function
Eun-Suk Cho[1], Jeong-Sik Yu[1]
[1]Radiology, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea, Republic of

15:00 3043. Hypovascular Nodules Presented with Hypointensity on the Hepatobiliary Phase of Gd-EOB-DTPA Enhanced MRI in the Cirrhotic Liver: Implications for Developing Hypervascular Hepatocellular Carcinoma.
Tomoko Hyodo[1,2], Masahiro Okada[1], Yuki Kagawa[1], Sachiyo Kogita[3], Seishi Kumano[1], Izumi Imaoka[1], Masatoshi Hori[4], Kazunari Ishii[1], Yasuharu Imai[3], Teruhito Mochizuki[2], Masatoshi Kudo[5], Takamichi Murakami[1]
[1]Radiology, Kinki University Faculty of Medicine, Osaka-Sayama, Osaka, Japan; [2]Diagnostic & Therapeutic Radiology, Ehime University Graduate School of Medicine, Toon, Ehime, Japan; [3]Gastroenterology, Ikeda Municipal Hospital, Ikeda, Osaka, Japan; [4]Radiology, Osaka University Graduate School of Medicine, Suita, Osaka, Japan; [5]Gastroenterology & Hepatology, Kinki University Faculty of Medicine, Osaka-Sayama, Osaka, Japan

15:30 3044. Diffusion-Weighted Imaging Versus Superparamagnetic Iron Oxide (SPIO)-Enhanced MRI: Exclusive & Combined Values in the Assessment of Hepatic Metastases
Hana Kim[1], Jeong-Sik Yu[1], Eun-Suk Cho[1], Jae-Joon Chung[1], Joo Hee Kim[1], Ki Whang Kim[1]
[1]Radiology, Yonsei University College of Medicine, Gangnam Severance Hospital, Seoul, Korea, Republic of

Exhibition Hall Tuesday 13:30-15:30 Computer 8

13:30 3045. MRI of the Cirrhotic Liver with Gd-EOB-DTPA: Does the Addition of the Hepatocyte Phase Improve Detection & Confidence in Characterization of Hepatocellular Carcinoma?
Mustafa R. Bashir[1], Rajan T. Gupta[1], Matthew S. Davenport[1], Brian C. Allen[1], Lisa M. Ho[1], Daniel T. Boll[1], Elmar M. Merkle[1]
[1]Radiology, Duke University Medical Center, Durham, NC, United States

14:00 3046. Characterization of Hyperintense Nodules on Precontrast T_1-Weighted MR Imaging: The Utility of Gadoxetic Acid-Enhanced Hepatocyte-Phase Imaging
Chen-Te Chou[1], Ran-Chou Chen[2]
[1]Radiology, Changhua Christian Hospital, Chang-Hua , Taiwan, Taiwan; [2]Radiology, Taipei City Hospital, Taipei, Taiwan

14:30 3047. Assessment of Response to Therapy by DCE-MRI & DWI MRI in Primary Liver Cancers
David H. Gultekin[1], Lawrence H. Schwartz[2], Nancy E. Kemeny[3], Mithat Gonen[4], Michael I. D'Angelica[5], Peter J. Allen[5], Yuman Fong[5], Leslie H. Blumgart[5], Ronald P. Dematteo[5], William R. Jarnagin[5]
[1]Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Radiology, Columbia University Medical Center, New York, NY, United States; [3]Medicine, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [4]Epidemiology-Biostatistics, Memorial Sloan-Kettering Cancer Center, New York, United States; [5]Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY, United States

15:00 3048. DCE-MRI Perfusion in Liver Disease with 3D Volumetric Coverage
Yin Huang[1], Ethan Brodsky[1], Kevin Johnson[1], Eric Bultman[2], Debra Horng[1,3], Sean Fain[1,3], Scott Reeder[1,3]
[1]Medical Physics, University of Wisconsin Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin Madison, Madison, WI, United States; [3]Radiology, University of Wisconsin Madison, Madison, WI, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 8

13:30 3049. Normal Pancreas & Pancreatic Cancer: Comparison Among Different Diffusion Weighted MR Imaging Acquisitions at 3.0T
Xiuzhong Yao[1], Mengsu Zeng[1], He Wang[2], Fei Sun[2], Shengxiang Rao[1], Yuan Ji[3]
[1]Radiology, Zhongshan Hospital of Fudan University, Shanghai, China, People's Republic of; [2]The applied science lab,GE Healthcare; [3]Pathology, Zhongshan Hospital of Fudan University, Shanghai, China, People's Republic of

14:00 3050. Pancreatic Cancer Screening & Surveillance with MRI – 7 Year Experience
Masoom A. Haider[1], Wigdan Al-Sukhni[2], Kartik S. Jhaveri[1], Heidi Rothenmund[2], Spring Holter[2], Steven Narod[3], Malcolm Moore[4], Stephanie Wilson[5], Steven Gallinger[2]
[1]Medical Imaging, Princess Margaret Hospital, University of Toronto, Toronto, Ontario, Canada; [2]Department of Surgery, University Health Network, University of Toronto, Toronto, Ontario, Canada; [3]Women's College Research Institute, University of Toronto, Toronto, Ontario, Canada; [4]Department of Medicine, Princess Margaret Hospital, University of Toronto, Toronto, Ontario, Canada; [5]Medical Imaging, University Health Network, University of Toronto, Toronto, Ontario, Canada

14:30 3051. Dynamic Contrast-Enhanced Magnetic Resonance Imaging to Assess Desmoid Tumours in Familial Adenomatous Polyposis
Santosh Bhandari[1], N. Jane Taylor[2], Ashish Sinha[1], J. James Stirling[2], Ian C. Simcock[2], Arun Gupta[1], Robin K. S. Phillips[1], Susan K. Clark[1], Vicky J. Goh[2]
[1]Polyposis Registry, St Mark's Hospital, London, United Kingdom; [2]Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom

15:00 3052. Comparison between Pre & Post Chemoradiation Therapy DCE-MR & PCT Findings: Initial Observations in Locally Advanced Rectal Tumors
Stefano Viotti[1], Giuseppe Petralia[1], Paul Eugene Summers[1], Luke Bonello[1], Moreno Pasin[1], Roberto Di Filippi[1], Massimo Bellomi[1,2]
[1]European Institute of Oncology, Milano, Italy; [2]School of Radiology, Università Statale degli Studi di Milano, Milano, Italy

Prostate Cancer (Clinical Studies) I

Exhibition Hall Thursday 13:30-15:30 Computer 9

13:30 3053. Identifying Prostate Brachytherapy Seeds at MRI: A Study in Phantom
Ali Fatemi-Ardekani[1], Jette Borg[1]
[1]Radiation Medicine Program, Princess Margaret Hospital, Toronto, Ontario, Canada

14:00 **3054.** **Value of Combined 3T Multiparametric MR Imaging & MR Guided Biopsy in Patient Selection for Active Surveillance within the PRIAS Study: Initial Results of the MRPRIAS Study, a Prospective Multicenter Study.**
Caroline Maria Anna Hoeks[1], Joyce G. R. Bomers[1], Diederik M. Somford[2], Roderick van Den Bergh[3], Inge M. Van Oort[2], Henk Vergunst[4], Geert Smits[5], Jorg Oddens[6], Christina A. Hulsbergen-Van De Kaa[7], Chris Bangma[8], Fred Witjes[2], Jelle O. Barentsz[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Urology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [3]Urology, University Medical Centre Utrecht, Utrecht, Netherlands; [4]Urology, Canisius Wilhelmina Hospital, Nijmegen, Gelderland, Netherlands; [5]Urology, Alysis Zorggroep, Arnhem, Gelderland, Netherlands; [6]Urology, Jeroen Bosch Hospital, Den Bosch, Noord-Brabant, Netherlands; [7]Pathology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [8]Urology, Erasmus University Medical Centre, Rotterdam

14:30 **3055.** **Hierarchical Image Registration for Improved Sampling During 3T MRI-Guided Transperineal Targeted Prostate Biopsy**
Andriy Fedorov[1], Kemal Tuncali[1], Fiona Fennessy[1], Junichi Tokuda[1], Nobuhiko Hata[1], William M. Wells[1], Ron Kikinis[1], Clare M. C. Tempany[1]
[1]Department of Radiology, Brigham & Women's Hospital, Boston, MA, United States

15:00 **3056.** **T_1 Relaxation Changes of Bone & Lymph Node Lesions of Metastatic Prostate Cancer During 4 Cycles of Antiangiogenic Drug Therapy**
Naira Muradyan[1], Baris Turkbey[2], William Dahut[3], Peter Choyke[2]
[1]iCAD, Inc., Nashua, NH, United States; [2]Molecular Imaging Program, National Cancer Institute, Bethesda, MD, United States; [3]Medical Oncology Branch, National Cancer Institute, Bethesda, MD, United States

Prostate Cancer (Clinical Studies) II

Exhibition Hall Monday 14:00-16:00 Computer 10

14:00 **3057.** **High Resolution 3D ^{31}P Spectroscopic Imaging of the Human Prostate at 7T: Technical Feasibility *& In Vivo* Measurement**
Thiele Kobus[1], Andreas K. Bitz[2], Mark J. Van Uden[1], Miriam W. Lagemaat[1], Stephan Orzada[2], Arend Heerschap[1], Tom W. J. Scheenen[1,2]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

14:30 **3058.** **Correlation between *In Vivo* ^{1}H MRSI *& Ex Vivo* ^{1}H HR MAS in Spatially Matched Regions in Prostate Cancer Patients**
Kirsten Margrete Selnæs[1], Ingrid Susanne Gribbestad[1], Helena Bertilsson[2,3], Alan Wright[4], Anders Angelsen[3], Arend Heerschap[4], May-Britt Tessem[1]
[1]Department of Circulation & Medical Imaging, NTNU, Trondheim, Norway; [2]Department of Laboratory Medicine & Children's & Women's Health, NTNU, Trondheim, Norway; [3]Department of Urology, St. Olavs Hospital, Trondheim University Hospital, Trondheim, Norway; [4]Department of Radiology, Radboud University Nijmegen Medical Centre, Netherlands

15:00 **3059.** **A Peak Phasing & Alignment Algorithm for Automated Post-Processing of 3D MRSI Data from the Prostate of Cancer Patients.**
Alan James Wright[1], Arend Heerschap[1]
[1]Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

15:30 **3060.** **Automated Lipid-Removal for Baseline Correction of Prostate-Cancer MRSI Data using Prior Knowledge.**
Alan James Wright[1], Arend Heerschap[1]
[1]Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

Exhibition Hall Tuesday 13:30-15:30 Computer 10

13:30 **3061.** **Improving Accuracy in Measurement of Choline as a Predictor of Early Response to Neoadjuvant Chemotherapy: Correction of Internal Reference using External Reference**
Yuriko Suzuki[1], Yoshifumi Kuroki[2], Marc Van Cauteren[1]
[1]MR Clinical Science, Philips Electronics Japan, Minato-ku, Tokyo, Japan; [2]Tochigi Cancer Center, Utsunomiya, Tochigi, Japan

14:00 **3062.** **Arterial Spin Labeling Perfusion Studies of the Prostate with an ERC**
Xiufeng Li[1], Chaitanya Kalavagunta[1], Michael T. Nelson[2], Greg J. Metzger[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]Diagnostic Radiology, University of Minnesota, Minneapolis, MN, United States

14:30 **3063.** **Prostate Perfusion using Arterial Spin Labeling: Initial Experience**

Xiufeng Li[1], Chaitanya Kalavagunta[1], Greg Metzger[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

15:00 **3064.** **A Comparison between Arterial Input Function Approaches for High Temporal Resolution Pharmacokinetic Analysis of Prostate Cancer at 3.0T**
Fiona M. Fennessy[1], Sandeep N. Gupta[2], Andriy Fedorov[1], Robert Mulkern[1], Yi Tang[1], Felipe Franco[1], Kemal Tuncali[1], Ehud Schmidt[1], Clare Tempany[1]
[1]Brigham & Women's Hospital, Boston, MA, United States; [2]Functional Imaging Lab, GE Global Research Center, Niskayuna, NY, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 10

13:30 **3065.** **The Effect of Tissue Hydraulic Conductivity on Interstitial Fluid Pressure (IFP) as Measured by DCE-MRI in Human Prostate**
Jarrett Grover[1], Yousef Mazaheri[2]
[1]Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, United States

14:00 **3066.** **Contrast-to-Noise Ratio in Extrapolated & Measured High B-Value Diffusion Weighted Prostate MR Images**
Marnix Christiaan Maas[1], Jurgen J. Fütterer[1], Tom W. J. Scheenen[1]
[1]Department of Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

14:30 **3067.** **Non Mono-Exponential Analysis of DW-MRI Data for the Detection of Prostate Cancer**
Yousef Mazaheri[1], Alvarez Vargas[2], Oguz Akin[2], Debra Goldman[2], Hedvig Hricak[2]
[1]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, United States; [2]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, United States

15:00 **3068.** **Role of Quantitative MRI Biomarkers for Evaluating Prostatic Transition Zone Tumors**
Jing Ren[1], Yi Huan[2], Mengqi Wei[2]
[1]Department of Radiology, Xijing Hospital, Fourth Military Medical University, Xi¡¯an, Shaanxi, China, People's Republic of; [2]Xijing Hospital, Fourth Military Medical University, China, People's Republic of

Exhibition Hall Thursday 13:30-15:30 Computer 10

13:30 **3069.** **Diagnosis of Prostate Cancer: Comparison of MR Diffusion Tensor Imaging, Quantitative Dynamic Contrast-Enhanced MR Imaging & the Two Techniques Combined at 3.0T**
Chunmei Li[1], Min Chen[1], Saying Li[1], Xuna Zhao[2], Chen Zhang[1], Cheng Zhou[1]
[1]Beijing Hospital, Beijing, China, People's Republic of; [2]Peking University

14:00 **3070.** **Neuroanatomical Evaluation of Periprostatic Nerve in Patients Submitted to Nerve-Sparing Prostatectomy at 3T: Feasibility Study & Preliminary Experience**
Valeria Panebianco[1], Sabina Prato[2], Daniele Lisi[1], Valeria Buonocore[1], Tommaso Biondi[1], Roberto Passariello[1]
[1]Department of Radiological Sciences, Sapienza University, Rome, Italy; [2]MR Advanced Applications, GE Healthcare, Milan, Italy

14:30 **3071.** **MRI Prostate Volumetry as a Surrogate for Transrectal Ultrasound Volumetry in Estimating Iodine – 125 Seeds in Brachytherapy: Inter-Observer Variability**
Liang Wang[1], Hedvig Hricak[2], Oguz Akin[2]
[1]Tongji University Hositla of HUST, Wuhan, Hubei, China, People's Republic of; [2]Memorial Sloan-Kettering Cancer Center

15:00 **3072.** **MRI & Biopsy Performance in Delineating Recurrent Tumor Boundaries After Radiotherapy for Prostate Cancer**
Cynthia Menard[1,2], Douglas Iupati[1], Jenny Lee[1], Anna Simeonov[1], Jessy Abed[1], Julia Publicover[1], Peter Chung[1], Andrew Bayley[1], Charles Catton[1], Michael Milosevic[1], Robert Bristow[1], Gerard Morton[3], Padraig Warde[1], Kristy Brock[1], Masoom Haider[3]
[1]Princess Margaret Hospital, Toronto, ON, Canada; [2]Department of Radiation Oncology, University of Toronto, Toronto, Ontario, Canada; [3]Odette Cancer Center

Breast I

Exhibition Hall Monday 14:00-16:00 Computer 11

14:00 **3073.** **Initial Clinical Testing of RESOLVE: High-Resolution Diffusion Weighted Imaging at 3T**
Dorota Jakubowski Wisner[1], Vibhas S. Deshpande[2], Bonnie N. Joe[1], David A. Porter[3], C. Belinda Chang[1], Gerhard A. Laub[2], Nola Hylton[1]

[1]Radiology & Biomedical Imaging, Univeristy of California, San Francisco, San Francisco, CA, United States; [2]MR Research & Development, Siemens Medical Solutions USA, Inc., San Francisco, CA, United States; [3]MR Research & Development, Siemens Medical Solutions, Erlangen, Bavaria, Germany

14:30 **3074.** **3.0T Breast Diffusion Weighted MRI using Readout Segmented EPI: Comparison with Single Shot EPI**
Shotaro Kanao[1], Tomohisa Okada[1], Mami Iima[1], Kazuna Takeda[1], Shigeaki Umeoka[1], Takeshi Kubo[1], Kaori Togashi[1]
[1]Diagnostic Imaging & Nuclear Medicine, Kyoto Univerisity Graduate School of Medicine, Kyoto, Japan

15:00 **3075.** **Reduced Field-of-View Diffusion-Weighted Imaging in Patients with Invasive Breast Cancer**
Lisa Singer[1], Lisa J. Wilmes[1], Emine U. Saritas[2,3], Ajit Shankaranarayanan[4], Evelyn Proctor[1], Dorota Wisner[1], Belinda Chang[1], Bonnie N. Joe[1], Dwight G. Nishimura[3], Nola M. Hylton[1]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Bioengineering, UC Berkeley, Berkeley, CA, United States; [3]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

15:30 **3076.** **Technical Advances for Breast Diffusion MR Imaging on Wide-Bore 3T Systems**
Vibhas S. Deshpande[1], Dorota J. Wisner[2], John W. Grinstead[1], Thorsten Feiweier[3], Bonnie N. Joe[2], Gerhard A. Laub[1]
[1]Siemens Medical Solutions USA, Inc., San Francisco, CA, United States; [2]Dept. of Radiology & Biomedical Engineering, UCSF, San Francisco, CA, United States; [3]Siemens Medical Solutions, Erlangen, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 11

13:30 **3077.** **Contrast Enhanced MRI in Neoadjuvant Chemotherapy for Locally Advanced Breast Cancer: Does Accuracy Vary Across Clinically Relevant Sub-Sets?**
David John Manton[1], Filip Van Kove[1], Martin D. Pickles[1], Lindsay W. Turnbull[1]
[1]Yorkshire Cancer Research Centre for MR Investigations, Hull-York Medical School, Hull, East Yorkshire, United Kingdom

14:00 **3078.** **The Study of Relationship between ADC Value & Maximal Diameter of the Breast Cancer with Ki-67 Expression During Neoadjuvant Chemotherapy**
Li Guo[1], Xiao-Ying Wang[1], Nai-Shan Qin[1], Xue-Xiang Jiang[1]
[1]Radiology, Peking University First Hospital, Beijing, China, People's Republic of

14:30 **3079.** **Feasibility of 7 Tesla Breast MRI. Determination of Intrinsic Sensitivity & High Resolution MRI, DWI & ^{1}H-MRS of Breast Cancer Patients Receiving Neo-Adjuvant Therapy**
Mies A. Korteweg[1], Wouter B. Veldhuis[1], Fredy Visser[1], Peter R. Luijten[1], Willem P. Th. M. Mali[1], Paul J. van Diest[2], Maurice A. A. J. van den Bosch[1], Dennis W. J. Klomp[1]
[1]Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Pathology, University Medical Center Utrecht, Utrecht, Netherlands

15:00 **3080.** **Feasibility of using MR Spectroscopy without Water-Fat Suppression to Monitor Tumor Response to Chemotherapy**
Hyeon-Man Baek[1], Jeon-Hor Chen[2], Orhan Nalcioglu[2], Min-Ying Su[2]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Tu & Yuen Center for Functional Onco-Imaging, UC Irvine, Irvine, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 11

13:30 **3081.** **Effect of Thin-Section Diffusion-Weighted Magnetic Resonance Imaging on Diagnosis of Malignant Breast Lesions**
April M. Chow[1], Polly S. Y. Cheung[2], Raymond Lee[3], Ka Man Chan[3], Sau Fan Liu[1], Siu Ki Yu[1], Gladys G. Lo[3]
[1]Medical Physics & Research Department, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of; [2]Breast Care Center, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of; [3]Department of Diagnostic & Interventional Radiology, Hong Kong Sanatorium & Hospital, Happy Valley, Hong Kong SAR, China, People's Republic of

14:00 **3082.** **Correlation between Apparent Diffusion Coefficient & Molecular & Histological Prognostic Factors in Breast Cancer: Initial Observations in 53 Patients.**
Giuseppe Petralia[1], Luke Bonello[2], Paul Summers[1], Lorenzo Preda[1], Roberto Di Filippi[1], Moreno Pasin[1], Marzia Locatelli[3], Giuseppe Curigliano[3], Massimo Bellomi[1,2]
[1]Radiology, European Institute of Oncology, Milan, Italy; [2]School of Radiology, University of Milan, Milan, Italy; [3]Medical Oncology, European Institute of Oncology, Milan, Italy

14:30 **3083.** **The Relation of Apparent Diffusion Coefficient (ADC) Measurements in Normal Glandular Breast Tissue to Menstrual Cycle & Menopausal State at 3.0T Diffusion-Weighted Imaging.**

Elizabeth Anne Maxine O'Flynn[1], Marco Borri[1], Maria Schmidt[1], Veronica Morgan[1], Sharon Giles[1], Catherine Parry-Jones[1], Nandita M. de Souza[1]
[1]Clinical Magnetic Resonance, Cancer Research UK & EPSRC Cancer Imaging Centre, Sutton, Surrey, United Kingdom

15:00 **3084.** **Difference of Apparent Diffusion Coeffcient in Breast Mass & Non-Mass Like Enhancement Lesions**
Liuquan Cheng[1], Yuhan Bai[1,2], Jing Zhang[1,3], Mei Liu[4], Xiru Li[5]
[1]Radiology, Chinese PLA General Hospital, Beijing, China, People's Republic of; [2]Radiology, the People's Hospital of Wuhan University, Hubei; [3]Radiology, Chinese PLA Navy General Hospital, Beijing; [4]Pathology, Chinese PLA General Hospital, Beijing, China, People's Republic of; [5]Surgery, Chinese PLA General Hospital, Beijing, China, People's Republic of

Exhibition Hall Thursday 13:30-15:30 Computer 11

13:30 **3085.** **Automatic Bolus Detection in Breast MRI: A Method to Improve Accuracy & Reliability?**
Christian Geppert[1], Matthias Fenchel[1], Rolf Janka[2], Andre de Oliveira[1], Berthold Kiefer[1], Michael Uder[2], Evelyn Wenkel[2]
[1]Siemens Healthcare, Erlangen, Germany; [2]Radiologisches Institut, Universitätsklinikum Erlangen, Erlangen, Germany

14:00 **3086.** **Transmit B_1 Field Inhomogeneity & T_1 Estimation Errors in Breast DCE MRI at 3T**
Kyunghyun Sung[1], Bruce L. Daniel[1], Brian A. Hargreaves[1]
[1]Radiology, Stanford University, Stanford, CA, United States

14:30 **3087.** **Variable-Resolution Dynamic Contrast-Enhanced Breast MRI Acquisition**
Manojkumar Saranathan[1], Brian A. Hargreaves[1], Catherine J. Moran[1], Bruce Daniel[1]
[1]Radiology, Stanford University, Stanford, CA, United States

15:00 **3088.** **Improved Lesion Conspicuity on Contrast Enhanced Breast MRI at 3 Tesla using Linear Vs. Radial-Centric K-Space Ordering**
Bonnie N. Joe[1], Dorota Wisner[1], Vignesh A. Arasu[1], Sachiko Suzuki[1], Vibhas S. Deshpande[2], Belinda Chang[1], Gerhard Laub[2], Nola M. Hylton[1]
[1]Dept of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Siemens Medical Solutions USA, Inc, San Francisco, CA, United States

Breast II

Exhibition Hall Monday 14:00-16:00 Computer 12

14:00 **3089.** **Magnetization Transfer Imaging & Dynamic Contrast Enhanced Imaging of Breast Cancer at 3T**
Samantha Lynn Heller[1], Linda Moy[1], Sherlin Lavianlivi[1], Melanie Moccaldi[1], Sungheon Kim[2]
[1]Radiology, NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Radiology, NYU School of Medicine, New York, NY

14:30 **3090.** **Chemical Exchange Saturation Transfer (CEST) MRI of the Breast at 3T using Amide Proton Transfer (APT)**
Adrienne N. Dula[1,2], Lori R. Arlinghaus[1,2], Bennett A. Landman[1,3], Richard D. Dortch[1,2], John C. Gore[1,2], Tom E. Yankeelov[1,2], Seth A. Smith[1,2]
[1]Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States; [2]Radiology & Radiological Sciences, Vanderbilt University Medical Center, Nashville, TN, United States; [3]Electrical Engineering & Computer Science, Vanderbilt University Medical Center, Nashville, TN, United States

15:00 **3091.** **Enhancing Mass Detection & Classification in Breast Tissue using Strain-Encoded (SENC) MRI**
Ahmed Amr Harouni[1], Riham H. El Khouli[2], Jakir Hossain[3], David A. Bluemke[2], Nael F. Osman[4], Michael A. Jacobs[5]
[1]Electrical & Computer Engineering, Johns Hopkins University, Baltimore , MD, United States; [2]Radiology & Imaging Sciences, National Institute of Health, Bethesda, MD, United States; [3]Electrical & Computer Engineering, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [5]Department of Radiology & Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

15:30 **3092.** **Sub-Millimeter Breast Imaging & Relaxivity Characterization at 7T**
Ryan Brown[1], Kellyanne Mcgorty[1], Linda Moy[1], Scott DeGregorio[1], Daniel K. Sodickson[1], Graham C. Wiggins[1]
[1]Center for Biomedical Imaging, NYU Langone Medical Center, New York, NY, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 12

13:30 **3093.** **Achieving Consistent, Homogeneous, Dark Fat Suppression on Bilateral Breast MRI at 3.0 Tesla in the Clinical Setting**
Bonnie N. Joe[1], Vibhas S. Deshpande[2], Dorota J. Wisner[1], Vignesh A. Arasu[1], Nola M. Hylton[1], Gerhard A. Laub[2]

[1]Dept of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Siemens Medical Solutions USA, Inc, San Francisco, CA, United States

14:00 **3094.** **Breast Morphological & DCE MRI with SWIFT**
Curtis Andrew Corum[1], Steen Moeller[1], Djaudat Idiyatullin[1], Diane Hutter[1], Angela Snyder[1], Michael T. Nelson[2], Tim Emory[2], Jessica E. Kuehn-Hajder[2], Lynn E. Eberly[3], Gregor Adriany[1], Michael Garwood[1]
[1]CMRR, Radiology Department, Medical School, University of Minnesota, Minneapolis, MN, United States; [2]Breast Center, Radiology Department, Medical School, University of Minnesota, Minneapolis, MN, United States; [3]Division of Biostatistics, School of Public Health, University of Minnesota, Minneapolis, MN, United States

14:30 **3095.** **Normal Variability in the Quantitative Assessment of Breast Tissue by MRI**
Ania Szary[1], Sheye Aliu[1], Sachiko Suzuki[1], Catherine Klifa[1], Dorota Wisner[1], Evelyn Proctor[1], Bonnie Joe[1], Nola Hylton[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

15:00 **3096.** **Clinical Implementation of 3D High Spectral & Spatial Resolution Imaging**
Abbie M. Wood[1], Gillian M. Newstead[1], Hiroyuki Abe[1], Milica Medved[1], Greg S. Karczmar[1]
[1]Radiology, University of Chicago, Chicago, IL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 12

13:30 **3097.** **Meta-Population Breast Cancer Screening with the δK^{trans} DCE-MRI Parameter**
Charles S. Springer[1], Luminita A. Tudorica[1], Xin Li[1], Sunitha Thakur[2], Elizabeth A. Morris[2], Karen Y. Oh[1], Mark D. Kettler[1], Yiyi Chen[1], Ian J. Tagge[1], Stephanie L. Hemmingson[1], Maayan Korenblit[2], John W. Grinstead[3], Gerhard Laub[4], Jason A. Koutcher[2], Wei Huang[1]
[1]Oregon Health & Science University, Portland, OR, United States; [2]Memorial Sloan Kettering Cancer Center, New York, United States; [3]Siemens Healthcare, Portland, OR, United States; [4]Siemens Healthcare, San Francisco, CA, United States

14:00 **3098.** **To Compare MR Spectroscopy at 3T with Tumor Type & Grading of Breast Cancers**
Marianna Telesca[1], Federica Pediconi[1], Maria Laura Luciani[1], Valeria Casali[1], Federica Vasselli[1], Elena Miglio[1], Carlo Catalano[1], Roberto Passariello[1]
[1]"Sapienza" University of Tome, Tome, Italy, Italy

14:30 **3099.** **Time-Frequency Analysis of *In Vivo* MRS of the Breast Improves Cancer Detection**
Frederick Shic[1], Alexander P, Lin[2], Peter Stanwell[2], Saadallah Ramadan[2], Eva Gombos[2], Carolyn Mountford[2]
[1]Child Study Center, Yale University School of Medicine, New Haven, CT, United States; [2]Center for Clinical Spectroscopy, Brigham & Women's Hospital, Boston, MA, United States

15:00 **3100.** ***In Vivo* Quantitative Proton MR Spectroscopy to Characterize Morphological Pattern of MR Enhancements in Breast Cancer**
Hyeon-Man Baek[1], Jeon-Hor Chen[2], Orhan Nalcioglu[2], Min-Ying Su[2]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Tu & Yuen Center for Functional Onco-Imaging, UC Irvine, Irvine, CA, United States

Other Cancers (Clinical Studies)

Exhibition Hall Monday 14:00-16:00 Computer 13

14:00 **3101.** **Using Paired Tissue & Serum Samples to Characterize Human Lung Cancer Metabolomics with *Ex Vivo* ^{1}H HRMAS MRS.**
Elita DeFeo[1], Isabel Dittmann, Yannick Berker, Li Su[2], Eugene Mark, David Christiani[2], Leo L. Cheng[3]
[1]Pathology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Environmental Health, Harvard School of Public Health; [3]Radiology, Pathology, Massachusetts General Hospital

14:30 **3102.** **Automatic Image Registration of Lung CT & Hyperpolarized Helium-3 MRI Via Mutual Information of Proton MRI**
Rob H. Ireland[1,2], James A. Swinscoe[2], Matthew Q. Hatton[2], Helen Marshall[1], Salma Ajraoui[1], Juan Parra-Robles[1], Jim M. Wild[1]
[1]Academic Radiology, University of Sheffield, Sheffield, S. Yorkshire, United Kingdom; [2]Academic Clinical Oncology, University of Sheffield, Sheffield, S. Yorkshire, United Kingdom

15:00 **3103.** **Clinical Application of Pharmacokinetic Analysis as a Biomarker in Solitary Pulmonary Nodules: Dynamic Contrast Enhanced MR Imaging**
Hatsuho Mamata[1,2], Junichi Tokuda[1,2], Ritu R. Gill[1,2], Robert F. Padera[2,3], Robert E. Lenkinski[2,4], David J. Sugarbaker[2,5], Hiroto Hatabu[1,2]

[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Pathology, Brigham & Women's Hospital, Boston, MA, United States; [4]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [5]Thoracic surgery, Brigham & Women's Hospital, Boston, MA, United States

15:30 **3104.** **Characterization of SCUBE3 Protein for Its Role in Tumor Vascularization by SSCE-MRI**
Cheng-Hung Chou[1], Yi-Fang Cheng[1], Amit Kumar[1], Konan Peck[1], Chen Chang[1]
[1]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan

Exhibition Hall Tuesday 13:30-15:30 Computer 13

13:30 **3105.** **Paediatric & Adolescent Lymphoma: Comparison of MR Imaging & PET-CT for Detection of Focal Splenic Lesions**
Shonit Punwani[1], King Kenneth Cheung[1], Nicholas Skipper[1], Alan Bainbridge[2], Stuart Taylor[1], Ashley Groves[3], Sharon Hain[3], Simona Ben-Haim[3], Michael Steward[3], Ananth Shankar[4], Stephen Daw[4], Steve Halligan[1], Paul Humphries[1]
[1]Centre for Medical Imaging, University College London, London, United Kingdom; [2]Department of Medical Physics & Bioengineering, University College London; [3]Institute of Nuclear Medicine, University College London; [4]Paediatrics, University College London Hospital

14:00 **3106.** **Magnetic Resonance Imaging for Staging Lymphoma: Whole-Body or Less?**
Thomas Kwee[1], Erik Akkerman[2], Rob Fijnheer[3], Marie Jose Kersten[4], Joseph Zsiros[5], Inge Ludwig[6], Marc Bierings[7], Jaap Stoker[2], Rutger-Jan Nievelstein[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Department of Hematology, Meander Medical Center, Amersfoort, Netherlands; [4]Department of Hematology, Academic Medical Center, Amsterdam, Netherlands; [5]Department of Pediatric Oncology, Academic Medical Center, Amsterdam, Netherlands; [6]Department of Hematology, University Medical Center Utrecht, Utrecht, Netherlands; [7]Department of Pediatric Hematology, University Medical Center Utrecht, Utrecht, Netherlands

14:30 **3107.** **Prediction of Lymphoma Response to Chemotherapy: Evaluation of Pre-Treatment MR Derived ADC & PET Derived SUV as Prognostic Biomarkers**
Shonit Punwani[1], Paul Humphries[1], Stuart Taylor[1], Stephen Daw[2], Ananth Shankar[2], Alan Bainbridge[3], Ziauddin Zia Saad[4], Ashley Groves[4], Steve Halligan
[1]Centre for Medical Imaging, University College London, London, United Kingdom; [2]Paediatrics, University College London Hospital; [3]Department of Medical Physics & Bioengineering, University College London; [4]Institute of Nuclear Medicine, University College London

15:00 **3108.** **^{1}H MRS & MRI Longitudinal Study to Detect Therapeutic Response in Non-Hodgkin's Lymphoma Patients**
Seung-Cheol Lee[1], Harish Poptani[1], Hari Hariharan[1], Sunita Nasta[2], Jakub Svoboda[2], Stephen J. Schuster[2], Jerry D. Glickson[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Medicine, Hematology Oncology Division, University of Pennsylvania, Philadelphia, PA, United States

Perfusion & Permeability: Preclinical & Clinical I

Exhibition Hall Monday 14:00-16:00 Computer 14

14:00 **3109.** **Effect of Anesthesia on Tumor Vascular Permeability Measurements by DCE-MRI**
Wenlian Zhu[1], Yoshinori Kato[1], Dmitri Artemov[1]
[1]The Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States

14:30 **3110.** **Assessing the Tumour Microenvironment with DCE-MRI & DCE-Ultrasound**
Firas Moosvi[1,2], Peter Bevan[3], Colleen Bailey[1,2], Greg Stanisz[1,2]
[1]Imaging Physics, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [3]McMaster University, Hamilton, Ontario, Canada

15:00 **3111.** **Towards Improving Tumor Boundary Identification in Murine Models of Glioma using Cerebral Blood Volume Maps**
Kathleen E. Chaffee[1], Jeff R. Anderson[1], Joshua S. Shimony[1], G. Larry Bretthorst[1], Joseph J. H. Ackerman[1], Joel R. Garbow[1]
[1]Radiology, Washington University School of Medicine, St. Louis, MO, United States

15:30 **3112.** **Contribution of Perfusion in Diffusion Weighted MRI of Orthotopic and Subcutaneous Hepatocellular Carcinoma in Rat**
Andriy Babsky[1], Beena George[1], Navin Bansal[1]
[1]Radiology & Imaging Sciences, Indiana University, Indianapolis, IN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 14

13:30 3113. The DCE-MRI δK^{trans} Parameter has Diminished Sensitivity to AIF Variation
Emerson Hum[1], Xin Li[1], Luminita Tudorica[2], Karen Oh[2], Stephanie Hemmingson[1], Mark Kettler[2], John Grinstead[3], Gerhard Laub[4], Charles Springer[1], Wei Huang[1]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Diagnostic Radiology, Oregon Health & Science University, Portland, OR, United States; [3]Siemens Healthcare, Portland, OR, United States; [4]Siemens Healthcare, San Francisco, CA, United States

14:00 3114. Significant Improvement in Reproducibility of DCE-MRI Achieved using Cardiac-Output Based Constraint of Arterial Input Function
Jeff Lei Zhang[1], Henry Rusinek[1], Umer Khan[1], Pippa Storey[1], David Stoffel[1], Qun Chen[1], Vivian S. Lee[1]
[1]Department of Radiology, New York University, New York, NY, United States

14:30 3115. Implications of Mean Intracellular Water Lifetime for Prostate DCE-MRI Modeling
Xin Li[1], Ryan A. Priest[2,3], William J. Woodward[1], Ian J. Tagge[1], Faisal Siddiqui[2,3], Tomasz M. Beer[4,5], Mark G. Garzotto[6,7], Wei Huang[1], William D. Rooney[1], Charles S. Springer, Jr.[1,5]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Radiology, Oregon Health & Science University, Portland, OR, United States; [3]School of Medicine, Oregon Health & Science University, Portland, OR, United States; [4]Hematology/Oncology, Oregon Health & Science University, Portland, OR, United States; [5]Knight Cancer Institute, Oregon Health & Science University, Portland, OR, United States; [6]Urology, Oregon Health & Science University, Portland, OR, United States; [7]Portland VA Medical Center, Portland, OR, United States

15:00 3116. A Comparison of DCE-MRI Pharmacokinetic Models in Human Breast Cancer
Xia Li[1], Lori R. Arlinghaus[1], E. Brian Welch[1], A. Bapsi Chakravarthy[1], Lei Xu[1], Jaime Farley[1], Ingrid Mayer[1], Mark Kelley[1], Ingrid Meszoely[1], Julie Means-Powell[1], Vandana Abramson[1], Ana Grau[1], Mia Levy[1], John C. Gore[1], Thomas E. Yankeelov[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 14

13:30 3117. Improved Temporal Resolution for Human Breast DCE-MRI Data using Compressed Sensing
David S. Smith[1], Xia Li[1], Lori Arlinghaus[1], Edward Brian Welch[1], John C. Gore[1], Thomas E. Yankeelov[1]
[1]Radiology & Radiological Sciences, Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

14:00 3118. What is the Minimum Time Resolution Required for DCE-MRI Kinetic Analysis with Kety Model using Single- & Dual-Temporal-Resolution Techniques?
Ka-Loh Li[1], Gerard Thompson[1], Xiaoping Zhu[1], Giovanni Buonaccorsi[2], Alan Jackson[1]
[1]Wolfson Molecular Imaging Centre, the University of Manchester, Manchester, Lancashire, United Kingdom; [2]ISBE, the University of Manchester

14:30 3119. Improving Quantitative Accuracy & Spatial Resolution of Parametric Imaging using a Dual-Temporal-Resolution DCE MRI Technique
Ka-Loh Li[1], Salman Qureshi[2], John Cain[1], Amy Watkins[1], Gareth Evans[3], Simon Lloyd[4], Xiaoping Zhu[1], Alan Jackson[1]
[1]Wolfson Molecular Imaging Centre, the University of Manchester, Manchester, Lancashire, United Kingdom; [2]Greater Manchester Neurosciences Centre, Salford Royal Hospital, Salford, United Kingdom; [3]MRI, the University of Manchester; [4]Manchester Royal Infirmary, Manchester, United Kingdom

15:00 3120. Free-Breathing Dynamic Contrast-Enhanced MRI at 3.0 T using a 3D-Radial-Gradient Echo Sequence with K-Space-Weighted Image Contrast (KWIC): Preliminary Study
Kyung Won Kim[1], Jeong Min Lee[1], Yong Sik Jeon[1], Joon Koo Han[1], Byung Ihn Choi[1]
[1]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

Exhibition Hall Thursday 13:30-15:30 Computer 14

13:30 3121. Is Perfusion Parameters Effective to Predict Tumor Response on DCE MRI Performed before CCRT?
Kyung Ah Kim[1,2], Mi-Suk Park[2], Myeong-Jin Kim[2], Joon Seok Lim[2], Jin-Young Choi[2], Ki Whang Kim[2]
[1]Radiology, Inje University Ilsan-Paik Hospital, Goyang-si, Gyeonggi-do, Korea, Republic of; [2]Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of

14:00 3122. Influence of Multiparametric Tumour Delineation Methods on the Median Transfer Constant (Ktrans) Tumour Values & their Reproducibility
Nina Tunariu[1], Michael Germuska[1], Veronica A. Morgan[1], Sharon Giles[1], Catherine Simpkin[1], Timothy Yap[2], James A. d'Arcy[1], David J. Collins[1], Nandita M. de Souza[1]

[1]Clinical MRI Unit, Royal Marsden Hospital, Institute of Cancer Research & EPSRC Cancer Imaging Centre, Sutton, Surrey, United Kingdom; [2]Drug Development Unit, Royal Marsden Hospital & Institute of Cancer Research, Sutton, Surrey, United Kingdom

14:30 3123. Preliminary Result of Pharmacokinetic Parameter Evaluation in Malignant Pleural Mesothelioma: Correlation with Histology & Growth Type.
Hatsuho Mamata[1,2], Ritu R. Gill[1,2], Junichi Tokuda[1,2], Robert F. Padera[2,3], Robert E. Lenkinski[2,4], William G. Richards[2,5], Tamara R. Tilleman[2,5], David J. Sugarbaker[2,5], Hiroto Hatabu[1,2]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Pathology, Brigham & Women's Hospital, Boston, MA, United States; [4]Radiology, Beth Israel Deaconess Medical Center, Boston, MA, United States; [5]Thoracic surgery, Brigham & Women's Hospital, Boston, MA, United States

15:00 3124. Comparison of Parameters of Dynamic Contrast Enhanced (DCE-)MRI & Contrast Enhanced UltraSound (CEUS) Applied in a Clinical Pharmacological Study
Ulrike Fasol[1], Annette Frost[2], Martin Buechert[1], Klaus Mross[2], Jann Arends[2]
[1]MR Development & Application Center, University Medical Center Freiburg, Freiburg, Germany; [2]Tumor Biology Center, Albert-Ludwigs-University Freiburg, Freiburg, Germany

Perfusion & Permeability: Preclinical & Clinical II

Exhibition Hall Monday 14:00-16:00 Computer 15

14:00 3125. Dynamic Contrast Enhanced MRI of the Liver for Therapy Monitoring of Hepatic Metastases from Neuroendocrine Tumors
Wieland H. Sommer[1], Steven Sourbron[2], Maximilian F. Reiser[1], Karin A. Herrmann[1], Christoph Zech[1]
[1]Department of Radiology, University Hospital Munich, Grosshadern Campus, Munich, Bavaria, Germany; [2]University of Leeds, Leeds, United Kingdom

14:30 3126. Correlation of Intravoxel Incoherent Motion with Dynamic Contrast Enhanced MRI Derived Parameters in Neck Nodal Metastases
Yonggang Lu[1], Jacobus F. A. Jansen[2], Hilda E. Stambuk[1], Yousef Tehrani-Mazaheri[1], Nancy Lee[1], Jason A. Koutcher[1], Amita Shukla-Dave[1]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Maastricht University Medical Center, Maastricht,, Netherlands

15:00 3127. Combined MRI Texture & Shape Analysis for the Prediction of Biologic Aggressiveness in Musculoskeletal Neoplasms
Rebecca E. Thornhill[1], Greg O. Cron[1], Ian Cameron[1], Adnan Sheikh[1], Gina Di Primio[1], Joel Werier[1], Mark E. Schweitzer[1], Jing Zhang[2], Xiao Guang Cheng[2]
[1]The Ottawa Hospital, Ottawa, Ontario, Canada; [2]Beijing Ji Shui Tan Hospital, Beijing, China, People's Republic of

15:30 3128. Dynamic Contrast-Enhanced Magnetic Resonance Imaging & Dynamic Contrast-Enhanced Computed Tomography of Primary Colorectal Cancer: Comparison of Test-Retest Agreement.
N. Jane Taylor[1], Ian C. Simcock[1], J. James Stirling[1], Aftab Khan[2], Rob Glynne-Jones[2], Anwar R. Padhani[1], Vicky J. Goh[1]
[1]Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom; [2]Cancer Centre, Mount Vernon Hospital, Northwood, Middlesex HA6 2RN, United Kingdom

Tumor Therapy Response - Preclinical & Clinical

Exhibition Hall Tuesday 13:30-15:30 Computer 16

14:00 3129. DCE-MRI in Rat Gliomas Under Therapy with Temozolomide & a Nitric Oxide Donor
Claudia Weidensteiner[1], Mehdi Ordikhani-Seyedlar[2], Anna Werres[3], Nadja Osterberg[3], Astrid Weyerbrock[3], Wilfried Reichardt[2]
[1]MR Development & Application Center, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology/Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [3]Department of Neurosurgery, University Medical Center Freiburg, Freiburg, Germany

14:30 3130. Multiparametric Imaging for Therapy Response to Cytotoxic & Cytostatic Agents in Xenograft Mice
Natalie J. Serkova[1], Erica L. Pierce[2], Kendra M. Hasebroock[1], Andrea L. Merz[1], Todd M. Pitts[2], Gail Eckhardt[2]
[1]Anesthesiology, University of Colorado Denver, Aurora, CO, United States; [2]Medical Oncology, University of Colorado Denver

15:00 3131. Assessment of Early Tumor Response to Chemotherapy using MR Elastography (MRE)
Jun Chen[1], Kiaran P. McGee[1], Yogesh K Mariappan[1], Kevin J. Glaser[1], Stephen M. Ansell[1], Kay M. Pelletier[1], Deanna M. Grote[1], Richard L. Ehman[1]

[1]Mayo Clinic, Rochester, MN, United States

15:30 3132. Comparisons of the Efficacy of the Jak1/2 Inhibitor AZD1480 with the VEGF Signaling Inhibitor Cediranib (AZD2171) & Sham Treatments in Mouse Tumors using DCE-MRI, DW-MRI, & Histology

Mary E. Loveless[1,2], Deborah Lawson[3], Michael Collins[3], Deborah Morosini[3], Corinne Reimer[3], Dennis Huszar[3], Jane Halliday[4], John C. Waterton[4], John C. Gore[2,5], Thomas E. Yankeelov[2,5]

[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Cancer Bioscience, AstraZeneca, Boston, MA, United States; [4]Translational Sciences: Imaging, AstraZeneca, Macclesfield, Cheshire, United Kingdom; [5]Radiology & Radiological Science, Vanderbilt University, Nashville, TN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 16

13:30 3133. Treatment Response Assessment of a Novel Vascular-Disrupting Agent on Rabbit Tumor Model using DCE-MRI

Kyung Won Kim[1], Jeong Min Lee[1], Ji Suk Park[1], Yong Sik Jeon[1], Joon Koo Han[1], Byung Ihn Choi[1]

[1]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of

14:00 3134. Textural Analysis of DCE-MRI of the Breast as a Predictor of Response

Peter Gibbs[1], Arfan Ahmed[1], Martin Pickles[1], Lindsay Turnbull[1]

[1]Centre for MR Investigations, University of Hull, Hull, United Kingdom

14:30 3135. Monitoring Treatment Response to Neoadjuvant Chemotherapy in Breast Cancer by 3D Proton Magnetic Resonance Spectroscopy Imaging

Bogumil-Krystian Debski[1], Wolfgang Bogner[1], Marek Chmelik[1], Katja Pinker, Thomas Helbich, Siegfried Trattnig[1], Stephan Gruber[1]

[1]MR Centre of Excellence, Dept. Radiology, Medical University of Vienna, Vienna, Austria

15:00 3136. Evaluation of the Role of DW-MRI in the Assessment of Tumor Response to Sunitinib in Metastatic Renal Cell Carcinoma.

Nishat Bharwani[1], Marc E. Miquel[2], Thomas Powles[3], Redha Boubertakh[2], Anju Sahdev[1], Rodney H. Reznek[1], Andrea G. Rockall[1]

[1]Radiology, Barts & the London NHS Trust, London, United Kingdom; [2]Medical Physics, Barts & the London NHS Trust, London, United Kingdom; [3]Medical Oncology, Barts & the London NHS Trust, London, United Kingdom

Exhibition Hall Wednesday 13:30-15:30 Computer 16

13:30 3137. Sunitinib Induces Reductions in Tumor Vascular Permeability & Intra-Tumor Vascular Volume in Renal Cell Carcinoma

Mark Alan Rosen[1], Yiqun Xue[1], Sarah Englander[1], Daniel Heitjian[2], Hyunseon S. Kang[1], Anna Fagan[1], Naomi Haas[3], William Lee[3], William Carley[4], Hee Kwon Song[1], Stephen Keefe[3], Yu Jiangsheng[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Medicine, University of Pennsylvania, Philadelphia, PA, United States; [4]Pfizer, Inc., Collegeville, PA, United States

14:00 3138. The δK^{trans} DCE-MRI Parameter Provides Early Prediction of Soft-Tissue Sarcoma Therapy Response: Initial Experience

Stephanie Hemmingson[1], Kelly Perlewitz[2], Megan Holtorf[2], Ian Tagge[1], William Woodward[1], Christopher Ryan[2], Charles Springer[1], Wei Huang[1]

[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]Medicine, Oregon Health & Science University, Portland, OR, United States

14:30 3139. DCE-MRI as a Prognostic Factor in Osteosarcoma

Junyu Guo[1], John O. Glass[1], Qing Ji[1], Catherine A. Billups[2], Najat C. Daw[3], Wilburn E. Reddick[1]

[1]Translational Imaging Research, Radiological Sciences, St Jude Children's Research Hospital, Memphis, TN, United States; [2]Biostatistics, St. Jude Children's Research Hospital, Memphis, TN, United States; [3]Division of Pediatrics, MD Anderson Cancer Center, Houston, TX, United States

15:00 3140. MRI Analysis of Bone Metastasis: Shape-Related Exclusion Criteria

Rafal M Kedzierski[1], Paul T. Weatherall[2]

[1]Radiology, John Peter Smith Hospital, Fort Worth, TX, United States; [2]Radiology, Univ. of Texas Southwestern Medical Center, Dallas, TX, United States

Exhibition Hall Thursday 13:30-15:30 Computer 16

13:30 3141. Assessment of Neoadjuvant Chemotherapeutic Response of Bladder Cancer by Dynamic Contrast-Enhanced MRI at 3T
Huyen Thanh Nguyen[1,2], Guang Jia[1], Zarine K. Shah[1], Kamal S. Pohar[3], Amir Mortazavi[4], Daniel Clark[1], Mitva Patel[1], Debra L. Zynger[5], Michael V. Knopp[1,2]
[1]Wright Center of Innovation in Biomedical Imaging & Department of Radiology, the Ohio State University, Columbus, OH, United States; [2]Biophysics Program, the Ohio State University, Columbus, OH, United States; [3]Department of Urology, the Ohio State University, Columbus, OH, United States; [4]Department of Internal Medicine, the Ohio State University, Columbus, OH, United States; [5]Department of Pathology, the Ohio State University, Columbus, OH, United States

14:00 3142. MRI Multi-Parametric Response Mapping for Assessment of Early Therapeutic Efficacy in Head & Neck Cancer
Yonggang Lu[1], Jacobus F. A. Jansen[2], Hilda E. Stambuk[1], Nancy Lee[1], Jason A. Koutcher[1], Amita Shukla-Dave[1]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Maastricht University Medical Center, Maastricht, Netherlands

14:30 3143. An Exploratory Open-Label, Non-Randomised, Single Centre Methodology Study to Compare Dynamic Contrast Enhanced CT & MRI as Markers of Changes in Vascular Activity Mediated by a Positive Control Agent (Cediranib), a Potent Inhibitor of VEGF-Driven Angiogenesis in Patients with Advanced Solid Tumours
Christina Messiou[1], Matthew Orton[1], David J. Collins[1], Veronica a Morgan[1], Dorothy Mears[2], Isabel Castellano[2], Dionysis Papadatospastos[3], Andre Brunetto[3], Jooern Ang[3], Helen Mann[4], Jean Tessier[4], Helen Young[4], Stan Kaye[3], Johann de Bono[3], Martin O. Leach[1], Nandita M. deSouza[1]
[1]CRUK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [2]Radiology, Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [3]Dept of Medicine, Institute of Cancer Research & Royal Marsden NHS Foundation Trust, Sutton, Surrey, United Kingdom; [4]AstraZeneca, United Kingdom

15:00 3144. Predictive Value of Fast & Slow ADC Component Analysis for Rectal Cancer Response Monitoring After Neo-Adjuvant Radiochemotherapy: Initial Results.
Martijn Intven[1], Onne Reerink[1], Marielle E. P. Philippens[1]
[1]Radiotherapy, University Medical Centre, Utrecht, Netherlands

Cancer Cells - Biopsies, Biofluids

Exhibition Hall Monday 14:00-16:00 Computer 17

14:00 3145. Lipid Profile of Distinct Areas of Astrocytic Brain Tumors
Frauke Nehen[1], Laura Columbano[2], Rudolf Fahlbusch[2], Dieter Leibfritz[1]
[1]Institute of Organic Chemistry, University of Bremen, Bremen, Germany; [2]International Neuroscience Institute Hannover, Hannover, Germany

14:30 3146. A ^{1}H MRS Study on Neurospheres of Cancer Stem Cells from Human Glioblastoma Multiforme Shows the Presence of Markers of Both Glial & Neuronal Morphology
Laura Guidoni[1], Lucia Ricci Vitiani[2], Simona di Martino[3], Sveva Grande[1], Anna Maria Luciani[1], Alessandra Palma[4], Vincenza Viti[1], Antonella Rosi[1]
[1]Dipartimento di Tecnologie e Salute, Istituto Superiore di Sanità and INFN, Rome, Italy; [2]Dipartimento di Ematologia, Oncologia e Medicina Molecolare, Istituto Superiore di Sanità, Rome, Italy; [3]Scuola Superiore di Catania, University of Catania, Catania, Italy; [4]Dipartimento di Tecnologie e Salute, Istituto Superiore di Sanità , Rome, Italy

15:00 3147. Metabolic Signatures in Histopathologically Proven Gallbladder Carcinoma Tissues by Hrmas Nmr Spectroscopy
Santosh Kumar Bharti[1], Raja Roy[1], Anu Behari[2], Vinay K. Kapoor[2], C. L. Khetrapal[1]
[1]CBMR, Centre of Biomedical Magneetic Resonance, Lucknow, Uttar Pradesh, India; [2]Dept. of Surgical Gastroenterology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

15:30 3148. Revealing Cancer Phenotype-Specific Biomarkers in a Cell Perfusing System by ^{13}C & ^{1}H MRS
Rui Vasco Simoes[1], Ellen Ackerstaff[1], Natalia Kruchevsky[1], Carl Le[1], Kristen Zakian[1], Jason A. Koutcher[1]
[1]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, NY, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 17

13:30 3149. Treatment with the MEK Inhibitor $U0_{126}$ Induces Increased Lactate Production in Prostate & Breast Cancer Cell Lines
Alessia Lodi[1], Sarah M. Woods[1], Robert M. Danforth[1], Sabrina M. Ronen[1]

[1]University of California San Francisco, San Francisco, CA, United States

14:00 3150. Proton HR-MAS MR Spectroscopy of Oral Squamous Cell Carcinoma Tissues: A Metabolic & Multivariate Approach to Distinguish Malignant Tissues

Raja Roy[1], Shatakshi Srivastava[1], Vivek Gupta[2], Ashish Tiwari[2], Anand N. Srivastava[3], Abhinav A. Sonkar[2]
[1]Centre of Biomedical Magneetic Resonance, Lucknow, Uttar Pradesh, India; [2]Departments of General Surgery, Chattrapati Shahuji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [3]Departments of Pathology, Chattrapati Shahuji Maharaj Medical University, Lucknow, Uttar Pradesh, India

14:30 3151. Metabolic Characterisation of Retinoblastoma Tumour Tissue

Martin Wilson[1,2], Georgia Kapatai[1], Risto A. Kauppinen[3], Theodoros N. Arvanitis[2,4], Carmel McConville[1], Andrew C. Peet[1,2]
[1]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [2]Birmingham Children's Hospital NHS Foundation Trust, Birmingham, United Kingdom; [3]Department of Radiology, Dartmouth College, Hanover, NH, United States; [4]School of Electronic, Electrical & Computer Enineering, University of Birmingham, Birmingham, United Kingdom

15:00 3152. MR Microimaging of *Ex-Vivo* Prostate Tissue at 16.4T

Gary Cowin[1], Nyoman Dana Kurniawan[1], Paul Sved[2,3], Geoff Watson[4], Roger Bourne[5]
[1]Centre for Advanced Imaging, the University of Queensland, Brisbane, Queensland, Australia; [2]Department of Surgery, Faculty of Medicine, University of Sydney, Sydney, New South Wales, Australia; [3]Department of Urology, Royal Prince Alfred Hospital, Sydney, New South Wales, Australia; [4]Department of Anatomical Pathology, Royal Prince Alfred Hospital, Sydney, New South Wales, Australia; [5]Discipline of Medical Radiation Sciences, Faculty of Health Sciences, University of Sydney, Sydney, New South Wales, Australia

Cancer - Animal Models

Exhibition Hall Monday 14:00-16:00 Computer 18

14:00 3153. Differentiation of Radiation Necrosis from Glioma in Rat Models using Diffusion Tensor MR Imaging

Silun Wang[1], Yifei Chen[1], Bachchu Lal[2,3], Eric Ford[4], Erik Tryggestad[4], Michael Armour[4], Kun Yan[1], John Laterra[2,5], Jinyuan Zhou[1,6]
[1]Radiology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [2]Neurology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [3]Neurology, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Radiation Oncology, Johns Hopkins School of Medicine, Baltimore, MD, United States; [5]Neurology , Kennedy Krieger Institute, Baltimore, MD, United States; [6]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

14:30 3154. Breast Cancer Metastases in the Rat Spinal Cord Induce Focal, But Not Distal, Neurodegeneration Measured with Diffusion Tensor Imaging.

Matthew D. Budde[1], Eric Gold[1], E. Kay Jordan[1], Joseph A. Frank[1]
[1]Radiology & Imaging Sciences, National Institutes of Health, Bethesda, MD, United States

15:00 3155. Characterization of Brain Tumor Infiltration into Adjacent Brain Tissue in Experimental Models with Diffusion Tensor Imaging (DTI)

Silun Wang[1], Jinyuan Zhou[1,2]
[1]Division of MR Research, Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

15:30 3156. MR Spectroscopic Imaging of Lactate in Dedifferentiated Liposarcoma Models

Asif Rizwan[1,2], Xiaohui Ni[1], Rachael O'Connor[3], Samuel Singer[3], Jason Koutcher[1,4], Kristen L. Zakian[1,4]
[1]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Weill Cornell Medical College, New York, NY, United States; [3]Sarcoma Biology Laboratory, Sarcoma Disease Management Program & Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [4]Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 18

13:30 3157. Assessment of Metastatic Potential of ^{67}NR and $^{4}T_1$ Tumors with Selective Multiple-Quantum Coherence Transfer

Asif Rizwan[1], Inna Serganova[2], Xiaohui Ni[1], Sunitha Thakur[1,3], Ronald Blasberg[2,3], Jason Koutcher[1,4]
[1]Medical Physics, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Neurology, Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [3]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, United States; [4]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, United States

14:00 **3158.** ***In Vivo* Lactate T_1 & T_2 Relaxation Measurements in ER-Positive Breast Tumors using SS-SelMQC Editing Sequence**

Sanjay Annarao[1], Ku Thomas[2], Nagavarakishore Pillarsetty, Jason Koutcher[1,2], Sunitha Thakur[1,2]
[1]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, United States

14:30 **3159.** **Suppression of Peritumoral Edema for Improved Demarcation of Brain Tumor Lesion with T_1 Over T_2 (T_1/T_2) Mapping**

Jerry S. Cheung[1], Enfeng Wang[1], Giulia Fulci[2], Phillip Zhe Sun[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH & Harvard Medical School, Charlestown, MA 02129, United States; [2]Molecular Neuro-oncology Laboratories, Center for Molecular Imaging, MGH & Harvard Medical School, Boston, MA 02124, United States

15:00 **3160.** **Changes in High Spectral & Spatial Resolution MR Images of Tumor Tissue Due to Locally Induced Hyperthermia**

Sean Foxley[1], Xiaobing Fan[1], Jonathan River[1], Marta Zamora[1], Erica Markiewicz[1], Shunmugavelu Sokka[2], Gregory S. Karczmar[1]
[1]Department of Radiology, University of Chicago, Chicago, IL, United States; [2]MR-HIFU, Philips Healthcare, Andover, MA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 18

13:30 **3161.** **Hyperpolarized ^{13}C Biomarkers of Response to Prostate Cancer Radiation Therapy**

Vickie Yi Zhang[1], Robert Bok[1], Subramaniam Sukumar[1], Adam Cunha[2], I-Chow Hsu[2], Kristen Scott[1], Jean Pouliot[2], Daniel Vigneron[1], John Kurhanewicz[1]
[1]Dept. of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Dept. of Radiation Oncology, University of California, San Francisco, San Francisco, CA, United States

14:00 **3162.** **Imaging Oncogene Expression using Hyperpolarized Succinic Acid**

Pratip Bhattacharya[1], Niki Zacharias[1], William H. Perman[2], Asraf Imam[1], Alan Epstein[3], Brian D. Ross[1]
[1]Enhanced MR Laboratory, Huntington Medical Research Institutes, Pasadena, CA, United States; [2]Medical Physics, St. Louis University, St. Louis, MO, United States; [3]Pathology, University of Southern California, Los Angeles, CA, United States

14:30 **3163.** **Characterization of Lung Cancer by Amide Proton Transfer (APT) Imaging: *In-Vivo* Study in an Orthotopic Mouse Model**

Masaya Takahashi[1], Osamu Togao[1], Chase W. Kessinger[2], Gang Huang[2], Ivan Dimitrov[1], A. Dean Sherry[1], Jinming Gao[2]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States; [2]Simmons Comprehensive Cancer Center, UT Southwestern Medical Center, Dallas, TX, United States

15:00 **3164.** **Predicting Glioma Response to Radiotherapy with Amide Proton Transfer (APT) MRI**

Jinyuan Zhou[1,2], Silun Wang[1], Betty Tyler[3], Rachel Grossman[3], Erik Tryggestad[4], Eric Ford[4], Michael Armour[4], Kun Yan[1], Bachchu Lal[5], Peter C. M. van Zijl[1,2], John Laterra[5]
[1]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Neurosurgery, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Radiation Oncology, Johns Hopkins University, Baltimore, MD, United States; [5]Department of Neurology, Kennedy Krieger Institute, Baltimore, MD, United States

Exhibition Hall Thursday 13:30-15:30 Computer 18

13:30 **3165.** **Investigation of the BOLD Response to Carbogen Breathing with Tumour Blood Volume in an Intracranial F_{98} Rodent Glioma Model**

Efthymia Papaevangelou[1], Kirstie Suzanne Opstad[1], Franklyn Arron Howe[1]
[1]Clinical Sciences, St. George's University of London, London, Greater London, United Kingdom

14:00 **3166.** **Correlation of Quantitative Tissue Characteristics Derived from DCE-MRI, DW-MRI & Histology in Murine Tumors**

Mary E. Loveless[1,2], Deborah Lawson[3], Michael Collins[3], Corinne Reimer[3], Dennis Huszar[3], Jane Halliday[4], John C. Waterton[4], John C. Gore[2], Thomas E. Yankeelov[2]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Cancer Bioscience, AstraZeneca, Boston, MA, United States; [4]Translational Sciences: Imaging, AstraZeneca, Macclesfield, Cheshire, United Kingdom

14:30 **3167.** **Non-Invasive Visualization of Differential BBB Permeability & *In Vivo* Quantification of Tumor Volume in an Experimental Model of Breast Cancer Metastasis to the Brain, using Gadolinium-Enhanced MRI & 3D BSSFP**

Dean Bowles Percy[1], Emeline J. Ribot[1], Catherine McFadden[1], Yuhua Chen[1], Carmen Simedrea[2], Ann F. Chambers[2], Patricia S. Steeg[3], Paula J. Foster[1]
[1]Robarts Research Institute, London, Ontario, Canada; [2]London Regional Cancer Program, London, Ontario, Canada; [3]National Cancer Institute, National Institutes of Health, Bethesda, MD, United States

15:00 **3168.** **Analysis of Vascular Function by DCE-MRI in a Human Endothelial Cell Derived Angiogenesis Model in Mice Under Anti- & Pro-Angiogenic Treatment**
Claudia Weidensteiner[1], Wilfried Reichardt[2], Oliver Siedentopf[3], Ralph Graeser[3], Holger Weber[3]
[1]MR Development & Application Center, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology/Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [3]ProQinase GmbH, Freiburg, Germany

Reduction of Susceptibility Artifact: Imaging Around Metallic Implants

Exhibition Hall Monday 14:00-16:00 Computer 19

14:00 **3169.** **Distortion Scout in Metal Implants Imaging**
Guobin Li[1], Mathias Nittka[2], Dominik Paul[2], Wei Jun Zhang[1]
[1]Siemens Mindit Magnetic Resonance Ltd., Shenzhen, Guang Dong, China, People's Republic of; [2]Siemens Healthcare Sector, Erlangen

14:30 **3170.** **MR Imaging Near Orthopedic Implants using Slice-Encoding for Metal Artifact Correction & Off-Resonance Suppression**
Chiel Johan den Harder[1], Ulrike A. Blume[1], Clemens Bos[2]
[1]MR CTO, Philips Healthcare, Best, Netherlands; [2]MR Clinical Science, Philips Healthcare, Best, Netherlands

15:00 **3171.** **MSVAT-SPACE for Fast Metal Implants Imaging**
Guobin Li[1], Mathias Nittka[2], Dominik Paul[2], Lars Lauer[2]
[1]Siemens Mindit Magnetic Resonance Ltd., Shenzhen, Guang Dong, China, People's Republic of; [2]Siemens Healthcare Sector, Erlangen

15:30 **3172.** **Combined Parallel Imaging & Compressed Sensing on 3D Multi-Spectral Imaging Near Metal Implants**
Kevin M. Koch[1], Kevin F. King[1]
[1]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 19

13:30 **3173.** **Jacobian-Based Correction of 3D-MSI Images Near Implanted Metal Devices**
Kevin M. Koch[1], Matthew A. Koff[2], Hollis G. Potter[2]
[1]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States; [2]Department of Radiology & Imaging, Hospital for Special Surgery, New York, NY, United States

14:00 **3174.** **POCS-Based Compressive Slice Encoding for Metal Artifact Correction**
Wenmiao Lu[1], Jun Deng[1], Yi Lu[2], Garry Gold[3], Brian Hargreaves[3]
[1]Nanyang Tech. University, Singapore, SG, Singapore; [2]University of Illinois, Urbana Champaign, United States; [3]Stanford University, United States

14:30 **3175.** **B_1 Mapping Near Metallic Implants**
Uchechukwuka Diana Monu[1], Pauline W. Worters[2], Kyunghyun Sung[2], Kevin M. Koch[3], Garry E. Gold[2], Brian A. Hargreaves[2]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States; [3]Applied Science Lab, GE Healthcare, Waukesha, WI, United States

15:00 **3176.** **Magnetic Resonance Imaging of Metal-On-Metal Hip Resurfacing Implants**
Catherine Lee Hayter[1], Matthew F. Koff[1], Kevin F. Koch[2], Parina Shah[1], Edwin P. Su[3], Hollis G. Potter[1,4]
[1]Department of Radiology & Imaging, Hospital for Special Surgery, New York, NY, United States; [2]Applied Science Laboratory, General Electric Healthcare, Waukesha, WI, United States; [3]Center for Hip Pain & Preservation, Hospital for Special Surgery, New York, NY, United States; [4]Weill Cornell Medical College of Cornell University, New York, NY, United States

Kinematic MR in the Knee & Small Joints/Inflammatory

Exhibition Hall Monday 14:00-16:00 Computer 20

14:00 **3177.** **Dynamic Imaging Produces Different 3D Knee Kinematic Information than Static Imaging**
Agnes G. d'Entremont[1,2], Jurek Nordmeyer-Massner[3], Clemens Bos[4], David R. Wilson[2,5], Klaas P. Pruessmann[3]

[1]Mechanical Engineering, University of British Columbia, Vancouver, BC, Canada; [2]Centre for Hip Health & Mobility, Vancouver, BC, Canada; [3]Institute for Biomedical Engineering, ETH & University of Zurich, Zurich, Switzerland; [4]Philips Healthcare, Best, Netherlands; [5]Orthopaedics, University of British Columbia, Vancouver, BC, Canada

14:30 **3178.** **Dynamic Imaging of 3D Knee Kinematics using PC-VIPR**
Robert Bradford[1], Kevin Johnson[2], Oliver Wieben[2], Darryl Thelen[1]
[1]Mechanical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Medical Physics, University of Wisconsin - Madison

15:00 **3179.** **Compression of the Knee Upon Weight Loading in Healthy & Osteoarthritis Subjects as Measured by MRI & X-Ray**
Bradley T. Wyman[1], Sebastian Cotofana[2], Yanwei Zhang[1], Richard B. Souza[3], M-P. Hellio Le Graverand[1], Xiaojuan Li[3], Sharmila Majumdar[3], Thomas M. Link[3], Felix Eckstein[2], Eric Vignon[4]
[1]Pfizer, Groton, CT, United States; [2]Paracelsus Medical University, Salzburg, Austria; [3]University Califorinia, San Francisco, San Francisco, CA, United States; [4]Universite Claude Bernard, Lyon, France

15:30 **3180.** **Fast Dynamic Multislice MRI of the Human Knee using a Motion Device**
Daniel Ludwig Weber[1,2], Sebastian Klum[2], Sai Ramesh Raghuraman[2], Joachim Hermann Schrauth[1,2], Peter Michael Jakob[1,2], Daniel Haddad[1,2]
[1]MRB Research Center for Magnetic Resonance Bavaria eV, Würzburg, Bavaria, Germany; [2]Department of Experimental Physics 5 (Biophysics), University of Würzburg, Würzburg, Bavaria, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 20

13:30 **3181.** **4D Dynamic MR Imaging of the Wrist at 1.5 & 3T: First Results from a Feasibility Study**
Catherine N. Petchprapa[1], Thomas Mulholland[2], Vito Ruggiero, Philip Hodnett
[1]RADIOLOGY, NYU HOSPITAL FOR JOINT DISEASES, NEW YORK, NY, United States; [2]NYU LANGONE MEDICAL CENTER, United States

14:00 **3182.** **Quantitative Assessment of Mechanical Ankle Laxity using MR Imaging**
Christian Jürgen Seebauer[1], Jens Rump[2], Hermann Josef Bail[3], Felix Güttler[2], Bernd Hamm[2], Ulf Teichgräber[2]
[1]Center for Musculoskeletal Surgery, Charité-Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Radiology, Charité-Universitätsmedizin Berlin, Berlin, Germany; [3]Department of Trauma & Orthopedic Surgery, Clinic Nuremberg, Nuremberg, Germany

14:30 **3183.** **Stress MRI of Ligamentous Stabilizers in Acute & Chronic Acromioclavicular Joint Instabilities**
Marco Vicari[1,2], Kaywan Izadpanah[3], Norbert P. Suedkamp[3], Matthias Weigel[4], Matthias Honal[4], Elisabeth Weitzel[3], Elmar Kotter[5], Mathias Langer[5], Jan T. Winterer[5]
[1]MRI R&D, Esaote S.p.A. , Genova, Italy; [2]Dept. of Radiology, Medical Physics , University Medical Center Freiburg, Freiburg, Germany; [3]Dept. of Orthopeadic & Trauma Surgery, University Medical Center Freiburg, Freiburg, Germany; [4]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [5]Dept. of Radiology, Clinical Radiology, University Medical Center Freiburg, Freiburg, Germany

15:00 **3184.** **Assessment of Length Variations of the Coracoclavicular Ligaments During Arm Movement from MRI Data**
Matthias Honal[1], Marco Vicari[2], Elisabeth Weitzel[3], Kaywan Izadpanah[3]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Esaote S. p. A., Genova, Italy; [3]Department of Orthopeadic & Trauma Surgery, University Medical Center Freiburg, Freiburg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 20

13:30 **3185.** **MRI of the Plantar Plate in the Painful Forefoot of Patients with Rheumatoid Arthritis**
Heidi J. Siddle[1], Richard J. Hodgson[2], Anthony C. Redmond[1,2], Andrew J. Grainger[2,3], Richard J. Wakefield[1,2], David A. Pickles[4], Philip S. Helliwell[1]
[1]Section of Musculoskeletal Disease, University of Leeds, Leeds, West Yorkshire, United Kingdom; [2]Leeds Musculoskeletal Biomedical Research Unit, Leeds, United Kingdom; [3]Department of Radiology, Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom; [4]Department of Rheumatology, Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom

14:00 **3186.** **Dynamic Contrast Enhanced MRI of the Achilles Enthesis in Spondyloarthritis**
Richard Hodgson[1], Peter Wright[2], Andrew J. Grainger[2], Phillip J. O'Connor[2], Phillip Helliwell, Dennis McGonagle, Paul Emery, Matthew D. Robson[3]
[1]LMBRU, University of Leeds, Leeds, Yorkshire, United Kingdom; [2]Leeds Teaching Hospitals NHS Trust; [3]University of Oxford

14:30 **3187.** **Comparison of MRI of the Hand & Feet for Detecting Early Arthritis**
Andrew J. Grainger[1], Richard J. Hodgson[2], Jackie Nam[2], Edith Villeneuve[2], Paul Emery[2]
[1]LMBRU, Leeds Teaching Hospitals NHS Trust, Leeds, Yorkshire, United Kingdom; [2]University of Leeds

15:00 3188. Magnetisation Transfer Contrast Imaging of Synovitis in Arthritis.
Carole Burnett[1], Andrew Grainger[1], Anthony Redmond[1,2], Richard Hodgson[1,2]
[1]LMBRU, Chapel Allerton Hospital, Leeds, United Kingdom; [2]Leeds University, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 20

13:30 3189. The Value of 3D ETHRIVE in the Diagnosis of Early Rheumatoid Arthritis of the Hand at 3T
Kazuyuki Ohgi[1], Masatoshi Hotta[1], Satoshi Doishita[1], Akinori Harada[1], Akiyoshi Yamashita[1], Hiroyuki Yokote[1], Shunji Tsukuda[1], Tetsuhisa Yamada[1]
[1]Department of Radiology, Japanese Red-Cross Medical Center, Shibuya-ku, Tokyo, Japan

14:00 3190. *In Vivo* ^{19}F MRI for Sensitive Assessment of Arthritis: Antiinflammatory Action of A2A Receptor Activation
Ulrich Flögel[1], Lisa Galbarz[1], Zhaoping Ding[1], Ali El-Tayeb[2], Christoph Jacoby[1], Peter van Lent[3], Christa Müller[2], Jürgen Schrader[1]
[1]Institute for Cardiovascular Physiology, Heinrich Heine University, Düsseldorf, NRW, Germany; [2]PharmaCenter Bonn; [3]Radboud University Nijmegen

14:30 3191. Iterative Decomposition of Water & Fat with Echo Asymmetry & Least-Squares Estimation (IDEAL) of the Wrist & Finger at 3TMRI: Comparison with Chemical Shift Selective Fat Suppression Images
Takatoshi Aoki[1], Yoshiko Yamashita[1], Hiroyuki Takahashi[1], Yoshiko Hayashida[1], Hodaka Oki[1], Shigeru Hibino[2], Atsushi Nozaki[2], Kazuyoshi Saito[3], Yoshiya Tanaka[3], Yukunori Korogi[1]
[1]Department of Radiology, University of Occupational & Environmental Health School of Medicine, Kitakyushu, Fukuoka, Japan; [2]GE Healthcare Japan; [3]First department of Internal Medicine, University of Occupational and Environmental Health School of, Kitakyushu, Fukuoka, Japan

15:00 3192. Progression of an Antigen-Induced Arthritis Model in Rat Assessed by MRI
Lindsey Alexandra Crowe[1], Frank Tobalem[1], David Tchernin[2], Benedicte M-A. Delattre[1], Kerstin Grosdemange[1], Marije Koenders[3], Wim B. van Den Berg[3], Jean-Paul Vallée[1]
[1]Division of Radiology, Geneva University Hospitals, University of Geneva, Faculty of Medicine, Foundation for Medical Researchers, Geneva, Switzerland; [2]Division of Radiology, Geneva University Hospitals, Geneva, Switzerland; [3]Department of Rheumatology, Rheumatology Research & Advanced Therapeutics, Radboud University Nijmegen Medical Center, Netherlands

MSK: 7T & Beyond MRI

Exhibition Hall Monday 14:00-16:00 Computer 21

14:00 3193. High Resolution Imaging of the Sacroiliac Joints in Ankylosing Spondylitis Patients at 7 Tesla
Maartje E. Vossen[1], Wouter M. Teeuwisse[1], Monique Reijnierse[1], Desiree M. van Der Heijde[2], Nadine B. Smith[1], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Rheumatology, Leiden University Medical Center

14:30 3194. MR Imaging of the Lower Extremities at 7 Tesla: Initial Experience with a 15-Channel Coil
Michael Bock[1], Florian Meise[1], Titus Lanz[2], Reiner Umathum[1], Lydia Schuster, Lars Gerigk, Armin M. Nagel[1], Ann-Kathrin Homagk[1], Wolfhard Semmler[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]RAPID Biomedical GmbH, Rimpar, Germany

15:00 3195. The Comparison of the Performance of MRI Clinical Sequences for Ankle Imaging at 3T vs. 7T
Vladimir Juras[1,2], Goetz Welsch[1], Ladislav Valkovic[2], Pavol Szomolanyi[1,2], Iris-Melanie Nöbauer-Huhmann[1], Ivan Frollo[2], Siegfried Trattnig[1]
[1]Department of Radiology, Medical University of Vienna, Vienna, Austria, Austria; [2]Department of Imaging Methods, Institute of Measurement Science, Bratislava, Slovakia

15:30 3196. Magnetic Resonance Imaging of the Knee at 3 & 7 Tesla – Comparison using Dedicated Multi-Channels Coils & Optimized 2D & 3D Protocols
Goetz Hannes Welsch[1,2], Vladimir Juras[1], Pavol Szomolanyi[1], Tallal Charles Mamisch[3], Peter Baer[4], Claudia Kronnerwetter[1], Friedrich Frank Hennig[2], Hiroyuki Fujita[5], Siegfried Trattnig[1]
[1]Medical University of Vienna, Vienna, Austria; [2]Department of Trauma Surgery, University of Erlangen-Nuremberg, Erlangen, Bavaria, Germany; [3]University of Berne; [4]Siemens Healthcare; [5]Quality Electrodynamics

Exhibition Hall Tuesday 13:30-15:30 Computer 21

13:30 3197. High Resolution MRI of the Wrist at 7 Tesla Detects Subregional Variation in Trabecular Bone Micro-Architecture in Healthy Subjects

Gregory Chang[1], Ligong Wang[1], Guoyuan Liang[2], Graham C. Wiggins[1], Punam K. Saha[2], Ravinder R. Regatte[1]
[1]NYU Langone Medical Center, New York, NY, United States; [2]University of Iowa, Iowa City, IA, United States

14:00 3198. Comparison of a 28-Channel Phased-Array Coil & a Circularly Polarized Coil for Morphologic Imaging & T_2 Mapping of Knee Cartilage at 7 Tesla
Gregory Chang[1], Ding Xia[1], Graham C. Wiggins[1], Guillaume Madelin[1], Christian Glaser[1], Matthew Finnerty[2], Hiroyuki Fujita[2], Ravinder R. Regatte[1]
[1]NYU Langone Medical Center, New York, NY, United States; [2]Quality Electrodynamics, Mayfield Village, OH, United States

14:30 3199. Skeletal Muscle Diffusion Tensor Imaging of the Human Forarm at 7T
Martijn Froeling[1,2], Johannes M. Hoogduin[3,4], Dennis W. J. Klomp[3], Klaas Nicolay[1], Gustav J. Strijkers[1], Aart J. Nederveen[2]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Imaging Division, University Medical Center Utrecht, Utrecht, Netherlands; [4]Brain Division, University Medical Center Utrecht, Utrecht, Netherlands

15:00 3200. Sodium (^{23}Na) MR Imaging at 7T for the Evaluation of Repair Tissue Quality in Patients After Two Cartilage Repair Procedures
Stefan Zbyn[1,2], David Stelzeneder[1], Goetz Hannes Welsch[1,3], Lukas L. Negrin[4], Vladimir Juras[1,5], Pavol Szomolanyi[1,5], Ronald Dorotka[2], Siegfried Trattnig[1]
[1]Department of Radiology, Medical University Vienna, Vienna, Austria; [2]Department of Orthopaedic Surgery, Medical University Vienna, Vienna, Austria; [3]Department of Trauma Surgery, University Hospital of Erlangen, Erlangen, Germany; [4]Department of Trauma Surgery, Medical University Vienna, Vienna, Austria; [5]Department of Imaging Methods, Institute of Measurement Science - SAS, Bratislava, Slovakia

Exhibition Hall Wednesday 13:30-15:30 Computer 21

13:30 3201. Detection of Fast Decaying Lactate in Human Skeletal Muscle After Exercise by 7T ^{1}H MRS
Jimin Ren[1], Ivan Dimitrov[1,2], Changho Choi[1], A. Dean Sherry[1,3], Craig R. Malloy[1,4]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Philips Medical Systems, Cleveland, OH; [3]Department of Chemistry, University of Texas at Dallas, Richardson, TX, United States; [4]VA North Texas Health Care System , Dallas, TX, United States

14:00 3202. Population-Averaged 7T ^{1}H MRS Determination of Metabolites in Human Skeletal Muscle at Rest
Jimin Ren[1], Ivan Dimitrov[1,2], Craig R. Malloy[1,3], A. Dean Sherry[1,4]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Philips Medical System, Cleveland, OH, United States; [3]VA North Texas Health Care System, Dallas, TX, United States; [4]Department of Texas at Dallas, University of Texas at Dallas, Richardson, TX, United States

14:30 3203. Phosphocreatine & Acetylcarnitine in Skeletal Muscle During Exercise at 7T by Interleaved ^{31}P & ^{1}H-MRS
Katja Heinicke[1,2], Jackson Green[1,2], Ivan Dimitrov[3,4], Sergey Cheshkov[3], Jimin Ren[3], Craig R. Malloy[3], Ronald G. Haller[1,2]
[1]Neuromuscular Center, Institute for Exercise & Environmental Medicine, Texas Health Presbyterian Hospital, Dallas, TX, United States; [2]Department of Neurology, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Philips Medical Systems, Cleveland, OH, United States

15:00 3204. Comparison of ^{31}P-MRS at 3T & 7T for Localized & Non-Localized Acquisition
Wolfgang Bogner[1], Marek Chmelik[1], Siegfried Trattnig[1], Stephan Gruber[1]
[1]Department of Radiology, Medical University of Vienna, Vienna, Austria

Exhibition Hall Thursday 13:30-15:30 Computer 21

13:30 3205. *In Vivo* ^{31}P Diffusion Tensor Spectroscopy of Human Calf Muscle
Hermien E. Kan[1], Sebastian Aussenhofer[1], Andrew Webb[1], Aranee Techawiboonwong[2], Itamar Ronen[1]
[1]Radiology, Leiden University Medical Center, Leiden, Zuid-Holland, Netherlands; [2]Department of Electrical Engineering, Mahidol University, Nakornpathom, Thailand

14:00 3206. T_1-Rho Dispersion in Human OA Cartilage Specimens using HRMAS Spectroscopy at 11.7T
Keerthi Shet[1], Hikari Yoshihara, Joe Schooler, John Kurhanewicz, Michael Ries, Xiaojuan Li
[1]Radiology, University of California, San Francisco, San Francisco, CA, United States

14:30 3207. Multiparametric Assessment of Healthy & OA Articular Cartilage Under Loading at 17.6 T
Jose G. Raya[1], Gerd Melkus[2], Silvia Adam-Neumair[3], Kevin Dunham, Olaf Dietrich[3], Maximilian F. Reiser[3], Reinhard Putz[3], Peter M. Jakob[4], Christian Glaser

[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]University of California, San Francisco; [3]University of Munich; [4]University of Wuerzburg

15:00 **3208.** **A Newly Strictly Non-Invasive Experimental Device Allowing Repeated MR Investigations of Exercising Hindlimb Mouse Muscles at Ultra-High Field (11.75T)**
Julien Gondin[1], Christophe Vilmen[1], Patrick J. Cozzone[1], Guillaume Duhamel[1], David Bendahan[1]
[1]Centre de Résonance Magnétique Biologique et Médicale (CRMBM) - UMR CNRS 6612, Faculté de Médecine - Université de la Méditerranée, Marseille, France

Ultrashort TE: MSK Applications

Exhibition Hall Monday 14:00-16:00 Computer 22

14:00 **3209.** **Free & Bound Water Quantification of Cortical Bone**
Jiang Du[1], Won Bae[1], Hermida Juan[2], Eric Diaz[1], Christine Chung[1], Darryl DLima[2], Graeme Bydder[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Scripps Reseach Institution

14:30 **3210.** **Preliminary Results on Bone Perfusion Measurement using Dynamic Contrast Enhanced Ultrashort TE Imaging**
Olivier M. Girard[1], Jiang Du[1], Robert F. Mattrey[1], Graeme M. Bydder[1]
[1]Department of Radiology, University of California, San Diego, CA, United States

15:00 **3211.** **Ultrashort Echo Time MRI for Quantification of Tendon Disease in Spondyloarthritis.**
Richard J. Hodgson[1], Nikesh Menon[2], Andrew J. Grainger[2], Philip O'Connor[2], Dennis McGonagle, Philip Helliwell, Paul Emery, Matthew D. Robson[3]
[1]LMBRU, University of Leeds, Leeds, Yorkshire, United Kingdom; [2]Leeds Teaching Hospitals NHS Trust; [3]University of Oxford

15:30 **3212.** **^{1}H Relaxation Properties of Achilles Tendons Measured by 3D-UTE at 3T & 7T: A Feasibility Study**
Vladimir Juras[1,2], Stefan Zbyn[1], Vladimir Jellus[3], Pavol Szomolanyi[1,2], Ivan Frollo[2], Siegfried Trattnig[1]
[1]Department of Radiology, Medical University of Vienna, Vienna, Austria, Austria; [2]Department of Imaging Methods, Institute of Measurement Science, Bratislava, Slovakia; [3]Siemens AG, Erlangen, Germany

MRI of Articular Cartilage - Osteoarthritis

Exhibition Hall Tuesday 13:30-15:30 Computer 23

13:30 **3213.** **Assessment of $T_1\rho$ & T_2 Mapping as Biomarkers of Denaturalization in Articular Cartilage with Osteoarthritis: Comparison with Pathological Results After Total Knee Replacement**
Yukihisa Takayama[1], Masamitsu Hatakenaka[1], Takashi Yoshiura[1], Hidetoshi Tsushima[2], Ken Okazaki[2], Kei Nishikawa[3], Makoto Obara[4], Yukihide Iwamoto[2], Hiroshi Honda[1]
[1]Department of Clinical Radiology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [2]Department of Orthopaedic Surgery, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [3]Radiology Center, Kyushu University Hospital, Fukuoka, Japan; [4]Philips Electronics Japan, Tokyo, Japan

14:00 **3214.** **T_2, $T_1\rho$ & Sodium MRI of Articular Cartilage in Patients with Osteoarthritis Treated with Arthritis Relief Plus Cream**
Hillary Jayne Braun[1], Melissa A. Vogelsong[1,2], Ernesto Staroswiecki[1,3], Brian A. Hargreaves[1], Neal Bangerter[4], Eric Han[5], Jill Fattor[6], Anne L. Friedlander[7], Omer Shah[8], Jacquie M. Beaubien[9], Garry Evan Gold[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]UCSF School of Medicine; [3]Electrical Engineering, Stanford University; [4]Electrical Engineering, Brigham Young University; [5]GE Healthcare Global Applied Sciences Laboratory, Menlo Park, CA; [6]Stanford Center on Longevity, Stanford University, Stanford, CA; [7]VA Palo Alto Healthcare Center, Palo Alto, CA; [8]Georgetown University School of Medicine; [9]Psychology, Stanford University, Stanford, CA

14:30 **3215.** **The Relationship between Knee Cartilage MR T_2 & Morphology in Subjects from the Incidence & Control Cohorts of the Osteoarthritis Initiative**
Gabby B. Joseph[1], Thomas Baum[1], Julio Carballido-Gamio[1], Lorenzo Nardo[1], Warapat Virayavanich[1], Hamza Alizai[1], Michael C. Nevitt[2], John A. Lynch[2], Charles E. McCulloch[2], Sharmila Majumdar[1], Thomas M. Link[1]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Department of Epidemiology & Biostatistics, University of California, San Francisco, San Francisco, CA, United States

15:00 **3216.** **T_2 Relaxation Time Reveals Early Cartilage Changes After One-Year & Two-Year Follow-Up in Subjects at Risk for Osteoarthritis: Data from Osteoarthritis Initiative**
Annamari Herronen[1], Eveliina Lammentausta[2], Risto O. Ojala[3], Miika T. Nieminen[1,2]

[1]Department of Medical Technology, University of Oulu, Oulu, Finland; [2]Department of Diagnostic Radiology, Oulu University Hospital; [3]Deaconess Institute of Oulu

Exhibition Hall Wednesday 13:30-15:30 Computer 23

13:30 3217. ***In Vivo* Sodium & Proton T_1rho MR Imaging of Human Knee Cartilage at 3T**
Chan Hong Moon[1], Jung-Hwan Kim[1], Tiejun Zhao[2], Xiang He[1], Bum-Woo Park[1], Kyongtae Ty Bae[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

14:00 3218. **Does the Scanner Make a Difference? Interscanner Variability of Tibial Cartilage T_2 Relaxation Time – a Comparison of Three 1.5T & One 3T Scanner of One Manufacturer**
Annie Horng[1], Sabine Weckbach, Mike Notohamiprodjo, Malte Münkel, Jürgen Weber, Maximilian F. Reiser, Christian Glaser[2,3]
[1]Department of Clinical Radiology, University Hospitals LMU Munich - Campus Grosshadern, Munich, Bavaria, Germany; [2]Center of Biomedical Imaging, NYULMC, New York, United States; [3]Department of Clinical Radiology, University Hospitals LMU Munich - Campus Grosshadern, Munich, Germany

14:30 3219. **Experimental Investigation into the Relationship between T_2* & T_2 in Cartilages at 3T**
Yongxian Qian[1], Ashley A. Williams[2], Constance R. Chu[2], Fernando E. Boada[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA, United States

15:00 3220. **Quantitative Cartilage Degeneration Associated with Spontaneous Osteoarthritis in a Guinea Pig Model**
Matthew Fenty[1], Victor Babu Kassey[1], George Dodge[2], Ari Borthakur[1], Ravinder Reddy[1]
[1]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]McKay Orthopaedics Labs, Department of Orthopaedic Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA, United States

Cartilage - Contrast Enhanced Imaging

Exhibition Hall Monday 14:00-16:00 Computer 24

14:00 3221. **A New Approach to Analyze DGEMRIC Measurements in Femoroacetabular Impingement**
Riccardo Lattanzi[1,2], Anna Krigel[3], Catherine Petchprapa[2], Artem V. Mikheev[2], Kevin Dunham[2], Soterios Gyftopoulos[2], Tallas Charles Mamisch[4], Young Jo Kim[5], Henry Rusinek[2], Michael Recht[2], Christian Glaser[1,2]
[1]Center for Biomedical Imaging, New York University Langone Medical Center, New York, NY, United States; [2]Radiology, New York University Langone Medical Center, New York, NY, United States; [3]New York University School of Medicine, New York, NY, United States; [4]Clinical Research, University of Bern, Bern, Switzerland; [5]Orthopedic Surgery, Children's Hospital, Boston, MA, United States

14:30 3222. **Contrast Agent Diffusion in DGEMRIC: Exploring Donnan Equlibrium *In Vitro* & *In Vivo***
Eveliina Lammentausta[1,2], Eliot H. Frank[3], Zana Hawezi[2], Alan J. Grodzinsky[3], Leif E. Dahlberg[2]
[1]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [2]Joint & Soft Tissue Unit, Department of Clinical Sciences, Lund University, Malmö, Sweden; [3]MIT, Cambridge, MA, United States

15:00 3223. **Depth-Wise Relaxivity of Gd-DTPA^{2-} & Gd-DTPA-BMA in Human Femoral Head Cartilage**
Eveliina Lammentausta[1,2], Samo Lasic[3], Daniel Topgaard[3], Olle Söderman[3], Leif E. Dahlberg[2]
[1]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland; [2]Joint & Soft Tissue Unit, Department of Clinical Sciences, Lund University, Malmö, Sweden; [3]Department of Physical Chemistry, Lund University, Lund, Sweden

15:30 3224. **Optimization of a 3D Phase-Sensitive IR Protocol for DGEMRIC Technique.**
Michael Durkan[1], Jerzy Szumowski[2], Dawson Brown[1], Dennis Crawford[1], Erwin Schwarz[2], Katrina Heiles[3]
[1]Orthopaedics & Rehabilitation, Oregon Health & Science University, Portland, OR, United States; [2]Radiology, Oregon Health & Science University, Portland, OR, United States; [3]Hewlett Packard, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 24

13:30 3225. **Early & Delayed Contrast Enhancement MRI of the Knee**
Wei Li[1], Ewa Gliwa[1], Pottumarthi V. Prasad[1]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States

14:00 3226. **Signal Polarity Restoration in IR Sequence for T_1-Mapping in the DGEMRIC Technique.**
Jerzy Szumowski[1], Michael Durkan, Katrina Heiles[2], Dawson Brown, Erwin Schwarz, Dennis Crawford
[1]Radiology, Oregon Health & Science University, Portland, OR, United States; [2]Hewlett-Packard

14:30 3227. The Effects of B_1 Inhomogeneity Correction for 3D-Variable Flip Angle T_1 Measurements in Hip-DGEMRIC at 3T & 1.5T
Carl Siversson[1], Jenny Chan[2], Carl Johan Tiderius[3], Tallal Charles Mamisch[4], Jonas Svensson[1], Young Jo Kim[2]
[1]Department of Radiation Physics, Lund University, Malmö, Sweden; [2]Department of Orthopaedics, Children's Hospital Boston, Boston, MA, United States; [3]Department of Orthopaedics, Lund University, Malmö, Sweden; [4]Department of Orthopaedics, University of Bern, Bern, Switzerland

15:00 3228. Histological Correlation with MRI Findings to Monitor Gene Therapy in an "*In Vivo*" Equine Model
Maria Isabel Menendez[1,2], Daniel J. Clark[1], Michelle Carlton[3], David C. Flanigan[4], Guang Jia[1], Steffen Sammet, Steven Weisbrode[5], Alicia L. Bertone[6], Michael V. Knopp
[1]Radiology, OSU Imaging Core Lab Wright Center of Innovation in Biomedical Imaging, the Ohio State University, Columbus, OH, United States; [2]Clinical Veterinary Sciences, College of Veterinary Medicine, Columbus, OH, United States; [3]Radiology, Wright Center of Innovation in Biomedical Imaging, the Ohio State University; [4]Orthopedics, the Ohio State University Medical Center, Columbus, OH, United States; [5]Veterinary Biosciences, College of Veterinary Medicine, the Ohio State University, Columbus, OH; [6]Veterinary Clinical Sciences, College of Veterinary Medicine, the Ohio State University, Columbus, OH

MRI of Articular Cartilage - New Methods

Exhibition Hall Monday 14:00-16:00 Computer 25

14:00 3229. $T_{1\rho}$ MRI of the Glenohumeral Joint Cartilage
Scott Puckhaber[1], Matthew Fenty[2], Nancy Major[3], Ravinder Reddy[2]
[1]Duke University School of Medicine, Durham, NC, United States; [2]CMROI, Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Musculoskeletal Imaging, Department of Radiology, Hospital of the University of Pennsylvania, Philadelphia, PA, United States

14:30 3230. Feasibility of High Resolution T_2 & T_2* Mapping of Metacarpophalangeal Joints in Children at 3T
Chen Lin[1], Scott A. Persohn[1], Boaz Karmazyn[1]
[1]Department of Radiology & Imaging Science, Indiana University School of Medicine, Indianapolis, IN, United States

15:00 3231. Quantitative Magnetization Transfer of Entire Human Patellofemoral Joint in 30 Minutes
Nade Sritanyaratana[1], Alexey Samsonov[2], Samuel A. Hurley[3], Kevin M. Johnson[2], Pouria Mossahebi[1], Walter F. Block[1,3], Richard Kijowski[2]
[1]Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, United States; [2]Radiology, University of Wisconsin - Madison, Madison, WI, United States; [3]Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

15:30 3232. Evaluation of the Articular Cartilage of the Wrist Joint using Two-Dimensional & Three-Dimensional Sequences at 1.5T & 3T
Albert Paul Meier[1], Humberto Rosas[1], Jonathan Tueting[2], Richard Kijowski[1]
[1]Department of Radiology, University of Wisconsin, Madison, WI, United States; [2]Department of Orthopedics, University of Wisconsin, Madison, WI

Bone: Assessment of Traveculae & Structural Analysis

Exhibition Hall Tuesday 13:30-15:30 Computer 26

13:30 3233. The Effects of Organic Nitrates on Lumbar Spine Bone Mineral Density & Marrow Blood Perfusion in Ovariectomized Female Rats.
Yi-Xiang Wang[1], Min Deng[1], James F. Griffith[1]
[1]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong, Shatin, NT, Hong Kong

14:00 3234. Feasibility of Assessing Trabecular Structure using a Standard Clinical MRI Scanner
Christie McComb[1], Christopher Leddy[2], John Foster[1], Gillian Anderson[2], S. Faisal Ahmed[2]
[1]Clinical Physics, Royal Hospital for Sick Children, Glasgow, United Kingdom; [2]Developmental Endocrinology Research Group, Royal Hospital for Sick Children, Glasgow, United Kingdom

