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ISMRM
MAGNETIC RESONANCE IN MEDICINE

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Footprints of the **ISMRM** in the MR Path

The Annual Meetings of the ISMRM (and its predecessor Societies, the Society of Magnetic Resonance in Medicine, SMRM, and the Society of Magnetic Resonance Imaging, SMRI) go all the way back to 1982, which was the year the 1st SMRM Annual Meeting took place in Boston, USA (August 16–18, 1982); 1983 was the year of the 1st SMRI Annual Meeting (Colorado Springs, USA). The Proceedings of all these historical meetings are now available online on the ISMRM website. These Proceedings provide an amazing footprint in the arc of our history as a Society, and the importance of our Annual Meetings as the avenue of choice for presenting new MR methods, tools, and applications of aspects of our field that have greatly impacted and transformed how MR is used today, and which have become 'classic' contributions. This is something the ISMRM should be very proud of, testimony to the role we have played helping MR leaders shape our field. It is indeed at our Annual Meetings where MR advances are most often first shown and/or conceived.

As it is often said, you must look at the past if you want to understand the future; by exploring the influential aspects of our past, it can help us envision what the future may look like and inspire us to dream high about it.

The project has involved broad consultation and led to a shortlist of 100 'classic' abstracts to celebrate the 40th anniversary of the Annual Meetings. If one thinks that we have well over 100,000 abstracts having been presented at our Annual Meetings over the years, the task of selecting a shortlist of 'classics' is indeed daunting. This is by no means "the list" of classics, but just the start of this project – a first trailer of our history.

After working on this project, I feel a bit like archaeologists from old times who had just discovered a new site, and the more they searched, the more amazing and influential material they found! This is just the start of our journey to unearth the footprints of ISMRM in the MR path, and there will be a follow up project(s) to address some of the gaps and diversity aspects we identified on the list.

We hope you will enjoy reading this collection.

Kind regards,

Fernando Calamante

2021-2022 ISMRM President

Year	Page / Abstract number	Authors	First Author's Institute	Title
1982	SMRM, p24	Brasch RC, Nitecki DE, London D, Tozer TN, Doemeny J, Tuck LD, Wolff S	University of California San Francisco, US	Evaluation of nitroxide stable free radicals for contrast enhancement in NMR imaging
1982	SMRM, p94	Mansfield P, Ordidge RJ, Rzedzian RR, Doyle M, Guilfoyle D	University of Nottingham, UK	Real-time dynamic imaging by NMR
1982	SMRM, p102	Maudsley AA, Hilal SK, Simon HE, Perman WH	Columbia University, US	Multinuclear NMR imaging
1982	SMRM, p105	Mendonça Dias MH, Lauterbur PC, Brown EJ	State University of New York at Stony Brook, US	The use of paramagnetic contrast agents in NMR imaging II: In vivo studies
1983	SMRM, p116	Edelstein WA, Mueller OM, Bottomley PA, Hart HR, Schenck JF, Smith LS, O'Donnel M, Leue WM, Redington RW	GE, US	NMR images of the whole human trunk at 64 MHz.
1983	SMRM, p230	Maudsley AA, Hilal SK, Simon HE, Wittekoek S	Columbia University, US	Multinuclear applications of chemical shift imaging
1984	SMRM, p63	Bottomley PA	GE, US	RF power deposition in NMR imaging
1984	SMRM, p74	Bottomley PA, Foster TE, Vatis D, Darrow RD, Mueller OM, Edelstein WA, Hardy CJ	GE, US	Depth resolved surface coil spectroscopy (DRESS) for in vivo 1H, 31P, and 13C NMR.
1984	SMRM, p193	Dixon WT, Faul DD	Washington University in St. Louis, US	Proton spectroscopic imaging at 0.35T
1984	SMRM, p291	Haase A, Frahm J, Hänicke W, Matthaei D	Max-Planck Institute, DE	Chemical shift selection (CHESS) imaging
1984	SMRM, p342	Hoult DI, Silver MS, Joseph RI	NIH, US	A highly selective 180° pulse
1984	SMRM, p559	Norris DG	University of Aberdeen, UK	Phase encoded NMR flow imaging
1985	SMRM, p618	Wedeen VJ, Rosen BR, Buxton R, Edelman, RR, Meuli R, Brady TJ	Massachusetts General Hospital, US	MRI angiography and flow volume quantification
1985	SMRM, p887	Mendonça-Dias MH, Bernardo ML, Muller RN, Acuff V, Lauterbur PC	State University of New York at Stony Brook, US	Ferromagnetic particles as contrast agents for magnetic resonance imaging
1985	SMRM, p935	Ahn CB, Rew CY, Kim JH, Nalcioglu O, Cho ZH	Korea Advanced Institute of Science, KR	A new high speed spiral-scan echo planar (SEPI) NMR imaging

