

DAY ONE

The Crystal Ball Lectures

1. **MRI 2010.** Robert S. Balaban. National Institutes of Health, Bethesda, MD.
2. **Clinical MR Applications in 2010.** Gustav K. von Schulthess. University Hospital, Zurich, Switzerland.
3. **MR Applications in the Asia-Pacific Area — Today and Tomorrow.** Daisy Chien. Siemens Medical, Hong Kong.

fMRI: Physiology

4. **Decoupling of the Hemodynamic Response and the Blood Oxygen Concentration: Direct Demonstration Using an Event-Related Disactivation Paradigm.** C. Janz, C. Schmitt, O. Speck, H. Fischer and J. Hennig. University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, BOLD, hemodynamic
5. **Echo Time Dependence of the Initial Negative Response in fMRI.** E. Yacoub, E.R. Cohen and X. Hu. University of Minnesota, Minneapolis, MN.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, mechanism, BOLD
6. **Investigation of the Early Response to Rat Forepaw Stimulation.** J.B. Mandeville, J.J.A. Marota, C. Ayata, M. Moskowitz, R. Weisskoff and B.R. Rosen. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, CBV, CMRO2

7. **Diffusion-Weighting Attenuates the BOLD Peak Signal Change But Not the Post-Stimulus Undershoot.** R.B. Buxton, W.M. Luh, E.C. Wong, L.R. Frank and P.A. Bandettini. University of California, San Diego, CA; Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: BOLD, mechanisms

8. **Quantification of the Hemodynamic Brain Response to Visual Activation Using Absolute T2.** J.M.E. Oja, R.A. Kauppinen, M. Kraut and P.C.M. van Zijl. Johns Hopkins University, Baltimore, MD; University of Kuopio, Finland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: fMRI, T2, quantitation

9. **Investigating the Dependence of the BOLD Contrast on Oxygen Consumption.** C. Schwarzbauer and W. Heinke. Max-Planck-Institut für Neuropsychologische Forschung; Universität Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: BOLD, perfusion, oxygen consumption

10. **Dynamic Study of BOLD, CBF and CMRO2 Changes Correlated to Varied Neuronal Activity in Primary Visual Cortex of Humans.** X.-H. Zhu, S.-G. Kim, P. Andersen, S. Ogawa, K. Ugurbil and W. Chen. University of Minnesota, Minneapolis, MN; Bell Lab. Innovations, Murray Hill, NJ.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: fMRI BOLD mechanism, perfusion, CMRO2 calculation

11. **Effects of Red Blood Cell Permeability on the Blood T2 -- Oxygen Saturation Relation at 1.5T.** G.A. Wright, C.G. Chan and K. Haddank. University of Toronto, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: oxygen, blood, erythrocyte permeability

12. **Experimental Hypoxemic Hypoxia: Effects of Variation in Hematocrit on MR T2*-Weighted Brain Images.** W. Lin, R.P. Paczynski, A. Celik, C.Y. Hsu, W.J. Powers and E.M. Haacke. Washington University, St. Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: BOLD, hemodilution, hypoxia
13. **BOLD fMRI Signal Depends Upon Baseline Blood Hemoglobin Concentration.** J.M. Levin, M.H. Ross, M.J. Kaufman, N. Lange, B. deB. Frederick, H.L. vonRosenberg, J.H. Mendelson, B.M. Cohen and P.F. Renshaw. Harvard Medical School, Belmont, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: BOLD, fMRI, hemoglobin

Coronary Artery Imaging

14. **VCATS, MR Coronary Angiography Using Breath-hold Volume Targeted Acquisitions.** P.A. Wielopolski, R.J.M. van Geuns, P.J. de Feyter and M. Oudkerk. Daniel den Hoed Kliniek; The Thorax Center, University Hospital Rotterdam, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: coronaries, 3D, MRA
15. **Coronary Vessel Wall Imaging.** C.H. Meyer, B.S. Hu, A. Macovski and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: coronary angiography, spiral, plaque
16. **Cardiac Imaging with SMASH.** P.M. Jakob, M.A. Griswold, R.R. Edelman, W.J. Manning and D.K. Sodickson. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: partial parallel imaging, cardiac imaging, RF coils