14:30 3235. Quantification using Textural Analysis on MR Bone Data
Victor Rakesh Lazar[1], Gary P. Liney[2], David J. Manton[1], Peter Gibbs[1], Celia Gregson[3], Sue Steel[4], Joern Rittweger[5], Jonathan Tobias[3], Lindsay W. Turnbull[1]
[1]Centre for Magnetic Resonance Investigations, University of Hull & HYMS, Hull, Humberside, United Kingdom; [2]Radiation Physics, University of Hull, Hull, United Kingdom; [3]Academic Rheumatology, University of Bristol, Bristol, United Kingdom; [4]Centre for Metabolic Bone Disease, Hull Royal Infirmary, Hull, United Kingdom; [5]Institute for Biomedical Research into Human Movement & Health, Manchester Metropolitan University, Manchester, United Kingdom

15:00 **3236.** **Analyses of Restricted Diffusion of Water Molecules using Trabecular Bone Phantom**
Risa Yorimitsu[1], Tosiaki Miyati[1], Takashi Minami[1], Harumasa Kasai[2], Nobuyuki Arai[2], Hirohito Kan[1], Akihiro Kitanaka[1], Tatsuhiko Matsushita[1], Masaki Hara[2], Yuta Shibamoto[2]
[1]Division of Health Sciences, Graduate School of Medical Science, Kanazawa University, Kanazawa, Ishikawa, Japan; [2]Department of Radiology, Nagoya City University Hospital

Quantitative MRI: Link to Material Properties

Exhibition Hall Wednesday 13:30-15:30 Computer 27

13:30 **3237.** **Quantitative MRI as an Indirect Evaluation Tool of the Mechanical Properties of Muscles**
Delphine Périé[1,2], Renaud Grenier[1], Guillaume Gilbert[3], Gilles Beaudoin[4]
[1]Mechanical Engineering, Ecole Polytechnique de Montréal, Montréal, Québec, Canada; [2]Research Center, CHU Sainte-Justine, Montréal, Québec, Canada; [3]Philips Healthcare, Montréal, Québec, Canada; [4]Physics & Biomedical Engineering, CHUM Notre Dame, Montréal, Québec, Canada

14:00 **3238.** **Association of MR Relaxation Times & Functional Behavior of Osteoarthritic Cartilage using Loaded Knee MRI**
Karupppasamy Subburaj[1], Richard B. Souza[1,2], Christoph Stehling[3], Brad T. Wyman[4], Marie-Pierre Hellio Le Graverand-Gastineau[4], Thomas M. Link[1], Xiaojuan Li[1], Sharmila Majumdar[1]
[1]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Department of Physical Therapy & Rehabilitation Science, University of California San Francisco, San Francisco, CA, United States; [3]Department of Clinical Radiology, University of Muenster, Münster, Germany; [4]Pfizer, Inc., Groton, CT, United States

14:30 **3239.** **Relationship between Relaxation Component T_2 Values & Weight Fractions & Mechanical Moduli in Native Cartilage**
Onyi Irrechukwu[1], Sarah von-Thaer[1], Eliot Frank[2], David Reiter[1], Alan Grodzinsky[2], Richard Spencer[1]
[1]National Institute on Aging, National Institutes of Health, Baltimore, MD, United States; [2]Massachusetts Institute of Technology, Cambridge, MA, United States

15:00 **3240.** **Estimating the Short-Time Elastic Modulus of Cartilage using $T1_\rho$ & T2**
Kathryn E. Keenan[1,2], Thor Besier[1], R. Lane Smith[1,2], Gary S. Beaupre[1,2], Garry E. Gold[1]
[1]Stanford University, Stanford, CA, United States; [2]Bone & Joint RR&D Center, VAHCS, Palo Alto, CA, United States

Intervertebral Disk: Quantitative Analysis

Exhibition Hall Thursday 13:30-15:30 Computer 28

13:30 **3241.** **Assessment of Mechanical Properties of Isolated Intervertebral Discs using Quantitative Magnetic Resonance Imaging**
Delphine Périé[1,2], Maximilien Recuerda[1,3], Guillaume Gilbert[4], Gilles Beaudoin[5]
[1]Mechanical Engineering, Ecole Polytechnique de Montréal, Montréal, Québec, Canada; [2]Research Center, CHU Sainte-Justine, Montréal, Québec, Canada; [3]Reserach Center, CHU Sainte-Justine, Montréal, Québec, Canada; [4]Philips Healthcare, Montréal, Québec, Canada; [5]Physics & Biomedical Engineering, CHUM Notre Dame, Montréal, Québec, Canada

14:00 **3242.** **Correlation between ADC & $T_{1\rho}$-Relaxation Time for *In-Vivo* Assessment of Intervertebral Disc Degeneration**
Hon J. Yu[1], Shadfar Bahri[1], Lutfi Tugan Muftuler[1], Orhan Nalcioglu[1], Vance Gardner[2]
[1]Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Orthopaedic Education & Research Institute of Southern California, Orange, CA, United States

14:30 **3243.** **Sensitivity of Quantitative MRI to the Compressive State of the Isolated Intervertebral Discs**
Delphine Périé[1,2], Yann-Guirec Manach[1], Guillaume Gilbert[3], Gilles Beaudoin[4]
[1]Mechanical Engineering, Ecole Polytechnique de Montréal, Montréal, Québec, Canada; [2]Research Center, CHU Sainte-Justine, Montréal, Québec, Canada; [3]Philips Healthcare, Montréal, Québec, Canada; [4]Physics & Biomedical Engineering, CHUM Notre Dame, Montréal, Québec, Canada

15:00 **3244.** ***In Vivo* Sodium & Proton T_{1rho} MR Imaging of Human Spine Disc at 3T**
Chan Hong Moon[1], Jung-Hwan Kim[1], Xiang He[1], Tiejun Zhao[2], Kyongtae Ty Bae[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

MSK - New Sequences, Interesting Applications

Exhibition Hall Monday 14:00-16:00 Computer 29

14:00 3245. T_2-Weighted-MRI & Dielectric Spectroscopy to Investigate Collagen Structure Behaviour During Cartilage Dehydration

Cesare E. M. Gruber[1,2], Cesare Cametti[1,3], Bruno Maraviglia[1,4], Silvia Capuani[1,2]
[1]Physics, "Sapienza" University of Rome, Rome, Italy; [2]CNR-IPCF UOS, Rome, Italy; [3]CNR-CRS-SOFT, Rome, Italy; [4]Santa Lucia Foundation, Neuroimaging Laboratory, Rome, Italy

14:30 3246. Clinical Feasibility of a New Partial Spoiling T_2 Mapping Approach After Cartilage Repair of the Knee

Goetz Hannes Welsch[1,2], Oliver Bieri[3], Klaus Scheffler[3], Tallal Charles Mamisch[4], Kolja Gelse[2], Alina Messner[1], Stefan Marlovits[1], Siegfried Trattnig[1]
[1]Medical University of Vienna, Vienna, Austria; [2]Department of Trauma Surgery, University of Erlangen-Nuremberg, Erlangen, Bavaria, Germany; [3]University of Basel; [4]University of Berne

15:00 3247. A Model-Based Approach for Fast T_2 Mapping of Articular Cartilage

Chuan Huang[1], Mihra S. Taljanovic[2], Maria I. Altbach[2]
[1]Mathematics, University of Arizona, Tucson, AZ, United States; [2]Radiology, University of Arizona

15:30 3248. Improved 3D-Fse Isotropic Imaging of the Knee using Enhanced Flip Angle Modulation & Crusher Gradient Optimization

Michael Muelly[1], Willis Huang[2], Weitian Chen[3], Donglai Huo[4], Xiaoli Zhao[4], Garry Gold[2]
[1]Pennsylvania State University, Hershey, PA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [4]PSD & Applications, GE Healthcare, Waukesha, WI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 29

13:30 3249. Joint Anatomical & Biochemical Imaging using 3D FSE

Weitian Chen[1], Tao Zhang[2], Eric T. Han[1], Garry E. Gold[3]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Electrical Engineering, Stanford University, Palo Alto, CA, United States; [3]Radiology, Stanford University, Palo Alto, CA, United States

14:00 3250. Impact of Compressed Sensing on Volumetric Knee MRI

Shreyas S. Vasanawala[1], Peng Lai[2], Marcus T. Alley[1], Garry E. Gold[1], John M. Pauly[3], Michael Lustig[4]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]ASL West, GE Healthcare, Menlo Park, CA, United States; [3]Electrical Engineering, Stanford University, Stanford, CA, United States; [4]Electrical Engineering & CS, UC Berkeley, Berkeley, CA, United States

14:30 3251. Simultaneous MRI Acquisition of Both Knee Joints with Multitransmit Technology at 3T

Wenbo Wei[1], Guang Jia[1], David C. Flanigan[2], Christopher C. Kaeding[2], Steffen Sammet[1], Peter Arjan Wassenaar[1], Michael V. Knopp[1]
[1]Wright Center of Innovation in Biomedical Imaging & Department of Radiology, the Ohio State University, Columbus, OH, United States; [2]Department of Orthopedics, the Ohio State University, Columbus, OH, United States

15:00 3252. Bilateral Hip MRI using Dual-Band Excitation with Slab-Phase Modulation

Misung Han[1], Brian Andrew Hargreaves[2], Roland Krug[1]
[1]Radiology & Biomedical Imaging, University of California - San Francisco, San Francisco, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 29

13:30 3253. Multi-Planar Assessment of the Elbow Joint using Isotropic Resolution Vipr-Atr Imaging

Larry Hernandez[1], Jessica L. Klaers[1], Walter F. Block[1,2], Rick Kijowski[3]
[1]Medical Physics, University of Wisconsin, School of Medicine & Public Health, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [3]Radiology, University of Wisconsin, School of Medicine & Public Health, Madison, WI, United States

14:00 3254. Magnetic Resonance Lymphography at 3T: A Promising Noninvasive Approach to Characterize Inguinal Lymphatic Vessel Leakage

Qing Lu[1], Jianrong Xu[1], Ningfei Liu[2], Xihai Zhao[3]
[1]Department of Radiology , Renji hospital Shanghai Jiaotong University School of Medicine, Shanghai, China, People's Republic of; [2]Plastic & Reconstructive Surgery, Shanghai 9th People¡¯s Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai; [3]Center for BioMedical Imaging Research (CBIR), Tsinghua University School of Medicine, Beijing, China, People's Republic of

14:30 **3255.** **3T High Resolution MR Neurography of Sciatic Neuropathy**
Avneesh Chhabra[1], Theodoros Soldatos, Gustav Andreisek[2], John A. Carrino
[1]MSK Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Radiology, University Hospital, Zurich, Switzerland

15:00 **3256.** **Magic Angle Effect: A Relevant Artifact in MR Neurography at 3T?**
Thorsten Kästel[1], Sabine Heiland, Philipp Baeumer, Andreas Bartsch, Martin Bendszus, Mirko Pham
[1]Department of Neuroradiology, University of Heidelberg Medical Center, Heidelberg, Baden-Württemberg, Germany

Muscle: Diabetes, Muscular Dystrophy, Diffusion Tensor

Exhibition Hall Monday 14:00-16:00 Computer 30

14:00 **3257.** **Diffusion Tensor Imaging Evaluation of Upper Leg Muscular Changes After Long Distance Running**
Martijn Froeling[1,2], Gustav J. Strijkers[1], Mario Maas[2], Klaas Nicolay[1], Aart J. Nederveen[2]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Radiology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands

14:30 **3258.** **T_2-Weighted Imaging & Stimulated Echo Diffusion Tensor Imaging in Chronic Exertional Compartment Syndrome Calf Muscle**
Eric Edward Sigmund[1], Dabang Sui[1], Philip A. Hodnett[2], Kecheng Liu[3], KellyAnne McGorty[1], Michael Mechlin[1], Jenny Bencardino[1]
[1]Radiology, New York University Langone Medical Center, New York, NY, United States; [2]Department of Radiology, NYU Langone Center, New York, United States; [3]Siemens Medical Systems, United States

15:00 **3259.** **Towards a General Approach for Skeletal Muscle DTI Acquisition & Post-Processing**
Martijn Froeling[1,2], Aart J. Nederveen[2], Maarten R. Drost[3], K. Nicolay[1], Gustav J. Strijkers[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Department of Human Movement Science, School for Nutrition, Toxicology & Metabolism, Maastricht University, Maastricht, Netherlands

15:30 **3260.** **Fiber Architecture of the Female Pelvic Floor: An Exploratory Investigation using Different Diffusion MRI Tractography Algorithms**
Martijn Froeling[1,2], Gustav J. Strijkers[1], Ben Jeurissen[3], Marije P. van Der Paardt[2], Jaap Stoker[2], Klaas Nicolay[1], Aart J. Nederveen[2], Alexander Leemans[4]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Department of Radiology, Academic Medical Center, Amsterdam, Netherlands; [3]Vision Lab, Department of Physics, University of Antwerp, Antwerp, Belgium; [4]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

Exhibition Hall Tuesday 13:30-15:30 Computer 30

13:30 **3261.** **Two Pools of Inorganic Phosphate in Canine Model of DMD Caracterized by Magnetization Transfer ^{31}P NMRS**
Claire Wary[1,2], Thibaud Naulet[1,2], Jean-Laurent Thibaud[1,3], Aurélien Monnet[1,2], Stephane Blot[4], Pierre G. Carlier[1,5]
[1]NMR Laboratory, Institute of Myology, Paris, France; [2]IdM NMR Laboratory, CEA, I²BM, MIRCen, Paris, France; [3]UPR of Neurobiology, Ecole Nationale Veterinaire d'Alfort , Maisons Alfort, France; [4]UPR of Neurobiology, Ecole Nationale Veterinaire d'Alfort, Maisons Alfort, France; [5]IdM NMR Laboratory, CEA, I²BM, MIRCen, Paris, France

14:00 **3262.** **Single- Versus Multipeak Modeling of Dixon Images to Determine the Fat Fraction in Patients with Duchenne Muscular Dystrophy**
Beatrijs H. A. Wokke[1], Clemens Bos[2], Holger Eggers[3], Janneke C. van Den Bergen[1], Andrew Webb[4], Jan J. Verschuuren[1], Hermien E. Kan[4]
[1]Neurology, Leiden University Medical Center, Leiden, Netherlands; [2]Philips Healthcare, Best, Netherlands; [3]Philips Healthcare, Hamburg, Germany; [4]Radiology, Leiden University Medical Center, Leiden, Netherlands

14:30 **3263.** **Reduced T_2* Values in Soleus Muscle of Type 2 Diabetes Mellitus**
Chun S. Zuo[1], Donald Simonson[2], Young-Hoon Sung[1], Rosemond Villafuerte[1], Perry F. Renshaw[1]
[1]McLean Hospital, Boston, MA, United States; [2]Brigham & Women's Hospital, Boston, MA, United States

15:00 **3264.** ***In Vivo* ^{1}H MRS Monitoring of Intra-Myocellular Lipids After Acute Muscle Injury in Healthy & Dystrophic Mouse Muscles**
Su Xu[1,2], Da Shi[1,2], Steven Roys[1,2], Alan McMillian[1,2], Rao Gullapalli[1,2], Rich Lovering[3]
[1]Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Core for Translational Research in Imaging @ Maryland University of Maryland School ; [3]Department of Orthopaedics, University of Maryland School of Medicine, Baltimore, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 30

13:30 3265. Distinct Inter- & Intra-Muscular Features Observed by MR Imaging & Spectroscopy in Patients with FSHD Uncover Pathobiological Processes in Disease Development
Barbara H. Janssen[1], Rob J. W. Arts[2], Nicoline B. M. Voet[3], Christine I. H. C. Nabuurs[1], Baziel G. M. van Engelen[2], Arend Heerschap[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Neurology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Rehabilitation, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

14:00 3266. Quantitative MRI for Muscle Characterisation – Initial Comparison of Young Adults with Cerebral Palsy to Normal Subjects
Jonathan James Noble[1,2], Sanjay Vijayanathan[3], Adam P. Shortland[1,3], Geoff D. Charles-Edwards[1,3]
[1]King's College London, London, United Kingdom; [2]King's College Hospital, London, United Kingdom; [3]Guy's & St Thomas' Hospital, London, United Kingdom

14:30 3267. Metformin Severely Impairs *In Vivo* Muscle Oxidative Capacity in a Rat Model of Type 2 Diabetes
Bart Wessels[1], Jolita Ciapaite[1], Klaas Nicolay[1], Jeanine Prompers[1]
[1]Biomedical NMR, Eindhoven University of Technology, Eindhoven, Netherlands

15:00 3268. Assessment of Changes in Regional Distribution of Skeletal Muscle Adipose Tissue in Type 2 Diabetes using Quantitative IDEAL Gradient Echo Imaging
Dimitrios C. Karampinos[1], Thomas Baum[1], Lorenzo Nardo[1], Julio Carballido-Gamio[1], Paran S. Yap[1], Huanzhou Yu[2], Ann Shimakawa[2], Thomas M. Link[1], Sharmila Majumdar[1]
[1]Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 30

13:30 3269. Diffusion Tensor Imaging of Acute Muscular Injury in Normal & Dystrophic Mice
Alan B. McMillan[1], Da Shi[1], Su Xu[1], R. M. Lovering[2]
[1]Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [2]University of Maryland School of Medicine, Orthopaedics, Baltimore, MD, United States

14:00 3270. The Effect of Diffusion Tensor Imaging SNR on Skeletal Muscle Tractography
Armen Alex Gharibans[1], Curtis Laurence Johnson[1], Danchin Daniel Chen[1], John G. Georgiadis[1]
[1]Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

14:30 3271. Quantitative Effects of Inclusion of Fat on Diffusion Tensor MRI of Human Thigh Muscles
Sarah E. Williams[1,2], Anneriet Heemskerk[3,4], Edward Brian Welch[2,3], Bruce M. Damon[2,3], Jane H. Park[3,5]
[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [3]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [4]Radiology, Erasmus Medical Center, Nashville, TN, United States; [5]Molecular Physiology & Biophysics, Vanderbilt University, Nashville, TN, United States

15:00 3272. *In Vivo* Muscle Fiber Curvature Measurements using DT-MRI
Anneriet Heemskerk[1,2], Zhaohua Ding[1,3], Tuhin Sinha[1,4], Kevin J. Wilson[3], Bruce M. Damon[1,3]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [2]Erasmus Medical Center, Rotterdam, Netherlands; [3]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [4]Radiology, UC-San Francisco, San Francisco, CA, United States

Cardiovascular Image Processing & Flow Quantification

Exhibition Hall Monday 14:00-16:00 Computer 31

14:00 3273. Evaluation of Vessel Area using Time-Of-Flight MR Angiography, Contrast-Enhanced MR Angiography & CT Angiography in a Rabbit Peripheral Arterial Disease Model
Yi Xu[1], Yingli Fu[1], Nicole Azene[1], Dorota Kedziorek[1], Tina Ehtiati[2], Aaron Flammang[2], Bruce A. Wasserman[1], Ye Qiao[1], Merine Etesami[1], Steven M. Shea[2], Dara L. Kraitchman[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Inc., Baltimore, MD, United States

14:30 3274. Wavelet Denoising of First-Pass Perfusion: Impact on Visual Assessment.
Pedro Ferreira[1], Peter Gatehouse[2], Tevfik Ismail[2], Ankur Gulati[2], David Firmin[2]
[1]Imperial College, London, United Kingdom; [2]Royal Brompton Hospital

15:00 **3275.** **Abnormal Right Heart Flow Patterns in Pulmonary Artery Hypertension Visualized with 4D Flow-Sensitive MRI**

Christopher J. François[1], Alejandro Roldan[1], Eric Niespodzany[2], Naomi C. Chesler[3], Jonathan G. Keevil[4], Alex P. Frydrychowicz[1]

[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States; [3]Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [4]Medicine, University of Wisconsin, Madison, WI, United States

15:30 **3276.** **Automated Segmentation of Myocardial Infarcts on Delayed Enhancement MR Images**

YingLi Lu[1], Graham A. Wright[1,2], Perry E. Radau[1]

[1]Imaging Research, Sunnybrook Health Science Centre, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

Exhibition Hall Tuesday 13:30-15:30 Computer 31

13:30 **3277.** **Automated Extraction of the Arterial Input Function from Contrast-Enhanced First-Pass Cardiac MR Perfusion Images**

Li-Yueh Hsu[1], Mikhail Gorbachev[1,2], Lin-Ching Chang[2], Sujethra Vasu[1], Christine Mancini[1], W. Patricia Bandettini[1], Andrew E. Arai[1]

[1]National Heart Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Department of Electrical Engineering & Computer Science, the Catholic University of America, Washington, D.C., United States

14:00 **3278.** **Inline Myocardial T_2* Mapping with Iterative Robust Fitting**

Saurabh Shah[1], Hui Xue[2], Andreas Greiser[3], Peter Weale[1], Taigang He[4], David N. Firmin[4], Dudley J. Pennell[4], Sven Zühlsdorff[1], Jens Guehring[3]

[1]Siemens Healthcare, Chicago, IL, United States; [2]Siemens Corporate Research, Princeton, NJ, United States; [3]Siemens AG, Erlangen, Germany; [4]Royal Brompton Hospital, London, United Kingdom

14:30 **3279.** **A New Triangulated Surface Approach to Measuring Apex Curvature from Cine MRI in Patients with Mitral Regurgitation**

Chun Guo Schiros[1], Steven G. Lloyd[2], Himanshu Gupta[2], Louis J. Dell'Italia[2], Thomas S. Denney Jr.

[1]Electrical & Computer Engineering Department, Auburn University, Auburn , AL, United States; [2]University of Alabama at Birmingham

15:00 **3280.** **A Geometric Method Based on Mass Center Drifting Detection for Improving Basal Left Ventricle Automated Segmentation**

Mengchao Pei[1], Lijia Wang[1,2], Jianqi Li[1], Mingxia Fan[1], Yi Wang[2,3]

[1]Shanghai Key laboratory of Magnetic Resonance, East China Normal University, Shanghai, China, People's Republic of; [2]Department of Radiology, Weill Medical College of Cornell University, New York, NY, United States; [3]Department of Physiology, Biophysics, & Systems Biology, Weill Medical College of Cornell Universi, New York, NY, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 31

13:30 **3281.** **Algorithmic Quantification of Left Ventricle Segmentation in 4D Cardiac Magnetic Resonance Imaging Based on Spatio-Temporal Continuity**

Lijia Wang[1,2], Mengchao Pei[1], Noel C. F. Codella[3], Jonathan W. Weinsaft[2,4], Martin R. Prince[2], Yi Wang[2,3]

[1]Shanghai Key laboratory of Magnetic Resonance, East China Normal University, Shanghai, China, People's Republic of; [2]Department of Radiology, Weill Medical College of Cornell University, New York, NY, United States; [3]Department of Physiology, Biophysics, and Systems Biology, Weill Medical College of Cornell Universi, New York, NY, United States; [4]Department of Medicine-Cardiology, Weill Medical College of Cornell University, New York, NY, United States

14:00 **3282.** **Accuracy of Vessel Area Assessment: Comparison between Experts & Automatic FWHM**

Maarten A. G. Merkx[1], Javier Oliván Bescós[2], Liesbeth Geerts[3], E. M. H. Bosboom[1], F. N. van De Vosse[4], M. Breeuwer[2,4]

[1]Biomedical Engineering, Maastricht University Medical Center, Maastricht, Netherlands; [2]Clinical Science and Advanced Development, Philips Healthcare, Netherlands; [3]MR Clinical Science, Philips Healthcare, Netherlands; [4]Biomedical Engineering, University of Technology Eindhoven, Netherlands

14:30 **3283.** **An Automated Method for Extraction of Tissue Doppler Like Myocardial Motion Parameters from Conventional Cine Cardiac MR - a Feasibility Study**

Peter Weale[1], Christoph Guetter[2], Jeremy D. Collins[3], Marie Wasielewski[3], Neil Chatterjee[4], Marie-Pierre Jolly[2], Hui Xue[2], Lu Xiaoguang[2], Jens Guehring[5], Sven Zuehlsdorff[1], James Carr[3]

[1]Cardiovascular MR Research & Development, Siemens Healthcare USA, Chicago, IL, United States; [2]Siemens Corporate Research, Princeton, NJ, United States; [3]Radiology, Northwestern University, Chicago, IL, United States; [4]Feinberg School of Medicine, Northwestern University, Chicago, IL, United States; [5]Magnetic Resonance, Siemens AG, Healthcare Sector, Erlangen, Germany

15:00 3284. 4D Gradient Based Phase Unwrapping for PC-MR Flow Data
Michael Loecher[1], Kevin Johnson[1], Benjamin Landgraf[1], Oliver Wieben[1,2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States

Exhibition Hall Thursday 13:30-15:30 Computer 31

13:30 3285. Rapid 3D *In Vivo* Magnetic Particle Imaging with a Large Field of View
Jürgen Rahmer[1], Bernhard Gleich[1], Claas Bontus[1], Ingo Schmale[1], Joachim Schmidt[1], Jürgen Kanzenbach[1], Oliver Woywode[2], Jürgen Weizenecker[3], Jörn Borgert[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Philips Medical Systems DMC GmbH, Hamburg, Germany; [3]University of Applied Sciences, Karlsruhe, Germany

14:00 3286. Flow Quantification with 4D Flow-Sensitive MRI: Validation in Patients with Congenital Heart Disease
Christina Boncyk[1], Alex P. Frydrychowicz[1], Michael W. Loecher[2], Elizabeth J. Nett[2], Benjamin R. Landgraf[1], Kevin M. Johnson[2], Oliver Wieben[1,2], Christopher J. François[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States

14:30 3287. K-T-GRAPPA Accelerated Phase Contrast MRI: Improved Assessment of Blood Flow & 3-Directional Myocardial Motion During Breath-Hold
Simon Bauer[1], Michael Markl[1], Bernd André Jung[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center, Freiburg, Germany

15:00 3288. Stenosis Flow: Comparison of a Generalized Navier-Stokes Model & Phase Contrast MRI
Alex J. Barker[1], Jelena Bock[1], Michael Markl[1]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany

Flow Quantification & Venal Function

Exhibition Hall Monday 14:00-16:00 Computer 32

14:00 3289. Middle Cerebral Artery Blood Flow Velocity Changes in Response to Precise Targeting of End-Tidal CO_2 & O_2: A Comparative Study between Transcranial Doppler Ultrasound & Phase Contrast Magnetic Resonance Angiography
Jackie Leung[1], Arun Mohanta[1], Amir Behpour[1,2], Neil Sokol[2], Andrea Kassner[1,2]
[1]Diagnostic Imaging, Hospital for Sick Children, Toronto, Ontario, Canada; [2]Medical Imaging, University of Toronto, Toronto, Ontario, Canada

14:30 3290. Hemodynamic Assessment of Kinking Vs. Non-Kinking Abdominal Aorta
Mamoru Takahashi[1], Yasuo Takehara[2], Hiroyasu Takeda[2], Masaki Terada[3], Haruo Isoda[4], Tetsuya Wakayama[5], Atsushi Nozaki[5], Toshiyuki Shimizu[6], Marcus Alley[7], Roland Bammer[7], Norihiko Siiya[2], Norihiro Tooyama, Katsutoshi Ichijo, Harumi Sakahara[2]
[1]Radiology, Seirei Mikatahara General Hospital , Hamamatsu, Shizuoka, Japan; [2]Hamamatsu University School of Medicine; [3]Iwata City Hosipital; [4]Nagoya University School of Health Sciences; [5]GE Helthcare Japan; [6]R's Tech Co.; [7]Stanford University School of Medicine

15:00 3291. Variable Velocity Encoding of 4D Phase-Contrast Sequences to Improve Blood Flow Visualizations
Anders Nilsson[1], Karin Markenroth Bloch[1,2], Freddy Ståhlberg[1,3]
[1]Dept. of Medical Radiation Physics, Lund University, Sweden; [2]Clinical Sciences, Philips Healthcare, Lund, Sweden; [3]Dept. of Diagnostic Radiology, Lund University, Sweden

15:30 3292. An *In Vivo* MRI & Computational Fluid Dynamic Simulation of Cerebrospinal Fluid Hydrodynamics in the Third Ventricle
Aurelie Picquot[1], Francesco Santini[2], Jelena Bock[3], Philippe Reymond[1], Eleonora Fonari[4], Bryn Andrew Martin[1], Nikos Stergiopulos[1]
[1]Laboratory of Hemodynamics & Cardiovascular Technology, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; [2]Radiological Physics, University of Basel Hospital, Switzerland; [3]Department of Radiology, University Hospital Freiburg , Germany; [4]Lausanne Center for Biomedical Imaging, Centre Hospitalier Universitaire Vaudois , Switzerland

Exhibition Hall Tuesday 13:30-15:30 Computer 32

13:30 3293. Aortic Pulse Wave Velocity Evaluation with 5-Year Followup
Yi Wang[1,2], Edwin Estrada[1], Visali Kodali[1], Nathaniel Reichek[1,3]

[1]Research, St. Francis Hospital, Roslyn, NY, United States; [2]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [3]Cardiology, Stony Brook University, Stony Brook, NY, United States

14:00 **3294.** **Volumetric Whole-Heart Three-Directional Tissue Phase Mapping of the Heart at 3T**
Anja Lutz[1], Axel Bornstedt[1], Patrick Etyngier[2], Robert Manzke[3], Wolfgang Rottbauer[1], G. Ulrich Nienhaus[4], Volker Rasche[1]
[1]University Hospital of Ulm, Ulm, BW, Germany; [2]Medisys Research Lab, Philips Healthcare, Sureness, France; [3]Philips Research NA, Briarcliff Manor, United States; [4]Karlsruhe Institute of Technology, Karlsruhe, Germany

14:30 **3295.** **Aortic Flow Assessment using Phase Contrast MRI in Mice with Aortic Regurgitation**
Xiaoli Zhang[1,2], Yu Qing Zhou[1], Mark van Doormaal[1], R. Mark Henkelman[1,2]
[1]Mouse Imaging Centre, Hospital for Sick Children, Toronto, Ontario, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada

15:00 **3296.** **Novel Real-Time PC-MRI Technique for Accurate Single Heartbeat Evaluation of Pulmonary-to-Systemic Flow Ratios using an Interleaved Two-Slice Acquisition Scheme**
Hung-Yu Lin[1,2], Scott B. King[1], Yu Ding[3], Davinder S. Jassal[2], Patricia Gervai[1], Eilean McKenzie-Matwiy[1], Orlando P. Simonetti[3], Boguslaw Tomanek[1], Ganghong Tian[1]
[1]Institute for Biodiagnostics, National Research Council Canada, Winnipeg, Manitoba, Canada; [2]Radiology, University of Manitoba, Winnipeg, Manitoba, Canada; [3]Internal Medicine, the Ohio State University, Columbus, OH, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 32

13:30 **3297.** **Clinical & Cardiac Function Correlates of Aortic Pulse Wave Velocity Measured by Cardiac Magnetic Resonance Imaging in Normal Subjects**
Visali Kodali[1], Yi Wang[1], Simcha Pollack[1,2], Edwin Estrada[1], Nathaniel Reichek[1,3]
[1]Cardiac Imaging, Research, Saint Francis Hospital, Roslyn, NY, United States; [2]St. John's University, New York , United States; [3]Department of Biomedical Engineering Division of Cardiology, Stony Brook University, Stony Brook, NY, United States

14:00 **3298.** **Robust Data Acquisition for MR Doppler**
Daeho Lee[1], Adam Bruce Kerr[1], Juan Manuel Santos[2], Bob Sueh-Chien Hu[3], John Mark Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]HeartVista, Inc., Palo Alto, CA, United States; [3]Cardiology, Palo Alto Medical Foundation, Palo Alto, CA, United States

14:30 **3299.** **Flow Acceleration & Elevated Wall Shear Stress with Hypoplastic Arch After Aortic Coarctation Repair**
Thomas A. Hope[1], Stephen E. S. Crook[1], Michael D. Hope[1]
[1]Radiology, University of California San Francisco, San Francisco, CA, United States

15:00 **3300.** **Magnetic Resonance Velocity Mapping During Intermittent Pneumatic Compression of the Calf & Foot**
Iain Thomas Pierce[1,2], Peter David Gatehouse[1,2], Evi Kalodiki[3,4], Chris Lattimer[3,4], George Geroulakos[3,4], David N. Firmin[1,2]
[1]NHLI, Imperial College London, London, United Kingdom; [2]CMR Unit, Royal Brompton Hospital Trust, London, United Kingdom; [3]Dept of Surgery & Cancer, Imperial College London, London, United Kingdom; [4]Vascular Unit, Ealing Hospital, London, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 32

13:30 **3301.** **Workflow Integrated Interactive Realtime Radial Flow Measurement with Dynamic VENC Adjustment for Accurate Peak Velocity Estimation**
Peter Speier[1], Andreas Greiser[1], Andre de Oliveira[1], Dirk Franger[2], Edgar Müller[1]
[1]Siemens AG Healthcare Sector, Erlangen, Germany; [2]Freelance Software Consultant

14:00 **3302.** **Whole Heart Flow-Sensitive 4D MRI in Patients After Repair of Tetralogy of Fallot**
Julia Geiger[1], Raoul Arnold[2], Brigitte Stiller[2], Mathias Langer[1], Michael Markl[1]
[1]Radiology and Medical Physics, University Hospital Freiburg, Freiburg, Germany; [2]Pediatric Cardiology, University Hospital Freiburg, Freiburg, Germany

14:30 **3303.** **Dual VENC Phase Contrast MRI for Simultaneous Assessment of Blood Flow and Cardiac Motion**
Waltraud Brigitte Buchenberg[1], Michael Markl[2], Simon Bauer[2], Jelena Bock[2], Ramona Lorenz[2], Bernd A. Jung[2]
[1]Radiology, Medical Physics, , University Medical Centre, Freiburg, Germany; [2]Radiology, Medical Physics, University Medical Centre, Freiburg, Germany

15:00 **3304.** **Normal Local Pulse Wave Velocity Predicts Absence of Local Aorta Diameter Growth in Marfan Syndrome: A Comprehensive MRI-Approach**
Jos J. M. Westenberg[1], Patrick J. H. de Koning[1], Pieter J. van Den Boogaard[1], Dennis Hendriksen[1], Johan H. C. Reiber[1], Albert de Roos[1], Rob J. van Der Geest[1]

[1]Radiology, Leiden University Medical Center, Leiden, ZH, Netherlands

Vessel Wall Imaging (Non-Coronary)

Exhibition Hall Monday 14:00-16:00 Computer 33

14:00 3305. Plaque Disruption in a Rabbit Model of Atherothrombosis Occurs in Regions of Low Endothelial Shear Stress
Alkystis Phinikaridou[1], Ning Hua[1], James A. Hamilton[1]
[1]Department of Physiology and Biophysics, Boston University, Boston, MA, United States

14:30 3306. Evaluation of 3D Blood Flow Changes in the Normal & Dilated Thoracic Aorta using Flow-Sensitive 4D MRI.
Jonas Bürk[1], Zoran Stankovic[1], Alex Frydrychowicz[1], Mathias Langer[1], Michael Markl[1]
[1]Department of Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany

15:00 3307. Calculation of Wall Shear Stress in Intracranial Cerebral Aneurysms using High Resolution Phase Contrast MRA (PC-VIPR)
Warren Chang[1], Steven Kecskemeti[2], Alex Frydrychowicz[1], Benjamin Landgraf[1], Beverly Aagaard-Kienitz[1], Yijing Wu[2], Kevin Johnson[2], Oliver Wieben[2], Charles Mistretta[2], Patrick Turski[1]
[1]Department of Radiology, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States; [2]Department of Medical Physics, University of Wisconsin School of Medicine & Public Health, Madison, WI, United States

15:30 3308. Carotid Plaque MRI Characteristics as a Marker of Severe Coronary Artery Disease.
Hideki Ota[1], Minako Oikawa[2], Morihiko Takeda[3], Satoshi Yasuda[3], Jun Takahashi[3], Yoshitaka Ito[3], Yoshihiro Fukumoto[3], Hiroaki Shimokawa[3], Shuichi Higano[1,4], Shoki Takahashi[1]
[1]Diagnostic Radiology, Tohoku University Hospital, Sendai, Miyagi, Japan; [2]Sendai Red Cross Hospital, Sendai, Miyagi, Japan; [3]Cardiovascular Medicine, Tohoku University Hospital, Sendai, Miyagi, Japan; [4]Sendai Radiation Oncology & Imaging Clinic, Sendai, Miyagi, Japan

Exhibition Hall Tuesday 13:30-15:30 Computer 33

13:30 3309. Comparison of Non-Invasive Self-Gated Flash (Intragate®) with Prospectively Triggered Flash Cine Sequences for the Evaluation of Aortic Distensibility in Mice at 9.4 T.
Peter Fries[1], Roland Seidel[1], Andreas Müller[1], Günther Schneider[1], Alexander Massmann[1], Arno Bücker[1]
[1]Clinic of Diagnostic & Interventional Radiology, Saarland University Hospital, Homburg, Saarland, Germany

14:00 3310. Improvements of Suppression of In-Plane Flow Signal of Carotid Arteries using Phase Sensitive Inversion Recovery -3D T_1 Turbo Field Echo
Nao Kajihara[1], Tomohiko Horie[1], Masatoshi Honda[1], Isao Muro[1], Taro Takahara[2], Hisamoto Moriguchi[1], Yutaka Imai[1]
[1]Radiology, Tokai University School of Medicine, Isehara, Kanagawa, Japan; [2]Tokai University School of Engineering, Hiratsuka, Kanagawa, Japan

14:30 3311. Quantitative T_1, T_2 & T_2* Mapping of Carotid Artery Normal Wall & Atherosclerotic Plaque
Georgeta Mihai[1], Shivraman Giri[2], Travis P Sharkey-Toppen[2], Subha V Raman[3], Sanjay Rajagopalan[3], Orlando P Simonetti[3]
[1]Cardiovascular Medicine , the Ohio State University , Columbus , OH, United States; [2]Biomedical Engineering, the Ohio State University, Columbus, OH, United States; [3]Cardiovascular Medicine, the Ohio State University, Columbus, OH, United States

15:00 3312. CINE Turbo Spin Echo Imaging
Jason K. Mendes[1], Dennis L. Parker[1], Jordan P. Hulet[1]
[1]University of Utah, Salt Lake City, UT, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 33

13:30 3313. Quantification of Morphologic & Microvascular Vessel Wall Characteristics of Abdominal Aortic Aneurysms with MRI
Van Lai Nguyen[1,2], Geert-Willem Schurink[1], Anne E. Saris[2], Marianne Eline Kooi[2], Walter H. Backes[2], Rob J. van Der Geest[3], Tim Leiner[2,4]
[1]Department of Surgery, Maastricht University Medical Center, Maastricht, Netherlands; [2]Department of Radiology, Maastricht University Medical Center, Maastricht, Netherlands; [3]LKEB, Leiden University Medical Center, Leiden; [4]Department of Radiology, Utrecht University Medical Center, Utrecht, Netherlands

14:00 3314. 3D T_2-Weighted Black Blood Vessel Wall Imaging with Uniform Fat & Water Separation
Ananth J. Madhuranthakam[1], Mitsuharu Miyoshi[2], Robert L. Greenman[3], David C. Alsop[3]

[1]Global Applied Science Laboratory, GE Healthcare, Boston, MA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Tokyo, Japan; [3]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

14:30 **3315.** **Development of Comprehensive 3D Evaluation of Atherosclerosis in Multiple Vascular Beds**
Venkatesh Mani[1], Claudia Calcagno[1], Yiucho Chung[2], Zahi A. Fayad[1]
[1]Radiology, Mount Sinai School of Medicine, New York, NY, United States; [2]Siemens Medical Solutions

15:00 **3316.** **SHILO: Simultaneous High/Low Spatial/Temporal Resolution Dual-Imaging Acquisition for Improved Parameters Quantification in Dynamic Contrast Enhanced (DCE) MRI of Atherosclerosis**
Claudia Calcagno[1], Sarayu Ramachandran, Venkatesh Mani, Melanie Kotys[2], Stefan Fischer[2], Zahi Adel Fayad
[1]Mount Sinai School of Medicine, New York, NY, United States; [2]Philips Healthcare

Exhibition Hall Thursday 13:30-15:30 Computer 33

13:30 **3317.** **Independent Factors which Impact Image Quality in Carotid Vessel Wall Imaging: Implications for Multi-Center Studies**
Jie Sun[1], Daniel S. Hippe[1], Hunter R. Underhill[2], Yan Song[3], Nan Luo[3], Min Chen[3], Cheng Zhou[3], Thomas S. Hatsukami[4], Chun Yuan[1]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Medicine, University of Washington, Seattle, WA, United States; [3]Radiology, Beijing Hospital, Beijing, China, People's Republic of; [4]Surgery, University of Washington, Seattle, WA, United States

14:00 **3318.** **Gadofosveset Detects Endothelial Dysfunction Associated with Atherosclerotic Plaque Formation & Progression in Mice**
Alkystis Phinikaridou[1], Marcelo Andia[1], Rene Botnar[1]
[1]Imaging Sciences, King's College London, London, United Kingdom

14:30 **3319.** **Fibrous Cap & Lipid Rich Necrotic Core are Difficult to be Distinguished with Routine Image Weighting at 3T**
Rui Li[1,2], Jie Sun[2], Marina Ferguson[2], Chun Yuan[2]
[1]Center for Biomedical Imaging Research, Tsinghua University, Beijing, China, People's Republic of; [2]University of Washington, Seattle, WA, United States

15:00 **3320.** **Identification of Vulnerable Plaque by MRI & Fluorescence Imaging in a Rabbit Model**
Ning Hua[1], Fred Baik[2], Tuan Pham[1], Nick Giordano[1], Alkystis Phinikaridou[1], Michael Whitney[2], Quyen Nguyen[2], Roger Tsien[2], James Hamilton[1]
[1]Boston University, Boston, MA, United States; [2]University of California San Diego, San Diego, CA, United States

Contrast Enhanced MRA (Non-Coronary)

Exhibition Hall Monday 14:00-16:00 Computer 34

14:00 **3321.** **A Novel Approach to ECG-Gated High-Resolution Contrast-Enhanced MR Angiography in Thorax: Technical Aspects**
Yutaka Natsuaki[1], Philipp Moritz Wagner[2], J. Paul Finn[2], Randall Kroeker[3], Gerhard Laub[1]
[1]Siemens Medical Solutions, Los Angeles, CA, United States; [2]Radiology, UCLA, Los Angeles, CA, United States; [3]Siemens Medical Solutions, Winnipeg, MB, Canada

14:30 **3322.** **Contrast Enhanced MR Angiography of the Thoracic Aorta: Comparison of ECG-Gated Techniques at 3T**
Ruth P. Lim[1], Ryan Avery[2], Mary Bruno[2], David Mossa[2], Gary McNeal[3], Yutaka Natsuaki[3], Monvadi B. Srichai[2]
[1]Radiology , NYU Langone Medical Center, New York, NY, United States; [2]Radiology, NYU Langone Medical Center, New York, NY, United States; [3]Siemens Healthcare, United States

15:00 **3323.** **Combined Respiratory & Cardiac Triggered MRA of Congenital Heart Disease with a Blood Pool Contrast Agent**
Shreyas S. Vasanawala[1], Frandics P. Chan[1], Beverley Newman[1], Marcus T. Alley[1]
[1]Radiology, Stanford University, Stanford, CA, United States

15:30 **3324.** **Neonatal Congenital Heart Disease: Initial Results with High Resolution Contrast Enhanced MR Angiography at 3.0 Tesla**
John Michael Moriarty[1], Kambiz Nael[1], Gary Satou[2], Pierangello Renella[2], Pablo Abbona[1], John Paul Finn[1]
[1]Radiology, UCLA Medical Center, Los Angeles, CA, United States; [2]Pediatric Cardiology, UCLA Medical Center, Los Angeles, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 34

13:30 3325. Time-Resolved MR Angiography Pre-Catheter-Based Ablation for Atrial Fibrillation
Michael Schonberger[1], Asad Usman[1], Aya Kino[1], Andrada Popescu[1], Maurizio Galizia[1], Jeremy Collins[1], James Carr[1], Timothy Carroll[1]
[1]Department of Radiology, Northwestern University, Chicago, IL, United States

14:00 3326. Diagnostic Accuracy of Contrast-Enhanced MR Angiography & Non-Contrast Proton MR Imaging Compared with CT Pulmonary Angiography in Chronic Thromboembolic Pulmonary Hypertension
Smitha Rajaram[1], Andy James Swift[1], David Capener[1], Adam Telfer[1], Judith Hurdman[2], Robin Condliffe[2], Charlie Elliot[2], Christine Davies[3], Catherine Hill[3], David G. Kiely[2], Jim M. Wild[1]
[1]Academic Unit of Radiology, University of Sheffield, Sheffield, Yorkshire, United Kingdom; [2]Pulmonary Vascular Disease Unit, Royal Hallamshire Hospital, Sheffield; [3]Department of Radiology, Royal Hallamshire Hospital, Sheffield

14:30 3327. High Temporal & Spatial Resolution Imaging of Body AVMs
Phillip M. Young[1], Petrice Marie Mostardi[1], Michael A. McKusick[1], Stephen J. Riederer[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

15:00 3328. MR Angiography using Fractional Contrast Doses with VIPR & HYPR
Lauren Ashley Keith[1], Frank Korosec[2], Charles Mistretta[1,2]
[1]Medical Physics, UW - Madison, Madison, WI, United States; [2]Radiology, UW - Madison, Madison, WI, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 34

13:30 3329. Preoperative Mapping of Autogenous Saphenous Veins in Patients with PAOD & Femorodistal Bypass Grafting: Prospective Comparison of Peripheral MR Angiography using a Blood Pool Contrast Agent with Ultrasound & Intraoperative Findings
Ann Marie Jah-Kabba[1], Guido Matthias Kukuk[1], Dariusch Reza Hadizadeh[1], Arne Koscielny[2], Frauke Verrel[2], Hans Heinz Schild[1], Winfried Albert Willinek[1]
[1]Department of Radiology, University of Bonn, Bonn, NRW, Germany; [2]Department of Vascular Surgery, University of Bonn, Bonn, NRW, Germany

14:00 3330. Qualitative & Quantitative Evaluation of Contrast-Enhanced MR Venography (MRV) of the Lower Extremities with a Blood Pool Agent Compared to Noncontrast MRV
Charles Yoon Kim[1], Steven Huang[1], Rajan Gupta[1], Michael Miller[1], Mark Lessne[1], Pranay Krishnan[1], Nicholas Befera[1], Paul Evans[1], Elmar M. Merkle[1]
[1]Radiology, Duke University Medical Center, Durham, NC, United States

14:30 3331. Three-Station MR Angiography with High-Resolution Steady-State Vascular Imaging using Ferumoxytol
Pippa Storey[1], Mary Theresa Bruno[1], Ruth P. Lim[1], Hersh Chandarana[1], David R. Stoffel[1], Vivian S. Lee[1]
[1]Radiology Department, New York University School of Medicine, New York, United States

15:00 3332. Single Dose Large Anatomical Coverage Contrast-Enhanced Peripheral MRA using a Novel Broadband Digital MR Architecture: Initial Experience
Tim Leiner[1], Eveline Alberts[2], Liesbeth Geerts[2], Mark Stoesz[2], Fredi Visser[1], Willem Mali[1], Jeroen Hendrikse[1]
[1]Department of Radiology, Utrecht University Medical Center, Utrecht, Netherlands; [2]Clinical Science Division, Philips Medical Systems, Best, Netherlands

Exhibition Hall Thursday 13:30-15:30 Computer 34

13:30 3333. Highly Accelerated Abdominal CE-MRA with 3D Timing Scan
Petrice Marie Mostardi[1], James F. Glockner[1], Stephen J. Riederer[1]
[1]Mayo Clinic, Rochester, MN, United States

14:00 3334. Comparison of Renal MRA/CTA & DSA in CORAL Study
Honglei Zhang[1], Alan H. Matsumoto[2], Donald Cutlip[3], Timothy P. Murphy[4], Christopher J. Cooper[5], Lance D. Dworkin[6], Martin R. Prince[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Clinical Investigations, Harvard Clinical Research Institute, Boston, MA, United States; [4]Diagnostic Imaging, Rhode Island Hospital, Providence, RI, United States; [5]Medicine, the University of Toledo, Toledo, OH, United States; [6]Department of Medicine, Alpert Medical School of Brown University, Providence, RI, United States

14:30 3335. Ultra-High Resolution 3D Microangiography of the Rat Ocular Circulation at 11.7 T
Yen-Yu Ian Shih[1], Eric R. Muir[1], Li Guang[1], Bryan H. De La Garza[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

15:00 **3336.** **4D Contrast Enhanced MRA using Single Dose Dual Injections & Constrained Reconstruction**
Yijing Wu[1], Kevin Johnson[1], Steven Kecskemeti, Charles A. Mistretta[2], Patrick A. Turski
[1]Medical Physics, University of Wisconsin, Madison, MADISON, WI, United States; [2]Medical Physics & Radiology, University of Wisconsin, Madison

Contrast-Free MRA

Exhibition Hall Monday 14:00-16:00 Computer 35

14:00 **3337.** **Three Dimensional Non-Contrast MRA of the Lower Extremities using Stepping Thin Slab Acquisition: Initial Experience in Healthy Subjects**
Thanh D. Nguyen[1], Mitchell Cooper[2], Pascal Spincemaille[1], Priscilla Winchester[1], Martin R. Prince[1], Yi Wang[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States

14:30 **3338.** **Accuracy of Non-Contrast Fresh-Blood MRA for the Assessment of Lower Extremity Peripheral Vascular Disease**
Timothy S. E. Albert, M.D.[1], Erin J. Kelly, Ph.D.[2], Patrik Zetterlund, M.D.[1], Connie Luna, R.T.[1], Nancy Yellin, RN[1], Mitsue Miyazaki, Ph.D.[3]
[1]Salinas Valley Memorial Hospital Cardiovascular Diagnostic Center, Monterey, CA, United States; [2]Toshiba America Medical Systems, Tustin, CA; [3]Toshiba Medical Research Institute USA, Inc, Vernon Hills, IL

15:00 **3339.** **Optimization of the First-Order Gradient Moment for Flow-Sensitive Dephasing Magnetization-Prepared 3D Noncontrast MRA**
Zhaoyang Fan[1,2], Xiangzhi Zhou[2], Xiaoming Bi[3], Sven Zuehlsdorff[3], Rohan Dharmakumar[2,4], James Carr[2], Debiao Li[2,4]
[1]Cedars-Sinai Medical Center , Los Angeles, CA, United States; [2]Northwestern University, Chicago, IL, United States; [3]Siemens Healthcare, Chicago, IL, United States; [4]Cedars-Sinai Medical Center, Los Angeles, CA, United States

15:30 **3340.** **Non-Contrast-Enhanced Peripheral MRA: Comparison of 3D Fast Spin-Echo Based & Flow Sensitive Dephasing Prepared Steady State Free Precession Techniques at 1.5 T**
Ruth P. Lim[1], Zhaoyang Fan[2], Manjil Chatterji[3], Amanjit Baadh[4], Iliyana Atanasova[4], Pippa Storey[4], Danny C. Kim[4], Sooah Kim[4], Philip Hodnett[4], Afshan Ahmad[4], David Stoffel[4], James S. Babb[4], Daniel Kim[4], Qun Chen[4], Jian Xu[5], Debiao Li[2,6], Vivian S. Lee[4,6]
[1]Radiology , NYU Langone Medical Center, New York, NY, United States; [2]Radiology, Cedars-Sinai Medical Center and UCLA, Los Angeles, CA, United States; [3]Radiology, Mt Sinai School of Medicine, New York, NY, United States; [4]Radiology, NYU Langone Medical Center, New York, NY, United States; [5]Siemens Healthcare, New York, NY, United States; [6]Co-Senior Author

Exhibition Hall Tuesday 13:30-15:30 Computer 35

13:30 **3341.** **Optimization of Non-Contrast Enhanced Time-SLIP for Carotid Artery Imaging**
William W. Orrison Jr. MD, MBA[1,2], Erin J. Kelly, PhD[3], Denise Moreau, RT[3], Cayce J. Roach[4,5], Eric H. Hanson MD, MPH[4,5]
[1]CHW Nevada Imaging Company, Las Vegas, NV, United States; [2]Touro University Nevada, Henderson, NV , United States; [3]Toshiba America Medical Systems, Tustin, CA; [4]University of Nevada Las Vegas; [5]Advanced Medical Imaging & Genetics (Amigenics)

14:00 **3342.** **Flow Independent Breast MR Angiography using a Variable Flip Angle Turbo Spin Echo Sequence**
Yi Wang[1,2], Karl Diedrich[2], Glen Morrell[2], Allison Payne[2], Dennis L. Parker[1,2]
[1]Bioengineering, University of Utah, Salt Lake City, UT, United States; [2]Radiology, Utah Center for Advanced Imaging Research, Salt Lake City, UT, United States

14:30 **3343.** **Non-Contrast Thoracic MRA within Single Breath-Hold using Highly-Accelerated Parallel Imaging**
Jian Xu[1,2], Kellyanne Mcgorty[1], Ruth Lim[1], Mary Bruno[1], Monvadi Srichai[1], Daniel Kim[1], Daniel Sodickson[1]
[1]Center for Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]PolyTechnic Institute of NYU & Siemens Medical Solutions USA Inc., New York, NY, United States

15:00 **3344.** **Dynamic Angiography Imaging at 7T using Variable Duration Pseudo-Continuous Arterial Spin Labeling**
Onur Ozyurt[1], Ann-Kathrin Homagk[2], Michael Bock[2], Cengizhan Ozturk[1]
[1]Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 35

13:30 3345. Non Contrast 3D Volumetric Time-Resolved MRA in Renal Artery(CINEMA-RENAL)
Masanobu Nakamura[1], Masami Yoneyama[1], Tomoyuki Okuaki[1], Takashi Tabuchi[1], Atsushi Takemura[2], Makoto Obara[2], Junko Ogura[1]
[1]Medical Satellite Yaesu Clinic, Chiyoda-ku, Tokyo, Japan; [2]Philips Electronics Japan, Tokyo, Japan

14:00 3346. Arterial Spin Labeling Angiography without the Need of Subtraction using a Triple Inversion Recovery Prepulse
Marcelo E. Andia[1], Rene M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, Kings College London, London, United Kingdom

14:30 3347. Non-Contrast Outer Radial Inner Square K-Space Scheme (NORISKS)- a Breath-Held Balanced SSFP-Dixon Technique for Non-Contrast Enhanced Renal MRA
Manojkumar Saranathan[1], Pauline W. Worters[1], Shreyas Vasanawala[1]
[1]Radiology, Stanford University, Stanford, CA, United States

15:00 3348. Noncontrast MR Angiography for Comprehensive Assessment of Abdominopelvic Arteries using Quadruple Inversion-Recovery Preconditioning & 3D Balanced Steady-State Free Precession Imaging
Iliyana P. Atanasova[1,2], Daniel Kim[1], Ruth P. Lim[1], Pippa Storey[1], Vivian S. Lee[1]
[1]New York University, New York, United States; [2]Columbia University, New York, United States

Exhibition Hall Thursday 13:30-15:30 Computer 35

13:30 3349. Noncontrast MRA at 3T
Mitsue Miyazaki[1,2], Yuichi Yamashita[2], Andrew Wheaton[1], Wayne Dannels[1], Robert Anderson[1], Leping Zha[1], Satoshi Sugiura[2]
[1]Toshiba Medical Research Institute USA, Vernon Hills, IL, United States; [2]Toshiba Medical Systems, Otawara, Tochigi, Japan

14:00 3350. Aorto-Iliac Flow-Sensitive 4D MRI: Normal & Altered Flow Characteristics in Abdominal Aneurysms
Jörg Mauch[1], Michael Markl[2], Christoph Haller[3], Zoran Stankovic[1], Mathias Langer[1], Julia Geiger[1]
[1]Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]Radiology, Medical Physics, University Medical Center, Freiburg , Germany; [3]Cardiovascular Surgery, University Medical Center, Freiburg, Germany

14:30 3351. Evaluation of Venous Spread of Renal Cell Carcinoma by Non-Contrast-Enhanced Magnetic Resonance Venography: A SLEEK Sequence
Yigang Pei[1], Daoyu Hu[2]
[1]Department of Radiology, Tongji Hospital,Tongji Medical College,Huazhong University of Science & Technology, Wuhan, Hubei, China, People's Republic of; [2]Department of Radiology, Ongji Hospital,Tongji Medical College,Huazhong University of Science & Technology, Wuhan, Hubei, China, People's Republic of

15:00 3352. Efficient Substitute for Inversion Preparation in TSE Angiography
Jason K. Mendes[1], Dennis L. Parker[1]
[1]University of Utah, Salt Lake City, UT, United States

Myocardial Function: Experimental Models & Human Studies I

Exhibition Hall Monday 14:00-16:00 Computer 36

14:00 3353. Quantitative Evaluation of Regional RF Shimming on a Wide Aperture Dual-Channel Multi-Transmit 3.0T: Implications for Cardiac MRI
Ramkumar Krishnamurthy[1], Amol Pednekar[2], Marc Kouwenhoven[3], Paul Harvey[3], Claudio Arena[4], Benjamin Cheong[4], Raja Muthupillai[4]
[1]Bioengineering, Rice University, Houston, TX, United States; [2]Philips Healthcare, Houston, TX, United States; [3]Philips Healthcare, Best, Netherlands; [4]Diagnostic & Interventional Radiology, St. Luke's Episcopal Hospital, Houston, TX, United States

14:30 3354. Quantification of Left Bundle Branch Block on Left Ventricular Regional Wall Motion using Six-Segment Center Point Trajectory Mapping
Ting Song[1,2], Jeffrey a Stainsby[3], Maureen N. Hood[2,4], Vincent B. Ho[2,4]
[1]Global Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States; [2]Radiology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [3]Global Applied Science Laboratory, GE Healthcare, Toronto, ON, Canada; [4]Radiology, National Naval Medical Center, Bethesda, MD, United States

15:00 **3355.** **Functional Characterization of the Micro-Rna Deficient Adult Murine Heart**
Surya C. Gnyawali[1], Sashwati Roy[1], Jaideep Banerjee[1], Savita Khanna[1], Chandan K. Sen[1]
[1]Surgery, Ohio State University, Columbus, OH, United States

15:30 **3356.** **Relative Area Change (RAC) Better Reflects Right Ventricular Ejection Fraction (RVEF) than Longitudinal or Transverse Functional Measurements in Pulmonary Hypertension Patients**
Andrew James Swift[1,2], Smitha Rajaram[1], David Capener[1], Judith Hurdman[3], Robin Condliffe[3], Charlie Elliot[3], David G. Kiely[3], Jim M. Wild[1]
[1]Academic Unit of Radiology, Sheffield, South Yorkshire, United Kingdom; [2]NIHR Cardiovascular Biomedical Research Unit, Sheffield, United Kingdom; [3]Pulmonary Vascular Disease Unit, Royal Hallamshire Hospital, Sheffield, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 36

13:30 **3357.** **Evaluation of Cardiac Function using Noninvasive Phase-Contrast MRI, Cine MRI & Invasive Pressure-Volume Techniques on Pigs at Rest & Under Pharmacologic Stress Test**
Hung-Yu Lin[1,2], Darren Freed[3], Trevor Lee[3], Rakesh Arora[3], Ayyaz Ali[4], Waiel Almoustadi[3], Bo Xiang[1], Fei Wang[1], Scott B. King[1], Boguslaw Tomanek[1], Ganghong Tian[1]
[1]Institute for Biodiagnostics, National Research Council Canada, Winnipeg, Manitoba, Cambodia; [2]Radiology, University of Manitoba, Winnipeg, Manitoba, Canada; [3]Cardiac Sciences Program, St. Boniface Hospital, Winnipeg, Manitoba, Canada; [4]Cardiothoracic Surgery, Papworth Hospital, Cambridge, United Kingdom

14:00 **3358.** **Dynamic PVA Gel Phantom for Material Property Assessment using SPAMM-PAV**
Ziheng Zhang[1], Peter B. Brown[1], Donald P. Dione[2], Albert J. Sinusas[2], Smita Sampath[1]
[1]Department of Diagnositc Radiology, Yale University, School of Medicine, New Haven, CT, United States; [2]Section of Cardiovascular Medicine, Yale University, School of Medicine, New Haven, CT, United States

14:30 **3359.** **Comparison of Regional Myocardial Function in the Human & the Mouse**
Christakis Constantinides[1], Daniel Rueckert[2], Dimitrios Perperidis[1]
[1]Mechanical & Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus; [2]Imperial College London, London, United Kingdom

15:00 **3360.** **Characterization of Iron Load in Rat Myocardium at 7T by R_2 Map**
Gyula Kotek[1], Matteo Milanesi[2], Gavin Houston[3], Piotr Wielopolski[1], Gabriella N. Doeswijk[1], Gabriel P. Krestin[1], Monique Bernsen[1]
[1]Radiology, Erasmus MC, Rotterdam, Netherlands; [2]Agilent Technologies UK Ltd, Netherlands; [3]General Electric Healthcare, Netherlands

Exhibition Hall Wednesday 13:30-15:30 Computer 36

13:30 **3361.** **Assessment of the Right Ventricular Function in Patients with Chronic Obstructive Pulmonary Disease using MRI**
Yan Gao[1], Xianging Du[1], Wen Qin[1], Kuncheng Li[1]
[1]Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, People's Republic of

14:00 **3362.** **Optimization of Whole-Heart Cine MRI with a 128-Channel Receive Coil**
Himanshu Bhat[1], Philipp Hoecht[1], Sven Zuehlsdorff[2], Azma Mareyam[3], Boris Keil[4], Andreas Potthast[5], Melanie Schmitt[5], Lawrence L. Wald[4], Michael Hamm[1], David E. Sosnovik[4]
[1]Siemens Medical Solutions USA Inc., Charlestown, MA, United States; [2]Siemens Medical Solutions USA Inc., Chicago, IL, United States; [3]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, United States; [4]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, United States; [5]Siemens Healthcare, Erlangen, Germany

14:30 **3363.** **Manual Right Ventricle Segmentation on Short-Axis SSFP Views: Quantification of the Regional Inter-Observer Variability.**
Laurent Bonnemains[1,2], Damien Mandry[2,3], Pierre-Yves Marie[3,4], Pierre-André Vuissoz[2,5]
[1]Cardiologie Infantile, CHU Nancy, NANCY, France; [2]IADI, Nancy University, NANCY, France; [3]Médecine Nucléaire, CHU Nancy, NANCY, France; [4]CIC801, INSERM, NANCY, France; [5]U947, INSERM, NANCY, France

15:00 **3364.** **Left Ventricular Volumes, Mass & Function Normalized to the Body Surface Area, Age & Gender from CMR in a Large Cohort of Well-Treated Thalassemia Major Patients Without Myocardial Iron Overload.**
Antonella Meloni[1], Maria Chiara Dell'Amico[1], Brunella Favilli[1], Giovanni Donato Aquaro[1], Pierluigi Festa[1], Elisabetta Chiodi[2], Stefania Renne[3], Gennaro Restaino[4], Vincenzo Positano[1], Maria Concetta Galati[5], Massimo Lombardi[1], Alessia Pepe[1]
[1]Fondazione G.Monasterio CNR-Regione Toscana & Institute of Clinical Physiology, Pisa, Italy; [2]Arcispedale “S. Anna”, Ferrara, Italy; [3]P.O. “Giovanni Paolo II”, Lamezia Terme, Italy; [4]Università Cattolica del Sacro Cuore, Campobasso, Italy; [5]A.O. "Pugliese-Ciaccio", Catanzaro, Italy

Exhibition Hall Thursday 13:30-15:30 Computer 36

13:30 3365. Surgical Ventricular Restoration Fails to Improve Regional Left Ventricular Shape in Terms of Curvedness
Liang Zhong[1], Yi Su[2], Srikanth Sola[3], Jose L. Navia[3], Terrance Chua[1], Ghassan Kassab[4], Ru San Tan[1]
[1]National Heart Centre , Singapore, Singapore; [2]Institute of High Performance Computing, A*STAR, Singapore; [3]Cleveland Clinic, USA; [4]Indiana University-Purdue University, Indiananpolis, USA

14:00 3366. Magnetic Resonance Analysis of Right Ventricular Volumetric Function for the Noninvasive Diagnosis of Pulmonary Hypertension
Amir H. Davarpanah[1], Parmede Vakil[1], Octavia Biris[1], Sanjiv Shah[2], Timothy Carroll[1], James Carr[1]
[1]Cardiovascular Imaging, Northwestern University, Chicago, IL, United States; [2]Cardiology, Northwestern University, Chicago, IL

14:30 3367. A Preliminary Assessment of Diastolic Dysfunction with Normal Ejection Fraction with Cine MRI of the Atrioventricular Junction Motion
Sohae Chung[1], Elodie Breton[1], Leon Axel[1]
[1]Radiology Department, NYU Langone Medical Center, New York, NY, United States

15:00 3368. Left Ventricular Strain through Radial Tagging: Efficiency & Validity
Abbas N. Moghaddam[1,2], Khaled Z. Abd-Elmoniem[3], Golanz Heidari[1], Stefan Ruehm[1], J. Paul Finn[1]
[1]David Geffen School of Medicine, UCLA, Los Angeles, CA, United States; [2]Biomedical Engineering, Polytechnique University, Tehran, Iran; [3]National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health, Bethesda, MD, United States

Myocardial Function: Experimental Models & Human Studies II

Exhibition Hall Monday 14:00-16:00 Computer 37

14:00 3369. Displacement-Encoded & Manganese-Enhanced Cardiac MRI Reveal that NNOS, & Not ENOS, Plays the Dominant Role in Modulating Calcium Cycling in the Mammalian Heart
Moriel Vandsburger[1], Brent A. French[2], Kramer M. Christopher[2], Xiaodong Zhong[3], Frederick H. Epstein[2]
[1]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel; [2]University of Virginia, United States; [3]Siemens Medical Solutions, United States

14:30 3370. Analysis of Segmental Myocardial Performance in Patients after Heart Transplantation
Daniela Foell[1], Tobias Wengenmayer[1], Bernd Andre Jung[2], Elfriede Schilli[1], Anna Lena Stroh[1], Christoph Bode[1], Jürgen Hennig[2], Michael Markl[2]
[1]Cardiology & Angiology, University Hospital Freiburg, Freiburg, Germany; [2]Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Germany

15:00 3371. Comparison of SNR Efficiencies & Strain for Cine DENSE Images Acquired using Conventional EPI, Flyback EPI and Spiral k-Space Trajectories
Xiaodong Zhong[1], Bruce S. Spottiswoode[2], Craig H. Meyer[3,4], Frederick H. Epstein[3,4]
[1]MR R&D Collaborations, Siemens Healthcare, Atlanta, GA, United States; [2]MRC/UCT Medical Imaging Research Unit, University of Cape Town, Cape Town, Western Cape, South Africa; [3]Radiology Department, University of Virginia, Charlottesville, VA, United States; [4]Biomedical Engineering Department, University of Virginia, Charlottesville, VA, United States

15:30 3372. Fiber Tracking of the Human Heart *In Vivo*
Sonia Nielles-Vallespin[1], Choukri Mekkaoui[2], Timothy G. Reese[2], Peter Gatehouse[1], Thorsten Feiweier[3], Peter Speier[3], David E. Sosnovik[2], David Firmin[1]
[1]Cardiovascular MR Unit, Royal Brompton & Harefield NHS Foundation Trust, London, United Kingdom; [2]Martinos Center for Biomedical Imaging, Massachussetts General Hospital, Charlestown, MA, United States; [3]Siemens AG Healthcare Sector, Erlangen, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 37

13:30 3373. Quantification of Left Ventricular Torsion by Off-Resonance Insensitive CSPAMM (ORI-CSPAMM)
Meral Reyhan[1,2], Daniel B. Ennis[2,3]
[1]Department of Radiological Sciences, Diagnostic Cardiovascular Imaging Section, University of California, Los Angeles, CA, United States; [2]Biomedical Physics Interdepartmental Program, University of California, Los Angeles, CA, United States; [3]Department of Radiological Sciences, Diagnostic Cardiovascular Imaging Section, University of California , Los Angeles, CA, United States

14:00 3374. Multichannel RF Transmission Improves Cardiac Cine BSSFP MRI at 3.0T
Oliver M. Weber[1], Javier Sanchez Gonzalez[1]
[1]Philips Healthcare, Madrid, Spain

14:30 **3375.** **Time-Evolution of Edema in Reperfused Acute Myocardial Infarction: Implications for Assesment of Area-At-Risk**
Veronica L. M. Rundell[1], Avinash Kali[1], Xiangzhi Zhou[1], Ying Liu[1], Richard L. Q. Tang[1], Andreas Kumar[2], Rohan Dharmakumar[1]
[1]Radiology, Northwestern University, Chicago, IL, United States; [2]Laval University

15:00 **3376.** **Age-Related Differences of 3D Blood Flow in the Left Heart**
Daniela Foell[1], Steffen Taeger[1], Bernd Andre Jung[2], Michael Markl[2]
[1]Cardiology & Angiology, University Hospital Freiburg, Freiburg, Germany; [2]Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 37

13:30 **3377.** **Effects of Autologous Bone Marrow Mononuclear Cells Transplantation through Coronary Artery Bypass Grafting in Patients with Chronic Myocardial Infarction Assessed by Magnetic Resonance Imaging: A Randomized, Double Blind, Placebo-Controlled Pilot Trial**
Minjie Lu[1], Shihua Zhao[1], Shiliang Jiang[1], Sheng Liu[2], Yan Zhang[1], Zuoxiang He[3]
[1]Radiology, Fuwai Hospital, Beijing, China, People's Republic of; [2]Cardiac Surgery, Fuwai Hospital, Beijing, China, People's Republic of; [3]Nuclear Medicne, Fuwai Hospital, Beijing, China, People's Republic of

14:00 **3378.** **Single-Breathhold Three-Dimensional Cardiac Cine MRI with Retrospective Cardiac Gating using High Acceleration Kat ARC (K- & Adaptive T- Autocalibrating Reconstruction for Cartesian Sampling)**
Peng Lai[1], Marcus T. Alley[2], Shreyas S. Vasanawala[2], Anja C. S. Brau[1]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States

14:30 **3379.** **The Effect of Through Plane Motion on Left Ventricular Regional Rotation: A Study using Slice-Following Harmonic Phase (SF-HARP) Imaging.**
David Brotman[1], Ziheng Zhang[2], Smita Sampath[2]
[1]Fairfield University, Fairfield, CT, United States; [2]Yale University

15:00 **3380.** **Pancreatic Exocrine Function & Cardiac Iron in Patients with Iron Overload & with Thalassemia**
Jin Yamamura[1], Regine Grosse[2], Andrea Jarisch[3], Gritta E. Janka[4], Peter Nielsen[5], Gerhard Adam[1], Roland Fischer[5,6]
[1]Diagnostic & Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Pediatric Hematology & Oncology, University Medical Center Hamburg-Eppendorf; [3]Stem Cell Transplant Center, Johann Wolfgang Goethe-University of Frankfurt, Frankfurt, Germany; [4]Pediatric Hematology & Oncology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [5]Department of Biochemistry & Molecular Biology II: Molecular Cell Biology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [6]Children's Hospital & Research Center Oakland, Oakland, CA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 37

13:30 **3381.** **Optimal Tag Distance for Myocardial MR Motion Analysis of Healthy & Diseased Mice**
Bastiaan J. van Nierop[1], Tom J. L. Schreurs[1,2], Hans C. van Assen[2], Gustav J. Strijkers[1], Klaas Nicolay[1]
[1]Biomedical NMR, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; [2]Biomedical Image Analysis, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

14:00 **3382.** **Diagnostic Capability & Reproducibility of Myocardial Strain Measured by DENSE MRI in Patients with Acute Myocardial Infarction**
Kakuya Kitagawa[1], Hideki Miyagi[1], Shingo Kato[1], Yeonyee Elizabeth Yoon[1], Motonori Nagata[1], Shinichi Takase[1], Andreas Sigfridsson[2], Hajime Sakuma[1]
[1]Radiology, Mie University Hospital, Tsu, Mie, Japan; [2]Center for Medical Image Science & Visualization, Linköping University, Linköping, Sweden

14:30 **3383.** **Free Breathing 3D Imaging of Right Ventricular Structure & Function using Respiratory & Cardiac Self-Gated Cine MRI**
Yanchun Zhu[1,2], Jing Liu[2], Pascal Spincemaille[2], Thanh D. Nguyen[2], Minisha Kochar[3], Debbie W. Chen[3], Jonathan Lessick[3], Shanglian Bao[1], Liuquan Cheng[4], Martin R. Prince[2], Yi Wang[2], Jonathan W. Weinsaft[3]
[1]Beijing Key Lab of Medical Physics & Engineering, Peking University, Beijing, China, People's Republic of; [2]Cornell Cardiovascular Magnetic Resonance Imaging Laboratory, Radiology Department,Weill Cornell Medical College, New York, NY, United States; [3]Department of Medicine, Weill Cornell Medical College, New York, NY, United States; [4]Department of Radiology, Chinese PLA General Hospital, Beijing, China, People's Republic of

15:00 **3384.** **Use of Oxygen Challenge to Assess Myocardial Oxygenation: A Potential Tool to Image Oxygen Metabolism.**
Marzena M. Wylezinska[1], Jordi L. Tremoleda[1], Joseph Habib[2], Daniel Stuckey[2], Willy Gsell[1]

[1]Biological Imaging Centre, Imaging Sciences Department, MRC Clinical Sciences Centre, Imperial College London, London, United Kingdom; [2]National Heart & Lung Institute, Imperial College London, London, United Kingdom

Myocardial Tissue Characterization: Human Studies

Exhibition Hall Monday 14:00-16:00 Computer 38

14:00 3385. Assessment of the Gray Zone: A Comparison of Two Quantitative Methods in Heart Failure Patients
Tobias Voigt[1], Peter Koken[1], Simon G. Duckett[2], Anoop K. Shetty[2], Christian Stehning[1], Aldo Rinaldi[2], Reza Razavi[2], Tobias Schaeffter[2], Andrea J. Wiethoff[3]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Kings College London, London, United Kingdom; [3]Philips Healthcare, Best, Netherlands

14:30 3386. Improved Detection of Papillary Muscle Infarction by High-Resolution 3D Free Breathing Delayed Enhancement CMR
Thanh D. Nguyen[1], Jason Chinitz[2], Minisha Kochar[2], Debbie Chen[3], Parag Goyal[2], Helina Kassahun[2], Martin R. Prince[1], Yi Wang[1], Jonathan W. Weinsaft[2]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Medicine/Cardiology, Weill Cornell Medical College, New York, NY, United States; [3]Cornell University, Ithaca, NY, United States

15:00 3387. Non-Selective Double Inversion Recovery Pre-Pulse for Flow-Independent Black Blood Myocardial Scar Imaging: Optimization of the T_1 Suppression Range
Sarah Anne Peel[1], Geraint Morton[1], Eike Nagel[1], René M. Botnar[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

15:30 3388. Three-Segment Center Point Trajectory Model for Segmental Motion Tracking of Myocardial Infarction
Ting Song[1,2], Jeffrey A. Stainsby[3], Maureen N. Hood[2,4], Vincent B. Ho[2,4]
[1]Global Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States; [2]Radiology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [3]Global Applied Science Laboratory, GE Healthcare, Toronto, ON, Canada; [4]Radiology, National Naval Medical Center, Bethesda, MD, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 38

13:30 3389. Scar-Coronary Cardiac MR Imaging Acquired by Navigator-Gated 3D Fat-Suppressed Delayed-Enhancement Imaging Technique
Yasuo Amano[1], Tomonari Kiriyama[1], Yoshio Matsumura[1], Masaki Tachi[1], Tetsuro Sekine[1], Shinichiro Kumita[1]
[1]Nippon Medical School, Tokyo, Japan

14:00 3390. Variations in Myocardial T_1 with Cardiac Cycle at 1.5T
Xiaopeng Zhou[1,2], Melanie S. Kotys[3], Christian Stehning[4], Stefan E. Fischer[3], Scott D. Flamm[1], Randolph M. Setser[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Cleveland State University, Cleveland, OH, United States; [3]Philips Healthcare, OH, United States; [4]Philips Research, Hamburg, Germany

14:30 3391. Myocardial T_1 Measurement: Comparison of Modified Look-Locker Inversion Recovery (MOLLI) & TI Scout
Yuan Chang Liu[1], Chia-Ying Liu[1], Rob J. van Der Geest[2], Joao Lima, David Bluemke[3], Collen Hadigan[4]
[1]Department of Radiology, Johns Hopkins Hospital, Baltimore, MD, United States; [2]Department of Radiology, Leiden University Medical Center, Netherlands; [3]Radiology & Imaging Sciences, National Institutes of Health (NIH); [4]National Institute of Allergy & Infectious Diseases (NIAID), NIH

15:00 3392. Imaging of the Right Ventricular Wall at 3T in Suspected ARVD: Black-Blood Proton Density & T_1-W Imaging Both with & Without Fat-Saturation Compared with Multi-Echo Dixon Technique
Caroline Daly[1], Tosin Osuntokun[1], Mark Knox[1], Deirdre Ward[1], Ross Murphy[1], Ruth Dunne[1], Peter Beddy[1], James F. Meaney[1], Gerard Boyle[1,2], Matthew Clemence[3], Andrew J. Fagan[1,2]
[1]Centre for Advanced Medical Imaging, St. James's Hospital / Trinity College, Dublin, Ireland; [2]School of Medicine, Trinity College University of Dublin, Ireland; [3]Philips Healthcare, Reigate, United Kingdom

Exhibition Hall Wednesday 13:30-15:30 Computer 38

13:30 3393. Myocardial T_1 & T_2 Measurement in Patients with Cardiac Amyloid & Comparison with Normal Controls
James Glockner[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

14:00 3394. MultiContrast Delayed Enhancement (MCODE) Improves Interpretation of Cardiac MRI Delayed Enhancement: A Clinical Validation Study

W. Patricia Bandettini[1], Peter Kellman[1], Christine Mancini[1], Oscar Julian Booker[1], Sujethra Vasu[1], Steve W. Leung[1], Joel R. Wilson[1], Pamela Vincent[1], Sujata M. Shanbhag[1], Marcus Y. Chen[1], Andrew Ernest Arai[1]
[1]National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD, United States

14:30 **3395.** **Myocardial T_2 Mapping with Respiratory Navigator & Non-Rigid Registration: Comparison of Motion Compensation Techniques**
Shivraman Giri[1], Saurabh Shah[2], Hui Xue[3], Jens Guehring[3], Sven Zuehlsdorff[2], Yiu-Cho Chung[2], Subha V. Raman[1], Orlando P. Simonetti[1]
[1]The Ohio State University, Columbus, OH, United States; [2]Siemens Healthcare, Chicago, IL, United States; [3]Siemens Corporate Research, Princeton, NJ, United States

15:00 **3396.** **Preliminary Investigation of the Use of Multi-Transmit for Myocardial T_2 & T_2* Quantification in Normal Volunteers at 3T**
Hua Guo[1,2], Ed X. Wu[3,4], Wenchuan Wu[1,2], Xiangyang Ma[5], Guangzhi Wang[1,2], Chun Yuan[2,6]
[1]Biomedical Engineering Department, Tsinghua University, Beijing, China, People's Republic of; [2]Center for Biomedical Imaging Research, Tsinghua University, Beijing, China, People's Republic of; [3]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong; [4]4Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong; [5]Philips Research Asia, Shanghai, China, People's Republic of; [6]Department of Radiology, University of Washington, Seattle, WA, United States

Exhibition Hall Thursday 13:30-16:00 Computer 38

13:30 **3397.** **Distribution of Cardiac Iron Measured by MRI-R_2***
Jin Yamamura[1], Regine Grosse[2], Joachim Graessner[3], Gritta Janka[2], Gerhard Adam[1], Roland Fischer[4,5]
[1]Diagnostic & Interventional Radiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Pediatric Hematology & Oncology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [3]Siemens AG, Hamburg, Germany; [4]Department of Biochemistry & Molecular Biology II: Molecular Cell Biology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [5]Children's Hospital & Research Center Oakland, Oakland, CA, United States

14:00 **3398.** **Characterization of the Failing Human Heart Via Diffusion Tensor Imaging: An *Ex-Vivo* Study**
Osama M. Abdullah[1,2], Stavros G. Drakos[3], Divya Ratan Verma[3], Josef Stehlik[3], Abdallah G. Kfoury[3], Craig H. Selzman[3], Craig Myrick[4], Greg Russel[4], Dean Y. Li[3], Edward W. Hsu[1]
[1]Bioengineering, University of Utah, Salt Lake City, UT, United States; [2]Small Animal Core Research, University of Utah, Salt Lake City, UT, United States; [3]UTAH Cardiac Transplant Program, University of Utah & Intermountain Medical Center, Salt Lake City, UT, United States; [4]Intermountain Donor Services, Salt Lake City, UT, United States

14:30 **3399.** **Myocardial Fat Deposition in Dilated Cardiomyopathy Assessment by using MR Water-Fat Separation Imaging**
Minjie Lu[1], Shihua Zhao[1], Shiliang Jiang[1], Yang Zhang[1], Jing An[2], Jerecic Renate[3], Saurabh Shah[4]
[1]Radiology, Fuwai Hospital, Beijing, China, People's Republic of; [2]Siemens Mindit Magnetic Resonance, Siemens Healthcare, MR Collaboration NE Asia., Beijing, China, People's Republic of; [3]Siemens Limited China, Siemens Healthcare, MR Collaboration NE Asia, Beijing, Germany; [4]Siemens Healthcare, Chicago, IL, United States

Experimental Myocardial Imaging & Flow Imaging

Exhibition Hall Monday 14:00-16:00 Computer 39

14:00 **3400.** **MR Diffusion Tensor Investigation of Transmural Heterogeneity of Myocardium Structural Remodeling in Postinfarct Porcine Model**
Yin Wu[1,2], Ed X. Wu[2,3]
[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of; [2]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong; [3]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong

14:30 **3401.** **Impact of B-Value on DTI Indices of Left Ventricular Porcine Myocardium: A Preliminary Study**
Yin Wu[1,2], Chao Zou[1,2], Lijuan Zhang[1,2], Wei Liu[1,2], Rui-Bin Dai[1,2], Na Zhang[1,2], Xin Liu[1,2]
[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of; [2]Key Laboratory of Biomedical Informatics & Health Engineering, Chinese Academy of Sciences, Shenzhen, Guangdong, China, People's Republic of

15:00 **3402.** **The Tractographic Propagation Angle: A Novel Tool to Detect Infarction & Characterize Myocardial Microstructure**
Choukri Mekkaoui[1], Shuning Huang[1], Guangping Dai[1], Timothy G. Reese[1], Udo Hoffmann[2], Marcel P. Jackowski[3], David Sosnovik[4]
[1]Radiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center For Biomedical Imaging, Charlestown, MA, United States; [2]Radiology, Massachusetts General Hospital, Harvard Medical School, United States; [3]Computer Science, University of

São Paulo, Institute of Mathematics & Statistics, São Paulo, Brazil; [4]Cardiology, Harvard Medical School, Massachusetts General Hospital, Martinos Center For Biomedical Imaging, Charlestown, MA, United States

15:30 3403. A Comparison of Delayed Contrast Enhanced & T_1rho MRI for Assessment of LV Remodeling
Gerald Zsido[1], Walter R. T. Witschey[2], Kevin Koomalsingh[1], Joseph H. Gorman[1], Robin Hinmon[1], James J. Pilla[1], Ravinder Reddy[3], Maxim Zaitsev[2], Robert Gorman[1]
[1]Cardiothoracic Surgery, University of Pennsylvania, Philadelphia, PA, United States; [2]Medical Physics, University Medical Center Freiburg, Freiburg i. Breisgau, Baden Württemburg, Germany; [3]Radiology, University of Pennsylvania, Philadelphia, PA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 39

13:30 3404. Rapid Relative Pressure Map Computation from Velocity-Encoded Phase-Contrast Measurements
Gerard R. Crelier[1,2], David Brunner[2], Sebastian Kozerke[2], Peter Boesiger[2]
[1]GyroTools LLC, Winterthur, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

14:00 3405. Quantification of Vessel-Encoded Arterial Spin Labeling Dynamic Angiography with Auto-Calibration
Thomas William Okell[1], Michael Andrew Chappell[1,2], Ursula G. Schulz[3], Peter Jezzard[1]
[1]FMRIB Centre, Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Institute of Biomedical Engineering, University of Oxford, Oxford, Oxfordshire, United Kingdom; [3]Stroke Prevention Research Unit, Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom

14:30 3406. Off-Pump Left Ventricular Apical to Descending Aortic Conduits in Adults with Aortic Stenosis: Postoperative Cardiodynamic Evaluation with Cardiac MRI
Stephanie Clement-Guinaudeau[1], Adrian Lam[2], Stuart N. Hurst[1], Robert L. Eisner[1], Muralidhar Padala[1], Vinod H. Thourani[1], John N. Oshinski[1,2]
[1]Emory University, Atlanta, GA, United States; [2]Georgia Institute of Technology, Atlanta, GA, United States

15:00 3407. Assessment of Myocardial Twist Motion by Velocity Encoded MRI in LA - Orientation
Anja Lutz[1], Axel Bornstedt[1], Patrick Etyngier[2], Robert Manzke[3], Wolfgang Rottbauer[1], G. Ulrich Nienhaus[4], Volker Rasche[1]
[1]University Hospital of Ulm, Ulm, BW, Germany; [2]Medisys Research Lab, Philips Healthcare, Sureness, France; [3]Philips Research NA, Briarcliff Manor, United States; [4]Karlsruhe Institute of Technology, Karlsruhe, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 39

13:30 3408. Serial Assessment of Hyperintense Post-Infarct Myocardial Edema in Mice by T_2-Weighted MRI
Ronald J. Beyers[1], R. Scott Smith[1], Yaqin Xu[1], Brent A. French[1], Frederick H. Epstein[1]
[1]University of Virginia, Charlottesville, VA, United States

14:00 3409. Imaging of Inflammation using VSOP at Multiple Time Points in a Mouse Model of Myocardial Infarction
Andrea Protti[1], Xuebin Dong[1], Marcelo Andia[2], Sanjay Chaubey[1], Bin Yu[1], Matthias Taupitz[3], Rene Botnar[2], Ajay M. Shah[1]
[1]Cardiovascular Division, King's College London BHF Centre of Excellence, London, UK, United Kingdom; [2]Division of Imaging Sciences & Biomedical Engineering, King's College London BHF Centre of Excellence, London, UK, United Kingdom; [3]Department of Radiology, Charite-Universitaetsmedizin, Berlin, Germany

14:30 3410. Dual Manganese- & Delayed-Enhanced MRI Detects Myocardial Border Zone Viability in a Murine Myocardial Injury Model
Ildiko Toma[1], Michael Qian[2], Jaehoon Chung[1], Yongquan Gong[3], Rajesh Dash[1], Robert C. Robbins[4], Philip Harnish[5], Phillip C. Yang[1]
[1]Medicine/Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [2]University of California, Berkeley, Berkeley, CA, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]Cardiothoracic Surgery - Adult Cardiac Surgery, Stanford University, Stanford, CA, United States; [5]Eagle Vision Pharmaceutical Corp., United States

15:00 3411. Implications of 2D Slice Profile Deformations for Rapid Myocardial T_1/T_2 Quantification using DESPOT
Matthias Alexander Dieringer[1,2], Michael Deimling[2,3], Davide Santoro[2], Flavio Carinci[2,4], Jeanette Schulz-Menger[1,2], Thoralf Niendorf[1,2]
[1]Experimental and Clinical Research Center (ECRC), Charité Campus Buch, Humboldt-University, Berlin, Germany; [2]Berlin Ultrahigh Field Facility, Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [3]Siemens Healthcare, Erlangen, Germany; [4]Department of Physics, Insubria University, Como, Italy

Exhibition Hall Thursday 13:30-15:30 Computer 39

13:30 3412. Normal Distribution on Blood Flow Helicity in the Healthy Aorta
Ramona Lorenz[1], Jelena Bock[1], Jan Gerrit Korvink[2,3], Michael Markl[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Microsystems Engineering - IMTEK, University of Freiburg, Freiburg, Germany; [3]Freiburg Institute of Advanced Studies (FRIAS), University Freiburg, Freiburg, Germany

14:00 3413. *In-Vivo* Validation of 5-Point PC-VIPR for Hemodynamic Assessment of the Hepatic & Splanchnic Hemodynamics in Swine
Alex Frydrychowicz[1], Emily Winslow[2], Dan Consigny[1], Eric Niespodzany[1], Eric Bultman[1], Alejandro Roldán-Alzate[1], Kevin M. Johnson[3], Oliver Wieben[4], Scott B. Reeder[1]
[1]Department of Radiology, University of Wisconsin - Madison, Madison, WI, United States; [2]Department of Surgery, University of Wisconsin - Madison, Madison, WI, United States; [3]Department of Medical Physics, University of Wisconsin - Madison, Madison, WI, United States; [4]Departments of Radiology & Medical Physics, University of Wisconsin - Madison, Madison, WI, United States

14:30 3414. Whole Heart 4D Hemodynamics in Patients with Transposition of the Great Arteries After Switch Procedure
Julia Geiger[1], Raoul Arnold[2], Zoltan Csatari[1], Mathias Langer[1], Michael Markl[1]
[1]Radiology & Medical Physics, University Hospital Freiburg, Freiburg, Germany; [2]Pediatric Cardiology, University Hospital Freiburg, Freiburg, Germany

15:00 3415. Analysis of Complex Cardiovascular Flow with Three Component Acceleration Encoded MRI
Alex J. Barker[1], Felix Staehle[1], Jelena Bock[1], Bernd A. Jung[1], Michael Markl[1]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany

MRS Applied Methodology

Exhibition Hall Monday 14:00-16:00 Computer 40

14:00 3416. Comparing MEGA-SPECIAL to MEGA-STEAM for Pure GABA Detection at 7T
He Zhu[1,2], Richard Edden[1,2], Ronald Ouwerkerk[3], Peter B. Barker[1,2]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]NIDDK, National Institute of Health, Bethesda, MD, United States

14:30 3417. Glutamate & Glutamine Spectroscopic Imaging in Brain Tumors at 3.0 T
Sandeep Kumar Ganji[1], Ivan E. Dimitrov[1,2], Elizabeth A. Maher[3], Changho Choi[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Philips Medical Systems, Cleveland, OH, United States; [3]Internal Medicine & Neurology, University of Texas Southwestern Medical Center, Dallas, TX, United States

15:00 3418. Thalamic & Subcortical GABA in Human Brain at 7T
Jullie W. Pan[1], Nikolai Avdievich[1], Hoby P. Hetherington[1]
[1]Neurosurgery, Yale University School of Medicine, New Haven, CT, United States

15:30 3419. *In Vivo* Short Spin-Echo ^{1}H MR Spectroscopy with Macromolecule Suppression
Xi Chen[1,2], Laura M. Rowland[2], Yihong Yang[1]
[1]Neuroimaging Research Branch, Nation Institute on Drug Abuse, Baltimore, MD, United States; [2]Maryland Psychiatric Research Center, University of Maryland School of Medicine, Baltimore, MD, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 40

13:30 3420. CT-PRESS Based Spiral Spectroscopic Imaging with Robust Water & Lipid Suppression using Multiple Dualband Frequency-Selective RF Pulses
Meng Gu[1], Daniel M. Spielman[1], Natalie M. Zahr[2], Adolf Pfefferbaum[2], Edith V. Sullivan[2,3], Dirk Mayer[1,2]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Neuroscience Program, SRI International, Menlo Park, CA, United States; [3]Psychiatry & Behavioral Sciences, Stanford University

14:00 3421. Fully Adiabatic ^{31}P 2D CSI with Negligible Chemical Shift Displacement Error at 7T
Marek Chmelik[1], Stephan Gruber[1], Siegfried Trattnig[1], Wolfgang Bogner[1]
[1]MR Centre of Excellence, Department of Radiology, Medical University of Vienna , Vienna, Austria

14:30 3422. ^{1}H SPECIAL-MRSI at Ultra-Short TE: Improved Metabolite Detection for Multiple Voxels in Human Brain at 3T
Ralf Mekle[1], Vladimir Mlynarik[2], Bernadeta Walaszek[1], Rolf Gruetter[2,3], Bernd Ittermann[1], Florian Schubert[1]

[1]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; [3]Departments of Radiology, Universities of Lausanne & Geneva, Lausanne & Geneva, Switzerland

15:00 **3423.** **A Semi_LASER ^{1}H MRS Sequence Designed with High Bandwidth RF Pulses for Use at 4.0 T**
Hui Liu[1,2], Gerald B. Matson[1,3]
[1]Center for Imaging of Neurodegenerative Diseases (CIND), Veterans Affairs Medical Center, San Francisco, CA, United States; [2]Northern California Institute for Research & Education, San Francisco, CA, United States; [3]University of California, San Francisco, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 40

13:30 **3424.** **Absolute Metabolite Quantification by Magnetic Resonance Spectroscopy Imaging in Skeletal Muscle: First Results & Reproducibility**
Xin Wang[1], Laura Fayad[1], Peter Barker[2]
[1]Johns Hopkins University, Baltimore, MD, United States; [2]Radiology, Johns Hopkins University, United States

14:00 **3425.** ***In Vivo* Phosphorus MR Spectroscopy Demonstrates the Heterogeneous Composition of Sarcomas**
Fernando Arias-Mendoza[1], Truman R. Brown[1]
[1]Radiology, Columbia University Medical Center, New York, NY, United States

14:30 **3426.** ***In Vivo* MR Spectroscopy of Irregularly Shaped Single Voxel using 2D-Selective RF Excitations Based on a PROPELLER Trajectory**
Martin G. Busch[1,2], Jürgen Finsterbusch[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

15:00 **3427.** **Correlated Spectroscopic Imaging using Concentrically Circular Echo-Planar Trajectories in Human Calf**
Neil Wilson[1], Jon Furuyama[1], Michael Albert Thomas[1]
[1]Radiology, UCLA, Los Angeles, CA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 40

13:30 **3428.** **Sensitivity & Localization Reliability Analysis for Spectral Localization by Multichannel Coils**
Li An[1], Steven Warach[1], Jun Shen[2]
[1]National Institute of Neurological Disorders & Stroke, National Institutes of Health, Bethesda, MD, United States; [2]National Institute of Mental Health, National Institutes of Health, Bethesda, MD, United States

14:00 **3429.** **Accelerating Magnetic Resonance Spectroscopy Imaging by Compressed Sensing**
Peng Cao[1,2], Condon Lau[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of

14:30 **3430.** **Combination of Compressed Sensing & SENSE for ^{1}H MRSI: An Initial Result**
Zhengchao Dong[1,2], Yudong Zhang[1,2], Bradley S. Peterson[1,2]
[1]Columbia University, New York, NY, United States; [2]New York State Psychiatric Institute, New York, NY, United States

15:00 **3431.** **Non-Negative Blind Source Separation Techniques for Describing Intratumoral Histopathological Tissue Properties Within MRSI Measurements**
Anca Ramona Croitor Sava[1], Sofie Van Cauter[2], Diana Maria Sima[1], Maria Osorio Garcia[1], Uwe Himmelreich[2], Sabine Van Huffel[2]
[1]Depart. Electrical Eng. – ESAT/SCD, Katholieke Universiteit Leuven, Leuven, Belgium; [2]Dept. Medical Diagnostic Sciences – Biomedical NMR Unit, Katholieke Universiteit Leuven, Leuven, Belgium

Spectroscopic Quantitation

Exhibition Hall Monday 14:00-16:00 Computer 41

14:00 **3432.** **Quantitative Musculoskeletal MRS using the Phantom Replacement Method & Phased-Array Receiver Coils**
Xin Wang[1], Laura Fayad[2], Peter Barker
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Johns Hopkins University, United States

14:30 **3433.** **Proton Magnetic Resonance Spectroscopy Method for the Detection of Human Brain Metabolites at 7 Tesla**
Mohammed Elywa[1], Samir Mulla-Osman[1], Martin Walter[2], Kai Zhong[1], Frank Godenschweger[1], Oleksandr Khorkhordin[1], Jörn Kaufmann[3], Oliver Speck[4]

[1]Department of Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany; [2]Universitätsklinik für Psychiatrie, Otto-von-Guericke-University, Magdeburg, Germany; [3]Department of Neurology, Otto-von-Guericke-University, Magdeburg, Germany; [4]Department of Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany

15:00 **3434.** **Precision & Repeatability of *In Vivo* GABA & Glutamate Quantification**
Ruth L. O'Gorman[1], Richard Edden[2], Lars Michels[1], James B. Murdoch[3], Ernst Martin[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University, Baltimore, MD, United States; [3]Toshiba Medical Research Institute, Mayfield Village, OH, United States

15:30 **3435.** **Exploring Collagen Self-Assembly by NMR**
Natalia Lisitza[1], Xudong Huang[2], Hiroto Hatatu[3], Samuel Patz[3]
[1]Department of Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States; [3]Department of Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 41

13:30 **3436.** ***In-Vivo* Short-Echo-Time Single-Voxel Proton LASER Spectroscopy at 7 Tesla Incorporating Macromolecule Subtraction**
Jacob Penner[1,2], Andrew Lim[1], Andrew Curtis[1,2], Martyn Klassen[1], Joseph Gati[1], Matthew Smith[3,4], Michael Borrie[3,4], Robert Bartha[1,2]
[1]Centre for Functional & Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada; [2]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [3]Medicine, University of Western Ontario, London, Ontario, Canada; [4]Division of Aging, Rehabilitation, & Geriatric Care, Lawson Health Research Institute, London, Ontario, Canada

14:00 **3437.** **Optimization of Metabolite Basis-Sets Prior to Quantitation: A Quantum Mechanics Approach**
Andrii Lazariev[1], Abdul-Rahman Allouche[2], Monique Aubert-Frécon[2], Florence Fauvelle[3], Karim Elbayed[4], Martial Piotto[4,5], Izzie Jacques Namer[6], Dirk van Ormondt[7], Danielle Graveron-Demilly[1]
[1]Creatis-LRMN, Université Claude Bernard Lyon 1, Villeurbanne, France; [2]LASIM, Université Claude Bernard Lyon 1, Villeurbanne, France; [3]CRSSA/BCM, Grenoble, France; [4]Institut de Chimie, Strasbourg, France; [5]Bruker BioSpin, Wissembourg, France; [6]Department of Biophysics & Nuclear Medicine, University Hospitals of, Strasbourg, France; [7]Delft University of Technology, Delft, Netherlands