1985	SMRM, p980	Haase A, Frahm J, Matthaei D, Hänicke W, Merboldt KD	Max-Planck Institute, DE	Rapid images and NMR movies
1985	SMRM, p988	Hennig J	University of Freiburg, DE	RARE-imaging: a fast imaging method for clinical routine
1985	SMRM, p1024	Margosian P	Siemens AG, DE	Faster MR imaging – imaging with half the data
1985	SMRM, p1094	Hayes CE, Edelstein WA, Schenck JF, Mueller OM, Eash M	GE, US	Highly homogeneous, efficient resonator for high field imaging
1985	SMRM, p1238	Le Bihan D, Breton E, Syrota A	Hopital d'Orsay, FR	In-vivo magnetic resonance imaging of self-diffusion
1986	SMRM, p7	Le Bihan D, Breton E, Guéron M	Ecole Polytechnique, FR	Separation of perfusion and diffusion in intra-voxel incoherent motion (IVIM) MR imaging
1987	SMRI, p107	Pattany PM, Duerk JL, McNally JM	Picker lnternatilonal, US	Motion artifact suppression technique (MAST™) in multislice MR imaging
1987	SMRM, p898	Szumowski J, Plewes DB, Dumoulin CL, Souza SP	University of Rochester, US	“SIMA” - Simultaneous multislice acquisition for magnetic resonance imaging
1988	SMRI, p38	Tasciyan T, Farzaneh F, Lee JN, Wright RC, Riederer SJ	Duke University, US	Selections of phase encodings in MR fluoroscopy
1988	SMRM, p154	Wolff SD, Balaban RS	NHLBI, US	Magnetization transfer contrast (MTC) in 1H-NMR imaging
1988	SMRM, p159	Bruhn H, Frahm J, Gyngell ML, Merboldt KD, Hänicke W, Sauter R	Max-Planck Institute, DE	Localized proton spectroscopy of patients with cerebral infarction
1988	SMRM, p237	Mansfield P, Chapman B, Coxon R, Glover P, Howseman AM, Ordidge RJ, Stehling MJ, Turner R	University of Nottingham, UK	Advances in echo-planar imaging
1988	SMRM, p653	Meyer C, Pauly J, Macovski A, Nishimura D	Stanford University, US	Simultaneous spatial and spectral selective excitation
1988	SMRM, p725	Dumoulin CL, Souza SP	GE, US	Three dimensional phase contrast angiography
1988	SMRM, p875	Roemer PB, Edelstein WA, Souza SP, Hayes CE, Mueller OM	GE, US	Simultaneous multiple surface coil NMR imaging
1989	SMRI, p434	Ehman RL, Felmlee JP, Riederer SJ, Korin HW	Mayo Clinic, US	Adaptive correction of MR motion artifacts: A method utilizing interleaved navigation echoes

1989	SMRM, p2	Axel L	University of Pennsylvania, US	Quantitative cardiac wall motion
1989	SMRM, p28	Pauly J, Conolly S, Nishimura D, Macovski A	Stanford University, US	Slice-selective excitation for very short T_2 species
1989	SMRM, p42	Cohen Y, Mintorovitch J, Chileuitt L, Pereira B, Shimizu H, Weinstein P, Moseley ME	University of California San Francisco, US	Early detection of ischemic injury: comparison of diffusion- and T2-weighted MRI and spectroscopy during regional cerebral ischemia in cats
1989	SMRM, p101	Pelc NJ, Shimakawa A, Glover GH	GE, US	Phase contrast cine MRI
1989	SMRM, p103	Keller P, Drayer B, Fram E, Williams K, Dumoulin C, Souza S	Barrow Neurological Institute, US	Initial experience with very thin slice two-dimensional MR angiography
1989	SMRM, p136	Moseley ME, Cohen Y, Mintorovitch J, Chileuitts L, Shimizu H, Tsuruda J, Norman D, Weinstein P	University of California San Francisco, US	Evidence of anisotropic self-diffusion in cat brain
1989	SMRM, p741	Ogawa S, Lee TM	AT&T Bell Labs, US	Oxygenation sensitive contrast in magnetic resonance imaging of brain at high fields
1989	SMRM, p744	Larsson, HBW, Stubgaard M, Frederiksen JL, Jensen M, Henriksen O, Paulson O	Hvidovre Hospital, DK	Quantitation of blood-brain barrier defect using MRI and Gadolinium-DTPA in acute multiple sclerosis
1989	SMRM, p805	Tofts PS, Kermode AG, Barker G	Institute of Neurology, UK	Measurement of the blood-brain barrier permeability using dynamic Gd-DTPA scanning
1990	SMRM, p432	Mugler JP, Brookeman JR	University of Virginia, US	Three-dimensional magnetization prepared rapid gradient echo (3D MP RAGE) imaging
1990	SMRM, p1289	Detre JA, Leigh JS, Williams DS, Korestsky AP	University of Pennsylvania, US	Quantitative NMR imaging of perfusion in rat brain
1991	SMRM, p115	Belliveau JW, Kennedy DN, McKinstry RC, Buchbinder BR, Weisskoff RM, Cohen MS, Vevea JM, Brady TJ, Rosen BR	Massachusetts General Hospital, US	Functional mapping of the human visual cortex by nuclear magnetic resonance imaging
1991	SMRM, p917	MacKay AL, Whittal KP, Cover KS, Li DKB, Paty DW	University of British Columbia, CA	In Vivo T_2 relaxation measurements of brain may provide myelin concentration
1992	SMRM, p104	Dumoulin CL, Souza SP, Darrow RD	GE, US	Tracking of an invasive device within an MR imaging system
1992	SMRM, p211	Meyer C, Hu B, Nishimura D, Macovski A	Stanford University, US	Fast spiral coronary artery imaging