17. **Comparison of Intravascular and Extravascular Contrast Agents in Coronary Artery Imaging.** D. Li, J. Zheng, H.-J. Weinmann, K.T. Bae, P.K. Woodard, T. Li and E.M. Haacke. Washington University School of Medicine, St. Louis, MO; Schering AG, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: coronary, angiography, contrast agent

18. **Safety and Preliminary Findings with an Intravascular Contrast Agent, NC100150, for MR Coronary Angiography.** A.M. Taylor, J.R. Panting, J. Keegan, P.D. Gatehouse, D. Amin, P. Jhooti, G.Z. Yang, J.M. Francis, E.D. Burman, S. McGill, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital & Guy's Drug Research Unit, London, UK; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast, intravascular, coronary

19. **Gadolinium-Enhanced Two-Dimensional Coronary MR Angiography Using an Automated Contrast Bolus Detection Algorithm (MR SMARTPREP).** V.B. Ho, T.K.F. Foo, A.E. Arai and S.D. Wolff. National Institutes of Health; Uniformed Services University of the Health Sciences, Bethesda, MD; GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: contrast media, MRA, heart

20. **Coronary Angiography Using the Real-Time Interactive 3D DVA.** T.S. Sachs, C.H. Meyer, J.M. Pauly, D.G. Nishimura and A. Macovski. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: motion, navigators, angiography

21. **Automated Monitoring of Diaphragm End-Expiratory Position for Real-Time Navigator Echo MR Coronary Angiography.** A.M. Taylor, P. Jhooti, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: navigator, diaphragm, motion

22. **Robust Coronary MRI by Spiral Fluoroscopy with Adaptive Averaging.** C.J. Hardy, R.W. Curwen and R.D. Darrow. GE Corporate Research & Development, Schenectady, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: coronaries, motion, MRI
23. **T2 Preparation Prepulses for Contrast Enhancement in 3D-Coronary MRA: Implementaion with Real-Time Left Ventricular Navigator Tracking.** R. Botnar, M. Stuber, K.V. Kissinger, P.G. Danias and W.J. Manning. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary MRA, pre-pulses, navigator-tracking

MRS — Quantitation

24. **Localized 1H-MRS Without Water Saturation: Techniques and Initial Results for Human Brain and Muscle.** R. Kreis and C. Boesch. University of Bern, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: amide, water suppression, MRS
25. **Measurements of Human Cerebral Gray and White Matter Glutamate Using Image Segmentation at 4.1T.** J.W. Pan, W.J. Chu and H.P. Hetherington. University of Alabama, Birmingham, AL; Brookhaven National Laboratory, Upton, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: combination MRI/MRS
 Keywords: glutamate, J-RECT, spectroscopic imaging
26. **Spectral Fitting in a Constrained Parameter Space Using a Random Search Strategy and Prior Knowledge.** J. Slotboom, L. Hofmann, C. Boesch and R. Kreis. University of Berne, Switzerland.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: fitting, MRS, prior knowledge

27. **Breakdown of the Ernst Formula in the Presence of Chemical Exchange and its Correction: Extension to 3- and N-Site Exchange Networks.** R.G.S. Spencer, A. Horská and M. Harman. National Institutes of Health, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: chemical exchange, saturation factors, T1 measurement
28. **Regression and Histogram Analysis of 1H MR Spectroscopic Imaging Data.** N. Schuff, B.J. Soher, K. Young, A.A. Maudsley, F. Ezekiel, D.L. Amend, G. Fein and M.W. Weiner. DVA Medical Center and University of California, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: combination MRI/MRS
 Keywords: 1H MRSI, regression, histogram
29. **Spectral Decomposition By Bayesian Methods.** M.F. Ochs, R. Stoyanova and T.R. Brown. Fox Chase Cancer Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRS
 Keywords: MRS, quantitation, methodology
30. **Diagnostic Impact of a New Quantitative and Proton-Decoupled 31P MRS Brain Examination.** S. Bluml and B.D. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; California Institute of Technology, Pasadena, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: Myelination, proton decoupling, Phosphoethanolamine
31. **Using a Step Response Function to Fit Cytosolic ADP Recovery After Exercise.** J.T. Chen, Z. Argov, R.E. Kearney and D.L. Arnold. McGill University, Montreal, Quebec, Canada; Hebrew University-Hadassah Medical School, Jerusalem, Israel.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Data Processing: MRS
 Keywords: ADP recovery, step response, undershoot