14:30 **3438.** **Association of MRS Measures in the Brain with Body Mass**
Andrew A. Maudsley[1], Varan Govind, Kris Arheart[2]
[1]Radiology, University of Miami, Miami, FL, United States; [2]Epidemiology, University of Miami

15:00 **3439.** ***In Vivo* ^{1}H MRS Quantification of Alzheimer Disease in Frontal Hippocampus of Mice with & without Inversion Recovery to Assess the Macromolecular Contribution**
Maria Isabel Osorio Garcia[1], Diana Sima[2], Flemming Ulrich Nielsen[3], Tom Dresselaers[3], Uwe Himmelreich[3], Fred Van Leuven[4], Sabine Van Huffel[2]
[1]Electrical Engineering - ESAT/SCD, Katholieke Universiteit Leuven, Leuven , Belgium; [2]Electrical Engineering - ESAT/SCD, Katholieke Universiteit Leuven, Leuven, Belgium; [3]Biomedical Nuclear - Magnetic Resonance Unit, Katholieke Universiteit Leuven, Leuven, Belgium; [4]Experimental Genetics Group LEGTEGG, Katholieke Universiteit Leuven, Leuven, Belgium

Exhibition Hall Wednesday 13:30-15:30 Computer 41

13:30 **3440.** **Accuracy & Reproducibility of Short-TE MRS Measurements of GABA at 3T as a Function of Linewidth & SNR**
Jamie Near[1], Jesper Andersson[1], Philip Cowen[2], Peter Jezzard[1]
[1]FMRIB Centre, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Department of Psychiatry, University of Oxford, Oxford, Oxfordshire, United Kingdom

14:00 **3441.** ***In Vivo* T_2 of GABA at 7T: Measuring Transverse Relaxation Times using Edited MRS**
Jarunee Intrapiromkul[1], Ying Cheng[2], He Zhu[1,3], Peter B. Barker[1,3], Richard Anthony Edward Edden[1,3]
[1]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, MD, United States; [2]Department of Biomedical Engineering, the Johns Hopkins University, Baltimore, MD, United States; [3]Kennedy Krieger Institute, Baltimore, MD, United States

14:30 **3442.** **Enhanced Detection of Glutamate in the Human Brain using Very Short Echo Times**
Sarah Andrea Wijtenburg[1,2], Jack Knight-Scott[1]
[1]Radiology, Children's Healthcare of Atlanta, Atlanta, GA, United States; [2]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States

15:00 **3443.** **Novel Approach for the Assessment of the Bioavailability of Exogenous Phosphate by *In Vivo* Dynamic ^{17}O & ^{31}P MRS & MRI**

Gheorghe D. Mateescu[1,2], Chris A. Flask[1,3], Jeffrey L. Duerk[1,3]
[1]Radiology, Case Western Reserve University, Cleveland, OH, United States; [2]Chemistry, Case Western Reserve University, Cleveland, OH, United States; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

Exhibition Hall Thursday 13:30-15:30 Computer 41

13:30 3444. Longitudinal Inter- & Intra-Individual Human Brain Metabolic Quantification with Proton MR Spectroscopy at 3T
Ivan Kirov[1], Ilena George[1], Nikhil Jayawickrama[1], James Babb[1], Nissa Perry[1], Oded Gonen[1]
[1]Radiology, New York University, New York, NY, United States

14:00 3445. If J Doesn't Evolve, It Won't J-Resolve: J-PRESS with Bandwidth-Limited Refocusing Pulses
Richard Anthony Edward Edden[1,2], Peter B. Barker[1,2]
[1]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, MD, United States; [2]FM Kirby Center for Functional MRI, Kennedy Krieger Institute, Baltimore, MD, United States

14:30 3446. Optimal Methodology for Glutamate & Glutamine Signal Quantification with Single Voxel MRS of the Human Brain
Jingjing Zhang[1], Sulaiman Sheriff[2], Andrew A. Maudsley[2], Karl Goodkin[3], Jeffry R. Alger[1]
[1]Neurology, University of California at Los Angeles, Los Angeles, CA, United States; [2]Radiology, University of Miami, Miami, FL, United States; [3]Psychiatry & Behavioral Neurosciences, Cedars-Sinai Medical Center, Los Angeles, CA, United States

15:00 3447. A Statistical Framework for Biomarker Identification using HR-MAS 2D NMR Spectroscopy
Akram Belghith[1], Christophe Collet[2], Karim Elbayed[3], Lucien Rumbach[4], Izzie Jacques Namer[5], Jean-Paul Armspach[6]
[1]University of Strasbourg, LSIIT - CNRS UMR 7005, Strasbourg, Alsace, France; [2]University of Strasbourg, LSIIT - CNRS UMR 7005, France; [3]University of Strasbourg, Institut de Chimie; [4]Neurology Department CHU Minjoz Besancon -France; [5]University of Strasbourg, LINC - CNRS FRE 3289 - France; [6]University of Strasbourg, LINC - CNRS FRE 3289, France

3D MRSI

Exhibition Hall Monday 14:00-16:00 Computer 42

14:00 3448. Volumetric Chemical Shift Imaging with Low Power Adiabatic Pulses & Fast Spiral Readouts
Ovidiu Cristian Andronesi[1], Borjan A. Gagoski[2], Elfar Adalsteinsson[2], Gregory A. Sorensen[1]
[1]Martinos Center for Biomedical Imaging, Radiology Department, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [2]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States

14:30 3449. Towards Standardization of Volumetric MRSI
Andrew A. Maudsley[1], Sulaiman Sheriff[1], Mohammed Sabati[1], Meng Gu[2], Juan Wei[3], Dan Spielman[2], Peter Barker[3], Rajesh Garugu[1]
[1]Radiology, University of Miami, Miami, FL, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]Radiology, Johns Hopkins University, Baltimore, MD, United States

15:00 3450. Novel Automated 3D MRSI Acquisition with Whole Brain Slice Selection & Outer-Volume Suppression
Eugene Ozhinsky[1,2], Adam B. Kerr[3], Sarah J. Nelson[1,4]
[1]Surbeck Laboratory of Advanced Imaging, Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]UCSF/UCB Joint Graduate Group in Bioengineering, University of California, San Francisco; [3]Department of Electrical Engineering, Stanford University, CA, United States; [4]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco

15:30 3451. Multi-Slice MRSI at 7T with Dualband Suppression & Hahn Echo Acquisition
He Zhu[1,2], Ronald Ouwerkerk[3], Richard Edden[1,2], Peter B. Barker[1,2]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]NIDDK, National Institute of Health, Bethesda, MD, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 42

13:30 3452. Improved Spatial Localization in 3D MRSI with a Sequence Combining PSF-Choice, EPSI & a Resolution-Enhancement Algorithm
Lawrence Patrick Panych[1], Bruno Madore[1], William S. Hoge[1], Robert V. Mulkern[2]
[1]Radiology, Brigham & Womens Hospital, Boston, MA, United States; [2]Radiology, Children's Hospital, Boston, MA, United States

14:00 3453. Phase-Cycled Segmented Center-Out Echo Planar Spectroscopic Imaging Sequence
Christian Labadie[1,2], Stefan Hetzer[3], Toralf Mildner[1], Monique Aubert-Frécon[2], Harald E. Möller[1]

[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Laboratoire de Spectrométrie Ionique et Moléculaire, Université Claude Bernard Lyon 1, France; [3]Bernstein Center for Computational Neuroscience, Berlin, Germany

14:30 **3454.** **Optimized Semi-LASER 3D MRSI Sequence for Lactate Detection in the Prostate**
Thiele Kobus[1], Arend Heerschap[1], Tom W. J. Scheenen[1]
[1]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Gelderland, Netherlands

15:00 **3455.** **Selective Zero-Quantum Coherence Transfer (Sel-ZQC) Method for High-Resolution Metabolite Imaging at Ultrahigh Field without Inhomogeneous Broadening & Susceptibility Artifacts**
Song Chen[1], Qiuhong He[1,2]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

Perfusion & Permeability Methodology

Exhibition Hall Monday 14:00-16:00 Computer 43

14:00 **3456.** **The Influences of Albumin Binding & Field Strength on the Relaxivity of Gadofosveset (Ablavar), & Its Potential Beyond Angiography as Clinical Field Strengths Increase**
Owen Carl Richardson[1], Steven F. Tanner[1], Marietta Scott[2], David L. Buckley[1]
[1]Division of Medical Physics, University of Leeds, Leeds, West Yorkshire, United Kingdom; [2]AstraZeneca, Alderley Park, Cheshire, United Kingdom

14:30 **3457.** **Nano-Osmotic Coupling in Active Cell Membrane Water Permeability**
Yajie Zhang[1], Marie Poirier-Quinot[1], Charles S. Springer, Jr.[2], James A. Balschi[1]
[1]Physiological NMR Core Laboratory, Brigham & Women's Hospital, Boston, MA, United States; [2]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States

15:00 **3458.** **Cerebral Blood Volume Fraction Quantification in Mice**
Teodora-Adriana Perles-Barbacaru[1], Francois Berger[2], Hana Lahrech[1]
[1]INSERM U836, Functional & Metabolic Neuroimaging, Grenoble Institute of Neurosciences, University Joseph Fourier, Grenoble, France; [2]INSERM U836, Brain Nanomedicine Group, Grenoble Institute of Neurosciences, University Joseph Fourier, Grenoble, France

15:30 **3459.** **3D Cartesian Volumetric Liver Perfusion MRI with High Temporal & Isotropic Spatial Resolution**
Kang Wang[1], Frank Korosec[1], Yin Huang[1], Kevin Johnson[1], Ethan Brodsky[2], Reed Busse[3], James Holmes[3], Jean Brittain[3], Scott Reeder[1,4]
[1]Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States; [3]Global Applied Science Laboratory, GE Healthcare; [4]Radiology, University of Wisconsin-Madison, Madison, WI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 43

13:30 **3460.** **Bias & Precision for Hemodynamic Parameters Resulting from 'best Model' & 'weighted Model' Strategies Based on the Akaike Information Criterion**
Robert Luypaert[1], Steven Pieter Sourbron[2], Johan de Mey[1]
[1]UZ Brussel - Radiology, Vrije Universiteit Brussel, Brussels, Belgium; [2]Medical Physics, University of Leeds, Leeds, United Kingdom

14:00 **3461.** **R_1 & R_2* Changes According to Gd Concentration: A Potential Limiting Factor in Converting MR Signal Intensity to Gd Concentration**
Jeong Kon Kim[1,2], Ravi Teja Seethamraju[3], Ji-Yeon Suh[1,2], Gyounggoo Cho[4], Woo Hyun Shim[2,5], Young Ro Kim[2]
[1]Department of Radiology, Research Institute of Radiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of; [2]Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]SIEMENS Medical Solutions USA, Inc, Boston, MA, United States; [4]MRI Team, Korea Basic Science Institute; [5]Bio & Brain, Korea Advanced Institute of Science & Technology

14:30 **3462.** **A Population Pharmacokinetic Model for Gd-DTPA in Small Animal DCE-MRI**
Andreas Steingoetter[1], Dieter Menne[2], Rickmer Braren[3]
[1]Division of Gastroenterology & Hepatology, University Zurich, Zurich, Switzerland; [2]Menne Biomed Consulting, Tuebingen, Germany; [3]Institute of Radiology, Klinikum rechts der Isar der TU München, Munich, Germany

15:00 **3463.** ***In Vivo* Measurement of Blood Transit Time in Rat Brain using the Saturation Recovery-T_1app Imaging Method**
Xiao Wang[1], Xiao-Hong Zhu[1], Yi Zhang[1], Wei Chen[1]

[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States

Microscopy

Exhibition Hall Wednesday 13:30-15:30 Computer 44

13:30 3464. Magnetic Resonance Microscopy of Human Brain Tumor Biopsies
Ana Gonzalez-Segura[1], Miguel Cerda-Nicolas[2], Concha Lopez-Gines[2], Jose Manuel Gonzalez-Darder[3], Jose Manuel Morales[2], Daniel Monleon[1]
[1]Fundacion Investigacion HCUV, Valencia, Spain; [2]Universidad de Valencia; [3]Hospital Clinico Valencia

14:00 3465. A Microfluidic Micro-MRI Set-Up to Assess the Specificity of Targeted Contrast Agents on a Living Cell Monolayer
Nicolas Gargam[1], Marie Poirier-Quinot[1], Jean-Sébastien Raynaud[2], Philippe Robert[2], Luc Darrasse[1]
[1]IR4M (UMR 8081), Université Paris-Sud - CNRS, Orsay, France; [2]Guerbet Research, Paris, France

14:30 3466. Biexponential T_2 Approach to Investigate Water Organization & Molecular Mobility of Hydrated HPMC Dosage Forms. Influence of Drug Substances with Different Water Solubility.
Anna Mlynarczyk[1], Krzysztof Jasinski[1], Piotr Kulinowski[1], Marco L. H. Gruwel[2], Przemys³aw Dorozynski[3], Boguslaw Tomanek[1,2], Wladyslaw P. Weglarz[1]
[1]Department of Magnetic Resonance Imaging, Institute of Nuclear Physics PAN, Krakow, Poland; [2]Institute for Biodiagnostics, National Research Council of Canada, Winnipeg, Manitoba, Canada; [3]Department of Pharmaceutical Technology & Biopharmaceutics, Jagiellonian University, Krakow, Poland

15:00 3467. Cellular Level MR Phase Contrast Microscopy & MEMRI of MnCl2 Labeled Tumor Cells with Direct Optical Correlation
Nicoleta Baxan[1], Ulf Kahlert[2], Juergen Hennig[1], Dominik von Elverfeldt[1]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Stereotactic Neurosurgery, University Medical Center Freiburg, Freiburg, Germany

MRS of Cells, Body Fluids & Others

Exhibition Hall Thursday 13:30-15:30 Computer 45

13:30 3468. Metabolic Regulatory Variation in Rat Serum Due to Cold Stress: High Resolution ^{1}H NMR Approach
Sonia Gandhi[1], Hemanth Kumar Bhonsle Somu[1], Memita Devi[1], Sunil Pal[2], Rajendra P. Tripathi[1], Subash Khushu[1]
[1]NMR Research Centre, Institute of Nuclear Medicine & Allied Sciences, DRDO, Delhi, India; [2]Division & Cyclotron & Radiopharmaceutical Sciences, Institute of Nuclear Medicine & Allied Sciences, DRDO, Delhi, India

14:00 3469. Metabolic Profiling of Human Liver Fibrosis
Jose Manuel Morales[1], Beatriz Martinez-Granados, Juan del Olmo[2], Bernardo Celda, Jose Manuel Rodrigo[1,2], Daniel Monleon[3]
[1]Universidad de Valencia, Valencia, Spain; [2]Hospital Clinico Valencia; [3]Fundacion Investigacion HCUV, Valencia, Spain

14:30 3470. High Resolution ^{1}H NMR Spectroscopy Successfully Discriminates Fetuses with Congenital Diaphragmatic Hernia from Normal Pregnancies
Anca Ramona Croitor Sava[1], Veronika Beck[2,3], Inga Sandaite[4], Jan Deprest[2,3], Filip Claus[4], Sabine Van Huffel[1], Uwe Himmelreich[5]
[1]Depart. Electrical Eng. – ESAT/SCD, Katholieke Universiteit Leuven, Leuven, Belgium; [2]Division Woman & Child, University Hospital Gasthuisberg, Leuven, Belgium; [3]Centre for Surgical Technologies, Katholieke Universiteit Leuven, Leuven, Belgium; [4]Division of Medical Imaging, University Hospital Gasthuisberg, Leuven, Belgium; [5]Dept. Medical Diagnostic Sciences – Biomedical NMR Unit, Katholieke Universiteit Leuven, Leuven, Belgium

15:00 3471. Hypoxia Increases Degradation of the Extracellular Matrix by Human Breast Cancer Cells
Tariq Shah[1], Balaji Krishnamachary[1], Flonne Wildes[1], Yelena Mironchik[1], Zaver M. Bhujwalla[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States

Spectroscopy - Other

Exhibition Hall Monday 14:00-16:00 Computer 46

14:00 **3472.** **Gender Differences in GABA & Glutamate Concentrations Measured with MEGA-PRESS**
Ruth L. O'Gorman[1], Lars Michels[1], Richard Edden[2], Ernst Martin[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University, Baltimore, MD, United States

14:30 **3473.** **Regional Variations in GABA Measured with MEGA-PRESS**
Christopher John Evans[1], Frederic Boy[1], Richard A. E. Edden[2], Krish D. Singh[1], Petroc Sumner[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, United States

15:00 **3474.** **Motor Control Predicted by GABA Concentration in the Supplimentary Motor Area**
Christopher John Evans[1], Frederic Boy[1], Richard A. E. Edden[2,3], Krish D. Singh[1], Masud Husain[4], Petroc Sumner[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, United States; [3]F.M. Kirby Research Center for Functional MRI, Kennedy Krieger Institute, Baltimore, United States; [4]UCL Institute of Cognitive Neuroscience & UCL Institute of Neurology, UCL, London, England, United Kingdom

15:30 **3475.** **^{1}H MRS at 7T Demonstrates a Strong Correlation Between Stimulus-Induced γ-Frequency in the Visual Cortex & the Glutamine/GABA Ratio.**
Mary Charlotte Stephenson[1], Matthew J. Brookes[1], Darren Price[1], Antonio Napolitano[2], Susan T. Francis[1], Peter G. Morris[1]
[1]School of Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Academic Radiology, University of Nottingham, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 46

13:30 **3476.** **Feasibility of Quantitative Proton MR Spectroscopy without Water Suppression in *In Vivo* Malignant Breast Lesions at 1.5T**
Hyeon-Man Baek[1]
[1]Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, United States

14:00 **3477.** **Increase in SNR for ^{31}P MR Spectroscopy by Integrating Polarization Transfer & Direct Detection in One Repetition Time.**
Wybe van Der Kemp[1], Vincent Boer[1], Peter Luijten[1], Jannie Wijnen[1], Dennis Klomp[1]
[1]Department of Radiology, University Medical Centre, Utrecht, Netherlands

14:30 **3478.** **Optimal Recombination of Multi-Coils CSI Data using Image Based Sensitivity Map**
Michaël Sdika[1], Yann Le Fur[1], Patrick J. Cozzone[1]
[1]CRMBM, CNRS, UMR 6612, Faculté de Médecine de Marseille, Université de la Méditerranée, Marseille, France

15:00 **3479.** **MISSA - a Highly-Developed Clinical Tool for MR Spectroscopy**
Bernd Merkel[1], Markus T. Harz[1], Horst K. Hahn[1]
[1]Fraunhofer MEVIS, Bremen, Germany

Elastography

Exhibition Hall Monday 14:00-16:00 Computer 47

14:00 **3480.** **Calculation of Shear Stiffness in Noise Dominated Magnetic Resonance Elastography (MRE) Data Based on Principal Frequency Estimation.**
Kiaran Patrick McGee[1], David Lake[1], Yogesh Mariappan[1], Armando Manduca[1], Rolf Hubmayr[2], Richard Ehman[1]
[1]Department of Radiology, Mayo Clinic, Rochester, MN, United States; [2]Pulmonology & Critical Care Medicine, Mayo Clinic, Rochester, MN, United States

14:30 **3481.** **Geometric Focusing of High Frequency Shear Waves for Noninvasive High Resolution MR Elastography**
Thomas J Royston[1], Temel Kaya Yasar[1], Richard L Magin[1]
[1]University of Illinois at Chicago, Chicago, IL, United States

15:00 **3482.** **Physical Boundary Conditions Reconstruction: A Novel Method to Determine Viscoelastic Parameters from Magnetic Resonance Elastography Data**
Philippe Garteiser[1], Sabrina Doblas[1], Bernard E. VanBeers[1,2], Valérie Vilgrain[2], Ralph Sinkus[1]
[1]INSERM UMR 773, Centre de Recherche Biomédicale Bichat-Beaujon, Clichy, France; [2]Department of Radiology, Beaujon University Hospital, Paris Diderot University, Clichy, France

15:30 **3483.** **Hardware & Software Design for Serial & Longitudinal Rat MR Elastography Studies**
Kevin John Glaser[1], Jun Chen[1], Meng Yin[1], Thomas Hulshizer[1], Phillip Rossman[1], Richard Ehman[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 47

13:30 **3484.** **Evaluating the Feasibility of Multi-Slice Endorectal Magnetic Resonance Elastography for Prostate Cancer Localization**
Arvin Arani[1,2], Donald Plewes[1,2], Rajiv Chopra[1,2]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada

14:00 **3485.** **MR-Elastography, a New Biomarker of the Tumor Vascularization in a Colon Cancer Mice Model**
Lauriane Jugé[1], Bich-Thuy Doan[2], Johanne Seguin[2], Miguel Albuquerque[1], Benoit Larrat[3], Daniel Scherman[2], Valerie Vilgrain[1], Valérie Paradis[1], Bernard E. Van-Beers[1], Ralph Sinkus[1]
[1]CRB3 / UMR 773, CLICHY, Ile de France, France, Metropolitan; [2]UMR 8151, Unité de pharmacologie chimique et génétique et d'Imagerie, -UPCGI/Chimie-Paristech, Paris, France, Metropolitan; [3]Institut Langevin, ESPCI, Paris, France, Metropolitan

14:30 **3486.** **Measuring the Transient Before Steady-State in Brain MR Elastography**
Curtis L. Johnson[1], Bradley P. Sutton[2,3], John G. Georgiadis[1,3]
[1]Department of Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Beckman Institute for Advanced Science & Technology, University of Illinois at Urbana-Champaign, Urbana, IL, United States

15:00 **3487.** **Hydraulic Conductivity Estimation using Magnetic Resonance Elastography**
Adam J. Pattison[1], Phillip R. Perrinez[1], Matthew D. J. McGarry[1], John B. Weaver[1,2], Keith D. Paulsen[1,3]
[1]Thayer School of Engineering, Dartmouth College, Hanover, NH, United States; [2]Dartmouth-Hitchcock Medical Center, Lebanon, NH, United States; [3]Norris Cotton Cancer Center, Lebanon, NH, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 47

13:30 **3488.** **Quantitative Measurement of Brain Deformation Caused by Pressure Loading of the Skull**
Erik H. Clayton[1], Agus Priatna[2], Bradley D. Bolster, Jr.[3], Philip V. Bayly[1,4]
[1]Mechanical Engineering & Material Science, Washington University in St. Louis, St. Louis, MO, United States; [2]MR R&D Collaborations, Siemens Healthcare, St. Louis, MO, United States; [3]MR R&D Collaborations, Siemens Healthcare, Rochester, MN, United States; [4]Biomedical Engineering, Washington University, St. Louis, MO, United States

14:00 **3489.** **Whole Brain MRE with Guided Pressure Waves**
Xavier Maitre[1], Emeline Lamain[1], Ralph Sinkus[2], Bruno Louis[3], Luc Darrasse[1]
[1]IR4M (UMR8081), Univ Paris-Sud, CNRS, Orsay, France; [2]Centre de Recherches Biomedicales Bichat-Beaujon (UMR773), CRB3, Inserm, Paris, France; [3]Biomecanique Cellulaire et Respiratoire (U841), IMRB, Inserm, Creteil, France

14:30 **3490.** **Non-Contact Driver System for MR Elastography of the Breast**
Jun Chen[1], Kevin J. Glaser[1], Eric G. Stinson[1], Jennifer L. Kugel[1], Richard L. Ehman[1]
[1]Mayo Clinic, Rochester, MN, United States

15:00 **3491.** **Modeling Strain-Encoded (SENC) MRI for Use in Clinical Breast Imaging**
Ahmed Amr Harouni[1], Nael F. Osman[2], Michael A. Jacobs[3]
[1]Electrical & Computer Engineering, Johns Hopkins University, Baltimore , MD, United States; [2]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [3]Department of Radiology & Oncology, Johns Hopkins University school of Medicine, Baltimore, MD, United States

Exhibition Hall Thursday 13:30-15:30 Computer 47

13:30 **3492.** **Feasibility of Brain MR-Elastography at 1.5 T with a Novel Wave Generator: An Animal Study**
Najat Salameh[1], Line Souris[1], Mathieu Sarracanie[1], Ludovic de Rochefort[1], Ralph Sinkus[2], Luc Darrasse[1], Xavier Maître[1]
[1]IR4M (UMR 8081), Université Paris-Sud 11, Orsay, France; [2]Inserm U979 - CNRS (UMR 7587), Institut Langevin, Paris, France

14:00 **3493.** **A Novel Cardiac Phantom to Study Murine & Human Cardiac Motion & Function using MRI**
Christakis Constantinides[1], Dimitris Nearchou[1], Christoforos Constantinou[1], Panayiotis Ktorides[1], Robert Gravett[2], Vasilios Tzagarakis[3]
[1]Mechanical & Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus; [2]Shelley Medical Imaging Technologies, London, Ontario, Canada; [3]Alpha Evresis Diagnostic Center, Nicosia, Cyprus

14:30 **3494.** **Measurement of Ferret Brain Tissue Stiffness *In Vivo* using MR Elastography**
Yulin V. Chang[1], Yuan Aaron Feng[1], Erik H. Clayton[1], Philip V. Bayly[1]
[1]Mechanical Engineering, Washington University, St. Louis, MO, United States

15:00 **3495.** **Single-Shot Cardiac MR Elastography**
Sebastian Hirsch[1], Thomas Elgeti[1], Dieter Klatt[1], Juergen Braun[2], Ingolf Sack[1]
[1]Department of Radiology, Charité - University Medicine Berlin, Berlin, Germany; [2]Institute of Medical Informatics, Charité - University Medicine Berlin, Berlin, Germany

Non-Proton MRI

Exhibition Hall Monday 14:00-16:00 Computer 48

14:00 **3496.** **Visualization & Quantification of Intestinal Transit & Motor Function by Real-Time Tracking of ^{19}F Labeled Capsules in Humans**
Tobias Hahn[1], Sebastian Kozerke[1], Werner Schwizer[2], Michael Fried[2], Peter Boesiger[1], Andreas Steingoetter[1,2]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [2]Division of Gastroenterology & Hepatology, University Hospital Zurich, Zurich, Switzerland

14:30 **3497.** ***In Vivo* Gastrointestinal Transit Study using Double-Labelled Markers**
Elisa Placidi[1], Caroline L. Hoad[1], Luca Marciani[2], Alan C. Perkins[3], P. E. Blackshaw[3], Robin C. Spiller[2], Penny A. Gowland[1]
[1]SPMMRC, Nottingham, Nottinghamshire, United Kingdom; [2]Nottingham Digestive Diseases Centre Biomedical Research Unit, Nottingham, United Kingdom; [3]Academic Medical Physics, Nottingham, United Kingdom

15:00 **3498.** **^{19}F-MRI: Flow Measurement of Fluorinated Gases During High Frequency Oscillatory Ventilation**
Janet Friedrich[1], Julien Rivoire[1], Maxim Terekhov[1], Laura Maria Schreiber[1]
[1]Section of Medical Physics, Johannes Gutenberg University Medical Center, Mainz, Germany

15:30 **3499.** **Feasibility of *In Vivo* Phosphorus Imaging of Cortical Bone at 7T in Humans**
Ping-Huei Tsai[1], Alan C. Seifert[1], Alexander C. Wright[1], Hamidreza S. Rad[1], Jeremy F. Magland[1], Hee Kwon Song[1], Mary B. Leonard[2], Felix W. Wehrli[1]
[1]Laboratory for Structural NMR Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Clinical Epidemiology & Biostatistics, Children¡¦s Hospital of Philadelphia, Philadelphia, PA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 48

13:30 **3500.** **Development of Dual-Tuned Knee Coil at 7T: A Feasibility Study of High-Resolution Sodium MR Imaging & T_2 Mapping in Knee Cartilage *In Vivo***
Junghwan Kim[1], Bumwoo Park[1], Alessandro Furlan[1], Chanhong Moon[1], Sung-Hong Park[1], Tiejun Zhao[2], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]MR Research Support, Siemens Healthcare, Pittsburgh, PA, United States

14:00 **3501.** **A Triple-Resonant Coil System for Inherently Co-Registered Proton-, Sodium- & Chloride-MRI at 9.4T**
Friedrich Wetterling[1], Saema Ansar[2], Laurant Tritschler[2], Raffi Kalayciyan[1], Stefan Kirsch[1], Marc Fatar[2], Stephen Meairs[2], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany; [2]Departmenet of Neuroloy, Heidelberg University, Mannheim, Germany

14:30 **3502.** **Evaluation of B_0-Inhomogeneity Correction for Triple-Quantum-Filtered Sodium MRI of the Human Brain at 4.7T**
Adrian Tsang[1], Rob Stobbe[1], Christian Beaulieu[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

15:00 **3503.** **Rodent Glioma Chemotherapy & Sodium MRI at 21.1T**
Victor D. Schepkin[1], Fabian Calixto Bejarano[1], Thomas Morgan[2], Shannon Gower-Winter[2], Cathy W. Levenson[2]
[1]CIMAR/MRI, NHMFL/FSU, Tallahassee, FL, United States; [2]Biomedical Sciences, FSU, Tallahassee, FL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 48

13:30 3504. ***In Vivo* Brain Sodium T_2* Mapping with a Multiple-Echo Flexible TPI Sequence**
Aiming Lu[1], Ian C. Atkinson[1], Keith R. Thulborn[1]
[1]Center for MR Research, University of Illinois, Chicago, IL, United States

14:00 3505. **Sodium Relaxation Times in the Knee Joint *In Vivo* at 7T**
Guillaume Madelin[1], Alexej Jerschow[2], Ravinder R. Regatte[1]
[1]Radiology Department, New York University Medical Center, New York, NY, United States; [2]Chemistry Department, New York University, New York, NY, United States

14:30 3506. ***In Vivo* Breast Sodium T_1 Measurements using Inversion Recovery 3D Cones**
Joshua Kaggie[1], Danny Park[2], Rexford D. Newbould[3], Glen R. Morrell[4], Brian Hargreaves[5], Ernesto Staroswiecki[5,6], Gary E. Gold[5], Neal K. Bangerter[2]
[1]Physics, University of Utah, Salt Lake City, UT, United States; [2]Electrical & Computer Engineering, Brigham Young University, Provo, UT, United States; [3]GSK Clinical Imaging Centre, London, United Kingdom; [4]Radiology, University of Utah, Salt Lake City, UT, United States; [5]Radiology, Stanford, Stanford, CA, United States; [6]Electrical Engineering, Stanford, CA, UT, United States

15:00 3507. **Relaxation Time Measurements of ^{31}P Metabolites in Human Muscle at 9.4 Tesla**
Yi Sui[1,2], Haoyang Xing[2], Theodore Claiborne[2], Keith R. Thulborn[2,3], Xiaohong Joe Zhou[2,4]
[1]Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for Magnetic Resonance Research, University of Illinois Medical Center, Chicago, IL, United States; [3]Department of Radiology, University of Illinois Medical Center, Chicago, IL, United States; [4]Departments of Radiology, Neurosurgery & Bioengineering, University of Illinois Medical Center, Chicago, IL, United States

Exhibition Hall Thursday 13:30-15:30 Computer 48

13:30 3508. **Quantitative Sodium MRI with Fluid Suppression in the Knee Joint at 3T & 7T**
Guillaume Madelin[1], Gregory Chang[1], Alexej Jerschow[2], Ravinder R. Regatte[1]
[1]Radiology Department, New York University Medical Center, New York, NY, United States; [2]Chemistry Department, New York University, New York, NY, United States

14:00 3509. **High Resolution Sodium MRI on Human Brain at 7T**
Yongxian Qian[1], Tiejun Zhao[2], Jonathan Weimer[3], Hai Zheng[3], Fernando E. Boada[1,3]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]R&D, Siemens Medical Solutions USA, Pittsburgh, PA, United States; [3]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

14:30 3510. **Sub-Millimeter ^{23}Na Imaging in Human Calf Skin at 7.0T**
Peter Linz[1], Davide Santoro[2], Wolfgang Renz[2,3], Jan Ruff[3], Jens Titze[4], Friedrich Luft[5], Thoralf Niendorf[2,5]
[1]Department of Nephrology & Hypertension, University Clinic Erlangen-Nuernberg, Erlangen, Germany; [2]Berlin Ultrahigh Field Facility, Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [3]Siemens Healthcare, Erlangen, Germany; [4]Department of Nephrology & Hypertension & Nikolaus-Fiebiger-Center for Molecular Medicine, University Clinic Erlangen-Nuernberg, Erlangen, Germany; [5]Experimental & Clinical Research Center (ECRC), Charité Campus Buch, Humboldt-University, Berlin, Germany

15:00 3511. **RARE Imaging of Post-Exercise Phospocreatine Recovery - Validation & Reproducibility**
Robert L. Greenman[1], Xiaoen Wang[1], Howard A. Smithline[2]
[1]Radiology, Beth Israel Deaconess Medical Center/Harvard Medical School, Boston, MA, United States; [2]Emergency Medicine, Bay State Medical Center, Tufts University School of Medicine, Boston & Springfield, MA, United States

Hyperpolarized ^{13}C I

Exhibition Hall Monday 14:00-16:00 Computer 49

14:00 3512. **Metabolism of Hyperpolarized [1-^{13}C]Pyruvate in Isolated Perfused Mouse Livers – a Comparison of Fed & Fasted States**
Benjamin M. Pullinger[1], Stephen J. Kadlecek[1], Helen Chen[2], Qingwei Chu[2], Nicholas N. Kuzma[1], Rahim R. Rizi[1]
[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Biochemistry & Biophysics, University of Pennsylvania, Philadelphia, PA, United States

14:30 3513. **Detection of Acute Kidney Injury using Hyperpolarized [1,4-$^{13}C_2$]fumarate**
Mikko I. Kettunen[1], Menna R. Clatworthy[2,3], Timothy H. Witney[1], De-En Hu[1], Brett W. C. Kennedy[1], Sarah E. Bohndiek[1], Rebeccah J. Mathews[2,3], Ferdia A. Gallagher[1,4], Ken G. Smith[2,3], Kevin M. Brindle[1]
[1]Department of Biochemistry, University of Cambridge & Cancer Research UK Cambridge Research Institute, Cambridge, Cambridgeshire, United Kingdom; [2]Cambridge Institute for Medical Research, Cambridge, Cambridgeshire, United Kingdom;

[3]Department of Medicine, University of Cambridge School of Clinical Medicine, Cambridge, Cambridgeshire, United Kingdom; [4]Department of Radiology, Addenbrooke's Hospital, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

15:00 3514. Chemical Shift Selective Imaging of Hyperpolarized ^{13}C using Variable Phase Balanced Steady-State Free Precession

Aaron Keith Grant[1], Elena Vinogradov[1], Xiaoen Wang[1], Hao Wang[1], Pankaj K. Seth[2], Vikas P. Sukhatme[2], David C. Alsop[1], Robert E. Lenkinski[1]

[1]Radiology, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States; [2]Medicine, Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA, United States

15:30 3515. Super Stimulated-Echo Preparation for Hyperpolarized ^{13}C Metabolic Imaging

Peder Eric Zufall Larson[1], Adam B. Kerr[2], Ralph E. Hurd[3], John Kurhanewicz[1], John M. Pauly[2], Daniel B. Vigneron[1]

[1]Radiology & Biomedical Imaging, UC - San Francisco, San Francisco, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 49

13:30 3516. Transient Decrease in Tumor PO_2 by ^{13}C-Pyruvate Injection

Keita Saito[1], Shingo Matsumoto[1], Nallathamby Devasahayam[1], Sankaran Subramanian[1], Jeeva P. Munasinghe[2], Jan Henrik Ardenkjaer-Larsen[3], Herman Douglas Morris[2], Martin J. Lizak[2], James B. Mitchell[1], Murali C. Krishna[1]

[1]National Cancer Institute, Bethesda, MD, United States; [2]National Institute of Neurological Disorder & Stroke; [3]GE Healthcare

14:00 3517. Metabolic Kinetics of a Glioma Model using Hyperpolarized ^{13}C Magnetic Resonance Spectroscopic Imaging

Jae Mo Park[1,2], Sonal Josan[2,3], Taichang Jang[4], Milton Merchant[4], Yi-Fen Yen[5], Ralph Hurd[5], Lawrence Recht[4], Daniel Spielman[1,2], Dirk Mayer[2,3]

[1]Department of Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States; [3]SRI International, Menlo Park, CA, United States; [4]Department of Neurology & Neurological Sciences, Stanford University, Stanford, CA, United States; [5]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

14:30 3518. Construction & Use of a Cryostat for Hyperpolarization Based on a 15 Cm, 4.6T Magnet

Lloyd Lumata[1], Richard Martin[1], Ashish Jindal[2], Zoltan Kovacs[1], Craig Malloy[1], A. Dean Sherry[1], Mark Conradi[3], Matthew E. Merritt[1]

[1]AIRC, UTSW Medical Center, Dallas, TX, United States; [2]UTSW Medical Center, United States; [3]Physics, Washington University in St. Louis, St. Louis, MO, United States

15:00 3519. Fast Volumetric Imaging of Ethanol Metabolism in Rat with Hyperpolarized [1-^{13}C]-Pyruvate

Sonal Josan[1,2], Daniel Spielman[2], Yi-Fen Yen[3], Ralph Hurd[3], Adolf Pfefferbaum[1,4], Dirk Mayer[1,2]

[1]SRI International, Menlo Park, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]GE Healthcare Applied Science Laboratory, Menlo Park, CA, United States; [4]Psychiatry and Behavioral Sciences, Stanford University, Stanford, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 49

13:30 3520. Simultaneous Bloch-Siegert B_1 Mapping & Imaging of Hyperpolarized Pyruvate, Bicarbonate, & Lactate, in a Single Tracer Bolus

Angus Zoen Lau[1,2], Albert P. Chen[3], Charles H. Cunningham[1,2]

[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]GE Healthcare, Toronto, ON, Canada

14:00 3521. Investigating the Role of PDH Inhibition on the Development of Hypertrophy in the Hyperthyroid Rat Heart

Helen J. Atherton[1,2], Michael S. Dodd[1], Lisa C. Heather[1], Marie A. Schroeder[1], Julian L. Griffin[2], George K. Radda[1], Kieran Clarke[1], Damian J. Tyler[1]

[1]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom; [2]Department of Biochemistry, University of Cambridge, Cambridge, United Kingdom

14:30 3522. Method for Robust PH Measurement using Hyperpolarized Bicarbonate & Carbon Dioxide

Albert P. Chen[1], Ralph E. Hurd[2], Marie A. Schroeder[3,4], Angus Z. Lau[4,5], Yi-Ping Gu[4], Wilfred W. Lam[4], Charles H. Cunningham[4,5]

[1]GE Healthcare, Toronto, ON, Canada; [2]GE Healthcare, Menlo Park, CA, United States; [3]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom; [4]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [5]Deptartment of Medical Biophysics, University of Toronto, Toronto, ON, Canada

15:00 3523. Spectroscopic Imaging of Cerebral Metabolism using Hyperpolarized [1-^{13}C]Pyruvate & Multi-Echo Single-Shot RARE Sequence

Peter Otto Magnusson[1], Sadia Asghar Butt[1], Mette Hauge Lauritzen[1], Jan Henrik Ardenkjær-Larsen[2], Per Åkesson[1], Lise Vejby Søgaard[1]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark; [2]GE Healthcare, Hillerød, Denmark

Exhibition Hall Thursday 13:30-15:30 Computer 49

13:30 3524. Autophagy Induced by DCA Treatment, PI3K Inhibition or Starvation Results in Reduced Pyruvate to Lactate Exchange Observed by DNP ^{13}C-MRS.
Yuen-Li Chung[1], Gigin Lin[1], Helen Troy[1], Anne-Christine Wong Te Fong[1], L. E. Jackson[1], Deborah K. Hill[1], Matthew Orton[1], Dow-Mu Koh[1], Simon P. Robinson[1], Ian R. Judson[2], John R. Griffiths[3], Martin O. Leach[1], Thomas R. Eykyn[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [2]CR-UK Centre for Cancer Therapeutics, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom; [3]Li Ka Shing Centre, CR-UK Cambridge Research Institute, Cambridge, United Kingdom

14:00 3525. Investigating Tumor Perfusion & Metabolism using Multiple Hyperpolarized ^{13}C Compounds: HP001, Urea, & Pyruvate
Cornelius von Morze[1], Peder E. Larson[1], Simon Hu[1], Robert Bok[1], Hikari Yoshihara[1], Andrei Goga[2], Jan Henrik Ardenkjaer-Larsen[3], Daniel B. Vigneron[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States; [2]Department of Medicine, Division of Hematology / Oncology, UCSF, San Francisco, CA, United States; [3]GE Healthcare, Hillerød, Denmark

14:30 3526. Arterial Input Function by DNP Measurement using an Automated Injector Designed for a 7T Unshielded Magnet
Steven Reynolds[1], Samira Kazan[2], Leigh Williams[2], Aneurin Kennerley[3], Jason Berwick[3], Gillian Tozer[2], Martyn Paley[1]
[1]Academic unit of Radiology, Medical School, University of Sheffield, Sheffield, S. Yorkshire, United Kingdom; [2]Department of Oncology, Medical School, University of Sheffield, Sheffield, S. Yorkshire, United Kingdom; [3]Department of Psychology, University of Sheffield, Sheffield, S. Yorkshire, United Kingdom

15:00 3527. Efficient Preparation of Hyperpolarized Aqueous Succinate from the Para-Hydrogenation & Hydrolysis of Maleic Anhydride
Francesca Reineri[1], Alessandra Viale[1], Silvano Ellena[1], Tommaso Boi[1], Roberto Gobetto[1], Silvio Aime[1]
[1]University of Torino, Torino, IT, Italy

Hyperpolarized ^{13}C II

Exhibition Hall Monday 14:00-16:00 Computer 50

14:00 3528. Effects of RF Excitation Scheme on Signal-To-Noise-Ratio & Apparent Rate Constant Estimation in Dynamic Volumetric Imaging of Hyperpolarized [1-^{13}C]-Pyruvate
Sonal Josan[1,2], Ralph Hurd[3], Adam B. Kerr[4], Yi-Fen Yen[3], Peder E. Z. Larson[5], Adolf Pfefferbaum[1,6], Daniel Spielman[2], Dirk Mayer[1,2]
[1]SRI International, Menlo Park, CA, United States; [2]Radiology, Stanford University, Stanford, CA, United States; [3]GE Healthcare Applied Science Laboratory, Menlo Park, CA, United States; [4]Electrical Engineering, Stanford University, Stanford, CA, United States; [5]Dept of Radiology & Biomedical Imaging, UC-San Francisco, San Francisco, CA, United States; [6]Psychiatry & Behavioral Sciences, Stanford University, Stanford, CA, United States

14:30 3529. Dynamic Imaging of Hyperpolarized [2-^{13}C] Pyruvate & [5-^{13}C] Glutamate in the Heart
Angus Zoen Lau[1,2], Albert P. Chen[3], Marie A. Schroeder[4], Jennifer Barry[2], Charles H. Cunningham[1,2]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]GE Healthcare, Toronto, ON, Canada; [4]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom

15:00 3530. Localized *In Vivo* Hyperpolarization Transfer Experiments
Mor Mishkovsky[1,2], Tian Cheng[1], Rolf Gruetter[1,3], Arnaud Comment[1,2]
[1]Laboratory for Functional & Metabolic Imaging , Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Université de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Universités de Lausanne et de Genève, Lausanne & Genève, Switzerland

15:30 3531. Single-Shot, Frequency & Time Specific, 3D Imaging Method for Measuring Hyperpolarized ^{13}C Biomarkers *In-Vivo* at 14.1 Tesla
Subramaniam Sukumar[1], Kayvan R. Keshari[1], Robert Bok[1], Vickie Zhang[1], Andrew Taylor[1], Michael A. Ohliger[1], Hikari Yoshihara[1], John Kurhanewicz[1], Daniel B. Vigneron[1]
[1]Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 50

13:30 3532. Free-Breathing Cardiac & Respiratory-Gated Imaging of Hyperpolarized Pyruvate & Bicarbonate in the Heart
Angus Zoen Lau[1,2], Albert P. Chen[3], Marie A. Schroeder[2,4], Wilfred W. Lam[2], Yiping Gu[2], Jennifer Barry[2], Charles H. Cunningham[1,2]
[1]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [2]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]GE Healthcare, Toronto, ON, Canada; [4]Department of Physiology, Anatomy & Genetics, University of Oxford, Oxford, United Kingdom

14:00 3533. Improving Estimation of Intracellular Hyperpolarized 1-^{13}C-Pyruvate Kinetics by Co-Injection of Gadolinium Contrast Agent
Matthew Smith[1], Eric Peterson[2], Jeremy Gordon[1], Kang Wang[1], Ian Rowland[3], Sean Fain[1,3]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin, Madison, WI, United States; [3]Radiology, University of Wisconsin, Madison, WI, United States

14:30 3534. Hyperpolarized Water for Interventional Angiography
Jan Henrik Ardenkjaer-Larsen[1], Christoffer Laustsen[2], Benjamin Pullinger[3], Stephen Kadlecek[3], Kiarash Emami[3], Rahim Rizi[3]
[1]GE Healthcare, Broendby, Denmark; [2]DRCMR, Hvidovre, Denmark; [3]University of Pennsylvania, United States

15:00 3535. Interrogating Tricarboxylic Acid Cycle: A Comparative Study by Hyperpolarized Succinic Acid & Its Diethylester
Pratip Bhattacharya[1], Niki Zacharias[1], Henry Chan[1], Napapon Sailasuta[1], Larry W. Robertson[1], Alan Epstein[2], Brian D. Ross[1]
[1]Enhanced MR Laboratory, Huntington Medical Research Institutes, Pasadena, CA, United States; [2]Pathology, University of Southern California, Los Angeles, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 50

13:30 3536. Study of Acetyl Carnitine Kinetics in Skeletal Muscle *In Vivo* using Hyperpolarized 1-^{13}C Acetate
Jessica A. M. Bastiaansen[1], Tian Cheng[1], Mor Mishkovsky[1,2], Arnaud Comment[1,2], Rolf Gruetter[1,3]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [2]Department of Radiology, Université de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Université de Lausanne et Genève, Lausanne & Geneva, Switzerland

14:00 3537. Spectral-Spatial EPI Sequence with Frequency Correction for Dynamic 3D Imaging of Pre-Polarized ^{13}C Metabolites
Charles H. Cunningham[1,2], Ralph E. Hurd[3], Albert P. Chen[4]
[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada; [3]GE Healthcare, Menlo Park, CA, United States; [4]GE Healthcare, Toronto, ON, Canada

14:30 3538. Producing >60,000-Fold Room-Temperature ^{89}Y NMR Signal Enhancement
Lloyd Laporca Lumata[1], Ashish Jindal[1], Matthew Merritt[1], Craig Malloy[1], Allan Dean Sherry[1,2], Zoltan Kovacs[1]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Chemistry, University of Texas at Dallas, Richardson, TX, United States

15:00 3539. *In Vivo* Assessment of Metabolism in the Hypertensive Rat Heart using Hyperpolarized [1-^{13}C] & [2-^{13}C]pyruvate
Michael Samuel Dodd[1,2], Daniel Ball[1], Marie A. Schroeder[1], Helen J. Atherton[1], Lydia Le Page[1], George K. Radda[1], Houman Ashrafian[2], Hugh Watkins[2], Kieran Clarke[1], Damian J. Tyler[1]
[1]Physiology, Anatomy & Genetics, Oxford University, Oxford, United Kingdom; [2]Cardiovascular Medicine, Oxford University, Oxford, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 50

13:30 3540. *In Vivo* Localized ^{15}N MRS Detection of Hyperpolarized ^{15}N Labeled Choline in the Rat Brain
Cristina Cudalbu[1], Arnaud Comment[2], Tian Cheng[2], Mor Mishkovsky[2], Rolf Gruetter[2,3]
[1]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL) , Lausanne, Switzerland; [2]Laboratory for Functional & Metabolic Imaging (LIFMET), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Departments of Radiology, Universities of Lausanne & Geneva, Geneva, Switzerland

14:00 3541. Evaluation of Heterogeneous Metabolic Profile in an Orthotopic Human Glioblastoma Xenograft Model using 3D Compressed Sensing Hyperpolarized ^{13}C MRSI
Ilwoo Park[1], Simon Hu[1], Robert Bok[1], Peter Shin[1], Tomoko Ozawa[2], C. David James[2], Sabrina M. Ronen[1], Daniel B. Vigneron[1,3], Sarah J. Nelson[1,3]

[1]Surbeck Laboratory of Advanced Imaging, Department of Radiology & Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States; [2]Brain Tumor Research Center, Department of Neurological Surgery, University of California, San Francisco, San Francisco, CA, United States; [3]Department of Bioengineering & Therapeutic Sciences, University of California, San Francisco, San Francisco, CA, United States

14:30 3542. Exchange Dynamics of a Cryptophane-Based Xenon Molecular Sensor

Richard Matthew Ramirez[1,2], Todd K. Stevens[1,2], Monica A. Smith[3,4], David E. Wemmer[1,4], Alexander Pines[1,2]
[1]Department of Chemistry, University of California, Berkeley, Berkeley, CA, United States; [2]Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; [3]Biophysics Graduate Group, University of California, Berkeley, United States; [4]Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

15:00 3543. Detection of Glutaminase Activity *In Vivo* in a MYC Mouse Model of Liver Cancer using Hyperpolarized [5-^{13}C]Glutamine

Simon Hu[1], Hikari Yoshihara[1], Robert Bok[1], Asha Balakrishnan[2], Andrei Goga[2], John Kurhanewicz[1], Daniel B. Vigneron[1]
[1]Dept. of Radiology & Biomedical Imaging, University of California at San Francisco, San Francisco, CA, United States; [2]Dept. of Medicine, Division of Hematology/Oncology, University of California at San Francisco, San Francisco, CA, United States

fMRI & Functional Connectivity Analysis

Exhibition Hall Monday 14:00-16:00 Computer 51

14:00 3544. Inter-Subject Correlations Between Resting-State Spontaneous Fluctuations & Fractional Volume of Gray Matter

Qihong Zou[1,2], Wanyong Shin[1,3], Hong Gu[1], Xiujuan Geng[1], Wang Zhan[4], Yufeng Zang[2], Yihong Yang[1]
[1]Neuroimaging Research Branch, National Institute on Drug Abuse, National Institutes of Health, Baltimore, MD, United States; [2]State Key Laboratory of Cognitive Neuroscience & Learning, Beijing Normal University, Beijing, China, People's Republic of; [3]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [4]Center of Imaging for Neurodegenerative Diseases, University of California San Francisco, San Francisco, CA, United States

14:30 3545. Quantitative BOLD using a Diffusive Model

John David Dickson[1], Dmitriy a Yablonskiy[2], Alex L. Sukstanskii[2], Tom W. J. Ash[3], Guy B. Williams[3], Richard E. Ansorge[1]
[1]Department of Physics, Cambridge University, Cambridge, Cambridgeshire, United Kingdom; [2]Mallinckrodt Institute of Radiology, University of Washington in St Louis, St Louis, MO, United States; [3]Wolfson Brain Imaging Centre, Cambridge University, United Kingdom

15:00 3546. Voxel-Wise fMRI Group Analysis using Fractional Volume of Gray Matter as a Covariant

Wanyong Shin[1], Hong Gu[2], Qihong Zou[2], Thomas Ross[2], Yihong Yang[2]
[1]Radiology, Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]National Institute on Drug Abuse, Baltimore, MD, United States

15:30 3547. Characterization of Spatial Variation of BOLD-Associated Neuronal Activity in fMRI

Yu Li[1], Hu Cheng[2]
[1]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Psychological & Brain Sciences, Indiana University at Bloomington, Bloomington, IN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 51

13:30 3548. A Support Vector Machine Based Real-Time fMRI Communication Channel

Tom Ash[1], Adrian Carpenter[1], Guy Williams[1]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, United Kingdom

14:00 3549. Combination of SVM & ROI Approaches for Real-Time fMRI Neurofeedback

Vadim Zotev[1], Raquel Phillips[1], Ruben Alvarez[1], W. Kyle Simmons[1], Pat Bellgowan[1], Wayne Drevets[1], Jerzy Bodurka[1]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States

14:30 3550. Online Learning for Real Time fMRI Classification

Hao Xu[1], Yongxin Taylor Xi[1], Ray Lee[2], Peter J. Ramadge[1]
[1]Electrical Engineering, Princeton University, Princeton, NJ, United States; [2]Princeton Neuroscience Institute, Princeton University, Princeton, NJ, United States

15:00 3551. Real-Time BOLD Functional MRI Neuro-Feedback: Connectivity Changes Observed in an Imagery Task

Silvina G. Horovitz[1], Brian D. Berman[1,2], Mark Hallett[1]
[1]HMCS, NINDS - NIH, Bethesda, MD, United States; [2]Neurology, School of Medicine University of Colorado Denver, Aurora, CO, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 51

13:30 3552. Connectivity Analysis Through Structural Vector Auto-Regressive (SVAR) Modeling
Gang Chen[1], Ziad S. Saad[1], J. Paul Hamilton[2], Ian H. Gotlib[2], Robert W. Cox[1]
[1]SSCC/DIRP/NIMH, National Institutes of Health, Bethesda, MD, United States; [2]Mood & Anxiety Disorders Laboratory, Department of Psychology, Stanford University, Stanford, CA, United States

14:00 3553. A Combined Dynamic Causal Modeling & Functional MRI Study to Assess Visuospatial Symmetry Judgment in Healthy Subjects
Manisha Bhattacharya[1], Shilpi Modi[1], Memita Devi[1], Namita Singh Saini[1], Rajendra Prasad Tripathi[1], Subash Khushu[1]
[1]NMR Research Centre, INMAS, Delhi, India

14:30 3554. Conditional Granger Causality Analysis of fMRI Data Shows a Direct Connection from LGN to HMT+ Bypassing V_1
Anna Gaglianese[1], Mauro Costagli[2], Giulio Bernardi[1], Lorenzo Sani[1], Emiliano Ricciardi[1], Pietro Pietrini[1]
[1]Laboratory of Clinical Biochemistry & Molecular Biology, Pisa, Italy, Italy; [2]Laboratory for Cognitive Brain Mapping, RIKEN - Brain Science Institute, Wako, Japan

15:00 3555. Stimulus Entrained Dynamic Effective Connectivity Analysis of fMRI
Gopikrishna Deshpande[1], Simon Lacey[2], Henrik Hagtvedt[3], Venessa Patrick[4], Amy Anderson[2], Randall Stilla[2], João Ricardo Sato[5], Srinivas Reddy[6], K. Sathian[2], Xiaoping Hu[7]
[1]AU MRI Research Center, Department of Electrical & Computer Engineering, Auburn University, Auburn, AL, United States; [2]Department of Neurology, Emory University, Atlanta, GA, United States; [3]Carroll School of Management, Boston College, Chestnut Hill, MA, United States; [4]C. T. Bauer College of Business, University of Houston, Houston, TX, United States; [5]Center of Mathematics, Computation & Cognition, Universidade Federal do ABC, Santo André, Brazil; [6]Centre for Marketing Excellence, Singapore Management University, Singapore; [7]Coulter Department of Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 51

13:30 3556. A Correlation-Matrix-Based Clustering Method for Extracting Correlation Patterns of Spontaneous BOLD Fluctuations
Xiao Liu[1,2], Xiao-Hong Zhu[1], Yi Zhang[1], Peihua Qiu[2], Wei Chen[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States; [2]Statistics, University of Minnesota, Minneapolis, MN, United States

14:00 3557. Eigenvector Centrality Mapping Based on Low-Frequency Phase Alignment
Gabriele Lohmann[1], Maren Grigutsch[1], Daniel Margulies[1], Annette Horstmann[1], Burkhard Pleger[1], Joeran Lepsien[1], Dirk Goldhahn[1], Haiko Schloegl[2], Michael Stumvoll[2], Arno Villringer[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Department of medicine, University of Leipzig, Leipzig, Germany

14:30 3558. BBCA Analysis of Functional & Structural Networks
Alex Kenneth Smith[1], David J. Madden[1], Pooja Gaur[1], Nan-Kuei Chen[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States

15:00 3559. Atlas-Based Analysis of Resting State Functional Connectivity MRI
Andreia Vasconcellos Faria[1,2], Suresh Joel[1,3], Xiaoying Tang[4], Peter vanZijl[1,3], Michael Miller[4], James Pekar[1,3], Susumu Mori[1]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]Radiology, State University of Campinas, Campinas, SP, Brazil; [3]FM Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [4]Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States

Function Connectivity: Physiology & Application

Exhibition Hall Monday 14:00-16:00 Computer 52

14:00 3560. Spontaneous fMRI Activity Reflects a Dynamic Image of Brain State
Marta Bianciardi[1], Masaki Fukunaga[1], Jacco A. de Zwart[1], Jeff H. Duyn[1]
[1]Advanced MRI Section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States

14:30 **3561.** **The Association between Pulse Wave Velocity, as a Marker of Sympathetic Tone, & Resting State BOLD Signals**
Kevin Murphy[1], James Coulson[1,2], Ashley D. Harris[1], Marija Fjodorova[1], Richard G. Wise[1]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Wales Heart Research Institute, Cardiff University, Cardiff, Wales, United Kingdom

15:00 **3562.** **Investigating the Neural Basis of FcMRI**
Matthew Jon Brookes[1], Joanne Hale[2], Claire Stevenson[2], Johanna Zumer[2], Gareth Barnes[3], Julia Owen[4], Susan Francis[2], Srikantan Nagarajan[4], Peter Morris[2]
[1]Sir Peter Mansfield Magnetic Resonance Centre , University of Nottingham, Nottingham, United Kingdom; [2]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom; [3]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom; [4]Biomagnetic Imaging Laboratory, University of California San Francisco, San Francisco, CA, United States

15:30 **3563.** **T_2* Modulation of Functional Connectivity using a Multi-Echo Strategy**
Changwei W. Wu[1], Hong Gu[1], Qihong Zou[1], Hanbing Lu[1], Elliot a Stein[1], Yihong Yang[1]
[1]Neuroimaging Research Branch, National Institute on Drug Abuse, Baltimore, MD, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 52

13:30 **3564.** **Caffeine Tightens the Coupling between Resting-State Blood Flow & Metabolic Fluctuations**
Anna Leigh Rack-Gomer[1], Tom T. Liu[1]
[1]Bioengineering & Center for Functional MRI, UC San Diego, La Jolla, CA, United States

14:00 **3565.** **Resting-State Functional Connectivity Modification by Non-Invasive Electrical Stimulation of the Brain**
Steven Roys[1], Gadi Alon[2], George Makris, Rao Gullapalli[1]
[1]University of Maryland, School of Medicine, Baltimore, MD, United States; [2]Physical Therapy, University of Maryland, School of Medicine

14:30 **3566.** **The Relation between Drug-Induced Effects on Resting State Brain Connectivity & Cerebral Blood Flow**
Najmeh Khalili-Mahani[1,2], Mathiass J. P. Van Osch[1], Serge A. R. B. Rombouts[1,2]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Leiden Institute for Brain & Cognition, Institute of Psychology, Leiden, Netherlands

15:00 **3567.** **Influence of Sevoflurane on Regional CBF & Functional Connectivity & Implications Related to Brain/Behavior During General Anesthesia**
Maolin Qiu[1], Ramachandran Ramani[2], Roberto Martuzzi[1], Xiaohui Zhang[1], R. Todd Constable[1,3]
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Anesthesia, Yale University School of Medicine, New Haven, CT, United States; [3]Biomedical Engineering, Neurosurgery, Yale University School of Medicine, New Haven, CT, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 52

13:30 **3568.** **Functional Networks in the Macaque Brain Revealed by Independent Component Analysis of Resting-State fMRI**
R. Matthew Hutchison[1], L. Stan Leung[1], Seyed M. Mirsattari[1], Joseph S. Gati[2], Ravi S. Menon[2], Stefan Everling[2]
[1]University of Western Ontario, London, Ontario, Canada; [2]Robarts Research Institute, London, Ontario, Canada

14:00 **3569.** **Gender Differences in Brain Structure & Resting State Activity: A Study in a Large Cohort of Young Healthy Subjects**
Paola Valsasina[1], Maria Assunta Rocca[1], Gianna Riccitelli[1], Andrea Falini[2], Giancarlo Comi[3], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Hospital, Milan, Italy; [2]Department of Neuroradiology, San Raffaele Hospital, Milan, Italy; [3]Department of Neurology, San Raffaele Hospital, Milan, Italy

14:30 **3570.** **Intrinsic Resting State Functional Connectivity of Default Mode Network Predicts Attention Task Performance**
Pan Lin[1], Nicola De Pisapia[1], Jorge Jovicich[1,2]
[1]Center for Mind Brain Sciences,University of Trento, Mattarello, Trento, Italy; [2]Department of Cognitive & Education Sciences,University of Trento, Rovereto, Trento, Italy

15:00 **3571.** **Applying Resting-State Functional MRI to Study Impact of Attention Training on Healthy Highly Educated Subjects**
Bob L. Hou[1], Alison Smith[2], Jason Chong[2], Julie Brefczynski-Lewis[1], Marc Haut[2]
[1]Radiology, West Virginia University, Morgantown, WV, United States; [2]Behavioral Medicine & Psychiatry, West Virginia University, Morgantown, WV, United States

Exhibition Hall Thursday 13:30-15:30 Computer 52

13:30 3572. Wavelet Analysis of the Small-World Human Brain Functional Network in Adolescents Prenatally Exposed to Cocaine
Lei Jiang[1], Zhihao Li[1], Claire Coles[2], Mary Lynch[2], Xiaoping Hu[1]
[1]Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, GA, United States; [2]Department of Psychiatry & Behavioral Sciences, Emory University School of Medicine, Atlanta, GA, United States

14:00 3573. Resting-State fMRI Multi-Spectral Connectivity Networks for Classification of Mild Cognitive Impairment Patients
Chong-Yaw Wee[1], Pew-Thian Yap[1], Kevin Denny[2], Lihong Wang[2], Dinggang Shen[1]
[1]Radiology, University of North Carolina, Chapel Hill, NC, United States; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

14:30 3574. Resting State Network Abnormalities in Amyotrophic Lateral Sclerosis Mirror Those of Frontotemporal Dementia
Elisa Canu[1], Federica Agosta[1], Paola Valsasina[1], Nilo Riva[2], Alessandro Prelle[3], Giulia Longoni[1], Giancarlo Comi[2], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]3Ospedale Fatebenefratelli e Oftalmico, Milan, Italy

15:00 3575. Changes in Thalamus Connectivity in Mild Cognitive Impairment: Evidence from Resting State fMRI
Zhiqun Wang[1], Xiuqin Jia[1], Peipeng Liang[1], Kuncheng Li[1]
[1]Radiology Department, Xuanwu Hospital of Capital Medical University, Beijing, China, People's Republic of

fMRI: High Temporal & Spatial Resolution

Exhibition Hall Monday 14:00-16:00 Computer 53

14:00 3576. Echo-Shifted Multi-Slice EPI Compared with GE-EPI in Median Nerve Stimulation at 7T
Gerda Bjork Grimnisdottir[1], Natalia Petridou[1,2], Richard Bowtell[1]
[1]Sir Peter Mansfield MR Centre, Physics & Astronomy, the University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]UMC, Utrecht, Netherlands

14:30 3577. Slice-Direction SENSE: A Sensitive Acquisition Method for Detecting Neuronal Current MRI Signal Induced by Epilepsy
Qingfei Luo[1], Gary H. Glover[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States

15:00 3578. GRASE Functional MRI with Asymmetric Spin-Echo
Lirong Yan[1], Robert P. Spunt[2], Emily Kilroy[1], Matthias Gunther[3], Matthew D. Lieberman[2], Danny J. J. Wang[1]
[1]Department of Neurology, University of California Los Angeles, Los Angeles, CA, United States; [2]Department of Psychology, University of California Los Angeles, Los Angeles, CA, United States; [3]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany

15:30 3579. Quantitative Evaluation of RSN Functional Contrast in Low-TR fMRI
Stephen Smith[1], Karla Miller[1], Christian Beckmann[1,2], Steen Moeller[3], Kamil Ugurbil[3], Essa Yacoub[3], David Feinberg[4,5]
[1]FMRIB, Oxford University, Oxford, Oxon, United Kingdom; [2]Donders Institute, Radboud University, Nijmegen, Netherlands; [3]Center for Magnetic Resonance Research, University of Minnesota Medical School, MN, United States; [4]Advanced MRI Technologies, Sebastopol, CA, United States; [5]Helen Wills Institute for Neuroscience, UC Berkeley, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 53

13:30 3580. Event-Related Functional MRI at High Spatial & Temporal Resolution using UNFOLD
Sebastian Domsch[1], Patrick Heiler[1], Lothar Rudi Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

14:00 3581. Imaging Cognitive Latencies with Ultrafast 7T fMRI
Allen T. Newton[1], Jascha D. Swisher[2], John C. Gore[1,3]
[1]Radiology & Radiological Sciences, Vanderbilt Universithy, Nashville, TN, United States; [2]Department of Psychology, Vanderbilt Universithy, Nashville, TN, United States; [3]Biomedical Engineering, Vanderbilt Universithy, Nashville, TN, United States

14:30 3582. The Limit of Relative Timing Accuracy of BOLD fMRI in Human Visual Cortex
Fa-Hsuan Lin[1,2], Jonathan R. Polimeni[2], Kevin Wen-Kai Tsai[1], Thomas Witzel[2], Wei-Tang Chang[1], Wen-Jui Kuo[3], John W. Belliveau[2]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Martinos Center, Massachusetts General Hospital, Charlestown, MA, United States; [3]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan

15:00 3583. Whole Brain Segmented Echo-Volumar-Imaging Increases fMRI Sensitivity Compared to Multi-Slice Echo-Planar-Imaging
Stefan Posse[1,2], Radu Mutihac[1,3], Elena Ackley[4], Jochen Rick[5], Akio Yoshimoto[6], Maxim Zaitsev[5], Oliver Speck[7]
[1]Neurology, University of New Mexico, Albuquerque, NM, United States; [2]Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, United States; [3]Electricity & Biophysics, Faculty of Physics, University of Bucharest, Bucharest, Romania; [4]Neurology, University of New Mexico, United States; [5]Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [6]Polytechnic Institute of New York University, New York, United States; [7]Biomedical Magnetic Resonance, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 53

13:30 3584. Mapping of Midbrain Nuclei Connectivity Networks using Time-Domain Phase-REgularized Parallel (T-PREP) Reconstruction of High-Resolution fMRI
Nan-Kuei Chen[1]
[1]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

14:00 3585. High Resolution Functional Connectivity Mapping at 7T
Christina Triantafyllou[1,2], Boris Keil[2], Sheeba Arnold[1], Susan Whitfield-Gabrieli[1], Lawrence L. Wald[2,3]
[1]A.A. Martinos Imaging Center, McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [3]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

14:30 3586. High Resolution Functional Mapping of Primary Motor Cortex & Primary Somatosensory Cortex in Humans at 7T
Robert Trampel[1], Andreas Schäfer[1], Robin Martin Heidemann[1], Dimo Ivanov[1], Gabriele Lohmann[1], Stefan Geyer[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany

15:00 3587. High Resolution BOLD fMRI of the Human Retina of Oxygen & Carbogen Inhalation
Yi Zhang[1,2], Qi Peng[1,2], Oscar San Emeterio Nateras[2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

Exhibition Hall Thursday 13:30-15:30 Computer 53

13:30 3588. Comparison of Acceleration Techniques Applied to Multi-Shot 3D EPI for fMRI Studies
Onur Afacan[1,2], Dana H. Brooks[1], W. Scott Hoge[2], Istvan A. Morocz[2]
[1]ECE Dept., Northeastern University, Boston, MA, United States; [2]Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States

14:00 3589. Functional MRI using Super-Resolved Spatiotemporally-Encoded Imaging Techniques
Noam Ben-Eliezer[1], Ute Goerke[2], Lucio Frydman[1]
[1]Chemical Physics, Weizmann Institute of Science, Rehovot, Israel; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

14:30 3590. Multi-Banded T_2-Weighted fMRI with a Z-Encoding RF Coil Array for Whole Brain Coverage at 7T
Johannes Ritter[1], Pierre-Francois Van De Moortele[1], Steen Moeller[1], Eddie Auerbach[1], Kamil Ugurbil[1], Gregor Adriany[1]
[1]CMRR, University of Minnesota, Minneapolis, MN, United States

15:00 3591. Highly Sparse Spiral fMRI Reconstructed with Compressed Sensing: Trajectory Optimization for BOLD Contrast
Daniel Holland[1], Careesa Liu[2], Chris V. Bowen[2,3], Andy Sederman[1], Lynn Gladden[1], Steven D. Beyea[2,3]
[1]Department of Chemical Engineering & Biotechnology, University of Cambridge, Cambridge, United Kingdom; [2]Institute for Biodiagnostics (Atlantic), National Research Council Canada, Halifax, Nova Scotia, Canada; [3]Departments of Physics & Radiology, Dalhousie University, Halifax, Nova Scotia, Canada

fMRI Signal Contributions

Exhibition Hall Monday 14:00-16:00 Computer 54

14:00 3592. Dynamical Statistical Modeling of Physiological Noise for Fast BOLD fMRI
Simo Sarkka[1], Aapo Nummenmaa[1,2], Arno Solin[1], Aki Vehtari[1], Thomas Witzel[3], Toni Auranen[4], Simo Vanni[4], Matti S. Hamalainen[2], Fa-Hsuan Lin[1,5]
[1]Department of Biomedical Engineering & Computational Science, Aalto University, Espoo, Finland; [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [3]Harvard-MIT Division of Health Sciences & Technology, Harvard University, Cambridge, MA, United States; [4]Advanced Magnetic Imaging Centre, Low Temperature Laboratory, Aalto University, Espoo, Finland; [5]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

14:30 3593. Improved Model for Physiological Fluctuations in fMRI
Christina Triantafyllou[1,2], Boris Keil[2], Jonathan R. Polimeni[2], Lawrence L. Wald[2,3]
[1]MIT, Athinoula A. Martinos Imaging Center, McGovern Institute for Brain Research, Cambridge, MA, United States; [2]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [3]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

15:00 3594. Sources of Signal Fluctuations in Single-Shot 2D EPI & Segmented 3D EVI Acquisitions for fMRI at 7T
João P. F. Jorge[1,2], Patrícia Figueiredo[1,2], Wietske van Der Zwaag[3,4], Mayur Narsude[3], José P. Marques[3,4]
[1]Instituto Superior Técnico, Lisbon, Portugal; [2]Institute for Systems & Robotics, Lisbon, Portugal; [3]Laboratory for Functional & Metabolic Imaging, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Department of Radiology, Université de Lausanne, Lausanne, Switzerland

15:30 3595. The Effect of Cardiac Synchronization on the Temporal Characteristics of 3D SSFP & 3D SGPR
Rob Hendrikus Tijssen[1], Karla Loreen Miller[1]
[1]FMRIB Centre, Oxford University, Oxford, Oxon, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 54

13:30 3596. Feasibility of Quantitative Measurements for Regional Cerebral Metabolic Rate of Oxygen ($CMRO_2$) During Functional Change with Visual Stimulus using MRI
Audrey Peiwen Fan[1], Jonathan R. Polimeni[2], Bruce R. Rosen[2,3], Elfar Adalsteinsson[1,3]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Health Sciences & Technology, Harvard-MIT, Cambridge, MA, United States

14:00 3597. A New Approach for Venous Blood Oxygenation & Calibrated BOLD using Hyperoxia
Ian Driver[1], Emma Hall[1], Susan Pritchard[1], Susan Francis[1], Penny Gowland[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

14:30 3598. Breathing Gas Calibration for MR $CMRO_2$ Measurements: Comparative Effects on Functional Brain Networks
Dimo Ivanov[1], Gabriele Lohmann[1], Stefan Kabisch[1,2], Ilona Henseler[1], Haiko Schloegl[1,2], Wolfgang Heinke[3], Chloe Hutton[4], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Department of Medicine, University Hospital Leipzig, Leipzig, Germany; [3]Department of Anestesiology & Intensive Care Therapy, University Hospital Leipzig, Leipzig, Germany; [4]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom

15:00 3599. High Resolution $CMRO_2$ in Visual Cortex of Macaca Mulatta
Yvette Bohraus[1], Nikos K. Logothetis[1,2], Jozien Goense[1]
[1]Dept. Physiology of Cognitive Processes, Max Planck Institute for Biological Cybernetics, Tübingen, Germany; [2]University of Manchester, Manchester, United Kingdom

Exhibition Hall Wednesday 13:30-15:30 Computer 54

13:30 3600. Differences in Neurovascular Coupling in Areas with Positive & Negative BOLD Signal
Jozien Goense[1], Nikos K. Logothetis[1,2]
[1]Dept. of Physiology of Cognitive Processes, Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany; [2]Division of Imaging Science & Biomedical Engineering, University of Manchester, United Kingdom

14:00 3601. Neurovascular Coupling & Uncoupling in Negative fMRI Response
Chiao-Chi V Chen[1,2], Yen-Yu I. Shih[3], Yi-Hua Hsu[1,2], Bai-Chuang Shyu[1], Chen Chang[1,2]
[1]Institute of Biomedical Sciences, Academic Sinica, Taipei, Taiwan; [2]Functional & Micro-magnetic Resonance Imaging Center, Academic Sinica, Taipei, Taiwan; [3]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States

14:30 **3602.** **The Source of the Early-Negative Blood Oxygenation Signal**
Hiro Fukuda[1], Alberto Vazquez[1], Seong-Gi Kim[1]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States

15:00 **3603.** **The BOLD fMRI Post-Stimulation Undershoot in Human Primary Motor Cortex is Not Caused by Elevated CBV**
Peter Dechent[1], Gunther Helms[1], Dietmar Merboldt[2], Jens Frahm[2]
[1]MR-Research in Neurology & Psychiatry, Universitymedicine Göttingen, Göttingen, Germany; [2]Biomedizinische NMR Forschungs GmbH am MPI für biophysikalische Chemie, Göttingen, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 54

13:30 **3604.** **Vascular-Space-Occupancy (VASO) MRI in Human Brain at 7T**
Jun Hua[1,2], Craig K. Jones[1,2], Peter C. M. van Zijl[1,2]
[1]Neurosection, Div. of MRI Research, Dept. of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States

14:00 **3605.** **Non-Invasive Quantification of Absolute Cerebral Blood Volume**
Pelin Aksit Ciris[1], Maolin Qiu[1], Robert Todd Constable[1]
[1]Yale University, New Haven, CT, United States

14:30 **3606.** **Cerebral Arterial & Venous Blood Volume Changes During the Post-Stimulus BOLD Undershoot Period**
Tae Kim[1], Soeng-Gi Kim[1]
[1]Neuroimaging Laboratory, Radiology, University of Pittsburgh, Pittsburgh, PA, United States

15:00 **3607.** **CBV Measurements-Gd_DTPA vs. VASO- & their Relationship with CBF in Activated Human Visual Cortex**
Ai-Ling Lin[1], Hanzhang Lu[2], Peter T. Fox[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

Improving fMRI Acquisition

Exhibition Hall Monday 14:00-16:00 Computer 55

14:00 **3608.** **Multi-Echo EPI with Parallel Transmission Z-Shimming for Increased Sensitivity in BOLD fMRI**
Benedikt A. Poser[1], Cungeng Yang[1], Weiran Deng[1], Vijayanand Alagappan[2,3], Lawrence L. Wald[2,4], V. Andrew Stenger[1]
[1]University of Hawaii, John A. Burns School of Medicine, Honolulu, HI, United States; [2]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [3]Department of Biomedical Engineering, Tufts University, Medford, MA, United States; [4]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

14:30 **3609.** **fMRI with Concurrent Magnetic Field Monitoring**
Christoph Barmet[1], Bertram Jakob Wilm[1], Lars Kasper[1], Christian C. Ruff[2], Klaas Enno Stephan[2,3], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University and ETH Zürich, Zurich, Switzerland; [2]Laboratory for Social & Neural Systems Research, University of Zurich, Zurich, Switzerland; [3]Wellcome Trust Centre for Neuroimaging, University College of London, London, United Kingdom

15:00 **3610.** **Slice-Specific Gradient Compensation of Magnetic Field Inhomogeneities to Improve T_2*-Weighted Imaging of the Human Spinal Cord**
Jürgen Finsterbusch[1,2], Falk Eippert[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

15:30 **3611.** **Parallel Imaging with Asymmetric Acceleration (ASYA) to Reduce Susceptibility Artifacts in BOLD fMRI**
Kwan-Jin Jung[1], Tiejun Zhao[2]
[1]Scientific Imaging Brain Research (SIBR), Department of Psychology, Carnegie Mellon University, Pittsburgh, PA, United States; [2]MR R&D Collaborations, Siemens Medical Solutionsn USA, Siemens Healthcare, Pittsburgh, PA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 55

13:30 **3612.** **Comparison of fMRI with Accelerated Variable Density Spiral & EPI**
Wei Lin[1], Enrico Simonotto[1], Feng Huang[1], Charles Saylor[1], George R. Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Philips Healthcare, Gainesville, FL, United States

14:00 **3613.** **Effects of a Slice-Dependent Template-Based Gradient Compensation Method on the BOLD Sensitivity**
Jochen Rick[1], Oliver Speck[2], Jürgen Hennig[3], Maxim Zaitsev[3]
[1]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, N/A, Germany; [2]Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany; [3]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

14:30 **3614.** **Optimizing EPI for Functional MRI using Multi-Directional Shimming in a Single Shot Acquisition**
Jaemin Shin[1], Sinyeob Ahn[1], Xiaoping P. Hu[1]
[1]Biomedical Engineering, Georgia Tech/Emory University, Atlanta, GA, United States

15:00 **3615.** **Dependence of Acquisition Trajectory on BOLD Sensitivity Changes Due to Magnetic Susceptibility Differences in the Brain**
Thomas Le Paine[1,2], Brad P. Sutton[1,2]
[1]Bioengineering, University of Illinois Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois Urbana-Champaign, Urbana, IL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 55

13:30 **3616.** **Implementation of Navigator Phase Correction in Multi-Echo Non-Balanced SSFP at 7T**
Pål Erik Goa[1,2], Benedikt Andreas Poser[2,3], Markus Barth[2,3]
[1]Department of Medical Imaging, St.Olav University Hospital, Trondheim, Norway; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany; [3]Donders Institute for Brain, Cognition & Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands

14:00 **3617.** **Impact of TE on Short-TR Pass-B & B-SSFP BOLD Contrast at 3T**
Qi Peng[1,2], Yi Zhang[1,2], Oscar San Emeterio Nateras[1,2], Timothy Q. Duong[1,2]
[1]Radiology, UT Health Science Center at San Antonio, San Antonio, TX, United States; [2]Research Imaging Institute, UT Health Science Center at San Antonio, San Antonio, TX, United States

14:30 **3618.** **A Real-Time Cardiac Synchronization Method for Reducing Flow-Induced Instabilities in SSFP fMRI of the Brainstem**
Rob Hendrikus Tijssen[1], Thomas William Okell[1], Karla Loreen Miller[1]
[1]FMRIB Centre, Oxford University, Oxford, Oxon, United Kingdom

15:00 **3619.** **Balanced Steady State Free Precession fMRI using Intravascular Susceptibility Contrast Agent**
Iris Yuwen Zhou[1,2], Matthew M. Cheung[1,2], Kevin C. Chan[1,2], Condon Lau[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of

Exhibition Hall Thursday 13:30-15:30 Computer 55

13:30 **3620.** **Dynamic Changes in the Tissue Microenvironment Induced by Hypercapnia & Hyperoxia: A T_1rho Dispersion Study at 9.4T**
Tao Jin[1], Seong-Gi Kim[1]
[1]Neuroimaging laboratory, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

14:00 **3621.** **Direction-Dependent Diffusion fMRI Signals During Hypercapnia & Hyperoxia**
Tao Jin[1], Seong-Gi Kim[1]
[1]Neuroimaging laboratory, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

14:30 **3622.** **Assessment of Hemodynamic Effects in Functional Diffusion-Weighted MRI**
Umesh Suryanarayana Rudrapatna[1], Maurits P. A. van Meer[1], Annette Van Der Toorn[1], Rick M. Dijkhuizen[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

15:00 **3623.** **Magnetization Transfer fMRI in Humans at 7T**
Sung-Yeon Park[1], Dae-Hoon Kang[1], Se-Hong Oh[1], Myoung-Kyun Woo[1], Joshua H. Park[1], Jun-Young Chung[1], Young-Bo Kim[1], Zang-Hee Cho[1], Seong-Gi Kim[2]
[1]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of; [2]Radiology, University of Pittsburgh, United States

fMRI Fluctuations: Artifacts & Information

Exhibition Hall Monday 14:00-16:00 Computer 56

14:00 3624. The Effect of Flip Angle on BOLD fMRI Sensitivity
Javier Gonzalez-Castillo[1], Vinai Roopchansingh[2], Peter A. Bandettini[1,2], Jerzy Bodurka[3]
[1]Section on Functional Imaging Methods, National Institute of Mental Health, Bethesda, MD, United States; [2]Functional MRI Facility, National Institute of Mental Health, Bethesda, MD, United States; [3]Laureate Institute for Brain Research, Tulsa, OK, United States

14:30 3625. Investigating Cardiac Pulsatility in the Brain using EPI Sequences: From Physiological Noise to Physiological Information
Ilia Makedonov[1,2], David E. Crane[1], Bradley J. MacIntosh[1,3]
[1]Heart & Stroke Foundation Centre for Stroke Recovery, Toronto, ON, Canada; [2]Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada; [3]Medical Biophysics, University of Toronto, Canada

15:00 3626. A Random-Walk Driven Segmentation of Resting State fMRI Data: Evaluation of Visual Cortex Sub-Communities is Enhanced by Physiological Noise Correction
Tommaso Gili[1], Ibrahim Eid[2], Kevin Murphy[1], Ashley Harris[1], Guido Caldarelli[3], Bruno Maraviglia[2], Richard Geoffrey Wise[1]
[1]Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, Cardiff, Wales, United Kingdom; [2]Dipartimento di Fisica, Università di Roma Sapienza, Roma, Italy; [3]CNR-ISC Dipartimento di Fisica, Univeristà di Roma Sapienza, Roma, Italy

15:30 3627. Relationship between Spontaneous Fluctuations in End-Tidal PCO2 & Apparent Resting State Functional Connectivity
Cécile Madjar[1], Claudine Joëlle Gauthier[1,2], Rasmus M. Birn[3], Rick D. Hoge[1,2]
[1]CRIUGM/UNF, Montréal, Québec, Canada; [2]Physiology/Biomedical Engineering, University of Montréal, Montréal, Québec, Canada; [3]University of Wisconsin, Madison, WI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 56

13:30 3628. A Simple Method to Reduce Signal Fluctuations in fMRI Caused by the Interaction between Motion & Coil Sensitivities
Axel Hartwig[1], Mathias Engström[1], Olof Flodmark[1], Martin Ingvar[1], Stefan Skare[1]
[1]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

14:00 3629. Identifying & Separating the RF Fluctuations from the Measurement Noise
Costin Tanase[1], Jeffrey O'Hara[2], Denise Davis[3], Fernando Boada[3], Michael H. Buonocore[4], Cameron S. Carter[1]
[1]Psychiatry & Behavioral Sciences, University of California at Davis, Sacramento, CA, United States; [2]Siemens Medical Solutions; [3]University of Pittsburgh, United States; [4]Radiology, University of California Davis, United States

14:30 3630. Modelling Temporal Stability of EPI Time Series Acquired with Multi-Channel Receiver Coils: Treatment of Noise Correlation
Chloe Hutton[1], Antoine Lutti[1], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, University College London, London, United Kingdom

15:00 3631. Reducing a Localized Signal Fluctuation Artifact in fMRI using Spectral-Spatial Fat Saturation
Dan Xu[1], Jian Zhang[2], Richard Scott Hinks[1], Kevin F. King[1]
[1]Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States; [2]Applied Science Laboratory, GE Healthcare, Bethesda, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 56

13:30 3632. Utility of T_2-Weighted Anatomical Images for fMRI Physiological Noise Visualization
Raquel Phillips[1], Vadim Zotev[1], Jonathan Savitz[1], Ruben Alvarez[1], W. Kyle Simmons[1], Patrick Bellgowan[1], Wayne Drevets[1], Jerzy Bodurka[1]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States

14:00 3633. Prediction & Correction of Physiological Noise in fMRI using Machine Learning
Tom Ash[1], John Suckling[2], Martin Walter[3], Cinly Ooi[2], Claus Tempelmann[4], Adrian Carpenter[1], Guy Williams[1]
[1]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, United Kingdom; [2]Brain Mapping Unit, University of Cambridge, Cambridge, United Kingdom; [3]Department of Psychiatry, University of Magdeburg, Magdeburg, Germany; [4]Department of Neurology, Otto v. Guericke University, Magdeburg, Germany

14:30 **3634.** **Increased SNR & Activation in Hadamard-Encoded fMRI Through Physiological Noise Removal & Phase Correction**
Alan Chu[1,2], Jon-Fredrik Nielsen[1], Scott J. Peltier[1], Douglas C. Noll[1]
[1]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [2]University of Michigan Medical School, Ann Arbor, MI, United States

15:00 **3635.** **Optimized Physiological Noise Correction for 3D EPI Time Series**
Antoine Lutti[1], Oliver Josephs[1], Dave Thomas[2], Rebecca Lawson[3], Jonathan P. Roiser[3], Chloe Hutton[1], Nikolaus Weiskopf[1]
[1]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, London, United Kingdom; [2]Institute of Neurology, Department of Brain Repair & Rehabilitation, University College London, London, United Kingdom; [3]Institute of Cognitive Neuroscience, University College London, London, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 56

13:30 **3636.** **Physiological Origin of Systemic Artifacts in Functional Near Infrared Spectroscopy as Revealed by fMRI**
Evgeniya Kirilina[1], Alexnader Jelzow[2], Ruediger Bruehl[2], Angela Heine[1], Michael Niessing[1], Arthur M. Jacobs[1], Bernd Ittermann[2], Heidrun Wabnitz[2], Rainer Macdonald[2], Ilias Tachtsidis[3]
[1]Free University of Berlin, Berlin, Germany; [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [3]Department Medical Physics & Bioengineering, University College London, London, United Kingdom

14:00 **3637.** **Small-Scale Phase & Magnitude Fluctuations in fMRI Time Series**
Gisela E. Hagberg[1,2], David Balla[3], Hannes M. Wiesner[4], Nikos K. Logothetis
[1]Physiology of Cognitive Processes, Max Planck Institute for Biological Cybernetics, Tübingen, Germany, Germany; [2]Fondazione Santa Lucia, Rome, Italy; [3]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tubingen, Germany; [4]High-Field Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Germany

14:30 **3638.** **Fully Automated fMRI Denoising using Multi-Echo fMRI & TE-Dependent Properties**
Prantik Kundu[1], Souheil J. Inati[1], Jennifer W. Evans[1], Ziad S. Saad[2], Peter A. Bandettini[1]
[1]Section on Functional Imaging Methods, National Institute of Mental Health, Bethesda, MD, United States; [2]Scientific & Statistical Computing Core, National Institute of Mental Health, Bethesda, MD, United States

15:00 **3639.** **Effect of Physiological Noise on Densely Sampled Multi-Echo fMRI Data**
Mark Chiew[1,2], Simon James Graham[1,3]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Rotman Research Institute, Toronto, Ontario, Canada; [3]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

fMRI Neuroscience Methods & Applications I

Exhibition Hall Monday 14:00-16:00 Computer 57

14:00 **3640.** **Tumor Induced Alterations in Hemodynamic Responses in BOLD fMRI: Implications in Presurgical Functional Brain Mapping**
Liya Wang[1,2], Dandan Chen[3], Jeffery Olson[4], Shazia Ali[1], Tianning Fan[5], Hui Mao[1,2]
[1]Radiology, Emory University School of Medicine, Atlanta, GA, United States; [2]Center for Systems Imaging, Emory University, Atlanta, GA, United States; [3]Physics, Emory University School of Medicine, Atlanta, GA, United States; [4]Neurosurgery, Emory University School of Medicine, Atlanta, GA, United States; [5]Center for Systems Imaging, Emory University , Atlanta, GA, United States

14:30 **3641.** **Neural Correlates of Archery Motor Imagery**
Jae-Jun Lee[1], Jeehye Seo[1], Hui-Jin Song[1], Seong-Uk Jin[1], Ji-Young Kim[2], Yongmin Chang[1,3]
[1]medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [2]School of Medicine, Kyungpook National University, Daegu, Korea, Republic of; [3]Diagnostic Radiology, Kyungpook National University , Daegu, Korea, Republic of

15:00 **3642.** **fMRI Assessment of Effects of Technique on Neurological Impairment in High School Football Players**
Thomas M. Talavage[1,2], Evan L. Breedlove[2], Katherine E. Morigaki[3], Meghan E. Robinson[2], Ruwan D. Ranaweera[1], Eric A. Nauman[2,4], Larry J. Leverenz[3]
[1]School of Electrical & Computer Engineering, Purdue University, West Lafayette, IN, United States; [2]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN, United States; [3]Department of Health & Kinesiology, Purdue University, West Lafayette, IN, United States; [4]School of Mechanical Engineering, Purdue University, West Lafayette, IN, United States

15:30 **3643.** **Training Shapes Cerebellum & Parieto-Frontal Network in Professional Badminton Players**
Senhua Zhu[1], Xin Di[1], Hua Jin[2], Pin Wang[2], Lei Mo[2], Ke Zhou[3], Yan Zhuo[3], Hengyi Rao[4]
[1]Department of Psychology, Sun Yat-sen University, Guangzhou, Guangdong, China, People's Republic of; [2]Department of Psychology, South China Normal University, Guangzhou, Guangdong, China, People's Republic of; [3]State Key Laboratory of Brain &

Cognitive Science, Beijing, China, People's Republic of; [4]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 57

13:30 3644. Deactivation in Tinnitus Patients & Controls During a Tone Discrimination Task Studied with fMRI
Arthur Peter Wunderlich[1], Carlos Schönfeldt-Lecuona[2], Robert Christian Wolf[2], Wolfgang Freund[1]
[1]Dept. for Diagnostic & Interventional Radiology, Univ.-Clinic Ulm, Ulm, Germany; [2]Psychiatry Dept., Univ.-Clinic Ulm, Ulm, Germany

14:00 3645. Enhanced Synchronization of Local Hymodynamic Activity in Mesial Temporal Epilepsy Network
Zhiqiang Zhang[1], Guangming Lu[1]
[1]Department of Radiology, Jinling hospital, Nanjing University School of Medicine, Nanjing, Jiangsu, China, People's Republic of

14:30 3646. Reorganization of Functional Networks After Training with Motor Imagery in Healthy Subjects & a Single Case of Lower Limb Amputation
Barbara Spano'[1], Mara Cercignani[1], Marco Bozzali[1], Cristiano Pecchioli[2], Giacomo Koch[2,3], Carlo Caltagirone[3,4], Barbara Marconi[2]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, IRCCS, Via Ardeatina 306, 00179 Rome, Italy, Rome, Lazio, Italy; [2]Laboratory of Clinical & Behavioral Neurology, Santa Lucia Foundation, IRCCS, Via Ardeatina 306, 00179 Rome, Italy, Rome, Lazio, Italy; [3]Department of Neuroscience, University of Rome 'Tor Vergata', Viale Oxford 81, 00133 Rome, Italy, Italy; [4]Department of Clinical & Behavioural Neurology, Santa Lucia Foundation, IRCCS, Via Ardeatina 306, 00179 Rome, Italy, Rome, Lazio, Italy

15:00 3647. Imaginary Toe-Tapping Causes Classic Motor Hand Area Activation in Bilateral Upper Limb Amputees
Feng Zhao[1,2], Hong-Jian He[3], Xiao-Jing Yu[2], Yi-Xiang Wang[1], Shi-Zheng Zhang[4]
[1]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong, Shatin, N.T., Hong Kong, China, People's Republic of; [2]Department of Radiology, Sir Run Run Shaw Hospital, Hang Zhou, Zhe Jiang, China, People's Republic of; [3]Bio-X laboratory of Physics Department, Zhejiang University, Hang Zhou, Zhe Jiang, China, People's Republic of; [4]Department of Radiology, Sir Run Run Shaw Hospital, Hang Zhou, Zhe Jiang, China, People's Republic of

Exhibition Hall Wednesday 13:30-15:30 Computer 57

13:30 3648. Self-Regulation of Amygdala Activation with Real-Time fMRI Neurofeedback
Vadim Zotev[1], Frank Kruger[2], Raquel Phillips[1], Ruben Alvarez[1], W Kyle Simmons[1], Pat Bellgowan[1], Wayne Drevets[1], Jerzy Bodurka[1]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States; [2]Department of Molecular Neuroscience, George Mason University, Fairfax, VA, United States

14:00 3649. fMRI of the Human Amygdala using Ultra-High Field MRI. Parcellation of Emotional Human Non-Linguistic Sounds
Eugenia Solano-Castiella[1], Bibek Dhital[1], Domenica Wilfling[1], Tom Fritz[1], Erik Türke[1], Enrico Reimer[1], Robert Trampel[1], Robert Turner[1]
[1]Neurophysics, Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Sachsen, Germany

14:30 3650. Spin-Echo BOLD Temporal Dynamics in the Rat Superior Colliculus & Lateral Geniculate Nucleus
Condon Lau[1,2], Jevin W. Zhang[1,2], Matthew M. Cheung[1,2], Iris Y. Zhou[1,2], Kevin C. Chan[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of

15:00 3651. Neurophysiological Verification that Unilateral Tactile Stimulation Evokes Contralateral Cortical but Bilateral Thalamic Activations
Basavaraju G. Sanganahalli[1,2], Peter Herman[1,2], Douglas L. Rothman[2,3], Hal Blumenfeld[2,4], Fahmeed Hyder[2,3]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Quantitative Neuroscience with Magnetic Resonance in Medicine (QNMR), Yale University, New Haven, CT, United States; [3]Diagnostic Radiology & Biomedical Engineering, Yale University, New Haven, CT, United States; [4]Neurology, Neurosurgery, Neuroscience, Yale University, New Haven, CT, United States

Exhibition Hall Thursday 13:30-15:30 Computer 57

13:30 3652. Functional Magnetic Resonance Imaging of the Effects of a 60 Hz 3000 µT Magnetic Field on Resting State Brain Blood Flow
Jodi Miller[1,2], Julien Modolo[1,2], Michael Corbacio[1,2], Daniel Goulet[3], Jacques Lambrozo[4], Michel Plante[3], Martine Souques[4], Frank S. Prato[1,2], Alex W. Thomas[1,2], Alexandre W. Legros[1,2]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Imaging, Lawson Health Research Institute, London, Ontario, Canada; [3]Hydro-Québec; [4]Service des Études Médicales, EDF

14:00 3653. BOLD Responses According to Stimulation Orders & Manipulation Methods
Geon-Ho Jahng[1], Seong-In Bae[2], Sabina Lim[2]
[1]Department of Radiology, Kyung Hee University Hospital-Gangdong, Kyung Hee University, Seoul, Korea, Republic of; [2]Department of Meridian & Acupuncture, Graduate School of Applied Eastern Medicine, Seoul, Korea, Republic of

14:30 3654. GABA, Glutamate, & Perfusion Changes During Working Memory
Lars Michels[1], Ernst Martin[1], Peter Klaver[2], Richard Edden[3], Daniel Brandeis[4], Rafael Lüchinger[4], David Lythgoe[5], Fernando Zelaya[5], Ruth L. O'Gorman[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Department of Psychology, University of Zürich, Zürich, Switzerland; [3]Russell H Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Child & Adolescent Psychiatry, University of Zürich, Zürich, Switzerland; [5]Centre for Neuroimaging Sciences, Institute of Psychiatry, London, United Kingdom

15:00 3655. Anesthetic Effects of Propofol on the Brain – Preliminary Results from MRI & MRS in Normal Human Subjects
Maolin Qiu[1], Ramachandran Ramani[2], R Todd Constable[1,3]
[1]Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, United States; [2]Anesthesia, Yale University School of Medicine, New Haven, CT, United States; [3]Biomedical Engineering, Neurosurgery, Yale University School of Medicine, New Haven, CT, United States

fMRI Neuroscience Methods & Applications II

Exhibition Hall Monday 14:00-16:00 Computer 58

14:00 3656. Event-Related Olfactory fMRI
Xiaoyu Sun[1], Christopher W. Weitekamp[1], Jianli Wang[1], Jeffrey Vesek[1], Qing X. Yang[1,2]
[1]Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

14:30 3657. Dynamic Behavior of BOLD Signal in Olfactory Neural Networks
Prasanna Karunanayaka[1], Christopher W. Weitekamp[1], Jianli Wang[1], Megha M. Patel[1], Jeffrey Vesek[1], Xiaoyu Sun[1], Paul J. Eslinger[2,3], James R. Connor[4], Qing X. Yang[1,4]
[1]Radiology, Center for NMR Research, Penn State University College of Medicine, Hershey, PA, United States; [2]Neurology, Penn State University College of Medicine, Hershey, PA, United States; [3]Neural & Behavioral Sciences, Penn State University College of Medicine, Hershey, PA, United States; [4]Neurosurgery, Penn State University College of Medicine, Hershey, PA, United States

15:00 3658. Optimized fMRI Imaging Protocol & Hardware for Studying the Orbitofrontal Cortex in the Presence of Olfactory Stimulation
Johnny Ng[1,2], Heather Berlin[3], Wayne Goodman[3], Emily Eaves[1], David Carpenter[1], Cheuk Tang[1,3]
[1]Radiology, Mount Sinai School of Medicine, New York, NY, United States; [2]Biomedical Engineering Dept., City College of New York, New York, NY, United States; [3]Psychiatry, Mount Sinai School of Medicine, New York, NY, United States