1992	SMRM, p301	Kwong KK, Belliveau JW, Chesler DA, Goldberg IE, Stern CE, Baker JR, Weisskoff RM, Benson R, Poncelet BP, Hoppel BE, Kennedy DN, Turner R, Cohen MS, Brady TJ, Rosen BR	Massachusetts General Hospital, US	Real time imaging of perfusion change and blood oxygenation change with EPI
1992	SMRM, p302	Bandettini PA, Wong EC, Hinks RS, Tikofsky RS, Hyde JS	Medical College of Wisconsin, US	Time-course gradient-echo EPI of localized signal enhancement in the human brain during task activation
1992	SMRM, p303	Ogawa S, Tank DW, Menon R, Ellermann JM, Kim SG, Merkle H, Ugurbil K	AT&T Bell Labs, US	Functional brain mapping using MRI: Intrinsic signal changes accompanying sensory stimulation
1992	SMRM, p670	Provencher SW, Michaelis T, Hänicke W, Frahm J	Max-Planck Institute, DE	Automated determination of metabolite concentrations from localized in vivo proton NMR spectra
1992	SMRM, p1221	Basser PJ, Le Bihan D	NIH, US	Fiber orientation mapping in an anisotropic medium with NMR diffusion spectroscopy
1992	SMRM, p4803	Ishihara Y, Calderon A, Watanabe H, Mori K, Okamoto K, Suzuki Y, Sato K, Kuroda K, Nakagawa N, Tsutsumi S	Toshiba, JP	A precise and fast temperature mapping using water proton chemical shift
1993	SMRM, p249	Warach S, Wielopolski P, Edelman RR	Beth Israel Hospital, US	Identification and characterization of the ischemic penumbra of acute human stroke using echo planar diffusion and perfusion imaging
1993	SMRM, p710	Liang ZP, Lauterbur PC	University of Illinois at Urbana-Champaign, US	(k, t)-space sampling considerations for imaging of time-varying functions
1994	SMR, p72	Warach S, Darby DG, Thangaraj DV, Nobre AC, Sanes JA, Edelman RR	Beth Israel Hospital, US	Applications of EPISTAR for mapping functional changes in relative cerebral blood flow
1994	SMR, p330	Jezzard P, Karni A, Meyer G, Adams M, Prinster A, Ungerleider L, Turner R	NIH, US	Practice makes perfect: a functional MRI study of long term motor cortex plasticity
1995	SMR, p189	Muthupillai R, Lomas DJ, Rossman PJ, Greenleaf JF, Manduca A, Riederer SJ, Ehman RL	Mayo Clinic, US	Magnetic resonance imaging of acoustic strain waves