32. **Detecting Natural Abundance Carbon Signal of NAA Metabolite Within a Small Localized Volume of Human Brain Using ^1H - $\{^{13}\text{C}\}$ NMR Spectroscopy.** W. Chen, G. Adriany, X.-H. Zhu, R. Gruetter and K. Ugurbil. University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: natural abundance, NAA carbon signal, ^1H - ^{13}C editing
33. **^{13}C Isotopomer Pools in the Rat Heart by ^1H -Heteronuclear Multiple Quantum Coherence Total Correlation Spectroscopy (HMQC-TOCSY).** R.A. Carvalho, P. Zhao, F.M.H. Jeffrey, C.R. Malloy and A.D. Sherry. U.T. Southwestern Medical Center, Dallas, TX; University of Coimbra, Portugal.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR

MR Imaging of Articular Cartilage

34. **Patellofemoral Joint Cartilage Thickness and Contact Areas from MRI in Patients with Osteoarthritis.** D.M. McCarthy, Z.A. Cohen, P. Legrand, J.H. Henry, F. Feldman, V.C. Mow and G.A. Ateshian. Columbia Presbyterian Medical Center; Columbia University, New York, NY.
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: osteoarthritis, knee, MRI
35. ***In vivo* Determination of Patellar Cartilage Volume and Thickness with MRI Following Strenuous Physical Exercise.** S. C. Faber, F. Eckstein, M. Tieschky, T. Stammberger, K. -H. Englmeier and M. Reiser. Ludwig-Maximilians-Universität, Munich; Institut für Medizinische Informatik und Systemforschung, Neuherberg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: cartilage, thickness, physical exercise
36. **MRI Detection of Early Degenerative Changes in Articular Cartilage via Intravenous Administration of Gd-DTPA.** V. Mlynárik, M. Breitenseher, M. Huber, H. Imhof and S. Trattnig. University of Vienna; Baumgartner Höhe, Vienna, Austria.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Contrast Agents
 Keywords: articular cartilage, proteoglycans, Gd-DTPA

37. **Sodium Imaging of Cartilage *In vivo*: Implications for Detecting Osteoarthritis.** R. Reddy, E.K. Insko, E.A. Noyszewski, R. Dandora, J.B. Kneeland and J.S. Leigh. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Non-proton MRI and ESR
 Keywords: sodium MRI, cartilage, arthritis
38. **Change in Articular Cartilage T2 Relaxation with Age: Impact on Detection of Early Degenerative Change.** T.J. Mosher, B.J. Dardzinski and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: cartilage, arthritis, T2
39. **Magnetization Transfer Modulation of Observed T2 Changes in Injured Human Cartilage.** T.P.L. Roberts, H.C. Roberts, C. Peterfy, D. White, Y. Jiang, J. Jiang and H.K. Genant. University of California, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: cartilage, MTC, degeneration
40. **Heterogeneity of Cartilage Laminae in MRI.** Y. Xia. Oakland University, Rochester, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Microscopy
 Keywords: cartilage, microscopy, heterogeneity
41. **Determination of *In Situ* Signal Intensity Changes of the Articular Cartilage During Mechanical Loading in MRI.** T. Stammberger, C. Herberhold, S. Faber, K.-H. Englmeier, M. Reiser and F. Eckstein. Institut für Radiologische Diagnostik; GSF-Institut für Medizinische Informatik; Anatomische Anstalt, Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: cartilage, compression, matching

42. **Application of Magnetic Resonance Microscopy to Tissue Engineering of Cartilage.** K. Potter, J. Butler, K.W. Fishbein, W.E. Horton and R.G.S. Spencer. National Institute on Aging, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Microscopy
 Keywords: cartilage, bioreactor, tissue engineering
43. **High-Resolution Short Echo Time Spectroscopic Imaging of Cartilage Transplants.** G.E. Gold, J.M. Pauly, J.P. Fechner, G. Bergman, C.F. Beaulieu, P.K. Lang and A. Macovski. Stanford University, Stanford; VA Health Care System of Palo Alto, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: combination MRI/MRS
 Keywords: cartilage, transplant, spectroscopy