15:30 3659. An MR Compatible Olfactometer for Clinical Research Use
Johnny Ng[1,2], Emily Evaes[1], David Carpenter[1], Cheuk Ying Tang[1,3]
[1]Dept. Radiology, Mount Sinai School of Medicine, New York, United States; [2]Biomedical Engineering Dept., City College of New York, New York, United States; [3]Dept. Psychiatry, Mt. Sinai School of Medicine, New York, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 58

13:30 3660. One Night Total Sleep Deprivation Alters Neural Correlates of Risk-Taking
Hengyi Rao[1,2], Dan Luftig[2], Julian Lim[2], John A. Detre[3], Daivid F. Dinges[2]
[1]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States; [2]Unit for Experimental Psychiatry, University of Pennsylvania, Philadelphia, PA, United States; [3]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States

14:00 3661. Discriminant Analysis & Prediction of AMCI Subjects and Normal Controls using Encoding & Recognition fMRI Tasks
Dietmar Cordes[1], Mingwu Jin[1], Tim Curran[2], Victoria Pelak[3], Rajesh Nandy[4]
[1]C-TRIC & Dept. of Radiology, University of Colorado-Denver, Aurora, CO, United States; [2]Dept. of Psychology & Neuroscience, University of Colorado-Boulder, Boulder, CO, United States; [3]Dept. of Neurology, University of Colorado-Denver, Aurora, CO, United States; [4]Depts. of Biostatistic & Psychology, University of California-Los Angeles, Los Angeles, CA, United States

14:30 3662. fMRI of Working Memory in Military Traumatic Brain Injury
John Graner[1], Hai Pan[1], Ping-Hong Yeh[1], Binquan Wang[1], Terrence R. Oakes[1,2], Wei Liu[1,2], Louis M. French[3], Fletcher Munter[2], Gerard Riedy[2,4]

[1]TBI Image Analysis Lab, Uniformed Services University of the Health Sciences / HJF, Bethesda, MD, United States; [2]National Capital Neuroimaging Consortium, Walter Reed Army Medical Center, Washington, DC, United States; [3]Defense & Veterans Brain Injury Center, Walter Reed Army Medical Center, Washington, DC, United States; [4]National Intrepid Center of Excellence, Bethesda, MD, United States

15:00 3663. Working Memory Impairment in Fibromyalgia Patients : fMRI Study
Jeehye Seo[1], Jae-Jun Lee[1], Hui-Jin Song[1], Seong-Uk Jin[1], Ji-Young Kim[2], Yongmin Chang[1,3]
[1]Medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [2]School of Medicine, Kyungpook National University, Daegu, Korea, Republic of; [3]Diagnostic Radiology, Kyungpook National University , Daegu, Korea, Republic of

Exhibition Hall Wednesday 13:30-15:30 Computer 58

13:30 3664. Investigating the Neural Base of Hearing One's Own Name by fMRI
Toshiki Nakane[1,2], Miyakoshi Makoto[2], Toshi Nakai[2], Shinji Naganawa[1]
[1]Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan; [2]NCGG, Ohbu, Aichi, Japan

14:00 3665. Empathic Brain Responses to Other's Pain was Modulated by Simple Group Categorization: An fMRI Study
Yang Hu[1,2], Mingxia Fan[3], Wenjing Li[2], Peijia Huang[2], Zhaoxin Wang[1,3]
[1]Institute of Cognitive Neuroscience, Shanghai Key Laboratory of Brain Functional Genomics, East China Normal University, Shanghai, China, People's Republic of; [2]Department of Psychology, School of Psychology & Cognitive Science, East China Normal University, Shanghai, China, People's Republic of; [3]Shanghai Key Laboratory of MRI, East China Normal University, Shanghai, China, People's Republic of

14:30 3666. Disrupted Sensory Projection & Preserved Integrative Network in Propofol-Induced Anesthesia
Xiaolin Liu[1], Kathryn K. Lauer[2], Stephen M. Rao[3], Shijiang Li[1], Anthony G. Hudetz[2]
[1]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Anesthesiology, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Schey Center for Cognitive Neuroimaging, Cleveland Clinic, Cleveland, OH, United States

15:00 3667. The Neural Basis of Auditory Processing Disorder
Vincent Jerome Schmithorst[1], Scott Kerry Holland[1], Elena Plante[2]
[1]Radiology, Children's Hospital Medical Center, Cincinnati, OH, United States; [2]Speech, Language, & Hearing Sciences, University of Arizona, Tucson, AZ, United States

Exhibition Hall Thursday 13:30-15:30 Computer 58

13:30 3668. Classical Music Enhances the Local Functional Connectivity Density in the Brain
Ruiliang Wang[1], Gene-Jack Wang[2], Frank Telang[3], Rita Z. Goldstein, Nora D. Volkow[4], Dardo Tomasi[4]
[1]Medical, Brookhaven National Laboratory, Upton, NY, United States; [2]Brookhaven Nationa Laboratory; [3]medical, Brookhaven National Laboratory; [4]National Institute on Drug Abuse, National Institute on Health

14:00 3669. Middle Frontal Gyrus as a Potential Neural Indicator for Musical Imagery
Kirsteen Davidson-Kelly[1], Sujin Hong[1], Janani Dhinakaran[2], Joseph Sanders[3], Calum Gray[4], Edwin J. R. van Beek[4], Neil Roberts[4], Katie Overy[1]
[1]Music, University of Edinburgh, Edinburgh, United Kingdom; [2]Carl von Ossietzky University of Oldenburgh, Germany; [3]Guildhall School of Music & Drama, London, United Kingdom; [4]Clinical Research Imaging Centre (CRIC), Queen's Medical Research Institute (QMRI), University of Edinburgh, Edinburgh, United Kingdom

14:30 3670. "Dual-Use" fMRI in Children: Assessing Language & Visuospatial Functions with One Task
Marko Wilke[1], Kathina Ebner[2], Till-Karsten Hauser[3], Karen Lidzba[2]
[1]Pediatric Neurology & Developmental Medicine, University Children's Hospital Tübingen, Tübingen, BW, Germany; [2]Pediatric Neurology & Developmental Medicine, University Children's Hospital Tübingen, Tübingen, Germany; [3]Diagnostic & Interventional Neuroradiology, Radiological Clinic, Tübingen, Germany

15:00 3671. Song & Speech – Perception & Covert Production: New Findings using Multi-Voxel Pattern Analysis
Dirk Goldhahn[1], Daniel E. Callan[2], Gabriele Lohmann[1], Robert Turner[1]
[1]Department of Neurophysics, Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]ATR Computational Neuroscience Laboratories, Kyoto, Japan

Animal fMRI

Exhibition Hall Monday 14:00-16:00 Computer 59

14:00 3672. BOLD fMRI of the Visual System in Awake & Anesthetized Rats
Der-Yow Chen[1], Stephen Dodd[1], Afonso Silva[1], Alan Koretsky[1]
[1]LFMI, NINDS, NIH, Bethesda, MD, United States

14:30 **3673.** **Neurophysiological Underpinnings of Ketamine-Induced Negative BOLD Response & Interactions with Anaesthesia**
Naranjargal Dashdorj[1], Mirjam I. Schubert[1], Malcolm Prior[2], Rob Mason[3], Dorothee P. Auer[1]
[1]Academic Radiology, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]Brain & Body Centre, University of Nottingham, Nottingham, United Kingdom; [3]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom

15:00 **3674.** **Ketamine-Evoked Functional Connectivity Changes in Isoflurane Anaesthetised Rats**
Naranjargal Dashdorj[1], Mirjam I. Schubert[1], Rob Mason[2], Dorothee P. Auer[1]
[1]Academic Radiology, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]School of Biomedical Sciences, University of Nottingham, Nottingham, United Kingdom

15:30 **3675.** **Alternating Phase Coherence of Spontaneous Hemodynamic Oscillation is Sensitive to Anesthesia Levels**
Xiao Liu[1], Xiao-Hong Zhu[1], Yi Zhang[1], Wei Chen[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 59

13:30 **3676.** **BOLD fMRI Investigation of Rat Auditory System**
Matthew Man Hin Cheung[1,2], Iris Y. Zhou[1,2], Kevin C. Chan[1,2], Frank Y. Lee[1,2], Leon C. Ho[1,2], Condon Lau[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong SAR, China, People's Republic of

14:00 **3677.** **BOLD Response Dependence on the Stimulation Light Intensity in the Rat Superior Colliculus**
Jevin W Zhang[1,2], Condon Lau[1,2], Matthew M. Cheung[1,2], Kyle Xing[1,2], Iris Y. Zhou[1,2], Kevin C. Chan[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of

14:30 **3678.** **BOLD fMRI Study of the Rat Superior Colliculus Responding to a Moving Visual Stimulus**
Condon Lau[1,2], Jevin W. Zhang[1,2], Matthew M. Cheung[1,2], Kyle Xing[1,2], Iris Y. Zhou[1,2], Kevin C. Chan[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of

15:00 **3679.** **BOLD Signal Differences in the Somatosensory & Visual Pathways**
Daniil Aksenov[1,2], Limin Li[1,2], Michael Miller[1,2], Alice Wyrwicz[1,2]
[1]NorthShore University Health System, Evanston, IL, United States; [2]Pritzker School of Medicine, University of Chicago, Chicago, IL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 59

13:30 **3680.** **Anatomical, BOLD, Blood Flow MRI of Non-Human Primate (Baboon) Retina**
Yi Zhang[1,2], Hsiao-Ying Wey[1,2], Oscar San Emeterio Nateras[2], Qi Peng[1,2], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

14:00 **3681.** **BOLD-fMRI Study of Effect of Dark-Rearing on Postnatal Visual Development**
Joe Shi Cheng[1,2], Kevin C. Chan[1,2], Iris Y. Zhou[1,2], Matthew M. Cheung[1,2], Condon Lau[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrial & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of

14:30 **3682.** **Optogenetically Induced BOLD of Excitatory Neurons in the Mouse Hippocampus at 9.4T: Identification of a Hippocampal Network**
Wolfgang Weber-Fahr[1], Alexander Sartorius[2], Natlia Gass[1], Zhijun Li[3], Wolfgang Kelsch[2,3]
[1]Neuroimaging, Central Institute of Mental Health, Mannheim, Germany; [2]Psychiatry, Central Institute of Mental Health, Mannheim, Germany; [3]Clinical Neurobiology, Ruprecht-Karls-Universität, Heidelberg, Germany

15:00 **3683.** **Study of Brain Activation in Small Animals using PET/MR Imaging**
Hans F. Wehrl[1], Florian C. Maier[1], Petros Martirosian[2], Gerald Reischl[3], Fritz Schick[2], Bernd J. Pichler[1]
[1]Laboratory for Preclinical Imaging & Imaging Technology of the Werner Siemens-Foundation, University of Tuebingen, Tuebingen, Germany; [2]Section on Experimental Radiology, University of Tuebingen, Tuebingen, Germany; [3]Radiopharmacy & PET-Center, University of Tuebingen, Tuebingen, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 59

13:30 3684. Rat Brain Possesses a Default Mode Network
Hanbing Lu[1], Qihong Zou[1], William Rea[1], Elliot A. Stein[1], Yihong Yang[1]
[1]National Institute on Drug Abuse, NIH, Baltimore, MD, United States

14:00 3685. Resting State Networks in (Transgenic) Mice: Differential Effects of Genetic Background, Sensory Stimulation, & Pharmacological Intervention
Silke Kreitz[1], Cornelia Heindl-Erdmann[1], Roland Axmann[2], Jochen Zwerina[2], Josef Penninger[3], Georg Schett[2], Kay Brune[1], Andreas Hess[1]
[1]Institute for Pharmacology & Toxicology, FAU Erlangen-Nuremberg, Erlangen, Germany; [2]Internal Medicine 3, Rheumatology & Immunology, FAU Erlangen-Nuremberg, Erlangen, Germany; [3]Institute of Molecular Biology, Austrian Academy of Sciences, Vienna, Austria

14:30 3686. Resting-State Functional Connectivity Alterations After Corpus Callosotomy in Rats
Iris Yuwen Zhou[1,2], Y. X. Liang[3], Kevin C. Chan[1,2], Matthew M. Cheung[1,2], Condon Lau[1,2], K. F. So[3], Ed X. Wu[1,4]
[1]Laboratory of Biomedical & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Anatomy, the University of Hong Kong; [4]Department of Electrical & Electronic Engineering, the University of Hong Kong , Hong Kong SAR, China, People's Republic of

15:00 3687. Restoration of Interhemispheric Resting-State Connectivity in S_1FL Following Median Nerve Injury & Surgical Repair
Christopher Paul Pawela[1,2], Bharat B. Biswal[3], Rupeng Li[2], Anthony G. Hudetz[4], James S. Hyde[2]
[1]Department of Plastic Surgery, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Department of Radiology, University of Medicine & Dentistry of New Jersey, Newark, NJ, United States; [4]Department of Anesthesiology, Medical College of Wisconsin, Milwaukee, WI, United States

Targeted Molecular Imaging

Exhibition Hall Monday 14:00-16:00 Computer 60

14:00 3688. Evaluation of a Targeted Nanoglobular Gd Chelate for MRI Molecular Imaging of Prostate Tumor in an Orthotopic Mouse Model
Mingqian Tan[1,2], Zheng-Rong Lu[1]
[1]Case Western Reserve University, Cleveland, OH, United States; [2]National Chromatographic Research & Analysis Center, Dalian Institute of Chemical Physics, the Chinese Academy of Sciences, Dalian, Liaoning, China, People's Republic of

14:30 3689. Targeting of Matrix Metalloproteinase-2 Activation with Gd-NBCB-TTDA-MMP-2 for Detection of Vulnerable Atherosclerotic Plaques using a Novel Molecular MR Imaging *In Vivo*
Chiao-Yun Chen[1,2], Twei-Shiun Jaw[1,3], Hua-Lin Wu[4], Guey-Yueh Shi[4], Yun-Ming Wang[5], Gin-Chung Liu[1,2], Yu-Ting Kuo[1,2]
[1]Department of Medical Imaging, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan; [2]Department of Radiology, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan; [3] Department of Radiology, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan; [4]Department of Biochemistry & Molecular Biology, College of Medicine & Cardiovascular Research Cancer, National Cheng Kung Univerisity, Taiwan; [5]Department of Biological Science & Technology, National Chiao Tung University, Hsinchu, Taiwan

15:00 3690. Quantitative Molecular MR Imaging of U87 Brain Tumor Angiogenesis using a Novel RGD Gd-Based Emulsion
Benjamin Marty[1], Françoise Geffroy[1], Boucif Djemai[1], Benoit Theze[2], Aline Perrin[1], Caroline Robic[3], Marc Port[3], Philippe Robert[3], Denis Le Bihan[1], Franck Lethimonnier[1], Sébastien Mériaux[1]
[1]CEA/DSV/I2BM/Neurospin, Gif-sur-Yvette, France; [2]CEA/DSV/I2BM/SHFJ, Orsay, France; [3]Research Division, Guerbet, Roissy Charles de Gaulle, France

15:30 3691. Atherosclerotic MR Molecular Imaging Strategy with Superparamagnetic Iron Oxide on a Human Clinical Scanner – Rabbit Model
David C. Zhu[1], Kheireddine El-Boubbou[2], George S. Abela[3], Ruiping Huang[3], Medha Kamat[2], Xuefei Huang[2]
[1]Radiology & Psychology, Michigan State University, East Lansing, MI, United States; [2]Chemistry, Michigan State University; [3]Medicine, Michigan State University

Exhibition Hall Tuesday 13:30-15:00 Computer 60

13:30 3692. Molecular MRI Allows the Detection of Activated Platelets in a New Mouse Model of Coronary Artery Thrombosis
Mirko Meißner[1], Daniel Dürschmied[2], Irene Neudorfer[2], Constantin von Zur Mühlen[2], Dominik von Elverfeldt[1]
[1]Dept. of Radiology / Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Cardiology & Angiology, University Medical Center Freiburg, Freiburg, Germany

14:00 3693. Non-Invasive Assessment of Disease Activity in Lupus Nephritis by MRI-Based Molecular Imaging
Siranush Anna Sargsyan[1], Kendra M. Hasebroock, Brandon Renner, Brian Larsen[2], Conrad Stoldt[2], V. Michael Holers, Joshua M. Thurman, Natalie Serkova
[1]Medicine, University of Colorado Denver, Aurora, CO, United States; [2]University of Colorado Boulder

14:30 3694. Molecular Probes for Targeting & Imaging of Epidermal Growth Factor Receptor on Head & Neck Cancer Cells
Chiwei Hung[1], Yuan-Chia Kuo[1,2], Jiachen Zhuo[3], Srinivasa R Raghavan[2,4], Janet E. Baulch[1], Rao Gullapalli[3], Mohan Suntharalingam[1], Warren D. D'souza[1,2]
[1]Department of Radiation Oncology, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Fischell Department of Bioengineering, University of Maryland, College Park, MD, United States; [3]Department of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, United States; [4]Department of Chemical & Biomolecular Engineering, University of Maryland, College Park, MD, United States

Novel Contrast Agents & Labels

Exhibition Hall Monday 14:00-16:00 Computer 61

14:00 3695. Development of Iron Oxide Nanoparticles for MRI-SPECT-Optical Imaging of Sentinel Lymph Nodes
Renata Madru[1], Pontus Kjellman[2], Pontus Svenmarker, Karin Wingårdh[1], Sarah Fredriksson[2], Anders Örbom[1], Stefan Andersson-Engels, Christian Ingvar[3], Linda Knutsson[1], Johan Olsrud[4], Jimmy Lätt[4], Freddy Ståhlberg[1], Sven-Erik Strand[1]
[1]Medical Radiation Physics, Lund University, Lund, Sweden; [2]Genovis AB, Lund, Sweden; [3]Surgery, Skane University Hospital, Lund, Sweden; [4]Center for Medical Imaging & Physiology, Skane University Hospital, Lund, Sweden

14:30 3696. Novel Mn-Porphyrin Contrast Probe for Molecular MR Imaging of Glial Reactivity in the Rat Brain
Timothy J. Amrhein[1], Talaignair N. Venkatraman[1], Haichen Wang[2], Ines Batinic-Haberle[3], Christopher D. Lascola[1]
[1]Radiology, Duke University Medical Center, Durham, NC, United States; [2]Anesthesiology, Duke University Medical Center, Durham, NC, United States; [3]Radiation Oncology, Duke University Medical Center, Durham, NC, United States

15:00 3697. A Nanoemulsion Based CEST Agent for Hyperpolarized ^{129}Xe
Todd K. Stevens[1,2], Richard M. Ramirez[1,2], Alexander Pines[1,2]
[1]Chemistry, UC Berkeley, Berkeley, CA, United States; [2]Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

15:30 3698. A Novel Dual MRI-Fluorescent Contrast Agent to Track T-Cells for *In-Vivo* Imaging
Li Liu[1], Qing Ye[1], Yijen L. Wu[1], Chih-Lung Chen[2], Wen-Yuan Hsieh[2], Hsin-Hsin Shen[2], T. Kevin Hitchens[1], Brent Barbe[1], Haosen Zhang[1], Shian-Jy Wang[2], Chien Ho[1]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Material and Chemical Research Laboratory, Industrial Technology Research Institute, Hsinchu, Taiwan

Exhibition Hall Tuesday 13:30-15:30 Computer 61

13:30 3699. Simultaneous T_1 & MR Temperature Monitoring in Case of Release of Gadoteridol from Thermosensitive Liposomes During HIFU Session
Marc Derieppe[1], Matthieu Lepetit-Coiffé[1], Mariska De Smet[2], Silke Hey[1], Yasmina Berber[1], Chrit Moonen[1]
[1]Laboratory for Molecular & Functional Imaging, UMR 5231 CNRS / University Bordeaux 2, Bordeaux, France; [2]Department of Biomedical NMR, Eindhoven University of Technology, Eindhoven, Netherlands

14:00 3700. A Dysprosium-Based PARACEST Agent for *In-Vivo* Temperature MRI: Dy^{3+}-DOTAM-Gly-Lys
Alex Xuexin Li[1], Mojmir Suchy[1,2], Joseph S. Gati[1], Robert H. E. Hudson[2], Ravi S. Menon[1,3], Robert Bartha[1,3]
[1]Robarts Research Institute, the University of Western Ontario, London, ON, Canada; [2]Department of Chemistry, the University of Western Ontario, London, ON, Canada; [3]Department of Medical Biophysics, the University of Western Ontario, London, ON, Canada

14:30 **3701.** **Monitoring of Iron-PLLA Particle Loaded MSCs After Intramuscular Injection in the Rat Model @ 3T**
Volker Rasche[1], Natalie Fekete[2], Axel Bornstedt[1], Jian Zhu, Ina Vernikouskaya, Martin Urban[3], Katharina Landfester[3], Gerlinde Schmidtke-Schrezenmeier[2], Hubert Schrezenmeier[2]
[1]Internal Medicine II, University Hospital Ulm, Ulm, Germany; [2]Institute for Transfusion Medicine, University Hospital Ulm; [3]Max-Planck-Institute for Polymer Research

15:00 **3702.** **Novel Hydroxytryptophan-Based Gd Chelating Substrate for Imaging Myeloperoxidase Activity.**
Alexei A. Bogdanov[1], Yang Xie, Mohammed S. Shazeeb
[1]Radiology, UMASS Medical School, Worcester, MA, United States

Exhibition Hall Wednesday 13:30-15:00 Computer 61

13:30 **3703.** ***In Vivo* Labelling of Xenografted B_{16} Melanoma Cells with a Thiol-Responsive Gd(III) Based MRI Contrast Agent**
Eliana Gianolio[1], Valeria Menchise[2], Giuseppe Digilio[3], Evelina Cittadino[4], Carla Carrera[4], Valeria Catanzaro[4], Silvio Aime[4]
[1]Università di Torino, Torino, Italy; [2]CNR - IBB, Italy; [3]Università del Piemonte Orientale, Italy; [4]Università di Torino, Italy

14:00 **3704.** **Synthesis & Characterization of D-Glucuronic Acid Coated Dysprosium Oxide Nanoparticles for Magnetic Resonance Imaging (MRI) Contrast Agent**
*Krishna Kattel[1], Ja Young Young Park[1], Wenlong Xu[1], Eun Jung Lee[1], Han Gyeol Kim[1], Gang Ho Lee**
[1]Department of Chemistry, Kyungpook National University, Daegu, Gyeongsangbuk-do, Korea, Republic of

14:30 **3705.** **Water-Soluble MnO Nanocolloid for a Molecular T_1 MR Imaging: A Facile One-Pot Synthesis, *In Vivo* T_1 MR Images, & Account for Relaxivities**
Eun Jung Lee[1], Ja Young Park[1], Wenlong Xu[1], Krishna Kattel[1], Han Gyeol Kim[1], Gang Ho Lee[1]
[1]Department of Chemistry, Kyungpook National University, Daegu, Gyeongsangbuk-do, Korea, Republic of

Cell Tracking & Gene Responders

Exhibition Hall Monday 14:00-16:00 Computer 62

14:00 **3706.** ***In Vivo* Quantification of Particle Based & Gene Based MRI Reporters in the Rodent Brain**
Janaki Raman Rangarajan[1], Greetje Vande Velde[2], Caroline Guglielmetti[3], Ruth Vreys[3], Marleen Verhoye[3], Tom Dresselaers[2], Annemie Van Der Linden[3], Uwe Himmelreich[2], Frederik Maes[1]
[1]Medical Image Computing - ESAT/PSI, K.U. Leuven, Leuven, Belgium; [2]Biomedical NMR Unit, K.U. Leuven, Belgium; [3]Bio-Imaging Lab, University of Antwerp, Belgium

14:30 **3707.** **Gadolinium-Catalyzed Single Walled Carbon Nanotubes as Advanced Magnetic Resonance Imaging Contrast Agents: Cell Labeling & Biodistribution Studies**
Pramod Kumar Avti[1], Henry Bryant[2], Youssef Zaim Wadghiri[3], Joseph Frank[2], Kenneth Shroyer[4], Balaji Sitharaman[5]
[1]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [2]Frank Laboratory, Radiology & Imaging Sciences, National Institutes of Health,, Bethesda, MD 20892, United States; [3]Radiology, New York University, Langone Medical Center, New York, New York 10016, United States; [4]Pathology, Stony Brook University Medical Center, Stony Brook, New York 11794-8691, United States; [5]Biomedical Engineering, Stony Brook University Medical Center, Stony Brook, New York 11794-5281, United States

15:00 **3708.** **Small & Ultra-Small Nanoparticles of Manganese Oxide (SPMnO, USPMnO) for Positive Contrast in Cellular MRI**
Marc-André Fortin[1,2], Mélanie Tremblay[1], Jean Lagueux[2], Mathieu Létourneau[1], Luc Faucher[1], Dario Rojas[1]
[1]Engineering Materials, Université Laval, Québec, Canada; [2]Axe métabolisme, santé vasculaire et rénale, Centre hospitalier universitaire de Québec (CHUQ), Québec, Canada

15:30 **3709.** ***In-Vivo* Monitoring of Therapeutic Effects on Bacterial Infection using High-Field ^{19}F-MRI**
Volker Sturm[1], Tobias Hertlein[2], Thomas Christian Basse-Lüsebrink[1], Knut Ohlsen[2], Peter Michael Jakob[1]
[1]Experimental Physics 5, University of Würzburg, Würzburg, Germany; [2]Institute for Molecular Infection Biology, University of Würzburg, Würzburg, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 62

13:30 **3710.** **Imaging of Inflammation in the Peripheral Nervous System by ^{19}F MRI**
Thomas Christian Basse-Luesebrink[1], Gesa Weise[2], Carsten Wessig[2], Peter Michael Jakob[1], Guido Stoll[2]
[1]Experimental Physics 5, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [2]Neurology, University of Wuerzburg, Wuerzburg, Bavaria, Germany

14:00 **3711.** **Tracking Metastatic Tumor Cells in Lymphatics in Mice Xenograft Model by MR Imaging**
Ting Liu[1], Haiju Zhou[2], Rui Xia[3], Jichun Liao[3], Hui Wang[3], Hua Ai[4], Feng Bi[2], Fabao Gao[1]
[1]Department of Radiology, West China Hospital£¬Sichuan University, CHENGDU, SICHUAN , China, People's Republic of; [2]Department of Oncology, West China Hospital£¬Sichuan University, CHENGDU, SICHUAN, China, People's Republic of; [3]Department of Radiology, West China Hospital£¬Sichuan University, CHENGDU, SICHUAN, China, People's Republic of; [4]National Engineering Research Center for Biomaterials£¬Sichuan University, CHENGDU, SICHUAN, China, People's Republic of

14:30 **3712.** **Characterization of USPIO Nanoparticles for Non Invasive Monitoring of Inflammation in Tissue Engineered Tissue Vascular Graft using *In Vivo* MRI**
Halima Chahboune[1,2], Jamie Harrington[3], Jason Criscione[2], Ragy Ragheb[2], Narutoshi Hibino[3], Toshiharu Shinoka[3], Christopher Breuer Breuer[3], Tarek Fahmy[4]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States; [3]Interdepartmental Program in Vascular Biology & Therapeutic, Yale University, New HAven, CT, United States; [4]Biomedical Engineering, Yale University, New Haven, United States

15:00 **3713.** **Quantification of Iron Oxide Nanoparticles in Cellular MRI: Assessment of Free Vs. Cell-Internalized Fraction**
Olivier M. Girard[1], Rose Ramirez[1], Stephanie McCarty[1,2], Elamprakash N. Savariar[3], Robert F. Mattrey[1]
[1]Department of Radiology, University of California, San Diego, CA, United States; [2]New York Medical College, Valhalla, NY, United States; [3]Department of Pharmacology, University of California, San Diego, CA, United States

Exhibition Hall Wednesday 13:30-14:00 Computer 62

13:30 **3714.** **Silica-Coated Superparamagnetic Iron Oxide Nanoparticles Are More Durable for Labeling Mesenchymal Stem Cells than Poly(Ethylene Glycol)-Coated Counterparts: Pilot *In-Vivo* Assay Results**
Yi-Xiang Wang[1], K. C. Leung[2], T. Quercy-Jouvet[2], H. H. Wang[3], C. P. Chak[2], S. Lin[3], D. F. Wang[3], D. W. Au[4], P. C. Leung[5], K. P. Fung[5]
[1]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong, Shatin, NT, Hong Kong; [2]Center of Novel Functional Molecules, Department of Chemistry, the Chinese University of Hong Kong, Hong Kong; [3]Department of Imaging & Interventional Radiology, the Chinese University of Hong Kong, Hong Kong; [4]4Department of Biology & Chemistry, City University of Hong Kong, Kowloon, Hong Kong; [5]Institute of Chinese Medicine, the Chinese University of Hong Kong, Hong Kong

MR Guided Focused Ultrasound, Thermotherapy & Thermometry

Exhibition Hall Monday 14:00-16:00 Computer 63

14:00 **3715.** **An MR-Compatible Preclinical Sonication Platform for Focused Ultrasound Therapy & Monitoring in Animal Models**
Adam Christian Waspe[1,2], Meaghan O'Reilly[1], Jiawen Zhang[1], Yaseen Khan[1], Anthony Chau[1], Rajiv Chopra[1,2], Kullervo Hynynen[1,2]
[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

14:30 **3716.** **A Temperature Dependent Perfusion Rate Model for Simulating Temperature Evolution in Tissue for Magnetic Resonance Imaging Guided High Intensity Focused Ultrasound (MR-HIFU) Therapy: Initial Experience in a Pig Model**
Jiming Zhang[1], Pei-Herng Hor[1], John Fischer[2], Ari Partanen[3], Tiina Karjalainen[3], Raja Muthupillai[2]
[1]Department of Physics & Texas Center for Superconductivity, University of Houston, Houston, TX, United States; [2]Diagnostic & Interventional Radiology, St. Luke's Episcopal Hospital, Houston, TX, United States; [3]Clinical Science, Philips Medical Systems, Cleveland, OH, United States

15:00 **3717.** **Real-Time Monitoring of Temperature & Magnetization Transfer During HIFU Transmission & Long-Term Follow-Up of Magnetization Transfer Effect : In Vivo Rabbit Investigations**
Hsu-Hsia Peng[1], Teng-Yi Huang[2], Wei-Min Tseng[2], Yu-Hui Ding[3], Hsiao-Wen Chung[4], Wen-Shiang Chen[3], Wen-Yih Isaac Tseng[5]
[1]Dept. of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Department of Electrical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan; [3]Department of Physical Medicine & Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan; [4]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; [5]Center for Optoelectronic Biomedicine, Medical College of National Taiwan University, Taipei, Taiwan

15:30 **3718.** **Thermal Ablative Lesions in Sheep's Renal Cortex using Respiratory Gated MRgHIFU: Spatial Accuracy & Complications**
Lorena Petrusca[1], Magalie Viallon[2], Thomas Goget[2], Denis Morel[3], Xavier Montet[2], Vincent Auboiroux[2], Sylvain Terraz[2], Christoph D. Becker[2], Rares Salomir[2]

[1]Radiology Department, University Hospitals of Geneva , Geneva , Switzerland; [2]Radiology Department, University Hospitals of Geneva, Geneva, Switzerland; [3]Anesthesiology, University Hospitals of Geneva, Geneva, Switzerland

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13:30 3719. Volumetric MRgHIFU Rapid Ablation: *In Vivo* Demonstration of Non-Parametric Automatic Temperature Control

Lorena Petrusca[1], Magalie Viallon[2], Thomas Goget[2], Denis Morel[3], Vincent Auboiroux[2], Sylvain Terraz[2], Christoph Becker[2], Rares Salomir[2]

[1]Radiology Department, University Hospitals of Geneva , Geneva , Switzerland; [2]Radiology Department, University Hospitals of Geneva, Geneva, Switzerland; [3]Anesthesiology, University Hospitals of Geneva, Geneva, Switzerland

14:00 3720. Model-Predictive Controller using MR Thermometry for Dynamic Optimization of Heating/Cooling Pulses for HIFU Therapies

Joshua de Bever[1,2], Allison Payne[1], Nick Todd[1], Robert Roemer[3]

[1]Utah Center for Advanced Imaging Research, University of Utah, Salt Lake City, UT, United States; [2]School of Computing, University of Utah; [3]Department of Mechanical Engineering, University of Utah, Salt Lake City, UT, United States

14:30 3721. MRI Motion Compensation by Positional Ultrasound Biometrics

Benjamin Schwartz[1], Nathan McDannold[2,3]

[1]Biophysics, Harvard University, Boston, MA, United States; [2]Radiology, Harvard Medical School, Boston, MA, United States; [3]Radiology, Brigham & Women's Hospital, Boston, MA, United States

15:00 3722. Model Based Correction of Triggered MR Thermometry for LITT

Joshua P. Yung[1,2], Florian Maier[3], David Fuentes[1], Axel J. Krafft[3], Andrew Elliott[1], Michael Bock[3], John D. Hazle[1,2], Wolfhard Semmler[3], R. Jason Stafford[1,2]

[1]Department of Imaging Physics, University of Texas M.D. Anderson Cancer Center, Houston, TX, United States; [2]The University of Texas Graduate School of Biomedical Sciences, Houston, TX, United States; [3]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 63

13:30 3723. Measuring Temperature Rise During Spin Echo MR-ARFI Acquisition

Elena Kaye[1], Kim Butts Pauly[2]

[1]Electrical Engineering, Stanford University, Palo Alto, CA, United States; [2]Radiology, Stanford University, Palo Alto, CA, United States

14:00 3724. MR-Acoustic Radiation Force Mapping Can Quantitatively Predict Drug Delivery Following Ultrasound-Induced Blood Brain Barrier Disruption in Rodents

Benoit Larrat[1], Benjamin Marty[1], Mathieu Pernot[2], Mickael Tanter[2], Franck Lethimonnier[1], Sébastien Mériaux[1]

[1]CEA/DSV/I2BM/Neurospin, Paris, France; [2]Institut Langevin - ESPCI Paristech, INSERM U979

14:30 3725. Blood-Brain Barrier Disruption in Nonhuman Primates using a Clinical MRI-Guided Focused Ultrasound System: Preliminary Results

Nathan McDannold[1], Costas D. Arvanitis[1], Natalia Vykhodtseva[1], Margaret S. Livingstone[2]

[1]Radiology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States; [2]Neurobiology, Harvard Medical School, Boston, MA, United States

15:00 3726. Pain Control in Patients with Locally Advanced Pancreatic Carcinoma using High Intensity Focused Ultrasound Under 3T MR Guidance. Results from a Single Center Preliminary Experience.

Alessandro Napoli[1], Beatrice Cavallo Marincola[1], Michele Anzidei[1], Guendalina Menichini[1], Gaia Cartocci[1], Carlo Catalano[1], Roberto Passariello[1]

[1]Radiological Sciences, Policlinico Umberto I, Rome, Italy

Exhibition Hall Thursday 13:30-15:30 Computer 63

13:30 3727. Assessing Thermal Tissue Damage with Biexponential Diffusion-Weighted MRI

Valentina Giannini[1,2], Pejman Ghanouni[3], Graham Sommer[3], Chris Diederich[4], Andrew Holbrook[3], Vasant Salgaonkar[4], Punit Prakash[4], Harcharan Gill[5], Donna Bouley[6], Kim Butts Pauly[3]

[1]Radiology, FPRC, Candiolo, TO, Italy; [2]Radiology, Stanford University, Stanford, Ca, United States; [3]Radiology, Stanford University, Stanford, CA, United States; [4]Radiation Oncology, University of California, San Francisco, San Francisco, Ca, United States; [5]Urology, Stanford University, Stanford, CA, United States; [6]Comparative Medicine, Stanford University, Stanford, CA, United States

14:00 3728. Comparing Different Drug Carriers for Dynamic Absolute MR Thermometry

Roel Deckers[1], Sara M. Sprinkhuizen[1], Marina Talelli[2], Bart Crielaard[2], Hans Ippel[3], Rolf Boelens[3], Twan Lammers[2,4], Chris J. Bakker[1], Gert Storm[2], Lambertus W. Bartels[1]
[1]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, Utrecht, Netherlands; [3]Department of NMR Spectroscopy, Bijvoet Center for Biomolecular Research, Utrecht University, Utrecht, Netherlands; [4]Department of Experimental Molecular Imaging, RWTH Aachen, Aachen, Germany

14:30 **3729.** **A Novel Imaging Approach Employing a ±90°-Preparation for Fast PRF-Based MR Thermometry**
Axel Joachim Krafft[1], Florian Maier[1], Jaane Rauschenberg[1], Joshua P. Yung[2], Jürgen Walter Jenne[3,4], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Imaging Physics, University of Texas M.D. Anderson Cancer Center, Houston, TX, United States; [3]Mediri GmbH, Heidelberg, Germany; [4]Clinical Clinical Cooperation Unit Radiation Oncology, German Cancer Research Center (DKFZ), Heidelberg, Germany

15:00 **3730.** **Kalman Filtered MR Temperature Imaging**
David Fuentes[1], Joshua Yung[1], Andrew Elliott[1], John D. Hazle[1], Roger Jason Stafford[1]
[1]Imaging Physics, MD Anderson Cancer Center, Houston, TX, United States

Interventional MRI: Cardiovascular Applications

Exhibition Hall Monday 14:00-16:00 Computer 64

14:00 **3731.** **Assessment of the Transmural Extent of Acute Atrial Lesions using Electrogram Amplitude vs. LGE-MRI**
Sathya Vijayakumar[1,2], Eugene G. Kholmovski[1,2], Ravi Ranjan[2,3], Gene Payne[1,2], Joshua Blauer[2,4], Kamal Vij[5], Nelly A. Volland[1,2], Gaston Vergara[2,3], Kimberly Johnson[2,3], Gregory Gardner[4,6], Steven Shea[7], Sunil Patil[7], Julien Barbot[7], Christopher J. McGann[2,3], Peter Piferi[5], Christine Lorenz[7], Rob MacLeod[2,4], Nassir F. Marrouche[2,3]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]CARMA Center, University of Utah, Salt Lake City, UT, United States; [3]Department of Cardiology, University of Utah, Salt Lake City, UT, United States; [4]SCI Institute, University of Utah, Salt Lake City, UT, United States; [5]SurgiVision Inc., Irvine, CA, United States; [6]Dept. of BioEngineering, University of Utah, Salt Lake City, UT; [7]Center for Applied Medical Imaging, Siemens Corporate Research, Princeton, NJ, United States

14:30 **3732.** **Characterization of Acute Atrial Lesions by Late Gadolinium Enhancement MRI**
Eugene G. Kholmovski[1,2], Sathya Vijayakumar[1,2], Christopher J. McGann[2,3], Joshua Blauer[2,4], Ravi Ranjan[2,3], Gaston Vergara[2,3], Gene Payne[1,2], Nelly Volland[1,2], Rob MacLeod[2,4], Nassir F. Marrouche[2,3]
[1]UCAIR, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]CARMA Center, University of Utah, Salt Lake City, UT, United States; [3]Department of Cardiology, University of Utah, Salt Lake City, UT, United States; [4]SCI Institute, University of Utah, Salt Lake City, UT, United States

15:00 **3733.** **MR-Guided Endocardial Local Activation Time Map During Programmed Stimulation**
Samuel O. Oduneye[1], Labonny Biswas[2], Stefan Pintilie[2], Venkat Ramanan[2], Jennifer Barry[2], Tawfiq Zeidan Shwiri[3], Ehud Kadmon[3], Eugene Crystal[3], Graham A. Wright[1]
[1]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada; [2]Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada; [3]Arrhythmia Services, Sunnybrook Health Science Centre, Toronto, Ontario, Canada

15:30 **3734.** **Atrial Thickness Mapping for EP Ablation using Black-Blood Restricted Field of View MRI**
Peter Koken[1], Ronald Holthuizen[2], Sascha Krueger[1], Harald Sepp Heese[1], Steffen Weiss[1], Jouke Smink[2], Reza Razavi[3], Tobias Schaeffter[3]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Philips Healthcare, Best, Netherlands; [3]Division of Imaging Sciences, King's College, London, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 64

13:30 **3735.** **Visualization Platform for Real-Time, MRI-Guided Cardiac Interventions**
Stefan Pintilie[1], Labonny Biswas[1], Samuel Oduneye[1], Kevan Anderson[1], Graham A. Wright[1,2], Perry E. Radau[1]
[1]Imaging Research, Sunnybrook Hospital, Toronto, Ontario, Canada; [2]Medical Biophysics, University of Toronto, Toronto, ON, Canada

14:00 **3736.** **Real-Time MR-Guided Transarterial Aortic Valve Implantation (TAVI): *In Vivo* Evaluation in Swine**
Harald H. Quick[1,2], Philipp Kahlert[3], Holger Eggebrecht[3], Gernot M. Kaiser[4], Nina Parohl[2], Juliane Albert[2], Lena Schäfer[2], Ian McDougall[5], Brad Decker[5], Raimund Erbel[3], Mark E. Ladd[2]
[1]Institute of Medical Physics, University of Erlangen-Nürnberg, Erlangen, Germany; [2]Department of Diagnostic Radiology, University Hospital Essen, Essen, Germany; [3]Department of Cardiology, University Hospital Essen, Essen, Germany; [4]Department of Transplantation Surgery, University Hospital Essen, Essen, Germany; [5]Evasc Medical Systems, Vancouver, BC, Canada

14:30 3737. XFM-Guided Approach to Intrapericardial Delivery of Cardiac Therapeutics
Nicole Azene[1,2], Yingli Fu[1], Tina Ehtiati[3], Aaron Flammang[3], Dorota Anna Kedziorek[1], Jens Guehring[4], Wesley D. Gilson[3], Judy Cook[1], Clifford R. Weiss[1], Kathleen L. Gabrielson[2], Peter V. Johnston[5], Dara L. Kraitchman[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Molecular & Comparative Pathobiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [3]Siemens Corporate Research, Baltimore, MD, United States; [4]Siemens Corporate Research, Erlangen, Germany; [5]Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, United States

15:00 3738. Virtual Dye Angiography: using Endogenous Contrast to Visualize Blood Flow in MRI-Guided Interventional Procedures
Ashvin Kurian George[1], Anthony Z. Faranesh[1], Kanishka Ratnayaka[1], J. Andrew Derbyshire[1], Robert J. Lederman[1], Michael S. Hansen[1]
[1]National Institutes of Health, Bethesda, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 64

13:30 3739. Online Automated Generation of an Aortic Model for MR Guided Interventions
Nils Karlsson[1], Klaus J. Kirchberg[2], Li Pan[1], Aaron J. Flammang[1], Christine H. Lorenz[1], Wesley Gilson[1]
[1]Center for Applied Medical Imaging, Siemens Corporation, Corporate Research, Baltimore, MD, United States; [2]Center for Applied Medical Imaging, Siemens Corporation, Corporate Research, Princeton, NJ, United States

14:00 3740. 3D Aortic Motion Estimation for Image-Guided Intervention
Rachel E. Clough[1], Christian Buerger[1], Christoph Kolbitsch[1], Markus Henningsson[1], Peter Taylor[1], Claudia Prieto[1], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, Westminster Bridge Road, London, United Kingdom

14:30 3741. Intra-Cardiac MRI Catheter for EP Ablation Monitoring: Preliminary Studies
Ehud J. Schmidt[1], Lei Qin[1], Juan Santos[2], Gregory F. Michaud[3], Raymond K. Kwong[3], Kim Butts-Pauly[4], William G. Stevenson[3], Charles L. Dumoulin[5]
[1]Radiology, Brigham & Womens Hospital, Boston, MA, United States; [2]CardioVista Inc., Palo Alto, CA, United States; [3]Cardiology, Brigham & Womens Hospital, Boston, MA, United States; [4]Radiology, Stanford University, Palo Alto, CA, United States; [5]Radiology, Cincinatti Childrens Hospital, Cincinatti, OH, United States

15:00 3742. System for Real-Time Cardiac MRI Gating, 12-Lead ECG Monitoring, & Non-Invasive Stroke Volume Estimation
Zion Tsz Ho Tse[1], Charles L. Dumoulin[2], Gari Clifford[3], Michael Jerosch-Herold[1], Daniel Kacher[1], Raymond Kwong[4], William Gregory Stevenson[4], Ehud Jeruham Schmidt[1]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]University of Cincinnati College of Medicine, Cincinnati, OH, United States; [3]Department of Engineering Science, University of Oxford, Oxford, United Kingdom; [4]Cardiology, Brigham & Women's Hospital, Boston, MA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 64

13:30 3743. Dephased Double Echo Imaging with Outer Volume Suppression for Accelerated White Marker Imaging in MR-Guided Interventions
Axel Joachim Krafft[1], Alexander Brunner[1], Jaane Rauschenberg[1], Joachim Pfeffer[2], Klaus Düring[2], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]MaRVis Technologies GmbH, Aachen, Germany

14:00 3744. PRESSURE GRADIENT PREDICTION in AORTIC COARCTATION using a COMPUTATIONAL-FLUID-DYNAMIC (CFD) MODEL: Validation Against Invasive Pressure Catheterization at Rest & Pharmacological Stress
Israel Valverde[1], Cristina Staicu[2], Alberto Marzo[2], Heynric Grotenhuis[3], Kawal Rhode[1], Yubing Shi[2], Aphrodite Tzifa[1], Reza Razavi[1], Patricia Lawford[2], Rod Hose[2], Philipp Beerbaum[1]
[1]Imaging Sciences, King's College London, London, United Kingdom; [2]Department of Cardiovascular Science, Medical Physics Group, University of Sheffield, Sheffield, United Kingdom; [3]Leiden University Medical Centre, Leiden, Netherlands

14:30 3745. Accurate Catheter Tip Tracking for MR-Guided EP Procedures using Realtime Active Detuning
Venkat Ramanan[1], Samuel O Oduneye[2], Labonny Biswas[1], Stefan Pintilie[1], Graham a Wright[1,2]
[1]Sunnybrook Research Institute, Toronto, Ontario, Canada; [2]Medical Biophysics, Sunnybrook Research Institute, Toronto, Ontario, Canada

15:00 **3746.** **Prospective Motion Correction for Intra-Cardiac 3D Delayed Enhancement MRI using an MR-Tracking Tetrahedron**
Lei Qin[1], Ehud J. Schmidt[1], Juan Santos[2], W. Scott Hoge[1], Clare Tempany-Afdhal[1], Kim Butts-Pauly[3], William G. Stevenson[4], Charles L. Dumoulin[5]
[1]Radiology, Harvard Medical School, Boston, MA, United States; [2]Heart Vista, Inc, Palo Alto, CA; [3]Radiology, Stanford University; [4]Cardiology, Harvard Medical School; [5]Radiology, Cincinnati Childrens' Hospital

Interventional MRI: Instrument Visualization, Guidance & Interfaces

Exhibition Hall Monday 14:00-16:00 Computer 65

14:00 **3747.** **Highly Efficient 3D Tracking & Visualization of Loopless Active MRI Devices using Slice-Direction-Dephased, Undersampled Projection Imaging**
Ashvin Kurian George[1], J. Andrew Derbyshire[1], Michael S. Hansen[1], Christina E. Saikus[1], Ozgur Kocaturk[1], Robert J. Lederman[1], Anthony Z. Faranesh[1]
[1]National Institutes of Health, Bethesda, MD, United States

14:30 **3748.** **Online Real-Time Visualization of an Active Catheter using Compressed Sensing in Interventional MRI**
Cheng Ouyang[1,2], Tobia Wech[1,3], Kamal Vij[4], Li Pan[1,5]
[1]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Institute of Radiology, University of Wuerzburg, Wuerzburg, Bavaria, Germany; [4]SurgiVision, Inc., Irvine, CA, United States; [5]Department of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD, United States

15:00 **3749.** **3D Passive Marker Tracking for MR-Guided Interventions**
Florian Maier[1], Axel J. Krafft[2], R. Jason Stafford[3], Joshua P. Yung[3,4], Rüdiger Dillmann[5], Wolfhard Semmler[2], Michael Bock[2]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [2]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; [3]Department of Imaging Physics, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States; [4]The University of Texas Graduate School of Biomedical Sciences, Houston, TX, United States; [5]Institute of Anthropomatics, Karlsruhe Institute of Technology, Karlsruhe, Germany

15:30 **3750.** **MR Active Insertion Mandrel for Improved Delineation of Deep Brain Structures During MR Guided Electrode Insertion**
Alastair Martin[1], Kamal Vij[2], Paul Larson[1], Philip Starr[1]
[1]University of California - San Francisco, San Francisco, CA, United States; [2]SurgiVision, Inc

Exhibition Hall Tuesday 13:30-15:30 Computer 65

13:30 **3751.** **Device Monitoring & Dynamic Scanner Feedback Control for Active Device Safety in Interventional MRI**
Christina E. Saikus[1], Ozgur Kocaturk[1], Merdim Sonmez[1], Jamie A. Bell[1], Anthony Z Faranesh[1], J. Andrew Derbyshire[1], Robert J. Lederman[1], Michael S. Hansen[1]
[1]National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD, United States

14:00 **3752.** **Low-Cost MRI Compatible Interface Device for Interactive Scan Plane Control**
Mihai T. Mazilu[1], Anthony Zahi Faranesh[1], John Andrew Derbyshire[1], Robert J. Lederman[1], Michael Schacht Hansen[1]
[1]National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD, United States

14:30 **3753.** **Real-Time Scan Plane Selection with a Novel Hand-Held Device for Needle Guidance**
Matthew Joseph Riffe[1], Stephen R. Yutzy[2], Colin Blumenthal[3,4], Daniel P. Hsu[4], Dean A. Nakamoto[4], Jeffrey L. Sunshine[4], Chris A. Flask[1,4], Vikas Gulani[4], Jeffrey L. Duerk[1,4], Mark A. Griswold[4]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [3]Electrical & Computer Engineering, Ohio State University, Columbus, OH, United States; [4]Radiology, University Hospitals of Cleveland, Cleveland, OH, United States

15:00 **3754.** **Diagnostic Accuracy & Workflow of 240 Experimental MR Biopsies with a Clinical Navigation Solution Outside the Bore**
Harald Busse[1], Tim Riedel[1], Nikita Garnov[1], Gregor Thörmer[1], Thomas Kahn[1], Michael Moche[1]
[1]Diagnostic & Interventional Radiology Department, Leipzig University Hospital, Leipzig, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 65

13:30 **3755.** **A Novel Broad-Band, High Power & RF-Safe Cable for MR-Guided Catheter Ablation**
Sascha Krueger[1], Oliver Lips[1], Bernd David[1], Steffen Weiss[1]

[1]Philips Research Laboratories, Hamburg, Germany

14:00 **3756.** **Novel Approach to Real-Time MR-Guided TIPS using an Actively Visualized Excimer Laser Catheter & Delivery System**
Christina E. Saikus[1], Jamie A. Bell[1], Kanishka Ratnayaka[1,2], Venkatish K. Raman[1], Merdim Sonmez[1], Anthony Z. Faranesh[1], Ozgur Kocaturk[1], Robert J. Lederman[1]
[1]National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Children's National Medical Center, Washington DC, United States

14:30 **3757.** **Tracking Rotational Orientation of Catheter using Transmit Array System**
Haydar Celik[1,2], Davut Ibrahim Mahcicek[3], Ergin Atalar[1,3]
[1]Electrical & Electronics Engineering, Bilkent University, Ankara, Turkey; [2]National Research Center for Magnetic Resonance (UMRAM) , Ankara, Turkey; [3]National Research Center for Magnetic Resonance (UMRAM), Ankara, Turkey

15:00 **3758.** **Pure Phase Encoding Acquisition for Calibration of High Geometric Fidelity Intervention Applications**
Sjoerd Crijns[1], Bas Raaymakers[1], Jan Lagendijk[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands

Exhibition Hall Thursday 13:30-15:30 Computer 65

13:30 **3759.** **MR Guided Percutaneous Embolization of Low-Flow Vascular Malformations: Initial Experience using a Hybrid MR/X-Ray Fluoroscopy System**
Clifford Raabe Weiss[1], Aaaron J. Flammang[2], Wesley Gilson[2], Dara L. Kraitchman[1], Sally E. Mitchell[1], Frank K. Wacker[3], Jonathan S. Lewin[1]
[1]Radiology & Radiologic Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Center for Applied Medical Imaging, Siemens Corporate Research, Baltimore, MD, United States; [3]Department of Diagnostic & Interventional Radiology, Hannover Medical School, Hannover, Germany

14:00 **3760.** **Construction of a MR Compatible Arthroscopic System & Its Clinical Application**
Christian Jürgen Seebauer[1], Jens Rump[2], Hermann Josef Bail[3], Felix Güttler[2], Bernd Hamm[2], Ulf Teichgräber[2]
[1]Center for Musculoskeletal Surgery, Charité-Universitätsmedizin Berlin, Berlin, Germany; [2]Department of Radiology, Charité-Universitätsmedizin Berlin, Berlin, Germany; [3]Department of Trauma & Orthopedic Surgery, Clinic Nuremberg, Nuremberg, Germany

14:30 **3761.** **Preliminary Accuracy Evaluation of 3T MRI-Guided Transperineal Prostate Biopsy with Grid Template**
Junichi Tokuda[1], Kemal Tuncali[1], Iulian Iordachita[2], Sang-Eun Song[1], Andriy Fedorov[1], Sota Oguro[1], Andras Lasso[3], Fiona M. Fennessy[1], Yi Tang[1], Clare M. Tempany[1], Nobuhiko Hata[1]
[1]Department of Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]The Johns Hopkins University, Baltimore, MD, United States; [3]School of Computing, Queen's University, Kingston, ON, Canada

15:00 **3762.** **Fast & Reliable Localization of Brachytherapy Seeds using Undersampled Co-RASOR**
Peter Roland Seevinck[1], Hendrik de Leeuw[1], Marinus A. Moerland[2], Chris J. G. Bakker[1]
[1]Physics of MRI, Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands; [2]Department of Radiation Oncology, University Medical Center Utrecht, Utrecht, Netherlands

Safety: Implants & Devices

Exhibition Hall Monday 14:00-16:00 Computer 66

14:00 **3763.** **RF Safety Assessment of a Generic Deep Brain Stimulator During 1.5T MRI Exposure**
Eugenia Cabot[1], Tom Lloyd[2], Andreas Christ[1], Gregg Stenzel[2], Wolfgang Kainz[3], Steve Wedan[2], Niels Kuster[1,4]
[1]IT'IS Foundation, Zurich, Switzerland; [2]Imricor Medical Systems, United States; [3]FDA, Rockville, United States; [4]Swiss Federal Institute of Technology (ETHZ), Zurich, Switzerland

14:30 **3764.** **Radio-Frequency Heating at Deep Brain Stimulation Lead Electrodes Due to Imaging with Head Coils in 3 T & 7T**
Devashish Shrivastava[1], Jingeng Tian[1], Aviva Abosch[1], John T. Vaughan[1]
[1]University of Minnesota, Minneapolis, MN, United States

15:00 **3765.** **Measurements of RF Heating During 3.0T MRI of a Pig Implanted with DBS**
Krzysztof R. Gorny[1], Stephan J. Goerss[2], Michael F. Presti[3], Sun Chul Hwang[4], Dong-Pyo Jang[4], Inyong Kim[4], Kendall H. Lee, Matt A. Bernstein[1]
[1]Radiology, Mayo Clinic, Rochester, MN, United States; [2]Neurosurgery, Mayo Clinic, Rochester, MN, United States; [3]Neurology, Mayo Clinic, Rochester, MN, United States; [4]Neurologic Surgery, Mayo Clinic, Rochester, MN, United States

15:30 **3766.** **Fast T_1-Thermometry of the RF Induced Heating of Conductive Wires**
Daniel Gensler[1], Florian Fidler[1], Marcus Warmuth[2], Theresa Reiter[2], Peter Nordbeck[2], Oliver Ritter[2], Mark E. Ladd[3], Harald H. Quick[4], Peter M. Jakob[1], Wolfgang R. Bauer[2]
[1]Forschungszentrum Magnet-Resonanz-Bavaria e.V., Wuerzburg, Bavaria, Germany; [2]Medizinische Klinik & Poliklinik I, Universitätsklinikum Würzburg, Wuerzburg, Bavaria, Germany; [3]Erwin L. Hahn Institut für Magnetresonanz, Universität Duisburg-Essen; [4]Institut für Medizinische Physik, Friedrich-Alexander-Universität Erlangen-Nürnberg

Exhibition Hall Tuesday 13:30-15:30 Computer 66

13:30 **3767.** **An MR Thermometry-GBHTM 'Hybrid' Model to Determine Radiofrequency Heating Near Implanted Leads in High Field Imaging**
Devashish Shrivastava[1], Ute Goerke[1], Shalom Michaeli[1], Jingeng Tian[1], Aviva Abosch[1], John T. Vaughan[1]
[1]University of Minnesota, Minneapolis, MN, United States

14:00 **3768.** **Resonant Traps as a Safety Measure: Influence of Inaccurate Tuning**
Falk Uhlemann[1], Peter Mazurkewitz[1], Oliver Lips[1]
[1]Philips Research Laboratories, Hamburg, Germany

14:30 **3769.** **Influence of Electrical Connections on Catheter Heating**
Oliver Lips[1], Bernd David[1], Sascha Krueger[1], Kai-Michael Luedeke[1], Steffen Weiss[1]
[1]Philips Research Laboratories, Hamburg, Germany

15:00 **3770.** **Assessment of RF Induced Heating of Coronary Stents in 7T MRI**
Davide Santoro[1], Julia Marie Vogt[2], Wolfgang Renz[3], Johanna Gellermann[4], Frank Seifert[5], Valeriy Tkachenko[4], Jeannette Schulz-Menger[4], Thoralf Niendorf[1,4]
[1]Berlin Ultra-High Field Facility (BUFF), Max Delbrück Center for Molecular Medicine (MDC), Berlin, Germany; [2]Department of Physics, Humboldt University Berlin, Berlin, Germany; [3]Siemens Healthcare, Erlangen, Germany,; [4]Experimental & Clinical Research Center (ECRC), Charité Campus Berlin Buch; [5]Physikalisch-Technische Bundesanstalt (PTB)

Exhibition Hall Wednesday 13:30-15:30 Computer 66

13:30 **3771.** **Detection & Countermeasures for RF Unsafe Conditions for MR-Conditional Devices**
Ingmar Graesslin[1], Steffen Weiss[1], Emna Hassani[1], Kai Nehrke[1], Peter Vernickel[1], Sascha Krueger[1]
[1]Philips Research Laboratories, Hamburg, Germany

14:00 **3772.** **Reduction of RF Heating of Metallic Devices by using a Two-Channel Transmit Array System : Application to Arbitrary Lead Geometries**
Yigitcan Eryaman[1], Burak Akin[1], Cagdas Oto[2], Oktay Algin[3], Ergin Atalar[1]
[1]National Magnetic Resonance Research Center (UMRAM), Bilkent University, Ankara, Turkey; [2]Veterinary Medicine,Department of Anatomy, Ankara University, Ankara, Turkey; [3]Department of Radiology, Ataturk Training & Research Hospital, Ankara, Turkey

14:30 **3773.** **Comparison of RF Heating in Cables Equipped with Different Types of Current Limitations**
Steffen Weiss[1], Bernd David[1], Oliver Lips[1], Jan Hendrik Wuelbern[1], Sascha Krueger[1]
[1]Philips Research Laboratories, Hamburg, Germany

15:00 **3774.** **MR Safety Assessment of Potential RF Heating from Cranial Fixation Plates at 7 Tesla**
Oliver Kraff[1,2], Karsten H. Wrede[1,3], Stephan Orzada[1,2], Philipp Dammann[1,3], Mark E. Ladd[1,2], Andreas K. Bitz[1,2]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany; [3]Clinic for Neurosurgery, University Hospital Essen, Essen, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 66

13:30 **3775.** **A Novel Phantom Design to Reduce Thermal Losses During Radio Frequency (RF) Induced Heating Testing According to ASTM F2182-09 Standard**
Christian Koch[1,2], Gregor Schaefers[1], Waldemar Zylka[2]
[1]MR:comp GmbH, MR Safety Testing Laboratory, Buschgrundstraße 33, 45894 Gelsenkirchen, North Rhine-Westphalia, Germany; [2]Deptartment of Physical Engineering, Medical Physics Laboratory, University of Applied Sciences Gelsenkirchen, Neidenburger Str. 43, 45877 Gelsenkirchen, North Rhine-Westphalia, Germany

14:00 **3776.** **MR Thermometry using a Paramagnetic Lanthanide Complex for Evaluation of RF Safety**
Shalmali Dharmadhikari[1,2], Navin Bansal[1,2]
[1]Purdue University, West Lafayette, IN, United States; [2]Indiana Univeristy, Indianapolis, IN, United States

14:30 **3777.** **TEM Cell for Calibration of an Electro-Optic E-Field Sensor in a Clinical Scanner**
Frank Seifert[1], Tobias Klepsch[1], Tomasz David Lindel[1], Werner Hoffmann[1], Bernd Ittermann[1]
[1]Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Germany

15:00 **3778.** **Optical Dipole Probes for Quantitative Electric Field Measurements Up to 7T**
Jens Groebner[1], Reiner Umathum[1], Stefan Hoffmann[1], Moritz Cornelius Berger[1], Michael Bock[1], Florian Martin Meise[1], Wolfhard Semmler[1], Jaane Rauschenberg[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

Gradient & Shim Coil Design

Exhibition Hall Monday 14:00-16:00 Computer 67

14:00 **3779.** **A Finite-Difference Based Method for the Design of Gradient Coils in MRI**
Ling Xia[1], Minhua Zhu[1], Guofa Shou[1], Feng Liu[2], Stuart Crozier[2]
[1]Department of Biomedical Engineering, Zhejiang University, Hangzhou, China, People's Republic of; [2]School of Information Technology & Electrical Engineering, University of Queensland, Brisbane, Australia

14:30 **3780.** **A Novel Coil Design Method for Manufacturable Configurations at Optimal Performance**
Feng Jia[1], Zhenyu Liu[2], Jan G. Korvink[1,3]
[1]Freiburg Institute of Advanced Studies (FRIAS), University of Freiburg, Freiburg, Germany; [2]Changchun Institute of Optics, Fine Mechanics & Physics (CIOMP), Chinese Academy of Sciences, Changchun, China, People's Republic of; [3]Department of Microsystems Engineering (IMTEK), University of Freiburg, Freiburg, Germany

15:00 **3781.** **Behaviour of Gradient Coils Designed with Varying Degrees of Minimised Maximum Current Density**
Michael Stephen Poole[1], Peter While[2], Hector Sanchez Lopez[1], Larry Forbes[2], Stuart Crozier[1]
[1]ITEE, University of Queensland, Brisbane, QLD, Australia; [2]Mathematics, University of Tasmania, Hobart, Tasmania, Australia

15:30 **3782.** **Suppressing Local Hot Spots in RF Coils & Shields Due to Gradient Eddy Currents**
Zhen Yao[1], Aaron Shojinaga[1], Yong Wu[1], Timothy Eagan[2], Shmaryu Shvartsman[2], Thomas Chmielewski[2], Robert Brown[1]
[1]Department of Physics, Case Western Reserve University, Cleveland, OH, United States; [2]ViewRay Inc., Oakwood Village, OH, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 67

13:30 **3783.** **Magnetic Particle Imaging: Linear Gradient Array for Imaging with a Traveling Wave**
Peter Klauer[1,2], Martin Andreas Rückert[1,2], Patrick Vogel[1,2], Walter H. Kullmann[1], Peter M. Jakob[2,3], Volker Christian Behr[2]
[1]Electrical Engineering, University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany; [2]Department of Experimental Physics 5 (Biophysics), University of Würzburg, Würzburg, Germany; [3]Research Center for Magnetic Resonance Bavaria e.V (MRB), University of Würzburg, Würzburg, Germany

14:00 **3784.** **A Hybrid Field-Harmonics Approach for Passive Shimming Design in MRI**
Feng Liu[1], Jianfeng Zhu[2], Ran Zhang[3], Ling Xia[2], Stuart Crozier[1]
[1]School of Information Technology & Electrical Engineering, University of Queensland, Brisbane, Queensland, Australia; [2]Department of Biomedical Engineering, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of; [3]School of Electrical Engineering, Shandong University, Jinan, Shandong, China, People's Republic of

14:30 **3785.** **Construction & Optimization of Local 3rd Order Passive Shim System for Human Brain Imaging at 4T MRI**
Mohan Lal Jayatilake[1,2], Judd Storrs[1,3], Jeff Osterhage[1], Jing-Huei Lee[1,4]
[1]Center for Imaging Research, University of Cincinnati, Cincinnati, OH, United States; [2]Department of Physics, University of Cincinnati, Cincinnati, OH, United States; [3]Department of Psychiatry & Behavioural Neuroscience, University of Cincinnati, Cincinnati, OH, United States; [4]School of Energy, Environmental, Biological, & Medical Engineering, University of Cincinnati, Cincinnati, OH, United States

15:00 **3786.** **Optimization of Computational Speed for BE Method of Coil Design**
Chad Tyler Harris[1], William B. Handler[1], Blaine A. Chronik[1]
[1]Physics and Astronomy, University of Western Ontario, London, Ontario, Canada

Exhibition Hall Wednesday 13:30-15:30 Computer 67

13:30 **3787.** **Synergistic Active & Passive Shimming to Optimize B_0 Field Homogeneity in Micro MR Imaging**
Rahul Dewal[1], Zhipeng Cao[2], Christopher Sica[3], Christopher Collins[3], Qing Yang[1,3]

[1]Bioengineering, the Pennsylvania State University, Hershey, PA, United States; [2]Bioengineering, the Pennsylvania State University, Hershey, PA, United States; [3]Radiology, the Pennsylvania State University, Hershey, PA, United States

14:00 **3788.** **Fast Eddy Current Simulation in Thick Split Cylinders of Finite Length Induced by Coils of Arbitrary Geometry**
Hector Sanchez-Lopez[1], Michael Poole[1], Limei Liu[1], Stuart Crozier[1]
[1]School of Information Technology & Electrical Engineering, the University of Queensland, Brisbane, QLD, Australia

14:30 **3789.** **Reducing Short Term Gradient Heating by Usage of Adapted Encoding Schemes**
Paul Freitag[1]
[1]Bruker BioSpin MRI GmbH, Ettlingen, Germany

15:00 **3790.** **Design of Gradient & Shim Coils for a Head-Only, Vertical, HTS MRI System**
Michael Stephen Poole[1], Hector Sanchez Lopez[1], Stuart Crozier[1], Iwao Nakajima[2], Shin-Ichi Urayama[3]
[1]ITEE, University of Queensland, Brisbane, QLD, Australia; [2]Takashima Seisakusho Co., Ltd., Tokyo, Japan; [3]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan

Exhibition Hall Thursday 13:30-15:30 Computer 67

13:30 **3791.** **Simple Minimum Energy Method for Calculating Shielding Coils on Arbitrary Geometries**
Dustin W. Haw[1], Chad T. Harris[1], William Bradfield Handler[1], Blaine A. Chronik[1]
[1]Physics & Astronomy, University of Western Ontario, London, Ontario, Canada

14:00 **3792.** **A Design Method for Asymmetric Gradient Coils with Reduced Hot Spot Temperatures**
Peter T. While[1], Larry K. Forbes[1], Stuart Crozier[2]
[1]School of Mathematics & Physics, University of Tasmania, Hobart, TAS, Australia; [2]ITEE, University of Queensland, Brisbane, QLD, Australia

14:30 **3793.** **Bi-Planar Shim Coil Designed by Stream Function Method Improves B_0 Homogeneity Along Z-Axis**
Daiki Tamada[1], Yasuhiko Terada[1], Katsumi Kose[1]
[1]Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan

15:00 **3794.** **Design of Compact Planar GC for High Field Open MRI using the Computational Tool DUCAS**
Mitsushi Abe[1], Yukinobu Imamura[1], Hiroyuki Takeuchi[2]
[1]Energy & Environmental Syustems Lab., Hitachi, Ltd.,, Hitachi, Ibaraki, Japan; [2]Hitachi Medical Corp., Kashiwa, Chiba, Japan

MR+: Multimodality Systems & Methods

Exhibition Hall Monday 14:00-16:00 Computer 68

14:00 **3795.** **On the Effects of Magnetic Fields Up to 9.4T on PET Image Resolution & Quality Measured with an MR-BrainPET**
Nadim Jon Shah[1,2], Hidehiro Iida[3], Christoph Weirich[1], Lutz Tellmann[1], Joachim Kaffanke[1], Liliana Caldeira[4], Elena Rota Kops[1], Stefan Spellerberg[5], Hans Herzog[1]
[1]Institute of Neuroscience & Medicine - 4, Research Centre Jülich, Jülich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany; [3]Department of Investigative Radiology, National Cardiovascular Center Research Institute, Osaka; [4]Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Spain; [5]Institute of Neuroscience & Medicine - 5, Research Centre Jülich, Jülich, Germany

14:30 **3796.** **Systematic Investigation & Correction of MR Influences on Simultaneous PET Measurements**
Christoph Weirich[1], Daniel Brenner[1], Lutz Tellmann[1], Hans Herzog[1], Nadim Jon Shah[1,2]
[1]Institute of Neurosciene & Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

15:00 **3797.** **Hybrid MR-PET - Simultaneous FET-PET & Chemical Shift Imaging**
N. Jon Shah[1,2], Irene Neuner[1,2], Joachim B. Kaffanke[1], Christian Filss[1], Gabriele Stoffels[1], Hans Herzog[1], Karl-Josef Langen[1]
[1]Institute of Neuroscience & Medicine 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, 52074 Aachen, Germany

15:30 **3798.** **Reproducibility of MRI-DUTE-Based Attenuation Correction Maps in Brain Tumor Patients**
Grace Sooyeon Kim[1], Daniel Burje Chonde[1], Thomas Benner[1], Michael Hamm[2], Alma Gregory Sorensen[1], Ciprian Catana[1]
[1]A.A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [2]Siemens Healthcare, Charlestown, MA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 68

13:30 3799. PET-MR-US in Drug Delivery
Yu Liu[1], Brett Z. Fite[1], Charles F. Caskey[1], Chun-Yen Lai[1], Dustin E. Kruse[1], Jai Woong Seo[1], Benoit Larrat[2], Erik Dumont[3], Katherine W. Ferrara[1]
[1]Biomedical Engineering, UC Davis, Davis, CA, United States; [2]Laboratoire Ondes et Acoustique, ESPCI, Paris, France; [3]Image Guided Therapy, Pessac, France

14:00 3800. Simultaneous PET/MRI: Evaluation of Electromagnetic Interactions & *In Vivo* Imaging in 9.4 T MRI
Sri-Harsha Maramraju[1,2], S.-David Smith[2], Sean Stoll[2], Daniela Schulz[2], Sergio Rescia[2], Sachin Junnarkar[2], Martin Purschke[2], Bosky Ravindranath[1,2], Paul Vaska[1,2], Craig Woody[2], David Schlyer[1,2]
[1]SUNY Stony Brook University, Stony Brook, NY, United States; [2]Brookhaven National Laboratory, Upton, NY, United States

14:30 3801. RF Coil Design for Simultaneous PET/MR
Peter Herrick[1], Richard Ansorge[1], Rob Hawkes[2], Steve Sawiak[2], Joe Stevick[1], Adrian Carpenter[2]
[1]Cavendish Laboratory, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Wolfson Brain Imaging Centre, Addenbrooke's Hospital, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

15:00 3802. Rapid Re-Shimming for Rotated Views in MR-SPECT Imaging
Mark Jason Hamamura[1], Seunghoon Ha[1], Werner W. Roeck[1], Orhan Nalcioglu[1,2]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Cogno-Mechatronics Engineering, Pusan National University, Pusan, Republic of Korea

Exhibition Hall Wednesday 13:30-15:30 Computer 68

13:30 3803. Towards Reliable Calibrated Transducers for MR-Guided Focused Ultrasound
Tobias Klepsch[1], Julian Haller[1], Klaus-Vitold Jenderka[1], Werner Hoffmann[1], Bernd Ittermann[1], Frank Seifert[1]
[1]Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Germany

14:00 3804. Characterization of a MRI-RF Hyperthermia Dual-Function Coil Element Design
Xing Yang[1], Jing Wu[2], Xu Chu[1], Thomas K. Foo[3], Desmond Teck Beng Yeo[3]
[1]Power Conversion Circuits Lab, GE Global Research, Shanghai, China, People's Republic of; [2]Electrical & Computer Engineering, Northeastern University, Boston, MA, United States; [3]Imaging Technologies, GE Global Research, Niskayuna, NY, United States

14:30 3805. A Unilateral Rf Coil for MR-Scintimammography
Seunghoon Ha[1], Mark Jason Hamamura[1], Werner W. Roeck[1], Orhan Nalcioglu[1]
[1]University of California Irvine, Irvine, CA, United States

15:00 3806. Simultaneous, Dynamic SPECT-MRI Demonstrated in Three Small-Animal Prototypes
James W. Hugg[1], Benjamin M. W. Tsui[2], Orhan Nalcioglu[3], Dirk Meier[4], Mark J. Hamamura[3], Douglas J. Wagenaar[1], Bradley E. Patt[1]
[1]Gamma Medica, Northridge, CA, United States; [2]Johns Hopkins University, Baltimore, MD, United States; [3]University of California, Irvine, CA, United States; [4]Gamma Medica, Oslo, Norway

Exhibition Hall Thursday 13:30-15:30 Computer 68

13:30 3807. Radiation Induced RF Coil Degradation in Hybrid MRI-Accelerator Systems
Sjoerd Crijns[1], Bas Raaymakers[2], Jan Kok[2], Kimmy Smit[2], Jan Van Ooijen[3], Jan Lagendijk[2]
[1]Radiotherapy, UMC Utrecht, Utrecht , Netherlands; [2]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [3]Philips Medical Systems, Best, Netherlands

14:00 3808. A Multi Element Rf Coil & Gamma Ray Radiation Shielding Assembly for Mrspect System
Seunghoon Ha[1], Mark Jason Hamamura[1], Werner W. Roeck[1], Orhan Nalcioglu[1]
[1]University of California Irvine, Irvine, CA, United States

14:30 3809. Real-Time Target Displacement Prediction using Dynamic MRI for Radiotherapy
Nilesh N. Mistry[1], Jiachen Zhuo[2], Kathleen Malinowski[1,3], Rao Gullapalli[2], Warren D. D'Souza[1]
[1]Radiation Oncology, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Radiology, University of Maryland School of Medicine, Baltimore, MD, United States; [3]Fischell Department of Bioengineering, University of Maryland, A. James Clark School of Engineering, College Park, MD, United States

15:00 3810. Ultra-Low-Field MRI System for Hybrid MEG-MRI
Panu Tapani Vesanen[1], Juha Hassel[2], Jari S. Penttilä[3], Jaakko Oskari Nieminen[1], Juhani Dabek[1], Koos Zevenhoven[1], Juho Luomahaara[2], Sarianna Alanko[1], Nadia Catallo[4], Fa-Hsuan Lin[5], Juha Simola[6], Antti Ahonen[6], Risto J. Ilmoniemi[1]

[1]Dept. of Biomedical Engineering & Computational Science, Aalto University, Espoo, Finland; [2]VTT Technical Research Centre of Finland, Espoo, Finland; [3]Aivon Oy, Espoo, Finland; [4]Dept. of Health Sciences, University of L'Aquila, Italy; [5]Institute of Biomedical Engineering, National Taiwan University, Taiwan; [6]Elekta Oy, Helsinki, Finland

Coils & Arrays for UHF MRI

Exhibition Hall Monday 14:00-16:00 Computer 69

14:00 3811. Remote Tuning and Matching an 8-Channel Transceive Array at 7T
Carl Snyder[1], Christopher Rogers[2], Lance DelaBarre[1], Mattew Robson[2], J. Thomas Vaughan[1]
[1]University of Minnesota, Minneapolis, MN, United States; [2]Oxford University, Oxford, Oxfordshire, United Kingdom

14:30 3812. An Improved Constellation Coil
Arslan Amjad[1]
[1]GE Healthcare, Waukesha, WI, United States

15:00 3813. A Full-Wavelength Dipole RF Coil Element for 7T MRI with Maximized Longitudinal FOV & Two-Peak SAR Distribution
Andreas Rennings[1], A. Litinsky[1], P. Schneider[1], S. Orzada[2], S. Otto[3]
[1]General & Theoretical Electrical Engineering (ATE), Faculty of Engineering, University of Duisburg-Essen, 47048 Duisburg, Germany; [2]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University of Duisburg-Essen, 45141 Essen, Germany; [3]High-Frequency Engineering (HFT), Faculty of Engineering, University of Duisburg-Essen, 47048 Duisburg, Germany

15:30 3814. Novel 24 Element Multi-Transmit Volume Coil for High Field MRI
Can Akgun[1], Hyoungsuk Yoo[2], Lance DelaBarre[1], Carl J Snyder[1], Gregor Adriany[1], Pierre-Francois Van De Moortele[1], Anand Gopinath[3], Kamil Ugurbil[1], John Thomas Vaughan[1]
[1]Center for Magnetic Resonance Imaging, University of MInnesota, Minneapolis, MN, United States; [2]Department of Biomedical Engineering, School of Electrical Engineering, University of Ulsan, Ulsan, Korea, Republic of; [3]Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 69

13:30 3815. Stepped Impedance Resonators for High Field MRI
Can Akgun[1], Lance DelaBarre[1], Hyoungsuk Yoo[2], Carl J Snyder[1], Anand Gopinath[3], Kamil Ugurbil[1], John Thomas Vaughan[1]
[1]Center for Magnetic Resonance Imaging, University of MInnesota, Minneapolis, MN, United States; [2]Department of Biomedical Engineering, School of Electrical Engineering, University of Ulsan, Ulsan , Korea, Republic of; [3]Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States

14:00 3816. Clinical Neuroimaging using High Dielectric Materials at 7T
Wouter M. Teeuwisse[1], Nadine B. Smith[1], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands

14:30 3817. Abdominal Imaging at 7T with a 32-Channel Body Array Coil - Initial Results
Jochen Leupold[1], Florian Meise[2], Matt Finnerty[3], Tsinghua Zheng[3], Jürgen Hennig[1], Michael Bock[2]
[1]Dept. of Radiology, Medical Physics, University Medical Center, Freiburg, Germany; [2]Abt. Medizinische Physik in der Radiologie, Deutsches Krebsforschungszentrum, Heidelberg, Germany; [3]Quality Electrodynamics (QED), Mayfield Village, OH, United States

15:00 3818. 30-Channel Unilateral Breast Coil for Ultra-High Resolution MRI at 7T
Ingmar Jacob Voogt[1], Bart L. van De Bank[1], Peter R. Luijten[1], Dennis W. Klomp[1], Michel Italiaander[1], Rudy Roon[1]
[1]Radiology, UMC Utrecht, Utrecht, Netherlands

Exhibition Hall Wednesday 13:30-15:30 Computer 69

13:30 3819. A 7-Tesla High Density Tx/Rx Mammography Coil
Tsinghua Zheng[1], Xiaoyu Yang[1], Matthew Finnerty[1], Jeremiah Heilman[1], Joseph Herczak[1], Hiroyuki Fujita[1,2], Graham Wiggins[3], Ryan Brown[3], Bernd Stoeckel[4]
[1]Quality Electrodynamics, LLC, Mayfield Village, OH, United States; [2]Physics, Case Western Reserve University, Cleveland, OH, United States; [3]Radiology, NYU Langone Medical Center, New York, United States; [4]Siemens Medical Solutions USA, Inc, Malvern, PA, United States

14:00 3820. A Prototype Head Coil for 11.7T using the Inductive Birdcage Geometry
Joseph Murphy-Boesch[1], Stephen Dodd[1], Peter van Gelderen[1], Alan Koretsky[1], Josef H. Duyn[1]
[1]LFMI/NINDS, National Institutes of Health, Bethesda, MD, United States

14:30 3821. A Flexible Microstrip Transceiver Coil for Imaging Flexed Human Knee Joints at 7 Tesla
Karupppasamy Subburaj[1], Yong Pang[1], Serena Scott[1], Bagrat Amirbekian[1], Richard B. Souza[1,2], Sharmila Majumdar[1], Xiaoliang Zhang[1]
[1]Department of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Department of Physical Therapy & Rehabilitation Science, University of California San Francisco, San Francisco, CA

15:00 3822. Radio-Frequency Heating in Swine with an 8-Channel, 7T (296 MHz) Head Coil
Devashish Shrivastava[1], Jeramy Kulesa[1], Jinfeng Tian[1], Gregor Adriany[1], Lance DelaBarre[1], J. T. Vaughan[1]
[1]CMRR, University of Minnesota, Minneapolis, MN, United States

Exhibition Hall Thursday 13:30-15:30 Computer 69

13:30 3823. A Loop Coil Design Based on the Broadside-Coupled Split Ring Resonator at 7T
Marcos Alonso Lopez Terrones[1], Gunthard Lykowsky[2], Jose Miguel Algarín[1], Manuel J. Freire[1], Maria Castillo Velazquez-Ahumada[1], Peter M. Jakob[2,3], Ricardo Marques[1]
[1]Electronics & Electromagnetism, University of Seville, Seville, Andalucia, Spain; [2]Research Center Magnetice Resonance Bavaria, Würzburg, Bavaria, Germany; [3]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany

14:00 3824. A Radiofrequency Coil Configuration for Imaging the Human Vertebral Column at 7 Tesla
Maartje E. Vossen[1], Wouter M. Teeuwisse[1], Monique Reijnierse[1], Nadine B. Smith[1], Chris M. Collins[2], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Radiology, Hershey Medical College

14:30 3825. A 15-Channel Receive Array & 16-Channel Detunable Transmit Coil for Human Brain Imaging at 9.4T
G. Shajan[1], Jens Hoffmann[1], Rolf Pohmann[1]
[1]Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tuebingen, Baden Wuttenberg, Germany

15:00 3826. Electrically Auto-Tuned RF Coil Design
Sung-Min Sohn[1], Anand Gopinath[1], J. Thomas Vaughan[1,2]
[1]Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

Transmit Arrays: Coil Design

Exhibition Hall Monday 14:00-16:00 Computer 70

14:00 3827. 8-Channel Transmit Body Array for Homogeneous Excitation of the Thorax at 3T
Yeun Chul Ryu[1], Sukhoon Oh[1], Christopher T. Sica[1], Chien-Ping Kao[1], Yong-Gwon Kim[2], Christopher M. Collins[1]
[1]Radiology, the Pennsylvania State University, Hershey, PA, United States; [2]Radiological Science, College of Medical Science, Konyang University, Daejeon, Korea, Republic of

14:30 3828. Design & Application of 5-Channel Tx/Rx Coil for High Spatial Resolution Laryngeal MRI at 7 Tesla
Jan Rieger[1], Christof Thalhammer[1], Wolfgang Renz[1,2], Tobias Frauenrath[1], Lukas Winter[1], Andreas Goemmel[3], Thoralf Niendorf[1,4]
[1]Berlin Ultrahigh Field Facility, Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [2]Siemens Medical Solutions, Erlangen, Germany; [3]Chair of Structural Statistics & Dynamics, RWTH, Aachen, Germany; [4]Experimental & Clinical Research Center (ECRC), Charité Campus Buch, Humboldt-University,, Berlin, Germany

15:00 3829. Improved B_1+ Field using a 16-Channel Transmit Head Array & an 8-Channel PTx System at 7T
Kyoung Nam Kim[1], Niravkumar Darji[2], Tim Herrmann[1], Johannes Mallow[1], Zang-He Cho[3], Oliver Speck[2], Johannes Bernarding[1]
[1]Department of Biometry & Medical Informatics, OvG University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [2]Chair of Biomedical Magnetic Resonance, OvG University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [3]Neuroscience Research Institute, Gachon University of Medicine & Science, Incheon, Korea, Republic of

15:30 3830. A Fully Tested Head Coil for 7T Compatible with a Dome Gradient Set
Daniel James Lee[1], Arthur W. Magill[2,3], Paul M. Glover[1]
[1]Physics & Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom; [2]LIFMET, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Radiology, University of Lausanne, Lausanne, Switzerland

Exhibition Hall Tuesday 13:30-15:30 Computer 70

13:30 3831. The Inductively Decoupled Transceiver Array: Simulations & Performance at 7T
Jullie W. Pan[1], Nikolai Avdievich[1], Tamer S. Ibrahim[2], Hoby P. Hetherington[1]

[1]Neurosurgery, Yale University School of Medicine, New Haven, CT, United States; [2]Bioengineering, University of Pittsburgh, United States

14:00 **3832.** **An Easily Integrated Eight Channel Parallel Transmit System for Transmit SENSE Applications**
Neal Anthony Hollingsworth[1], Katherine Lynn Moody[2], Jon-Fredrik Nielsen[3], Douglas C. Noll[3], Mary Preston McDougall[1,2], Steve M. Wright[1,2]
[1]Electrical & Computer Engineering, Texas A&M University, College Station, TX, United States; [2]Biomedical Engineering, Texas A&M University; [3]Biomedical Engineering, University of Michigan

14:30 **3833.** **Versatile Volume Coil Implementation using a Constellation Coil**
Yudong Zhu[1], Ryan Brown[1], Cem Murat Deniz[1], Bei Zhang[1], Leeor Alon[1], Graham Wiggins[1], Hans-Peter Fautz[2], Bernd Stoeckel[3], Daniel K. Sodickson[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Siemens Medical Solutions, Erlangen, Germany; [3]Siemens Medical Solutions USA Inc, New York, NY, United States

15:00 **3834.** **Plug & Play Multi Transmit Head Coil with Integrated Receiver Arrays for Clinical 7T MRI.**
Hans Hoogduin[1], Ingmar Voogt, Giel Mens[2], Hugo Kroeze, Peter Luijten, Dennis Klomp[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands; [2]Philips Medical Systems

Exhibition Hall Wednesday 13:30-15:30 Computer 70

13:30 **3835.** **Investigation of 7 Tesla Spine MRI with a 5-Channel Stripline Array & an 8-Channel Loop Array**
Oliver Kraff[1,2], Stephan Orzada[1,2], Philipp Dammann[1,3], Marc Schlamann[1,2], Mark E. Ladd[1,2], Harald H. Quick[1,4], Andreas K. Bitz[1,2]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany; [3]Clinic for Neurosurgery, University Hospital Essen, Essen, Germany; [4]Institute of Medical Physics, Friedrich-Alexander-University Erlangen-Nuernberg, Erlangen, Germany

14:00 **3836.** **Actively Detunable 8-Channel Small Animal Transceive Volume Array for 9.4T MRI Systems**
Ewald Weber[1], Yu Li[1], BingKeong Li[1], Feng Liu[1], Stuart Crozier[1]
[1]School of ITEE, the University of Queensland, Brisbane, QLD, Australia

14:30 **3837.** **B_1-Control Loop Array for Reduction of B_1 Inhomogeneity**
Yukio Kaneko[1], Hideta Habara[1], Yoshihisa Soutome[1], Hisaaki Ochi[1], Yoshitaka Bito[1]
[1]Central Research Laboratory, Hitachi Ltd., Kokubunji-shi, Tokyo, Japan

15:00 **3838.** **A 3T Linear Phase Volume Excitation Coil**
Rock Hadley[1], Dennis Parker[1], Glen Morrell[1]
[1]Radiology - UCAIR, University of Utah, Salt Lake City, UT, United States

Exhibition Hall Thursday 13:30-15:30 Computer 70

13:30 **3839.** **Combinations of Weighted First and Second-Order Clockwise CP Modes to Improve Image Homogeneity with a 16-Channel Head Array at 7 Tesla**
Kyoung Nam Kim[1], Tim Herrmann[1], Johannes Mallow[1], Zang-He Cho[2], Johannes Bernarding[1]
[1]Department of Biometry & Medical Informatics, OvG University Magdeburg, Magdeburg, Saxony-Anhalt, Germany; [2]Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, Korea, Republic of

14:00 **3840.** **Constellation Coil Design**
Yudong Zhu[1], Bei Zhang[1], Ryan Brown[1], Cem Murat Deniz[1], Leeor Alon[1], Hans-Peter Fautz[2], Daniel K. Sodickson[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Siemens Medical Solutions, Erlangen, Germany

14:30 **3841.** **Self-Decoupling Elements of 8-Channel 7T Head Antenna**
Hideta Habara[1], Yoshitaka Bito[1], Hisaaki Ochi[1], Yoshihisa Soutome[1], Yukio Kaneko[1], Masayoshi Dohata[1,2], Hiroyuki Takeuchi[2], Tetsuhiko Takahashi[2]
[1]Central Research Lab., Hitachi Ltd., Kokubunji, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

15:00 **3842.** **Modelling Study of a Hybrid Loop-Sheet Coil Structure for a 8-Channel Small Animal Transceive Array at 9.4T**
Yu Li[1], Feng Liu[1], Jin Jin[1], Ewald Weber[1], BingKeong Li[1], Stuart Crozier[1]
[1]School of ITEE, the University of Queensland, Brisbane, QLD, Australia

Multichannel Transmit Monitoring & Simulation

Exhibition Hall Monday 14:00-16:00 Computer 71

14:00 3843. A Robust Concept for Real-Time SAR Calculation in Parallel Transmission
Hanno Homann[1], Peter Börnert[2], Olaf Dössel[1], Ingmar Graesslin[2]
[1]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [2]Philips Research Europe, Hamburg, Germany

14:30 3844. Ultra-Fast Calculation of SAR-Induced Temperature Increase
Giuseppe Carluccio[1], Sukhoon Oh[2], Christopher Michael Collins[2]
[1]Electrical & Computer Engineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Radiology & Bioengineering, Pennsylvania State University at Hershey, Hershey, PA, United States

15:00 3845. Simulation Tool for 3T/7T Subject-Specific Multi-Transmission Applications without RF Measurements
Tamer S. Ibrahim[1], Lin Tang[2], Yik-Kiong Hue
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]University of Oklahoma

15:30 3846. Patient Adapted SAR Calculation on a Parallel Transmission System
Ingmar Graesslin[1], Hanno Homann[2], Sven Biederer[3], Peter Börnert[1], Giel Mens[4], Paul Harvey[4]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Germany; [3]Institute of Medical Engineering, University of Lübeck, Lübeck, Germany; [4]Philips Healthcare, Best, Netherlands

Exhibition Hall Tuesday 13:30-15:30 Computer 71

13:30 3847. Simple Approaches to Current Control for Transmit Array Elements at 7 Tesla
Steven M. Wright[1,2], Mary Preston McDougall[1,2], Ivan Dimitrov[3], Sergey Cheshkov[3], Craig Malloy[3]
[1]Electrical Engineering, Texas A&M University, College Station, TX, United States; [2]Biomedical Engineering, Texas A&M University, College Station, TX, United States; [3]University of Texas Southwestern Medical Center, Dallas, TX, United States

14:00 3848. Threshold Criteria for Real Time RF Monitoring in 7T Parallel Transmit System
Borjan Gagoski[1], Himanshu Bhat[2], Philipp Hoecht[2], Khaldoun Makhoul[3,4], Ulrich Fontius[5], Josef Pfeuffer[5], Franz Schmitt[5], Michael Hamm[2], Joonsung Lee[1], Kawin Setsompop[3,4], Lawrence L. Wald[3,6], Elfar Adalsteinsson[1,6]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Siemens Healthcare, Charlestown, MA, United States; [3]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [4]Harvard Medical School, Boston, MA, United States; [5]Siemens Healthcare, Erlangen, Germany; [6]Harvard-MIT Division of Health Sciences & Technology, MIT, Cambridge, MA, United States

14:30 3849. RF Monitoring of the Complex Waveforms of an 8-Channel Multi-Transmit System at 7T Utilizing Directional Couplers & I/Q Demodulators
Irina Brote[1,2], Klaus Solbach[3], Stephan Orzada[1,2], Oliver Kraff[1,2], Stefan Maderwald[1,2], Mark E. Ladd[1,2], Andreas K. Bitz[1,2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany; [3]High Frequency Engineering, University Duisburg-Essen, Duisburg, Germany

15:00 3850. Method for Monitoring Safety in Parallel Transmission Systems Based on Channel-Dependent Average Powers
Nicolas Boulant[1], Martijn Cloos[1], Michel Luong[2], Guillaume Ferrand[2], Christopher Wiggins[1], Alexis Amadon[1]
[1]NeuroSpin, CEA Saclay, Saclay, France; [2]Irfu, CEA Saclay, Saclay, France

Exhibition Hall Wednesday 13:30-15:30 Computer 71

13:30 3851. Tailoring RF Power Distribution for Body Torso MRI at 300MHz
Jinfeng Tian[1], Anand Gopinath, J. T. Vaughan
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

14:00 3852. B_1-Based Local SAR Estimation for a Parallel Transmit System at 3T: A Simulation Study
Stefanie Buchenau[1], Martin Haas[1], Daniel Nicolas Splitthoff[1], Juergen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

14:30 3853. Feasibility of a Local SAR Monitoring for a 7T Body Transmit Array with Single Element Power Monitoring
Ozlem Ipek[1], Alexander J. E. Raaijmakers[1], Dennis W. J. Klomp[2], Alessandro Sbrizzi[3], Peter R. Luijten[2], Jan J. W. Lagendijk[1], Cornelis A. T. van Den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands; [3]Radiotherapy , UMC Utrecht, Utrecht, Netherlands

15:00 **3854.** **Volumetric Local SAR Mapping for Parallel Transmission**
Leeor Alon[1], Cem Murat Deniz[1], Jian Xu[2,3], Ryan Brown[1], Daniel K. Sodickson[1], Yudong Zhu[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, United States; [3]Siemens Medical Solutions, Malvern, PA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 71

13:30 **3855.** **Fast Patient Specific Estimation of Electric Fields for a Transmit Array from B_1+ Measurements**
Alessandro Sbrizzi[1], Hans Hoogduin[1], Gerard L. G. Sleijpen[2], Jan J. Lagendijk[1], Peter Luijten[1], Cornelis A. T. van Den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]Department of Mathematics, Utrecht University, Utrecht, Netherlands

14:00 **3856.** **A Fast Algorithm to Optimize Transmit Efficiency for Local Excitation with a Transmit Array**
Giuseppe Carluccio[1], Christopher Michael Collins[2], Danilo Erricolo[1]
[1]Electrical & Computer Engineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Radiology & Bioengineering, Pennsylvania State University at Hershey, Hershey, PA, United States

14:30 **3857.** **SAR Consequences of Optimization Strategy for a 7T RF Transmit Loop Array in CP Mode**
Mikhail Kozlov[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Saxony, Germany

15:00 **3858.** **A Method for Calibrating Multi-Channel RF Systems**
Francesco Padormo[1], Shaihan J. Malik[1], Giel Mens[2], Jo V. Hajnal[1]
[1]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom; [2]Philips Healthcare, Best, Netherlands

RF Modeling

Exhibition Hall Monday 14:00-16:00 Computer 72

14:00 **3859.** **Fast Full Wave RF Simulation Scheme for MRI**
Tamer S. Ibrahim[1], Gary Boerger[2]
[1]University of Pittsburgh, Pittsburgh, PA, United States; [2]University of Oklahoma

14:30 **3860.** **Electro-Dynamic Inverse Method for High-Field RF Transmit Coil Design**
Shumin Wang[1], Jeff Duyn, Alan Koretsky
[1]NIH, Bethesda, MD, United States

15:00 **3861.** **On the Consequences of Wrapping Patients with RF Shielding Materials**
Paul R. Harvey[1], Johan S. van Den Brink[1]
[1]Philips Healthcare, Best, Netherlands

15:30 **3862.** **Investigation of RF Penetration in Humans at Ultrahigh Magnetic Fields**
Yong Pang[1], Daniel Vigneron[1,2], Xiaoliang Zhang[1,2]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco & Berkeley, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 72

13:30 **3863.** ***In-Vivo* Human Forearm Temperature Mapping for Correspondence with Numerical SAR & Temperature Calculations**
Sukhoon Oh[1], Yeun Chul Ryu[1], Andrew Webb[2], Christopher M. Collins[1]
[1]Radiology, College of Medicine, the Pennsylvania State University, Hershey, PA, United States; [2]Radiology, the Leiden University Medical Center, Netherlands

14:00 **3864.** **A Detailed Quantitative Analysis of B_1 Components at 1.5T & 3T**
Xin Chen[1], Michael Steckner[1]
[1]Toshiba Medical Research Institute USA, Inc., Mayfield Village, OH, United States

14:30 **3865.** **A Comparison of FDTD-Solvers for Simulation of a ^{31}P Birdcage Coil at 1.5 T**
Andre Kuehne[1], Helmar Waiczies[1,2], Sairamesh Raghuraman[3], Tobias Wichmann[4], Titus Lanz[4], Frank Seifert[1], Bernd Ittermann[1]

[1]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]Experimental & Clinical Research Center (ECRC), Max-Delbrueck Center for Molecular Medicine, Berlin, Germany; [3]MRB Research Centre, Würzburg, Rimpar, Germany; [4]Rapid Biomed, Rimpar, Germany

15:00 **3866.** **SAR Comparison for Infant Due to Different Positioning Within an MRI Head Coil**
Zhangwei Wang[1], Owen Arthurs[2], Desmond T. B. Yeo[3], Fraser Robb[1]
[1]GE Healthcare Coils, Aurora, OH, United States; [2]2University of Cambridge, Cambridgeshire, United Kingdom; [3]GE Global Research, Niskayuna, NY, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 72

13:30 **3867.** **Comparison of Deviations in SAR Prediction Between Highly Detailed & Proper Simplified Human Models at 7T**
Sebastian Wolf[1], Oliver Speck[1]
[1]Dept. Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany

14:00 **3868.** **Method & Tool for Improved, Rapid N-Gram Average SAR Determination**
Sukhoon Oh[1], Giuseppe Carluccio[2], Christopher M. Collins[1]
[1]Radiology, College of Medicine, the Pennsylvania State University, Hershey, PA, United States; [2]Department of Electrical & Computer, University of Illinois at Chicago, IL, United States