1995	SMR, p875	Østergaard L, Weisskoff RM, Chesler DA, Kwong K, Sorensen G, Davis TL, Boxerman JL, Gyldensted C, Rosen BR	Aarhus University Hospital, DK	High resolution measurement of cerebral plasma flow, mean transit time and volume using dynamic imaging of Gd-DTPA bolus passages
1997	ISMRM, p135	Bernstein MA, Zhou X, King KF, Ganin A, Pelc NJ, Glover GH	GE, US	Shading artifacts in phase contrast angiography induced by maxwell terms: analysis and correction
1997	ISMRM, p898	Buxton RB, Wong EC, Frank LR	University of California San Diego, US	A biomechanical interpretation of the BOLD signal time course: the balloon model
1997	ISMRM, p2022	Sodickson DK, Manning WJ	Beth Israel Deaconess Medical Center, US	Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with RF coil arrays
1997	ISMRM, p2332	Mugler JP, Driehuys B, Brookeman JR, Cates GD, Berr SS, Bryant RG, Daniel TM, de Lange EE, Erickson CJ, Happer W, Hinton DP, Maier T, Saam BT, Sauer KL, Wagshul ME	University of Virginia, US	MR imaging of the human lungs using hyperpolarized ^{129}Xe gas
1998	ISMRM, p358	DelaBarre L, Garwood M	University of Minnesota, US	LASER: adiabatic single shot localization with J-refocusing
1998	ISMRM, p579	Pruessmann KP, Weiger M, Scheidegger MB, Boesiger P	University of Zurich, CH	Coil sensitivity encoding for fast MRI
1998	ISMRM, p1226	Basser, PJ	NIH, US	Fiber-tractography via diffusion tensor MRI (DT-MRI)
1999	ISMRM, p320	Mori S, Xue R, Crain B, Solaiyappan M, Chacko VP, van Zijl PCM	Johns Hopkins University, US	3D reconstruction of axonal fibers from diffusion tensor imaging using fiber assignment by continuous tracking (FACT)
1999	ISMRM, p1282	Bundy J, Simonetti O, Laub G, Finn JP	Siemens, US	Segmented trueFISP cine imaging of the heart
2000	ISMRM, p82	Wedeen VJ, Reese TG, Tuch DS, Weigel MR, Dou JG, Weiskoff RM, Chessler D	Massachusetts General Hospital, US	Mapping fiber orientation spectra in cerebral white matter with Fourier-transform diffusion MRI
2000	ISMRM, p213	Simonetti O, Kim RJ, Fieno DS, Hillenbrand H, Wu E, Bundy JM, Finn JP, Judd RM	Siemens, US	2D and 3D segmented TurboFLASH for the visualization of myocardial injury
2000	ISMRM, p221	Nieminen MT, Rieppo J, Töyräs J, Hakumäki JM, Silvennoinen MJ, Hyttinen MM, Helminen J, Jurvelin JS	University of Kuopio, FI	T_2 reveals spatial collagen architecture in articular cartilage: a comparative quantitative MRI and polarized light microscopic study

2000	ISMRM, p379	Ward KM, Aletras AH, Balaban RS	NIH, US	Proton chemical exchange dependent saturation transfer (CEST): evaluation as a mechanism for non-metal based exogenous MRI contrast agent
2000	ISMRM, p383	Bulte JWM, Zhang SC, van Gelderen P, Lewis BK, Duncan ID, Frank JA	NIH, US	3D MR tracking of magnetically labeled oligosphere transplants: initial in vivo experience in the LE (shaker) rat brain
2001	ISMRM, p8	Griswold M, Jakob P, Heidemann R, Nittka M, Wang J, Kiefer B, Haase A	Wurzburg University, DE	Push-button PPA reconstructions: generalized autocalibrating partially parallel acquisitions (GRAPPA)
2001	ISMRM, p10	Gupta A, Liang ZP	University of Illinois at Urbana-Champaign, US	Dynamic imaging by temporal modeling with principal component analysis
2002	ISMRM, p189	Katscher U, Börnert P, Leussler C, van den Brink J	Philips Research, DE	Theory and experimental verification of transmit SENSE
2002	ISMRM, p720	Zhou J, Payen JF, Wilson DA, Traystman RJ, van Zijl PCM	Johns Hopkins University, US	Detection of pH Effects in the water signal through selective saturation transfer via exchangeable amide protons of mobile intracellular proteins: protein proton transfer imaging (PPTI)
2003	ISMRM, p618	Glunde K, Chacko V, Bhujwalla Z	Johns Hopkins University, US	Mechanisms of indomethacin-induced alterations in choline phospholipid metabolism of non-malignant versus malignant human mammary epithelial cells
2003	ISMRM, p742	Lu H, Golay X, Pekar J, van Zijl PCM	Johns Hopkins University, US	Vascular-space-occupancy (VASO) dependent fMRI
2003	ISMRM, p2154	Jensen JH, Helpern JA	New York University, US	Quantifying non-gaussian water diffusion by means of pulsed-field-gradient MRI
2004	ISMRM, p502	Dresner M, Fidler J, Ehman R	Mayo Clinic, US	MR elastography of in vivo human liver
2005	ISMRM, p37	Garcia DM, de Bazelaire C, Alsop D	Beth Israel Deaconess Medical Center, US	Pseudo-continuous flow driven adiabatic inversion for arterial spin labeling
2005	ISMRM, p408	Grazioso R, Ladebeck R, Schmand M, Krieg R	CPS Innovations, Inc., US	APD-based PET for combined MR-PET imaging
2006	ISMRM, p213	Vaughan T, Snyder C, DelaBarre L, Bolinger L, Tian J, Andersen P, Strupp J, Adriany G, Ugurbil K	University of Minnesota, US	7T body imaging: first results