Flow Quantification

44. **Young Investigator Awards Finalist: Quantitation of Circumferential Subpixel Vessel Wall Position and Wall Shear Stress by Multiple Sectorized Three-Dimensional Paraboloid Modeling of Velocity Encoded Cine MRI.** S. Oyre, S. Ringgaard, S. Kozerke, W.P. Paaske, M.B. Scheidegger, P. Boesiger and E.M. Pedersen. Aarhus University Hospital, Aarhus, Denmark; University of Zürich and Swiss Federal Institute of Technology, Zürich, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: edge detection, wall shear stress, flow
45. **MR Flow Measurement in Small Vessels with Limited Spatial Resolution Using a Model-Based Method.** R.M. Hooijveen, C.J.G. Bakker and M.A. Viergever. University Hospital Utrecht, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow quantification, partial volume error, model-based image processing
46. **A New Mathematical Description of the NMR Signal of Brain Perfusion in Bolus Track: Determination of Mean Transit Time in Different Brain Regions in Humans.** C.M. Kerskens, R. Tavakolian and A. Villringer. Charité, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, MTT, quantitation

47. **Quantitation of the Reactive Hyperanemic Response in the Leg Using a Fast Hybrid Segmented K-Space Technique with EPI Readouts for MR Velocity Mapping.** E.M. Pedersen, A. Lombardi and J. Laustsen. Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: fast flow, reactive hyperaemia, femoral artery
48. **WITHDRAWN**
49. **How Accurate is Magnetic Resonance Phase Velocity Mapping in Quantifying Heart Valve Regurgitation?.** G.P. Chatzimavroudis, J.N. Oshinski, P.G. Walker, R.H. Franch, R.I. Pettigrew and A.P. Yoganathan. Emory University Hospital; Georgia Institute of Technology, Atlanta, GA; University of Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: heart valves, regurgitation, flow quantitation
50. **A Potential Error Source for Quantitative Perfusion Imaging Using FAIR.** J. Zhou, S. Mori and P.C.M. van Zijl. Johns Hopkins University, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Flow
 Keywords: flow, quantitation, methods
51. **Vortical Flow Feature Characterisation Using MR Velocity Mapping.** G.Z. Yang, R.H. Mohiaddin and D.N. Firmin. Royal Brompton Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: vorticity, flow topology, velocity mapping
52. **Contrast Enhanced 4D Phase Contrast Imaging.** J.O. Fredrickson, M.T. Alley, M.E. Moseley, R.J. Herfkens and N.J. Pelc. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow

53. **Relaxation-Based Mapping of Tumour pH.** D.A. Beauregard, D. Parker and K.M. Brindle. University Cambridge, UK; University of Durham, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: pH, tumor, imaging
54. ***In vivo* Extracellular pH Mapping at 1.5T Using Proton CSI.** I.J. Rowland, P.S. Murphy, A. Schwarz, M. Botta, S. Aime and M.O. Leach. The Royal Marsden NHS Trust, Surrey, UK; Universita di Torino, Italy.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: pH, CSI, contrast agents
55. **Tumor Transmembrane pH Gradient Measurement with 6-Fluoropyridoxol by ¹⁹F NMR Spectroscopy.** S. Hunjan, R.P. Mason, S. He, A. Constantinescu, P.V. Kulkarni and P.P. Antich. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: pH, tumor, vitamin B6
56. **Functional Correlation of 3-Dimensional MRI Maps of Tumor Vascular Volume and Permeability with 3-Dimensional Histological Morphology.** M. Solaiyappan, D. Artemov and Z.M. Bhujwalla. National University of Singapore; The Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast cancer, vascularization, virtual microscope
57. **VEGF is a Survival Factor for Tumor Angiogenesis: Detection of Vascular Collapse by VEGF Withdrawal Using BOLD Contrast MRI.** R. Abramovitch and M. Neeman. Weizmann Institute of Science, Rehovot, Israel.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: spheroids, VEGF, angiogenesis