14:30 **3869.** **Optimization of Composite Pulses Considering Pulse Duration, Excitation Uniformity & SAR**
Bu S. Park[1,2], J. McGarrity[2], Z. Cao[2], K. Sung[3], S. Oh[2], C. M. Collins[2]
[1]NIH, Bethesda, MD, United States; [2]Radiology, the Pennsylvania State University, Hershey, PA, United States; [3]Radiology, Standford University, Stanford, CA, United States

15:00 **3870.** **RF Shimming with Regularization of Maximum & Mean RF Power**
Ulrich Katscher[1], Kay Nehrke[1], Peter Vernickel[1], Ingmar Graesslin[1], Peter Börnert[1]
[1]Philips Research Europe, Hamburg, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 72

13:30 **3871.** **How to Reach the Full Potential of the B_1+ Efficiency for a 7T Body Transmit Array?**
Ozlem Ipek[1], Alexander J. E. Raaijmakers[1], Dennis W. J. Klomp[2], Johannes M. Hoogduin[2], Peter R. Luijten[2], Jan J. W. Lagendijk[1], Cornelis A. T. van Den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands

14:00 **3872.** **Ultrahigh Field Body Transmit Arrays using Non-Resonance Method: A Feasibility Study**
Xiaoliang Zhang[1,2], Chunsheng Wang[1], Sarah Nelson[1,2], Daniel Vigneron[1,2]
[1]Dept of Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco and Berkeley, CA, United States

14:30 **3873.** **Electromagnetic Simulations of High Dielectric Materials at 7 Tesla**
Wouter M. Teeuwisse[1], Chris M. Collins[2], Nadine B. Smith[1], Andrew G. Webb[1]
[1]Radiology, Leiden University Medical Center, Leiden, Netherlands; [2]Radiology, Hershey Medical College

15:00 **3874.** **Simulation-Based Phased-Array Optimization using an Efficient Method for Realistic Coil Modeling**
Matthias Korn[1], Simon Lambert[1], Xavier Maître[1], Luc Darrasse[1]
[1]IR4M (UMR8081), Université Paris-Sud XI - CNRS, Orsay, France

Hot Topics in RF

Exhibition Hall Monday 14:00-16:00 Computer 73

14:00 **3875.** **Experimental Comparison of Array Coil Overlap Strategies for Maximal SNR**
Tyler Charlton[1], Adam Maunder[1], B. Gino Fallone[1,2], Nicola De Zanche[1,2]
[1]Dept. of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Dept. of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

14:30 **3876.** **Physical Insights from Ideal Current Patterns Resulting in Ultimate Intrinsic SNR: Efficacy of Traditional Coil Designs at Low Field Strength & the Need for New Designs at High Field**
Riccardo Lattanzi[1,2], Daniel K. Sodickson[1,2]
[1]Center for Biomedical Imaging, New York University Langone Medical Center, New York, NY, United States; [2]Radiology, New York University Langone Medical Center, New York, NY, United States

15:00 **3877.** **Optimum SNR Data Compression for Complex Arrays**
Scott B. King[1], Mike J. Smith[1], Boguslaw Tomanek[2]
[1]Institute for Biodiagnostics, National Research Council of Canada, Winnipeg, Manitoba, Canada; [2]Institute for Biodiagnostics (West), National Research Council of Canada, Calgary, Alberta, Canada

15:30 **3878.** **Ultimate Intrinsic Signal-To-Noise Ratio of the Human Head at 9.4T**
Jörg Felder[1], Nadim Joni Shah[1,2]
[1]Institute of Neuroscience & Medicine-4, Forschungszentrum Juelich GmbH, Juelich, NRW, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 73

13:30 **3879.** **Predicting Potential SNR Gain for High Field Body Imaging at 7 Tesla using Radiative Coil Array Element Sensitivity Patterns**
Alexander J. E. Raaijmakers[1], Cornelis A. T. van Den Berg[1], Dennis W. J. Klomp[2]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands

14:00 **3880.** **Investigating Parallel Imaging Performance of the 8-Channel Transceiver Array with Tilted Microstrip Elements**
Yong Pang[1], Bing Wu[1], Daniel Vigneron[1,2], Xiaoliang Zhang[1,2]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]UCSF/UC Berkeley Joint Graduate Group in Bioengineering, San Francisco & Berkeley, CA, United States

14:30 **3881.** **Effect of Receive Only Array Inserts on B_1+ Field & Specific Absorption Rate (SAR)**
Narayanan Krishnamurthy[1], Tamer S. Ibrahim[1]
[1]University of Pittsburgh, Pittsburgh, PA, United States

15:00 **3882.** **Effects of Channel Numbers on Signal-To-Noise Ratio in Multi T/Rx Coils at 7.0 Tesla**
Hongbae Jeong[1], Suk-Min Hong[1], Joshua Haekyun Park[1], Myung-Kyun Woo[1], Young-Bo Kim[1], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, Korea, Republic of

Exhibition Hall Wednesday 13:30-15:30 Computer 73

13:30 **3883.** **Do We Need Preamplifier Decoupling?**
Arne Reykowski[1], Charles Saylor[1], G. Randy Duensing[1]
[1]ACD, Invivo Corporation, Gainesville, FL, United States

14:00 **3884.** **Investigating the Use of Carbon Nanotubes in MRI Receiver Coils**
Mohamed Aly Saad Aly[1], Nibardo Lopez[1], Daniel Weyers[2], Sarbast Rasheed[1], Eihab M. Abdel-Rahman[1], Arsen Hajian[2,3]
[1]System Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; [2]Tornado Medical Systems, Waterloo, Ontario, Canada; [3]System Design Engineering, University of Waterloo, Waterloo, ontario, Canada

14:30 **3885.** **7T Imaging of the Head &Neck Region: B_0 &B_1+ Challenges**
Johanna Jacoba Bluemink[1], Anna Andreychenko[1], Astrid L. H. M. W. van Lier[1], Marielle Phillippens[1], Jan J. W. Lagendijk[1], Peter R. Luijten[2], Cornelis A. T. van Den Berg[1]
[1]Radiotherapy, University Medical Center Utrecht, Utrecht, Netherlands; [2]Radiology, University Medical Center Utrecht, Utrecht, Netherlands

15:00 **3886.** **Fast Automatic Matching Control: Technical Advances & Initial Results of SNR Optimization**
Matteo Pavan[1], Roger Lüchinger[2], Klaas Paul Pruessmann[2]
[1]Institute for Biomedical Engineering,, University & ETH Zurich, Zurich, Switzerland; [2]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

Exhibition Hall Thursday 13:30-15:30 Computer 73

13:30 **3887.** **Theoretical Determination of the Dielectric Constant for Passive RF Shimming at High Field**
Mohan Lal Jayatilake[1,2], Judd Storrs[1,3], Wen-Jang Chu[1,3], Jing-Huei Lee[1,4]
[1]Center for Imaging Research, University of Cincinnati, Cincinnati, OH, United States; [2]Department of Physics, University of Cincinnati, Cincinnati, OH, United States; [3]Department of Psychiatry & Behavioural Neuroscience, University of Cincinnati, Cincinnati, OH, United States; [4]School of Energy, Environmental, Biological, & Medical Engineering, University of Cincinnati, Cincinnati, OH, United States

14:00 3888. SVD-Based Hardware Concept to Drive N Transmit Elements of a Phased Array Coil with M≤N Channels for High Field MRI
Guillaume Ferrand[1], Michel Luong[1], Martijn A. Cloos[1,2], Alain France[1], Alexis Amadon[2], Nicolas Boulant[2], Luc Darrasse[3]
[1]IRFU/SACM, CEA-Saclay, Gif s/ Yvette, France; [2]I2BM/Neurospin, CEA-Saclay, Gif s/ Yvette, France; [3]IR4M (UMR8081), Univ Paris-Sud, CNRS, Orsay, France

14:30 3889. A Novel Method for Amplitude & Phase Mapping of RF Transmit & Receive Fields
Alessandro Sbrizzi[1], Hans Hoogduin[1], Gerard L. G. Sleijpen[2], Astrid L. Van Lier, Jan J. Lagendijk[1], Peter Luijten[1], Cornelis A. T. van Den Berg[1]
[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands; [2]Department of Mathematics, Utrecht University, Utrecht, Netherlands

15:00 3890. SAR Reduction through Dark Modes Excitation
Kawin Setsompop[1,2], Lawrence L. Wald[1,3]
[1]Radiology, A. A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Harvard-MIT Division of Health Sciences & Technology, MIT, Cambridge, MA, United States

ADC & DTI Methods

Exhibition Hall Wednesday 14:00-16:00 Computer 74

14:00 3891. Diffusion Model Complexity Reduces Repeatability in Multiple B-Value DWI Fitting : Impact of Tumour Volume & Fitting Methodology in a Phase I Clinical Trial Setting
Matthew R. Orton[1], David J. Collins[1], Christina Messiou[1], Jean Tessier[2], Martin O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Formerly with Early Clinical Development, AstraZeneca, Alderley Park, Macclesfield, United Kingdom

14:30 3892. Evaluation of a Novel Continuously Distributed Diffusion Model in Normal Human Brain
He Wang[1], Yong Zhang[1], Guang Cao[1]
[1]Global Applied Science Laboratory, GE Healthcare, Shanghai, China, People's Republic of

15:00 3893. New Strategy for Registering DW & Non-DW Images Via Tensor Estimation Metric
Cheng Guan Koay[1,2], Andrew L. Alexander[1], M. Elizabeth Meyerand[1]
[1]Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, United States; [2]STBB, National Institutes of Health, Bethesda, MD, United States

15:30 3894. Statistical Comparison of DT-MRI Interpolation Methods using Cardiac DT-MRI Data
Jin Kyu Gahm[1,2], Nicholas Wisniewski[3], William S. Klug[4], Alan Garfinkel[3,5], Daniel B. Ennis[1,6]
[1]Department of Radiological Sciences, University of California, Los Angeles, CA, United States; [2]Department of Computer Science, University of California, Los Angeles, CA, United States; [3]Department of Medicine, University of California, Los Angeles, CA, United States; [4]Department of Mechanical & Aerospace Engineering, University of California, Los Angeles, CA; [5]Department of Physiological Science, University of California, Los Angeles, CA, United States; [6]Biomedical Engineering Interdepartmental Program, University of California, Los Angeles, CA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 74

13:30 3895. Six is Enough? Examining the Controversy of 6 Versus 30 Diffusion Encoding Directions for Deterministic Tractography of Human Brain
Catherine Lebel[1], Thomas Benner[2], Christian Beaulieu[3]
[1]Biomedical Engineering, University of Alberta, Edmonton, AB, Canada; [2]Athinoula Martinos Center for Functional & Structural Biomedical Imaging, Harvard University, Boston, MA, United States; [3]Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

14:00 3896. Effect of SNR of DTI on the Structural Network
Hu Cheng[1], Dae-Jin Kim[1], Olaf Sporns[1], Yang Wang[2], Jinhua Sheng[2], Andrew Saykin[2]
[1]Indiana University, Bloomington, IN, United States; [2]Indiana University, Indianapolis, IN, United States

14:30 3897. The Reproducibility & Correlation of Phase Errors in Diffusion Weighted Imaging with the Cardiac Cycle
Rafael Luis O'Halloran[1], Samantha Holdsworth[1], Roland Bammer[1]
[1]Radiology, Stanford University, Palo Alto, CA, United States

15:00 3898. Informed RESTORE for Removal of Physiological Noise Artifacts in Low Redundancy DTI Data
Lin-Ching Chang[1], Lindsay Walker[2], Babak Behseta[3], Carlo Pierpaoli[2]

[1]Department of Electrical Engineering & Computer Science, the Catholic University of America, Washington, DC, United States; [2]STBB, NICHD, National Institutes of Health, Bethesda, MD, United States; [3]Pediatric & Developmental Neuroscience Branch, NIMH, National Institutes of Health, Bethesda, MD, United States

Dynamic Contrast Enhancement Methods (DCE-MRI)

Exhibition Hall Monday 14:00-16:00 Computer 75

14:00 **3899.** **Arterial Input Functions in Dynamic Contrast-Enhanced MRI: Magnitude Versus Phase**
Paul Wessel de Bruin[1], Maarten J. Versluis[1], Erlangga Yusuf[2], Monique Reijnierse[1], Matthias J. P. van Osch[1]
[1]Radiology, LUMC, Leiden, ZH, Netherlands; [2]Rheumatology, LUMC, Leiden, ZH, Netherlands

14:30 **3900.** **MR Estimation of Arterial Input Function (AIF) in Dual Gradient Echo Sequences using an Adaptive Model Trained by Standard Radiological AIF**
Hassan Bagher-Ebadian[1,2], Tavarekere N. Nagaraja[3], Robert Knight[1,2], Ramesh Paudyal[1], Siamak P. Nejad-Davarani[1], Stephen Brown[4], Sawyam Panda[1], Polly Whitton[1], Joseph D. Fenstermacher[3], James R. Ewing[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Anesthesiology, Henry Ford Hospital, Detroit, MI, United States; [4]Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States

15:00 **3901.** **Effects of Artery Input Function on Dynamic Contrast Enhanced MRI for Determining Grades of Gliomas**
Na Zhang[1], Lijuan Zhang[1], Xin Liu[1], Hairong Zheng[2], Jeffrey Carpenter[3], Bob L. Hou[3]
[1]Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology, Chinese Academy of Science, Shenzhen, Guangdong, China, People's Republic of; [2]Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology, Chinese Academy of Science, Shenzhen, Guangdong, China, People's Republic of; [3]Radiology, West Virginia University, Morgantown, WV, United States

15:30 **3902.** **Construction of a Model-Based High Resolution Arterial Input Function (AIF) using a Standard Radiological AIF & the Levenberg-Marquardt Algorithm**
Hassan Bagher-Ebadian[1,2], Azimeh Noorizadeh[3], Siamak P. Nejad-Davarani[1,4], Ramesh Paudyal[1], Tavarekere N. Nagaraja[5], Robert Knight[1,2], Stephen Brown[6], Joseph D. Fenstermacher[5], James R. Ewing[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Mechanical Engineering, Nuclear Engineering, University of Shiraz, Shiraz, Fars, Iran; [4]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [5]Anesthesiology, Henry Ford Hospital, Detroit, MI, United States; [6]Radiation Oncology, Henry Ford Hospital, Detroit, MI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 75

13:30 **3903.** **Intraarterial MR Perfusion Imaging of Meningiomas: Comparison to Digital Subtraction Angiography**
Steven W. Hetts[1], Alastair J. Martin[1], Christopher F. Dowd[1], Van V. Halbach[1], Randall T. Higashida[1], Michael McDermott[2], Soonmee Cha[1], David Saloner[1]
[1]Radiology, UCSF, San Francisco, CA, United States; [2]Neurosurgery, UCSF, San Francisco, CA, United States

14:00 **3904.** **Blood Volume Fraction Mapping for Angiogenesis Assessment in a Novel Human Glioblastoma Stem Cell Model**
Teodora-Adriana Perles-Barbacaru[1], Feriel Tiar[2], Laurent Pelletier[2], Didier Wion[2], Francois Berger[2], Hana Lahrech[1]
[1]INSERM U836, Functional & Metabolic Neuroimaging, Grenoble Institute of Neurosciences, University Joseph Fourier, Grenoble, France; [2]INSERM U836, Brain Nanomedicine Group, Grenoble Institute of Neurosciences, University Joseph Fourier, Grenoble, France

14:30 **3905.** **Comparison of the Uptake of Gadolinium Contrast Agents between Pre-Clinical Colorectal & Other Tumour Models by Dynamic Contrast Enhanced Magnetic Resonance Imaging.**
Ian Wilson[1], G. S. Almeida[1], Huw D. Thomas[2], David R. Newell[2], Ross J. Maxwell[1]
[1]Newcastle MR Centre, Newcastle University, Newcastle Upopn Tyne, Tyne and Wear, United Kingdom; [2]Northern Institute of cancer Research, Newcastle University, Newcastle Upon Tyne, Tyne and wear, United Kingdom

15:00 **3906.** **Quantitative Assessment of Perfusion & Permeability in Osteochrondritis Dissecans Lesions: Feasibility & Initial Results**
Andreas P. Arnoldi[1], Michael Ingrisch[2], Sandra Utzschneider[3], Maximilian F. Reiser[1], Sabine Weckbach[1]
[1]Department of Clinical Radiology, Ludwig-Maximilians-University Munich, Munich, Bavaria, Germany; [2]Josef Lissner Laboratory, Department of Clinical Radiology, Ludwig-Maximilians-University Munich, Munich, Germany; [3]Department of Orthopedics, Campus Grosshadern, Ludwig-Maximilians-University Munich, Munich, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 75

13:30 3907. Adaptive Neural Network for Direct Quantification of Longitudinal Relaxation Rate Change (δR1) in T One by Multiple Read Out (TOMROP) Sequence
Hassan Bagher-Ebadian[1,2], Meser M. Ali[3], Ali Seyd Arbab[3], Malek Makki[4], Siamak P. Nejad-Davarani[1,5], Sawyam Panda[1], Quan Jiang[1,2], James R. Ewing[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Radiology, Henry Ford Hospital, Detroit, MI, United States; [4]Diagnostic Imaging, University of Children Hospital of Zurich, Zurich, Switzerland; [5]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

14:00 3908. A Numerical Advection-Diffusion Model to Fit Dynamic Contrast-Enhanced MRI (DCE-MRI) Data
Nicolas Michoux[1], Denis Rommel[1], Emmanuel Lefrançois[2]
[1]IMAG - Radiology Department, Université Catholique de Louvain, Brussels, Belgium; [2]UMR 6253 UTC-CNRS, Université de Technologie de Compiègne, Compiègne, France

14:30 3909. Wide Variations in Cellular-Interstitial Water Exchange Rates are within the Experimental Uncertainty of AIF Variations in their Effect on Uptake Curve Shapes for DCE-MRI Modelling
Matthew R. Orton[1], David J. Collins[1], Martin O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom

15:00 3910. A Pharmacokinetic Model Enabling Modelling of DCE-MRI Data of Normal & Cancerous Liver
Matthew R. Orton[1], David J. Collins[1], Martin O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 75

13:30 3911. Bayesian Estimation Improves Plasma Volume Repeatability with Compartmental Modelling of DCE-MRI Data
Matthew R. Orton[1], David J. Collins[1], Christina Messiou[1], Jean Tessier[2], M. O. Leach[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research, Sutton, Surrey, United Kingdom; [2]Formerly with Early Clinical Development, AstraZeneca, Alderley Park, Macclesfield, United Kingdom

14:00 3912. Comparison of the Kinetic Parameters Estimated with Different Numerical Methods in DCE-MRI
Cing-Ciao Ke[1], Shin-Lei Peng[1], Chih-Feng Chen[2], Ho-Lin Liu[3], Fu-Nien Wang[1]
[1]Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [2]Radiology, Chang Gung Memorial Hospital, Chiayi, Taiwan; [3]Medical Imaging & Radiological Sciences, Chang Gung University, Taoyuan, Taiwan

14:30 3913. Combined Analysis of Perfusion & Capillary Permeability by Parametric Analysis of the Tissue Residue Function from DCE-MRI
Atle Bjornerud[1,2], Tuva Hope[1], Christopher Larsson[1], Frederic Courivaud[1], Raimo Aleksi Salo[1], Knut Lote[3], Inge Andre Rasmussen[1]
[1]Interventional Centre, Oslo University Hospital, Oslo, Norway; [2]Dept. of Physics, Univ. of Oslo, Norway; [3]Dept. of Oncology, Oslo University Hospital, Oslo, Norway

15:00 3914. Utility of Non-Model Based 'Semi-Quantitative' Indices Derived from Dynamic Contrast Enhanced T_1-Weighted MR Perfusion in Differentiating Treatment Induced Necrosis from Recurrent Progressive Brain Tumor.
Jayant Narang[1], Rajan Jain[1,2], Syed Ali Arbab[3], Abbas Babajani-Feremi[3]
[1]Neuroradiology, Henry Ford Health System, Detroit, MI, United States; [2]Neurosurgery, Henry Ford Health System, Detroit, MI, United States; [3]Radiology, Henry Ford Health System, Detroit, MI, United States

Perfusion & Permeability: DSC - Methods

Exhibition Hall Monday 14:00-16:00 Computer 76

14:00 3915. Reliable Estimation of Capillary Transit Time Distributions at Voxel-Level using DSC-MRI
Kim Mouridsen[1], Leif Østergaard[1], Søren Christensen[2], Sune Nørhøj Jespersen[1]
[1]Center for Functionally Integrative Neuroscience, Aarhus University, Aarhus University Hospital, Aarhus, Denmark; [2]Department of Neurology, Royal Melbourne Hospital, Melbourne, Australia

14:30 3916. Does R_2^* Increase or Decrease When Contrast Agent Extravasates? A Simulation Study.
Nicolas Pannetier[1,2], Clément Debacker[1,2], Franck Mauconduit[1,2], Thomas Christen[1,3], Emmanuel Luc Barbier[1,2]
[1]U836, INSERM, Grenoble, France; [2]Grenoble Institut des Neurosciences, Université Joseph Fourier, Grenoble, France; [3]Department of Radiology, Stanford University, Stanford, CA, United States

15:00 **3917.** **Variability of Model-Based Blood Volume Correction & Vessel Permeability Estimation in Dynamic Susceptibility Contrast MRI: A Computer Simulation Study**
Lin-Wei Hsu[1], Yeng-Peng Liao[1], Ho-Ling Liu[1,2]
[1]Institute of Medical Physics & Imaging Science, Chang Gung University, Taoyuan, Taiwan; [2]Department of Medical Imaging & Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan

15:30 **3918.** **An Efficient Computational Approach to Characterize DSC-MRI Signals Arising from Heterogeneous Vascular Networks**
Natenael B. Semmineh[1], Junzhong Xu[1], Christopher Chad Quarles[1]
[1]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 76

13:30 **3919.** **Effect of Cerebral Hemodynamic Changes on DTI Quantitation: A Hypercapnia Study**
Abby Ying Ding[1,2], Ed X. Wu[1,3]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong , Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of

14:00 **3920.** **The Effects of Myelin in FA & QSI Indices: Control vs. Long Evans Shaker Rat Brains**
Debbie Anaby[1], Ian D. Duncan[2], Yoram Cohen[1]
[1]School of Chemistry, Tel Aviv University, Tel Aviv, Israel; [2]School of Veterinary Medicine, University of Wisconsin-Madison, Madison, WI, United States

14:30 **3921.** **On the Time to Peak Factor of Dynamic Susceptibility Contrast of Microbubbles**
Shin-Lei Peng[1], Chih-Kuang Yeh[1], Chung-Hsin Wang[1], Hsu-Hsia Peng[1], Fu-Nien Wang[1]
[1]Department of Biomedical Engineering & Environme, National Tsing Hua University, Hsin-Chu, Taiwan

15:00 **3922.** **DSC MRI on Rat Model: Choosing the Integration Interval for Measuring CBV**
Yi-Ling Wu[1], Chien-Chung Chen[1], Yi-Chun Wu[1], Chia-Hao Chang[1], Fu-Nien Wang[1]
[1]Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan

Exhibition Hall Wednesday 13:30-15:30 Computer 76

13:30 **3923.** **Altered Hemodynamics of Cortical Lesions in Multiple Sclerosis: A Dynamic Susceptibility Contrast MRI Study using a Kernel-Based Deconvolution Algorithm**
Marco Castellaro[1], Denis Peruzzo[1], Massimiliano Calabrese[2], Francesca Rinaldi[2], Valentina Bernardi[2], Alice Favaretto[2], Irene Mattisi[2], Paolo Gallo[2], Alessandra Bertoldo[1]
[1]Department of Information Engineering, University of Padova, Padova, Italy; [2]Multiple Sclerosis Centre, Department of Neuroscience, University of Padova, Padova, Italy

14:00 **3924.** **Tissue Similarity Map of Perfusion Weighted MR Imaging in the Study of Multiple Sclerosis**
E. M. Haacke[1], Meng Li[1], Flavia Juvvigunta[1]
[1]Department of Radiology, Wayne State University, Detroit, MI, United States

14:30 **3925.** **Evaluation of Signal Formation in Local Arterial Input Function Measurements of DSC-MRI**
Egbert J. W. Bleeker[1], Andrew G. Webb[1], Marianne A. A. van Walderveen[2], Mark A. van Buchem[1,2], Matthias J. P. van Osch[1]
[1]Radiology, C.J. Gorter Center for High Field MRI, Leiden University Medical Center, Leiden, Netherlands; [2]Radiology, Leiden University Medical Center, Leiden, Netherlands

15:00 **3926.** **Comparison of Automatic Localized & Manual Global AIF Perfusion Imaging from DSC MRI by Vascular Territories**
Adam Martin Winchell[1,2], Ralf B. Loeffler[3], Ruitian Song[3], Himanshu Bhat[4], Michael Hamm[4], Alberto Broniscer[5], Claudia M. Hillenbrand[3]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis , TN, United States; [2]Biomedical Engineering, University of Memphis, Memphis, TN, United States; [3]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [4]Siemens Healthcare, Charlestown, MA, United States; [5]Oncology, St. Jude Children's Research Hospital, Memphis, TN, United States

Diffusion Acquisition & Pulse Sequences

Exhibition Hall Monday 14:00-16:00 Computer 77

14:00 **3927.** **Effect of Truncated Sampling on Estimated Fiber Directions in Q-Space Imaging**
Bryce Wilkins[1], Namgyun Lee[1], Manbir Singh[1]
[1]Radiology & Biomedical Engineering, University of Southern California, Los Angeles, CA, United States

14:30 **3928.** **Improved Precision in the Charmed Model of White Matter through Sampling Scheme Optimization & Model Parsimony Testing**
Silvia De Santis[1,2], Yaniv Assaf[3], Christopher John Evans[1], Derek K. Jones[1]
[1]CUBRIC, School of psychology, CARDIFF University, United Kingdom; [2]Physics Department, Sapienza University, Rome, Italy; [3]Tel Aviv University, Israel

15:00 **3929.** **Harmonic Analysis of Spherical Sampling in Diffusion MRI**
Alessandro Daducci[1], Jason McEwen[2], Dimitri Van De Ville[3,4], Jean-Philippe Thiran[1], Yves Wiaux[2,4]
[1]Signal Processing Laboratory (LTS5), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [2]Institute of Electrical Engineering, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [3]Institute of Bioengineering, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; [4]Department of Radiology & Medical Informatics, University of Geneva (UniGE), Geneva, Switzerland

15:30 **3930.** **Effect of using Super-Resolution Technique in Slice Direction on DTI Fiber Tractography**
Daniel Güllmar[1], Christian Ros[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Jena University Hospital, Jena, Thuringia, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 77

13:30 **3931.** **High-Resolution Diffusion Imaging of the *In Vivo* Human Hippocampus**
Michael Zeineh[1], Samantha Holdsworth[1], Stefan Skare[1], Scott Atlas[1], Roland Bammer[1]
[1]Stanford Univeristy, Stanford, CA, United States

14:00 **3932.** **Comparison of Two Alternative Approaches for Diffusion-Weighted Readout-Segmented (RS)-EPI**
Samantha J. Holdsworth[1], Stefan Skare[2], Murat Aksoy[1], Rafael O'Halloran[1], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Palo Alto, CA, United States; [2]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

14:30 **3933.** **Multi Slice Localized Parallel Excitation for Abdominal & Pelvic EPI Applications in Humans**
Denis Kokorin[1,2], Martin Haas[1], Frederik Testud[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]International Tomography Center, Novosibirsk, Russian Federation

15:00 **3934.** **High Spatial-Resolution DTI using 32-Channel Head Coil at Human 7 T**
Ha-Kyu Jeong[1,2], John C. Gore[1,2], Adam W. Anderson[1,2]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [2]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 77

13:30 **3935.** **MR Measurements of Anomalous Diffusion Indices α & γ by Means of PGSTE Techniques at Varying of Time & of Gradient Strength in Phantoms**
Marco Palombo[1], Andrea Gabrielli[2], Silvia De Santis[1], Silvia Capuani[1,3]
[1]Physics Department, Sapienza University of Rome, Rome, Italy; [2]ISC, CNR, Rome, Italy; [3]IPCF UOS Roma, CNR, Rome, Italy

14:00 **3936.** **Concatenated Double Wave Vector Diffusion Weighting Experiments**
Martin A. Koch[1], Jürgen Finsterbusch[1]
[1]Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

14:30 **3937.** **Human Brain Mapping of Orientationally Invariant Axonal Diameter using Q-Space Diffusion Tensor MRI**
Jun-Cheng Weng[1,2]
[1]School of Medical Imaging & Radiological Sciences, Chung Shan Medical University, Taichung, Taiwan; [2]Department of Medical Imaging, Chung Shan Medical University Hospital, Taichung, Taiwan

15:00 **3938.** **Measurement of Axon Radii Distribution in Orientationally Unknown Tissue using Angular Double-Pulsed Gradient Spin Echo (Double-PGSE) NMR**
Wenjin Zhou[1], David Laidlaw[1]
[1]Brown University, Providence, RI, United States

Exhibition Hall Thursday 13:30-15:30 Computer 77

13:30 3939. Diffusion Tensor Imaging with View Angle Tilting Technique for Distortion Correction
Sinyeob Ahn[1], Ki Sueng Choi[1], Xiaoping Hu[1]
[1]Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States

14:00 3940. Geometric Distortion Correction of DTI using Accelerated PSF Mapping Based Reconstruction at 7 Tesla
Myung-Ho In[1], Oliver Speck[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany

14:30 3941. Robustness of Echo Planar Imaging (EPI) Distortion Correction in Diffusion Tensor Imaging using Forward/reverse Phase Encode Directional B=0 Scans
Wanyong Shin[1], Erik B. Beall[1], Ken Sakaie[1], Mingyi Li[1], Dominic Holland[2], Anders M. Dale[3], Mark Lowe[1]
[1]Radiology, Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Neuroscience, University of California, San Diego, CA, United States; [3]Radiology, University of California, San Diego, CA, United States

15:00 3942. Implementation of Real Time Motion Correction in Diffusion Tensor Imaging
Alkathafi ALI Alhamud[1], Aaron Hess[1], Matthew Dylan Tisdall[2], Ernesta M. Meintjes[1], Andre J. van Der Kouwe[2]
[1]University of Cape Town, Cape Town, South Africa; [2]Department of Radiology, Harvard Medical School, MA, United States

Diffusion Applications, Non-Gaussian Diffusion & Diffusion Related Contrasts

Exhibition Hall Monday 14:00-16:00 Computer 78

14:00 3943. The Drum is Visible in Nuclear Magnetic Resonance Diffusion Experiments
Frederik Bernd Laun[1], Wolfhard Semmler[1], Bram Stieltjes[2]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany; [2]Quantitative Imaging-based Disease Characterization, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

14:30 3944. Diffusion Relaxation Correlation Spectroscopy at Ultra-Short Echo Times Reveals Two Major Compartments in Human Cadaver Brain White Matter
Bibek Dhital[1], Marcel Gratz[2], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]Faculty of Physics & Geoscienes, Department of Interface Sciences, University of Leipzig, Leipzig, Germany

15:00 3945. Renormalization Group Method: Effects of Diffusion Retarding on Intracellular Membranes
Oleg Posnansky[1], Yuliya Kupriyanova[1], N. Jon Shah[1,2]*
[1]Medical Imaging Physics, Institute of Neurosciences & Medicine - 4, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

15:30 3946. Efficient Numerical Solution of the Bloch-Torrey Equation for Modeling Multiple Compartment Diffusion
Jing Rebecca Li[1], Donna Calhoun[2], Chun-Hung Yeh[3], Cyril Poupon[4], Denis Le Bihan[4]
[1]INRIA-Saclay, Palaiseau Cedex , France; [2]CEA, Saclay, France; [3]National Yang-Ming University, Taiwan; [4]CEA Neurospin, Saclay, France

Exhibition Hall Tuesday 13:30-15:30 Computer 78

13:30 3947. Constrained Maximum Likelihood Estimator for More Accurate Diffusion Kurtosis Tensor Estimates
Jelle Veraart[1], Wim Van Hecke[2,3], Dirk H. J. Poot[4], Jan Sijbers[1]
[1]Vision lab, University of Antwerp, Antwerp, Belgium; [2]Dept. of Radiology, University Hospitals of the Catholic University of Leuven, Leuven, Belgium; [3]Dept. of Radiology, University Hospital Antwerp, Antwerp, Belgium; [4]Biomedical Imaging Group Rotterdam,, Erasmus MC, Rotterdam, Netherlands

14:00 3948. Characterization of Neural Tissues in Humans using Diffusion Kurtosis Imaging
Wenshu Qian[1], Zhongping Zhang[1], Ed Xuekui Wu[2], Matthew M. Cheung[2], Queenie Chan[1,3], Pek-Lan Khong[1], Mina Kim[1]
[1]Diagnostic Radiology, the University of Hong Kong, Hong Kong, China, People's Republic of; [2]Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong, China, People's Republic of; [3]Philips Healthcare, Hong Kong, China, People's Republic of

14:30 3949. Apparent Kurtosis in the Motional Narrowing Regime: Analytic Results for Closed Domains
Frederik Bernd Laun[1], Wolfhard Semmler[1], Bram Stieltjes[2]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany; [2]Quantitative Imaging-based Disease Characterization, German Cancer Research Center, Heidelberg, Baden-Württemberg, Germany

15:00 **3950.** **Estimation of the Axonal Density using DKI: A Validation Study**
Els Fieremans[1], Jens H. Jensen[1], Ali Tabesh[1], Joseph A Helpern[1,2]
[1]Center of Biomedical Imaging, Department of Radiology, New York University School of Medicine, New York, NY, United States; [2]Center for Advanced Brain Imaging, Nathan S. Kline Institute, Orangeburg, NY, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 78

13:30 **3951.** **Electrically Active *In-Vitro* Spinal Cords for the Study of Functional Diffusion Weighted Imaging**
Nitzan Tirosh[1], Uri Nevo[1]
[1]Biomedical Engineering, Tel Aviv University, Tel Aviv, Israel

14:00 **3952.** **Brain Tissue Water Comes in 2 Pools: Evidence from Diffusion & R_2 Measurements with USPIOs in Non Human Primates**
Denis Le Bihan[1,2], Olivier Joly[3], Toshihiko Aso[2], Lynn Uhrig[3], Cyril Poupon[1], Naoki Tani[3], H. Iwamuro[3], Shin-Ichi Urayama[2], Bechir Jarraya[3]
[1]I²BM, NeuroSpin, Gif-sur-Yvette, France; [2]HBRC, Kyoto University, Kyoto, Japan; [3]NeuroSpin, INSERM-AVENIR unit, Gif-sur-Yvette, France

14:30 **3953.** **Magnetic Susceptibility Local Variations Affect γ-Weighted Maps Contrast in Brain**
Silvia De Santis[1,2], Andrea Gabrielli[3], Emiliano Macaluso[4], Marco Bozzali[4], Silvia Capuani[2,5]
[1]CUBRIC, School of Psychology, CARDIFF, South Glamorgan, United Kingdom; [2]Physics Department, Sapienza University, Rome, Italy; [3]via dei Taurini 19, ISC-CNR, Rome, Italy; [4]Neuroimaging Laboratory Santa Lucia Foundation, Rome, Italy; [5]IPCF UOS Roma, Sapienza University, Rome, Italy

15:00 **3954.** **Susceptibility-Induced Increase in Apparent Diffusion Coefficient**
Dmitry S .Novikov[1], Valerij G. Kiselev[2]
[1]Radiology, NYU School of Medicine, New York, NY, United States; [2]Diagnostic Radiology, Uniklinikum Freiburg, Freiburg, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 78

13:30 **3955.** **Gene Therapy Evaluated using *In Vivo* Diffusion Tensor Imaging**
Joong Hee Kim[1], Adarsh S. Reddy[2], Mark S. Sands[2], Sheng-Kwei Song[1]
[1]Radiology, Washington University, St. Louis, MO, United States; [2]Internal Medicine, Washington University, St. Louis, MO, United States

14:00 **3956.** **Quantitative DTI of White Matter Abnormalities Upon Early Postnatal Visual Impairments**
Kevin C. Chan[1,2], Joe S. Cheng[1,2], Shu Juan Fan[1,2], Matthew M. Cheung[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of

14:30 **3957.** **Neuroregenerative Effect of Mesenchymal Stem Cell Following Hypoxia-Ischemia in the Pup Mouse Brain Assessed by Diffusion Tensor Imaging**
Yohan van De Looij[1,2], Cindy T van Velthoven[3], Rolf Gruetter[2,4], Petra S Hüppi[1], Annemieke Kavelaars[3], Cobi J. Heijnen[3], Stéphane V. Sizonenko[1]
[1]Division of Child Growth & Development, University of Geneva, Geneva, Switzerland; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Lab. for Neuroimmunology & Developmental Origins of Disease, University Medical Center Utrecht, Utrecht, Netherlands; [4]Department of Radiology, Universities of Geneva & Lausanne, Geneva & Lausanne, Switzerland

15:00 **3958.** **Can Diffusion Kurtosis Imaging Provide Better Ischemic Lesion Delineation?**
Edward S. Hui[1], Fang Du[1], Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center San Antonio, San Antonio, TX, United States

Tractography

Exhibition Hall Monday 14:00-16:00 Computer 79

14:00 **3959.** **A New Comprehensive Framework for Probabilistic Tractography of Fanning Fibres**
Jennifer Campbell[1], Parya MamayyezSiahkal[2], Peter Savadjiev[3], Ilana R. Leppert[1], Kaleem Siddiqi[2], G. B. Pike[1]
[1]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada; [2]Centre for Intelligent Machines, McGill University; [3]Brigham & Women's Hospital, Harvard University

14:30 **3960.** **A Full Bi-Tensor Neural Tractography Algorithm using the Unscented Kalman Filter**
Stefan Lienhard[1], James Malcolm[2], Carl-Frederik Westin[3], Yogesh Rathi[2]
[1]Information Technology & Electrical Engineering, ETH Zürich, Zürich, Switzerland; [2]Harvard Medical School, Psychiatry Neuroimaging Laboratory, Boston, MA, United States; [3]Harvard Medical School, Laboratory of Mathematics in Imaging, Boston, MA, United States

15:00 **3961.** **Advanced Fiber Tracking using ODF Based Force Fields**
Robert Stefan Vorburger[1], Carolin Reischauer[1], Peter Boesiger[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

15:30 **3962.** **Clinically Feasible Crossing Fiber Tractography Based on Additional Local HARDI**
Kenji Ito[1], Yoshitaka Masutani[1,2], Yuichi Suzuki[2], Shigeki Aoki[3], Osamu Abe[4], Akira Kunimatsu[1,2], Kuni Ohtomo[1,2]
[1]Graduate School of Medicine Univ. of Tokyo, Bunkyo-ku, Tokyo, Japan; [2]Univ. of Tokyo Hospital, Bunkyo-ku, Tokyo, Japan; [3]Radiology, Juntendo Hospital, Bunkyo-ku, Tokyo, Japan; [4]Radiology, Nihon University Itabashi Hospital, Itabashi-ku, Tokyo, Japan

Exhibition Hall Tuesday 13:30-15:30 Computer 79

13:30 **3963.** **Voxel-Based Morphometric Analysis of Fiber Tract Volume of Corpus Callosum using Large Deformation Diffeomorphic Metric Mapping & Diffusion Spectrum Tractography**
Hsiao-Chin Cheng[1], Yung-Chin Hsu[2], Wen-Yih Isaac Tseng[1,3]
[1]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Department of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan; [3]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

14:00 **3964.** **Fiber Bundle Segmentation using Major Diffusion Orientations in Reduced Position Orientation Space**
Esmail Davoodi-Bojd[1], Mohammadreza Nazem-Zadeh[2], Hamid Soltanian-Zadeh[1], Quan Jiang[2]
[1]Control & Intelligent Processing Center of Excellence, School of Electrical & Computer Engineering, University of Tehran, Tehran, Iran; [2]Neurology, Henry Ford Hospital, Detroit, MI, United States

14:30 **3965.** **COMET – a Framework for the Large Scale Cluster Analysis of Major Equivalent Tracts**
Christia Ros[1], Daniel Güllmar[1], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Department of Diagnostic & Interventional Radiology I, Jena University Hospital, Jena, Thuringia, Germany

15:00 **3966.** **Clustering Method for Estimating Principal Diffusion Directions**
Mohammadreza Nazem-Zadeh[1], Kourosh Jafari-Khouzani[2], Abbas Babajani-Fermi[2], Siamak Pourabdollah Nejad-Davarani[1], Hamid Soltanian-Zadeh[2,3], Quan Jiang[1]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Diagnostic Radiology, Henry Ford Hospital, Detroit, MI, United States; [3]Control & Intelligent Processing Center of Excellence, School of Electrical & Computer Engineering, University of Tehran, Tehran, Iran

Exhibition Hall Wednesday 13:30-15:30 Computer 79

13:30 **3967.** **Accurate Estimation of Local Fiber Orientations for Groupwise Tractography**
Pew-Thian Yap[1], John H. Gilmore[2], Weili Lin[1], Dinggang Shen[1]
[1]Radiology & BRIC, University of North Carolina, Chapel Hill, NC, United States; [2]Psychiatry, University of North Carolina, Chapel Hill, NC, United States

14:00 **3968.** **Auditory Tracts Identified with the Combined Use of fMRI & DTI**
Laura Mancini[1,2], Faiza Javad[2], Jason D. Warren[3], John S. Thornton[1,2], Xavier Golay[1,2], Tarek Yousry[1,2], Caroline Micallef[1,2]
[1]Lysholm Dept of Neuroradiology, National Hospital for Neurology & Neurosurgery, UCLH NHS Foundation Trust, London, WC1N 3BG, United Kingdom; [2]Academic Neuroradiological Unit, Dept Brain Repair & Rehabilitation, UCL Institute of Neurology, London, WC1N 3BG, United Kingdom; [3]Dementia Research Centre, UCL Institute of Neurology, London, WC1N 3BG, United Kingdom

14:30 **3969.** **Are Larger Pathways Faster? A Spherical Deconvolution Tractography Study on the Visuo-Spatial Pathways**
Michel Thiebaut De Schotten[1,2], Flavio Dell'Acqua[1,3], Stephanie Forkel[1,4], Marco Catani[1,3]
[1]Natbrainlab, Institute of Psychiatry, London, United Kingdom; [2]Hopital de la Salpêtrière, CRICM-INSERM UMRS 975, Paris, France; [3]Department of Neuroimaging Sciences, Institute of Psychiatry, London, United Kingdom; [4]Department of Forensic & Neurodevelopmental Sciences, Institute of Psychiatry, London, United Kingdom

15:00 **3970.** **Voxel-Wise Histogram Analysis of Tractography Streamline Length for Assessing Brain Injury**
Kerstin Pannek[1], Thomas Kampf[2], Jane Mathias[3], Greg Brown[4], Jamie Taylor[5], Olivier Salvado[6], Stephen Rose[7]
[1]Centre for Advanced Imaging, the University of Queensland, Brisbane, Queensland, Australia; [2]Department of Experimental Physics 5, University of Wuerzburg, Wuerzburg, Germany; [3]School of Psychology, University of Adelaide, Adelaide, South Australia, Australia; [4]MRI Unit, Royal Adelaide Hospital, Adelaide, South Australia, Australia; [5]Radiology, Royal Adelaide Hospital, Adelaide,

South Australia, Australia; [6]Biomedical Imaging, Australian eHealth Research Centre, Brisbane, Queensland, Australia; [7]Centre for Clinical Research, the University of Queensland, Brisbane, Queensland, Australia

Brain Across Species

Exhibition Hall Monday 14:00-16:00 Computer 80

14:00 **3971.** ***In Vivo* Measurement of T_2 Relaxation Times in Mouse Brain at 17.6 Tesla**
Firat Kara[1], Fu Chen[1], Jörg Matysik[1], Alia Alia[1]
[1]Leiden Institute of Chemistry, Leiden University, Leiden, South holland, Netherlands

14:30 **3972.** **High-Resolution Zebrafish White Matter Fibertracks**
Nyoman Dana Kurniawan[1], Gary Cowin[1], Shaun P. Collin[2,3], Jeremy F. P. Ullmann[3]
[1]Centre for Advanced Imaging, the University of Queensland, Brisbane, Queensland, Australia; [2]School of Animal Biology, the University of Western Australia, Crawley, Western Australia, Australia; [3]School of Biomedical Sciences, the University of Queensland, Brisbane, Queensland, Australia

15:00 **3973.** **Characterizing Brain Development in the Ferret *In Vivo* using Diffusion Tensor Imaging**
Yulin V. Chang[1], Philip V. Bayly[1]
[1]Mechanical Engineering, Washington University, St. Louis, MO, United States

15:30 **3974.** **MRI Assessment of the Effect of Different Resuscitation Fluids on Cerebral Blood Flow & Edema Following Experimental Traumatic Brain Injury and Hemorrhagic Shock in Mice**
Lesley M. Foley[1], T. Kevin Hitchens[1,2], John A. Melick[3], Nancy T. Ho[2], Tusey C. Tam[2], Chien Ho[1,2], Patrick M. Kochanek[3,4]
[1]Pittsburgh NMR Center for Biomedical Research, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, United States; [3]Safar Center for Resuscitation Research, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; [4]Departments of Critical Care Medicine, Pediatrics & Anesthesiology, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States

Diffusion Phantoms

Exhibition Hall Tuesday 13:30-15:30 Computer 81

13:30 **3975.** **A Diffusion Tensor Resolution Phantom**
Michael Bach[1], Bram Stieltjes[2], Klaus Fritzsche[3], Wolfhard Semmler[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Quantitative Imaging-based Disease Characterization, German Cancer Research Center, Heidelberg, Germany; [3]Medical Imaging & Biological Informatics, German Cancer Research Center, Heidelberg, Germany

14:00 **3976.** **A Selectable Diffusion Coefficient Phantom Based on Restricted Diffusion**
Joseph P. Hornak[1], Hongmei Yuan[2], Scott Kennedy[3], Edmund Kwok[3]
[1]Imaging Science, RIT, Rochester, NY, United States; [2]Chemistry, RIT, Rochester, NY, United States; [3]University of Rochester, Rochester, NY, United States

14:30 **3977.** **Characterization of the TE Dependence of IVIM Biomarkers in a Flow Phantom & *In Vivo***
Gene Young Cho[1], Daniel K. Sodickson[1], Eric E. Sigmund[1]
[1]Center for Biomedical Imaging - Radiology, NYU School of Medicine, New York, United States

15:00 **3978.** **Regional Biomechanical Property of Intracranial Tissue using Dynamic Diffusion MRI: A Phantom Study**
Hirohito Kan[1], Tosiaki Miyati[1], Mitsuhito Mase[2], Masaki Hara[3], Makoto Kawano[3], Yuta Shibamoto[3], Harumasa Kasai[3], Nobuyuki Arai[3], Akihiro Kitanaka[1], Risa Yorimitsu[1]
[1]Division of Health Sciences, Graduate School of Medical Science, Kanazawa University, Kanazawa, Ishikawa, Japan; [2]Department of Neurosurgery & Restorative Neuroscience, Graduate School of Medical Sciences, Nagoya City University, Nagoya, Aichi, Japan; [3]Department of Radiology, Nagoya City University Hospital, Nagoya, Aichi, Japan

Arterial Spin Labeling - Methods

Exhibition Hall Monday 14:00-16:00 Computer 82

14:00 **3979.** **Velocity Selective Arterial Spin Labeling using an Inversion Pulse Train**
Ruitian Song[1], Ralf B. Loeffler[1], Adam M. Winchell[1], Claudia M. Hillenbrand[1]
[1]Radiological Sciences, St Jude Children's Research Hospital, Memphis, TN, United States

14:30 3980. Optimization of Tagging Efficiency using ECG-Gated Velocity-Matched B_1-Increased Pseudo-Continuous Arterial Spin Labeling

Wen-Ming Luh[1], Eric C. Wong[2], S. Lalith Talagala[3], Peter A. Bandettini[1]
[1]Functional MRI Facility, NIMH, National Institutes of Health, Bethesda, MD, United States; [2]Departments of Radiology & Psychiatry, University of California, San Diego, La Jolla, CA, United States; [3]NMRF, NINDS, National Institutes of Health, Bethesda, MD, United States

15:00 3981. Territorial Arterial Spin Labelling at 7T using PICORE

Rebecca Susan Dewey[1,2], Dorothee P. Auer[1], Susan T. Francis[3]
[1]Division of Academic Radiology, the Univeristy of Nottingham, Nottingham, United Kingdom; [2]Sir Peter Mansfield Magnetic Resonance Centre, the University of Nottingham, Nottingham, United Kingdom; [3]Sir Peter Mansfield Magnetic Resonance Centre, the Univeristy of Nottingham, Nottingham, United Kingdom

15:30 3982. Inversion-Prepared Pulsed ASL with Single-Shot FSE Readout for the *In Vivo* Measurement of the T_1 of Arterial Blood

David Thomas Pilkinton[1,2], John a Detre[2,3], Ravinder Reddy[1,2]
[1]Biochemistry & Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Magnetic Resonance and Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Center for Functional Neuroimaging, Unversity of Pennsylvania, Philadelphia, PA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 82

13:30 3983. Acquisition Strategy for 3D GRASE with a Sharp Point Spread Function Towards Whole Brain ASL Perfusion Mapping at 3T

Qin Qin[1,2], Alan J. Huang[2,3], Jun Hua[1,2], Matthias J. P. van Osch[4], Peter C. M. van Zijl[1,2]
[1]Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Center, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [4]Radiology, Leiden University Medical Center, Leiden, Netherlands

14:00 3984. Look-Locker 3D-EPI ASL at 7T

Emma Louise Hall[1], Penny A. Gowland[1], Susan T. Francis[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

14:30 3985. Turbo-Flash Based Arterial Spin Labeling at 7T

Zhentao Zuo[1,2], Rui Wang[1,2], Dapeng Liu[1,2], Rong Xue[1], Yan Zhuo[1], Danny J. J. Wang[3]
[1]State Key Laboratory of Brain & Cognitive Science, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, People's Republic of; [2]Graduate University, Chinese Academy of Sciences, Beijing, China, People's Republic of; [3]Neurology, UCLA, Los Angeles, CA, United States

15:00 3986. Dual-Density & Parallel Spiral ASL for Motion Artifact Reduction

Craig H. Meyer[1,2], Li Zhao[1], Michael Lustig[3], Manal Jilwan-Nicolas[2], Max Wintermark[2], John P. Mugler III[2], Frederick H. Epstein[2]
[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Department of Radiology, University of Virginia, Charlottesville, VA, United States; [3]Department of Electrical & Computer Engineering, UC Berkeley, Berkeley, CA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 82

13:30 3987. Full Model-Based Analysis of QUASAR Arterial Spin Labelling

Michael A. Chappell[1,2], Esben T. Petersen[3], Mark W. Woolrich[2], Xavier Golay[4], Stephen J. Payne[1]
[1]Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [3]Clinical Imaging Research Center, NUS-A*STAR, Singapore; [4]Institute of Neurology, University College, London, United Kingdom

14:00 3988. Absolute Regional Gray Matter Perfusion Measured with Arterial Spin Labeling Calibrated using Phase Contrast MRI

Ahmet Murat Bagci[1], Sang Lee[1], David Adams[1], Clinton Wright[1], Birgit Ertl-Wagner[2], Noam Alperin[1]
[1]University of Miami, Miami, FL, United States; [2]University of Munich, Munich, Germany

14:30 3989. Detection of MR Perfusion Transit Time Effects in Pulsed Arterial Spin Labeling using a 'Model Validity Metric'

Yang Wang[1], Josef Pfeuffer[2], Gary D. Hutchins[1], Andrew J. Saykin[1]
[1]Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [2]MR Applications Development, Siemens Healthcare, Erlangen, Germany

15:00 3990. Regional Coherence-Based Denoising (RECODE) for Arterial Spin Labeled Perfusion MRI
Ze Wang[1], John A. Detre[2]
[1]Dept of Psychiatry, U of Penn, Philadelphia, PA, United States; [2]Dept of Neurology, Univ of Penn, Philadelphia, PA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 82

13:30 3991. WITHDRAWN

14:00 3992. A Total Variation Spatial Prior for the Estimation of Perfusion & Transit Time Maps in PASL-MRI
Nuno Santos[1,2], João M. Sanches[1], Inês Sousa[1,2], Patricia Figueiredo[1]
[1]Institute for Systems & Robotics, Instituto Superior Técnico, Lisbon, Portugal; [2]Healthcare Sector, Siemens S.A., Portugal

14:30 3993. Absolute CBF Quantification with PASL During Hyperoxia Corrected with the Simultaneous Measurement of the T_1 of Arterial Blood
David Thomas Pilkinton[1,2], John A. Detre[2,3], Ravinder Reddy[1,2]
[1]Biochemistry & Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, United States; [2]Center for Magnetic Resonance & Optical Imaging, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [3]Center for Functional Neuroimaging, Unversity of Pennsylvania, Philadelphia, PA, United States

15:00 3994. Comparison of Arterial Transit Times Estimated using Arterial Spin Labeling
Yufen Chen[1], Danny J. J. Wang[2], John A. Detre[1]
[1]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Neurology, University of California Los Angeles, Los Angeles, CA, United States

Arterial Spin Labeling - Applications

Exhibition Hall Monday 14:00-16:00 Computer 83

14:00 3995. Magnetic Resonance Imaging of Blood Flow of the Human Retina
Qi Peng[1,2], Yi Zhang[1,2], Oscar San Emeterio Nateras[1,2], Timothy Q. Duong[1,2]
[1]Radiology, UT Health Science Center at San Antonio, San Antonio, TX, United States; [2]Research Imaging Institute, UT Health Science Center at San Antonio, San Antonio, TX, United States

14:30 3996. Blood Flow MRI of the Human Retina During Isometric Exercise-Induced Increase in Blood Pressure
Yi Zhang[1], Oscar San Emeterio Nateras[2], Qi Peng[1,2], Carlos A. Rosende[3], John M. Johnson[4], Timothy Q. Duong[1,2]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [2]Radiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [3]Ophthalmology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States; [4]Physiology, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

15:00 3997. Layer-Specific Blood-Flow MRI of Retina Degeneration at 11.7T
Guang Li[1], Bryan De La Garza[2], Yen-Yu I Shih[2], Eric R. Muir[2,3], Timothy Q. Duong[2]
[1]Radiology, UT Health Science Center at San Antonio, San Antonio, TX, United States; [2]UT Health Science Center at San Antonio, United States; [3]Georgia Institute of Technology, Atlanta, GA, United States

15:30 3998. Layer-Specific Retinal & Choroidal Blood-Flow MRI in a Mouse Model of Glaucoma
Eric R. Muir[1], William Lavery[2], Jeffrey W. Kiel[2], René C. Rentería[3,4], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center, San Antonio, TX, United States; [2]Department of Ophthalmology, University of Texas Health Science Center, San Antonio, TX, United States; [3]Department of Physiology, University of Texas Health Science Center, San Antonio, TX, United States; [4]Center for Biomedical Neuroscience, University of Texas Health Science Center, San Antonio, TX, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 83

13:30 3999. Calibrated fMRI using Simultaneous EEG & fMRI & the Effect of Hypercapnia on $CMRO_2$
Andrea Federspiel[1], Ariane Orosz[1], Martinus Hauf[2], Roland Wiest[2], Danny J. J. Wang[3], Thomas Dierks[1], Kay Jann[1]
[1]Department of Psychiatric Neurophysiology, University Hospital of Psychiatry, Bern, Switzerland; [2]Institute of Diagnostic & Interventional Neuroradiology, University of Bern, Switzerland; [3]Department of Neurology, UCLA, Ahmanson-Lovelace Brain Mapping Center, Los Angeles, CA, United States

14:00 4000. Coupling between Resting Cerebral Perfusion & EEG Power
Lars Michels[1], Ernst Martin[1], Daniel Brandeis[2], Rafael Lüchinger[2], Peter Klaver[3], Ajit Shankaranarayanan[4], David C. Alsop[5,6], Ruth L. O'Gorman[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Department of Child & Adolescent Psychiatry, University of Zürich, Zürich, Switzerland; [3]Department of Psychology, University of Zürich, Zürich, Switzerland; [4]Global Applied Science Laboratory, GE

Healthcare, Menlo Park, CA, United States; [5]Beth Israel Deaconess Medical Center, Boston, MA, United States; [6]Harvard Medical School, Boston, MA, United States

14:30 **4001.** **Dynamics of CBF and BOLD Responses to a Cued Deep Breathing Paradigm**

Inês Sousa[1,2], Pedro Vilela[3], Patricia Figueiredo[1]
[1]Institute for Systems & Robotics, Instituto Superior Técnico, Lisbon, Portugal; [2]Healthcare Sector, Siemens, S.A., Lisbon, Portugal; [3]Imaging Department, Hospital da Luz, Lisbon, Portugal

15:00 **4002.** **Dosage-Dependent Effects of Isoflurane on Cerebral Blood Flow in Rhesus Monkeys**

Chun-Xia Li[1], Sudeep Patel[1], Eddie Auerbach[2], Xiaodong Zhang[1]
[1]Yerkes Imaging Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States; [2]Center for MR Research, School of Medicine, University of Minnesota, Minneapolis, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 83

13:30 **4003.** **Memory Performance is Negatively Correlated with Resting CBF Level in Hippocampus in Healthy Elderly**

Siyuan Hu[1], Hengyi Rao[1], Lauren Mancuso[1], John A. Detre[1], David Wolk[1]
[1]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States

14:00 **4004.** **Temporal & Extra-Temporal Perfusion Abnormality in Mesial Temporal Lobe Epilepsy Revealed by Arterial Spin Labeling(ASL)-Based MRI**

Guangming Lu[1], Zhiqiang Zhang[1], Cuiping Yuan[1], Lianfang Shen[1]
[1]Department of Radiology, Jinling hospital, Nanjing University School of Medicine, Nanjing, Jiangsu, China, People's Republic of

14:30 **4005.** **Quantification of Cerebral Blood Flow (CBF) in Acute-On Chronic Liver Failure (ACLF) Patients with 3D Pseudo Continuous Arterial Spin Labeling**

Abhishek Yadav[1], Rakesh Kumar Gupta[1], Santosh Kumar Yadav[1], M Rangan[2], V. A. Saraswat[3], M. A. Thomas[4], R. K. S. Rathore[5]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Pediatric Gastroenterology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, UP, India; [3]Pediatric Gastroenterology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, lucknow, UP, India; [4]Department of Radiological Sciences, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, California, Los Angels, United States; [5]Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur, UP, India

15:00 **4006.** **Combined Dynamic Susceptibilty Contrast (DSC) Imaging & Arterial Spin Labeling (ASL) for Quantitative Perfusion Measurements in Children with Diffuse Pontine Glioma**

Brian A. Taylor[1], Adam Winchell[1,2], Jan Sedlacik[1], Alberto Broniscer[3], Ruitian Song[1], Ralf B. Loeffler[1], Claudia M. Hillenbrand[1]
[1]Radiological Sciences, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Biomedical Engineering, University of Memphis, Memphis, TN, United States; [3]Oncology, St. Jude Children's Research Hospital, Memphis, TN, United States

Exhibition Hall Thursday 13:30-15:30 Computer 83

13:30 **4007.** **Test-Retest Reproducibility Assessment of CBF Measurements with 3D GRASE ASL at 1.5 T in Aged Population with Alzheimer's Disease**

Alexandre Coimbra[1], Dai Feng[2], Sonia Apreleva[2], Peter Hu[3], S Ramana[4], A. Bernstein[5], Matthias Guenther[6], William Cho[7], Mark Forman[8], Ajay Verma[9], Gary Herman[10], Richard Baumgartner[2], David Feinberg[4]
[1]Imaging, Merck & Co, Inc, West Point, PA, United States; [2]Biometrics, Merck & Co, Inc, Rahway, NJ, United States; [3]BARDS, Merck & Co, Inc, Upper Gwynedd, PA, United States; [4]Advanced MRI Technologies, Sebastopol, CA, United States; [5]Redwood Regional Medical Group, Santa Rosa, CA, United States; [6]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany; [7]Experimental Medicine, Merck & Co, Inc, Upper Gwynedd, PA, United States; [8]Clinical Pharmacology, Merck & Co, Inc, Upper Gwynedd, PA, United States; [9]Translational Neurology, Biogen Idec, Cambridge, MA, United States; [10]Clinical Research, Merck & Co, Inc, Rahway, NJ, United States

14:00 **4008.** **A Comparison Study of Imaging Absolute CBF Change in Rat Brain with SR-T_1app Method and CASL Technique**

Xiao Wang[1], Xiao-Hong Zhu[1], Yi Zhang[1], Wei Chen[1]
[1]Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States

14:30 **4009.** **Intersubject Variability in Cerebral Blood Flow is Great than Structural Variability**

Yufen Chen[1], Hengyi Rao[1], John A. Detre[1]
[1]Center for Functional Neuroimaging, University of Pennsylvania, Philadelphia, PA, United States

15:00 **4010.** **An Online Shared Database of ASL-Based CBF Measures with Integrated Processing Pipeline**
David Dongsuk Shin[1], Burak Ibrahim Ozyurt[2], Thomas T Liu[1]
[1]Center for Functional MRI, University of California, San Diego, La Jolla, CA, United States; [2]Department of Psychiatry, University of California, San Diego, La Jolla, CA, United States

Mapping Structural Anisotropy : Kurtosis

Exhibition Hall Monday 14:00-16:00 Computer 84

14:00 **4011.** **Estimation of Kurtosis in Accelerated Diffusion Spectrum Imaging using Compressed Sensing**
Jonathan Immanuel Sperl[1], Ek Tsoon Tan[2], Kedar Khare[2], Kevin F. King[3], Xiaodong Tao[2], Christopher J. Hardy[2], Luca Marinelli[2], Marion I. Menzel[1]
[1]GE Global Research, Garching, Germany; [2]GE Global Research, Niskayuna, NY, United States; [3]GE Healthcare, Waukesha, WI, United States

14:30 **4012.** **Do Commonly Used B-Values Yield Accurate Apparent Kurtosis Values?**
Tristan Anselm Kuder[1], Bram Stieltjes[2], Wolfhard Semmler[1], Frederik Bernd Laun[1]
[1]Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany; [2]Quantitative Imaging-based Disease Characterization, German Cancer Research Center, Heidelberg, Germany

15:00 **4013.** **Diffusion Gradient Correction in Diffusion Kurtosis Imaging**
Xiaowei Zou[1], Jordan S. Muraskin[1], Melvyn B. Ooi[2], Truman R. Brown[3]
[1]Biomedical Engineering, Columbia University, New York, NY, United States; [2]Stanford University; [3]Radiology, Columbia University

15:30 **4014.** **A Novel Diffusion Kurtosis Imaging System using Heteroscedastic Multiple Regression**
Xiaowei Zou[1], Truman R. Brown[2]
[1]Biomedical Engineering, Columbia University, New York, NY, United States; [2]Radiology, Columbia University

Mapping Structural Anisotropy : Reconstruction & Morphometry

Exhibition Hall Tuesday 13:30-15:30 Computer 85

13:30 **4015.** **Online Reconstruction & Motion Detection in HARDI**
Emmanuel Caruyer[1], Iman Aganj[2], Christophe Lenglet[3], Guillermo Sapiro[2], Rachid Deriche[1]
[1]Athena Project-Team, INRIA Sophia Antipolis - Méditerranée, Sophia Antipolis, France; [2]Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN, United States; [3]Department of Radiology - CMRR, University of Minnesota Medical School, Minneapolis, MN, United States

14:00 **4016.** **Multiple Kernel Spherical Deconvolution**
Qiuyun Fan[1,2], Xin Hong[2], Nicole Davis[3,4], Laurie E. Cutting[3,5], Adam W. Anderson[1,2]
[1]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States; [3]Vanderbilt University Kennedy Center for Research on Human Development, Nashville, TN, United States; [4]Department of Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [5]Department of Special Education, Vanderbilt Peabody, Nashville, TN, United States

14:30 **4017.** **Brain Atlas-Based Study of the Interplay between Normal Tissue Microstructural MRI Parameters**
Indika S. Walimuni[1], Khader M. Hasan[1]
[1]Radiology, UTHSCH, Houston, TX, United States

15:00 **4018.** **ODF-Based Morphometry & Application to Brain Asymmetry**
Alvina Goh[1], Neda Jahanshad[2], Paul M. Thompson[2], Christophe Lenglet[3]
[1]Department of Mathematics, National University of Singapore, Singapore, Singapore; [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA, Los Angeles, CA, United States; [3]Department of Radiology - CMRR, University of Minnesota Medical School, Minneapolis, MN, United States

Mapping Structural Anisotropy : Novel Contrast

Exhibition Hall Wednesday 13:30-15:30 Computer 86

13:30 **4019.** **Diffusion Properties of Whole, Post-Mortem Human Brains**
Karla L. Miller[1], Charlotte J. Stagg[1], Saad Jbabdi[1], Heidi Johansen-Berg[1], Jennifer A. McNab[2]

[1]FMRIB Centre, University of Oxford, Oxford, Oxon, United Kingdom; [2]A.A. Martinos Center, Massachusetts General Hospital, Boston, MA, United States

14:00 **4020.** **White Matter Fiber Orientation Mapping Based on T_2* Anisotropy**
Jongho Lee[1],[2], Peter van Gelderen[1], Li-Wei Kuo[1], Hellmut Merkle[1], Afonso C. Silva[3], Jeff H. Duyn[1]
[1]Advanced MRI section/LFMI/NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Department of Radiology, University of Pennsylvania , Philadelphia, PA, United States; [3]CMU/LFMI/NINDS, National Institutes of Health, Bethesda, MD, United States

14:30 **4021.** **Temporal Alterations in Brain Water Diffusivity in Acute Radiation Injury**
Richa Trivedi[1], Hemanth Kumar Bhonsle Somu[1], Senthil Veeramani[1], Rajendra P. Tripathi[1], Subash Khushu[1]
[1]Institute of Nuclear Medicine & Allied Sciences, Delhi, India

15:00 **4022.** **DTI Metrics Differentiate Chronic Infective from Chronic Inflammatory Knee Arthritis**
Rishi Awasthi[1], Vikas Agarwal[2], Deepak Tripathi[2], Vinita Agarwal[3], R. K. S. Rathore[4], Rakesh K. Gupta[1]
[1]Departments of Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, UP, India; [2]Departments of Immunology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, UP, India; [3]Departments of Pathology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, UP, India; [4]Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur, UP

Mapping Structural Anisotropy : Acquisition & Pipeline

Exhibition Hall Thursday 13:30-15:30 Computer 87

13:30 **4023.** **Diffusion Weighted MR Nerve Sheath Imaging (DW-NSI) using Diffusion-Sensitized Driven-Equiliblium (DSDE)**
Makoto Obara[1], Taro Takahara[2], Masatoshi Honda[3], Thomas Kwee[4], Yutaka Imai[3], Marc Van Cauteren[1]
[1]Healthcare, Philips Electronics Japan, Minato-ku, Tokyo, Japan; [2]Department of Biomedical Engineering, Tokai University School of Engineering, Hiratsuka, Kanagawa, Japan; [3]Department of Radiology, Tokai University Hospital, Isehara, Kanagawa, Japan; [4]University Medical Center Utrecht, Utrecht, Netherlands

14:00 **4024.** **A Novel Interlaced Sampling Scheme for Multi-Shell q-Space Magnetic Resonance Microscopy**
Sharon Portnoy[1], Wenxing Ye[2], Alireza Entezari[2], Stephen J. Blackband[3,4], Baba C. Vemuri[2]
[1]Department of Neuroscience, University of Florida, Gainesville , FL, United States; [2]CISE department, University of Florida, Gainesville, FL, United States; [3]Department of Neuroscience, University of Florida, Gainesville, FL, United States; [4]National High Magnetic Field Laboratory, Tallahassee, FL, United States

14:30 **4025.** **Development & Evaluation of a Robust & Efficient Computational Pipeline for Track Density Imaging for Use in a Clinical Research Environment**
Cornelius von Morze[1], Duan Xu[1], Christopher P. Hess[1]
[1]Department of Radiology & Biomedical Imaging, UCSF, San Francisco, CA, United States

15:00 **4026.** **Gaussian Dephasing Due to Finite Gradients in Q-Space Imaging**
Frank Peeters[1]
[1]Université Catholique de Louvain, Brussels, Belgium

Integrated Software Packages

Exhibition Hall Tuesday 13:30-15:30 Computer 88

13:30 **4027.** **Accelerating Diffusion Tensor Estimation using General-Purpose Graphics Processing Unit**
Lin-Ching Chang[1], Mikhail a Gorbachev[1]
[1]Department of Electrical Engineering & Computer Science, the Catholic University of America, Washington, DC, United States

14:00 **4028.** **Diffusion Imaging in the Medical Imaging Interaction Toolkit (MITK)**
Klaus Hermann Fritzsche[1], Marco Nolden[1], Hans-Peter Meinzer[1], Bram Stieltjes[1]
[1]German Cancer Research Center, Heidelberg, Baden Württemberg, Germany

14:30 **4029.** **Extendable Multimodality Imaging Framework with Specific Illustration of DTI**
Divya Kishore Singh Rathore[1], Sanjay K. Verma[2], Rks Rathore[2], Rakesh K. Gupta[3]
[1]Imaging R&D, ADISL, Kanpur, UP, India; [2]Mathematics and Statistics, Indian Institute of Technology, Kanpur, UP, India; [3]Departments of Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, UP, India

15:00 4030. DTI Processing & Analysis with MedINRIA
Pierre Fillard[1], *Nicolas Toussaint*[2]
[1]Parietal Reseach Team, INRIA Saclay Île-de-France, Gif/Yvette, France; [2]Imaging Sciences, King's College London, London, United Kingdom

MR Angiography - Cranial

Exhibition Hall Monday 14:00-16:00 Computer 89

14:00 4031. Non Contrast Time-Resolved MRA Combining High Resolution Multiple Phase EPISTAR (CINEMA-STAR)
Masanobu Nakamura[1], *Masami Yoneyama*[1], *Tomoyuki Okuaki*[1], *Takashi Tabuchi*[1], *Atsushi Takemura*[2], *Makoto Obara*[2], *Junko Ogura*[1]
[1]Medical Satellite Yaesu Clinic, Chiyoda-ku, Tokyo, Japan; [2]Philips Electronics Japan, Tokyo, Japan

14:30 4032. Changes Over Time in Intracranial Aneurysms Monitored with MRA/I
David Saloner[1,2], *Daniel Hurwit*[1,2], *Vitaliy Rayz*[1,2], *Loic Boussel*[3], *Alastair Martin*[1], *William Young*[4], *Wade Smith*[5], *Nerissa Ko*[5], *Michael Lawton*[6]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]Radiology, VA Medical Center San Francisco, San Francisco, CA, United States; [3]Radiology, Louis Pradel Hospital, Lyon, France; [4]Anesthesiology, University of California San Francisco, San Francisco, CA, United States; [5]Neurology, University of California San Francisco, San Francisco, CA, United States; [6]Neurosurgery, University of California San Francisco, San Francisco, CA, United States

15:00 4033. High-Resolution Dynamic Angiography Imaging at 7 Tesla
Ann-Kathrin Homagk[1], *Moritz Cornelius Berger*[1], *Lars Gerigk*[1], *Onur Ozyurt*[2], *Lydia Schuster*[1], *Wolfhard Semmler*[1], *Michael Bock*[1]
[1]German Cancer Research Center, Heidelberg, Germany; [2]Bogazici University, Istanbul, Turkey

15:30 4034. 4D Vessel-Encoded Arterial Spin Labeling Angiography
Thomas William Okell[1], *Peter Schmitt*[2], *Xiaoming Bi*[3], *Michael Andrew Chappell*[1,4], *Rob Hendrikus Tijssen*[1], *Karla L. Miller*[1], *Peter Jezzard*[1]
[1]FMRIB Centre, Department of Clinical Neurosciences, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]MR Application & Workflow Development, Siemens AG, Healthcare Sector, Erlangen, Germany; [3]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, United States; [4]Institute of Biomedical Engineering, University of Oxford, Oxford, Oxfordshire, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 89

13:30 4035. PC-MRI Velocimetry as Improved Initial Approximation in Iterative CFD Modeling
Vitaliy L. Rayz[1], *Loic Boussel*[2], *Gabriel Acevedo-Bolton*[1], *Alastair J. Martin*[1], *David Saloner*[1]
[1]Radiology, University of California, San Francisco, CA, United States; [2]Radiology, Louis Pradel Hospital, CREATIS-LRMN, UMR CNRS 5515, INSERM U630, Lyon, France

14:00 4036. Non Contrast 3D Volumetric Time-Resolved MRA Combining Multiple Phase FAIR(CINEMA-FAIR)
Masanobu Nakamura[1], *Masami Yoneyama*[1], *Tomoyuki Okuaki*[1], *Takashi Tabuchi*[1], *Atsushi Takemura*[2], *Makoto Obara*[2], *Junko Ogura*[1], *Satoshi Tsutsumi*[3]
[1]Medical Satellite Yaesu Clinic, Chiyoda-ku, Tokyo, Japan; [2]Philips Electronics Japan, Tokyo, Japan; [3]Neurosurgery, Juntendo University Urayasu Hospital, Chiba, Japan

14:30 4037. Design of Ramped RF Excitation Pulses with Built-In Out of Slab Saturation for 3D - TOF Angiography
Daniel Kopeinigg[1,2], *Roland Bammer*[1]
[1]Stanford University, Stanford, CA, United States; [2]Institute of Medical Engineering, Graz, Styria, Austria

15:00 4038. 3D Cine Phase-Contrast MRI of Flow Patterns & Turbulent Kinetic Energy in Patient-Specific Models of Carotid Disease Under in Vivo Mimicking Flow Conditions
Petter Dyverfeldt[1,2], *Gabriel Acevedo-Bolton*[1], *Alastair J. Martin*[1], *David Saloner*[1]
[1]Radiology & Biomedical Imaging, University of California San Francisco, San Francisco, CA, United States; [2]CMIV & Linköping University, Linköping, Sweden

Exhibition Hall Wednesday 13:30-15:00 Computer 89

13:30 4039. Time-Dependent Wall Shear Stress Measurement in Middle Cerebral Artery (MCA) using Bi-Exponential Curve Fitting of Phase Contrast MR Angiography
Namkug Kim[1], *SeonKyu Lee*[2]

[1]Radiology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, Republic of; [2]Radiology, Tufts University, Boston, MA, United States

14:00 **4040.** **Improvement of Magnetic Resonance Angiography at 3 Tesla & Clinical Capability in Patients with Cerebral Aneurysms After Endovascular Coiling: Correlation with Standard Digital Subtraction Angiography**
Ulrike Wiesspeiner[1], Robert Vollmann, Hannes Deutschmann, Klaus Leber[2], Franz Ebner[3]
[1]Department of Radiology, Medical University of Graz, Graz, Austria; [2]Neurosurgery, Medical University of Graz; [3]Neuroradiology, Medical University of Graz

14:30 **4041.** **Mouse MRI & MR Angiography at 9.4T to Study the Role of PKC θ Protein in Neurological Complication of Malaria**
Sandra Même[1], Mathilde Fauconnier[2], Marie-Laure Bourrigault[2], Bernard Ryffel[2], Valérie Quesniaux[2], Jean-Claude Beloeil[1]
[1]CBM CNRS UPR4301, orléans, France; [2]IEM CNRS UMR6218, orléans, France

Normal Aging Brain

Exhibition Hall Monday 14:00-16:00 Computer 90

14:00 **4042.** **Does White Matter Lesion Load Affect the Integrity of Normal-Appearing White Matter in the Ageing Brain?**
Susana Muñoz Maniega[1], Maria C. Valdés Hernández[1], Catherine Murray[2], Zoe Morris[1], Natalie A. Royle[1], Alan J. Gow[2], Mark E. Bastin[3], Ian J. Deary[2], Joanna M. Wardlaw[1]
[1]Clinical Neurosciences, University of Edinburgh, Edinburgh, Scotland, United Kingdom; [2]Psychology, University of Edinburgh, Scotland, United Kingdom; [3]Medical Physics, University of Edinburgh, Scotland, United Kingdom

14:30 **4043.** **Assessment of Bound Pool Fractions in the Aging Brain with Stimulated Echoes**
Michaela Soellinger[1], Christian Langkammer[1], Franz Fazekas[1], Stefan Ropele[1]
[1]Neurology, Medical University of Graz, Graz, Austria

15:00 **4044.** **Breath-Hold Regulated Blood Oxygenation Level-Depedent MRI of Elderly Adults**
Yuan-Yu Hsu[1,2], Wen-Cheng Chu[1], Ho-Ling Liu[3], Kun-Eng Lim[1]
[1]Department of Medical Imaging, Buddhist Tzu Chi General Hospital-Taipei Branch, Taipei, Taiwan; [2]School of Medicine, Tzu Chi University, Hualien, Taiwan; [3]Department of Medical Imaging & Radiological Science, Chang Gung University, Taoyuan, Taiwan

15:30 **4045.** **Multimodal Investigations in Cognitively Normal Elderly with Different Types of Apolipoprotein E (ApoE) Genotype Polymorphism: Brain Volume, Diffusion Anisotropy, & Cerebral Blood Flow MRI Study**
Min-Ji Kim[1], Geon-Ho Jahng[1], Sun-Mi Kim[1], Chang-Woo Ryu[1], Soo-Yeol Lee[2], Hack-Young Lee[3], Won-Chul Shin[3]
[1]Department of Radiology, Kyung Hee University Hospital-Gangdong, Kyung Hee University, Seoul, Korea, Republic of; [2]Department of Biomedical Medical Engineering, Kyung Hee University; [3]Department of Neurology, Kyung Hee University Hospital-Gangdong, Kyung Hee University, Seoul, Korea, Republic of

Exhibition Hall Tuesday 13:30-15:30 Computer 90

13:30 **4046.** **Proton(^{1}H) Magnetic Resonance Spectroscopy: Absolute Metabolite Concentrations in Normal Aging Human Brain at 3Tesla**
Pui Wai Chiu[1], Henry Ka Fung Mak, Queenie Chan[2], Kai Wing Kelvin Yau[3], Leung Wing Chu[4]
[1]Department of Diagnostic Radiology, the University of Hong Kong, HK, Hong Kong; [2]Philips Healthcare, Hong Kong; [3]Department of Management Sciences, City University of Hong Kong; [4]Department of Medicine, the University of Hong Kong

14:00 **4047.** **Catch Me If You Can: GABA Spectroscopy with Shifted Editing Pulse Frequencies**
Eva Aufhaus[1], Wolfgang Weber-Fahr[1], Gunilla Oberthuer[1], Mareen Hoerst[1], Nuran Tunc-Skarka[1], Markus Sack[1], Andreas Meyer-Lindenberg[2], Uwe Boettcher[3], Gabriele Ende[1]
[1]Neuroimaging, Central Insitute of Mental Health, Mannheim, Germany; [2]Psychiatry, Central Insitute of Mental Health, Mannheim, Germany; [3]Siemens Medical, Erlangen, Germany

14:30 **4048.** **Resting Neurotransmitter Levels Correlate with Peak EEG Gamma Frequency and Power**
Ruth L. O'Gorman[1], Lars Michels[1], Richard Edden[2], Daniel Brandeis[3], Rafael Lüchinger[3], Peter Klaver[4], Ernst Martin[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Russell H. Morgan Department of Radiology & Radiological Sciences, Johns Hopkins University, Baltimore, MD, United States; [3]Department of Child & Adolescent Psychiatry, University of Zürich, Zürich, Switzerland; [4]Department of Psychology, University of Zürich, Zürich, Switzerland

15:00 **4049.** **Increased Levels of Systemic Inflammation in the Elderly Are Associated with Reduced Microstructural Integrity of Brain Tissue**
Stephanie Harmon[1], Debra A. Fleischman[2], Robert J. Dawe[1], Lisa L. Barnes[2], Martha C. Morris[2], David A. Bennett[2], Konstantinos Arfanakis[1,2]

[1]Illinois Institute of Technology, Chicago, IL, United States; [2]Rush University Medical Center, Chicago, IL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 90

13:30 4050. Glutamate & Glutamine Concentrations by MRS in Adult Brain: Age & Sex Dependence
Florian Schubert[1], Christoph Wirth[2], Jeff Bierbrauer[2], Bernd Ittermann[1], Jürgen Gallinat[2]
[1]Physikalisch-Technische Bundesanstalt, Berlin, Germany; [2]Psychiatry, Charité University Medicine, Berlin, Germany

14:00 4051. Evidence of Long-T_2 Fraction & Higher Myelin Water Fraction in the Corticospinal Tract
Bretta Adrianne Russell-Schulz[1], Cornelia Laule[2,3], David Li[3], Alex L. MacKay[1,3]
[1]Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada; [2]Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada; [3]Radiology, University of British Columbia, Vancouver, BC, Canada

14:30 4052. Regional Brain T_2-Relaxation Changes with Age in Healthy Adult Subjects
Rajesh Kumar[1], Mary A. Woo[2], Sean Delshad[1], Paul M. Macey[2], Ronald M. Harper[1]
[1]Neurobiology, University of California at Los Angeles, Los Angeles, CA, United States; [2]UCLA School of Nursing, University of California at Los Angeles, Los Angeles, CA, United States

15:00 4053. How Many Subjects Should Be Included in a Well-Powered Cross-Sectional Cortical Thickness Analysis?
Heath Richard Pardoe[1], David F. Abbott[1], Graeme D. Jackson[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Melbourne, Victoria, Australia; [2]Department of Medicine, University of Melbourne, Melbourne, Victoria, Australia

Exhibition Hall Thursday 13:30-15:30 Computer 90

13:30 4054. Do Cortical GABA Levels Correlate with Age?
Zaiyang Long[1,2], James Brown Murdoch[3], Andrew W. Goddard[2,4], Ulrike Dydak[1,2]
[1]School of Health Sciences, Purdue University, West Lafayette, IN, United States; [2]Department of Radiology & Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN, United States; [3]Toshiba Medical Research Institute USA, Mayfield Village, OH, United States; [4]Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN, United States

14:00 4055. Volume Reduction of Subcortical Grey Matter After Death
Aikaterini Kotrotsou[1], Robert J. Dawe[1], Julie A. Schneider[2], David A. Bennett[2], Konstantinos Arfanakis[1,2]
[1]Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, IL, United States; [2]Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, IL, United States

14:30 4056. Age-Related Differences in Metabolites in the Posterior Cingulated Cortex & Hippocampus of Normal Ageing Brain: A ^{1}H-MRS Study
Harmen Reyngoudt[1,2], Tom Claeys[1,2], Leslie Vlerick[1,2], Stijn Verleden[3], Marjan Acou[1,2], Karel Deblaere[1,2], Yves De Deene[4], Kurt Audenaert[3], Ingeborg Goethals[1], Eric Achten[1,2]
[1]Radiology & Nuclear Medicine, Ghent University, Ghent, Belgium; [2]Ghent Institute for Functional & Metabolic Imaging, Ghent University, Ghent, Belgium; [3]Psychiatry & Medical Psychology, Ghent University, Ghent, Belgium; [4]4Laboratory for Quantitative & Nuclear Magnetic Resonance in Medicine & Biology, Ghent University, Ghent, Belgium

15:00 4057. Aging Effect on the Resting State: Two Complementary Approaches with the Same fMRI Datasets
Makoto Miyakoshi[1], Satoru Miyauchi[2], Takahiko Koike[2], Shigeyuki Kan[2], Toshiharu Nakai[1]
[1]National Center for Geriatrics & Gerontology, Ohbu, Aichi, Japan; [2]National Institute of Information & Communications Technology, Japan

Stroke: Clinical Studies

Exhibition Hall Monday 14:00-16:00 Computer 91

14:00 4058. Progression of Blood Brain Barrier Permeability in Patients with Acute Ischemic Stroke: From Acute to Early Subacute Phase
Kun Huang[1], David John Mikulis[2], Frank Silver[3], Andrea Kassner[1]
[1]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [2]Medical Imaging, Toronto Western Hospital, Toronto, Ontario, Canada; [3]Neurology, Toronto Western Hospital, Toronto, Ontario, Canada

14:30 4059. On the Feasibility of Reduced Dose Dynamic Susceptibility Contrast Perfusion MRI for Stroke
Jeffry R. Alger[1,2], T. J. Schaewe, D. S. Liebeskind, J. L. Saver, C. S. Kidwell[3]
[1]Neurology, Geffen School of Medicine at UCLA, Los Angeles, CA, United States; [2]Radiological Sciences, Geffen School of Medicine at UCLA, Los Angeles, CA, United States; [3]Neurology, Georgetown University, Washington, DC, United States

15:00 **4060.** **Prediction of Hemorrhagic Transformation in Acute Ischemic Stroke using DCE MRI: Delayed AUC Measures Versus Quantitative Estimates of Permeability**
Alexis Gordon[1], Jackie Leung[2], Igor Sitartchouk[1], David Mikulis[3], Andrea Kassner[1]
[1]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [2]Diagnostic Imaging, the Hospital for Sick Children, Toronto, Ontario, Canada; [3]Medical Imaging, Toronto Western Hospital, Toronto, Ontario, Canada

15:30 **4061.** **Appropriate Methodology for Automated Scaling of DSC-CBF Images for Stroke Evaluation**
Jeffry R. Alger[1,2], T. J. Schaewe, J. J. Wang, D. S. Liebeskind, Q. Hao, J. X. Qian[2], J. L. Saver, N. Salamon[2], UCLA Stroke Investigators
[1]Neurology, Geffen School of Medicine at UCLA, Los Angeles, CA, United States; [2]Radiological Sciences, Geffen School of Medicine at UCLA

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13:30 **4062.** ***In Vivo* Measurement of Oxygenation Changes After Stroke using Susceptibility Weighted Imaging**
Meng Li[1], Jianlin Wu[2], Yanwei Miao[2], Zhihong Yang[2], Waqar Raza[1], Ying Wang[3], E. M. Haacke[1,4], Jian Hu[1]
[1]Department of Radiology, Wayne State University, Detroit, MI, United States; [2]Department of Radiology, Dalian Medical University, China, People's Republic of; [3]Department of Computer Science, Northeastern University, Shenyang, China, People's Republic of; [4]MRI Institute of Biomedical Research, Detroit, MI, United States

14:00 **4063.** **Can Fiber Tractography in Capsular Stroke Affected Brain Predict Immediate Neurological Functional Outcome?**
Judy R. James[1], Asif A. Khan[2], David P. Gordy[1], Majid A. Khan[1], Juebin Huang[2], Alexander P. Auchus[2,3], Razvan Buciuc[1,2]
[1]Radiology, University of Mississippi Medical Center, Jackson, MS, United States; [2]Neurology, University of Mississippi Medical Center, Jackson, MS, United States; [3]Neurology, G.V. (Sonny) Montgomery VA Medical Center, Jackson, MS, United States

14:30 **4064.** **Acute Stroke Follow-Up Study: Assessing Infarct Volume Change**
Rakesh Mullick[1], Uday Patil[1], Sumit K. Nath[1], Dattesh D. Shanbhag[1], Patrice Hervo[2], Catherine Oppenheim[3]
[1]Imaging Technologies, GE Global Research, Bangalore, Karnataka, India; [2]GE Healthcare, Buc, France; [3]Departments of Radiology & Neurology, Centre Hospitalier Sainte-Anne, Paris, France

15:00 **4065.** **Middle Cerebral Artery Stroke Lesion Pattern Classification After Thrombolysis Based on Diffusion-Weighted Imaging & MR-Angiography**
Alex Foerster[1], Achim Gass[1], Rolf Kern[1], Martin Griebe[1], Angelika Alonso[1], Michael G. Hennerici[1], Kristina Szabo[1]
[1]Department of Neurology, UniversitaetsMedizin Mannheim, Mannheim, Germany

Exhibition Hall Wednesday 13:30-14:30 Computer 91

13:30 **4066.** **WITHDRAWN**

14:00 **4067.** **BOLD Activation Pattern for Motor Task in Chronic Stroke Patients After Administration of Autologous Mononuclear & Mesenchymal Stem Cells**
Ashu Bhasin[1], S. Senthil Kumaran[2], M. V. Padma[1], Sujata Mohanty[3], Rohit Bhatia[1]
[1]Department of Neurology, All India Institute of Medical Sciences, New Delhi, India; [2]Department of N.M.R, All India Institute of Medical Sciences, Delhi, India; [3]Stem Cell Facility, All India Institute of Medical Sciences, New Delhi, India

Animal Models of Stroke

Exhibition Hall Monday 14:00-16:00 Computer 92

14:00 **4068.** **Longitudinal Magnetic Resonance Imaging of Aged Rats with Sildenafil Treatment After Embolic Stroke**
Guangliang Ding[1], Quan Jiang[1], Lian Li[1], Li Zhang[1], Zhenggang Zhang[1], Qingjiang Li[1], James R. Ewing[1], Michael Chopp[1,2]
[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States

14:30 **4069.** **MRI Characterization of Secondary Degeneration in Ipsilateral Substantia Nigra Following Experimental Intracerebral Hemorrhage**
Shujuan J. Fan[1,2], Frank Yik Hin Lee[1,2], Matthew Man Hin Cheung[1,2], April Mei Kwan Chow[1,2], Zhongwei W. Qiao[1,2], Kevin Chuen Wing Chan[1,2], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of

15:00 4070. Longitudinal DTI of White Matter Injury in Experimental Intracerebral Hemorrhage
Shujuan J. Fan[1,2], Matthew Man Hin Cheung[1,3], Abby Ying Ding[1,2], Frank Yik Hin Lee[1,2], Zhongwei W. Qiao[1,2], Jian Yang[4], Ed X Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Electrical & Electronic Engineering , the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [4]Medical Imaging Center of the First Affiliated Hospital, School of Medicine of Xi'an Jiaotong University, Xi'an, Shanxi Province, China, People's Republic of

15:30 4071. Diffusion Kurtosis is Sensitive to Hyperacute Cerebral Ischemia & Increases with Ischemic Progression without Renormalization
Edward S. Hui[1], Fang Du[1], Qiang Shen[1], Shiliang Huang[1], Timothy Q. Duong[1]
[1]Research Imaging Institute, University of Texas Health Science Center San Antonio, San Antonio, TX, United States

Exhibition Hall Tuesday 13:30-14:30 Computer 92

13:30 4072. Non-Invasive Detection of Microvascular Remodeling Enhanced by Erythropoietin Treatment in a Rat Model of Focal Ischemia using MRI
Asamoah Bosomtwi[1], Michael Chopp[2,3], Guang Liang Ding[2], Li Zhang[2], Leonard L. Howell[1], Quan Jiang[2]
[1]Yerkes Primate Center, Emory University, Atlanta, GA, United States; [2]Neurology, Henry Ford Hospital; [3]Physics, Oakland University

14:00 4073. USPIO High Resolution Neurovascular Imaging of Rat Middle Cerebral Artery Occlusion Stroke Model
Yimin Shen[1], Weili Zheng[1], Yu-Chung N. Cheng[1], Yuchuan Ding[2], Jean Sebastien Raynaud[3], E. Mark Haacke[1]
[1]Radiology, Wayne State University, Detroit, MI, United States; [2]Neurological Surgery, Wayne State University, Detroit, MI, United States; [3]Guerbet, France

Multiple Sclerosis

Exhibition Hall Monday 14:00-16:00 Computer 93

14:00 4074. Characterization of the Perivascular Distribution of White Matter Lesions in Multiple Sclerosis Phenotypes by 7T MRI
Caterina Mainero[1], Emanuele Tinelli[2], Allen Nielsen[3], Thomas Benner[1], Bruce R. Rosen[1], Revere Philip Kinkel[3]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Dept of Neurological Sciences, Universtiy of Rome "La Sapienza", Rome, Italy; [3]Neurology, Beth Israel Deaconess Medical Center, Boston, MA, United States

14:30 4075. Normal Appearing White Matter Myelin Water Fraction Distribution Analysis in Multiple Sclerosis
Hagen H. Kitzler[1,2], Frank M. Noack[1], Jason Su[3], Michael Zeineh[3], Cyndi Harper-Little[2], Andy Leung[4], Marcelo Kremenchutzky[5], Ruediger von Kummer[1], Sean Deoni[6], Brian K. Rutt[3]
[1]Neuroradiology, Technische Universitaet Dresden, Dresden, SN, Germany; [2]Robarts Research Institute, University of Western Ontario, London, ON, Canada; [3]Department of Radiology, Stanford University, Stanford, CA, United States; [4]Department of Diagnostic Radiology & Nuclear Medicine, University of Western Ontario, London, ON, Canada; [5]Department of Clinical Neurological Sciences, University of Western Ontario, London, ON, Canada; [6]Department of Engineering, Brown University, Providence, RI, United States

15:00 4076. mcDESPOT-Derived MWF Improves EDSS Prediction in MS Patients Compared to Only Atrophy Measures
Jason Su[1], Hagen H. Kitzler[2], Michael Zeineh[1], Cyndi Harper-Little[3], Andy Leung[4], Marcelo Kremenchutzky[5], Sean C. Deoni[6], Brian Keith Rutt[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Department of Neuroradiology, Technische Universitaet Dresden, Dresden, Germany; [3]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [4]Department of Diagnostic Radiology & Nuclear Medicine, University of Western Ontario, London, Ontario, Canada; [5]Department of Clinical Neurological Sciences, University of Western Ontario, London, Ontario, Canada; [6]Brown University, Providence, RI, United States

15:30 4077. Diffusion Tensor Imaging Abnormalities Associated with Cognitive Decline in Relapsing-Remitting Multiple Sclerosis
Hui Jing Yu[1], Lauren B. Krupp[2], Christopher Christodoulou[3], Mark E. Wagshul[4]
[1]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [2]Neurology, Stony Brook University; [3]Neurology, Stony Brook University, Stony Brook, NY; [4]Gruss Magnetic Resonance Research Center, Albert Einstein College of Medicine, Bronx, NY

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13:30 4078. Whole Brain 3D Spiral Imaging for Multi-Component T_2 Relaxometry of Multiple Sclerosis in 10 Minutes: A Feasibility Study at 3 Tesla

Thanh D. Nguyen[1], Cynthia Wisnieff[2], Joseph Comunale[1], Mitchell Cooper[2], Dushyant Kumar[1], Ashish Raj[1], Martin R. Prince[1], Yi Wang[1], Tim Vartanian[3], Susan A. Gauthier[3]

[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [3]Neurology, Weill Cornell Medical College, New York, NY, United States

14:00 4079. FLAIR-SWI: A Combination of 3 Tesla FLAIR & 7 Tesla SWI Phase for Multiple Sclerosis Research

Günther Grabner[1,2], Assunta Dal-Bianco[3], Melanie Schernthaner[1], Karl Vass[3], Hans Lassmann[4], Siegfried Trattnig[1,2]

[1]Department of Radiology, Medical University of Vienna, Vienna, Austria; [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria; [3]Department of Neurology, Medical University of Vienna, Vienna, Austria; [4]Center for Brain Research, Medical University of Vienna, Vienna, Austria

14:30 4080. Regional Gray & White Matter Atrophy are Largely Unrelated in Relapsing Remitting Multiple Sclerosis

Elisabetta Pagani[1], Maria Assunta Rocca[1,2], Gianna Riccitelli[1], Vittorio Martinelli[2], Marta Radaelli[2], Andrea Falini[3], Giancarlo Comi[2], Massimo Filippi[1,2]

[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, MI, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, MI, Italy; [3]Department of Neuroradiology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

15:00 4081. Similar Global N-Acetylaspartate in Benign & Non-Benign Multiple Sclerosis

Daniel J. Rigotti[1], Lutz Achtnichts[2], Oded Gonen[1], James S. Babb[1], Yvonne Naegelin[2], Kerstin Bendtfield[2], Jochen Hirsch[2], Michael Amann[2], Robert I. Grossman[1], Ludwig Kapposs[2], Achim Gass[2]

[1]Radiology, New York University School of Medicine, New York, NY, United States; [2]Neurology & Neuroradiology, University Hospital Basel, Basel, Switzerland

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13:30 4082. Normalization of Magnetization Transfer Ratio MRI for Multicentre Clinical Trials

Robert Allan Brown[1], Sridar Narayanan[1], Harold Atkins[2], Mark S. Freedman[3], Douglas L. Arnold[1]

[1]Montreal Neurological Institute, McGill University, Montreal, QC, Canada; [2]Division of Hematology, Ottawa Hospital Regional Cancer Centre, Ottawa, ON, Canada; [3]Department of Medicine (Neurology), the Ottawa Hospital, Ottawa, ON, Canada

14:00 4083. Sensitive Detection of Myelination Change in Multiple Sclerosis by McDESPOT

Jason Su[1], Hagen H. Kitzler[2], Michael Zeineh[1], Cyndi Harper-Little[3], Andy Leung[4], Marcelo Kremenchutzky[5], Sean C. Deoni[6], Brian Keith Rutt[1]

[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Department of Neuroradiology, Technische Universitaet Dresden, Dresden, Germany; [3]Robarts Research Institute, University of Western Ontario, London, Ontario, Canada; [4]Department of Diagnostic Radiology & Nuclear Medicine, University of Western Ontario, London, Ontario, Canada; [5]Department of Clinical Neurological Sciences, University of Western Ontario, London, Ontario, Canada; [6]Brown University, Providence, RI, United States

14:30 4084. A New Quantitative MRI Contrast for Measuring White Matter Myelin

Aviv A. Mezer[1], Nikola Stikov[2], Kendrick Kay, Robert Dougherty, Jason Yeatman, Josef Parvizi[3], Brian Wandell

[1] Psychology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Neurology, Stanford University, Stanford, CA, United States

15:00 4085. Voxel-Wise Assessment of WM Architecture Integrity in MS Patients with Different Clinical Phenotypes