2006	ISMRM, p293	Nunes RG, Hajnal JV, Golay X, Larkman DJ	Hammersmith Hospital, UK	Simultaneous slice excitation and reconstruction for single shot EPI
2006	ISMRM, p695	Lustig M, Donoho DL, Pauly JM	Stanford University, US	Rapid MR imaging with "compressed sensing" and randomly under-sampled 3D FT trajectories
2006	ISMRM, p892	Yacoub E, Ugurbil K, Harel N	University of Minnesota, US	Detection of orientation specific activation zones in human V1 using fMRI
2007	ISMRM, p204	Duyn JH, van Gelderen P, Li TQ, de Zwart JA, Koretsky AP, Fukunaga M	NIH, US	High-Field MRI of brain cortical substructure based on signal phase
2008	ISMRM, p323	Ling W, Regatte RR, Navon G, Jerschow A	Tel Aviv University, IL	gagCEST & NOE: assessment of glycosaminoglycan concentration in vivo
2008	ISMRM, p434	Brunner DO, De Zanche N, Paska J, Fröhlich J, Pruessmann KP	University of Zurich, CH	Traveling wave MR on a whole-body system
2008	ISMRM, p642	Shmueli K, van Gelderen P, Li TQ, Duyn JH	NIH, US	High resolution human brain susceptibility maps calculated from 7 Tesla MRI phase data
2008	ISMRM, p643	Liu T, Spincemaille P, de Rochefort L, Kressler BM, Wang Y	Cornell University, US	Multiple orientation acquisition to invert dipole field for quantitative susceptibility mapping
2008	ISMRM, p2366	Moeller S, Auerbach E, van de Moortele PF, Adriany G, Ugurbil K	University of Minnesota, US	fMRI with 16 fold reduction using multibanded multislice sampling
2009	ISMRM, p594	Overweg J, Raaymakers B, Lagendijk J, Brown K	Philips Research, DE	System for MRI guided radiotherapy
2009	ISMRM, p2812	Doneva M, Sénégas J, Börnert P, Eggers H, Mertins A	University of Luebeck, DE	Accelerated MR parameter mapping using compressed sensing with model-based sparsifying transform
2010	ISMRM, p87	Sacolick L, Wiesinger F, Dixon W, Hancu I, Vogel MW	GE Research, DE	B1 mapping by Bloch-Siegert shift
2010	ISMRM, p551	Setsompop K, Gagoski BA, Polimeni J, Witzel T, Wedeen VJ, Wald LL	Massachusetts General Hospital, US	Blipped CAIPIRHINA for simultaneous multi-slice EPI with reduced g-factor penalty
2012	ISMRM, p288	Ma D, Gulani V, Seiberlich N, Duerk J, Griswold M	Case Western Reserve University, US	MR Fingerprinting (MRF): a novel quantitative approach to MRI
2016	ISMRM, p1088	Hammernik K, Knoll F, Sodickson DK, Pock T	Graz University of Technology, AU	Learning a variational model for compressed sensing MRI reconstruction

2016	ISMRM, p1778	Wang S, Su Z, Ying L, Peng X, Liang D	Shenzhen Institutes of Advanced Technologies, CN	Exploiting deep convolutional neural network for fast magnetic resonance imaging
2016	ISMRM, p1801	Kwon K, Kim D, Seo H, Cho J, Kim B, Park H	KAIST, KR	Learning-based reconstruction using artificial neural network for higher acceleration

Authors:

Fernando Calamante

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The University of Sydney, Sydney, AU

Stefano Mandija

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Andrada Ianus

Sub-committee member

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Fei Li

Sub-committee member

Associate Professor, Huaxi MR Research Center, Department of Radiology, West China Hospital of Sichuan University, Chengdu, CN

Thomas Welton

Sub-committee member

Junior Principal Investigator, National Neuroscience Institute, Singapore, SG

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