58. **Oxygen Induced MR-Signal Intensity and pO₂ Changes in Murine Tumors.** M. Peller, L. Weissfloch, J. Weber, R. Senekowitsch-Schmidtke, M. Molls and M. Reiser. University of Munich; Technical University of Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: hyperoxia, oxygen tension, tumors
59. **Perfusion Changes in 9L Rat Brain Tumors Following Vasoactive Drug Administration — Implications for Radiation Therapy of Cancer.** S.L. Brown, J.R. Ewing, R.A. Knight, Y. Cao, Q. Jiang and J.H. Kim. Henry Ford Health Systems, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Perfusion
 Keywords: tumor, perfusion, radiotherapy
60. **Radiation Induced Tumor Vascular Permeability and the Effective Interstitial Space Volume Changes as Measured by the Dynamic Gadomer-17 Enhanced MRI.** Z. Wang, J.L. Redpath, M.-Y. Su, X. Lao and O. Nalcioğlu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: radiation, permeability, gadomer-17
61. **Water and Metabolite ADC Alterations in BT4C Rat Glioma as Detected by Diffusion Weighted 1H MRS Spectroscopy *in vivo*.** J. Hakumäki, H. Poptani, A.-M. Puumalainen, S. Loimas, L. Paljärvi, S. Ylä-Herttula and R.A. Kauppinen. University of Kuopio, Finland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: diffusion, tumour, gene therapy
62. **Early Monitoring of Response to Hyperthermia in Rat Osteogenic Sarcoma Using Diffusion Weighted MR Imaging.** M.A. Bredella, P. Lang, A. Gindele, M.F. Wendland, M. Saeed, P.R. Stauffer, C.J. Diderich, W. Rosenau, C.A. Gooding and H.K. Genant. University of California, San Francisco; Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Tumors
 Methods: Diffusion
 Keywords: bone tumors, diffusion, hyperthermia

63. **Two-Dimensional MR Digital Subtraction Angiography: Prospective Evaluation in the Distal Lower Extremity.** H.M. Lee, Y. Wang, H.D. Sostman, L.H. Schwartz and N.M. Khilnani. Cornell University Medical College, New York, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, peripheral, subtraction

64. **Gadolinium-Enhanced 3D MR Angiography of the Aorta and Peripheral Arteries: Evaluation of a Multi-Station Examination Using Two Gadolinium Injections.** J.P. Earls, N. Patel and M. Meissner. University of Washington School of Medicine, Seattle, WA; Johns Hopkins Hospital, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, gadolinium, aorta

65. **Single Injection, 2-Station 3D MR Angiography with a Dedicated Peripheral Coil for the Assessment of the Pelvic and Run-off Vasculature.** T.F. Hany, T. Pfammatter, M.E. Ladd, E. Schneider, M. Schmidt and J.F. Debatin. University Hospital Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR-angiography, peripheral vasculature, coil-peripheral

66. **Stepping-Table (MOBITRAK) Gadolinium-Enhanced Digital-Subtraction Magnetic Resonance Angiography of the Aorta and Lower Extremity Arteries.** J.F.M. Meaney, J.P. Ridgway, A. Radjenovic, M. Saysell, M. Kouwenhoven, A. Kassner and M.A. Smith. Leeds General Infirmary, Leeds, UK; Philips Medical Systems, Best, Netherlands; University of Leeds, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: vascular, MRA, gadolinium

67. **Single Bolus Contrast Enhanced Peripheral 3D MRA Using Automated Table Motion Integrated with Automated Bolus Detection and Acquisition Triggering (MR SMARTPREP).** T.K.F. Foo, V.B. Ho, R.A. McCann, A. Moalemi and M.N. Hood. GE Medical Systems, Milwaukee, WI; National Institutes of Health; Uniformed Services University of the Health Sciences, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, pulse sequences, contrast media
68. **2D Bolus Chase MR Digital Subtraction Angiography of the Entire Lower Extremity.** Y. Wang, H.M. Lee, N.M. Khilnani, P.W. Winchester and D.W. Trost. Cornell University Medical College, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, extremity, contrast enhanced
69. **Three-Dimensional Dynamic Contrast-Enhanced Subtraction MR Angiography of the Aortoiliac Arteries and Arteries of the Lower Extremity: Comparison with Conventional Angiography.** E. Sueyoshi, I. Sakamoto, Y. Matsuoka, Y. Ogawa, H. Hayashi and K. Hayashi. Nagasaki University School of Medicine, Nagasaki, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, contrast enhancement, extremity
70. **Comparison of Lower Extremity 2D MR Digital Subtraction Angiography and X-Ray Angiography.** P.A. Winchester, H.M. Lee, N.M. Khilnani, Y. Wang and D.W. Trost. Cornell University Medical College, New York, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, angiography, peripheral