Elisabetta Pagani[1], Maria Assunta Rocca[1,2], Gianna Riccitelli[1], Vittorio Martinelli[2], Filippo Martinelli-Boneschi[2], Andrea Falini[3], Giancarlo Comi[2], Massimo Filippi[1,2]

[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]Department of Neuroradiology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

Exhibition Hall Thursday 13:30-15:30 Computer 93

13:30 4086. Brain Atlas-Based Lesion Spatial Distribution & Modeling of Wallerian Degeneration in Multiple Sclerosis

Khader M. Hasan[1], Indika S. Walimuni[1], Sushmita Datta[1], Flavia Nelson[2], Jerry S. Wolinsky[3], Ponnada A. Narayana[4]

[1]Radiology, UTHSCH, Houston, TX, United States; [2]Neurology, UTHSCH, Houston, TX; [3]Neurology, UTHSCH, Houston, Texasa, United States; [4]Radiology, UTHSCH, Houston, Uexasa, United States

14:00 **4087.** **Voxel-Wise Assessment of White Matter Architecture Integrity in Patients with Relapsing Remitting Multiple Sclerosis**

Gianna Riccitelli[1], Maria Assunta Rocca[1,2], Elisabetta Pagani[1], Vittorio Martinelli[2], Paolo Rossi[2], Andrea Falini[3], Giancarlo Comi[2], Massimo Filippi[1,2]

[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, MI, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, MI, Italy; [3]Department of Neuroradiology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

14:30 **4088.** **FLAIR MIPS: Increased White Matter Lesion Conspicuity**

Kenneth L. Weiss[1], Virginia B. Hill[2], Kenneth J. Herbert[1], Senthur J Thangasamy[1], Yichun Lin[3], Jun Ying[4], Jane L. Weiss[5], Maria J. Melanson[6]

[1]Department of Radiology, University of Cincinnati, Cincinnati, OH, United States; [2]Department of Radiology, Cleveland Clinic Regional Radiology, Cleveland, OH, United States; [3]College of Medicine, Cincinnati, OH, United States; [4]Department of Public Health Science, University of Cincinnati, Cincinnati, OH, United States; [5]Division of Research, WestImage, Cincinnati, OH, United States; [6]Department of Neurology, University of Cincinnati, Cincinnati, OH, United States

15:00 **4089.** **Is Increased Normal White Matter Glutamate Concentrations a Precursor of Gliosis & Disease Progression in Multiple Sclerosis?**

Olof Dahlqvist Leinhard[1,2], Jacek Jaworski[3], Anne Aalto[4], Anders Grönqvist[5], Anders Tisell[1,2], Örjan Smedby[2,4], Anne-Marie Landtblom[3,6], Peter Lundberg[5,7]

[1]Dept of Radiation physics (IMH), Linköping University, Linköping, Sweden; [2]Center for Medical Image Science & Visualization (CMIV), Linköping University, Linköping, Sweden; [3]Department of Neurology, Linköping University Hospital, Linköping, Sweden; [4]Dept of Radiology (IMH), Linköping University, Linköping, Sweden; [5]Dept of Radiation Physics (CKOC), Linköping University Hospital, Linköping, Sweden; [6]Division of Clinical Immunology, Unit of Autoimmunity and Immune Regulation (IKE), Linköping University, Linköping, Sweden; [7]Dept of Radiation physics (IMH), Center for Medical Image Science & Visualization (CMIV), Linköping University, Linköping, Sweden

White Matter Diseases

Exhibition Hall Monday 14:00-16:00 Computer 94

14:00 **4090.** **Detecting Histological Changes in Traumatic Brain Injury with Magnetization Transfer Imaging**

Nikolaus Krebs[1,2], Michaela Soellinger[3], Michael Scarpatetti[4], Christian Langkammer[1,3], Monika Gloor[5], Stefan Ropele[3], Franz Fazekas[3], Kathrin Yen[1], Eva Scheurer[1]

[1]Ludwig Boltzmann Institute for Clinical-Forensic Imaging, Graz, Austria; [2]Institute of Forensic Medicine, Medical University of Graz, Graz, Austria; [3]Department of Neurology, Medical University of Graz, Graz, Austria; [4]Institute of Pathology, Medical University of Graz, Graz, Austria; [5]Division of Radiological Physics, University of Basel Hospital, Basel, Switzerland

14:30 **4091.** **Reduced Callosal Thickness & Volume Due to Myelin Deficit in RLS: Thickness Measurement & Volumetric Study**

Byeong-Yeul Lee[1,2], Jong M. Kim[3], Yeun Chul Ryu[1], James R. Connor[4], Qing X. Yang[1,4]

[1]Center for NMR Research, Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Bioengineering, Penn State College of Medicine, Hershey, PA, United States; [3]Biomedical Engineering, Duke University, Durham, NC, United States; [4]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

15:00 **4092.** **MR Spectroscopy of the Motor Cortex in Cervical Spondylotic Myelopathy: Pre & Post Surgery Observations**

Izabela Kowalczyk[1,2], Neil Duggal[1,3], Robert Bartha[1,2]

[1]Medical Biophysics, the University of Western Ontario, London, Ontario, Canada; [2]Centre for Functional & Metabolite Mapping, Robarts Research Institute, London, Ontario, Canada; [3]Clinical Neurological Sciences, University Hospital, London Health Sciences Centre, London, Ontario, Canada

15:30 **4093.** **Loss of Callosal Fibre Integrity in Healthy Elderly with Small Vessel Disease**

Martin Griebe[1], Alex Förster[1], Michèle Wessa[2], Christina Rossmanith[1], Tamara Sauer[1], Kathrin Zohsel[1], Andrea V. King[2], Michael G. Hennerici[1], Achim Gass[1], Kristina Szabo[1]

[1]Department of Neurology, UniversitätsMedizin Mannheim, University of Heidelberg, Mannheim, Germany; [2]Department of Cognitive & Clinical Neuroscience, Central Institute of Mental Health, University of Heidelberg, Mannheim, Germany

Exhibition Hall Tuesday 13:30-15:30 Computer 94

13:30 **4094.** **Metabolic Characterization of Gray & White Matter in Mild Traumatic Brain Injury with 3D Proton MR Spectroscopy**

Ivan Kirov[1], Assaf Tal[1], James Babb[1], Joseph Reaume[1], Robert Grossman[1], Oded Gonen[1]

[1]Radiology, New York University, New York, NY, United States

14:00 **4095.** **Evaluation of White Matter Integrity, Cortical Thickness & Volume of Subcortical Structures in Patients with Typical Absence Epilepsy**
Thomas Martin Doring[1,2], Tadeu Takao Almodovar Kubo[1], Nina Ventura[2], Bernardo Bizzo[2], Emerson Leandro Gasparetto[1,2]
[1]CDPI, Rio de Janeiro, RJ, Brazil; [2]Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

14:30 **4096.** **Quantitative MRI Study of Non-Cognitively Impaired HIV Patients Shows No Detectable Neurodegeneration**
Nicholas G. Dowell[1], Emilie Elliot[2], Martin Fisher[2], Becky I. Haynes[1], Roshani Patel[2], Paul S. Tofts[1]
[1]Clinical Imaging Sciences Centre, Brighton & Sussex Medical School, Brighton, Sussex, United Kingdom; [2]Brighton & Sussex University Hospital, Brighton, United Kingdom

15:00 **4097.** **High-Resolution Small Field-of-View 3 Tesla Mri with 32-Channel Head Coil by Appropriately Selected Coil Elements Reconstruction Method**
Akira Yamamoto[1], Mitsunori Kanagaki[1], Tomohisa Okada[1], Satoshi Kozawa[2], Koji Sakai[3], Kaori Togashi[1]
[1]Department of Diagnostic Imaging & Nuclear Medicine, Kyoto University Hospital, Kyoto, Japan; [2]Clinical Radiology Service, Kyoto University Hospital, Kyoto, Japan; [3]Department of Human Health Science, Kyoto University Graduate School of Medicine, Kyoto, Japan

Exhibition Hall Wednesday 13:30-15:30 Computer 94

13:30 **4098.** **Automatic WML Segmentation & Quantification using a Machine Learning Approach**
Mariano Rincon[1], Per Selnes[2], Christopher Alfred Larsson[3], Tormod Fladby[2], Atle Fillibom Bjørnerud[3]
[1]Departement of Artificial Intelligence, UNED, Madrid, Spain; [2]Departement of Neurology, Akershus University Hospital, Oslo, Norway; [3]Intervention Center, Rikshospitalet, Oslo, Norway

14:00 **4099.** **Selective Gray Matter Atrophy in the Pain-Matrix Network in Cluster Headache**
Martina Absinta[1,2], Maria Assunta Rocca[1,2], Bruno Colombo[2], Andrea Falini[3], Giancarlo Comi[2], Massimo Filippi[1,2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute and University Ospedale San Raffaele, Milan, Italy; [3]Department of Neuroradiology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

14:30 **4100.** **Brain & Skeletal Muscle MRS Study in Patients with Myotonic Dystrophy Type 1**
Caterina Tonon[1], Emil Malucelli[1], Patrizia Avoni[2], David Neil Manners[1], Claudia Testa[1], Sara Contardi[2], Valerio Carelli[3], Bruno Barbiroli[1], Rocco Liguori[2], Raffaele Lodi[1]
[1]MR Spectroscopy Unit, University of Bologna, Bologna, Italy, Italy; [2]Department of Neurological Sciences , University of Bologna, Bologna, Italy, Italy; [3]Department of Neurological Sciences, University of Bologna, Bologna, Italy, Italy

15:00 **4101.** **Altered Interhemispheric Brain Connectivity in Neonates with Congenital Heart Disease Following Cardiopulmonary Bypass Surgery.**
Malek I. Makki[1], Rabia Liamlahi[2], Walter Knirsch[2], Bea Latal[3], Ianina Scheer[1], Achim Schmitz[4], Hintendu Dave[5], Vera Bernet[6], Christian Kellenberger[1]
[1]Diagnostic Imaging, University Children Hospital, Zurich, Switzerland; [2]Cardiology, University Children Hospital, Zurich, Switzerland; [3]Child Development, University Children Hospital, Zurich, Switzerland; [4]Anesthesia, University Children Hospital, Zurich, Switzerland; [5]Congenital Cardiovascular Surgery, University Children Hospital, Zurich; [6]Pediatric Intensive Care, University Children Hospital, Zurich, Switzerland

Exhibition Hall Thursday 13:30-15:30 Computer 94

13:30 **4102.** **Corticospinal Tract Disease & Sensory-Motor Disability in Multiple Sclerosis**
Fernanda Tovar-Moll[1], Annie Chiu, Sungyoung Auh, Mary Ehrmantraut, Joan Ohayon, Francesca Bagnato
[1]NIB-NINDS-NIH, Bethesda, MD, United States

14:00 **4103.** **Diffusion Tensor Imaging of Therapy Induced Leukoencephalopathy in Children Treated for Acute Lymphoblastic Leukemia**
John O. Glass[1], Wilburn E. Reddick[1], Sima Jeha[2]
[1]Division of Translational Imaging Research, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Department of Oncology, St. Jude Children's Research Hospital, Memphis, TN, United States

14:30 **4104.** **Metabolite Changes in Anatomical Substructures of the Brain Following Traumatic Brain Injury**
Varan Govind[1], Sulaiman Sheriff[1], Gaurav Saigal[1], Leo Harris[2], Andrew A. Maudsley[1]
[1]Radiology, University of Miami, Miami, FL, United States; [2]Neurological Surgery, University of Miami, Miami, FL, United States

15:00 **4105.** **Creation & Validation of a White Matter Importance Map using Traumatic Brain Injury Patient Data**
Amy Kuceyeski[1], Ashish Raj[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States

Functional & Structural MRI in Neurodegeneration

Exhibition Hall Monday 14:00-16:00 Computer 95

14:00 4106. Neuromelanin Imaging in Dementia with Lewy Body (DLB)
Masahiro Ida[1], Shunsuke Sugawara[1], Yuko Kubo[1], Keiko Hino[1], Naoya Yorozu[1], Tomohiro Suzuki[1], Shuzo Ikuta[1], Yuko Kawaguchi[1]
[1]Department of Radiology, Tokyo Metropolitan Ebara Hospital, Oota-ku, Tokyo, Japan

14:30 4107. PRGN Mutation Modulates Brain Damage & Reorganization from Preclinical to Symptomatic Stages of Frontotemporal Dementia
Marco Bozzali[1], Mara Cercignani[1], Antonella Alberici[2], Enrico Premi[2], Laura Serra[1], Carlo Cerini[2], Maura Cosseddu[2], Carla Pettenati[2], Marina Turla[2], Silvana Archetti[2], Roberto Gasparotti[2], Alessandro Padovani[2], Barbara Borroni[2]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]Neurology Unit, University of Brescia, Brescia, Italy

15:00 4108. Concordant Brain Structural & Diffusion Changes in Frontotemporal Dementia with & without Motor Neuron Disease
Yu Zhang[1,2], Norbert Schuff[1,2], Maria Carmela Tartaglia[2], Joel Laxamana[1,2], Howard J. Rosen[2], Maria Luisa Gorno-Tempini[2], Bruce L. Miller[2], Michael W. Weiner[1,3]
[1]Center for Imaging of Neurodegenerative Diseases, VA Medical Center, San Francisco, CA, United States; [2]University of California, San Francisco, San Francisco, CA, United States; [3]University California, San Francisco, CA, United States

15:30 4109. DTI Reveals Abnormal White Matter Pathways to Classic Language Areas in Semantic Dementia
Julio Acosta-Cabronero[1], Karalyn Patterson[1], Tim D. Fryer[1], John R. Hodges[2], George Pengas[1], Guy B. Williams[1], Peter J. Nestor[1]
[1]Department of Clinical Neurosciences, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Neuroscience Research Australia, Randwick, Australia

Exhibition Hall Tuesday 13:30-15:30 Computer 95

13:30 4110. Cranio Spinal Hydrodynamic View of Neurodegenerative Disease by 2D-PCMRI
Olivier Balédent[1], Soraya El Sankari[2], Catherine Gondry-Jouet[3], Anthony Fichten[4], Olivier Pottie[1], Roger Bouzerar[1], Jean-Marie Serot[5], Olivier Godefroy[2], Hervé Deramond[3], Marc-Etienne Meyer[1]
[1]Image Processing, University Hospital Jules Verne, Amiens, Picardie, France; [2]Neurology, University Hospital Jules Verne, Amiens, Picardie, France; [3]Radiology, University Hospital Jules Verne, Amiens, Picardie, France; [4]Neurosurgery, University Hospital Jules Verne, Amiens, Picardie, France; [5]Geriatry, University Hospital Jules Verne, Amiens, Picardie, France

14:00 4111. High Resolution MTR at 3T using Automated Analysis Targeting Small Functional Brain Regions – a Validation Study on Normal Subjects
Ying Wu[1,2], Hongyan Du[3], Christopher Glielmi[4], Shawn Sidharthan[1], Ryan Hutten[1], Ann Ragin[5], Paul S. Tofts[6], Robert R. Edelman[1]
[1]Radiology, NorthShore University HealthSystem, Evanston, IL, United States; [2]Radiology, University of Chicago, Chicago, IL, United States; [3]Center for Clinical Research Informatics, NorthShore University HealthSystem, Evanston, IL, United States; [4]MR Research & Development, Siemens Healthcare, Chicago, IL, United States; [5]Radiology, Northwestern University, Chicago, United States; [6]Imaging Physics, Brighton & Sussex Medical School, Brighton, United Kingdom

14:30 4112. Evaluation of T_1 & T_2* Mapping Reproducibility at 3T using Histogram Analysis
Christopher Glielmi[1], Ryan Hutten[2], Shawn Sidharthan[2], Hongyan Du[2], Todd Parrish[3], Ann Ragin[4], Robert R. Edelman[2], Ying Wu[2]
[1]Cardiovascular MR R&D, Siemens Healthcare, Chicago, IL, United States; [2]NorthShore University HealthSystem, Evanston, IL, United States; [3]Biomedical Engineering, Northwestern University, Chicago, IL, United States; [4]Radiology, Northwestern University, Chicago, IL, United States

15:00 4113. Reproducibility of Apparent Diffusion Coefficient Values at Hippocampus Measured by High-Resolution Readout-Segmented DWI vs. Single-Shot DWI with 2DRF Excitations.
Ryo Sakamoto[1], Tomohisa Okada[1], Akira Yamamoto[1], Mitsunori Kanagaki[1], Seiko Kasahara[1], Emiko Morimoto[1], Mami Iima[1], Satoshi Nakajima[1], Taha Mohammed Mehemed[1], Kaori Togashi[1]
[1]Diagnostic Imaging & Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan

Exhibition Hall Wednesday 13:30-15:30 Computer 95

13:30 4114. A Multimodal MRI Investigation in Patients with Alzheimer¡¯s Disease, Mild Cognitive Impairment, & Cognitively Normal Subjects
Sun Mi Kim[1], Min Ji Kim[1], Chang-Woo Ryu[1], Eui Jong Kim[2], Woo Suk Choi[2], Geon-Ho Jahng[1], Dal-Mo Yang[1]
[1]Radiology, Kyung Hee University Hospital-Gangdong, Seoul, Korea, Republic of; [2]Radiology, Kyung Hee University Hospital, School of Medicine, Kyung Hee University, Seoul, Korea, Republic of

14:00 4115. MRI Morphological & Diffusion Tensor Imaging (DTI) Analysis to Early Alzheimer Disease
Yongxia Zhou[1], Yulin Ge[1], John H. Dougherty[2]
[1]Radiology/Center for Biomedical Imaging, New York University School of Medicine, New York, NY, United States; [2]Medicine & Cole Neuroscience Center, University of Tennessee Medical Center at Knoxville, Knoxville, TN, United States

14:30 4116. Is Myelin Content Altered in Alzheimer's Disease?
Sean C. Deoni[1], Stephen Correia[2], Tanja Su[2], Jessica Man[2], Paul Malloy[3], Stephen Salloway[3]
[1]School of Engineering, Brown University, Providence, RI, United States; [2]Psychiatry & Human Behavior, Brown University, Providence, RI, United States; [3]Alpert Medical School, Brown University, Providence, RI, United States

15:00 4117. New Insight in the Alzheimer's Disease Progression Revealed by a Combination of Functional & Structural Information
Eini Niskanen[1,2], Mervi Könönen[2,3], Sara Määttä[3], Merja Hallikainen[4], Miia Kivipelto[4,5], Silvia Casarotto[6], Marcello Massimini[6], Ritva Vanninen[2], Hilkka Soininen[4,7]
[1]Department of Physics & Mathematics, University of Eastern Finland, Kuopio, Finland; [2]Department of Clinical Radiology, Kuopio University Hospital, Kuopio, Finland; [3]Department of Clinical Neurophysiology, Kuopio University Hospital, Kuopio, Finland; [4]Institute of Clinical Medicine, Neurology, University of Eastern Finland, Kuopio, Finland; [5]Aging Research Center, Karolinska Institutet, Stockholm, Sweden; [6]Department of Clinical Science "L. Sacco", Università degli Studi di Milano, Milan, Italy; [7]Department of Neurology, Kuopio University Hospital, Kuopio, Finland

Exhibition Hall Thursday 13:30-15:30 Computer 95

13:30 4118. Diagnosing Alzheimer Disease in Individuals: Volumetric Imaging
Song Lai[1], John Lackey[1], Jianrong Shi[1]
[1]Radiology, Thomas Jefferson University, Philadelphia, PA, United States

14:00 4119. CA1 Specific Loss in Patients with Alzheimer's Disease & Mild Cognitive Impairment
Min-Ji Kim[1,2], Geon-Ho Jahng[1], Hyck-Gi Kim[1], Sun-Mi Kim[1], Chang-Woo Ryu[1], Dal-Mo Yang[1], Hack-Young Lee[3], Won-Chul Shin[3], Dong- Kyun Lee[4], Jong-Min Lee[4]
[1]Department of Radiology, Kyung Hee University Hospital-Gandong, Kyung Hee University, Seoul, Korea, Republic of; [2]East-West Neo Medical Center Kyung Hee Huiversity, Seoul, Korea, Democratic People's Republic of; [3]Department of Neurology, Kyung Hee University Hospital-Gandong, Kyung Hee University, Seoul, Korea, Republic of; [4]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of

14:30 4120. MRI Intensity Tissues Normalisation for Longitudinal Surface Based Analysis of the WM/GM Contrast, Application to Alzheimer's Disease
Vincent Doré[1], Jurgen Fripp[1], Pierrick Bourgeat[1], Oscar Acosta[1,2], Olivier Salvado[1]
[1]Biomedical Imaging ICT, the Australian e-Health Research Centre, CSIRO, Brisbane, Queensland, Australia; [2]Université de Rennes1, France

15:00 4121. Correlating White Matter Integrity Loss & Gray Matter Atrophy in Alzheimer's Disease
Amy Kuceyeski[1], Yu Zhang[2,3], Ashish Raj[1]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Center for Imaging of Neurodegenerative Diseases, VA Medical Center, San Francisco, CA, United States; [3]Radiology, University of California, San Francisco, San Francisco, CA, United States

fMRI in Brain Disorders I

Exhibition Hall Monday 14:00-16:00 Computer 96

14:00 4122. Detecting Acute Cortical Plasticity in Rats using High Field fMRI, Part 1- fMRI Maps & Cytoarchitectonic Boundaries
Carolyn W.-H. Wu[1,2], Artem Goloshevsky[2,3], Alan P. Koretsky[2]
[1]NeuroSpin / CEA, Gif Sur Yvette, Île-de-France, France; [2]NINDS / NIH, Bethesda, MD, United States; [3]Bruker BioSpin, Billerica, MA, United States

14:30 **4123.** **Independent Component Analysis of Resting-State FMRI Reveals Diminished Functional Connectivity in Callosal Dysgenesis**
Yi-Ou Li[1], Fan-Pei Yang[1], Charvi Shetty[1], Sandya Venugopal[1], Polina Bukshpun[1], Mari Wakahiro[1], Elliott H. Sherr[1], Pratik Mukherjee[1]
[1]University of California San Francisco, San Francisco, CA, United States

15:00 **4124.** **Detecting Acute Cortical Layer-Specific Plasticity in Rat Model using High Field fMRI, Part 2- a Non-Thresholded, Raw Data Analysis Study**
Alexandra Petiet[1], Carolyn W.-H. Wu[1]
[1]NeuroSpin / CEA, Gif Sur Yvette, Île-de-France, France

15:30 **4125.** **Varying Resting-State Brain Activity in the "default-Mode Network" in Post-Stroke Aphasia**
Quan Zhang[1], Li Sang[1], Ming Song[2], Yunting Zhang[1], Tianzi Jiang[2]
[1]Department of Radiology, Tianjin Medical University General Hospital, Tianjin, China, People's Republic of; [2]National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences

Exhibition Hall Tuesday 13:30-15:30 Computer 96

13:30 **4126.** **Developmental Deviation in the Cortico-Striatal Response in Children with ADHD: fMRI Evidence using a Sustained Attention Task**
Vaibhav A. Diwadkar[1], Jacqueline Radwan[1], Mahya Rahimian Mashhadi[2], Dalal Khatib[1], Olivia McGarragle[1], Patrick Pruitt[3], Arthur Robin[1], David R. Rosenberg[1], Jeffrey A. Stanley[1]
[1]Psychiatry & Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, MI, United States; [2]Psychology, Eastern Michigan University; [3]Neuroscience, University of Michigan

14:00 **4127.** **A Combined Optimized Voxel-Based Morphometry & Resting State Functional Connectivity Investigation in Obsessive-Compulsive Disorder**
Fei Li[1], Bin Li[2], Su Lui[1], Xiaoqi Huang[1], Qizhu Wu[1], Lihua Qiu[1], Yanchun Yang[2], Qiyong Gong[1]
[1]Huaxi MR Research Center (HMRRC),Department of Radiology, West China Hospital of Sichuan University, Chengdu, Sichuan, China, People's Republic of; [2]Department of Psychiatry, West China Hospital of Sichuan University, Chengdu, Sichuan, China, People's Republic of

14:30 **4128.** **Modification in Functional Connectivity of Resting State Networks in Patients Affected by Psychogenic Erectile Dysfunction During Visual Erotic Stimulation: An fMRI Study**
Nicoletta Cera[1], Ezio Domenico Di Pierro[2], Gianni Perrucci[1], Gianna Sepede[1], Francesco Gambi[1], Armando Tartaro[1], Carlo Vicentini[2], Cosimo Del Gratta[1], Gian Luca Romani[1], Antonio Ferretti[1]
[1]Dept of Neuroscience & Imaging, ITAB - University G.d'Annunzio of Chieti, Chieti, CH, Italy; [2]Department of Health Sciences University of L'Aquila, Hospital "G.Mazzini", Teramo, Italy

15:00 **4129.** **Impaired Small World Efficiency in Functional Networks in Liver Cirrhosis Patients**
Tun Wei Hsu[1,2], Wei Che Lin[3], Chin Po Lin[1]
[1]Institute of Biomedical Imaging & Radiological Sciences, National Yang-Ming University, Taipei, Taiwan; [2]Department of Radiology, Taipei Veterans General Hospital , Taipei, Taiwan; [3]Department of Diagnostic Radiology, Chang Gung Memorial Hospital - Kaohsiung Medical Center,, Kaohsiung, Taiwan

Exhibition Hall Wednesday 13:30-15:30 Computer 96

13:30 **4130.** **Brain & Functional Abnormalities as Results of Genetic Mutation with the DCC (Deleted in Colon Cancer) Gene Deletion**
Liya Wang[1,2], Brocha F. Tarshish[3], Andres Moreno De Luca[3], Michael Rossi[3], Hui Mao[1,2]
[1]Radiology, Emory University School of Medicine, Atlanta, GA, United States; [2]Center for Systems Imaging, Emory University, Atlanta, GA, United States; [3]Human Genetics, Emory University School of Medicine, Atlanta, GA, United States

14:00 **4131.** **Thalamo-Cortical Functional Connectivity in Autism Spectrum Disorders**
Mariana Lazar[1], Joy Carol Ming[2], Laura Miles[1], Jeffrey Donaldson[1]
[1]Department of Radiology, New York University School of Medicine, New York, United States; [2]Livingston High School, Livingston, NJ, United States

14:30 **4132.** **Sensorimotor Functional Connectivity Changes in Amyotrophic Lateral Sclerosis**
Federica Agosta[1], Paola Valsasina[1], Martina Absinta[1], Nilo Riva[2], Stefania Sala[1], Alessandro Prelle[3], Massimiliano Copetti[4], Mauro Comola[2], Giancarlo Comi[2], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]3Ospedale Fatebenefratelli e Oftalmico, Milan, Italy; [4]Biostatistics Unit, IRCCS-Ospedale Casa Sollievo della Sofferenza, San Giovanni Rotondo, Italy

15:00 **4133.** **Mood Congruent Hippocampal Activation Biases: Double Dissociation of Negative & Positive Contexts in Depressed & Healthy Adults**
Kirstine Carter[1], Wendy Ringe[1], Cybeles Onuegbulem[1], Kaundinya Gopinath[2], Richard Briggs[2]
[1]Department of Psychiatry, UT Southwestern Medical Center, Dallas, TX, United States; [2]Department of Radiology, UT Southwestern Medical Center, Dallas, TX, United States

Exhibition Hall Thursday 13:30-15:30 Computer 96

13:30 **4134.** **Framework for Studying Changes in the Functional Connectivity Network After Stroke using Resting State fMRI**
Siamak Pourabdollah Nejad-Davarani[1], Michael Chopp[1], Hassan Bagher-Ebadian[1], Scott Peltier[2], Douglas C. Noll[2], M. Peter Kostiuk[1], Shiyang Wang[1,3], Panayiotis Mitsias[1], Quan Jiang[1]
[1]Neurology, Henry Ford Health System, Detroit, MI, United States; [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States; [3]Physics, Oakland University, Rochester, MI, United States

14:00 **4135.** **Integration of Structural & Functional Biomarkers of MRI Data Toward Early Diagnosis of Alzheimer's Disease**
Jong-Hwan Lee[1,2], Junghoe Kim[1], Yong-Hwan Kim[1], Dong-Youl Kim[1], Soohyun Ha[2]
[1]Brain & Cognitive Engineering, Korea University, Seoul, Korea, Republic of; [2]College of Information and Communication, Korea University, Seoul, Korea, Republic of

14:30 **4136.** **Resting State Functional Connectivity Correlated with Neuropsychological Tests in Temporal Lobe Epilepsy Patients**
Martha J. Holmes[1,2], John C. Gore[1,2], Brad S. Folley[3], Bassel Abou-Khalil[3], Hasan H. Sonmezturk[3], Victoria L. Morgan[1,2]
[1]Vanderbilt University Institute of Imagining Science, Nashville, TN, United States; [2]Radiology & Radiological Sciences, Vanderbilt University, Nashville, TN, United States; [3]Neurology, Vanderbilt University

15:00 **4137.** **fMRI of Pain Processing in Diabetic Neuropathy**
Jennifer L. Davies[1], Dinesh Selvarajah[2], Michael D. Hunter[3], Elaine Cachia[1], Adithya Sankar[1], Irene Tracey[4], Solomon Tesfaye[2], Iain D. Wilkinson[1]
[1]Academic Radiology, University of Sheffield, Sheffield, United Kingdom; [2]Diabetes, Sheffield Teaching Hospitals; [3]Academic Psychiatry, University of Sheffield; [4]Oxford University

fMRI in Brain Disorders II

Exhibition Hall Monday 14:00-16:00 Computer 97

14:00 **4138.** **Functional Activation Within Hippocampal Subfields During Scene Memory Encoding in Temporal Lobe Epilepsy**
Sandhitsu Das[1], Dawn Mechanic-Hamilton[2], Marc Korczykowski[2], John Pluta[1], John Detre[2], Paul Yushkevich[1]
[1]PICSL, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]CfN, Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States

14:30 **4139.** **Spatio-Temporal Mapping of Interictal Epileptic Discharges Based on Mutual Information of Concurrent EEG & fMRI**
Cesar Caballero Gaudes[1], Serge Vulliemoz[2], Frederic Grouiller[3], Magritta Seeck[2], Dimitri Van De Ville[1,4], François Lazeyras[1]
[1]Radiology Department, CIBM, Hôpitaux Universitaires de Genéve, Geneva, Switzerland; [2]Neurology Department, Epilepsy Unit, Hôpitaux Universitaires de Genéve; [3]Neurology Department, Functional Brain Mapping Laboratory, Hôpitaux Universitaires de Genève; [4]Institute of Bioengineering, EPFL, Lausanne, Switzerland

15:00 **4140.** **Presurgical Evaluation using Functional Connectivity Resting-State fMRI**
Leslie Vlerick[1,2], Eric Achten[1,2]
[1]Dept. Neuroradiology, Ghent University Hospital, Ghent, Belgium; [2]GIfMI (Ghent Institute for Functional & Metabolic Imaging), Ghent, Belgium

15:30 **4141.** **Loss of Functional Network Efficiency is Associated with Cognitive Decline in Cryptogenic Epilepsy**
Maarten Vaessen[1,2], Marielle Vlooswijk[2,3], Jacobus Jansen[1,2], Marc de Krom[3], Marian Majoie[3,4], Paul Hofman[1,2], Albert Aldenkamp[3,4], Walter Backes[1,2]
[1]Radiology, Maastricht University Medical Centre, Maastricht, Netherlands; [2]School for Mental Health & Neurosciences, Maastricht University, Maastricht, Netherlands; [3]Neurology, Maastricht University Medical Centre, Maastricht, Netherlands; [4]Epilepsy Centre Kempenhaeghe, Heeze, Netherlands

Exhibition Hall Tuesday 13:30-15:30 Computer 97

13:30 4142. Brain Function Disruption of Thalamus Related Low Frequency Resting State Networks in Patients with Mild Traumatic Brain Injury
Lin Tang[1], Yulin Ge[1], Daniel K. Sodickson[1], Laura Miles[1], Joseph Reaume[1], Robert I. Grossman[1]
[1]NYU CBI, New York, NY, United States

14:00 4143. Separating Global & Regional Effects of Hydrocortisone Medication using Normalized fMRI
Hanzhang Lu[1], Daren Denniston[2], Binu Thomas[1], Jinsoo Uh[1], Thomas J. Carmody[2], Richard Auchus[3], Ramon Diaz-Arristia[4], Carol Tamminga[2], E. Sherwood Brown[2]
[1]Advanced Imaging Research Center, University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, United States; [3]Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, United States; [4]Department of Neurology, University of Texas Southwestern Medical Center, Dallas, TX, United States

14:30 4144. Resting-State Functional Connectivity of the Thalamus is Reduced in Absence Epilepsy
Richard Andrew James Masterton[1], Patrick W. Carney[1,2], Graeme D. Jackson[1,2]
[1]Brain Research Institute, Florey Neuroscience Institutes, Melbourne, Victoria, Australia; [2]Department of Medicine, the University of Melbourne, Melbourne, Victoria, Australia

15:00 4145. Disruption of Default Mode Network Following Mild Traumatic Brain Injury
Chandler Sours[1], Josh Betz[1], Steve Roys[1], Bizhan Aarabi, Kathirkamanthan Shanmuganathan, Joel Greenspan[2], Rao Gullapalli[1,3]
[1]Core for Translational Research in Imaging @ Maryland (CTRIM), University of Maryland School of Medicine, Baltimore, MD, United States; [2]Department of Biomedical Sciences & Program in Neuroscience, University of Maryland School of Dentistry, Baltimore, MD, United States; [3]Department of Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 97

13:30 4146. Effect of RTMS on Cerebello-Thalamo-Cortical Connectivity in Essential Tremor
Cécile Gallea[1], Léa Marais[1], Traian Popa[1], David Grabli[2,3], Emmanuel Roze[2,3], Vincent Perlbarg[4], David Coynel[4], Bertrand Degos[2,3], Marie Vidailhet[2,3], Stéphane Lehéricy[1,2], Sabine Meunier[2,3]
[1]Centre for Neuroimaging Research - CENIR, Paris, Pitié-Salpêtrière Hospital, France; [2]Centre de Recherche de l'Institut du Cerveau et de la Moelle Epinière, UPMC - INSERM UMR S975 - CNRS UMR 7225; [3]Fédération des Maladies du Système Nerveux, AP-HP Groupe Hospitalier Pitié-Salpêtrière, Paris; [4]Laboratoire d'Imagerie Fonctionnelle, INSERM - UPMC - UMR S678

14:00 4147. Impaired fMRI Activation in Patients with Primary Brain Tumors
Zhen Jiang[1,2], Alexandre Krainik[1,3], Olivier David[3], Dominique Hoffmann[1], Irene Tropres[4], Sylvie Grand[1,3], Emmanuel Barbier[3], Stephan Chabardes[1,3], Jan Warnking[3], Jean-Francois Le Bas[1,3]
[1]University Hospital Grenoble, Grenoble, France; [2]2nd Affiliated Hospital - Soochow University, Suzhou, China, People's Republic of; [3]Grenoble Institute of Neurosciences, Grenoble, France; [4]Joseph Fourier University, Grenoble, France

14:30 4148. Functional Changes in the Cerebro-Cerebellar Verbal Working Memory Network in Schizophrenia
Kayako Matsuo[1], Annabel S.-H. Chen[2], Su-Chun Huang[1], Chih-Min Liu[3], Chen-Chung Liu[3], Hai-Go Hwu[3], Wen-Yih Isaac Tseng[1]
[1]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [2]Division of Psychology, School of Humanities & Social Sciences, Nanyang Technological University, Singapore; [3]Department of Psychiatry, National Taiwan University, Taipei, Taiwan

15:00 4149. Combination of Structural & Functional MRI with Rapid Prototyping as a Neurosurgical Tool
Yu-Chun Chang[1], Fred Nicolls[2], Bruce S. Spottiswoode[3,4]
[1]Department of Electrical Engineering, University of Cape Town, Cape Town, Western Province, South Africa; [2]Department of Electrical Engineering, University of Cape Town, South Africa; [3]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, South Africa; [4]Department of Radiology, University of Stellenbosch, Cape Town, South Africa

Exhibition Hall Thursday 13:30-15:30 Computer 97

13:30 4150. Resting State Functional Connectivity Changes with Subthalamic Nucleus Deep Brain Stimulation in a Parkinson's Disease Patient
Jenny Wu[1,2], Erik B. Beall[1], Mark J. Lowe[1], Benjamin L. Walter[3,4], Andre Machado[5], Micheal D. Phillips[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]New York Medical College, Valhalla, NY, United States; [3]Neurological Institute, University Hospitals Case Medical Center, Cleveland, OH, United States; [4]Case Western Reserve University School of Medicine, Cleveland, OH, United States; [5]Center for Neurological Restoration, Cleveland Clinic, Cleveland, OH, United States

14:00 **4151.** **Functional Connectivity between Areas Involved in Emotion & Executive Control is Abnormal in Patients with Psychogenic Non-Epileptic Seizures**
Sylvie J. M. van Der Kruijs[1], Maarten J. Vaessen[2], Nynke M. G. Bodde[1], Richard H. C. Lazeron[1], Paul A. M. Hofman[2], Walter H. Backes[2], Albert P. Aldenkamp[1], Jacobus F. A. Jansen[2]
[1]Epilepsy Center Kempenhaeghe, Heeze, Netherlands; [2]Radiology, Maastricht University Medical Center, Maastricht, Netherlands

14:30 **4152.** **Effects of Levodopa Therapy on Resting Brain Perfusion & Functional Connectivity in Parkinson's Disease Patients Measured by ASL Perfusion MRI**
Marta Vidorreta[1], Elisa Mengual[2,3], Gonzalo Arrondo[1], María a Pastor[1], María a Fernández-Seara[1]
[1]Functional Neuroimaging Laboratory, Center for Applied Medical Research (University of Navarra), Pamplona, Navarra, Spain; [2]Neuroanatomy of Basal Ganglia Laboratory, Center for Applied Medical Research (University of Navarra), Pamplona, Navarra, Spain; [3]Deparment of Anatomy, Medical School, University of Navarra, Pamplona, Navarra, Spain

15:00 **4153.** **Morphometric & Functional Connectivity Correlates of Hippocampal Changes in Migraine Frequency**
Nasim Maleki[1], Gautam Pendse[1], Lauren Nutile[2], Rami Burstein[3], Lino Becerra[1,4], David Borsook[1]
[1]P.A.I.N. Group, Brain Imaging Center, McLean Hospital, Department of Psychiatry, Harvard Medical School, Belmont, MA, United States; [2]Department of Psychology, Villanova University, Villanova, PA, United States; [3]Department of Anesthesia & Critical Care, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA; [4]Department of Radiology, Massachusetts General Hospital, Charlestown, MA

fMRI in Brain Disorders III

Exhibition Hall Monday 14:00-16:00 Computer 98

14:00 **4154.** **Functional Connectivity in Strabismic Adults During Saccadic Eye Movements**
Suk-Tak Chan[1], Ka-Yue Chan[2], Sau-Fan Ma[2], Shuk-Ling Law[2], Shuk-Yee Ho[2], Hiu-Kwan Lee[2], Kwok-Wing Tang[3], Andrew Kwok-cheung Lam[4], James Yuk-ling Cheung[3], Kenneth K. Kwong[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Department of Health Technology & Informatics, the Hong Kong Polytechnic University, Hong Kong; [3]Department of Diagnostic Radiology & Imaging, Queen Elizabeth Hospital, Hong Kong; [4]School of Optometry, the Hong Kong Polytechnic University, Hong Kong

14:30 **4155.** **Altered Cerebral Perfusion & Functional Connectivity in a Response-Control Network in Parkinson's Disease Measured by ASL**
María A. Fernández-Seara[1], Marta Vidorreta[1], Maite Aznárez-Sanado[1], Francis Loayza[1], Federico Villagra[1], Maria Pastor[1]
[1]Center for Applied Medical Research, University of Navarra, Pamplona, Navarra, Spain

15:00 **4156.** **Altered Medial Temporal Lobe Activations in AMCI Subjects During Encoding & Recognition Tasks**
Mingwu Jin[1], Victoria Pelak[1], Tim Curran[2], Rajesh Nandy[3], Dietmar Cordes[1]
[1]University of Colorada Denver, Aurora, CO, United States; [2]University of Colorada at Boulder, Boulder, CO, United States; [3]UCLA, Los Angeles, CA, United States

15:30 **4157.** **Aberrant Resting-State Activity in Default Mode Network of Subjects with Amnestic Mild Cognitive Impairment**
Mingwu Jin[1], Victoria S. Pelak[1], Dietmar Cordes[1]
[1]University of Colorada Denver, Aurora, CO, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 98

13:30 **4158.** **Alterations in Neural Network Activity of Methamphetamine Abusers Performing an Emotion Matching Task: fMRI Study**
Hui-Jin Song[1], Jeehye Seo[1], Seong-Uk Jin[1], Moon-Jung Hwang[2], Young-Ju Lee[2], Yongmin Chang[1,3]
[1]Medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [2]GE healthcare, Seoul, Korea, Republic of; [3]Diagnostic Radiology, Kyungpook National University, Daegu, Korea, Republic of

14:00 **4159.** **Functional MRI Analysis of a Novel Short-Term Motor Learning Task**
Ryan J. Cassidy[1], Shaun Boe[2,3], William McIlroy[4,5], Simon J. Graham[6,7]
[1]Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada; [2]School of Physiotherapy, Dalhousie University, Halifax, NS, Canada; [3]Department of Psychology, Dalhousie University, Halifax, NS, Canada; [4]Toronto Rehabilitation Institute, University of Toronto, Toronto, ON, Canada; [5]Department of Kinesiology, University of Waterloo, Waterloo, ON, Canada; [6]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada; [7]Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada

14:30 4160. Default-Mode Resting Network in Mild Traumatic Brain Injury (MTBI)
Yongxia Zhou[1], Lin Tang[1], Daniel K. Sodickson[1], Joseph Reaume[1], Laura Miles[1], Robert I. Grossman[1], Yulin Ge[1]
[1]Radiology/Center for Biomedical Imaging, New York University School of Medicine, New York, NY, United States

15:00 4161. fMRI Reveals That Basolateral Amygdala Responsiveness to Aversive Stimuli as a Neural Correlate of Trait Anxiety is Modulated by Neuropeptide S (NPS) Receptor Genotype
Harald Kugel[1], Udo Dannlowski[2], Friederike Franke[2], Christa Hohoff[2], Peter Zwanzger[2], Thomas Lenzen[2], Dominik Grotegerd[2], Thomas Suslow[2,3], Volker Arolt[2], Walter Heindel[1], Katharina Domschke[2]
[1]Dept. of Clinical Radiology, University of Muenster, Muenster, NRW, Germany; [2]Dept. of Psychiatry, University of Muenster, Muenster, NRW, Germany; [3]Dept. of Psychosomatic Medicine and Psychotherapy, University of Leipzig, Leipzig, SN, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 98

13:30 4162. An fMRI Study of Cognitive Functions in Adolescents with Spina Bifida
Xiawei Ou[1,2], Jeffrey H. Snow[3], John J. Hall[3], Amy Byerly[3], Charles M. Glasier[1]
[1]Department of Radiology, University of Arkansas for Medical Sciences, Little Rock, AR, United States; [2]Radiology, Arkansas Children's Hospital, Little Rock, AR, United States; [3]Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR, United States

14:00 4163. Diminished Resting-State Functional Connectivity in Lateral Occipital Cortex in Early HIV Infection
Paul Foryt[1,2], Xue Wang[1], Renee Ochs[1], Jae-Hon Chung[1,2], Ying Wu[1,3], Todd Parrish[1], Ann B. Ragin[1,3]
[1]Radiology, Northwestern University, Feinberg School of Medicine, Chicago, IL, United States; [2]Engineering, Northwestern University, Evanston, IL, United States; [3]Radiology, NorthShore University HealthSystem, Evanston, IL, United States

14:30 4164. Reliability Analysis of the Resting State Sensitively & Specifically Identifies Parkinson Disease
Frank M. Skidmore[1,2], Mark Yang[3], Lewis Baxter[2], Karen von Deneen[2], Guojun He[2], Keith White[4], Kenneth Heilman[5], Mark Gold[2], Yijun Liu[2]
[1]Neurology, North Florida/South Georgia VA Medical Center, Gainesville, FL, United States; [2]Department of Psychiatry, University of Florida, Gainesville, FL, United States; [3]Department of Statistics, University of Florida, Gainesville, FL, United States; [4]Department of Psychology, University of Florida, Gainesville, FL, United States; [5]Department of Neurology, University of Florida, Gainesville, FL, United States

15:00 4165. fMRI Detection of Asperger's Disorder using Support Vector Machine Classification
Yash Shailesh Shah[1], Daehyun Yoon[1], Opal Ousley[2], Xiaoping Hu[2], Scott J. Peltier[1]
[1]University of Michigan, Ann Arbor, MI, United States; [2]Emory University, Atlanta, GA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 98

13:30 4166. Differential Brain Activation Associated with the Effects of Emotional & Non-Emotional Distracters During a Delayed-Response Working Memory Task in Patients with Schizophrenia
Gwang-Won Kim[1], Moo-Suk Lee[2], Heoung-Keun Kang[3], Tae-Jin Park[4], Young-Chul Chung[5], Jong-Chul Yang[5], Gyung-Ho Chung[6], Gwang-Woo Jeong[1,3]
[1]Interdisciplinary Program of Biomedical Engineering, Chonnam National University Medical School, Gwangju, Chonnam, Korea, Republic of; [2]Psychiatry, Chonnam National University Hospital, Korea, Republic of; [3]Radiology, Chonnam National University Hospital, Korea, Republic of; [4]Psychology, Chonnam National University, Korea, Republic of; [5]Psychiatry, Chonbuk National University Hospital, Korea, Republic of; [6]Radiology, Chonbuk National University Hospital, Korea, Republic of

14:00 4167. Central Pain Processing in Chemotherapy Induced Peripheral Neuropathy
Elaine Cachia[1], Dinesh Selvarajah[2], Michael D. Hunter[3], John Snowden[4], Sam H. Ahmedzai[5], Iain D. Wilkinson[1]
[1]Academic Radiology, University of Sheffield, Sheffield, United Kingdom; [2]Diabetes, Sheffield Teaching Hospitals; [3]Academic Psychiatry, University of Sheffield; [4]Haematology, Sheffield Teaching Hospitals; [5]Palliative Care, University of Sheffield

14:30 4168. Slow Fluctuation BOLD Signal Component Analysis During Active Press Pain Stimulation in Fibromyalgia Patients
Ji-Young Kim[1], Jeehye Seo[2], Jae-Jun Lee[2], Hui-Jin Song[2], Seong-Uk Jin[2], Yongmin Chang[2,3]
[1]School of Medicine, Kyungpook Nataional University, Daegu, Korea, Republic of; [2]Medical & Biological Engineering, Kyungpook National University, Daegu, Korea, Republic of; [3]Diagnostic Radiology, Kyungpook National University, Daegu, Korea, Republic of

15:00 4169. fMRI Investigation of Voluntary & Involuntary Motor Activation in Hypnotic Paralysis
Harald Kugel[1], Markus Burgmer[2], Bettina Pfleiderer[1], Adrianna Ewert[1], Thomas Lenzen[3], Regina Pioch[2], Martin Pyka[4], Jens Sommer[4], Volker Arolt[3], Gereon Heuft[2], Carsten Konrad[4]
[1]Dept. of Clinical Radiology, University of Muenster, Muenster, NRW, Germany; [2]Dept. of Psychosomatics & Psychotherapy, University of Muenster, Muenster, NRW, Germany; [3]Dept. of Psychiatry & Psychotherapy, University of Muenster, Muenster, NRW, Germany; [4]Dept. of Psychiatry & Psychotherapy, University Marburg, Marburg, HE, Germany

MRS of Animal Brain (except Cancer)

Exhibition Hall Monday 14:00-16:00 Computer 99

14:00 4170. Neurochemical Profile of the Striatum & Hippocampus in Mice at 16.4T using *In Vivo* ^{1}H NMR Spectroscopy
Dinesh K. Deelchand[1], Isabelle Iltis[1], Gregor Adriany[1], Emily Colonna[1], Malgorzata Marjanska[1], Kamil Ugurbil[1], Pierre-Gilles Henry[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States

14:30 4171. Neurochemical Profile in the Hippocampus of Aging Mice as Detected by *In Vivo* ^{1}H NMR Spectroscopy at 14.1T
Joao M. N. Duarte[1,2], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging, Center for Biomedical Imaging, Ecole Polytechnique, Lausanne, Vaud, Switzerland; [2]Faculty of Biology & Medicine, University of Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Universities of Lausanne & Geneva, Lausanne, Switzerland

15:00 4172. *In Vivo* ^{13}C NMR Spectroscopy at 14.1T
Joao M. N. Duarte[1,2], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging, Center for Biomedical Imaging, Ecole Polytechnique, Lausanne, Vaud, Switzerland; [2]Faculty of Biology & Medicine, University of Lausanne, Lausanne, Vaud, Switzerland; [3]Departments of Radiology, Universities of LAusanne & Geneva

15:30 4173. *In Vitro* & *In Vivo* Studies of ^{17}O NMR Sensitivity at 9.4 & 16.4 Tesla
Ming Lu[1,2], Xiao Wang[1,2], Ryan Taylor[1,2], Yi Zhang[1,2], Kamil Ugurbil[1,2], Wei Chen[1,2], Xiao-Hong Zhu[1,2]
[1]Center for Magnetic Resonance Research, University of Minnesota Medical School, Minneapolis, MN, United States; [2]Department of Radiology, University of Minnesota Medical School, Minneapolis, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 99

13:30 4174. Short Erythropoietin Treatment Following Hypoxia-Ischemia in the Immature Rat Brain: Macro-, Micro-Structural & Metabolic Assessment using Multimodal MR
Yohan van De Looij[1,2], Alexandra Chatagner[1], Petra S. Hüppi[1], Rolf Gruetter[2,3], Stéphane V. Sizonenko[1]
[1]Division of Child Growth & Development, University of Geneva, Geneva, Switzerland; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [3]Department of Radiology, Universities of Lausanne & Geneva, Lausanne & Geneva, Switzerland

14:00 4175. Dynamics of Cerebral Glucose Analysed *In Vivo* with a Four-State Conformational Model
Joao M. N. Duarte[1,2], Rolf Gruetter[1,3]
[1]Laboratory for Functional & Metabolic Imaging, Center for Biomedical Imaging, Ecole Polytechnique, Lausanne, Vaud, Switzerland; [2]Faculty of Biology & Medicine, University of Lausanne, Lausanne, Vaud, Switzerland; [3]Department of Radiology, Universities of Lausanne & Geneva, Switzerland

14:30 4176. Effects of Chronic Uncontrolled Diabetes on Neurochemical Profile & Glucose Transport in the Rat Brain *In Vivo* by ^{1}H MRS at 9.4T
Wen-Tung Wang[1], Phil Lee[1,2], Irina V Smirnova[3], In-Young Choi[1,4]
[1]Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS, United States; [2]Molecular & Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, United States; [3]Physical Therapy & Rehabilitation Sciences, University of Kansas Medical Center, Kansas City, KS, United States; [4]Neurology, University of Kansas Medical Center, Kansas City, KS, United States

15:00 4177. Metabolic Changes in the Focal Brain Ischemia in Rats Treated with Human Induced Pluripotent Cell-Derived Neural Precursors
Daniel Jirak[1,2], Karolina Turnovcova[3], Nataliya Kozubenko[3], Pavla Jendelova[3], Milan Hajek[1,2]
[1]Department of Diagnostic & Interventional Radiology, Institute for Clinical & Experimental Medicine, Prague, Czech Republic; [2]Center for Cell Therapy & Tissue Repair, Prague, Czech Republic; [3]Institute of Experimental Medicine, Czech Republic

Exhibition Hall Wednesday 13:30-15:30 Computer 99

13:30 4178. Towards the Assessment of Intracellular Viscosity: Diffusion Spectroscopy at Ultra-Short Diffusion Time in the Rat Brain
Charlotte Marchadour[1], Martine Guillermier[1], Diane Houitte[1], Marion Chaigneau[1], Philippe Hantraye[1], Vincent Lebon[1], Julien Valette[1]
[1]CEA-MIRCen, Fontenay-aux-Roses, France

14:00 4179. Decrease of Glutamate in the Hippocampus of the fmr1 Knockout Mouse During Myelingenesis Detected by *In Vivo* ^{1}H MRS

Da Shi[1,2], Su Xu[1,2], Steven Roys[1,2], Rao Gullapalli[1,2], Mary Cathrine McKenna[3]

[1]Core for Translational Research in Imaging @ University of Maryland, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Diagnostic Radiology & Nuclear Medicine, University of Maryland School of Medicine, Baltimore, MD, United States; [3]Department of Pediatrics, University of Maryland School of Medicine, Baltimore, MD, United States

14:30 4180. Early Metabolic Changes in Hippocampus & Cingulate Cortex After Fear Conditioning

Iris Yuwen Zhou[1,2], Abby Y. Ding[1,2], Qi Li[3,4], Shujuan Fan[1,2], Kevin Chuen Wing Chan[1,2], Peng Cao[1,2], April Mei Kwan Chow[1,2], Grainne M. McAlonan[3,4], Ed Xuekui Wu[1,2]

[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Psychiatry, the University of Hong Kong; [4]Centre for Reproduction Growth & Development, the University of Hong Kong

15:00 4181. Brain N-Acetylaspartate is Increased in Mice with Hypomyelination

Jun-Ichi Takanashi[1,2], Shigeyoshi Saito[1], Ichio Aoki[1], A. James Barkovich[3], Hitoshi Terada[4], Yukiko Ito[5], Ken Inoue[5]

[1]Molecular Imaging Center, National Institute of Radiological Sciences, Chiba, Japan; [2]Pediatrics, Kameda Medical Center, Kamogawa, Chiba, Japan; [3]Radiology & Biomedical Imaging, University of California Sanfrancisco, San Francisco, CA, United States; [4]Radiology, Toho University Sakura Medical Center, Sakura, Chiba, Japan; [5]Mental Retardation & Birth Defect Research, National Center of Neurology & Psychiatry, Kodaira, Tokyo, Japan

Exhibition Hall Thursday 13:30-15:30 Computer 99

13:30 4182. The Influence of Physical Activity on the Structure & Metabolism of the Mouse Hippocampus - Combining ^{1}H MRS & VBM at 9.4T

Wolfgang Weber-Fahr[1], Sarah Biedermann[1], Lei Zheng[1,2], Claudia Falfán-Melgoza[1], Johannes Fuss[3], Alexander Sartorius[3], Peter Gass[3], Gabriele Ende[1]

[1]Neuroimaging, Central Institute of Mental Health, Mannheim, Germany; [2]Experimental Radiation Oncology, , University Medical Center Mannheim, Mannheim, Germany; [3]Psychiatry, Central Institute of Mental Health, Mannheim, Germany

14:00 4183. Cross-Sectional & Longitudinal Reproducibility of Rhesus Macaque Brain Metabolites: Proton MR Spectroscopy at 3T

William E. Wu[1], Ivan Kirov[1], Ke Zhang[1], James S. Babb[1], Chan-Gyu Joo[2], Eva-Maria Ratai[2], R. Gilberto Gonzalez[2], Oded Gonen[1]

[1]Radiology, New York University Medical Center, New York, NY, United States; [2]Neuroradiology, Massachusetts General Hospital, Charlestown, MA, United States

14:30 4184. Choline's Relationship to Pro-Inflammatory Monocyte Chemoattractant Protein & Glial Activation

Eva-Maria Ratai[1,2], Robert Fell[3], Margaret Lentz[2,3], Julian He[2,3], Tricia Burdo[4], Lakshmanan Annamalai[5], Elkan Halpern[2,6], Eliezer Masliah[7], Susan Westmoreland[2,5], Kenneth Williams[4], R. Gilberto González[2,3]

[1]Department of Radiology, Neuroradiology Division, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Department of Radiology, Neuroradiology Division, A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [4]Biology Department, Boston College, Chestnut Hill, MA, United States; [5]Division of Comparative Pathology, New England Primate Research Center, Southborough, MA, United States; [6]Institute for Technology Assessment, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [7]Department of Neurosciences, University of California at San Diego, La Jolla, United States

15:00 4185. The 1.28 Ppm Signal – a Translational Magnetic Resonance Spectroscopy Marker for Neurogenesis?

Conny Frauke Waschkies[1,2], Basil Künnecke[1], Aline Seuwen[2], Markus von Kienlin[1], Markus Rudin[2]

[1]Magnetic Resonance Imaging & Spectroscopy, F. Hoffmann-La Roche, Basel, Switzerland; [2]Animal Imaging Centre, Institute for Biomedical Engineering, ETH & University of Zurich, Zurich, Switzerland

Animal Models of Brain Disease Other than Stroke

Exhibition Hall Monday 14:00-16:00 Computer 100

14:00 4186. Efficacy of Ginkgo Biloba in Aluminium Induced Neurotoxicity on Rat Brain: Magnetization Transfer & Diffusion Weighted MRI Study

Shatakshi Srivastava[1], Sandeep Tripathi[2], Abbas Ali Mahdi[2], Raja Roy[1]

[1]Centre of Biomedical Magnetic Resonance, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India; [2]Department of Biochemistry, Chatrapati Shahuji Maharaj Medical University, Lucknow, Uttar Pradesh, India

14:30 4187. Correlating Longitudinal & Quantitative MRI Metrics Elucidates White Matter Changes in the Cuprizone Mouse Model of Demyelination

Jonathan Dale Thiessen[1], Yanbo Zhang[2], Handi Zhang[2], Lingyan Wang[2], Richard Buist[3], Jiming Kong[4], Xin-Min Li[2], Melanie Martin[5,6]

[1]Physics & Astronomy, University of Manitoba, Winnipeg, Manitoba, Canada; [2]Psychiatry, University of Manitoba; [3]Radiology, University of Manitoba; [4]Human Anatomy & Cell Science, University of Manitoba; [5]Physics & Astronomy/Radiology, University of Manitoba; [6]Physics, University of Winnipeg

15:00 4188. Correlation between Diffusion Tensor Imaging Indices & Sociability, a Behavioral Endophenotype Relevant to Autism: A Longitudinal Study in the BALB/cJ Mouse Strain

Manoj Kumar[1], Stephen Pickup[1], Ranjit Ittyerah[1], Sungheon Kim[2], Andrew H. Fairless[3], Ted Abel[4], Edward S. Brodkin[3], Harish Poptani[1]

[1]Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Radiology, New York University, United States; [3]Psychiatry, University of Pennsylvania, Philadelphia, PA, United States; [4]Biology, University of Pennsylvania, Philadelphia, PA, United States

15:30 4189. A DTI Investigation of Neuroanatomical Differences in a Mouse Model of Early Life Neglect

Daniel Coman[1,2], Alvaro Duque[3], Elizabeth D. George[4], Xenophon Papademetris[2,5], Fahmeed Hyder[2,5], Arthur A. Simen[4]

[1]Department of Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Quantitative Neuroscience with Magnetic Resonance (QNMR), Yale University, New Haven, CT, United States; [3]Department of Neurobiology, Yale University, New Haven, CT, United States; [4]Department of Psychiatry, Yale University, New Haven, CT, United States; [5]Department of Diagnostic Radiology & Biomedical Engineering, Yale University, New Haven, CT, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 100

13:30 4190. Prediction of Behavioral Deficits using Diffusion Tensor Imaging in Experimental Hydrocephalus

Mark E. Wagshul[1,2], Shams Rashid[3], Maria Gulinello[4], James P. McAllister[5]

[1]Radiology, Albert Einstein College of Medicine, Bronx, NY, United States; [2]Radiology, Stony Brook University, Stony Brook, NY, United States; [3]Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States; [4]Neuroscience, Albert Einstein College of Medicine, Bronx, NY, United States; [5]Neurosurgery, University of Utah, Salt Lake City, UT, United States

14:00 4191. Cortical Metabolic Alterations Induced by Genetic Redox Deregulation in GCLM KO Mice & the Protective Effect of N-Acetylcysteine Treatment: Relevance for Schizophrenia

Joao M. N. Duarte[1,2], Anita Kulak[3], Kim Q. Do[3], Rolf Gruetter[1,4]

[1]Laboratory for functional & metabolic imaging, Center for Biomedical Imaging, Ecole Polytechnique, Lausanne, Vaud, Switzerland; [2]Faculty of Biology & Medicine, University of Lausanne, Lausanne, Vaud, Switzerland; [3]Center for Psychiatric Neuroscience, Univ. Hosp. Lausanne, Switzerland; [4]Department of Radiology, Universities of Lausanne & Geneva, Lausanne, Switzerland

14:30 4192. Cerebral Blood Volume & Metabolite Levels in Mouse Models for Alzheimer (APP/PS1) & Atherosclerosis (ApoE4 & ApoE Knockout): Genotype Differences & Early Effects of DHA & Cholesterol Containing Diets

Valerio Zerbi[1,2], Diane Jansen[1], Andor Veltien[2], Carola I. F. Janssen[1], Bastian Zinnhardt[1], Daan van Rooij[1], Yang Liu[3], Alan J. Wright[2], P. Jos Dederen[1], Laus M. Broersen[4], Amanda J. Kiliaan[1], Arend Heerschap[2]

[1]Anatomy, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Radiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [3]Universität des Saarlandes, Homburg, Germany; [4]Danone Research, Wageningen, Netherlands

15:00 4193. Preliminary Characterization of Apolipoprotein E Targeted Replacement Mice using MRI Techniques

Renuka Sriram[1], James Goodman[1], Zhiyong Xie[1], Kelly Bales[1]

[1]Pfizer Inc, Groton, CT, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 100

13:30 4194. Validation of Neurite Remodeling After TBI using MRI & Histopathology

Shiyang Wang[1,2], Michael Chopp[1,2], Guangliang Ding[1], Mohammad-Reza Nazem-Zadeh[1], Siamak Pourabdollah Nejad D.[1], Changsheng Qu[3], Zhenggang Zhang[1], Asim Mahmood[3], Lian Li[1], Li Zhang[1], Quan Jiang[1,2]

[1]Neurology, Henry Ford Health System, Detroit, MI, United States; [2]Physics, Oakland University, Rochester, MI, United States; [3]Neurosurgery, Henry Ford Health System, Detroit, MI, United States

14:00 4195. Transplantation of Marrow Stromal Cells Restores Cerebral Blood Flow & Reduces Cerebral Atrophy in Rats with Traumatic Brain Injury: *In Vivo* MRI Study

Lian Li[1], Quan Jiang[1], Chang Sheng Qu[2], Guang Liang Ding[1], Qing Jiang Li[1], Shi Yang Wang[3], Ji Hyun Lee[3], Mei Lu[4], Asim Mahmood[2], Michael Chopp[1,3]

[1]Neurology, Henry Ford Hospital, Detroit, MI, United States; [2]Neurosurgery, Henry Ford Hospital, Detroit, MI, United States; [3]Physics, Oakland University, Rochester, MI, United States; [4]Biostatistics & Research Epidemiology, Henry Ford Hospital, Detroit, MI, United States

14:30 **4196.** **Hemodynamic Response from Ketamine & Effect of MGluR2/3 Agonist (LY404039) Pretreatment.**
Anders Andersson[1], Mattias Lindberg[1], Fu-Hua Wang[1], Tomas Klason[1]
[1]AstraZeneca R&D, Sodertalje, Sweden

15:00 **4197.** **Multiparametric Imaging of Rat Glioma after Intra Tumoral Injection of Codbait, a Small Molecule Mimicking Dna Damage for Sensitizing Tumors to Radiotherapy**
Nicolas Coquery[1,2], Nicolas Pannetier[1,2], Régine Farion[1,2], Didier Clarencon[3], Jian-Sheng Sun[4], Marie Dutreix[4], Emmanuel Luc Barbier[1,2], Chantal Rémy[1,2]
[1]Grenoble Institute of Neuroscience, Grenoble, France; [2]Université Joseph Fourier, Grenoble, France; [3]Centre de Recherches du Service de Santé des Armées, La Tronche, France; [4]Institut Curie Hospital, Department of Translational Research, Orsay, France

Clinical Application of Diffusion Tensor Imaging I

Exhibition Hall Monday 14:00-16:00 Computer 101

14:00 **4198.** **Evaluation of Cerebrocerebellar Pathway Integrity in Pediatric Posterior Fossa Tumor Patients with Cerebellar Mutism Syndrome**
Nicole Law[1,2], Eric Bouffet[3], Douglas Strother[4], Suzanne Laughlin[5], Normand Laperriere[6], Marie-Eve Briere[4], Dina McConnell[7], Juliette Hukin[8], Christopher Fryer[8], Conrad Rockel[1], Fang Liu[1], Donald Mabbott[1,9]
[1]Department of Psychology, Program in Neuroscience & Mental Health, the Hospital for Sick Children, Toronto, Ontario, Canada; [2]Department of Psychology, Collaborative Program in Neuroscience, University of Toronto, Toronto, Ontario, Canada; [3]Department of Haematology/Oncology, the Hospital for Sick Children, Toronto, Ontario, Canada; [4]Southern Alberta Cancer Program, Alberta Children's Hospital, Calgary, Alberta, Canada; [5]Diagnostic Imaging, the Hospital for Sick Children, Toronto, Ontario, Canada; [6]Radiation Oncology, Princess Margaret Hospital, Toronto, Ontario, Canada; [7]Department of Psychology, British Columbia Children's Hospital, Vancouver, British Columbia, Canada; [8]Department of Oncology, British Columbia Children's Hospital, Vancouver, British Columbia, Canada; [9]Department of Psychology, University of Toronto, Toronto, Ontario, Canada

14:30 **4199.** **Diffusion Spectrum Imaging After Stroke Shows Structural Changes in the Contra-Lateral Motor Network Correlating with Functional Recovery.**
Cristina Granziera[1,2], Alessandro Daducci[3], Xavier Gigandet[3], Leila Cammoun[3], Meskaldji Eddine Djalel[3], Patrik Michel[1], Philippe Maeder[4], Alma Gregory Sorensen[5], Jean-Philippe Thiran[3], Reto Meuli[4], Gunnar Krueger[6]
[1]Neurology, CHUV, Lausanne, VD, Switzerland; [2]BMI, EPFL, Lausanne, VD, Switzerland; [3]STI / IEL / LTS5, EPFL, Lausanne, VD, Switzerland; [4]Radiology, CHUV, Lausanne, VD, Switzerland; [5]Radiology, Martinos' Center-MGH, Boston, MA, United States; [6]Healthcare Sector IM&WS S, Siemens Schweiz AG, Renens, VD, Switzerland

15:00 **4200.** **Mean Kurtosis: A New Potential Biomarker for Brain Tumor Grading?**
Sofie Van Cauter[1], Jelle Veraart[2], Jan Sijbers[2], Uwe Himmelreich[3], Ronald Peeters[1], Stefaan Van Gool[4], Wim Van Hecke[1,2], Stefan Sunaert[1]
[1]Department of Radiology, University Hospitals of Leuven, Leuven, Belgium; [2]Vision Lab, Department of Physics, University of Antwerp; [3]Biomedical NMR Unit/Molecular Small Animal Imaging Center, Department of Medical Diagnostic Sciences, Catholic University Leuven; [4]Pediatric Neuro-Oncology, University Hospitals of Leuven

15:30 **4201.** **Clinical Assessment of Standard & GRAPPA Parallel Diffusion Imaging: Effects of Spatial Resolution & Reduction Factor.**
Jalal Badi Andre[1], Greg Zaharchuk[1], Nancy J. Fischbein[1], Michael Augustin[2], Stefan Skare[1], Jarrett Rosenberg[1], Maarten Lansberg[3], Stephanie Kemp[3], Christine Wijman[3], Gregory W. Albers[3], Roland Bammer[1]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Radiology, University of Graz, Graz, Austria; [3]Neurology & Neurological Sciences, Stanford University, Stanford, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 101

13:30 **4202.** **Distribution of the Functional Atrophy in the Striatum Territory of Huntington's Patients**
Linda Marrakchi-Kacem[1,2], Christine Delmaire[3], Alan Tucholka[4,5], Pauline Roca[1,2], Pamela Guevara[1,2], Sophie Lecomte[1,2], Fabrice Poupon[1,2], Jerome Yelnik[6], Alexandra Durr[6], Jean-François Mangin[1,2], Stephane Lehericy[2,3], Cyril Poupon[1,2]
[1]NeuroSpin, CEA, Gif-Sur-Yvette, France; [2]IFR49, Gif-Sur-Yvette, France; [3]CENIR, Pitié Salpêtrière Hospital, Paris, France; [4]Centre de Recherche Hôpital Ste-Justine, Montreal, Canada; [5]Université de Montréal, Montreal, Canada; [6]CRICM, Inserm/UPMC, Paris, France

14:00 **4203.** **Trends & Differences in DTI Metrics Across Ages & Spinal Cord Levels in Normal Children**
Izlem Izbudak[1], Netsiri Dumrongpisutikul[1], Carol B. Thompson[2], Wesley Gilson[3], Aylin Tekes, Majda M. Thurnher[4], Thierry A. G. M. Huisman
[1]John Hopkins Medical Institution, Baltimore, MD, United States; [2]John Hopkins Bloomberg school of Public health; [3]Imaging & Visualization, Siemens Corporate Research, Inc.; [4]Radiology, Medical University of Vienna

14:30 **4204.** **ADC with Higher B-Value Correlate Better with Viable Cell Count Quantified from the Cavity of the Brain Abscess**
Vaishali Tomar[1], Abhishek Yadav[1], Vikas Bharadwaj[2], Bal Kishan Ojha[2], Kashi Nath Prasad[3], Ram Kishan Singh Rathore[4], Rakesh Kumar Gupta[1]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Neurosurgery, Chatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [3]Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [4]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India

15:00 **4205.** **Diffusional Kurtosis Imaging & Perfusion of the Thalamus & White Matter During the First Month of Mild Traumatic Brain Injury**
Elan J. Grossman[1,2], Jens H. Jensen[1,2], Matilde Inglese[1,2], Ali Tabesh[1], Kelly A. McGorty, Joseph Reaume[1], Qun Chen[1,2], Robert I. Grossman[1]
[1]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, United States; [2]Department of Physiology & Neuroscience, NYU School of Medicine, New York, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 101

13:30 **4206.** **Quantitative MRI Studies for Restless Legs Syndrome: Cerebral Iron, Mophology & DTI**
Byeong-Yeul Lee[1,2], Jeffrey Vesek[1], James R. Connor[3], Qing X. Yang[1,3]
[1]Center for NMR Research, Radiology, Penn State College of Medicine, Hershey, PA, United States; [2]Bioengineering, Penn State College of Medicine, Hershey, PA, United States; [3]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

14:00 **4207.** **Two-Tensor Residual Bootstrapping on Classified Tensor Morphologies**
Nagulan Ratnarajah[1], Andy Simmons Simmons[2], Ali Hojjatoleslami[1]
[1]Neurosciences & Medical Image Computing, University of Kent, Canterbury, Kent, United Kingdom; [2]Neuroimaging Department, Institute of Psychiatry, Kings College London., United Kingdom

14:30 **4208.** **Computational White Matter Atlas for Young Rhesus Macaques**
Nagesh Adluru[1], Hui Zhang[2], Andrew S. Fox[1], Elizabeth Zakszewski[1], Chad Ennis[1], Anne Bartosic[1], Andrew L. Alexander[1], Steve Shelton[1], Ned Kalin[1]
[1]University of Wisconsin, Madison, WI, United States; [2]University College London, London, United Kingdom

15:00 **4209.** **Predicting Effectiveness of Cortical Stimulation Therapy for Tinnitus using DTI**
Wolfgang Gaggl[1,2], Brian Harris Kopell[3], Christopher R. Butson[3,4], Rey R. Ramirez[4], Sylvain Baillet[2,4], Klaus Driesslein[4], Gang Chen[2], Shi-Jiang Li[2]
[1]Radiology, Medical College of Wisconsin, Milwaukee, WI, United States; [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States; [3]Neurosurgery, Medical College of Wisconsin, Milwaukee, WI, United States; [4]Neurology, Medical College of Wisconsin, Milwaukee, WI, United States

Exhibition Hall Thursday 13:30-15:30 Computer 101

13:30 **4210.** **Understanding Evolution of Neurocysticercosis through Diffusion Tensor Imaging**
Rakesh Kumar Gupta[1], Bharti Anand[1], Rishi Awasthi[1], Ram K. S. Rathore[2], Richa Trivedi[3], Vimal Kumar Paliwal[4], Kashi Nath Prasad[5]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; [3]Institute of Nuclear Medicine and Allied Sciences, New Delhi, Uttar Pradesh, India; [4]Neurology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India

14:00 **4211.** **Serial Diffusion Tensor Imaging Suggests Progressive Pathophysiology for Weeks Following Traumatic Brain Injury, & Possible White Matter Repair Months After Injury**
Virginia Newcombe[1], Guy Williams[2], Joanne Outtrim[1], Doris Chatfield[1], M. G. Abate[1], T. Geeraerts[1], A. Manktelow[1], Peter Hutchinson[3], Jonathon Coles[1], David Menon[1]
[1]Division of Anaesthesia, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; [2]Wolfson Brain Imaging Centre, Univerisity of Cambridge; [3]Academic Department of Neurosurgery, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom

14:30 4212. Altered White Matter Microstructure in Elderly Major Depressive Disorder Patients: A DTI Study
Daniel Han-en Chang[1,2], L. Tugan Muftuler[1,2], Huali Wang[3], Orhan Nalcioglu[1,2], Min-Ying Lydia Su[1,2]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Radiological Sciences, University of California, Irvine, CA, United States; [3]Department of Geriatric Psychiatry, Peking University Institute of Mental Health, Beijing 10083, China, People's Republic of

15:00 4213. Corpus Callosum Wallerian Degeneration in Unilateral Brain Tumors: Evaluation with Diffusion Tensor Imaging
Sona Saksena[1], Mohammad-Reza Nazem-Zadeh[2], Jayant Narang[1], Lonni Schultz[3], Quan Jiang[2], Rajan Jain[1]
[1]Neuroradiology, Henry Ford Health System, Detroit, MI, United States; [2]Neurology, Henry Ford Health System, Detroit, MI, United States; [3]Epidemiology & Biostatistics, Henry Ford Health System, Detroit, MI, United States

Clinical Application of Diffusion Tensor Imaging II

Exhibition Hall Monday 14:00-16:00 Computer 102

14:00 4214. Developmental Differences in Deep Gray Matter Nuclei Tissue Integrity & Neuropsychological Performance in Healthy Children & Patients Treated with Brain Radiation
Anna Nidecker[1], Jarunee Intrapiromkul[1], Firouzeh Tannazi[1], Todd McNutt[2], Siamak Ardekani[3], Rebecca Martin[4], Moody D. Wharam[2], Ernest Mark Mahone[4,5], Alena Horska[1]
[1]Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, MD, United States; [2]Radiation Oncology & Molecular Radiation Sciences, the Johns Hopkins University, Baltimore, MD, United States; [3]Institute for Computational Medicine, Baltimore, MD, United States; [4]Kennedy Krieger Institute, Baltimore, MD, United States; [5]Department of Psychiatry & Behavior Sciences, the Johns Hopkins University, Baltimore, MD, United States

14:30 4215. Secondary Involvement of Optic Radiation in Leber's Hereditary Optic Neuropathy
Giovanni Rizzo[1], David Neil Manners[1], Caterina Tonon[1], Claudia Testa[1], Emil Malucelli[1], Maria Lucia Valentino[2], Chiara La Morgia[2], Piero Barboni[2], Bruno Barbiroli[1], Valerio Carelli[2], Raffaele Lodi[1]
[1]Department of Internal Medicine, Aging & Nephrology, University of Bologna, Bologna, Italy; [2]Department of Neurological Sciences,, University of Bologna, Bologna, Italy

15:00 4216. Cerebral Diffusion Tensor Imaging in Prion Diseases: Voxelwise Analysis & Comparison with VBM
Harpreet Hyare[1,2], Enrico De Vita[3,4], Chris Carswell[1,2], Andrew Thompson[1,2], Ana Lukic[1,2], Tarek Yousry[3,4], Peter Rudge[1,2], Simon Mead[1,2], John Collinge[1,2], John Thornton[3,4]
[1]MRC Prion Unit, Department of Neurodegenerative Disease, UCL Institute of Neurology, London, United Kingdom; [2]National Prion Clinic, National Hospital for Neurology & Neurosurgery, UCLH NHS Trust, London, United Kingdom; [3]Lysholm Department of Neuroradiology, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [4]Academic Neuroradiological Unit, Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom

15:30 4217. Diffusional Kurtosis Imaging in Mild Cognitive Impairment & Alzheimer's Disease
Joseph A. Helpern[1], Maria F. Falangola[1], Cathy Hu[2], Ali Tabesh[3], Jane Kwon[3], James S. Babb[3], Jens H. Jensen[3]
[1]Radiology, Medical University of South Carolina, Charleston, SC, United States; [2]The Nathan S. Kline Institute; [3]Radiology, New York University School of Medicine

Exhibition Hall Tuesday 13:30-15:30 Computer 102

13:30 4218. Thalamic Microstructural Changes in Neonates with Congenital Heart Disease: A DT-MRI Study Before & After Cardiopulmonary Bypass Surgery.
Malek I. Makki[1], Rabia Liamlahi[2], Bea Latal[3], Walter Knirsch[2], Hintendu Dave[4], Achim Schmitz[5], Vera Bernet[6], Christian Kellenberger[1], Ianina Scheer[1]
[1]Diagnostic Imaging, University Children Hospital, Zurich, Switzerland; [2]Cardiology, University Children Hospital, Zurich, Switzerland; [3]Child Development Center, University Children Hospital, Zurich, Switzerland; [4]Congenital Cardiovascular Surgery, University Children Hospital, Zurich; [5]Anesthesia, University Children Hospital, Zurich, Switzerland; [6]Pediatric Intensive Care, University Children Hospital, Zurich, Switzerland

14:00 4219. Do the Language Deficit in Autism & Specific Language Impairment (SLI) have a Common Neuro-Anatomical Substrate?
Judith S. Verhoeven[1], Elena Prodi[2,3], Sabine Deprez[3], Nathalie Rommel[4], Alexander Leemans[5], Wim Van Hecke[3], Ronald Peeters[3], Paul De Cock[1], Lieven Lagae[1], Stefan Sunaert[3]
[1]Pediatrics, University Hospitals of the Catholic University of Leuven, Leuven, Belgium; [2]Radiology, Istituto Neurologico Besta, University of Milan, Milan, Italy; [3]Radiology, University Hospitals of the Catholic University of Leuven, Leuven, Belgium; [4]Neurosciences, Exp ORL, University Hospitals of the Catholic University of Leuven, Leuven, Belgium; [5]Image Sciences Institute, University Medical Center Utrecht, Utrecht, Netherlands

14:30 **4220.** **Longitudinal Assessment of Chemotherapy-Induced Structural Changes in Cerebral White Matter & Its Correlation with Impaired Cognitive Functioning in Breast Cancer Patients**

Sabine Deprez[1], Frederic Amant[2], Judith Verhoeven[1], Ann Smeets[2], Marie-Rose Christiaens[2], Alexander Leemans[3], Ron Peeters[1], Wim Van Hecke[1], Joris Vandenberghe[4], Mathieu Vandenbulcke[4], Stefan Sunaert[1]

[1]Department of Radiology, University Hospital Gasthuisberg, K.U. Leuven, Leuven, Belgium; [2]Multidisciplinary Breast Center, University Hospital Gasthuisberg, K.U. Leuven; [3]Image Sciences Institute, Department of Radiology, University Medical Center Utrecht; [4]Department of Psychiatry, University Hospital Gasthuisberg, K.U. Leuven

15:00 **4221.** **DTI & Tractography of Military-Related Traumatic Brain Injury & Correlation with Neuropsychological Functions**

Ping-Hong Yeh[1], Binquan Wang[1], Terrence R. Oakes[1], Haiying Tang[2], John Graner[1], Hai Pan[1], Wei Lui[3], Lous M. French[4], Fletcher Munter[3], Gerard Riedy[3,5]

[1]Henry Jackson Foundation for the Advancement of Military Medicine, Rockville, MD, United States; [2]Uniformed Services University of the Health; [3]National Capital Neuroimaging Consortium, Walter Reed Army Medical Center, Washington DC; [4]Defense & Veterans Brain Injury Center, Walter Reed Army Medical Center, Washington DC; [5]National Intrepid Center of Excellence , Bethesda, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 102

13:30 **4222.** **MR Diffusion Tensor Imaging in Cervical Spondylotic Myelopathy**

Izabela Kowalczyk[1,2], Stuart Malcolm Kenne McGregor[3], Neil Duggal[1,4], Robert Bartha[1,2]

[1]Medical Biophysics, the University of Western Ontario, London, Ontario, Canada; [2]Centre for Functional & Metabolite Mapping, Robarts Research Institute, London, Ontario, Canada; [3]Clinical Neurological Sciences, Univerity Hospital, London Health Sciences Centre, London, Ontario, Canada; [4]Clinical Neurological Sciences, University Hospital, London Health Sciences Centre, London, Ontario, Canada

14:00 **4223.** **Multisite Investigation of the Effect of Site & Protocol Variation on Fractional Anisotropy**

Karl Gerard Helmer[1], Ming-Chung Chou[2], Allen Song[3], Jessica Turner[4], Barjor Gimi[5], Susumu Mori[6]

[1]Radiology, Massachusetts General Hospital, Charlestown , MA, United States; [2]Computer Science & Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan; [3]Duke University, Durham, NC, United States; [4]The Mind Research Network, Albuquerque, NM, United States; [5]Radiology, Dartmouth Medical School, Hanover, NH, United States; [6]Radiology, School of Medicine, Johns Hopkins Univerity, Baltimore, MD, United States

14:30 **4224.** **Comparison of White Matter Integrity between Alzheimer's Disease Patients with & without White Matter Lesions Analyzed by Tract-Based Spatial Statistics**

Daniel Han-en Chang[1,2], L. Tugan Muftuler[1,2], Huali Wang[3], Orhan Nalcioglu[1,2], Min-Ying Lydia Su[1,2]

[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, CA, United States; [2]Department of Radiological Sciences, University of California, Irvine, CA, United States; [3]Department of Geriatric Psychiatry, Peking University Institute of Mental Health, Beijing 10083, China, People's Republic of

15:00 **4225.** **Diffusivity Alterations in Temporal Lobe Epilepsy**

Paula Bezerra Diniz[1,2], Carlos Ernesto Garrido Salmon[2,3], Tonicarlo Velasco[1,2], Americo Ceiki Sakamoto[1,2], João Pereira Leite[1,2], Antonio Carlos Santos[2,4]

[1]Neuroscience & Behavior, FMRP, University of São Paulo, Ribeirão Preto, SP, Brazil; [2]CInAPCe (Cooperação Interinstitucional de Apoio a Pesquisas sobre o Cérebro), Ribeirão Preto, SP, Brazil; [3]Physics & Mathematics, FFCLRP, University of São Paulo, Ribeirão Preto, SP, Brazil; [4]Internal Medicine, FMRP, University of São Paulo, Ribeirão Preto, SP, Brazil

Exhibition Hall Thursday 13:30-15:30 Computer 102

13:30 **4226.** **High Resolution Distortion-Free Diffusion-Tensor Imaging of Optic Radiation using Readout-Segmented Echo-Planar Imaging & a Two-Dimensional Navigator-Based Reacquisition**

Akira Yamamoto[1], Mitsunori Kanagaki[1], Tomohisa Okada[1], Seiko Kasahara[1], Emiko Morimoto[1], Mami Iima[1], Ryo Sakamoto[1], Satoshi Nakajima[1], Taha Mohamed Mehemed[1], Kaori Togashi[1]

[1]Department of Diagnostic Imaging & Nuclear Medicine, Kyoto University Hospital, Kyoto, Japan

14:00 **4227.** **FA & Tract Changes in Obsessive Compulsive Disorder**

An Vo[1], Patricia Gruner[1,2], Toshikazu Ikuta[1,2], Katie Mahon[1,2], Vivian Kafantaris[1,2], Juan Gallego[1,2], Katherine E. Burdick[1,2], Aziz M. Ulug[1,3], Philip R. Szeszko[1,2]

[1]The Feinstein Institute for Medical Research, Manhasset, NY, United States; [2]The Zucker Hillside Hospital, Glen Oaks, NY, United States; [3]Department of Radiology, Albert Einstein School of Medicine, Bronx, NY, United States

14:30 **4228.** **Diffusion Tensor Imaging & Cognition in Patients with Neuropsychiatric Systemic Lupus Erythematosus**

Becky Ilana Haynes[1], Nicholas G. Dowell[1], Jenny Rusted[2], Tofts S. Paul[1], Kevin A. Davies[1]

[1]BSMS, Brighton, East Sussex, United Kingdom; [2]University of Sussex, United Kingdom

15:00 4229. Brain Function Mapping of Pre-Mild Cognitive Impairment
Amir M. Abduljalil[1], Doug Scharre[2], Nicoleta Stoicea[2], Ananth Narayanan[3], Michael Knopp[1], Petra Schmalbrock[1]
[1]Wright Center of Innovation, Radiology Department, the Ohio State University, Columbus, OH, United States; [2]Neurology Department; [3]Interdisciplinary Graduate Studies Program

Clinical Application of Diffusion Tensor Imaging III

Exhibition Hall Monday 14:00-16:00 Computer 103

14:00 4230. No Evidence of Acute or Predisposing Structural Abnormalities in Patients with Transient Global Amnesia (TGA): A Tract Based Spatial Statistics (TBSS) Study
Alex Foerster[1], Martin Griebe[1], Christina Rossmanith[1], Achim Gass[1], Rolf Kern[1], Michael G. Hennerici[1], Kristina Szabo[1]
[1]Department of Neurology, UniversitaetsMedizin Mannheim, Mannheim, Germany

14:30 4231. Structural & Functional Changes in Visual Pathways & Visual Cortex Associated with Visual Field Improvement After Therapy in a Case of Hemianopia
Yi-Ching Lynn Ho[1,2], Laura Mancini[3,4], Amandine Cheze[2], Esben Thade Petersen[2,5], Kong-Yong Goh[6], Yih-Yian Sitoh[2], Xavier Golay[3,4]
[1]Center for Functionally Integrative Neuroscience, Aarhus, Denmark; [2]Neuroradiology, National Neuroscience Institute, Singapore; [3]Academic Neuroradiological Unit, Dept of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [4]Lysholm Dept of Neuroradiology, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [5]Clinical Imaging Research Centre, Singapore; [6]Eye Institute, Tan Tock Seng Hospital, Singapore

15:00 4232. The Visual Ventral Stream in Posterior Cortical Atrophy
Federica Agosta[1], Raffaella Migliaccio[1,2], Elisabetta Pagani[1], Elisa Canu[1], Stefania Sala[1], Francesca Caso[3], Giuseppe Magnani[3], Alessandra Marcone[4], Stefano Cappa[4,5], Elisa Scola[6], Andrea Falini[6], Giancarlo Comi[3], Paolo Bartolomeo[2], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]U975 Centre de Recherche de l'Institut du Cerveau et de la Moëlle Epinière, INSERM, Paris, France; [3]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [4]Department of Clinical Neurosciences, San Raffaele Turro Hospital, Milan, Italy; [5]Vita Salute University , Milan, Italy; [6]Department of Neuroradiology & CERMAC, Scientific Institute & University Hospital San Raffaele, Milan, Italy

15:30 4233. Relationship between White Matter Tract Damage & Executive Functions in Amyotrophic Lateral Sclerosis: A DT MRI Tractography Study
Lidia Sarro[1], Federica Agosta[1], Elisa Canu[1], Nilo Riva[2], Alessandro Prelle[3], Massimiliano Copetti[4], Mauro Comola[2], Giancarlo Comi[2], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]Ospedale Fatebenefratellie Oftalmico, Milan, Italy; [4]Biostatistics Unit, IRCCS-Ospedale Casa Sollievo della Sofferenza, San Giovanni Rotondo, Italy

Exhibition Hall Tuesday 13:30-15:30 Computer 103

13:30 4234. Voxel-Based Analysis of High- & Standard B-Value Diffusion Weighted Imaging, & Voxel Based Morphometry, in Alzheimer Disease
Enrico De Vita[1,2], Basil H. Ridha[3], Nick C. Fox[3], John S. Thornton[1,2], H. R. Jager[1,2]
[1]Lysholm Department of Neuroradiology, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [2]Academic Neuroradiological Unit, Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]Dementia Research Centre, Department of Neurodegenerative Diseases, UCL Institute of Neurology, London, United Kingdom

14:00 4235. Dynamic State of Water Molecular Displacement of the Brain During the Cardiac Cycle in Idiopathic Normal Pressure Hydrocephalus
Hirohito Kan[1], Tosiaki Miyati[1], Naoki Ohno[1,2], Mitsuhito Mase[3], Harumasa Kasai[4], Masaki Hara[4], Yuta Shibamoto[4], Kazuo Yamada[3], Makoto Kawano[4]
[1]Division of Health Sciences, Graduate School of Medical Science, Kanazawa University, Kanazawa, Ishikawa, Japan; [2]Department of Radiology, Kanazawa University Hospital, Kanazawa, Ishikawa, Japan; [3]Department of Neurosurgery & Restorative Neuroscience, Graduate School of Medical Sciences, Nagoya City University, Nagoya, Aichi, Japan; [4]Department of Radiology, Nagoya City University Hospital, Nagoya, Aichi, Japan

14:30 4236. Anatomical Characterization of Athetotic & Spastic Cerebral Palsy using Atlas-Based Analysis
Shoko Yoshida[1], Katsumi Hayakawa[2], Kenichi Oishi[3], Susumu Mori[4], Toyoko Kanda[5], Yuriko Yamori[6], Naoko Yoshida[7], Haruyo Hirota[7], Mika Iwami[7], Sozo Okano[8]

[1]Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, Malyland, United States; [2]Radiology, Kyoto City Hospital, Kyoto, Japan; [3]Department of Radiology & Radiological Science, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]F.M.Kirby Resarch Center for Functional Brain Imaging, Kennedy Krieger Institute; [5]Neuropediatrics, St.Joseph Hospital for Handicapped Children, Kyoto, Japan; [6]St. Jpseph Hospital for Handicapped Children; [7]St. Joseph Hospital for Handicapped Children; [8]Pediatrics, Kyoto City Hospital

15:00 **4237.** **Exploratory Data Analysis of Tractographic Measures: Study of the Cingulum in Autism Spectrum Disorders**
Lucia Billeci[1,2], Sara Calderoni[2], Laura Biagi[2], Filippo Muratori[3], Marco Catani[4], Michela Tosetti[2]
[1]Interdepartmental Research Center "E.Piaggio", University of Pisa, Pisa, Italy; [2]MR Laboratory, Stella Maris Scientific Institute, Pisa, Italy; [3]Division of Child Neuropsychiatry, Stella Maris Scientific Institute, Pisa, Italy; [4]NatBrainLab, Institute of Psychiatry, King's College London, London, United Kingdom

High Resolution Brain Imaging

Exhibition Hall Monday 14:00-16:00 Computer 104

14:00 **4238.** **How Does White Matter Orientation Affect Contrast in Gradient-Echo Magnitude & Phase Images? Simulation of a Three Compartment Model**
Andreas Schäfer[1], Bibek Dhital[1], Christopher J. Wiggins[2,3], Robert Turner[1]
[1]Max-Planck-Institute for Human Cognitive & Brain Sciences, Leipzig, Germany; [2]CEA NeuroSpin, Gif-sur-Yvette, France; [3]IFR 49, Gif-sur-Yvette, France

14:30 **4239.** **Reconstruction of Phase Images by Compressed Sensing using Low-Pass Filter**
Sung-Min Gho[1,2], Wei Li[2], Bing Wu[2], Chunlei Liu[2,3], Dong-Hyun Kim[1,4]
[1]Electrical & Electronic Engineering, Yonsei University, Sinchon-dong, Seoul, Korea, Republic of; [2]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States; [3]Radiology, Duke University, Durham, NC, United States; [4]Radiology, Yonsei University, Sinchon-dong, Seoul, Korea, Republic of

15:00 **4240.** **Cerebral Cortex & Thalamic Sub-Region Contrast at 7T: Magnitude, Phase or Susceptibility?**
Wei Li[1], Bing Wu[1], Nan-Kuei Chen[1], Chunlei Liu[1,2]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States; [2]Radiology, Duke University, Durham, NC, United States

15:30 **4241.** **Isotropic Multispectral QMRI with the Mixed-TSE Pulse Sequence & SENSE: Implications for Synthetic-MRI**
Stephan William Anderson[1], Osamu Sakai[1], Memi Watanabe[1], Jorge A. Soto[1], Hernan Jara[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 104

13:30 **4242.** **Whole Brain High Resolution T_2w 3D TSE at 7Tesla with a Tissue Specific Non Linear Refocus Pulse Angle Sweep; Initial Results.**
Frederik Visser[1,2], Jaco Zwanenburg[1], Peter Luijten[1]
[1]7 Tesla, UMC-Utrecht, Utrecht, Netherlands; [2]Philips Heathcare, Best, Netherlands

14:00 **4243.** **High-Resolution Clinical 7T Protocol for the Depiction of Cerebral Vascular Structures**
Soeren Johst[1,2], Karsten H. Wrede[1,3], Sebastian Schmitter[4], Philipp Dammann[1,3], Marc U. Schlamann[3], Ibrahim E. Sandalcioglu[5], Ulrich Sure[5], Susanne C. Ladd[1,2], Mark E. Ladd[1,2], Stefan Maderwald[1]
[1]Erwin L. Hahn Institute for MRI, University Duisburg-Essen, Essen, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, Germany; [3]Department of Neurosurgery, University Hospital Essen, Essen, Germany; [4]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [5]Department of Neurosurgery, University Hospital, Essen, Germany

14:30 **4244.** **Acoustic Feedback During Motor Dexterity Training Modulates Brain Structure in Healthy Adult Individuals**
Maria Assunta Rocca[1,2], Gianna Riccitelli[1], Elisabetta Pagani[1], Roberto Gatti[3], Dennis Acella[3], Andrea Falini[4], Giancarlo Comi[2], Massimo Filippi[1,2]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [3]Laboratory of Movement Analysis, School of Physiotherapy, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [4]Department of Neuroradiology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

15:00 **4245.** **Increased Cross Sectional Area of Genu & Splenium of Corpus Callosum in Professional Musicians Compared to Amateur Musicians & Controls**
Ihssan Abdulkareem[1], Vanessa Sluming[2]
[1]Magnetic Resonance & Image Analysis Research Centre-Liverpool University, Liverpool, Merseyside, United Kingdom; [2]Liverpool University

Exhibition Hall Wednesday 13:30-15:30 Computer 104

13:30 4246. Morphometric Changes Detected in Hepatits C (HCV) & HCV/HIV Co-Infected Adults
Manoj K. Sarma[1], M. Albert Thomas[1], Rajakumar Nagarajan[1], April Thames[2], Steven Castellon[3,4], Elyse Singer[5], Jason Smith[4], Jonathan Truong[6], Homayoon Khanlou[7], Ann Ragin[8], Charles Hinkin[3,4]
[1]Radiological Sciences, UCLA, Los Angeles, CA, United States; [2]Psychiatry, UCLA School of Medicine, Los angeles, CA, United States; [3]Psychiatry, UCLA School of Medicine, Los Angeles, CA, United States; [4]VA Greater Los Angeles Healthcare Service, Los Angeles, CA, United States; [5]Neurology, UCLA School of Medicine, Los Angeles, CA, United States; [6]Kaiser Permanente Lancaster, CA, United States; [7]AIDS Healthcare Foundation, Los Angeles, CA, United States; [8]Radiology, Northwestern University, Chicago, IL, United States

14:00 4247. A Software Tool for Semi-Automated Quantification of Pituitary Volumes
Zhiyue J. Wang[1,2], Dah-Jyuu Wang[3], Jonathan M. Chia[4], Qing Yuan[1], Michael C. Morriss[1,2], Nancy K. Rollins[1,2]
[1]University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Children's Medical Center, Dallas, TX, United States; [3]Children's Hospital of Philadelphia, Philadelphia, PA, United States; [4]Philips Healthcare, Cleveland, OH, United States

14:30 4248. Anatomical Details in Brainstem & Cisterns Revealed by RESOLVE with Unidirectional MPG; Comparison with Single-Shot EPI Diffusion Weighted Image
Shinji Naganawa[1], Hisashi Kawai[1], Masahiro Yamazaki[1]
[1]Department of Radiology, Nagoya University Graduate School of Medicine, Nagoya, Aichi, Japan

15:00 4249. Meyer's Loop Delineated on Magnitude Images of Susceptibility-Weighted Imaging: Pre- & Postoperative Perimetric Correlation in Patients with Refractory Temporal Lobe Epilepsy
Nobuyuki Mori[1], Yukio Miki[2], Nobuhiro Mikuni[3], Riki Matsumoto[4], Seiko Kasahara[5], Emiko Morimoto[5], Mitsunori Kanagaki[5], Akira Yamamoto[5], Tomohisa Okada[5], Satoshi Noma[1], Kaori Togashi[5]
[1]Radiology, Tenri Hospital, Tenri, Nara, Japan; [2]Radiology, Osaka City University Graduate School of Medicine; [3]Neurosurgery, Kyoto University Graduate School of Medicine; [4]Neurology, Kyoto University Graduate School of Medicine; [5]Diagnostic Imaging & Nuclear Medicine, Kyoto University Graduate School of Medicine

Exhibition Hall Thursday 13:30-16:00 Computer 104

13:30 4250. Which to Choose for Volumetry: MPRAGE or SPACE?
Tomohisa Okada[1], Mitsunori Kanagaki[1], Akira Yamamoto[1], Ryo Sakamoto[1], Seiko Kasahara[1], Emiko Morimoto[1], Mami Iima[1], Taha M. Mehemed[1], Satoshi Nakajima[1], Kaori Togashi[1]
[1]Diagnostic Imaging & Nuclear Medicine, Kyoto University, Kyoto, Japan

14:00 4251. Contrast-Enhanced T_1-CUBE Brain Imaging with Compressed Sensing
Kevin F. King[1], Matt A. Bernstein[2], Donglai Huo[1], Timothy J. Kaufmann[2], Kirk M. Welker[2]
[1]GE Healthcare, Waukesha, WI, United States; [2]Dept. of Radiology, Mayo Clinic, Rochester, MN, United States

14:30 4252. Visualization of Posterior Fossa High-Resolution Anatomy in the Infant Brain using Tract Density Imaging
Peter Yi Shen[1], Christopher P. Hess[1], Donna Ferriero[2], Cornelius von Morze[1], Duan Xu[1], A. James Barkovich[1], Donna Ferriero[3]
[1]Radiology & Biomedical Imaging, UCSF Medical Center, San Francisco, Ca, United States; [2]Neurology & Pediatrics, UCSF Medical Center, San Francisco, Ca, United States; [3]Neurology & Pediatrics, UCSF Medical Center, San Francisco, CA, United States

15:30 4253. Using a Mean DSI Dataset & Targeted ROIs can Increase the Specificity & Reproducibility of Manual Tractography in DSI.
Aki Nikolaidis[1], Wen-Yih Isaac Tseng[2,3]
[1]National Taiwan University, Taipei City, Taipei, Taiwan; [2]Center for Optoelectronic Biomedicine, National Taiwan University; [3]Institute of Biomedical Engineering, National Taiwan University

Manganese Enhanced MRI

Exhibition Hall Monday 14:00-15:00 Computer 105

14:00 4254. Kinesin Mutations Induce Defects in Mn2+ Transport in the Important Memory Circuit from Hippocampus to Basal Forebrain
Elaine L. Bearer[1,2], Octavian Biris[3], Xiaowei Zhang[2], Russell E. Jacobs[2]
[1]Pathology, University of New Mexico, Albuquerque, NM, United States; [2]Biology, California Institute of Technology, Pasadena, CA, United States; [3]Engineering, Brown University, Providence, Rho Island, United States

14:30 **4255.** ***In Vivo* MEMRI of Early Postnatal Development in Rat Visual System**
Kevin C. Chan[1,2], Joe S. Cheng[2,3], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [3]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong,, Pokfulam, Hong Kong, China, People's Republic of

Exhibition Hall Tuesday 13:30-14:30 Computer 105

13:30 **4256.** ***In Vivo* MEMRI of Neuronal Plasticity in Retinocollicular Projection**
Kevin C. Chan[1,2], Iris Y. Zhou[1,2], Shu juan Fan[1,2], Joe S. Cheng[1,3], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of; [3]Department of Electrical & Electronic Engineering, the Univrsity of Hong Kong, Pokfulam, Hong Kong, China, People's Republic of

14:00 **4257.** **Myelin Mapping in Mouse Brain *In Vivo* using Contrast-Enhanced Magnetization Transfer MRI**
Takashi Watanabe[1], Jens Frahm[1], Thomas Michaelis[1]
[1]Biomedical NMR Research GmbH, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

Human Brain Tumors

Exhibition Hall Monday 14:00-16:00 Computer 106

14:00 **4258.** **Correlation of NMR Metabolic Profile & Gene Expression Profiles in High Grade Glioma**
Jose Manuel Morales[1], Eva Serna, Ana Gonzalez-Segura[2], Concha Lopez-Gines, Jose Manuel Gonzalez-Darder[3], Ramon Cardona, Miguel Cerda-Nicolas, Daniel Monleon[2]
[1]Universidad de Valencia, Valencia, Spain; [2]Fundacion Investigacion HCUV, Valencia, Spain; [3]Hospital Clinico Valencia

14:30 **4259.** **Correlation of MRI Contrast Enhancement in Gliomas with Immuno-Histological Vascular Parameters using Image-Guided Biopsy Specimens**
Rajan Jain[1,2], Jayant Narang[1], Jack P. Rock[2], Lisa Scarpace[2], Lonni Schultz[3], Syed Ali Arbab[4], Jorge Gutierrez[5]
[1]Neuroradiology, Henry Ford Health System, Detroit, MI, United States; [2]Neurosurgery, Henry Ford Health System, Detroit, MI, United States; [3]Epidemiology & Biostatistics, Henry Ford Health System, Detroit, MI, United States; [4]Radiology, Henry Ford Health System, Detroit, MI, United States; [5]Neuropathology, Henry Ford Health System, Detroit, MI, United States

15:00 **4260.** **Clinical Protocol for Brain Tumour Patients using a 3T Hybrid MR-BrainPET**
Nadim Jon Shah[1,2], Irene Neuner[1,2], Joachim B. Kaffanke[1], Christian Filss[1], Gabriele Stoffels[1], Hans Herzog[1], Karl-Josef Langen[1]
[1]Institute of Neuroscience & Medicine, Research Centre Jülich, Jülich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

15:30 **4261.** **Diffusion Tensor Invasive Phenotypes Can Predict Time to Progression in Glioblastomas**
Laila A. Mohsen[1,2], Veronica Shi[3], Rajesh Jena[4], Jonathan H. Gillard[1], Stephen J. Price[3,5]
[1]University Department of Radiology, University of Cambridge, Cambridge, United Kingdom; [2]Radiology Department, Al-Menia University, Al-Menia, Egypt; [3]Neurosurgery Division, Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom; [4]Department of Oncology, Addenbrooke's Hospital, Cambridge, United Kingdom; [5]Wolfson Brain Imaging Centre, University of Cambridge, Cambridge, United Kingdom

Exhibition Hall Tuesday 13:30-15:30 Computer 106

13:30 **4262.** **Changes in Lipid Droplet Composition Detected by ^{1}H MRS During Cisplatin Treatment of DAOY Cells**
Xiaoyan Pan[1,2], Martin Wilson[1,2], Carmel McConville[1], Julian L. Griffin[3], Theodoros N. Arvanitis[2,4], Risto A. Kauppinen[5], Andrew C. Peet[1,2]
[1]Cancer Sciences, University of Birmingham, Birmingham, United Kingdom; [2]Birmingham Children's Hospital NHS Foundation Trust, Birmingham, United Kingdom; [3]Biochemistry, University of Cambridge, Cambridge, United Kingdom; [4]School of Electronic, Electrical & Computer Engineering, University of Birmingham, Birmingham, United Kingdom; [5]Department of Radiology, Dartmouth College, Hanover, NH, United States

14:00 **4263.** **Three-Dimensional (3D) Amide Proton Transfer (APT) Imaging of Human Brain Tumors at 3T**
Jinyuan Zhou[1,2], He Zhu[1,2], Michael Lim[3], Silun Wang[1], Alfredo Quinones-Hinojosa[3], Lindsay Blair[4], John Laterra[4], Peter Barker[1,2], Peter C. M. van Zijl[1,2], Jaishri Blakeley[4]

[1]Department of Radiology, Johns Hopkins University, Baltimore, MD, United States; [2]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Department of Neurosurgery, Johns Hopkins University, Baltimore, MD, United States; [4]Department of Neurology, Johns Hopkins University, Baltimore, MD, United States

14:30 **4264.** **Glutamate & Glutamine Concentrations in Recurrent High-Grade Gliomas.**
Alena Horska[1], Antonin Skoch[2], Eric Ford[1], Stuart S. Grossman[1], Jaishri O. Blakeley[1]
[1]Johns Hopkins University, Baltimore, MD, United States; [2]Institute for Clinical & Experimental Medicine, Prague, Czech Republic

15:00 **4265.** **Prognostic Imaging Markers in Patients with GBM: Comparison between Functional Versus Mean KPS Analysis**
Andrea Kassner[1], Igor Sitartchouk[1], Fang Liu[2], Jeremy Hoisak[3], Adam Gladwish[3], Normand Laperriere[3], Cynthia Menard[3]
[1]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [2]Diagnostic Imaging, Hospital for Sick Children, Toronto; [3]Radiation Oncology, University of Toronto, Toronto

Exhibition Hall Wednesday 13:30-15:30 Computer 106

13:30 **4266.** **Glioma Grading: Comparison of Parameters from Dynamic Contrast-Enhanced (DCE) MRI, Apparent Diffusion Coefficient (ADC), & Fractional Anisotropy (FA)**
Seung-Koo Lee[1], EunJu Kim[2], Hyun Seok Choi[1,3]
[1]Department of Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of; [2]Philips Healthcare; [3]Department of Radiology, Catholic University School of Medicine, Seoul, Korea, Republic of

14:00 **4267.** **Detection of Abnormal Water Exchange Rate in Brain Tumor Patients**
Young Ro Kim[1], Dominique L. Jennings, Thomas Benner, Seonjoo Kwon, Gyunggoo Cho[2], Jeong Kon Kim, Chris Farrar, Peter Caravan, Bruce Rosen, Greg Sorensen
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States; [2]Korea Basic Science Institute

14:30 **4268.** **Proton Spectroscopy for Lipid Characterisation in Paediatric Brain Tumours**
Antonio Napolitano[1], Fotios Savvopoulos[1], Timothy Jaspan[2], Richard G. Grundy[2], Dorothee P Auer[1]
[1]Academic Radiology, University of Nottingham, Nottingham, Nottighamshire, United Kingdom; [2]The Children's Brain Tumour Research Centre, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

15:00 **4269.** **Quantitative Susceptibility Mapping of Intracranial Tumors: Correlation with Histologic Grade**
Krishna Surapaneni[1], Craig Horenstein[2], Tian Liu[3], Cynthia Wisnieff[3], Yi Wang[4], Robert DeLaPaz[2]
[1]Radiology, Columbia University , New York, NY, United States; [2]Radiology, Columbia University, New York, NY, United States; [3]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [4]Radiology, Cornell University, NY, United States

Exhibition Hall Thursday 13:30-15:30 Computer 106

13:30 **4270.** **Classification of Tissue Oxygenation Properties Based on Simultaneous Dynamic δR_1 & δR_2* D(C)O_2E-MRI**
Stefanie Remmele[1], Andreas Müller[2], Frank Träber[2], Ingobert Wenningmann[3], Marec von Lehe[4], Juergen Gieseke[2,5], Sebastian Flacke[2,6], Winfried A. Willinek[2], Hans H. Schild[2], Jochen Keupp[1], Petra Mürtz[2]
[1]Philips Research Laboratories, Hamburg, Germany; [2]Department of Radiology, University of Bonn, Bonn, Germany; [3]Department of Anesthesiology, University of Bonn, Bonn, Germany; [4]Department of Neurosurgery, University of Bonn, Bonn, Germany; [5]Philips Healthcare, Best, Netherlands; [6]Department of Radiology, Lahey Clinic, Tufts University Medical School, MA, United States

14:00 **4271.** **SWAN Imaging Substantially Increases the Prevalence of Hemorrhage in the Wall of Brain Abscess -Its Implications in Clinical Interpretation**
Rakesh Kumar Gupta[1], Vaishali Tomar[1], Rishi Awasthi[1], Vikas Bharadwaj[2], Bal Kishan Ojha[2], Nuzhat Husain[3], Kashi Nath Prasad[4], Ramesh Venkatesan[5], Ram K. S. Rathore[6]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Neurosurgery, Chatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [3]Pathology, Chatrapati Sahu ji Maharaj Medical University, Lucknow, Uttar Pradesh, India; [4]Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Wipro-GE Healthcare, Bangalore, Karnataka, India; [6]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India

14:30 **4272.** **Functional & Structural Alterations in the Frontal Lobe in Acute Lymphoblastic Leukemia: A Combined fMRI & Voxel-Based Morphometry Study**
Byeong-Yeul Lee[1,2], Jianli Wang[1], Kayla Davidson[3], Paul J. Eslinger[1,4], Qing X. Yang[1,5]
[1]Center for NMR Research, Radiology, Hershey, PA, United States; [2]Bioengineering, Penn State College of Medicine, Hershey, PA, United States; [3]Psychology, Messiah College, Grantham, PA, United States; [4]Neurology, Penn State College of Medicine, Hershey, PA, United States; [5]Neurosurgery, Penn State College of Medicine, Hershey, PA, United States

15:00 **4273.** **Meningioma Metabolic Subgroups Revealed by NMR Spectroscopy**
Daniel Monleon[1], Jose Manuel Morales[2], Ana Gonzalez-Segura[1], Concha Lopez-Gines, Jose Manuel Gonzalez-Darder[3], Rosario Gil-Benso, Miguel Cerda-Nicolas
[1]Fundacion Investigacion HCUV, Valencia, Spain; [2]Universidad de Valencia, Valencia, Spain; [3]Hospital Clinico Valencia

Head & Neck MRI (including Cancer)

Exhibition Hall Monday 14:00-16:00 Computer 107

14:00 **4274.** **Real-Time 3D Motion Correction for High-Resolution MR Imaging of the Larynx**
Joëlle Karine Barral[1], Juan M Santos[2], Edward J Damrose[3], Nancy J. Fischbein[3,4], Dwight G. Nishimura[5]
[1]Bioengineering, Stanford University, Stanford, CA, United States; [2]Heart Vista, Inc., Los Altos, CA, United States; [3]Otolaryngology, Stanford University, Stanford, CA, United States; [4]Radiology, Stanford University, Stanford, CA, United States; [5]Electrical Engineering, Stanford University, Stanford, CA, United States

14:30 **4275.** **Automatic Generation of Movie with Sound During Speech Production for Assessing Velopharyngeal Insufficiency**
Andre J. W. van Der Kouwe[1], Pallavi Sagar[2], Amanda L. Silver[3], Stephen Maturo[3], Katherine Nimkin[2], Christopher J. Hartnick[3]
[1]Athinoula A. Martinos Center, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Pediatric Radiology, Department of Radiology, Massachusetts General Hospital, Boston, MA, United States; [3]Department of Otolaryngology, Massachusetts Eye & Ear Infirmary, Boston, MA, United States

15:00 **4276.** **Efficient CSF Flow Imaging with a Multiple Flexible Labeling Band Sequence at 3.0T**
Hao Shen[1], Nan Sun[2], Guang Cao[3], Jinfeng Li[4], Ailian Zhang[4]
[1]Global Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of; [2]MR Modality, GE Healthcare, Beijing, China, People's Republic of; [3]Global Applied Science Laboratory, GE Healthcare, Hong Kong, China, People's Republic of; [4]Department of Radiology, Chinese PLA General Hospital, Beijing, China, People's Republic of

15:30 **4277.** **Brain MRI Segmentation for Focal Cortical Dysplasia Lesion Detection**
Ivana Despotovic[1], Ief Segers[1], Ljiljana Platisa[1], Ewout Vansteenkiste[1], Aleksandra Pizurica[1], Karel Deblaere[2], Wilfried Philips[1]
[1]Department of Telecommunications & Information Processing TELIN-IPI-IBBT, Ghent University, Ghent, Belgium; [2]Department of Radiology, Ghent University Hospital, Ghent, Belgium

Exhibition Hall Tuesday 13:30-15:30 Computer 107

13:30 **4278.** **Effects of Nonrigid Registrations on DBM Analysis using SSD Model**
Zhaoying Han[1,2], Xue Yang[1], Bennett a Landman[1,2], John C. Gore[2], Benoit M. Dawant[1]
[1]Electrical Engineering, Vanderbilt University, Nashville, TN, United States; [2]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States

14:00 **4279.** **Characterization of the Vestibulo-Cochlear Nerve Motion *In Vivo* using a Phase Contrast MRI Sequence**
Marc Labrousse[1,2], Guillaume Calmon[1], Gabriela Hossu[1,3], André Chays[2], Jacques Felblinger[1], Marc Braun[1,4]
[1]IADI, INSERM U947, NANCY, France; [2]Faculty of Medecine & University Hospital, REIMS, France; [3]CIC-IT NANCY (INSERM CIT801), NANCY, France; [4]Faculty of Medecine & University Hospital, NANCY, France

14:30 **4280.** **Diffusion-Weighted Zoomed EPI of the Larynx & Oral Cavity/oropharynx**
Daniel Guo Quae Chong[1], Dechen Wangmo Tshering Vogel[1], Josef Pfeuffer[2], Andre de Oliveira[2], Berthold Kiefer[2], Johnannes Micheal Froehlich[1,3], Harriet Thoeny[1]
[1]Dept. of Diagnostic, Interventional & Pediatric Radiology (DIPR), Inselspital, Bern, Switzerland; [2]Siemens AG, Erlangen, Germany; [3]Guerbet AG, Zurich, Switzerland

15:00 **4281.** **Comparison of Vascularity Characteristics Between Primary Tumor & Metastatic Nodes in Head & Neck Cancer by DCE- & IVIM-MRI**
Yonggang Lu[1], Jacobus F. A. Jansen[2], Hilda E. Stambuk[1], Nancy Lee[1], Jason A. Koutcher[1], Amita Shukla-Dave[1]
[1]Memorial Sloan-Kettering Cancer Center, New York, NY, United States; [2]Maastricht University Medical Center, Maastricht, Netherlands

Exhibition Hall Wednesday 13:30-15:30 Computer 107

13:30 **4282.** **Coil Comparison for *In Vivo* Eye Imaging at 7T**
Peter A. Wassenaar[1], Kathryn Richdale[2], Petra Schmalbrock[1], Michael V. Knopp[1]

[1]Wright Center of Innovation, Department of Radiology, the Ohio State University, Columbus, OH, United States; [2]College of Optometry, the Ohio State University, Columbus, OH, United States

14:00 **4283.** **High Resolution Distortion-Free Diffusion-Tensor Imaging of Craniovertebral Junction**
Mami Iima[1], Akira Yamamoto[1], Tomohisa Okada[1], Mitsunori Kanagaki[1], Denis Le Bihan[2,3], Seiko Kasahara[1], Emiko Morimoto[1], Satoshi Nakajima[1], Ryo Sakamoto[1], Taha Mohamed Mehemed[1], Kaori Togashi[1]
[1]Department of Diagnostic Imaging & Nuclear Medicine, Kyoto University Graduate School of Medicine, Kyoto, Japan; [2]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan; [3]Neurospin, CEA-Saclay Center, Gif-sur-Yvette, France

14:30 **4284.** **Detection of Bone Metastases in Nasopharyngeal Carcinoma Patients: Accuracy of 3T Whole-Body MRI & FDG-PET-CT**
Charng-Chyi Shieh[1,2], Yu-Chun Lin[1,2], Jiun-Jie Wang[2,3], Yau-Yau Wai[1,2], Chun-Huang Hsieh[1], Sheng-Chieh Chan[3,4], Tzu-Chen Yen[3,4], Shu-Hang Ng[1,2]
[1]Medical Imaging & Intervention, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan; [2]Medical Imaging & Radiological Science, Chang Gung University, Taoyuan, Taiwan; [3]Molecular Imaging Center, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan; [4]Nuclear Medicine, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan

15:00 **4285.** **"Flow-Void Enhanced" Volumetric Black-Blood Angiography using 3D-TSE with Very Low-Constant Refocusing Flip Angles & Sensitized Flow Compensation**
Masami Yoneyama[1], Masnobu Nakamura[1], Tomoyuki Okuaki[1], Takashi Tabuchi[1], Atsushi Takemura[2], Makoto Obara[2], Junko Ogura[1]
[1]Medical Satellite Yaesu Clinic, Tokyo, Japan; [2]Philips Electronics Japan, Tokyo, Japan

Exhibition Hall Thursday 13:30-15:30 Computer 107

13:30 **4286.** **Measuring the Change in Mechanical Properties of Upper Airway Soft Tissues in Obstructive Sleep Apnea using Magnetic Resonance Elastography**
Elizabeth Nye[1], Shaokoon Cheng[1], Simon Gandevia[2], David McKenzie[3], Ralph Sinkus[4], Lynne Bilston[2]
[1]Neuroscience Research Australia, Sydney, NSW, Australia; [2]Neuroscience Research Australia, Australia; [3]University of New South Wales, Australia; [4]Centre de Recherches Biomédicales Bichat-Beaujon, France

14:00 **4287.** **MRI of Head & Neck Cancer Patients for Radiotherapy Treatment Planning**
Scott Hanvey[1], Martin Glegg, John Foster[2]
[1]Department of Clinical Physics & Bioengineering, Beatson West of Scotland Cancer Centre, Glasgow, Lanarkshire, United Kingdom; [2]Glasgow Cardiac Magnetic Resonance Unit

14:30 **4288.** **Echo-Planar Versus PROPELLER Diffusion-Weighted Imaging at 3T for Assessment of Thyroid Tumors**
Sidhartha Nagala[1], Mary A. McLean[2], Daniel Scoffings[3], Andrew N. Priest[3], Piyush Jani[1], John R. Griffiths[2]
[1]Otolaryngology, Addenbrooke's Hospital, Cambridge, Cambridgeshire, United Kingdom; [2]Cancer Research UK, Cambridge Research Institute, United Kingdom; [3]Radiology, Addenbrooke's Hospital, Cambridge, United Kingdom

15:00 **4289.** **Evaluation of the Vocal Tract with Real Time MRI in Professional Male Altos**
Matthias Echternach[1], Louisa Traser[2], Bernhard Richter[1], Michael Markl[3]
[1]Institute of Musicians`Medicine, Freiburg University Medical Center, Freiburg, Germany; [2]Charite, Berlin, Germany; [3]Department of Radiology, Medical Physics, Freiburg University Medical Center, Freiburg, Germany

Spine/Spinal Cord

Exhibition Hall Monday 14:00-16:00 Computer 108

14:00 **4290.** **Spinal Cord ^{1}H-MR Spectroscopy in Patients After Brachial Plexus Root Re-Implantation**
Enrico De Vita[1,2], Carolina Kachramanoglou[1], Claudia A. M. Wheeler-Kingshott[3], David L. Thomas[1], David Choi[1], Alan Thompson[1], Olga Ciccarelli[1]
[1]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [2]Lysholm Department of Radiology, National Hospital for Neurology & Neurosurgery, London, United Kingdom; [3]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom

14:30 **4291.** **Diffusion Weighted Imaging of Spinal Tumors with Reduced Field of View EPI**
Samantha J. Holdsworth[1], Rafael O'Halloran[1], Kristen Yeom[1], Murat Aksoy[1], Stefan Skare[2], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Palo Alto, CA, United States; [2]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

15:00 **4292.** **4D Flow Characteristics of Cerebrospinal Fluid Dynamics at the Craniocervical Junction & the Cervical Spinal Canal in Patients with Chiari Malformation Type I**
Alexander Christian Bunck[1], Jan-Robert Kröger[1], Alena Jüttner[1], Angela Brentrup[2], Barbara Fiedler[3], Gerard R. Crelier[4], Wolfram Schwindt[1], Walter Heindel[1], Thomas Niederstadt[1], David Maintz[1]
[1]Department of Clinical Radiology, University Hospital of Münster, Münster, Germany; [2]Department of Neurosurgery, University Hospital of Münster, Münster, Germany; [3]Department of Pediatrics, University Hospital of Münster, Münster, Germany; [4]Institute for Biomedical Engineering, ETH & University of Zurich, Zurich, Switzerland

15:30 **4293.** **Detection of Spinal Cord Abnormality on Diffusion Tensor Imaging (DTI) in Patients with Unilateral Deficit using Pattern Classification**
Arturo Cardenas-Blanco[1], Santanu Chakraborty[2], Fahad Alkherayf[3], Eve Tsai[3], Mark Schweitzer[2], Thanh Nguyen[2]
[1]Diagnostic Imaging Department, the Ottawa Hospital, Ottawa, Ontario, Canada; [2]Radiology, the Ottawa Hospital, Ottawa, Ontario, Canada; [3]Neurosurgery, the Ottawa Hospital, Ottawa, Ontario

Exhibition Hall Tuesday 13:30-15:30 Computer 108

13:30 **4294.** **Detection of Nerve Injury with Diffusion Weighted Wide Band Steady State Free Precession (DW-WBSSFP) in the Lumbar Spine**
Giovanna Danagoulian[1], Rivka R. Colen, Krishna Nayak[2], Srinivasan Mukundan, Ferenc Jolesz, Ehud J. Schmidt
[1]Brigham & Women's Hospital, Boston, MA, United States; [2]University of Southern California

14:00 **4295.** **Spatial Normalization of Cervical Cord 3D T_1-Weighted Images & Regional Assessment of Cord Atrophy with a Voxel-Based Approach**
Paola Valsasina[1], Maria Assunta Rocca[1], Stefania Sala[1], Mark Andrew Horsfield[2], Patrick Stroman[3], Martina Absinta[1], Giancarlo Comi[4], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Hospital, Milan, Italy; [2]Department of Cardiovascular Sciences, University of Leicester, Leicester, United Kingdom; [3]Centre for Neuroscience Studies, Queen's University, Kingston, Ontario, Canada; [4]Department of Neurology, San Raffaele Hospital, Milan, Italy

14:30 **4296.** **Peripheral Nerve Imaging with 3D Gradient Recalled Echo-Selective Species Imaging Sequence at 3.0T: A Preliminary Study**
Hao Shen[1], Guang Cao[2], Xin Lou[3], Ailian Zhang[3], Jinfeng Li[3], Zhikui Xiao[1], Qian Jiang[4], Anthony T. Vu[5]
[1]Global Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of; [2]Global Applied Science Laboratory, GE Healthcare, Hong Kong, China, People's Republic of; [3]Department of Radiology, Chinese PLA General Hospital, Beijing, China, People's Republic of; [4]MR Modality, GE Healthcare, Shanghai, China, People's Republic of; [5]MR PSD/Applications Engineering, GE Healthcare, Waukesha, WI, United States

15:00 **4297.** **Pain or No Pain: Paradigm to Image Lower Back Pain with fMRI**
Harish A. Sharma[1], Raj Gupta[2], William Olivero[3]
[1]Department of Medical Biophysics, University of Western Ontario, London, ON, Canada; [2]Medicine, University of Illinois; [3]Neurosurgery, Carle Foundation Hospital

Exhibition Hall Wednesday 13:30-15:30 Computer 108

13:30 **4298.** **Magnetic Resonance Spectroscopy of Human Cervical Spondylosis at 3T**
Rajakumar Nagarajan[1], Michael Albert Thomas[1], Benjamin M. Ellingson[1], Langston Holly[2], Noriko Salamon[1]
[1]Radiological Sciences, University of California Los Angeles, Los Angeles, CA, United States; [2]Neurosurgery, University of California Los Angeles

14:00 **4299.** **Evidence of Wallerian Degeneration in the Human Spinal Cord using *In Vivo* High-Resolution DTI & Magnetization Transfer**
Julien Cohen-Adad[1,2], Bradley Buchbinder[2,3], Lawrence L. Wald[1,4], Anne Louise Oaklander[2,3]
[1]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [2]Harvard Medical School, Boston, MA, United States; [3]Massachusetts General Hospital, Boston, MA, United States; [4]Harvard-MIT Division of Health Sciences and Technology, MIT, Cambridge, MA, United States

14:30 **4300.** **Understanding the fMRI Response to Thermal Stimuli in the Human Spinal Cord**
Christopher Alan Kidd[1], Rachael Lee Bosma[1], Patrick W. Stroman[1,2]
[1]Centre for Neuroscience Studies, Queen's University, Kingston, Ontario, Canada; [2]Departments of Diagnostic Radiology & Physics, Queen's University, Kingston, Ontario, Canada

15:00 **4301.** **MRI Monitoring of Neural Precursor Cell Transplantation Therapy in a Rat Spinal Cord Injury Model**
Rafal Janik[1], Greg Hawryluk[2,3], Kimberly Lara Desmond[4], Ryan Fobel[4], Micheal Fehlings[2,3], Greg J. Stanisz[1,4]

[1]Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [2]Division of Neurosurgery, University of Toronto, Toronto, Ontario, Canada; [3]Krembil Neuroscience Centre, Toronto Western Research Institute, Toronto, Ontario, Canada; [4]Department of Biophysics, University of Toronto, Toronto, Ontario, Canada

Exhibition Hall Thursday 13:30-15:30 Computer 108

13:30 4302. BLADE in Sagittal T_2-Weighted Imaging of the Cervical Spine: Value for Spinal Cord Lesions
Claudia Fellner[1], Cynthia Menzel[1,2], Christian Stroszczynski[1], Thomas Finkenzeller[1,3]
[1]Institute of Radiology, University Medical Center Regensburg, Regensburg, Germany; [2]Institute of Radiology & Neuroradiology, Krankenhaus Barmherzige Brüder, Regensburg, Germany; [3]Institute of Diagnostic & Interventional Radiology, Klinikum Weiden, Weiden, Germany

14:00 4303. Improved T_1 Weighted Dynamic Contrast Enhanced MRI to Probe Microvascularity & Assessment of Spine Bone Marrow
Mohan Pauliah[1], Kyung K. Peck[1,2], Yoshiya Josh Yamada[3], Eric Lis[1,4], Michelle S. Bradbury[1,5], Sasan Karimi[1]
[1]Radiology, Memorial Sloan Kettering Cancer Center, New York, United States; [2]Medical Physics, Memorial Sloan Kettering Cancer Center, New York, United States; [3]Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, United States; [4]Interventional Radiology, Memorial Sloan Kettering Cancer Center, New York, United States; [5]Molecular Imaging, Memorial Sloan Kettering Cancer Center, New York, United States

14:30 4304. Diffusion Tensor Imaging Characteristics of Normal Human Cervical Spinal Cord at 3T
Khin Khin Tha[1], Satoshi Terae[2], Kinya Ishizaka[2], Tomoyuki Okuaki[3], Makoto Hirotani[4], Kentaro Kobayashi[2], Marc van Cauteren[5], Hiroki Shirato[1]
[1]Dept. of Radiobiology & Medical Engineering, Hokkaido University Graduate School of Medicine, Sapporo, Hokkaido, Japan; [2]Dept. of Radiology, Hokkaido University Hospital; [3]Medical Satellite Yaesu Clinic; [4]Dept. of Neurology, Hokkaido University Graduate School of Medicine; [5]Philips Healthcare Asia Pacific

15:00 4305. Diffusion Tensor Imaging Changes in the Spinal Cord of Amyotrophic Lateral Sclerosis Patients
Wim Van Hecke[1], Louise Emsell[2], Caroline Sage[3], Stefan Sunaert[3], Paul M. Parizel[4]
[1]University of Antwerp, Antwerp, Belgium; [2]The Murdoch Childrens Research Institute, Australia; [3]University of Leuven, Belgium; [4]University of Antwerp, Belgium

Developing Brain I

Exhibition Hall Monday 14:00-16:00 Computer 109

14:00 4306. Infant 0-1-2 Brain Atlases for MRI Segmentation & Normalization
Feng Shi[1], Guorong Wu[1], Pew-Thian Yap[1], Hongjun Jia[1], John H. Gilmore[2], Weili Lin[1], Dinggang Shen[1]
[1]Department of Radiology & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

14:30 4307. Longitudinal DTI in Young Children with Prenatal Methamphetamine Exposure: A 3 Year Follow-Up Study
Linda Chang[1], Kazim Gumus[1], Ashley Saito[1], Aaron Hoo[1], Alexandra Pritchett[1], Daniel Alicata[1], Christine Cloak[1], Thomas Ernst[1]
[1]Department of Medicine, John A. Burns School of Medicine, University of Hawaii at Manoa, Honolulu, HI, United States

15:00 4308. Age Associated Changes in Subcortical Structures in Preadolescent Children
L. Tugan Muftuler[1], Angela T. Cheriyan[2], Kevin M. Head[3], Min-Ying Su[1], Claudia Buss[3], Curt A. Sandman[3], Elysia P. Davis[3]
[1]Center for Functional Onco-imaging, University of California, Irvine, CA, United States; [2]Biological Sciences, University of California, Irvine, CA; [3]Psychiatry & Human Behavior, University of California, Orange, CA

15:30 4309. Feasibility of Non-Invasive Quantitative MRI Measurements of Cerebral Vascular Reactivity using a Computer Controlled Stimulus in Children with Sickle Cell Disease
Andrea Kassner[1,2], Jackie Leung[2], Fatima Nathoo[3], Stephanie Dorner[4], Joseph A. Fisher[5], Manohar Shroff[2], Gabrielle de Veber[6], Suzan Williams[7]
[1]Medical Imaging, University of Toronto, Toronto, Ontario, Canada; [2]Diagnostic Imaging, the Hospital for Sick Children, Toronto, Ontario, Canada; [3]Respiratory therapy, the Hospital for Sick Children, Toronto, Ontario, Canada; [4]Thornhill Research Inc., Toronto, Ontario, Canada; [5]Physiology, University of Toronto, Toronto, Ontario, Canada; [6]Neurology, Hospital for Sick Children, Toronto, Ontario, Canada; [7]Hematology, Hospital for Sick Children, Toronto, Ontario, Canada

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13:30 4310. Neurogenetics in the Pediatric Brain: A ^{1}H MRS Study of Brain Development
Jack Knight-Scott[1], Sarah Andrea Wijtenburg[1]

[1]Radiology, CHOA, Atlanta, GA, United States

14:00 **4311.** **Identifying Growth Velocity Discontinuities in the First Postnatal Year Brain Development with Diffusion Tensor Imaging**
Yasheng Chen[1], Hongtu Zhu[2], Jiaping Wang[2], Hongyu An[1], Dinggang Shen[1], Weili Lin[1]
[1]Radiology, Univ. of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Biostatistics, Univ. of North Carolina at Chapel Hill, Chapel Hill, NC, United States

14:30 **4312.** **Development of Axonal Pathways in Preadolescent Children**
L. Tugan Muftuler[1], Anna Wiebel[2], Sandra Waeldin[2], Min-Ying Su[1], Claudia Buss[3], Curt A. Sandman[3], Elysia P. Davis[3]
[1]Center for Functional Onco-imaging, University of California, Irvine, CA, United States; [2]University of Trier, Germany; [3]Psychiatry & Human Behavior, University of California, Orange, CA

15:00 **4313.** **Temporal Evolution of Brain Metabolic Substrates Differs Among Major Anatomical Lobes During the First Months of Life in Human**
Yang Yang[1], Hongyu An[2], Feng Shi[2], Wei Gao[2], Dinggang Shen[2], Weili Lin[2]
[1]Department of Biomedical Engineering & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Department of Radiology & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 109

13:30 **4314.** **Elastic Registration Based Neonatal Brain Segmentation**
Petronella Anbeek[1], Britt J. M. van Kooij[1], Floris Groenendaal[1], Linda S. de Vries[1], Manon J. N. L. Benders[1]
[1]Neonatology, Wilhelmina Children's Hospital, Utrecht, Netherlands

14:00 **4315.** **Absolute Brain Metabolite Concentrations in Non-Acute Maple Syrup Urine Disease**
Emilie Ruth Muelly[1], Don C. Bigler[1], Kevin A. Strauss[2], Pavlina Todorova[3], D. Holmes Morton[2], Julie Mack[4], Arabinda Choudhary[4], David O. Aleman[1], Jeff Vesek[4], Megan Taylor Sutton[1], Scott C. Bunce[1], Gregory J. Moore[5]
[1]Center for Emerging Neurotechnology & Imaging, Penn State Hershey Neurosciences Institute, Penn State College of Medicine, Hershey, PA, United States; [2]Clinic for Special Children, Strasburg, PA; [3]Division of Basic Sciences, University of Texas Southwestern Medical Center, Dallas, TX; [4]Radiology, Penn State College of Medicine, Hershey, PA, United States; [5]Radiology, Geisinger Medical Center, Danville, PA

14:30 **4316.** **Longitudinal Guided Level-Sets for Consistent Neonatal Image Segmentation**
Li Wang[1], Feng Shi[1], John H. Gilmore[2], Weili Lin[3], Dinggang Shen[1]
[1]IDEA Lab, Department of Radiology & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [3]MRI Lab, Department of Radiology & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

15:00 **4317.** **Sharp Curvature in Frontal Lobe White Matter Pathways of Children with Autism Spectrum Disorder**
Jeong-Won Jeong[1,2], Ajay Kumar[1,2], Senthil K. Sundaram[1,2], Harry T. Chigani[1,2], Diane C. Chugani[2,3]
[1]Pediatrics, Neurology, Wayne State University, Detroit, MI, United States; [2]PET Center, Children's Hospital of Michigan, Detroit, MI, United States; [3]Radiology, Wayne State University, Detroit

Exhibition Hall Thursday 13:30-15:30 Computer 109

13:30 **4318.** **Impairment of the Medullary Veins on Neonatal Subependymal Hemorrhage using Susceptibility-Weighted Imaging**
Tetsu Niwa[1], Noriko Aida[1], Yasuhiko Tachibana[1], Reiko Watanabe[1], Tetsuhiko Okabe[1,2], Jun Shibasaki[3]
[1]Radiology, Kanagawa Children's Medical Center, Yokohama, Kanagawa, Japan; [2]Radiology, Yokohama City University , Yokohama, Japan; [3]Neonatology, Kanagawa Children's Medical Center

14:00 **4319.** **3-Tesla Cerebral Proton Magnetic Resonance Spectroscopy in Healthy Term & Extremely Preterm Infants**
Yuxiang Zhou[1], Nehal A. Parikh[2], Katrina Burson[2], Ponnada A. Narayana[1]
[1]Diagnostic & Interventional Imaging, University of Texas Health Science Center at Houston, Houston, TX, United States; [2]Dept. of Pediatrics, University of Texas Health Science Center at Houston, Houston, TX, United States

14:30 **4320.** **Longitudinal Analysis of Tissue Property Changes in Multi-Modal MRI of the Developing Preterm Brain**
Ahmed Serag[1], Paul Aljabar[1], Gareth Ball[2], Serena J. Counsell[2], James P. Boardman[2,3], Daniel Rueckert[1], Jo V. Hajnal[2]
[1]Department of Computing, Imperial College London, London, United Kingdom; [2]Imaging Sciences Department, MRC Institute of Clinical Sciences, Imperial College London, London, United Kingdom; [3]Simpson Centre for Reproductive Health, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

15:00 **4321.** **Automated Partial Volume Tissue Classification in Preterm Neonates**
Dallas Card[1], Revital Nossin-Manor[1,2], John G. Sled[3,4]

[1]Diagnostic Imaging, the Hospital for Sick Children, Toronto, Ontario, Canada; [2]Neurosciences & Mental Health, Research Institute, the Hospital for Sick Children, Toronto, Ontaro, Canada; [3]Physiology & Experimental Medicine, Research Institute, the Hospital for Sick Children, Toronto, Ontario, Canada; [4]Medical Biophysics, the University of Toronto, Toronto, Ontario, Canada

Developing Brain II

Exhibition Hall Monday 14:00-16:00 Computer 110

14:00 4322. Assessment of the Maturation of the Optic Radiation in Children & Adolescents with Probabilistic Tractography
Michael Dayan[1], Monica Munoz[2,3], Sebastian Jentschke[2,4], Martin J. Chadwick[2,5], Janine Cooper[2], Kate Riney[6], Faraneh Vargha-Khadem[2], Chris Alan Clark[1]
[1]Imaging & Biophysics, UCL Institute of Child Health, London, United Kingdom; [2]Developmental Cognitive Neuroscience Unit, UCL Institute of Child Health, London, United Kingdom; [3]School of Medicine, University of Castilla–La Mancha, Albacete, Spain; [4]Free University, Cluster of Excellence "Languages of Emotion", Berlin, Germany; [5]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom; [6]Neurosciences Unit, UCL Institute of Child Health, London, United Kingdom

14:30 4323. Time Course of Diffusion Restriction in Neonates with Hypoxic Ischemic Encephalopathy Treated with Hypothermia
Nathalie Bednarek[1], Jared Wilkinson[1], Amit Mathur[1], Preethi Srinivasakumar[1], Jeff Neil[1], Terrie Inder[1], Joshua Shimony[1]
[1]Washington University School of Medicine, St. Louis, MO, United States

15:00 4324. Swi Post Processing to Enhance Clinical Utility of Conventional 2D Gre in the Pediatric Neuroimaging
Salil Soman[1], Samantha J. Holdsworth[2], Patrick David Barnes[1], Roland Bammer[2], Kristen Yeom[1]
[1]Department of Radiology, Stanford University, Stanford, CA, United States; [2]Department of Radiology, Lucas Center, Stanford University, Stanford, CA, United States

15:30 4325. Grey & White Matter Differences in ^{1}H-MRS Metabolic Ratios in the Preterm Brain
Dallas Card[1], John G, Sled[2,3], Aideen M. Moore[4,5], Hilary E. Whyte[4,5], Margot J. Taylor[1,6]
[1]Diagnostic Imaging, the Hospital for Sick Children, Toronto, Ontario, Canada; [2]Physiology & Experimental Medicine, Research Institute, the Hospital for Sick Children, Toronto, Ontario, Canada; [3]Medical Biophysics, the University of Toronto, Toronto, Ontario, Canada; [4]Neonatology, the Hospital for Sick Children, Toronto, Ontario, Canada; [5]Paediatrics, the University of Toronto, Toronto, Ontario, Canada; [6]Medical Imaging, the University of Toronto, Toronto, Ontario, Canada

Exhibition Hall Tuesday 13:30-15:30 Computer 110

13:30 4326. Feasibility of Functional Resting-State Measurements of the Fetal Brain
Veronika Schöpf[1,2], Gregor Kasprian[1], Christian M. Mitter[1], Peter C. Brugger[3], Daniela Prayer[1]
[1]Department of Radiology, Division of Neuroradiology, Medical University Vienna, Vienna, Austria; [2]MR Centre of Excellence, Medical University Vienna, Vienna, Austria; [3]Center of Anatomy & Cell Biology, Integrative Morphology Group, Medical University Vienna, Vienna, Austria

14:00 4327. DTI Based Tractography of Fetal Periventricular Crossroad Regions *In Utero*
Christian Mitter[1], Gregor Kasprian[1], Peter Christian Brugger[2], Laura Perju-Dumbrava[3], Ivica Kostovic[4], Daniela Prayer[1]
[1]Department of Radiology, Division of Neuroradiology, Medical University of Vienna, Vienna, Austria; [2]Center of Anatomy & Cell Biology, Medical University of Vienna, Vienna, Austria; [3]Institute of Neurology, Medical University of Vienna, Vienna, Austria; [4]Croatian Institute for Brain Research, University of Zagreb School of Medicine, Zagreb, Croatia

14:30 4328. Atlas-Based T_2 Relaxometry of the Developing Child Brain: Serial & Cross-Sectional Analysis
Khader M. Hasan[1], Indika S. Walimuni[1], Larry A. Kramer[1], Linda Ewing-Cobbs[2]
[1]Radiology, UTHSCH, Houston, TX, United States; [2]Pediatrics, UTHSCH, Houston, TX, United States

15:00 4329. Simultaneous High Resolution *Ex-Vivo* Diffusion Imaging of White Matter & Muscles
Thomas Benner[1], Allison Stevens[1], Michelle Roy[1], Bruce Fischl[1]
[1]Radiology, Athinoula A. Martinos Center, Charlestown, MA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 110

13:30 4330. Relationship between the Arcuate Fasciculus & Cortical Structure in Pediatric Patients with Polymicrogyria: A Pilot Study.
Michael John Paldino[1], Rudolph Pienaar[2], Annapurna Poduri[3], Katyucia Macedo Rodrigues[1], Patricia Ellen Grant[1]
[1]Radiology, Children's Hospital Boston, Boston, MA, United States; [2]Newborn Medicine, Children's Hospital Boston, Boston, MA, United States; [3]Neurology, Children's Hospital Boston, Boston, MA, United States

14:00 **4331.** **Do DTI Indices Correlate with Neurological Status of Neonates with Congenital Heart Disease Before & After Cardiopulmonary Bypass Surgery?**
Rabia Liamlahi[1], Walter Knirsch[1], Bea Latal[2], Michael von Rhein[3], Ianina Scheer[4], Hintendu Dave[5], Achim Schmitz[6], Vera Bernet[7], Christian Kellenberger[4], Malek I. Makki[4]
[1]Cardiology, University Children Hospital, Zurich, Switzerland; [2]Child Development, University Children Hospital, Zurich, Switzerland; [3]Child Development Center, University Children Hospital, Zurich, Switzerland; [4]Diagnostic Imaging, University Children Hospital, Zurich, Switzerland; [5]Congenital Cardiovascular Surgery, University Children Hospital, Zurich; [6]Anesthesia, University Children Hospital, Zurich, Switzerland; [7]Pediatric Intensive Care, University Children Hospital, Zurich, Switzerland

14:30 **4332.** **Application of Snapshot Inversion Recovery (SNAPIR) in Neonatal Patients with Snaphot-to-Volume-Reconstruction (SVR): A Pilot Study at 3 Tesla**
Ash Ederies[1], Amy K. McGuinness[2], Nora Tusor[1], Joanna M. Allsop[2], Serena J. Counsell[2], Rita G. Nunes[2], Zhi Qing Wu[2], Jo V. Hajnal[2], Mary A. Rutherford[2], Christina Malamateniou[2]
[1]Neonatal Imaging Group, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom; [2]Robert Steiner MRI Unit, Imaging Sciences Department, MRC Clinical Sciences Centre, Hammersmith Hospital, Imperial College London, London, United Kingdom

15:00 **4333.** **Comparison of DTI Metrics in Neonates Obtained with Manual ROI Analysis vs. Modified TBSS**
Nancy K. Rollins[1,2], Youngseob Seo[1,2], Lina Chalak[1,2], Jonathan M. Chia[3], Gareth Ball[4], Zhiyue J. Wang[1,2]
[1]University of Texas Southwestern Medical Center, Dallas, TX, United States; [2]Children's Medical Center, Dallas, TX, United States; [3]Philips Healthcare, Cleveland, OH, United States; [4]Imperial College and MRC Clinical Science Center, London, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 110

13:30 **4334.** **Quantitative Assessment of the Cortico-Spinal Tracts in Neonates with Congenital Heart Disease Following Cardiopulmoray Bypass Surgery.**
Malek I. Makki[1], Rabia Liamlahi[2], Hintendu Dave[3], Ianina Scheer[1], Walter Knirsch[2], Bea Latal[4], Achim Schmitz[5], Vera Bernet[6], Christian Kellenberger[1]
[1]Diagnostic Imaging, University Children Hospital, Zurich, Switzerland; [2]Cardiology, University Children Hospital, Zurich, Switzerland; [3]Congenital Cardiovascular Surgery, University Children Hospital, Zurich; [4]Child Development Center, University Children Hospital, Zurich, Switzerland; [5]Anesthesia, University Children Hospital, Zurich, Switzerland; [6]Pediatric Intensive Care, University Children Hospital, Zurich, Switzerland

14:00 **4335.** **The Application of T_2 Star Weighted Angiography (SWAN) in Hypoxic-Ischemic Encephalopathy**
Zhengrong Xia[1], Yuhua Li[1], He Wang[2]
[1]Department of Radiology, Xinhua Hospital Affiliated to Shanghai Jiaotong University School of Medicine, Shanghai, China, People's Republic of; [2]Global Applied Science LaboratoryGlobal Applied Science Laboratory, GE Healthcare

14:30 **4336.** **3D Proton MR Spectroscopy of Normal-Appearing Brain in Tuberous Sclerosis Complex**
Ivan Kirov[1], Sarah Milla[1], Joseph Oved[2], Orrin Devinsky[3], Howard Weiner[3], Oded Gonen[1]
[1]Radiology, New York University, New York, NY, United States; [2]School of Medicine, New York University, New York, United States; [3]Neurosurgery, New York University, New York, NY, United States

15:00 **4337.** **A Lobar-Based Curvature Analysis of Normal & Polymicrogyria Brain Surfaces in Children**
Michael Paldino[1,2], Daniel Ginsburg[1], Patricia Ellen Grant[1,2], Rudolph Pienaar[1,2]
[1]Radiology, Children's Hospital Boston, Boston, MA, United States; [2]Radiology, Harvard Medical School, Boston, MA, United States

Imaging of Psychiatric Disorders

Exhibition Hall Monday 14:00-16:00 Computer 111

14:00 **4338.** **Brain Functional Connectivity Reveals Abnormal Brain Development in High Risk Bipolar Infants**
Wei Gao[1], John Gilmore[2], Shun Xu[3], Weili Lin
[1]Radiology & BRIC, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [2]Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States; [3]Computer Science, University of North Carolina at Chapel Hill

14:30 **4339.** **Emotional Processing & Brain Metabolism After Pharmacological Stimulation with Ketamine**
Milan Scheidegger[1,2], Simone Grimm[3,4], Alexander Fuchs[5], Rainer Kraehenmann[4], Heinz Boeker[4], Erich Seifritz[4], Peter Boesiger[5], Martin Walter[6], Anke Henning[5]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich , Switzerland; [2]Clinic of Affective Disorders & General Psychiatry, Psychiatric University Hospital Zurich, Zurich , Switzerland; [3]Cluster Languages of Emotion, Freie Universität Berlin, Berlin, Germany; [4]Clinic of Affective Disorders & General Psychiatry, Psychiatric University Hospital Zurich, Zurich, Switzerland; [5]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland; [6]Clinical Affective Neuroimaging Laboratory, Psychiatric University Hospital, Magdeburg, Germany

15:00 **4340.** **Blunted Hemodynamic Response to a Methylphenidate Challenge in Regular Users of Amphetamine: An ASL Based Pharmacological MRI Study**

Marieke L. J. Schouw[1], Matthan W. A. Caan[1], Aart J. Nederveen[1], Liesbeth Reneman[1]
[1]Radiology, AMC, Amsterdam, Netherlands

15:30 **4341.** **New Insight Into Mechanism of Epileptogenesis with Dynamic T_1 Contrast Perfusion MRI in Calcified Neurocysticercosis**

Rakesh Kumar Gupta[1], Rishi Awasthi[1], Prativa Sahoo[2], Avantika Verma[3], Vimal Kumar Paliwal[4], Ramesh Venkatesan[5], Kashi Nath Prasad[3], Ram K. S. Rathore[2]
[1]Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [2]Mathematics & Statistics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; [3]Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [4]Neurology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, Uttar Pradesh, India; [5]Wipro-GE Healthcare, Bangalore, Karnataka, India

Exhibition Hall Tuesday 13:30-15:30 Computer 111

13:30 **4342.** **DTI Detection of Fear Conditioning Induced Microstructural Plasticity**

Abby Ying Ding[1,2], Iris Y. Zhou[1,2], Qi Li[3,4], Grainne M. McAlonan[3,4], Ed X. Wu[1,2]
[1]Laboratory of Biomedical Imaging & Signal Processing, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [2]Department of Electrical & Electronic Engineering, the University of Hong Kong , Hong Kong, Hong Kong SAR, China, People's Republic of; [3]Department of Psychiatry, the University of Hong Kong, Hong Kong, Hong Kong SAR, China, People's Republic of; [4]Centre for Reproduction Growth & Development, the University of Hong Kong , Hong Kong, Hong Kong SAR, China, People's Republic of

14:00 **4343.** **Correlation between Clinical Data & Metabolic Abnormalities in Inferior Colliculus for Schizophrenic Patients with Auditory Hallucinations**

Bernardo Celda[1], MCarmen Martínez-Bisbal[2], Julio Sanjuan[3], Eduardo J. Aguilar[4], Luis Martí-Bonmatí[5], Enrique Mollá[6], Beatriz Martínez-Granados[7]
[1]Química Física, Universitat Valencia-CIBER-BBN, Burjassot, Valencia, Spain; [2]Química Física, CIBER-BBN/Universitat de Valencia, Burjassot, Valencia, Spain; [3]Psychiatry, Universitat de Valencia-CIBERSAM, Valencia, Spain; [4]Psychiatry, Hospital Sagunto-CIBERSAM, Sagunto, Valencia, Spain; [5]Radiology, Hospital Dr. Peset, Valencia, Spain; [6]Radiology, Hospital La Ribera, Alzira, Valencia, Spain; [7]Química Física, Universitat de Valencia, Burjassot, Valencia, Spain

14:30 **4344.** **Effects of Prenatal Cocaine Exposure on Human Brain Structures**

Xiangchuan Chen[1], Claire D. Coles[2], Mary E. Lynch[2], Zhihao Li[1], Xiaoping Hu[1]
[1]Biomedical Imaging Technology Center, Emory University, Atlanta, GA, United States; [2]Department of Psychiatry & Behavioral Sciences, Emory University, Atlanta, GA, United States

15:00 **4345.** **Gray Matter Differences Due to Weeks of Excessive Long-Distance Running & After Recovery Revealed by Voxel-Based Morphometry (VBM)**

Arthur Peter Wunderlich[1], Sonja Faust[2], Wolfgang Freund[1], Uwe Schütz[1], Christan Billich[1]
[1]Dept. for Diagnostic & Interventional Radiology, Univ.-Clinic Ulm, Ulm, Germany; [2]Univ.-Clinic Ulm, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 111

13:30 **4346.** **Real-Time Monitoring of *In Vivo* Human Brain Amino Acid Neurotransmitter Response to a Single Intravenous Dose of Ketamine in Major Depressive Disorder using the ^{1}H MRS J-Editing Technique**

Dikoma C. Shungu[1], Matthew S. Milak[2], Larence S. Kegeles[2], Caitlin Proper[2], Xiangling Mao[1], J. John Mann[2]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Psychiatry, College of Physicians & Surgeons of Columbia University, New York, NY

14:00 **4347.** **Brain Stem Motion in Acqueductal Stenosis Hydrocephalus**

Guillaume Calmon[1,2], Olivier Balédent[3], Marc Labrousse[1,4], Catherine Gondry-Jouet[3], Anthony Fichten[3], Gabriela Hossu[5], Jacques Felblinger[1,5], Marc Braun[1,6]
[1]IADI, INSERM U947, Nancy, France; [2]GE Healthcare, Buc, France; [3]Amiens University Hospital, Amiens, France; [4]Faculty of Medecine & University Hospital, Reims, France; [5]INSERM CIT801, CIC-IT, Nancy, France; [6]Faculty of Medecine & University Hospital, Nancy, France

14:30 **4348.** **A Multimodal Imaging Study of Never-Medicated Adults with Schizophrenia**

Elisa Canu[1], Roberto Gasparotti[2], Federica Agosta[1], Paolo Valsecchi[3], Giancarlo Comi[4], Elisabetta Pagani[1], Emilio Sacchetti[3], Massimo Filippi[1]
[1]Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, Scientific Institute & University Hospital San Raffaele, Milan, Italy; [2]Department of Diagnostic Imaging, University of Brescia, Spedali Civili, Brescia, Italy; [3]Department of Psychiatry, Brescia University School of Medicine, Brescia, Italy; [4]Department of Neurology, Scientific Institute & University Hospital San Raffaele, Milan, Italy

15:00 **4349.** **Correlating Functional & Structural Connectivity of Default Mode Network with Dosage of Two Candidate Vulnerability Genes of Schizophrenia**
Su-Chun Huang[1,2], Chih-Min Liu[3], Hai-Go Hwu[3], Chen-Chung Liu[3], Fa-Hsuan Lin[1], Wen-Yih Isaac Tseng[1,2]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan; [3]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan

Exhibition Hall Thursday 13:30-15:00 Computer 111

13:30 **4350.** **Proinflammatory Cytokines Correlates with MR Imaging in Patients with Extrahepatic Portal Venous Obstruction Patients Having Minimal Hepatic Encephalopathy**
A. Yadav[1], S. K. Yadav[2], A. Srivastava[3], S. K. Yachha[3], M. A. Thomas[4], V. A. Saraswat, R. K. Gupta[1]
[1]Departments of Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, Lucknow, UP, India; [2]Departments of Radiodiagnosis, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, lucknow, UP, India; [3]Pediatric Gastroenterology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India, lucknow, UP, India; [4]Department of Radiological Sciences, David Geffen School of Medicine at UCLA, California, California, Los Angels, United States

14:00 **4351.** **MRI Morphological & Functional Connectivity Analysis of Thalamus in Mild Traumatic Brain Injury**
Yongxia Zhou[1], Lin Tang[1], Daniel K. Sodickson[1], Joseph Reaume[1], Robert I. Grossman[1], Yulin Ge[1]
[1]Radiology/Center for Biomedical Imaging, New York University School of Medicine, New York, NY, United States

14:30 **4352.** **γ-Aminobutyric Acid (GABA) Modulates Functional Connectivity Network Strength in Adolescent Major Depressive Disorder**
Vilma Gabbay[1], Benjamin Ely[1], Soraja Bangaru[1], Michael Milham[1], Xiangling Mao[2], Francisco X. Castellanos[1], Dikoma C. Shungu[2]
[1]Child Study Center, New York University School of Medicine, New York, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States

Pulse Sequences & Applications

Exhibition Hall Monday 14:00-16:00 Computer 112

14:00 **4353.** **Superbalanced Steady State Free Precession**
Oliver Bieri[1]
[1]Department of Medical Radiology, Radiological Physics, University of Basel Hospital, Basel, Switzerland

14:30 **4354.** **Measurement of Cerebral Metabolic Rate of Oxygen (CMRO2) using QBOLD Technique in Resting State**
Xiang He[1], Dmitriy A. Yablonskiy[2], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Mallinckrodt Institute of Radiology, Washington Uninversity in St Louis, St Louis, MO, United States

15:00 **4355.** **Dynamic 3D Visualization of Vocal Tract Shaping During Speech**
Yinghua Zhu[1], Yoon-Chul Kim[1], Michael I. Proctor[1], Shrikanth S. Narayanan[1], Krishna S. Nayak[1]
[1]Ming Hsieh Department of Electrical Engineering, University of Southern California, Los Angeles, CA, United States

15:30 **4356.** **Measurement of Eye PO2 using T_1 Mapping Has Precision ~8 MmHg & Shows Oxygenation Gradient between Retina & Lens**
Nicholas G. Dowell[1], Edward H. Hughes[2], Paul S. Tofts[1]
[1]Clinical Imaging Sciences Centre, Brighton & Sussex Medical School, Brighton, Sussex, United Kingdom; [2]Sussex Eye Hospital, Brighton, Sussex, United Kingdom

Pulse Sequences - Methods

Exhibition Hall Wednesday 13:30-15:30 Computer 113

13:30 **4357.** **Retrospective Reconstruction of Black-Blood Golden Ratio Radial Imaging for Visualization of Heart Valves at Arbitrary Dynamic Time Points**
Claudia Prieto[1], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

14:00 **4358.** **Highly Efficient Isotropic Whole-Heart Imaging using Radial Phase Encoding PAWS**
Christoph Kolbitsch[1], Claudia Prieto[1], Jouke Smink[2], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [2]Philips Healthcare, Best, Netherlands

14:30 **4359.** **Five-Dimensional Free-Breathing Cardiac MRI using a 3D Cones Trajectory**
Holden H. Wu[1,2], Dwight G. Nishimura[2], Michael V. McConnell[1,2], Bob S. Hu[2,3]
[1]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Palo Alto Medical Foundation, Palo Alto, CA, United States

15:00 **4360.** **Ultra-Fast Volumetric Functional Imaging using Single Shot Concentric Shells Trajectories**
Benjamin Zahneisen[1], Thimo Grotz[1], Maxim Zaitsev[1], Juergen Hennig[1]
[1]University Hospital Freiburg, Freiburg, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 113

13:30 **4361.** **Improved through Slice Resolution in Continuously Moving Table MRI by using a Modified Helical Trajectory**
Florian Hoffmann[1], Philipp Ehses[2], Michael Völker[2], Felix A. Breuer[2], Martin Blaimer[2], Peter M. Jakob[1,2]
[1]Department of Experimental Physics 5, University of Würzburg, Würzburg, Bayern, Germany; [2]Research Center Magnetic Resonance Bavaria (MRB), Würzburg, Germany

14:00 **4362.** **3D Fast Spin Echo Novel View Ordering for Variable TE**
Mitsuharu Miyoshi[1], Naoyoki Takei[1], Ananth J. Madhuranthakam[2], Hiroyuki Kabasawa[1]
[1]Global Applied Science Laboratory, GE Healthcare Japan, Hino, Tokyo, Japan; [2]Global Applied Science Laboratory, GE Healthcare, Boston, MA, United States

14:30 **4363.** **Fast Susceptibility Weighted Imaging (SWI) using Readout-Segmented (RS)-EPI**
Samantha J. Holdsworth[1], Rafael O'Halloran[1], Stefan Skare[2], Roland Bammer[1]
[1]Department of Radiology, Stanford University, Palo Alto, CA, United States; [2]Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

15:00 **4364.** **Golden Step Phase Encoding: Simultaneous Real-Time & ECG Gated-Cine Parallel MRI with Retrospective Selection of Temporal Resolution, Acceleration Rate & Acquisition Duration**
J. Andrew Derbyshire[1], Haris Saybasili[1], Liheng Guo[2], Ozan Sayin[2], Peter Kellman[1], Robert J. Lederman[1], Daniel A. Herzka[2]
[1]National Heart, Lung & Blood Institute, NIH, Bethesda, MD, United States; [2]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States

Pulse Sequences - Water & Fat

Exhibition Hall Thursday 13:30-16:00 Computer 114

13:30 **4365.** **Simultaneous T_2 & Lipid Quantitation using IDEAL-CPMG**
Robert Leonard Janiczek[1,2], Giulio Gambarota[2], Christopher D. J. Sinclair[1], Tarek A. Yousry[1], John S. Thornton[1], Xavier Golay[1], Rexford D. Newbould[1,2]
[1]University College London, London, United Kingdom; [2]GSK Clinical Imaging Centre, London, United Kingdom

14:30 **4366.** **Rapid Fat-Water-Separated Cardiac Cine Imaging using Concentric Rings & K-T BLAST**
Holden H. Wu[1,2], Taehoon Shin[2], Dwight G. Nishimura[2], Michael V. McConnell[1,2]
[1]Cardiovascular Medicine, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

15:00 **4367.** **T_2/PD Weighted Water & Fat Seperation on Low-Field Scanner**
Cong Zhao[1], Guobin Li[1], Dehe Weng[1], Weijun Zhang[1], Mathias Nittka[2], Vladimir Jellus[2]
[1]Siemens Mindit Magnet Resonance Co. Ltd, ShenZhen, GuangDong, China, People's Republic of; [2]Siemens Healthcare Sector, Erlangen, Germany

Dynamic Imaging & Compressed Sensing

Exhibition Hall Monday 14:00-16:00 Computer 115

14:00 **4368.** **Combination of Compressed Sensing, Parallel Imaging & Partial Fourier for Highly-Accelerated 3D First-Pass Cardiac Perfusion MRI**
Li Feng[1,2], Jian Xu[3,4], Daniel Kim[2], Leon Axel[2], Daniel K Sodickson[2], Ricardo Otazo[2]
[1]Sackler Institute of Graduate Biomedical Sciences, New York University School of Medicine, New York, NY, United States; [2]Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]Siemens Medical Solutions USA; [4]Polytechnic Institute of NYU, Brooklyn, NY, United States

14:30 4369. Accelerated Multi-TI Spiral MRI using Compressed Sensing with Temporal Constraints
Xiao Chen[1], Michael Salerno[2,3], Frederick H. Epstein[2], Craig H. Meyer[1]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States; [3]Cardiology, University of Virginia, Charlottesville, VA, United States

15:00 4370. Golden Angle Radial Cardiac Imaging without ECG Gating using Nonconvex Compressed Sensing
André Fischer[1,2], Nicole Seiberlich[3], Mark A. Griswold[3], Peter M. Jakob[1,2], Felix A. Breuer[1]
[1]Research Center Magnetic Resonance Bavaria (MRB) e.V., Wuerzburg, Germany; [2]Department of Experimental Physics 5, University of Wuerzburg, Wuerzburg, Germany; [3]Department of Radiology, University Hospitals, Cleveland, OH, United States

15:30 4371. Local Versus Global Low-Rank Promotion in Dynamic MRI Series Reconstruction
Joshua Trzasko[1], Armando Manduca[1]
[1]Mayo Clinic, Rochester, MN, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 115

13:30 4372. On the Spatiotemporal Bandwidth of Cardiac Motion
Marijn E. Brummer[1], Mireia Sanz-Blasco[2], Sumati Krishnan[3], Lei Hou Hamilton[4], Senthil Ramamurthy[3], David Moratal[5]
[1]Pediatrics & Radiology, Emory University, Atlanta, GA, United States; [2]Universitat Politècnica de València, València, Spain; [3]Pediatrics, Emory University, Atlanta, GA, United States; [4]Bioengineering, Georgia Institute of Technology, Atlanta, GA, United States; [5]Center for Biomaterials & Tissue Engineering, Universitat Politècnica de València, València, Spain

14:00 4373. 3D Dynamic Contrast Enhanced Imaging of Liver at 250ms Temporal Resolution
Bo Xu[1,2], Pascal Spincemaille[2], Mukta Agrawal[2], Gang Chen[3], Martin Prince[2], Yi Wang[1,2]
[1]Biomedical Engineering, Cornell University, New York, NY, United States; [2]Weill Cornell Medical College, New York, NY, United States; [3]Polytechnic Institute of New York University, New York, NY, United States

14:30 4374. Parallel Reconstruction for Cartesian Golden Step MRI with Arbitrary Temporal Resolution, Field-Of-View & Acceleration Rate.
Haris Saybasili[1], J. Andrew Derbyshire[1], Liheng Guo[2], Ozan Sayin[2], Annette M. Stine[1], Robert J. Lederman[1], Daniel A. Herzka[2]
[1]National Heart Lung & Blood Institute, National Institutes of Health, Bethesda, MD, United States; [2]Department of Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States

15:00 4375. Image Reconstruction from Highly Undersampled (K, T)-Space Data with Joint Partial Separability & Sparsity Constraints
Bo Zhao[1], Justin Haldar[1], Anthony Christodoulou[1], Zhi-Pei Liang[1]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 115

13:30 4376. Cardiac Perfusion Imaging using a Combination of CAIPIRINHA & Compressed Sensing
Daniel Stäb[1], Tobias Wech[1], Christian Oliver Ritter[1], Dietbert Hahn[1], Herbert Köstler[1]
[1]Institute of Radiology, University of Würzburg, Würzburg, Bavaria, Germany

14:00 4377. k-T ISD: Dynamic Cardiac Imaging using Compressed Sensing with Iterative Support Detection
Dong Liang[1], Edward V. R. DiBella[2], Rong-Rong Chen[3], Leslie Ying[1]
[1]Department of Electrical Engineering & Computer Science,University of Wisconsin – Milwaukee, MIlwaukee, WI, United States; [2]Department of Radiology,University of Utah, Salt Lake City, UT, United States; [3]Department of Electrical & Computer Engineering,University of Utah, Salt Lake City, UT, United States

14:30 4378. Accelerating Phase Contrast MR Angiography by Simplified Skipped Phase Encoding & Edge Deghosting with Array Coil Enhancement (S-SPEED-ACE)
Zheng Chang[1], Xiang Qing-San[2,3], Hao Shen[4], Jim Ji[5], Fang-Fang Yin[1]
[1]Department of Radiation Oncology, Duke University, Durham, NC, United States; [2]Department of Physics & Astronomy, University of British Columbia, Vancouver, BC, Canada; [3]Department of Radiology, University of British Columbia, Vancouver, BC, Canada; [4]Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of; [5]Department of Electrical & Computer Engineering, Texas A&M University, College Station, TX, United States

15:00 4379. Improved Compressed Sensing Reconstruction in Dynamic Contrast Enhanced MR Angiography by Means of Principal Component Analysis (PCA)
Felix A. Breuer[1], Andre Fischer[1], Nicole Seiberlich[2], Philipp Ehses[1], Martin Blaimer[1], Daniel Neumann[1], Peter M. Jakob[1,3], Mark A. Griswold[2]
[1]Research Center Magnetic Resonance Bavaria, Würzburg, Germany; [2]Radiology, Case Western Reserve University, Cleveland, OH, United States; [3]Experimental Physics 5, University of Würzburg, Würzburg, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 115

13:30 4380. k-T Sparse GROWL: A Fast & Accurate Algorithm for Highly Accelerated Dynamic Imaging
Feng Huang[1], Wei Lin[1], George Randy Duensing[1], Arne Reykowski[1]
[1]Invivo Corporation, Gainesville, FL, United States

14:00 4381. Fast Functional Imaging using Interleaved Data Acquisition & Compressed Sensing
Thimo Grotz[1], Benjamin Zahneisen[1], Maxim Zaitsev[1], Jürgen Hennig[1]
[1]Dept. of Radiology - Medical Physics, University Medical Center Freiburg, Freiburg, BW, Germany

14:30 4382. High Resolution Structural Free-Breathing Cardiac MRI using K-T SLR
Yue Hu[1], Sajan Goud Lingala[2], Mathews Jacob[2]
[1]Electrical & Computer Engineering, University of Rochester, Rochester, NY, United States; [2]Biomedical Engineering, University of Rochester, Rochester, NY, United States

15:00 4383. A Model-Based Compressed Sensing Method for Fast Cardiac T_1 Mapping in Small Animals
Wen Li[1,2], Mark Griswold[1,3], Xin Yu[1,3]
[1]Biomedical Engineering Department, Case Western Reserve University, Cleveland, OH, United States; [2]Case Center for Imaging Research, Case Western Reserve University, Cleveland, OH, United States; [3]Radiology Department, Case Western Reserve University

The Many Faces of Image Reconstruction

Exhibition Hall Monday 14:00-16:00 Computer 116

14:00 4384. Bloch Equation Based Algebraic Reconstruction for MRI using Frequency-Modulated Pulses
Naoharu Kobayashi[1], Steen Moeller[1], Jang-Yeon Park[2], Michael Garwood[1]
[1]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, United States; [2]School of Biomedical Engineering, College of Biomedical & Health Science, Konkuk University, Chungju, Korea, Republic of

14:30 4385. Correcting K-Trajectory by using Multiple Function Models of Gradient Waveform for Ultrashort TE(UTE)
Masahiro Takizawa[1], Hikaru Hanada[1], Kuniharu Oka[1], Tetsuhiko Takahashi[1]
[1]MRI System Division, Hitachi Medical Corporation, Kashiwa, Chiba, Japan

15:00 4386. A Wavelet Fusion Approach to the Reconstruction of Isotropic-Resolution MR Images from Anisotropic Orthogonal Scans
Iman Aganj[1], Christophe Lenglet[2], Essa Yacoub[2], Guillermo Sapiro[1], Noam Harel[2]
[1]Electrical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Center for Magnetic Resonance Research, University of Minnesota, United States

15:30 4387. MR Based Limited-Field-of-View SPECT Image Reconstruction
Keumsil S. Lee[1,2], Werner W. Roeck[1,3], Grant T. Gullberg[4], Orhan Nalcioglu[1,3]
[1]Tu & Yuen Center for Functional Onco-Imaging, University of California, Irvine, Irvine, CA, United States; [2]Department of Electrical Engineering & Computer Science, University of California, Irvine, Irvine, CA, United States; [3]Department of Radiological Sciences, University of California, Irvine, Irvine, CA, United States; [4]Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 116

13:30 4388. Lesion & Deep Grey Matter Visualization in Phase Images using a Local Polynomial Filter with Moving Window
Sarah E. Riske[1], Amir Eissa[1], Sandra M. Meyers[2], Alan H. Wilman[1]
[1]University of Alberta, Edmonton, Alberta, Canada; [2]University of Alberta,, Edmonton, Alberta, Canada

14:00 4389. Improved Interleaved Single-Shot Z-Shim EPI Via Spatial & Temporal Encoding
W. Scott Hoge[1], Hong Pan[1], Huan Tan[2], Emily Stern[1], Robert A. Kraft[2]
[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Virginia-Tech Wake Forest School of Biomedical Engineering, Winston-Salem, NC, United States

14:30 4390. Rapid Sample Density Estimation for 3D Trajectories
Nicholas Ryan Zwart[1], James Grant Pipe[1]
[1]Neuroimaging Research, Barrow Neurological Institute, Phoenix, AZ, United States

15:00 4391. Correction of EPI Nyquist Ghosts Via GESTE with Spatial Calibration
W. Scott Hoge[1], Huan Tan[2], Zhikui Xiao[3], Robert A. Kraft[2]

[1]Radiology, Brigham & Women's Hospital, Boston, MA, United States; [2]Virginia-Tech Wake Forest School of Biomedical Engineering, Winston-Salem, NC, United States; [3]Global Applied Science Laboratory, GE Healthcare, Beijing, China, People's Republic of

Parallel Imaging

Exhibition Hall Monday 14:00-16:00 Computer 117

14:00 4392. Through-Time Spiral GRAPPA for Real-Time Cardiac Imaging
Nicole Seiberlich[1], Gregory Lee[1], Philipp Ehses[2], Jeffrey Duerk[1,3], Mark Griswold[1,3]
[1]Radiology, University Hospitals of Cleveland, Cleveland, OH, United States; [2]Research Center for Magnetic Resonance Bavaria (MRB), Wuerzburg, Germany; [3]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

14:30 4393. 3D Radial Parallel Imaging for Bandwidth Limited Acquisitions.
Steen Moeller[1], Curtis A. Corum[1], Djaudat Idiyatullin[1], Michael Garwood[1]
[1]University of Minnesota, Minneapolis, 55455, United States

15:00 4394. Kernel GRAPPA: A GENERAL NONLINEAR FRAMEWORK for GRAPPA REGULARIZATION
Yuchou Chang[1], Dong Liang[1], Leslie Ying[1]
[1]Electrical Engineering, University of Wisconsin - Milwaukee, Milwaukee, WI, United States

15:30 4395. CS-GRAPPA: Improving GRAPPA using Cross Sampling
Haifeng Wang[1], Dong Liang[1], Kevin F. King[2], Gajanan Nagarsekar[1], Leslie Ying[1]
[1]Department of Electrical Engineering & Computer Science, University of Wisconsin-Milwaukee, Milwaukee, WI, United States; [2]Global Applied Science Lab, General Electric Healthcare, Waukesha, WI, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 117

13:30 4396. IMPATIENT MRI: Illinois Massively Parallel Acceleration Toolkit for Image Reconstruction with ENhanced Throughput in MRI
Xiao-Long Wu[1], Jiading Gai[2], Fan Lam[1,2], Maojing Fu[1,2], Justin P. Haldar[1,2], Yue Zhuo[2,3], Zhi-Pei Liang[1,2], Wen-Mei Hwu[1,2], Bradley P. Sutton[2,3]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3]Bioengineering Department, University of Illinois at Urbana-Champaign, Urbana, IL, United States

14:00 4397. Parallel Imaging using a Non-Uniform Undersampling Trajectory
Yu Li[1], Charles L. Dumoulin[1]
[1]Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

14:30 4398. Hadamard Encoded Time-Dependent Phase Constraint Parallel Image Reconstruction
Jacob R. Hoberg[1], Nan-Kuei Chen[1]
[1]BIAC, Duke University, Durham, NC, United States

15:00 4399. Simultaneous Acquisition of Image & Navigator Slices using CAIPIRINHA
Zarko Celicanin[1], Frank Preiswerk[2], Patrik Arnold[2], Philippe Cattin[2], Klaus Scheffler[1], Francesco Santini[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland; [2]Medical Imaging Analysis Center, University of Basel, Basel, Switzerland

Exhibition Hall Wednesday 13:30-15:30 Computer 117

13:30 4400. The Accuracy of Noise Covariance Estimation & Its Relationship with Signal-To-Noise Ratio in Parallel Magnetic Resonance Imaging
Yu Ding[1], Yiu-Cho Chung[2], Orlando Simontetti
[1]The Ohio State University, Columbus, OH, United States; [2]Siemens Medical Solutions

14:00 4401. Theoretical Signal-to-Noise Penalty in Parallel Ultra-Low-Field Magnetic Resonance Imaging
Fa-Hsuan Lin[1,2], Panu Vesanen[3], Jaakko O. Nieminen[3], John W. Belliveau[2], Risto J. Ilmoniemi[3]
[1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; [2]Martinos Center, Massachusetts General Hospital, Charlestown, MA, United States; [3]Department of Biomedical Engineering and Computational Science (BECS), Aalto University, Espoo, Finland

14:30 4402. G-Factor as Regularization Parameter in Regularized SENSE Reconstruction
Hammad Omer[1], Robert Dickinson
[1]Imperial College London, London, United Kingdom

15:00 **4403.** **Suppression of Residual Noise & Artifact in Parallel Imaging by Iterative Noquist**
Lei Hou Hamilton[1], Sumati Krishnan[2], Senthil Ramamurthy[2], David Moratal[3], Marijn Brummer[2]
[1]School of Electrical & Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States; [2]School of Medicine, Emory University, Atlanta, GA, United States; [3]Center for Biomaterials & Tissue Engineering, Universitat Politècnica de València, València, Spain

Exhibition Hall Thursday 13:30-15:30 Computer 117

13:30 **4404.** **Optimized RX Field Homogeneity for SENSE Imaging in Parallel Transmit MR**
Hanno Homann[1], Tim Nielsen[2], Kay Nehrke[2], Ingmar Graesslin[2], Olaf Dössel[1], Peter Börnert[2]
[1]Institute of Biomedical Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany; [2]Philips Research Europe, Hamburg, Germany

14:00 **4405.** **Temporal Filtering Effects in Dynamic Parallel MRI: Comparing Radial & Cartesian Sampling**
Irene Paola Ponce Garcia[1], Martin Blaimer[2], Felix Breuer[2], Peter M. Jakob[1,2], Mark A. Griswold[3], Peter Kellman[4]
[1]Experimental Physics 5, University of Würzburg, Würzburg, Bavaria, Germany; [2]Research Center Magnetic Resonance Bavaria e.V (MRB), Würzburg, Bavaria, Germany; [3]Department of Radiology, University Hospitals of Cleveland & Case Western Reserve University, Cleveland, OH, United States; [4]Laboratory of Cardiac Energetics, National Institutes of Health, National Heart, Lung & Blood Institute, Bethesda, MD, United States

14:30 **4406.** **Time-Resolved MRA with Data-Driven Parallel Imaging using Calibration Over Multiple Time-Frames & Interleaved Variable Density Cartesian Acquisition**
James H. Holmes[1], Kang Wang[2], Philip J. Beatty[3], Reed F. Busse[4], Frank R. Korosec[5], Lauren A. Keith[2], Christopher J. Francois[6], Scott B. Reeder[5], Jean H. Brittain
[1]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States; [2]Medical Physics, University of Wisconsin-Madison, Madison, WI; [3]Global Applied Science Laboratory, GE Healthcare, Thornhill, ON, Canada; [4]MR Research, GE Healthcare, Waukesha, WI; [5]Radiology, University of Wisconsin-Madison, Madison, WI; [6]Radiology, University of Wisconsin-Madison, Madision, WI

15:00 **4407.** **Adaptive Self-Calibrating in K-Space Parallel Magnetic Resonance Imaging using Kalman Filter**
Suhyung Park[1], Jin-Suck Suh[1,2], Jaeseok Park[2]
[1]Medical Science, Yonsei University, Seoul, Korea, Republic of; [2]Radiology, Yonsei University, Seoul, Korea, Republic of

Pulse Sequences - RF

Exhibition Hall Tuesday 13:30-15:30 Computer 118

13:30 **4408.** **Simultaneous B_1 & B_0 Mapping using Dual Echo Actual Flip Angle Imaging (DE-AFI)**
Claudia Lenz[1], Oliver Bieri[1], Klaus Scheffler[1], Francesco Santini[1]
[1]Radiological Physics, University of Basel Hospital, Basel, Switzerland

14:00 **4409.** **T_1-Nonlinearity Corrections for Fast Transmit-Array B_1^+-Mapping of the Human Brain in the Small-Tip-Angle Regime**
Martijn Anton Cloos[1,2], Nicolas Boulant[1], Guillaume Ferrand[2], Michel Luong[2], Christopher J. Wiggins[1], Denis Le Bihan[1], Alexis Amadon[1]
[1]LRMN, CEA, DSV, I2BM, NeuroSpin, Gif-Sur-Yvette, ile-de-France, France; [2]CEA, DSM, IRFU, Gif-Sur-Yvette, ile-de-France, France

14:30 **4410.** **An Experimental Comparison of B_1-Mapping Techniques at Two Field Strengths**
Rolf Pohmann[1]
[1]Magnetic Resonance Center, Max Planck Institute for Biological Cybernetics, Tübingen, Germany

15:00 **4411.** **Fast B_1 Mapping using a STEAM-Based Bloch-Siegert Preparation Pulse**
Kay Nehrke[1], Peter Börnert[1]
[1]Philips Research Laboratories, Hamburg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 118

13:30 **4412.** **Gradient & Frequency Modulated Excitation for a Tailored Spatial Trajectory with Two-Dimensional Time Encoding for Fourier-Free Imaging**
Angela Lynn Styczynski Snyder[1], Curt Corum[2], Steen Moeller[2], Nathan Powell[3], Michael Garwood[2]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; [2]Department of Radiology, University of Minnesota; [3]Department of Neuroscience, University of Minnesota

14:00 **4413.** **Simultaneous Bloch Siegert B_1^+ & T_2 Mapping in One Experiment using a Multi Spin Echo Sequence**
Volker Sturm[1], Thomas Christian Basse-Lüsebrink[1,2], Thomas Kampf[1], Guido Stoll[2], Peter Michael Jakob[1]
[1]Experimental Physics 5, University of Würzburg, Würzburg, Germany; [2]Neurology, University of Würzburg, Würzburg, Germany

14:30 **4414.** **A Novel B_1-Insensitive Outer Volume Suppression Pulse**
Travis Benjamin Smith[1], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

15:00 **4415.** **Time Interleaved Acquisition of Modes (TIAMO): An Analysis of SAR & Image Contrast Implications**
Stephan Orzada[1,2], Stefan Maderwald[1,3], Benedikt A. Poser[1,4], Sören Johst[1,2], Mark E. Ladd[1,2], Stephan Kannengiesser[5], Andreas K. Bitz[1,2]
[1]Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, NRW, Germany; [2]Department of Diagnostic & Interventional Radiology & Neuroradiology, University Hospital Essen, Essen, NRW, Germany; [3]University of Duisburg-Essen, Essen, NRW, Germany; [4]Donders Institute for Brain, Cognition & Behaviour, Centre for Cognitive Neuroimaging, Radboud University Nijmegen, Nijmegen, Netherlands; [5]Siemens Healthcare Sector, Erlangen, Germany

B_1 & Mapping

Exhibition Hall Monday 14:00-16:00 Computer 119

14:00 **4416.** **Saturated Double Angle Method with Radial Sampling**
Liyong Chen[1,2], Edward V. R. DiBella[1,2]
[1]Utah Center for Advanced Imaging Research, Department of Radiology, University of Utah, Salt Lake City, UT, United States; [2]Department of Bioengineering, University of Utah, Salt Lake City, UT, United States

14:30 **4417.** **A New Phase-Based Method for Rapid 3D B_1 Mapping using Double RF Pulses**
Yulin V. Chang[1]
[1]Mechanical Engineering, Washington University, St. Louis, MO, United States

15:00 **4418.** **Comparison of Four Phase Based Methods for the B_1^+ Mapping at 7T**
Flavio Carinci[1,2], Federico von Samson-Himmelstjerna[1,3], Davide Santoro[1], Tomasz Lindel[1,4], Matthias Dieringer[1,5], Frank Seifert[1,4], Jan Sobesky[3,6], Thoralf Niendorf[1,5]
[1]Berlin Ultra-High Field Facility (BUFF), Max Delbrück Center for Molecular Medicine (MDC), Berlin, Germany; [2]Department of Physics, Insubria University, Como, Italy; [3]Center for Stroke Research Berlin (CSB), Charitè Universitaetsmedizin Berlin, Berlin, Germany; [4]Physikalisch-Technische Bundesanstalt (PTB); [5]Experimental & Clinical Research Center (ECRC)), Charitè Campus Berlin, Berlin, Germany; [6]Department of Neurology, Charitè Universitaetsmedizin Berlin, Berlin, Germany

15:30 **4419.** **Reduction of Required Gradient Spoiler Size for AFI B_1 Mapping**
Kim Shultz[1], Greig Scott[1], John Pauly[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 119

13:30 **4420.** **On the Effectiveness of RF Spoiling at 7T**
Douglas A. C. Kelley[1,2], Janine M. Lupo[2]
[1]Global Applied Science Laboratory, GE Healthcare, San Francisco, CA, United States; [2]Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States

14:00 **4421.** **Asymmetric Field Distribution in B_1^+ & B_1^- Maps are Caused by Phase Differences in Field Components in the Laboratory Frame**
Hidehiro Watanabe[1], Nobuhiro Takaya[1], Fumiyuki Mitsumori[1]
[1]Environmental Chemistry Division, National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan

14:30 **4422.** **3D Slab Selective AFI Utilizing a Thin Slab Approach**
Christopher Thomas Sica[1], Christopher M. Collins[1]
[1]Radiology, the Pennsylvania State University, Hershey, PA, United States

15:00 **4423.** **Sa2RAGE Sequence Improvements & *In-Vivo* Brain RF-Shimming at 7 Tesla**
Florent Eggenschwiler[1], Arthur William Magill[1,2], Tobias Kober[1], Rolf Gruetter[1,3], José Pedro Marques[1,2]
[1]EPFL, Laboratory for Functional & Metabolic Imaging, Lausanne, Vaud, Switzerland; [2]University of Lausanne, Department of Radiology, Lausanne, Vaud, Switzerland; [3]Universities of Geneva & Lausanne, Department of Radiology, Switzerland

Exhibition Hall Wednesday 13:30-15:30 Computer 119

13:30 4424. Statistical Analysis of B_1 Mapping Techniques
Daniel Joseph Park[1], Ahsan Javed[1], Neal Kepler Bangerter[1,2], Mohammad Mehdi Khalighi[3], Glen R. Morrell[2]
[1]Electrical & Computer Engineering, Brigham Young University, Provo, UT, United States; [2]Department of Radiology, University of Utah, Salt Lake City, UT, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

14:00 4425. Theoretical & Experimental Efficiency & Optimization of Flip Angle Mapping Techniques
Trevor Wade[1,2], Charles McKenzie[2,3], Brian Rutt[4]
[1]Robarts Research Institute, London, Ontario, Canada; [2]Biomedical Engineering, the University of Western Ontario, London, Ontario, Canada; [3]Medical Biophysics, the University of Western Ontario, London, Ontario, Canada; [4]Department of Radiology, Stanford University, Stanford, CA, United States

14:30 4426. A Short TR, MFA Approach to Simultaneous B_1+ & T_1 Mapping
Christopher Thomas Sica[1], Christopher M. Collins[1]
[1]Radiology, the Pennsylvania State University, Hershey, PA, United States

15:00 4427. B_1-Mapping with the Transient Phase of SSFP
Carl Ganter[1], Marcus Settles[1], Klaus Scheffler[2], Oliver Bieri[2]
[1]Department of Radiology, Technische Universität München, Munich, Germany; [2]Division of Radiological Physics, University of Basel Hospital, Basel, Switzerland

Exhibition Hall Thursday 13:30-15:30 Computer 119

13:30 4428. Fast 3D B_1 Mapping with Single-Shot EPI
Jay Moore[1,2], Marcin Jankiewicz[1,3], Adam W. Anderson[1,4], John C. Gore[1,4]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Physics & Astronomy, Vanderbilt University, Nashville, TN, United States; [3]Department of Radiology & Radiological Sciences, Vanderbilt University; [4]Department of Biomedical Engineering, Vanderbilt University

14:00 4429. *In-Vivo* RF Receiver Sensitivity Measurement using Phase-Based B_1+ Mapping on a Reverse-Oriented Subject
Seung-Kyun Lee[1], William Thomas Dixon[1]
[1]GE Global Research, Niskayuna, NY, United States

14:30 4430. Multi-Slice B_1+ Shimming for 7T MRI
Andrew T. Curtis[1], Kyle M. Gilbert[1], Martyn L. Klassen[1], Joseph S. Gati[1], Ravi S. Menon[1]
[1]Centre for Functional & Metabolic Mapping, University of Western Ontario, London, Ontario, Canada

15:00 4431. RF Pulse Optimization for Bloch-Siegert B_1^+ Mapping
Mohammad Mehdi Khalighi[1], Brian K. Rutt[2], Manojkumar Saranathan[2], Adam B. Kerr[3]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Department of Radiology, Stanford University, Stanford, CA, United States; [3]Department of Electrical Engineering, Stanford University, Stanford, CA, United States

Tailoring Excitation with Parallel Transmission & Advanced Pulse Design

Exhibition Hall Monday 14:00-16:00 Computer 120

14:00 4432. Relaxation-Enhanced Multiple Inner-Volume Imaging using Parallel 3D Spatially Selective Excitation
Johannes Thomas Schneider[1,2], Martin Haas[2], Wolfgang Ruhm[1], Juergen Hennig[2], Peter Ullmann[1]
[1]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [2]Dept. of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

14:30 4433. Selective Excitation of Arbitrary Three-Dimensional Targets on a Human MR System using Parallel Transmit
Martin Haas[1], Jeff Snyder[1], Johannes T. Schneider[1,2], Peter Ullmann[2], Denis Kokorin[1,3], Hans-Peter Fautz[4], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Bruker BioSpin MRI GmbH, Ettlingen, Germany; [3]International Tomography Center, Novosibirsk, Russian Federation; [4]Siemens Healthcare, Erlangen, Germany

15:00 4434. Sparse Parallel Transmit Excitation Trajectory Design for Rapid Inner-Volume Excitation
Cem Murat Deniz[1,2], Dong Chen[3], Leeor Alon[2,4], Ryan Brown[4], Hans-Peter Fautz[5], Daniel K. Sodickson[4], Yudong Zhu[4]
[1]Center for Biomedical Imaging , Department of Radiology, NYU School of Medicine, New York, NY, United States; [2]Sackler Institute of Graduate Biomedical Sciences, NYU School of Medicine, New York, NY, United States; [3]Center for Mathematical Science, Technical University of Munich, Munich, Germany; [4]Center for Biomedical Imaging, Department of Radiology, NYU School of Medicine, New York, NY, United States; [5]Siemens Medical Solutions, Erlangen, Germany

15:30 **4435.** **Volume Localization using Adiabatic Inversion Pulses in FAIR Imaging**
Ziqi Sun[1], Sergey Petryakov[1], George Caia[1], Alex Samouilov[1], Jay L. Zweier[1]
[1]Davis Heart & Lung Research Institute, the Ohio State University, Columbus, OH, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 120

13:30 **4436.** **Large Tip Angle Segmented RF Design for Multi-Dimensionally Selective Imaging & Spectroscopy with Parallel Transmit**
Martin Haas[1], Jeff Snyder[1], Peter Ullmann[2], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Department of Radiology Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Bruker BioSpin MRI GmbH, Ettlingen, Germany

14:00 **4437.** **Flexibly Shaped Saturation Band Excitation using 7T Parallel Transmit System**
Borjan Gagoski[1], Khaldoun Makhoul[2,3], Dieter Ritter[4], Kawin Setsompop[2,3], Josef Pfeuffer[4], Himanshu Bhat[5], Philipp Hoecht[5], Michael Hamm[5], Ulrich Fontius[4], Lohith Kini[1], Joonsung Lee[1], Lawrence L. Wald[2,6], Elfar Adalsteinsson[1,6]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]A.A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, MA, United States; [3]Harvard Medical School, Boston, MA, United States; [4]Siemens Healthcare, Erlangen, Germany; [5]Siemens Healthcare, Charlestown, MA, United States; [6]Harvard-MIT Division of Health Sciences & Technology, MIT, Cambridge, MA, United States

14:30 **4438.** ***In Vivo* Zoom Imaging using Transmit SENSE**
Ingmar Graesslin[1], Sebastian Boetzl[1], Ulrich Katscher[1], Kay Nehrke[1], Bjoern Annighoefer[2], Giel Mens[3], Peter Börnert[1]
[1]Philips Research Laboratories, Hamburg, Germany; [2]TU Hamburg-Harburg, Hamburg, Germany; [3]Philips Healthcare, Best, Netherlands

15:00 **4439.** **Practical Considerations for the Design of Parallel Transmission Pulses at Ultra-High Field**
Tiejun Zhao[1], Hai Zheng[2], Yik-Kiong Hue[3], Tamer Ibrahim,,[3], Yongxian Qian[3], Fernando Boada[2,3]
[1]Siemens Medical Solutions, Pittsburgh, PA, United States; [2]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 120

13:30 **4440.** **Characterization & Correction of Eddy Currents for Ultra-High Field Parallel Transmission with RF Pulse Design**
Hai Zheng[1], Tiejun Zhao[2], Yongxian Qian[3], Tamer Ibrahim[1,3], Fernando Boada[1,3]
[1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; [2]Siemens Medical Solutions, Pittsburgh, PA, United States; [3]Radiology, University of Pittsburgh, Pittsburgh, PA, United States

14:00 **4441.** **Parallel Transmission in Human Brain at 9.4T Counteracting Eddy Current Induced Excitation Errors in RF Pulse Design**
Xiaoping Wu[1], Gregor Adriany[1], Kamil Ugurbil[1], P-F. Van De Moortele[1]
[1]CMRR, Radiology, University of Minnesota, Minneapolis, MN, United States

14:30 **4442.** **An Interleaved Spatial-Spectral Pulse for Imaging Large Chemical-Shift Components**
Jing Chen[1], Jing An[2], Yan Zhuo[1]
[1]State Key Laboratory of Brain & Cognitive Science, Inst. of Biophysics, Chinese Academy of Sciences, Beijing, China, People's Republic of; [2]Siemens Healthcare, MR Collaboration NE Asia, Siemens Mindit Magnetic Resonance, China, People's Republic of

15:00 **4443.** **RF Energy Reduction by Parallel Transmission using Large-Tip-Angle Composite Pulses**
Rene Gumbrecht[1,2], Elfar Adalsteinsson[3,4], Paul Müller[2], Hans-Peter Fautz[1]
[1]Siemens Healthcare, Erlangen, Germany; [2]Department of Physics, Friedrich-Alexander University, Erlangen, Germany; [3]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [4]Harvard-MIT Division of Health Sciences & Technology, Massachusetts Institute of Technology, Cambridge, MA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 120

13:30 **4444.** **B_1 Inhomogeneity Mitigation in the Human Brain at 7T with Selective Pulses by using Average Hamiltonian Theory**
Nicolas Boulant[1], Martijn Cloos[1], Alexis Amadon[1]
[1]NeuroSpin, CEA Saclay, Saclay, France

14:00 **4445.** **Non-Slice Selective Uniform Tipping RF Pulse Design for 3D MRI at High Field**
Hui Liu[1,2], Gerald B. Matson[1,3]

[1]Center for Imaging of Neurodegenerative Diseases (CIND), Veterans Affairs Medical Center, San Francisco, CA, United States; [2]Northern California Institute for Research & Education, San Francisco, CA, United States; [3]University of California, San Francisco,CA, United States

14:30 4446. T_2-Weighting Enhancement using Pseudo-Echoes Generated by Selective Adiabatic Refocusing Pulses in a CPMG Pulse Sequence
Ziqi Sun[1]
[1]Davis Heart & Lung Research Institute, the Ohio State University, Columbus, OH, United States

15:00 4447. Fast Spin Echo Imaging with Quadratic Phase-Modulated Non-CPMG Echo Train in Parallel Transmit – a Simulation Study
Seung-Kyun Lee[1], Mika W. Vogel[2], William A. Grissom[2], Graeme C. McKinnon[3], Patrick H. Le Roux[4]
[1]GE Global Research, Niskayuna, NY, United States; [2]Advanced Medical Applications Laboratory, GE Global Research, Munich, Bavaria, Germany; [3]Applied Science Lab, GE Healthcare, Waukesha, WI, United States; [4]Applied Science Lab, GE Healthcare, Palaiseau, France

Quantitative MRI

Exhibition Hall Monday 14:00-16:00 Computer 121

14:00 4448. Experimental Evaluation of RF Non-Uniformity Correction in the Mapping of the Proton Density
Vincent Gras[1], Zaheer Abbas[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine 4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich, Germany; [2]Faculty of Medicine, Department of Neurology, RWTH Aachen University, Aachen, Germany

14:30 4449. Quantitative Water Content Mapping at 1.5 & 3 Tesla Field Strength
Vincent Gras[1], Zaheer Abbas[2], Anna-Maria Oros-Peusquens[3], Klaus Hans Manfred Möllenhoff[3], Fabian Keil[3], Miriam Rabea Kubach[1], Nadim Jon Shah[1,4]
[1]Institute of Neuroscience & Medicine 4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich , Germany; [2]Institute of Neuroscience & Medicine 4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich , Germany; [3]Institute of Neuroscience & Medicine 4, Medical Imaging Physics, Forschungszentrum Jülich GmbH, Jülich, Germany; [4]Faculty of Medicine, Department of Neurology, RWTH Aachen University, Aachen, Germany

15:00 4450. Quantitative Magnetic Resonance Imaging in Light-Chain (AL) Amyloidosis: Preliminary Experience
Stephan William Anderson[1], Jennifer Ellis-Ward[2], Erskine Hawkins[3], James A. Hamilton[4], Carl J. O'Hara[5], Lawreen H. Connors[6], Jorge A. Soto[1], David C. Seldin[2], Hernan Jara[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States; [2]Hematology & Medical Oncology, Boston University Medical Center; [3]Boston University School of Medicine; [4]Physiology & Biophysics, Boston University Medical Center; [5]Pathology & Laboratory Medicine, Boston University Medical Center; [6]Biochemistry, Boston University School of Medicine

15:30 4451. Characterization of Modified Look Locker (MOLLI) using Bloch Simulations & Corroboration with Scan Measurements
Neville D. Gai[1], Christian Stehning[2], Marcelo Nacif[1], David A. Bluemke[1,3]
[1]Radiology & Imaging Sciences, National Institutes of Health, Bethesda, MD, United States; [2]Philips Research Europe, Hamburg, Germany; [3]NIBIB, Bethesda, MD, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 121

13:30 4452. Comparison of Different EPI-Based Approaches to Measure T_2' in Human Brain for the Purpose of Oxygenation Measurements
Thomas Christen[1], Heiko Schmiedeskamp[1], Matus Straka[1], Roland Bammer[1], Greg Zaharchuk[1]
[1]Department of radiology, Stanford University, Stanford, CA, United States