71. **Contrast-Enhanced Dynamic MR Imaging of Focal Liver Lesions: Correlation of the Peripheral Washout Sign with Tumor Type and Vascularization in 183 Patients.** M. Taupitz, A. Habermalz, A. Heiniche, A. Condiescu, M. Bollow, K.-J. Wolf, A. Mahfouz and B. Hamm. Humboldt-Universität zu Berlin; Freie Universität Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: liver, neoplasms, contrast media

72. **Characterization of Hepatic Lesions by Perfusion-Weighted MR Imaging with an Echo-Planar Sequence.** T. Ichikawa, H. Haradome, J. Hachiya, T. Nitatori and T. Araki. Yamanashi Medical University, Yamanashi; Kyorin University School of Medicine, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Perfusion
 Keywords: echo-planar imaging, contrast-enhancement, liver neoplasm

73. **Dual Arterial-Dominant Phases to Optimize the Detection of Small Hepatocellular Carcinoma During IV Contrast-Enhancement Dynamic MR Imaging Using Multisection FLASH Sequence.** J.-S. Yu, D.-G. Kim, B.-J. Jo, T.-H. Kim and K.W. Kim. Yonsei University College of Medicine, Seoul, South Korea.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, MR, liver, neoplasms, liver neoplasms, diagnosis

74. **Comparison of State-of-the-Art Spiral CT and MRI with and without SPIO for the Diagnostic Efficacy in Focal Hepatic Disease.** T. Helmberger, M. Gregor, N. Holzknecht, V. Scholz, J. Gauger, C. Glaser and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: liver, lesion, SPIO

75. **Contrast-Enhanced 3D-MRA of the Liver with a Bolus-Injectable SPIO (SH U 555 A): A Step Towards a Comprehensive Liver Study?.** P. Reimer, T. Allkemper, L. Matuszewski, C. Bremer, T. Balzer, K. Shamsi and E.J. Rummeny. Westfalian Wilhelms-University Münster; Schering AG, Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: SPIO, 3D-MRA, liver

76. **Preoperative Assessment of Pancreatic Adenocarcinoma: Comparison of Dynamic Contrast Enhanced MRI and Dual Phase Helical CT with ROC Analysis.** J. Ward, J.A. Guthrie, M.B. Sheridan, J.A. Spencer, C. Craven, D. Wilson and P.J. Robinson. St. James University Hospital, Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: pancreas, neoplasms, CT
77. **MRI with Mangafodipir Trisodium in the Detection and Staging of Pancreatic Cancer.** J. Stoker, M.G. Romijn, J.M. van Muiswinkel, C.H.J. van Eijck, C.C. Torres and J.S. Laméris. University Hospital Rotterdam, The Netherlands; Nycomed Imaging, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: pancreas, tumor, contrast medium
78. **Pancreatic Cancer: Vascular Imaging Using Contrast-Enhanced 3D-MR Angiography.** M. Sadick, S.J. Diehl, K.-J. Lehmann, J. Gaa, R. Möckel and M. Georgi. University of Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Angiography
 Keywords: MR-angiography, pancreatic cancer, vascular invasion

Musculoskeletal MR Imaging

79. **Functional MR Imaging of Patients with Patellar Tendinitis (Jumper's Knee) and of Healthy Volunteers in an Open Configuration 0.5 T MR System.** M.R. Schmid, J. Hodler, Ph. Cathrein, St. Duewell, B. Romanowski, H. Jacob and J. Romero. University Hospital Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: functional MR, patellar tendinitis, knee joint
80. **Measurement of Patellar Tendon Strain *In vivo* by Phase Contrast MR Imaging.** F.T. Sheehan and J.E. Drace. VA Palo Alto HCS, Palo Alto; Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: musculoskeletal, motion, phase con.