14:00 4453. On the T_1 of Fat Calculated from a Segmented Look Locker Scout Scan & Its Implications in Cardiac Imaging
Neville D. Gai[1], Christian Stehning[2], Saman Nazarian[3], Evrim Turkbey[1], David A. Bluemke[1,4]
[1]Radiology & Imaging Sciences, National Institutes of Health, Bethesda, MD, United States; [2]Philips Research Europe, Hamburg, Germany; [3]Division of Cardiology, Johns Hopkins University, Baltimore, United States; [4]NIBIB, Bethesda, MD, United States

14:30 4454. Accurate T_1 Measurement with IR-Prepared Segmented Gradient Echo & a New Regression Algorithm
Haosen Zhang[1], Kevin Hitchens[1], Qing Ye[1], Erik B. Schelbert[2], Chien Ho[1]
[1]Pittsburgh NMR Center for Biomedical Research, Department of Biological Science, Carnegie Mellon University, Pittsburgh, PA, United States; [2]Department of Medicine, University of Pittsburgh, Pittsburgh, PA, United States

15:00 4455. Non-Exponential T_2^* Decay in White Matter
Peter van Gelderen[1], Jacco A. de Zwart[1], Jongho Lee[1], Pascal Sati[2], Daniel S. Reich[2], Jeff H. Duyn[1]

[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Translational Neuroradiology Unit, Neuroimmunology Branch, NINDS, National Institutes of Health, Bethesda, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 121

13:30 4456. Fast Radio-Frequency Enforced Steady State (FRESS) Spin Echo MRI for Quantitative T_2 Mapping
Jerry S. Cheung[1], Enfeng Wang[1,2], XiaoAn Zhang[2], Emiri Mandeville[3], Eng H. Lo[3], A. Gregory Sorensen[1], Phillip Zhe Sun[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH & Harvard Medical School, Charlestown, MA 02129, United States; [2]Department of Radiology, 3rd Affiliated Hospital, Zhengzhou University, China, People's Republic of; [3]Neuroprotection Research Laboratory, Department of Radiology & Neurology, MGH and Harvard Medical School, Charlestown, MA 02129, United States

14:00 4457. Quantitative T_1 Estimation using Tissue Specific Imaging
Arezou Koohi[1], Vasiliki N. Ikonomidou[1]
[1]Electrical & Computer Engineering, George Mason University, Fairfax, VA, United States

14:30 4458. Single-Slice Mapping of Submillisecond T_2 using Spin Echo Prepared Ultra-Short Echo Time Imaging
Stefan Kirsch[1], Lothar R. Schad[1]
[1]Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

15:00 4459. Effect of the Slice Profile on the T_1 Measurement with Steady-State Magnetization
Jung-Jiin Hsu[1]
[1]Radiology, University of Miami School of Medicine, Miami, FL, United States

Exhibition Hall Thursday 13:30-15:30 Computer 121

13:30 4460. T_2* Myelin Water Imaging with BmGESEPI for Macroscopic Field Inhomogeneity Compensation
Yoonho Nam[1], Eung-Yeop Kim[2], Dosik Hwang[1], Dong-Hyun Kim[1]
[1]Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of; [2]Radiology, Yonsei University, Seoul, Korea, Republic of

14:00 4461. Simulation of the Filtering Effect of the FLASH Readout on Saturation Recovery T_1 Evaluation
Moritz Cornelius Berger[1], Wolfhard Semmler[1], Michael Bock[1]
[1]Medical Physics in Radiology, German Cancer Research Center (DKFZ), Heidelberg, Germany

14:30 4462. Rapid T_2 Mapping of Mouse Heart using CPMG Sequence & Model-Based Compressed Sensing Reconstruction
Yong Chen[1,2], Wen Li[1,2], Xin Yu[1,2]
[1]Department of Biomedical Engineering, Case Western Reserve Univ, Cleveland, OH, United States; [2]Case Center for Imaging Research, Case Western Reserve Univ, Cleveland, OH, United States

15:00 4463. Multi-Slice Look-Locker T_1 Mapping for the Mouse Heart
Adrienne E. Campbell[1,2], Anthony N. Price[3], Bernard M. Siow[1], Jack A. Wells[1], Mark F. Lythgoe[1], Roger J. Ordidge[2]
[1]Centre for Advanced Biomedical Imaging, Division of Medicine & Institute of Child Health, University College London, London, United Kingdom; [2]Department of Medical Physics & Bioengineering, University College London, London, United Kingdom; [3]Robert Steiner MRI Unit, Imaging Science Department, Hammersmith Hostpital, Imperial College London, London, United Kingdom

Electromagnetic Tissue Property Mapping

Exhibition Hall Monday 14:00-16:00 Computer 122

14:00 4464. Electrical Conductivity Imaging of Brain Tumours.
Astrid L. H. M. W. van Lier[1], Johannes M. Hoogduin[2], Daniel L. Polders[2], Vincent O. Boer[2], Jeroen Hendrikse[2], Pierre A. Robe[3], Peter A. Woerdeman[3], Jan J. W. Lagendijk[1], Peter R. Luijten[2], Cornelis A. T. van Den Berg[1]
[1]Radiotherapy, UMC Utrecht, Utrecht, Netherlands; [2]Radiology, UMC Utrecht, Utrecht, Netherlands; [3]Neurosurgery, UMC Utrecht, Utrecht, Netherlands

14:30 4465. Electrical Impedance Tomography using Magnetic Resonance as the Voltage Source
Michiro Negishi[1], Tangji Tong[1], Peter Brown[1], Terrence Nixon[1], R. Todd Constable[1,2]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Neurosurgery, Yale University, New Haven, CT, United States

15:00 4466. *In Vivo* Conductivity Mapping using Double Spin Echo for Flow Effect Removal
Narae Choi[1], Minoh Ghim[1], Seungwook Yang[1], Sang-Young Zho[1], Dong-Hyun Kim[1,2]

[1]Electrical & Electronic Engineering, Yonsei University, Sinchon dong, Seoul, Korea, Republic of; [2]Radiology, Yonsei University, Sinchon dong, Seoul, Korea, Republic of

15:30 **4467.** **Rapid Estimation of Conductivity & Permittivity using Bloch-Siegert B_1 Mapping at 3.0T**
Selaka Bandara Bulumulla[1], Seung-Kyun Lee[1], Teck Beng Desmond Yeo[1], W. Thomas Dixon[1], Thomas K. Foo[1]
[1]GE Global Research, Niskayuna, NY, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 122

13:30 **4468.** **MREIT & EPT: A Comparison of Two Conductivity Imaging Modalities**
Dong-Hyun Kim[1], Min-Oh Ghim[1], Ohin Kwon[2], Hyung Joong Kim[3], Jin Keun Seo[4], Eung Je Woo[3]
[1]Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, Republic of; [2]Mathematics, Konkuk University, Korea, Republic of; [3]Biomedical Engineering, Kyung Hee University, Korea, Republic of; [4]Mathematics, Yonsei University, Seoul, Korea, Republic of

14:00 **4469.** **Mechanism of Conductivity Image Contrast in MREIT: Numerical Simulation & Phantom Experiment**
Young Tae Kim[1], Tong In Oh[1], Atul Singh Minhas[1], Hyung Joong Kim[1], Jin Keun Seo[2], Oh In Kwon[3], Eung Je Woo[1]
[1]Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of; [2]Computational Science & Engineering, Yonsei University, Seoul, Korea, Republic of; [3]Mathematics, Konkuk University, Seoul, Korea, Republic of

14:30 **4470.** **Quantitative Susceptibility Imaging using L_1 Regularized ReConstruction with Sparsity Promoting Transformation: SILC**
Deqiang Qiu[1], Greg Zaharchuk[1], Shangping Feng[1], Thomas Christen[1], Kyunghyun Sung[1], Michael E. Moseley[1]
[1]Lucas Imaging Center, Stanford University, Stanford, CA, United States

15:00 **4471.** ***In Vivo* Whole Brain Susceptibility Mapping using Compressed Sensing**
Bing Wu[1], Wei Li[1], Chunlei Liu[1]
[1]Brain imaging & analysis center, Duke University, Durham, NC, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 122

13:30 **4472.** **Regularized Quantitative Susceptibility Mapping for Phase-Based Regional Oxygen Metabolism (PROM) at 7T**
Audrey Peiwen Fan[1], Berkin Bilgic[1], Thomas Benner[2], Bruce R. Rosen[2,3], Elfar Adalsteinsson[1,3]
[1]Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; [2]Radiology, Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, United States; [3]Health Sciences & Technology, Harvard-MIT, Cambridge, MA, United States

14:00 **4473.** **A Theoretical Analysis of the Morphology Enabled Dipole Inversion (MEDI) Method: using Anatomical Information to Improve the Calculation of Susceptibility**
Tian Liu[1,2], Weiyu Xu[3], Amir Salman Avestimehr[3], Yi Wang[1,2]
[1]Biomedical Engineering, Cornell University, Ithaca, NY, United States; [2]Radiology, Weill Cornell Medical College, New York, NY, United States; [3]School of Electrical & Computer Engineering, Cornell University, Ithaca, NY, United States

14:30 **4474.** **Fast *In Vivo* Susceptibility Imaging using Compressed Sensing & Parallel Imaging**
Bing Wu[1], Wei Li[1], Chunlei Liu[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States

15:00 **4475.** **Susceptibility Mapping: Computation of the Field Map using Water-Fat Separation at 7T**
Ildar Khalidov[1], Tian Liu[1], Martin R. Prince[1], Yi Wang[1]
[1]Radiology, Weill Cornell Medical College, NYC, NY, United States

Exhibition Hall Thursday 13:30-15:30 Computer 122

13:30 **4476.** **Improving Susceptibility Mapping of Veins using a K-Space Iterative Approach**
Jin Tang[1], Saifeng Liu[1], Jaladhar Neelavalli[2], E. Mark Haacke[2,3]
[1]School of Biomedical Engineering, McMaster University, Hamilton, Ontario, Canada; [2]The MRI Institute for Biomedical Research, Detroit, MI, United States; [3]Academic Radiology, Wayne State University, Detroit, MI, United States

14:00 **4477.** **Susceptibility Mapping in Rat Deep Brain Structures using UHF MRI**
David A. Rudko[1], L. M. Klassen[1], Sonali N. de Chickera[2], Greg A. Dekaban[2], Ravi S. Menon[1]
[1]Centre for Functional & Metabolic Mapping, Robarts Research Institute, London, Ontario, Canada; [2]Biotherapeutics Research Group, Robarts Research Institute, London, Ontario, Canada

14:30 **4478.** **Susceptibility Mapping of Human Brain Reflects Spatial Variation in Tissue Composition**
Wei Li[1], Bing Wu[1], Chunlei Liu[1,2]

[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States; [2]Radiology, Duke University, Durham, NC, United States

15:00 **4479.** **Susceptibility Quantification in MRI using Phase Gradient Mapping**
Luning Wang[1], Qun Zhao[1]
[1]Department of Physics & Astronomy, University of Georgia, Athens, GA, United States

Pulse Sequences - Contrast Mechanisms

Exhibition Hall Monday 14:00-16:00 Computer 123

14:00 **4480.** **Feasibility of Myelin Water Fraction Quantification using Multi-Component Gradient Echo Sampling of Spin Echoes**
Yann Gagnon[1,2], Neil Gelman[1,2], Jean Théberge[1,2]
[1]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [2]Lawson Health Research Institute, London, Ontario, Canada

14:30 **4481.** **2D Multi-Slice Quantitative Myelin Water Imaging at 3T**
Junyu Guo[1], Qing Ji[1], Wilburn E. Reddick[1]
[1]Radiological Sciences, St Jude Children's Research Hospital, Memphis, TN, United States

15:00 **4482.** **Simulation of Double Pulsed Field Gradient Experiments**
Gregory T. Baxter[1], Evren Ozarslan[2,3], Peter J. Basser[2], Lawrence R. Frank[1,4]
[1]Radiology, UCSD, La Jolla, CA, United States; [2]STBB / PPITS / NICHD, National Institutes of Health, Bethesda, MD, United States; [3]Center for Neuroscience & Regenerative Medicine, USUHS, Bethesda, MD, United States; [4]VASDHS, La Jolla, CA, United States

15:30 **4483.** **Intermolecular Double-Quantum Coherence Imaging without Coherence Selection Gradients**
Yanqin Lin[1], Guiping Sheng[1], Congbo Cai[1], Shuhui Cai[1], Jianhui Zhong[2], Zhong Chen[1]
[1]Department of Physics, Xiamen University, Xiamen, Fujian, China, People's Republic of; [2]Department of Imaging Sciences, University of Rochester, Rochester, NY, United States

Endogenons Contrast: Relaxation, CEST & MT

Exhibition Hall Monday 13:30-15:30 Computer 124

14:00 **4484.** **Self-Justification Fitting to Improve Reliability of Relaxometry Quantification**
Dan Ma[1], Kecheng Liu[2], Mark Griswold[1]
[1]Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States; [2]Siemens Medical Solution

14:30 **4485.** **Simultaneous Quantification of the Arterial Input Function & Myocardial T_1 in Small Animals using Saturation Recovery Look-Locker**
Wen Li[1], Bernadette Erowku[2], Chris Flask[2,3], Mark Griswold[1,3], Xin Yu[1,3]
[1]Biomedical Engineering Department, Case Western Reserve University, Cleveland, OH, United States; [2]Case Center for Imaging Research; [3]Radiology Department

15:00 **4486.** **Anatomical Brain Scans Derived from Quantitative T_1maps: Investigation of SNR, CNR & Signal Uniformity in Comparison to Conventional Methods**
Ulrike Nöth[1], Steffen Volz[1], Ralf Deichmann[1]
[1]Brain Imaging Center (BIC), Goethe University Frankfurt/Main, Frankfurt/Main, Germany

15:30 **4487.** **Phantom Verification of B_1 Inhomogeneity Correction for 3D-Variable Flip Angle T_1 Measurements**
Carl Siversson[1], Carina Dahlberg[2], Carl Johan Tiderius[3], Tallal Charles Mamisch[4], Jonas Svensson[1], Young jo Kim[5]
[1]Department of Radiation Physics, Lund University, Malmö, Sweden; [2]Lund Bioimaging center, Lund University, Lund, Sweden; [3]Department of Orthopaedics, Lund University, Malmö, Sweden; [4]Department of Orthopaedics, University of Bern, Bern, Switzerland; [5]Department of Orthopaedics, Children's Hospital Boston, Boston, MA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 124

13:30 **4488.** **Spoiling Properties of the VAFI Method for Fast Simultaneous T_1 & B_1 Mapping from Actual Flip-Angle Imaging (AFI) & Variable Flip-Angle (VFA) Data.**
Samuel Anthony Hurley[1], Vasily L. Yarnykh[2], Alexey A. Samsonov[3]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Washington, Seattle, WA, United States; [3]Radiology, University of Wisconsin, Madison, WI, United States

14:00 **4489.** ***In Vivo* Correlation of T_1 & Methemoglobin in a Mouse Model of Deep Vein Thrombosis**
Prakash Saha[1], Marcelo E. Andia[2], Ulrike Blume[2,3], Bijan Modarai[1], Matthew Waltham[1], Alberto Smith[1], Tobias Schaeffter[2], Andrea J. Wiethoff[2,4]
[1]Department of Academic Surgery, Cardiovascular Division, King's College London, London, United Kingdom; [2]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom; [3]Philips Healthcare, Best, Netherlands; [4]Philips Healthcare, Guildford, United Kingdom

14:30 **4490.** **Quantitative Model-Based Analysis of Amide Proton Transfer MRI**
Michael A. Chappell[1,2], Manus J. Donahue[3], Yee Kai Tee[1], Peter Jezzard[2], Stephen J. Payne[1]
[1]Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom; [2]FMRIB Centre, University of Oxford, Oxford, United Kingdom; [3]School of Medicine, Vanderbilt University, Nashville, TN, United States

15:00 **4491.** **CEST Sensitivity Functions Based Sampling Schedule**
Yee Kai Tee[1], Michael A. Chappell[1,2], Jingyi Xie[2], Stephen J. Payne[1]
[1]Institute of Biomedical Engineering, Department of Engineering Science, University of Oxford, Oxford, Oxfordshire, United Kingdom; [2]Oxford Centre for Functional MRI of the Brain, University of Oxford

Exhibition Hall Wednesday 13:30-15:30 Computer 124

13:30 **4492.** **Enhancement of Endogenous CEST Effects by Optimizing Pre-Saturation Pulse Train Properties**
Moritz Zaiss[1], Benjamin Schmitt[1], Peter Bachert[1]
[1]Department of Medical Physics in Radiology, German Cancer Research Center, Heidelberg, Germany

14:00 **4493.** **Simulation & Optimization of Pulsed RF Irradiation Scheme for Chemical Exchange Saturation Transfer (CEST) MRI – Demonstration of PH-Weighted Pulsed-CEST MRI in Acute Ischemic Stroke Animal Model**
Phillip Zhe Sun[1], Enfeng Wang[1], Jerry S. Cheung[1], Thomas Benner[1], A. Gregory Sorensen[1]
[1]Radiology, Athinoula. A. Martinos Center for Biomedical Imaging, MGH & Harvard Medical School, Charlestown, MA, United States

14:30 **4494.** **Center-Corrected GagCEST Assessment of Intervertebral Disc Degeneration**
Boyang Zhang[1], Xiang Xu[1], Jae-Seung Lee[1,2], Gil Navon[3], Ravinder R. Regatte[2], Alexej Jerschow[1]
[1]Department of Chemistry, New York University, New York, NY, United States; [2]Department of Radiology, New York University School of Medicine, New York, NY, United States; [3]School of Chemistry, Tel Aviv University, Tel Aviv, Israel

15:00 **4495.** **Chemical Exchange Saturation Transfer & R_1rho Dispersions of Polypeptides with Varying Complexities**
Ke Li[1,2], Jared G. Cobb[1,3], Jingping Xie[1,2], Zhongliang Zu[1,2], Daniel F. Gochberg[1,2], John C. Gore[1,2]
[1]Institute of Imaging Science, Vanderbilt University, Nashville, TN, United States; [2]Department of Radiology, Vanderbilt University, Nashville, TN, United States; [3]Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

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13:30 **4496.** **Characterization of Iopamidol Chemical Exchange Saturation Transfer (CEST) MRI for Ratiometric Imaging of PH**
Phillip Zhe Sun[1], Dario L. Longo[2], Silvio Aime[2]
[1]Radiology, Athinoula. A. Martinos Center for Biomedical Imaging, MGH & Harvard Medical School, Charlestown, MA, United States; [2]Chemistry, IFM & Molecular Imaging Centre, University of Torino, Torino, Italy

14:00 **4497.** ***In Vivo* LipoCEST CA Accumulation Around U87 Mice Brain Tumor Demonstrated by *In Vivo* CEST MRI & *Ex Vivo* Fluorescence Microscopy**
Julien Flament[1], Françoise Geffroy[1], Boucif Djemaï[1], Benoit Theze[2], Aline Perrin[1], Christelle Medina[3], Caroline Robic[3], Marc Port[3], Franck Lethimonnier[1], Gilles Bloch[1], Denis Le Bihan[1], Fawzi Boumezbeur[1]
[1]NeuroSpin, I2BM, DSV, Commissariat à l'Energie Atomique, Gif-sur-Yvette, France; [2]SHFJ, I2BM, DSV, Commissariat à l'Energie Atomique, Gif-sur-Yvette, France; [3]Guerbet, Research Division, Roissy-Charles de Gaulle, France

14:30 **4498.** **Optimal Parameters for a Fixed Imaging Time Acquisition of Quantitative Magnetization Transfer Data**
Mara Cercignani[1], Gareth J. Barker[2], Daniel C. Alexander[3]
[1]Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy; [2]CNS, Department of Neuroimaging, King's College London, Institute of Psychiatry, London, United Kingdom; [3]Centre for Medical Image computing, Department of Computer Science, UCL, London, United Kingdom

15:00 **4499.** **Magnetic Field-Dependent Magnetisation Transfer Contrast MRI with Fast Field-Cycling**
Chang-Hoon Choi[1,2], David J. Lurie[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, Scotland, United Kingdom; [2]MR Solutions Ltd., Guildford, Surrey, United Kingdom

Endogenons Contrast Relaxometry

Exhibition Hall Monday 14:00-16:00 Computer 125

14:00 **4500.** **Magic Angle Effects on T_2, T_2* & $T_1\rho$ Relaxation Times**
Jiang Du[1], Eric Diaz[1], Won Bae[1], Sheronda Statum[1], Nikolaus Szeverenyi[1], Darryl DLima[2], Graeme Bydder[1], Christine Chung[1]
[1]Radiology, University of California, San Diego, San Diego, CA, United States; [2]Scripps Reseach Institution, San Diego, CA, United States

14:30 **4501.** **Dynamic Changes of On-Resonance T_1rho Dispersion During Global Ischemia: A 9.4 T Study**
Tao Jin[1], Seong-Gi Kim[1]
[1]Neuroimaging Laboratory, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States

15:00 **4502.** **Fluid Suppressed $T_{1\rho}$ Mapping of Human Liver on Clinical Scanners**
Anup Singh[1], Mohammad Haris[1], Kejia Cai[1], Walter R. T. Witschey[2], Hari Hariharan[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States; [2]Department of Radiology, University Hospital Freiburg, Freiburg, Germany

15:30 **4503.** **$T_{1\rho}$ Changes in the Human Brain During Respiratory Acidosis & Alkalosis**
Hye Young Heo[1], Brian J. Dlouhy[2], Nader S. Dahdaleh[2], Daniel R. Thedens[3], Bradley D. Bolster[4], John A. Wemmie[2,5], Vincent A. Magnotta[1,3]
[1]Biomedical Engineering, University of Iowa, Iowa City, IA, United States; [2]Neurosurgery, University of Iowa, Iowa City, IA, United States; [3]Radiology, University of Iowa, Iowa City, IA, United States; [4]Siemens Healthcare, Rochester, MN, United States; [5]Psychiatry, University of Iowa, Iowa City, IA, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 125

13:30 **4504.** **Age Related Differences in Brain Iron Detected *In Vivo* at 3T with Quantitative MRI: Comparison of R_2, R_2' & R_2***
Catherine Anusha Mallik[1], David J. Lythgoe[1], Gareth J. Barker[1]
[1]Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College London, London, United Kingdom

14:00 **4505.** **Different Patterns of Myocardial Iron Overload by Multislice T_2* Cardiovascular MR as Markers of Risk for Cardiac Dysfunction in Thalassemia Major.**
Antonella Meloni[1], Pasquale Pepe[1], Maria Chiara Dell'Amico[1], Gennaro Restaino[2], Gianluca Valeri[3], Massimo Midiri[4], Vincenzo Positano[1], Petra Keilberg[1], Antonio Cardinale[5], Massimo Lombardi[1], Alessia Pepe[1]
[1]Fondazione G.Monasterio CNR-Regione Toscana & Institute of Clinical Physiology, Pisa, Italy; [2]Università Cattolica del Sacro Cuore, Campobasso, Italy; [3]Azienda Ospedaliero-Universitaria Ospedali Riuniti "Umberto I-Lancisi-Salesi", Ancona, Italy; [4]Policlinico “Paolo Giaccone”, Palermo, Italy; [5]Ospedale S Maria alla Gruccia, Montevarchi, Italy

14:30 **4506.** **Characterization of Chelation Therapies in Thalassemia Patients by Longitudinal Analysis of MRI-Assessed Cardiac & Hepatic Iron Overload**
Antonella Meloni[1], John C. Wood[2], Alessia Pepe[1], Leila J. Noetzli[2], Maria Chiara Dell'Amico[1], Gianluca Valeri[3], Claudio Ascioti[4], Petra Keilberg[1], Massimo Lombardi[1], Vincenzo Positano[1]
[1]Fondazione G.Monasterio CNR-Regione Toscana & Institute of Clinical Physiology, Pisa, Italy; [2]Children’s Hospital, Los Angeles, United States; [3]Azienda Ospedaliero-Universitaria Ospedali Riuniti "Umberto I-Lancisi-Salesi", Ancona, Italy; [4]P.O. “Giovanni Paolo II”, Lamezia Terme, Italy

15:00 **4507.** ***In Vivo* & *In Vitro* T_2* Quantification of Carious Lesions by Ultra-Short Echo-Time (UTE) MRI**
Anna-Katinka Bracher[1], Axel Bornstedt[1], Erich Hell[2], Johannes Ulrici[2], Volker Rasche[1]
[1]Department of Internal Medicine II, University Hospital of Ulm, Ulm, Germany; [2]Sirona Dental Systems, Bensheim, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 125

13:30 **4508.** **Potential Sources for MR Signal Delay**
Yongxian Qian[1], Fernando E. Boada[1,2]
[1]Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

14:00 **4509.** **Tumor Angiogenesis & Vasculature MRI with Endogenous BOLD Effect**
Kejia Cai[1], Adam Shore[1], Anup Singh[1], Mohammad Haris[1], Damodar Reddy[1], Hari Hariharan[1], Mark Elliott[1], Ravinder Reddy[1]
[1]CMROI, Department of Radiology, University of Pennsylvania, Philadelphia, PA, United States

14:30 4510. Accelerated Gradient-Recalled Echo, Asymetric Spin-Echo (GREASE-II) for Production of High-Resolution Human T_1, T_2, & T_2* Maps
Daniel Lee Shefchik[1], Andrew Scott Nencka[1], Andrzej Jesmanowicz[1], James S. Hyde[1]
[1]Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, United States

15:00 4511. Understanding the Effects of Oriented Susceptibility Inclusions on the Phase & Magnitude of Gradient Echo Signals
Anna Izabella Blazejewska[1], Samuel Wharton[1], Penny A. Gowland[1], Richard Bowtell[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

Exhibition Hall Thursday 13:30-15:30 Computer 125

13:30 4512. Determinants of T_2* Relaxation in White Matter: Insights from Postmortem Analyses
Christian Langkammer[1,2], Nikolaus Krebs[2], Walter Goessler[3], Eva Scheurer[2], Michaela Soellinger[1], Kathrin Yen[2], Franz Fazekas[1], Stefan Ropele[1]
[1]Department of Neurology, Medical University of Graz, Graz, Austria; [2]Ludwig Boltzmann Institute for Clinical-Forensic Imaging, Graz, Austria; [3]Institute of Chemistry - Analytical Chemistry, University of Graz, Graz, Austria

14:00 4513. Quantitative Iron Mapping in Human Brain Based on the Apparent Transverse Relaxation Time
Fumiyuki Mitsumori[1], Hidehiro Watanabe[1], Nobuhiro Takaya[1]
[1]Natl. Inst. Environmental Studies, Tsukuba, Ibaraki, Japan

14:30 4514. Effects of Fat Particle Size on R_2* in Fat-Water-SPIO Emulsion Phantoms: Implications for Fat Quantification with Phantoms
Catherine D. G. Hines[1], Calista Roen[1], Diego Hernando[1], Scott B. Reeder[1,2]
[1]Radiology, University of Wisconsin-Madison, Madison, WI, United States; [2]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, United States

15:00 4515. A Simplified Approach for Anisotropic Susceptibility Map Calculation
Sam Wharton[1], Richard Bowtell[1]
[1]Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom

Novel Tissue Contrast

Exhibition Hall Monday 14:00-16:00 Computer 126

14:00 4516. Orientation & Microstructure Effects on Susceptibility Reconstruction: A Diffusion Phantom Study
Johannes Lindemeyer[1], Ana-Maria Oros-Peusquens[1], Ezequiel Farrher[1], Farida Grinberg[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine - 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen, Aachen, Germany

14:30 4517. Effect of Orientation of 2D Phase High-Pass Filter on Susceptibility Mapping of Veins & Microbleeds
Jaladhar Neelavalli[1], Saifeng Liu[2], YuChung Norman Cheng[3], Ewart Mark Haacke[1,3], Zhifeng Kou[4]
[1]The Magnetic Resonance Imaging Institute for Biomedical Research, Detroit, MI, United States; [2]Biomedical Engineering, Mcmaster University, Hamilton, Ontario, Canada; [3]Academic Radiology, Wayne State University, Detroit, MI, United States; [4]Biomedical Engineering, Wayne State University, Detroit, MI, United States

15:00 4518. Dependence of White Matter Orientation to Magnet Field on Gradient-Echo Imaging at 17.2 Tesla in Mice.
Christopher John Wiggins[1], Denis Le Bihan[1], Luisa Ciobanu[1]
[1]LRMN, CEA/NeuroSpin, Gif-Sur-Yvette cedex, France

15:30 4519. Use of a Non-Fixed Brain Tissue Sample to Examine the Effect of White Matter Orientation to the Magnetic Field on MRI Signals
Christopher John Wiggins[1], Denis Le Bihan[1]
[1]LRMN, CEA/NeuroSpin, Gif-Sur-Yvette cedex, France

Exhibition Hall Tuesday 13:30-15:30 Computer 126

13:30 4520. Positive-Contrast Imaging with Phase-Perturbed Differenced SSFP
R. Reeve Ingle[1], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States

14:00 4521. Characterizing Tissue Microstructure Orientation by Multi-Directional Sub-Pixel Enhancement of Nonuniform Tissue (SPENT) Sequence
Bailiang Chen[1], Bernard Siow[2], David Carmichael[3], Freddy Odille[2], Roger Ordidge[1], Andrew Todd-Pokropek[1]

[1]Medical Physics & Bioengineering, University College London, London, United Kingdom; [2]Centre for Medical Image Computing, University College London, London, United Kingdom; [3]Department of Clinical & Experimental Epilepsy, UCL, Institute of Neurology, , London, United Kingdom

14:30 **4522.** **Macroscopic Meets Microscopic: The Use of Multi Acquisition Variable Resonance Image Combination (MAVRIC) for Detection of Microscopic Objects by Means of Off-Resonance Excitation**
Gerrit Hendrik van De Maat[1], U. A. Blume[2], C. J. den Harder[2], Clemens Bos[3], Chris J. Bakker[1]
[1]Image Sciences Institute, University Medical Center, Utrecht, Netherlands; [2]MR CTO, Philips Healthcare, Best, Netherlands; [3]MR Clinical Science, Philips Healthcare, Best, Netherlands

15:00 **4523.** **Improving Susceptibility Weighted Contrast using Gradient Echo Plural Contrast Imaging**
Jie Luo[1], Bharathi Jagadeesan[2], Dmitriy A. Yablonskiy[2]
[1]Chemistriy, Washington University in St.Louis, St. Louis, MO, United States; [2]Radiology, Washington University School of Medicine, St. Louis, MO, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 126

13:30 **4524.** **A Simple 3D Susceptibility Model to Simulate Magnetic Field Patterns in White Matter Microstructure**
Way Cherng Chen[1], Karla Loreen Miller[1]
[1]FMRIB, University of Oxford, Oxford, Oxon, United Kingdom

14:00 **4525.** **Study of Chemical Exchange Effect on Water MR Frequency Shifts using CEST**
Xiang He[1], Jie Luo[2], Dmitriy A. Yablonskiy[2], Kyongtae Ty Bae[1]
[1]Department of Radiology, University of Pittsburgh, Pittsburgh, PA, United States; [2]Mallinckrodt Institute of Radiology, Washington University in St Louis, St Louis, MO, United States

14:30 **4526.** **Accurate Determination of Water-Macromolecule Exchange Independent of Reference Interaction**
Tobias Leutritz[1], Liane Hilfert[2], Karl-Heinz Smalla[3], Oliver Speck[1], Kai Zhong[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany; [2]Institute for Chemistry, Otto-von-Guericke-University, Magdeburg, Germany; [3]Leibniz-Institute for Neurobiology, Magdeburg, Germany

15:00 **4527.** **Non-Linear Evolution of GRE Phase as a Means to Investigate Tissue Microstructure**
Ferdinand Schweser[1,2], Andreas Deistung[1], Daniel Güllmar[1], Marie Atterbury[1,3], Berengar Wendel Lehr[1], Karsten Sommer[1,4], Jürgen R. Reichenbach[1]
[1]Medical Physics Group, Dept. of Diagnostic & Interventional Radiology 1, Jena University Hospital, Jena, Germany; [2]School of Medicine, Friedrich Schiller University of Jena, Jena, Germany; [3]Dept. of Physics, Brown University, Providence, RI, United States; [4]School of Physics & Astronomy, Friedrich Schiller University of Jena, Jena, Germany

Exhibition Hall Thursday 13:30-15:30 Computer 126

13:30 **4528.** ***In Vivo* Acquisition of CEST MRI using Length & Offset VARiation of Saturation CEST (LOVARS-CEST) for Artifact Reduction**
Xiaolei Song[1,2], Guanshu Liu[1,3], Amnon Bar-Shir[1,2], Michael Gorelik[1,2], Assaf A. Gilad[1,2], Peter C. M. Van Zijl[1,3], Jeff W. M. Bulte,,[2], Michael T. McMahon[1,3]
[1]Division of MR Research, the Russell H. Morgan Department of Radiology & Radiological Science, the Johns Hopkins University, Baltimore, MD, United States; [2]Cellular Imaging Section, Institute for Cell Engineering, Johns Hopkins University, Baltimore, MD, United States; [3]F.M. Kirby Research Center, Kennedy Krieger Institute, Baltimore, MD, United States

14:00 **4529.** **The Removal of Blood Contributions in Phase & Susceptibility Contrast Imaging**
Alexandru Vlad Avram[1,2], Arnaud Guidon[1,2], Chunlei Liu[2], Allen W. Song[2]
[1]Biomedical Engineering Department, Duke University, Durham, NC, United States; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

14:30 **4530.** **Improving Contrast to Noise Ratio of Resonance Frequency Contrast Images (Phase Images) using BSSFP**
Jongho Lee[1,2], Masaki Fukunaga[1,3], Jeff H. Duyn[1]
[1]Advanced MRI section/LFMI/NINDS, National Institutes of Health, Bethesda, MD, United States; [2]Department of Radiology, University of Pennsylvania , Philadelphia, PA, United States; [3]Biofunctional Imaging, WPI Immunology Frontier Research Center, Osaka University, Osaka, Japan

15:00 **4531.** **Frequency Mapping without Phase Wraps**
Issel Anne Lei Lim[1,2], Jonathan A. D. Farrell[2,3], Craig K. Jones[2,3], Deepti S. Vikram[2,3], Carlos Augusto Renjifo[4], Peter C. M. van Zijl[2,3]
[1]Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States; [2]F. M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute, Baltimore, MD, United States; [3]Neuroscience Section, Division of MR Research, Department of Radiology, Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]The Johns Hopkins University Applied Physics Laboratory, Laurel, MD, United States

Image Analysis Advances

Exhibition Hall Monday 14:00-16:00 Computer 127

14:00 4532. An Automated Method for Scan Geometry Planning for MR Knee Imaging
Xiaodong Tao[1]
[1]Imaging Technologies, GE Global Research Center, Niskayuna, NY, United States

14:30 4533. Automated Scan Prescription for MRI Liver Scans
Takao Goto[1], *Hiroyuki Kabasawa*[1]
[1]Global Applied Science Laboratory, GE Healthcare, Hino-shi, Tokyo, Japan

15:00 4534. Automatic Derivation of Scan Plane Angles Along the Vertebral Column of the Human Spine
Anand Narasimhamurthy[1], *Akshay Pai*[1], *Vivek Vaidya*[2], *Uday Patil*[1]
[1]GE Global Research Centre, Bangalore, Karnataka, India; [2]GE Global Research Centre,Bangalore, Bangalore, Karnataka, India

15:30 4535. Automated Scan Plane Planning for Spine MRI using 2D Scout Images
Suguru Yokosawa[1], *Yo Taniguchi*[1], *Yoshitaka Bito*[1], *Hisako Nagao*[2], *Miki Tachibana*[2], *Hiroyuki Itagaki*[2]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; [2]Hitachi Medical Corporation, Kashiwa, Chiba, Japan

Exhibition Hall Tuesday 13:30-15:30 Computer 127

13:30 4536. Effects of Multichannel Transmission on DTI Metrics
Geng Guangqiang[1], *Roland Henry*[2], *Caroline Rae*[1,3]
[1]Neuroscience Research Australia, Sydney, NSW, Australia; [2]Departments of Radiology & Biomedical Imaging, Neurology, & Bioengineering Graduate Group, University of California, San Francisco, United States; [3]UNSW, Sydney, Australia

14:00 4537. Brain Tissue Segmentation for Diffusion Tensor Imaging (DTI) Data using Multi-Tensor Estimation
Seiji Kumazawa[1], *Takashi Yoshiura*[1], *Hiroshi Honda*[1], *Fukai Toyofuku*[1]
[1]Kyushu Unversity, Fukuoka, Japan

14:30 4538. Improved Morphological Information using the Dixon Technique in Conjunction with DWI for Detection of Bone Metastases
Matthew David Blackledge[1], *Duncan Brown*[1], *Toni Wallace*[1], *Nina Tunariu*[1], *Martin O. Leach*[1], *Dow-Mu Koh*[1], *David J. Collins*[1]
[1]CR-UK & EPSRC Cancer Imaging Centre, Institute of Cancer Research & Royal Marsden Hospital, Sutton, Surrey, United Kingdom

15:00 4539. Diffusion Kurtosis Imaging (DKI) Reconstruction - Linear or Non-Linear?
Jiachen Zhuo[1,2], *Jonathan Simon*[2], *Rao Gullapalli*[1]
[1]Radiology, University of Maryland School of Medicine, Baltimore, MD, United States; [2]Electrical & Computer Engineering, University of Maryland College Park, College Park, MD, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 127

13:30 4540. A Variational Approach to Susceptibility Estimation that is Insensitive to B_0 Inhomogeneity
Clare Poynton[1,2], *William Wells III*[1,3]
[1]Computer Science & Artificial Intelligence Lab (CSAIL), MIT, Cambridge, MA, United States; [2]Harvard-MIT Division of HST, MIT, Cambridge, MA, United States; [3]Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States

14:00 4541. Differentiation of Superparamagnetic Iron Oxide Nanoparticles & Air Pockets using Independent Component Analysis
Jason A. Langley[1,2], *Joonsang Lee*[1,2], *Luning Wang*[1,2], *Qun Zhao*[1,2]
[1]Department of Physics & Astronomy, the University of Georgia, Athens, GA, United States; [2]Bioimaging Research Center, the University of Georgia, Athens, GA, United States

14:30 4542. USPIOs Quantification in Brain Mice 2D MR Images by Default Field Deconvolution
Delphine Charpigny[1], *Jean-Christophe Brisset*[1], *Thomas Grenier*[1], *Marlene Wiart*[1], *Hugues Benoit-Cattin*[1]
[1]CREATIS, Lyon, France

15:00 4543. Quantification of Different Superparamagnetic Iron Oxide (SPIO) Concentrations in Diffuse Medium using 4.7T Magnetic Resonance Imaging
Bang-Bon Koo[1], *Vibhu Sachdev*[1], *Ronald J. Killiany*[1,2]
[1]Multimodal Whole Animal Imaging Core, National Emerging Infectious Disease Laboratories Institute Boston University Medical Campus, Boston, MA, United States; [2]Department of Anatomy & Neurobiology, Boston University School of Medicine, Boston, MA, United States

Exhibition Hall Thursday 13:30-15:30 Computer 127

13:30 4544. Feasibility of Cortical Thickness Measures in Survivors of Childhood Acute Lymphoblastic Leukemia
Wilburn E. Reddick[1], John O. Glass[1], Qing Ji[1], David C. Carver[1], Kevin R. Krull[2]
[1]Translational Imaging Research, St. Jude Children's Research Hospital, Memphis, TN, United States; [2]Epidemiology & Cancer Control, St. Jude Children's Research Hospital, Memphis, TN, United States

14:00 4545. SyN Based Multimodal Investigation on a Small Cohort of Patients Affected with Amnesic Mild Cognitive Impairment
Fabrizio Fasano[1], Chiara Ganazzoli[1], Simona Gardini[1], Fabio Sambataro[2], Letizia Concari[1], Paolo Caffarra[1]
[1]Department of Neurosciences, Università degli Studi di Parma, Parma, Italy; [2]Italian Institute of Technology, Parma, Italy

14:30 4546. Comparison of Longitudinal & Cross-Sectional Cortical Thickness Measurements
Kunio Nakamura[1], Robert J. Fox[2], Elizabeth Fisher[1]
[1]Biomedical Engineering, Cleveland Clinic, Cleveland, OH, United States; [2]Mellen Center for Multiple Sclerosis Treatment & Research, Cleveland Clinic

15:00 4547. Cerebellar GM-WM Segmentation Accuracy in Assessing Brain Atrophy
Sushmita Datta[1], Xiaojun Sun[1], Ponnada A. Narayana[1]
[1]Diagnostic & Interventional Imaging, Medical School, the University of Texas Health Science Center at Houston, Houston, TX, United States

Image Analysis: Noise, Artifact & Parameter Maps

Exhibition Hall Monday 14:00-16:00 Computer 128

14:00 4548. Use of the Noise Covariance Matrix in Array Coil Quality Assurance
Elizabeth Mary Tunnicliffe[1,2], Martin John Graves[1,3], Matthew D. Robson[4]
[1]Department of Medical Physics & Clinical Engineering, Addenbrooke's Hospital, Cambridge, United Kingdom; [2]AVIC, Nuffield Department of Clinical Medicine, University of Oxford, Oxford, United Kingdom; [3]Department of Radiology, University of Cambridge, Cambridge, United Kingdom; [4]OCMR, Department of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom

14:30 4549. Spatially Variable Rician Noise in DTI
Ivan I. Maximov[1], Ezequiel A. Farrher[1], Farida Grinberg[1], Nadim Jon Shah[1,2]
[1]Institute of Neuroscience & Medicine 4, Forschungszentrum Juelich, Juelich, Germany; [2]Department of Neurology, Faculty of Medicine, JARA, RWTH Aachen University, Aachen, Germany

15:00 4550. Validity of the Noncentral Chi Model in Multiple-Coil Systems with Noise Correlations
Santiago Aja-Fernandez[1], Antonio Tristan-Vega[2]
[1]Universidad de Valladolid, Valladolid, VA, Spain; [2]Harvard Medical School, Boston, MA, United States

15:30 4551. Modification of the Simulated-Multi-Image Method Allows SNR Measurement using Sum-Of-Squares Reconstruction
Elizabeth Mary Tunnicliffe[1,2], Martin John Graves[1,3], Matthew D. Robson[4]
[1]Department of Medical Physics & Clinical Engineering, Addenbrooke's Hospital, Cambridge, United Kingdom; [2]AVIC, Nuffield Department of Clinical Medicine, University of Oxford, Oxford, United Kingdom; [3]Department of Radiology, University of Cambridge, Cambridge, United Kingdom; [4]OCMR, Department of Cardiovascular Medicine, University of Oxford, Oxford, United Kingdom

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13:30 4552. Roemer Reconstruction Yields Significant SNR Gain Over Sum-Of-Squares @ 7T.
Anna Andreychenko[1], Sjoerd Crijns[1], Ingmar Voogt[1], Wouter Koning[1], Peter Luijten[1], Jan J. W. Lagendijk[1], Cornelis A. T. van Den Berg[1]
[1]University Medical Center Utrecht, Utrecht, Netherlands

14:00 4553. Tissue-Based Intensity Standardization Technique: Application to the ADNI Multi-Centric Dataset
Nicolas Robitaille[1], Abderazzak Mouiha[1], Simon Duchesne[1,2]
[1]Laboratoire MEDICS, Centre de Recherche Université Laval Robert-Giffard, Québec, Canada; [2]Radiology Department, Université Laval, Québec, Canada

14:30 4554. A New Intensity Inhomogeneity Correction Method for Improved Segmentation of Breast Density on MRI
Muqing Lin[1], Siwa Chan[2], Jeon-Hor Chen[1,3], Daniel H-E. Chang[1], Ke Nie[1], Shih-Ting Chen[4], Cheng-Ju Lin[4], Tzu-Ching Shih[4], Orhan Nalcioglu[1], Min-Ying Lydia Su[1]

[1]Tu & Yuen Center for Functional Onco-Imaging & Department of Radiological Sciences, University of California, Irvine, CA, United States; [2]Department of Radiology, Taichung Veterans General Hospital, Taichung, Taiwan; [3]Department of Radiology, China Medical University, Taichung, Taiwan; [4]Department of Biomedical Imaging & Radiological Science, China Medical University, Taichung, Taiwan

15:00 **4555.** **Joint Restoration of Bi-Contrast MRI Data for Intensity Non-Uniformities**
Stathis Hadjidemetriou[1], Michael Weiner[2], Juergen Hennig[1]
[1]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Radiology, VA UCSF, San Francisco, CA 94121, United States

Exhibition Hall Wednesday 13:30-15:30 Computer 128

13:30 **4556.** **Fuzzy Partial Volume Correction of Spinal Cord DTI Parameters**
Torben Schneider[1], David L. Thomas[2], Carolina Kachramanoglou[2], Olga Ciccarelli[2], Daniel C. Alexander[3], Claudia A. M. Wheeler-Kingshott[1]
[1]Department of Neuroinflammation, UCL Institute of Neurology, London, United Kingdom; [2]Department of Brain Repair & Rehabilitation, UCL Institute of Neurology, London, United Kingdom; [3]Centre for Medical Image Computing, Department of Computer Science, UCL, London, United Kingdom

14:00 **4557.** **Adaptive Iterative T_2 Mapping with Maximum Pearson Correlation in the Presence of Noise**
Stephan William Anderson[1], Jorge A. Soto[1], Osamu Sakai[1], Hernan Jara[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States

14:30 **4558.** **Accurate T_2 Mapping with Dual Echo-FSE: Effect of Phase Encoding Profile Orders**
Stephan William Anderson[1], Osamu Sakai[1], Jorge A. Soto[1], Hernan Jara[1]
[1]Radiology, Boston University Medical Center, Boston, MA, United States

15:00 **4559.** **Elimination of Susceptibility-Induced Distortion in the T_2*-Decay Curve with an Improved Fitting Procedure**
Pei-Hsin Wu[1], Nan-Kuei Chen[2], Hsiao-Wen Chung[1]
[1]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan; [2]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

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13:30 **4560.** **Simultaneous T_1, T_2, & B_1 Mapping using Partially RF-Spoiled Gradient Echo**
Yo Taniguchi[1], Suguru Yokosawa[1], Yoshitaka Bito[1]
[1]Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan

14:00 **4561.** **A Simplified Nonlinear Fitting Strategy for Estimating T_1 from Variable Flip Angle Sequences**
Joshua Trzasko[1], Petrice M. Mostardi[1], Stephen J. Riederer, Armando Manduca[1]
[1]Mayo Clinic, Rochester, MN, United States

14:30 **4562.** **Strong Regularization for Brain Myelin Water Quantification in T_2 Relaxation MRI Obtained in 3.0T**
Qing Ji[1], Junyu Guo[1], John O. Glass[1], Wilburn E. Reddick[1]
[1]Radiological Science, St.Jude Children's Research Hospital, Memphis, TN, United States

15:00 **4563.** **A Pixel is an Artifact: On the Necessity of Zero-Filling in Fourier Imaging**
Xiaolu Zhu[1], Boguslaw Tomanek[1], Jonathan Sharp[1]
[1]Institute for Biodiagnostics (West), National Research Council of Canada, Calgary, AB, Canada

Artifacts & Correction - Eddy Currents & B_0 Homogeneity

Exhibition Hall Monday 14:00-16:00 Computer 129

14:00 **4564.** **Correcting High Order Eddy Current Induced Distortion for Diffusion Weighted Echo Planar Imaging**
Dan Xu[1], Joe K. Maier, Kevin F. King[1], Bruce D. Collick, Hong Huang, Tony M. Linz, Gaohong Wu
[1]Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States

14:30 **4565.** **A 3D Eddy Current Model for the Prediction of Geometric Image Distortions in Stejkal-Tanner Diffusion Weighted EPI**
Kieran R. O'Brien[1,2], Nils Kickler[3], Francois Lazeyras[1], Rolf Gruetter[3], Thorsten Feiweier[4], Gunnar Krueger[5]
[1]Department of Radiology, Université de Genève, Geneva, Switzerland; [2]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne,, Switzerland; [3]Laboratory for Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; [4]Siemens Healthcare Sector, Erlangen, Germany; [5]Advanced Clinical Imaging Technology, Siemens Suisse SA, Lausanne, Switzerland

15:00 **4566.** **Efficient Correction of Static & Dynamic (Including Eddy Current) Field Inhomogeneity in DTI Data**
Erik B. Beall[1], Wanyong Shin[1], Kecheng Liu[2], Ken E. Sakaie[1], Mingyi Li[1], Dominic Holland[3], Anders M. Dale[4], Mark J. Lowe[1]
[1]Imaging Institute, Cleveland Clinic, Cleveland, OH, United States; [2]Siemens Medical Solutions USA, Inc, Malvern, PA, United States; [3]Neurosciences, University of California, San Diego, La Jolla, CA, United States; [4]Radiology, University of California, San Diego, La Jolla, CA, United States

15:30 **4567.** **A Simple Model for Eddy Currents Correction in High B-Values Acquisitions**
Silvia De Santis[1,2], Shani Ben Amitay[3], Yaniv Assaf[3], Derek K. Jones[1]
[1]CUBRIC, School of psychology, CARDIFF University, United Kingdom; [2]Physics department, Sapienza University, Rome, Italy; [3]Tel Aviv University, Israel

Exhibition Hall Tuesday 13:30-15:30 Computer 129

13:30 **4568.** **Automatic Geometric Distortion Correction for Single-Shot Echo Planar Imaging**
Thomas Benner[1], Andre J. W. van Der Kouwe[1], Caterina Mainero[1], Dominic Holland[2], Anders M. Dale[2]
[1]Radiology, Athinoula A. Martinos Center, Charlestown, MA, United States; [2]Multimodal Imaging Laboratory,, University of California, San Diego, La Jolla, CA, United States

14:00 **4569.** **Distortion Correction of Single-Shot Spin-Echo EPI of the Liver at 3T**
Kevin M. Koch[1], Dominic Holland[2], Dan Xu[1], Ajit Shankaranarayanan[3], Anders Dale[2]
[1]Global Applied Science Laboratory, GE Healthcare, Waukesha, WI, United States; [2]Department of Neurosciences, University of California, San Diego, United States; [3]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States

14:30 **4570.** **Point Spread Function Map for Distortion Correction with Double EPI Readout Acquisition Strategy at 3T**
Yu Cai[1], Qingwei Liu[2], Mark Woods[1], Craig Hamilton[3], Hongyu An[2]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, OR, United States; [2]University of North Carolina atg Chapel Hill; [3]Wake Forest University

15:00 **4571.** **Improved PSF Mapping Acceleration Technique for EPI Geometric Distortion Correction at 7 Tesla**
Myung-Ho In[1], Oliver Speck[1]
[1]Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 129

13:30 **4572.** **3D Magnetic Susceptibility Correction with Application to Diffusion-Weighted Imaging**
Anh Tu Van[1], Bradley P. Sutton[2]
[1]Electrical & Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; [2]Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States

14:00 **4573.** **Distortion Correction of Multi-Coil Diffusion-Weighted EPI using the Phase-Based Method: PLACE**
Sofia Chavez[1], Elizabeth Ramsay[1], Masoom Haider[1,2], Qing-San Xiang[3], Greg Stanisz[1,4]
[1]Imaging Research, Sunnybrook Research Institute, Toronto, ON, Canada; [2]Department of Radiology, University of Toronto, Toronto, ON, Canada; [3]Department of Radiology, University of British Columbia, Vancouver, B.C., Canada; [4]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

14:30 **4574.** **A Correction of Amplitude Variation using Navigators in an Interleave-Type Multi-Shot EPI at 7T**
Dae-Hun Kang[1], Se-Hong Oh[1], Jun-Young Chung[1], Young-Bo Kim[1], Seiji Ogawa[1], Zang-Hee Cho[1]
[1]Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, Korea, Republic of

15:00 **4575.** **Dynamic Correction of Artifacts Due to Susceptibility Effects & Time-Varying Eddy Currents in DTI**
Trong-Kha Truong[1], Nan-Kuei Chen[1], Allen W. Song[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States

Exhibition Hall Thursday 13:30-15:30 Computer 129

13:30 **4576.** **Dynamic Distortion Correction of SE EPI Data using Phase Maps from Simultaneously-Acquired GE-EPI Data**
Jack Harmer[1], Susan Francis[1], Richard Bowtell[1]
[1]SPMMRC, the University of Nottingham, Nottingham, Nottinghamshire, United Kingdom

14:00 **4577.** **Dynamic Phase Echo-Planar Imaging - Detection & Correction of Dynamic Off-Resonance**
Josef Pfeuffer[1], Dingxin Wang[2], Christina Triantafyllou[3]
[1]MR Application Development, Siemens Healthcare, Erlangen, D, Germany; [2]US R&D, Siemens Healthcare, Minneapolis, MN, United States; [3]McGovern Institute for Brain Research, MIT, Cambridge, MA, United States

14:30 **4578.** **Dynamic Fieldmap Estimation for Respiration Correction Based on Single Shot 3D Images**

Benjamin Zahneisen[1], Thimo Grotz[1], Maxim Zaitsev[1], Juergen Hennig[1]
[1]University Hospital Freiburg, Freiburg, Germany

15:00 **4579.** **Recovering Fine-Scale Features in Spiral Imaging with Piecewise Linear Off Resonance Correction (PLORC)**
Travis Benjamin Smith[1], Krishna S. Nayak[1]
[1]Electrical Engineering, University of Southern California, Los Angeles, CA, United States

Pulse Sequences - Corrections

Exhibition Hall Tuesday 13:30-15:30 Computer 130

13:30 **4580.** **K-Space Trajectory Correction in Spiral-In/Out Bssfp Imaging**
Xue Feng[1], Sameul William Fielden[1], Hao Tan[1], Craig H. Meyer[1,2]
[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, United States; [2]Radiology, University of Virginia, Charlottesville, VA, United States

14:00 **4581.** **UTILE – A Fast Combined UTE-DIXON Four Class Attenuation Correction Technique for PET/MR**
Jochen Franke[1,2], Hank Donker[3], Felix Mottaghy[4], Christiane Kuhl[3], Fabian Kiessling[2], Volkmar Schulz[1,2]
[1]Molecular Imaging Systems, Philips Research Europe, Aachen, North Rhine-Westphalia, Germany; [2]Experimental Molecular Imaging, University of Aachen (RWTH), Aachen, North Rhine-Westphalia, Germany; [3]Diagnostic & Interventional Radiology, University Hospital Aachen, Aachen, North Rhine-Westphalia, Germany; [4]Nuclear Medicine, University Hospital Aachen, Aachen, North Rhine-Westphalia, Germany

14:30 **4582.** **An Accelerating Method for FSE Phase Correction**
Weiwei Zhang[1], Yongchuan Lai[1]
[1]GE Healthcare, Beijing, China, People's Republic of

15:00 **4583.** **STAGES: Dynamic Shimming by Nonlinear Phase Preparation & K-Space Parcellation in Steady-State MRI**
Walter R. T. Witschey[1], Christian A. Cocosco[1], Daniel Gallichan[1], Gerrit Schultz[1], Hans Weber[1], Anna Masako Welz[1], Jürgen Hennig[1], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg i. Breisgau, Germany

Artifacts & Correction: Motion I

Exhibition Hall Monday 14:00-16:00 Computer 131

14:00 **4584.** **External Calibration Parallel Imaging for Improved Motion Correction Capabilities with T_1 FLAIR PROPELLER**
James H. Holmes[1], Philip J. Beatty[2], Howard A. Rowley[3], Zhiqiang Li[4], Ajeetkumar Gaddipati[5], Xiaoli Zhao[5], Reed F. Busse[6], Jean H. Brittain[1]
[1]Global Applied Science Laboratory, GE Healthcare, Madison, WI, United States; [2]Global Applied Science Laboratory, GE Healthcare, Toronto, ON, Canada; [3]Radiology, University of Wisconsin-Madison; [4]MR Engineering, GE Healthcare, Phoenix, AZ; [5]MR Engineering, GE Healthcare, Waukesha, WI; [6]MR Research, GE Healthcare, Waukesha, WI

14:30 **4585.** **Measuring Effect of Embedded Navigators on MEMPRAGE Tissue Contrast**
M. Dylan Tisdall[1,2], Martin Reuter[1,3], Andre van Der Kouwe[1,2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Masschusetts General Hosptial, Charlestown, MA, United States; [2]Radiology, Harvard Medical School, Brookline, MA, United States; [3]Neurology, Harvard Medical School, Brookline, MA, United States

15:00 **4586.** **Motion-Insensitive Structural MRI Based on Repeated Imaging with Echo-Planar Navigation & Acceleration (RIENA): Demonstrated with Susceptibility-Weighted Imaging in the Presence of Frequent Intra-Scan Tremors**
Nan-Kuei Chen[1]
[1]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

15:30 **4587.** **Comparison of MR-Navigator & Optical Tracking Methods for Adaptive Motion Correction**
Kazim Z. Gumus[1], Brian Keating[1], Brian Andrews-Shigaki[2], Brian Armstrong[3], Anders Dale[4], Thomas M. Ernst[1]
[1]John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, United States; [2]Department of Military & Emergency Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; [3]Electrical Engineering & Computer Science, University of Wisconsin-Milwaukee, Milwaukee, WI, United States; [4]Department of Radiology, University of California, San Diego, La Jolla, CA, United States

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13:30 4588. Motion-Corrected Single Shot Fast Spin-Echo MRI using Prospective Motion Tracking & Retrospective Super-Resolution Volume Reconstruction
Ali Gholipour[1], Martin Polak[1], Andre van Der Kouwe[2], Erez Nevo[3], Simon K. Warfield[1]
[1]Computational Radiology Laboratory, Children's Hospital Boston, & Harvard Medical School, Boston, MA, United States; [2]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, & Harvard Medical School, Boston, MA, United States; [3]Robin Medical, Inc., Baltimore, MD, United States

14:00 4589. Combined Real-Time Prospective Motion Correction & Concurrent Field Monitoring
Maximilian Haeberlin[1], Lars Kasper[1], Christoph Barmet[1], Signe Johanna Vannesjö[1], Sebastian Kozerke[1], Klaas Paul Pruessmann[1]
[1]Institute for Biomedical Engineering, University & ETH Zurich, Zurich, Switzerland

14:30 4590. Impact of Motion on Parallel Transmission
Roland Bammer[1], Bei Zhang[2], Weiran Deng[3], Graham C. Wiggins[2], Andy V. Stenger[3], Daniel K. Sodickson[2]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Radiology, New York University Langone Medical Center, New York, United States; [3]JABSOM, University of Hawaii, Honolulu, HI, United States

15:00 4591. Correction of Subject Motion in Quantitative T_2*-Mapping
Joerg Magerkurth[1,2], Steffen Volz[2], Marlies Wagner[1], Alina Jurcoane[1], Sandra Anti[2], Elke Hattingen[1], Ralf Deichmann[2]
[1]Institute of Neuroradiology, Goethe University Frankfurt, Frankfurt/Main, Germany; [2]Brain Imaging Center (BIC), Goethe University Frankfurt, Frankfurt/Main, Germany

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13:30 4592. DTI with Prospective Motion Correction & Reacquisition in a Clinical Subject Population
Thomas Benner[1], Andre J. W. van Der Kouwe[1], A. G. Sorensen[1]
[1]Radiology, Athinoula A. Martinos Center, Charlestown, MA, United States

14:00 4593. Combined Prospective Rigid-Body Motion Correction with Retrospective Non-Rigid Distortion Correction for EPI
Melvyn B. Ooi[1], Roland Bammer[1], Truman R. Brown[2]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Radiology, Medical University of South Carolina, Charleston, SC, United States

14:30 4594. Inherent Correction of Motion-Induced Phase Errors in Multishot Spiral Imaging using Iterative Phase Cycling
Trong-Kha Truong[1], Nan-Kuei Chen[1], Allen W. Song[1]
[1]Brain Imaging & Analysis Center, Duke University, Durham, NC, United States

15:00 4595. Retrospective Registration-Based Motion Correction with Interleaved Radial Trajectories
Ashley Gould Anderson III[1], Julia Velikina[1], Oliver Wieben[1,2], Alexey Samsonov[2]
[1]Medical Physics, University of Wisconsin, Madison, WI, United States; [2]Radiology, University of Wisconsin, Madison, WI, United States

Exhibition Hall Thursday 13:30-15:00 Computer 131

13:30 4596. Non-Iterative Navigator-Based Approach: Advances Towards Real Time 3D Motion Correction
Junmin Liu[1,2], Maria Drangova[1,2]
[1]Robarts Research Institute, the University of Western Ontario, London, Ontario, Canada; [2]Schulich School of Medicine & Dentistry, the University of Western Ontario, London, Ontario, Canada

14:00 4597. Comparison of K-Space Based Parallel Imaging Approaches for Reducing Non-Rigid Motion Induced Ghosting
Suchandrima Banerjee[1], Philip J. Beatty[2], Ajit Shankaranarayanan[1]
[1]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [2]Global Applied Science Laboratory, GE Healthcare, Toronto, Canada

14:30 4598. Combined Prospective-Retrospective Motion Correction for High-Resolution Brain Imaging
Julian Maclaren[1], Kuan Lee[1], Chaiya Luengviriya[2,3], Michael Herbst[1], Oliver Speck[2], Maxim Zaitsev[1]
[1]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany; [2]Dept. of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany; [3]Dept. of Physics, Kasetsart University, Thailand

Artifacts & Correction: Motion II

Exhibition Hall Monday 14:00-16:00 Computer 132

14:00 **4599.** **Phase Correction in Multi-Breath-Hold MRI with Tracking using Information Entropy**
Yuji Iwadate[1], Hiroyuki Kabasawa[1]
[1]Global Applied Science Laboratory, GE Healthcare, Hino, Tokyo, Japan

14:30 **4600.** **Comparison of Algorithms for Prediction of Respiratory Motion**
Tejas Nair[1], H. Michael Gach[1]
[1]Research Imaging, Nevada Cancer Institute, Las Vegas, NV, United States

15:00 **4601.** **Advantages of Digital vs. Analog Accelerometer-Based Sensor for Respiratory Motion Correction**
Laure Rousselet[1,2], Slavisa Jovanovic[1,2], Cédric Pasquier[3,4], Jacques Felblinger[1,2]
[1]IADI, Nancy-Université, Nancy, France; [2]U947, INSERM, Nancy, France; [3]CIT 801, INSERM, Nancy, France; [4]CIC-IT, CHU de Nancy, Nancy, France

15:30 **4602.** **Real Time Velocity-Based Navigator Triggering in the Abdomen: Initial Results**
Gabriele Beck[1], Jeroen Stout[1], Vincent Denolin[2], Kenneth Coenegrachts[3], Gwenael Herigault[1]
[1]Philips Healthcare, Best, Netherlands; [2]Philips Healthcare Benelux, Brussels, Belgium; [3]Department of Radiology, AZ St.-Jan, Brugge, Belgium

Exhibition Hall Tuesday 13:30-15:30 Computer 132

13:30 **4603.** **Motion Artifact Removal by Retrospective Resolution Reduction (MARs)**
Candice Bookwalter[1], Nicole Seiberlich[1], Mark Griswold[1,2], Vikas Gulani[1]
[1]Department of Radiology, University Hospitals Case Medical Center, Cleveland, OH, United States; [2]Department of Biomedical Engineering, Case Western Reserve Univeristy, Cleveland, OH, United States

14:00 **4604.** **Improvements of Respiratory Motion Recording: Optical Belt vs. Pneumatic Belt**
Laure Rousselet[1,2], Julien De Jonckheere[3], François Narbonneau[4], Slavisa Jovanovic[1,2], Cédric Pasquier[5,6], Jacques Felblinger[1,2]
[1]IADI, Nancy-Université, Nancy, France; [2]U947, INSERM, Nancy, France; [3]CIC-IT 807, INSERM, Lille, France; [4]Multitel, Mons, Belgium; [5]CIT 801, INSERM, Nancy, France; [6]CHU de Nancy, Nancy, France

14:30 **4605.** **Multiple-Region Affine Motion Correction using Localized Coil Sensitivities**
Ghislain Vaillant[1], Christian Buerger[1], Graeme Penney[1], Claudia Prieto[1], Tobias Schaeffter[1]
[1]Division of Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom

15:00 **4606.** **Subject Specific Respiratory Motion in Cardiac MR**
Ian Hamilton Burger[1], Ernesta Meintjes[1]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, Western Cape, South Africa

Exhibition Hall Wednesday 13:30-15:30 Computer 132

13:30 **4607.** **A First Step Towards Multi Slices Fast Spin Echo Cine Imaging of the Heart in Free Breathing using GRICS**
Pierre-André Vuissoz[1,2], Marine Beaumont[3,4], Gabriela Hossu[3,4], Damien Mandry[1,4], Jacques Felblinger[1,3]
[1]Imagerie Adaptative Diagnostique et Interventionnelle, Nancy-Université, Nancy, France; [2]U947, INSERM, Nancy, France; [3]CIT801, INSERM, Nancy, France; [4]CHU-Nancy, Nancy, France

14:00 **4608.** **Free-Breathing Cardiac Black Blood Imaging using 1D Navigator Driven Reconstruction**
Maelene Lohezic[1,2], Brice Fernandez[1,2], Damien Mandry[2,3], Jacques Felblinger[2,4], Pierre-André Vuissoz[2,5]
[1]Global Applied Science Laboratory, GE Healthcare, Nancy, France; [2]IADI Lab., Nancy-Université, Nancy, France; [3]CHU de Nancy, Nancy, France; [4]CIT801, INSERM, Nancy, France; [5]U947, INSERM, Nancy, France

14:30 **4609.** **Association of Several Motion Sensors for Free Breathing Reconstruction Method**
Laure Rousselet[1,2], Slavisa Jovanovic[1,2], Maélène Lohezic[2,3], Marina Filipovic[1,2], Cédric Pasquier[4,5], Jacques Felblinger[1,2]
[1]IADI, Nancy-Université, Nancy, France; [2]U947, INSERM, Nancy, France; [3]Global Applied Science Lab., GE Healthcare, Nancy, France; [4]CIT 801, INSERM, Nancy, France; [5]CIC-IT, CHU de Nancy, Nancy, France

15:00 **4610.** **Motion Correction using Coil Arrays (MOCCA) for Free-Breathing Cardiac Cine MRI**
Peng Hu[1], Susie Hong, Mehdi H. Moghari, Beth Goddu, Lois Goepfert, Thomas H. Hauser, Warren J. Manning, Reza Nezafat
[1]Beth Israel Deaconess Medical Center, Boston, MA, United States

Exhibition Hall Thursday 13:30-14:00 Computer 132

13:30 4611. Assessment of Accuracy & Reproducibility of ECG, Pulse Oximetry & Phonocardiogram Gating of Cardiac MRI at 7T
Tobias Frauenrath[1], Thibaut de Geyer D´Orth[1], Thoralf Niendorf[1,2]
[1]Berlin Ultrahigh Field Facility, MDC Berlin, Berlin, Germany; [2]Charité Campus Buch, Humboldt-University, Experimental & Clinical Research Center (ECRC), Berlin, Germany

Artifacts & Correction: Non-Motion

Exhibition Hall Monday 14:00-16:00 Computer 133

14:00 4612. PROPELLER-EPI-DWI with Oblique N/2 Ghost Correction using 2D Linear Phase Correction & Interlaced Fourier Transform Reconstruction
Hing-Chiu Chang[1,2], Chun-Jung Juan[3], Tzu-Chao Chuang[4], Hsiao-Wen Chung[2,3]
[1]Global Applied Science Laboratory, GE Healthcare, Taipei, Taiwan; [2]Institute of Biomedical Electronics & Bioinformatics, National Taiwan University, Taipei, Taiwan; [3]Department of Radiology, Tri-Service General Hospital, Taipei, Taiwan; [4]Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan

14:30 4613. A Generalized Phase Correction Technique for EPI-PROPELLER
Novena Rangwala[1,2], Xiaohong Joe Zhou[2,3]
[1]Department of Bioengineering, University of Illinois at Chicago, Chicago, IL, United States; [2]Center for Magnetic Resonance Research, University of Illinois Medical Center, Chicago, IL, United States; [3]Departments of Radiology, Neurosurgery & Bioengineering, University of Illinois Medical Center, Chicago, IL, United States

15:00 4614. EPI Ghost Correction with LTI k-Space Trajectory Estimation
Nii Okai Addy[1], Holden H. Wu[1,2], Dwight G. Nishimura[1]
[1]Electrical Engineering, Stanford University, Stanford, CA, United States; [2]Cardiovascular Medicine, Stanford University, Stanford, CA, United States

15:30 4615. Two-Dimensional Phase Cycled Reconstruction for Inherent Correction of EPI Nyquist Artifacts
Nan-Kuei Chen[1], Alexandru V. Avram[1], Allen W. Song[1]
[1]Brain Imaging & Analysis Center, Duke University Medical Center, Durham, NC, United States

Exhibition Hall Tuesday 13:30-15:30 Computer 133

13:30 4616. Simulations of Stent Artifacts in MRI
Yan Guo[1], Jiangbo Chen[1], Xiaohua Jiang[1]
[1]Department of Electrical Engineering, Tsinghua University, Beijing, China, People's Republic of

14:00 4617. Frequency Adjustments in TIDE BSSFP Imaging to Compensate for Banding Artifacts Caused by Dental Braces
Yin-Cheng Kris Huang[1], Chun-Jung Juan[2], Te-Son Kuo[1]
[1]Department of Electrical Engineering, National Taiwan University, Taipei City, Taiwan; [2]Department of Radiology, Tri-Service General Hospital, Taipei City, Taiwan

14:30 4618. Spiral Imaging with View Angle Tilting for Application to Metal Artifact Correction
Sang-Young Zho[1], Dong-Hyun Kim[1,2]
[1]Electrical & Electronic Engineering, Yonsei University, Shinchon-dong, Seoul, Korea, Republic of; [2]Radiology, Yonsei University College of Medicine, Shinchon-dong, Seoul, Korea, Republic of

15:00 4619. MRI Near Metal Objects: Investigating the Effects of Induced RF Currents & Currents Induced by Gradient Switching on SE Phase Images using a Simple Model System
Hanne Wojtczyk[1], Petros Martirosian[1], Verena Ballweg[1], Hansjoerg Graf[1], Fritz Schick[1]
[1]Section on Experimental Radiology, University Hospital Tuebingen, Tuebingen, Baden-Wuerttemberg, Germany

Exhibition Hall Wednesday 13:30-15:30 Computer 133

13:30 4620. Reducing Artefacts in Inversion Recovery Prepared MRI Caused by Varying Heart Rate Through Real-Time Adaptation of the Inversion Time
Jedrzej Burakiewicz[1], Christoph Kolbitsch[1], Geoffrey David Charles-Edwards[1,2], Tobias Schaeffter[1]
[1]Division of Imaging Sciences, King's College London, London, United Kingdom; [2]Guy's & St Thomas' NHS Foundation Trust, London, United Kingdom

14:00 **4621.** **The Inner Lives of Voxels: Revisiting the Basics for Nonlinear Gradient Imaging**
Gigi Galiana[1], Jason Stockmann[2], Leo K. Tam[2], Robert Todd Constable[1,2]
[1]Diagnostic Radiology, Yale University, New Haven, CT, United States; [2]Biomedical Engineering, Yale University, New Haven, CT, United States

14:30 **4622.** **Partial Volume Corrections of Myelin Water Fraction Values**
Sonya Bells[1], Sean Deoni[2,3], Ofer Pasternak[4], Derek K. Jones[1]
[1]CUBRIC, School of Psychology, Cardiff, United Kingdom; [2]School of Engineering, Brown University, Providence, RI, United States; [3]Centre of Neuroimaging Sciences-Institute of Psychiatry, King's College, London, United Kingdom; [4]Brigham & Women's Hospital, Harvard Medical School, Bostan, MA, United States

15:00 **4623.** **Post Processing Correction of Ghosting Artefacts in Arterial Input Function Determination for Fast Dynamic Contrast Enhanced MRI**
Hendrik Laue[1], Dennis Doelschel[2], Felix Gremse[2], Matthias Günther[1], Fabian Kiessling[2], Heinz-Otto Peitgen[1]
[1]Fraunhofer MEVIS, Bremen, Germany; [2]Experimental Molecular Imaging, RWTH (University of Aachen), Aachen, Germany

Educational E-Poster

Body - Non-Cancer

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4624. **Tissue- & Magnetic Resonance-Based Metrics for Quantifying Hepatic Content: Implications for Validation Studies using Tissue as the Reference Standard**
Scott Brian Reeder[1,2], Catherine D. Hines[1], Charles A. McKenzie[3], Claude B. Sirlin[4]
[1]Radiology, University of Wisconsin, Madison, WI, United States; [2]Medical Physics, University of Wisconsin, Madison, WI, United States; [3]Medical Biophysics, University of Western Ontario, London, Ontario, Canada; [4]Department of Radiology, University of California, San Diego, San Diego, CA, United States

4625. **Whole Body MRI; Improve Lesion Detection & Characterization with Diffusion Weighted Techniques**
Rajpaul Attariwala[1], Wayne Picker[1]
[1]AIM Medical Imaging, Vancouver, BC, Canada

4626. **Non-Contrast-Enhanced Hepatic MR Angiography with Time Spatial Labeling Inversion Pulse**
Hiroyoshi Isoda[1], Tomohisa Okada[1], Kotaro Shimada[1], Seiya Kawahara[1], Hironori Shimizu[1], Kaori Togashi[1]
[1]Kyoto University, kyoto, Japan

4627. **Magnetic Resonance Enterography in the Assessment of Inflammatory Bowel Disease in Pediatric Population Including DWI, Cine MR & Post Gadolinium Dynamic MR.**
Jorge Humberto Davila Acosta[1,2], Nagwa Wilson[3], Elka Miller
[1]Diagnostic Imaging, Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada; [2]Radiology, University of Ottawa, Ottawa, Ontario, Canada; [3]Children's Hospital of Eastern Ontario, Canada

4628. **MRI of Inflammatory Bowel Disease: Review of the Findings with Comparison to CT & Fluoroscopy & Discussion of the Role of MR-Enterography in Establishing & Following the Disease.**
Joseph Yacoub[1], Christine Schmid-Tannwald[1], Barbra White[1], Xiaobing Fan[1], David Rubin[2], Aytekin Oto[1]
[1]Radiology, University of Chicago, Chicago, IL, United States; [2]Gastroenterology, University of Chicago, Chicago, IL, United States

4629. **Imaging Features of Ovarian Cystic Lesions with Emphasis on Differential Diagnosis**
Sung Bin Park[1]
[1]Radiology, Cheil General Hospital & Women's Healthcare Center, Kwandong University College of Medicine, Seoul, Korea, Republic of

4630. **Imaging Features of the Hypointense Solid Lesions on T_2-Weighted MR Images in the Genitourinary Tract**
Sung Bin Park[1]
[1]Radiology, Cheil General Hospital & Women's Healthcare Center, Kwandong University College of Medicine, Seoul, Korea, Republic of

4631. **How to Differentiate Medically Treated vs. Surgically Treated Crohn's Disease on MR Enterography**
Andrew Dean Hardie[1]
[1]Radiology, Medical University of South Carolina, Charleston, SC, United States

4632. **Functional Imaging of the Female Pelvis**
Helen Clare Addley[1], Penelope Moyle[2], Caroline Reinhold[1], Evis Sala[3]

[1]Radiology, Montreal General Hospital, Montreal, Quebec, Canada; [2]Hinchingbrooke Hospital, United Kingdom; [3]Addenbrooke's Hospital, United Kingdom

4633. Diffusion-Weighted Imaging of the Kidney
Helen Clare Addley[1], Nesreen Abourokbah[1], Alla Khashper[1], Caroline Reinhold[1]
[1]Radiology, Montreal General Hospital, Montreal, Quebec, Canada

4634. Real-Time MRI with Synchronous Polysomnography of the Upper Airway in Patients with Obstructive Sleep Apnea.
Lewis K. Shin[1,2], Andrew B. Holbrook[1], Catherine E. Chang[1], Juan M. Santos[3], Nancy J. Fischbein[4], Robson Capasso[5], Clete A. Kushida[6]
[1]Radiology / Lucas Center for MRI, Stanford University, Stanford, CA, United States; [2]PAVAHCS, Palo Alto, CA, United States; [3]HeartVista Inc, Palo Alto, CA; [4]Radiology, Stanford University, Stanford, CA, United States; [5]Otolaryngology/Head & Neck Surgery, Stanford University, Stanford, CA, United States; [6]Psychiatry & Behavioral Sciences, Stanford University, Stanford, CA, United States

Cancer

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4635. Optimizing Breast Magnetic Resonance Imaging at 3.0 Tesla
Habib Rahbar[1,2], Savannah Partridge[1,2], Wendy DeMartini[1,2], Constance Lehman[1,2]
[1]Radiology, University of Washington, Seattle, WA, United States; [2]Radiology, Seattle Cancer Care Alliance, Seattle, WA, United States

4636. Optimizing Clinical Breast MRI: How to Identify Common Artifacts & Correct Them
Basak Erguvan Dogan[1], Jigfei Ma[2], Gary J. Whitman
[1]Diagnostic Radiology, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States; [2]Imaging Physics, the University of Texas M. D. Anderson Cancer Center, Houston, TX, United States

4637. MRI Staging of Endometrial Carcinoma According to New FIGO Staging System (2009).
Alla Khashper[1], Helen Addley[1], Nesreen H. AbouRokbah[1], Evis Sala[2], Caroline Reinhold[1]
[1]McGill University Health Center, Montreal, Quebec, Canada; [2]Addenbrooke's Hospital, Cambridge, United Kingdom

4638. Applications of Perfusion MRI in Radiation Therapy of Lung Cancers
Jing Cai[1], Fang-Fang Yin[1]
[1]Duke University Medical Center, Durham, NC, United States

4639. Evaluation of Focal Liver Lesions with Diffusion Weighted MRI & ADC Maps
Omar Saleh[1], Judy Rose James[1], Manohar Roda[2]
[1]Radiology, University of Mississippi Medical Center, Jackson, MS, United States; [2]Radiology, University of Mississippi Medical Center , Jackson, MS, United States

4640. Preoperatively Mapping Perforator Flap Artery for Autologous Breast Reconstruction
Mukta Dilipkumar Agrawal[1], Zou Zhitong[1], Tiffany M. Newman[1], Michelle Cerilles[1], Julie Vasile[2], Joshua L. Levine[2], David R. Greenspun[2], Martin R. Prince[1,3]
[1]Radiology, Weill Cornell Medical College, New York, NY, United States; [2]Center of Microsurgical Breast Reconstruction, New York, NY, United States; [3]Radiology, Columbia College of Physicians & Surgeons, New York, United States

Musculoskeletal

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4641. Soft Tissue Lipomatous Tumors : Review of MR Imaging Characteristics with Emphasis on Differentiation Between Benign & Malignant Lesions
Isabelle Drolet[1], Patricia Noël[2]
[1]Radiology Department, Laval University, Quebec City, Quebec, Canada; [2]Radiology Department, CHUQ - Hôtel-Dieu de Québec, Quebec City, Quebec, Canada

4642. Ankylosing Spondylitis from Well Known to Some Less Observed Findings
Hatice Tuba Sanal[1], Sedat Yilmaz[2], Muhammet Cinar[2], Ayhan Dinc[2], Cem Tayfun[2]
[1]Gulhane Military Medical Academy, Ankara, NA, Turkey; [2]Gulhane Military Medical Academy, Turkey

4643. Rare Involvement in Behcet Disease: Myositis
Sedat Yilmaz[1], Muhammet Cinar[1], Hatice Tugba Sanal[2], Omer Karadag[1], Yýldýrým Karslioglu[3], Ismail Simsek[1], Hakan Erdem[1], Salih Pay[1], Ayhan Dinc[1]
[1]Division of Rheumatology, Gulhane School of Medicine, Kecioren, Ankara, Turkey; [2]Department of Radiology, Gulhane School of Medicine, Kecioren, Ankara, Turkey; [3]Department of Pathology, Gulhane School of Medicine, Kecioren, Ankara, Turkey

4644. Imaging of Internal Derangement of Various Joints with Isotropic Turbo-Spin Echo Sequence
Young Cheol Yoon[1]
[1]Samsung Medical Center, Seoul, Korea, Republic of

Cardiovascular

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4645. MRI "Triple Rule-Out": MRI for Acute Chest Pain Evaluation
Christopher J. François[1], Mark L. Schiebler[1], Scott B. Reeder[1], Michael P. Hartung[1], Scott K. Nagle[1]
[1]Radiology, University of Wisconsin, Madison, WI, United States

4646. Contrast Agents & MR Protocols for Molecular Imaging of Murine Myocardial Infarction
Leonie Elisabeth Paulis[1], Bram Franciscus Coolen[1], Tessa Geelen[1], Klaas Nicolay[1], Gustav Jacobus Strijkers[1]
[1]Biomedical NMR, Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands

4647. Techniques & Applications of Mouse Cardiac MRI for the Study of Heart Function & Failure.
Moriel Vandsburger[1]
[1]Biological Regulation, Weizmann Institute of Science, Rehovot, Israel

4648. MR Imaging in Cardiomyopathy
Tirur Raman. KAPILAMOORTHY Kapilamoorthy[1], Narendra Bodhey[2], Vk Ajit Kumar[2]
[1]RADIOLOGY, S.C.T.I.M.S.T., TRIVANDRUM, KERALA, India; [2]SCTIMST

4649. Practical Tricks for 3.0T Whole-Heart Coronary MRA
Qi Yang[1], Kuncheng Li[1], Xiangying Du[1], Debiao Li[2]
[1]Radiology, Xuanwu Hospital, Beijing, China, People's Republic of; [2]Biomedical Imaging Research Institute, Cedars-Sinai Medical Center

4650. Role of MRI in Venacaval Anomalies of Complex Congenital Heart Disease
Tirur Raman. KAPILAMOORTHY Kapilamoorthy[1], Narendra Bodhey[2], Thomas Titus[2]
[1]RADIOLOGY, S.C.T.I.M.S.T., TRIVANDRUM, KERALA, India; [2]SCTIMST

4651. What is the Role of Pulmonary MRA in this "Medical Radiation Sensitized" Era?
Mark L. Schiebler[1], Scott K. Nagle[1], Christopher J. Francois[1], Azita G. Hamedani[2], Michael D. Repplinger, Thomas M. Grist[1], Scott B. Reeder[1,3]
[1]Radiology, UW-Madison, Madison, WI, United States; [2] Emergency Medicine, UW-Madison; [3]Medical Physics, UW-Madison

4652. Non-Contrast Magnetic Resonance Angiography for Renal Transplant Patients: Current State of the Art
Mark L. Schiebler[1], Scott B. Reeder[1,2], Eric Bultman[2,3], Scott K. Nagle[1], Oliver Wieben[2], Christopher J. François[1]
[1]Radiology, UW-Madison, Madison, WI, United States; [2]Medical Physics, UW-Madison; [3]School of Medicine, UW-Madison

4653. Non-Contrast MRA of the Finger & Toe using Time-Spatial Labeling Inversion Pulse (Time-SLIP) Technique
Jun Isogai[1], Takeshi Shimada[2], Hideo Hatakeyama[2], Mitsue Miyazaki[3], Kenji Yodo[4], Tomoko Miyata[4]
[1]Shuwa General Hospital, Kasukabe, Saitama, Japan; [2]Hasuda Hospital; [3]Toshiba Medical Research Institute, USA, United States; [4]Toshiba Medical Systems Corp.

4654. Thoracic DCE-MRI for Estimating Pharmacokinetic Parameters using Diffusible Tracer
Jae-Hun Kim[1], Yoo Na Kim[1], In Young Song[1], Chin A. Yi[1]
[1]Radiology, Samsung Medical Center, Sungkyunkwan University, Seoul, Korea, Republic of

Functional MRI

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4655. Functional Connectivity: Biophysical Underpinnings & Ramifications
Yash Shah[1], Cameron Craddock[2], Stephen LaConte, Scott James Peltier[1]
[1]University of Michigan, Ann Arbor, MI, United States; [2]Baylor College of Medicine, Waco, TX, United States

4656. Optimal Sampling & Reconstruction Patterns for Magnetic Resonance Inverse Imaging & MR-Encephalography

Irtiza Ali Gilani[1], Raimo Sepponen[2]
[1]Advanced Magnetic Resonance Imaging Centre, Low Temperature Laboratory, Aalto University, Espoo, Uusima, Finland; [2]Department of Electronics, Aalto University, Espoo, Uusima, Finland

Engineering

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4657. Lots of Loops: Constructing a Highly Parallel Brain Array Coil

Boris Keil[1], Christin Y. Sander[1,2], Veneta Tountcheva[1], Jennifer A. McNab[1], Kyoko Fujimoto[1], Christina Triantafyllou[1,3], Lawrence L. Wald[4,5]
[1]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital , Harvard Medical School, Charlestown, MA, United States; [2]Department of Electrical Engineering & Computer Science, MIT, Cambridge, MA, United States; [3]McGovern Institute for Brain Research, MIT, Cambridge, MA, United States; [4]A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, United States; [5]Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, United States

4658. Interpreting "Spatial Field Gradient" MR Conditional Device Labeling & the IEC 60601-2-33 3rd Edition Fringe-Field Compatibility Technical Specification Sheet Requirements

Michael C. Steckner[1], Georg Frese[2], Johan van Den Brink[3], Daniel J. Schaefer[4]
[1]TMRU, Mayfield Village, OH, United States; [2]Siemens Medical Solutions, Erlangen, Germany; [3]Philips Medical Systems, Best, Netherlands; [4]General Electric Healthcare, Waukesha, WI, United States

4659. A Unified Framework for SNR Comparisons of Four Array Image Combination Methods

Nicola De Zanche[1,2], Adam Maunder[1], Tyler Charlton[1], Keith Wachowicz[1,2], B. Gino Fallone[1,2]
[1]Dept. of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Dept. of Medical Physics, Cross Cancer Institute, Edmonton, Alberta, Canada

4660. Common Modes & Cable Traps

Benoit Michel Schaller[1], Arthur William Magill[1,2], Rolf Gruetter,,[3]
[1]Laboratory of Functional & Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Vaud, Switzerland; [2]Department of Radiology, University of Lausanne, Switzerland; [3]Department of Radiology, Universities of Lausanne & Geneva, Switzerland

Diffusion + Perfusion – Neuro

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4661. Mapping the Human Connectome with Lausanne Neuroimaging Tools

Patric Hagmann[1], Stephan Gerhard[1,2], Alessandro Daducci[2], Leila Cammoun[2], Elda Fischi[2], Alia Lemkaddem[2], Djalel Meskaldji[2], Xavier Gigandet[2], Reto Meuli[1], Jean-Philippe Thiran[2]
[1]Radiology, CHUV-UNIL, Lausanne, VD, Switzerland; [2]LTS5, EPFL, Lausanne, VD, Switzerland

4662. Understanding the Principles & the Challenges of Intravoxel Voxel Incoherent Motion MRI

Christian Federau[1], Reto Meuli[1], Philippe Maeder[1], Patric Hagmann[1]
[1]Department of Radiology, University Hospital Center & University of Lausanne, Switzerland, Lausanne, Switzerland

4663. The Angular Signal Modulation Observed in Double-Wave-Vector Diffusion-Weighting Experiments at Short Mixing Time: A Phase Evolution Perspective

Jürgen Finsterbusch[1,2]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Neuroimage Nord, University Medical Centers Hamburg-Kiel-Lübeck, Hamburg-Kiel-Lübeck, Germany

4664. Methods for Reorienting and Retransforming Diffusion Weighted Imaging Data

Thijs Dhollander[1,2], Wim Van Hecke[1,3], Frederik Maes[1,2], Stefan Sunaert[1,3], Paul Suetens,,[2]
[1]Medical Imaging Research Center (MIRC), K.U.Leuven, Leuven, Belgium; [2]Department of Electrical Engineering (ESAT), K.U.Leuven, Leuven, Belgium; [3]Department of Radiology, University Hospitals of the K.U.Leuven, Leuven, Belgium

Neuro

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4665. Applications of Arterial Spin Labeling (ASL) Perfusion MRI in Clinical Pediatric Neuroimaging
Arastoo Vossough[1], Robert A. Zimmerman[1], Tamara Feygin[1]
[1]Radiology, Children's Hospital of Philadelphia, University of Pennsylvania, Philadelphia, PA, United States

4666. Intracranial Dural Arteriovenous Fistula: Which MR Angiography is the Best for Diagnosis?
Masaaki Hori[1], Shigeki Aoki[2], Koji Kamagata[2], Atsushi Nakanishi[2], Keigo Shimoji[2], Koichi Asahi[2], Haruyoshi Houshito[2], Ryohei Kuwatsuru[2], Keisuke Sasai[2]
[1]Radiology, School of Medicine, Juntendo University, Tokyo, Japan; [2]Radiology, School of Medicine, Juntendo University, Tokyo, Japan

4667. MRI & MRA of Spinal Cord Arterio Venous Shunts
Stéphanie Condette-Auliac[1], Anne Boulin[1], Oguzhan Coskun[1], Georges Rodesch[1]
[1]NEURORADIOLOGY, Hôpital FOCH, SURESNES, France

4668. Future Clinical Applications of High Resolution Anatomical Imaging of the Brain at 7.0 Tesla MRI
Anja Gwendolyn van Der Kolk[1], Jaco J. M. Zwanenburg[1,2], Fredy Visser[1,3], Peter R. Luijten[1], Jeroen Hendrikse[1]
[1]Department of Radiology, University Medical Center Utrecht, Utrecht, Netherlands; [2]Image Sciences Institute, University Medical Center Utrecht, Netherlands; [3]Philips Healthcare, Best, Netherlands

4669. MR Characterization of Autism Spectrum Disorders
Yash Shah[1], Scott James Peltier[1]
[1]University of Michigan, Ann Arbor, MI, United States

4670. MR Imaging of Epidermoid Tumors-Histopathological Correlation & Surgical Implications
Bejoy Thomas[1], Divyata Rajendra Hingwala[1], Chandrasekharan Kesavadas[1], Girish Menon[2], Vishnupuri Venkataraman Radhakrishnan[3]
[1]Imaging Sciences & Interventional Radiology, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, Kerala, India; [2]Neurosurgery, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, Kerala, India; [3]Pathology, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, Kerala, India

4671. High-Resolution 3D MR Imaging of the Sellar & Parasellar Space using SPACE at 3.0 T
Emiko Morimoto[1], Mitsunori Kanagaki[1], Akira Yamamoto[1], Tomohisa Okada[1], Seiko Kasahara[1], Satoshi Nakajima[1], Mami Iima[1], Ryo Sakamoto[1], Kaori Togashi[1]
[1]Department of Diagnostic Imaging & Nuclear Medicine, Graduate School of Medicine, Kyoto University, Kyoto, Japan

4672. Diffusion Kurtosis Imaging *In Vivo*; from Basics to Clinical Applications.
Masaaki Hori[1], Yoshitaka Masutani[2], Ryo Sato[3,4], Koji Kamagata[3], Koichi Asahi[3], Nozomi Hamasaki[3], Shuji Satou[3], Atsushi Nakanishi[3], Keigo Shimoji[3], Haruyoshi Houshito[3], Ryohei Kuwatsuru[3], Keisuke Sasai[3], Masaru Takashima[5], Yuriko Suzuki[5], Shigeki Aoki[3]
[1]Radiology, School of Medicine, Juntendo University, Tokyo, Japan; [2]Radiology, TheUniversity of Tokyo Hospital, Tokyo, Japan; [3]Radiology, School of Medicine, Juntendo University, Tokyo, Japan; [4]Radiological Sciences, Graduate School of Human Health Sciences, Tokyo Metropolitan University, Tokyo, Japan; [5]Philips Electronics Japan, Tokyo, Japan

4673. Anatomic, Functional & Postprocessing MRI Techniques in the Evaluation of Epileptic Patients
Diego A. Herrera[1,2], Sergio A. Vargas[1,2], Jon E. Duque[1,2], Arthur B. Dublin[3]
[1]Universidad de Antioquia, Medellin, Antioquia, Colombia; [2]CediMed, Colombia; [3]University of California Davis Medical Center, United States

4674. Neonatal Perfusion Imaging with Pulsed Continuous Arterial Spin Labelling (PCASL)
Ruth L. O'Gorman[1], Cornelia Hagmann[1], Hadwig Speckbacher[1], Brigitte Koller[1], Ajit Shankaranarayanan[2], David C. Alsop[3,4], Ernst Martin[1]
[1]University Children's Hospital, Zürich, Switzerland; [2]Global Applied Science Laboratory, GE Healthcare, Menlo Park, CA, United States; [3]Beth Israel Deaconess Medical Center, Boston, MA, United States; [4]Harvard Medical School, Boston, MA, United States

4675. Focal Cortical Dysplasia: Classification & Role of Advanced MRI Techniques in Evaluation
Chandrasekharan Kesavadas[1], Bejoy Thomas[2], Divyata Hingwala, Ashalatha Radhakrishnan, Kurupath Radhakrishnan
[1]Imaging Sxciences & Interventional Radiology, SCTIMST, Trivandrum, Kerala, India; [2]SCTIMST, India

4676. Using MR-Measured Cerebral Blood Flow to Assess Stroke Risk in Pediatric Sickle Cell Patients
Amanda K. Wake[1], John C. Gore[1]

[1]Vanderbilt University Institute of Imaging Science, Vanderbilt University Medical Center, Nashville, TN, United States

4677. Two Dynamic Studies in One MR Examination: Three Alternative Combinations of Different Dynamic Studies
Keiichi Kikuchi[1], Yoshiyasu Hiratsuka[1], Shogo Oda[1], Shohei Kohno[2], Hideaki Watanabe[2], Shiro Ohue[2], Teruhito Mochizuki[1], Kenya Murase[3]
[1]Radiology, Ehime University, Ehime, Japan; [2]Neurosurgery, Ehime University, Ehime, Japan; [3]Medical Engineering, Osaka University, Suita, Japan

4678. Conventional & Advanced MR Imaging of Parkinson`s Disease
Koji Kamagata[1], Shigeki Aoki[1], Yumiko Motoi[1], Masaaki Hori[1], Atsushi Nakanishi[1], Keigo Shimoji[1], Ryohei Kuwatsuru[1], Keisuke Sasai[1], Nobutaka Hattori[1]
[1]Juntendo University, Tokyo, Bunkyouku, Japan

4679. Grading Glioma- Moving Closer to Pathology with Advanced MRI Techniques
Chandrasekharan Kesavadas[1], Bejoy Thomas[2], Tirur Raman Kapilamoorthy, V. V. Radhakrishnan
[1]Imaging Sxciences & Interventional Radiology, SCTIMST, Trivandrum, Kerala, India; [2]SCTIMST, India

4680. *In Vivo* Sodium MRI: Biomedical Applications
Guillaume Madelin[1], Alexej Jerschow[2], Ravinder R. Regatte[1]
[1]Radiology Department, New York University Medical Center, New York, NY, United States; [2]Chemistry Department, New York University, New York, NY, United States

4681. Proton Spectral Editing with the PRESS Sequence
Atiyah Yahya[1,2]
[1]Department of Oncology, University of Alberta, Edmonton, Alberta, Canada; [2]Department of Medical Physics, Cross Cancer Institute, Edmonton, AB, Canada

4682. Bright Stuff on T_1 – Applications in Clinical Neuroradiology
Ulf Jensen-Kondering[1], Olav Jansen[1]
[1]University of Schleswig-Holstein, Campus Kiel, Institute of Neuroradiology, Kiel, Schleswig-Holstein, Germany

Pulse Sequences, Reconstruction + Analysis

Exhibition Hall Available Monday thru Thursday Educational E-Poster Tables

4683. Biophysical Principles & Models of SSFP Functional MRI Contrast Mechanisms in the Brain at High & Ultra-High Magnetic Fields
Irtiza Ali Gilani[1], Raimo Sepponen[2]
[1]Advanced Magnetic Resonance Imaging Centre, Low Temperature Laboratory, Aalto University, Espoo, Uusima, Finland; [2]Department of Electronics, Aalto University, Espoo, Uusima, Finland

4684. T_1 Mapping: Methods & Challenges
Nikola Stikov[1], Christine L. Tardif[1], Joelle K. Barral[2], Ives Levesque[2], G. Bruce Pike[1]
[1]Montreal Neurological Institute, McGill University, Montreal, QC, Canada; [2]Electrical Engineering, Stanford University, Stanford, CA, United States

4685. Prospective Motion Correction: The Benefits & the Challenges
Julian Maclaren[1], Oliver Speck[2], Maxim Zaitsev[1]
[1]Medical Physics, University Medical Center Freiburg, Freiburg, Germany; [2]Department of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany

4686. A Visual, Interactive Introduction to Basic & Advanced Magnetic Resonance Techniques
Lars G. Hanson[1,2]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark; [2]Biomedical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark

4687. An Overview of Registration Methods Used for the Automatic Analysis of Abdominal DCE-MRI
David Pilutti[1], Claudia Weidensteiner[1], Martin Büchert[1], Ulrike Fasol[1], Stathis Hadjidemetriou[1]
[1]Radiology - Medical Physics, University Medical Center, Freiburg, Germany

4688. Metal-Induced Artifacts in MRI
Brian A. Hargreaves[1], Garry E. Gold[1], John M. Pauly[2], Kim Butts Pauly[1], Kevin M. Koch[3]
[1]Radiology, Stanford University, Stanford, CA, United States; [2]Electrical Engineering, Stanford University, Stanford, CA, United States; [3]Applied Science Lab, General Electric Healthcare, Waukesha, WI, United States

4689. Accuracy & Precision in Quantitative Rotating Frame Relaxometry at High & Ultra-High Magnetic Fields
Irtiza Ali Gilani[1], Raimo Sepponen[2]
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4690. T_1rho & Steady-State MRI: The Odd Couple
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4691. What is Magnetic Resonance?
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4692. Fundamentals & Visualization of the SWIFT Sequence
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4693. Normalized Cuts Method for Biomedical MRI Segmentation
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