81. **Effect of Resolution and Contrast in the Detection of Superficial Cartilage Lesions: Insensitivity of the T1-Weighted Gradient Echo Sequence.** T.J. Mosher and S.W. Pruett. Penn State Geisinger; The Milton S. Hershey Medical Center, Hershey, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: cartilage, arthritis, fibrillation
82. **Accuracy of T2 Weighted Fast Spin Echo MR Imaging for Detecting Cartilage Defects in the Knee: Correlation with Arthroscopy.** M.A. Bredella, P.F.J. Tirman, C.K. Peterfy, M. Zarlingo, T.K. Wischer, S.C.M. Moelleken and H.K. Genant. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Basic NMR
 Keywords: cartilage, knee, T2-FSE
83. **MR Imaging of Meniscal Bucket-Handled Tears.** T.H. Magee and G.W. Hinson. Menorah Medical Center, Overland Park, KS.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: MRI, meniscus, knee
84. **Mucoid Degeneration of the Anterior Cruciate Ligament Mistaken for Ligamentous Tears at MR Imaging.** J. McIntyre, S. Moelleken, H.K. Genant and P.F.J. Tirman. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Basic NMR
 Keywords: cruciate, tear, degeneration
85. **Virtual Arthroscopy Based on 3D MR Imaging.** M.R. Schmid, D. Weishaupt, J. Debatin, P. Hilfiker, St. Duewell and J. Hodler. University Hospital; University Clinic Balgrist, Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: MR arthrography, 3D imaging, shoulder

86. **Fast Spin Echo T2-Weighted Imaging of Hip Osteonecrosis.** S. Kawamoto, J.P. Earls and D.A. Bluemke. Johns Hopkins University, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: hip, osteonecrosis, avascular necrosis
87. **Labral Abnormalities in the Asymptomatic Hips at MR Imaging.** I. Abe, Y. Harada, K. Oinuma, K. Kamikawa, H. Kitahara, F. Morita and H. Moriya. Chiba University, Chiba, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: acetabular labrum, MR imaging, radial-sequence
88. **High Resolution Noncontrast MR Evaluation of Labral and Chondral Injuries of the Hip.** D.A. Connell, H.G. Potter, R.L. Buly, J.A. Schatz and D.E. Padgett. Hospital for Special Surgery and Cornell University Medical College, New York, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: hip, labrum, cartilage

Pediatric Brain Imaging

89. **Demonstration of Sulcation and Gyration of the Brain in Very Premature Infants Using Magnetic Resonance Imaging.** E.F. Maalouf, S.J. Counsell, A.H. Herlihy, M.A. Rutherford, A.D. Edwards and G.M. Bydder. Hammersmith Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: brain, sulcation, gyration
90. **Evaluation of *In vivo* Intrauterine Fetal Brain Development and Abnormalities Using Rapid MR Imaging Methods.** K. Enomoto, T. Watabe, M. Amanuma and A. Heshiki. Saitama Medical School, Saitama, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: brain, fetus, MRI

91. **Assessment of Myelination in White Matter and Central Gray Matter Structures in the Preterm Brain Using a Novel Neonatal MRI Scanner.** S.J. Counsell, E.F. Maalouf, M.A. Rutherford, A.H. Herlihy, A.M. Fletcher, H.J. Lewis and A.D. Edwards. Hammersmith Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: preterm, myelin
92. **Age Dependence of Quantitative Magnetisation Transfer Measurements in the Infant Brain.** S. Tanner, E. Berry, A.-M. Childs, D. Evans, M. Levene, L. Ramenghi, J. Ridgway, M. Saysell and M.A. Smith. University of Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: infants, magnetisation, transfer
93. **Diffusion Tensor Imaging of Normal Human Infant Brain: Apparent Diffusion Coefficient and Anisotropy.** J.J. Neil, S.I. Shiran, R.C. McKinstry, G. Schefft, A.Z. Snyder, C.R. Almli, E. Akbudak, J.P. Miller, B.C.P. Lee and T.E. Conturo. Washington University School of Medicine, St. Louis, MO.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: newborn human, diffusion, anisotropy
94. **Regional Maturation of the Human Brain Assessed by 1H-MRS and Diffusion Tensor MRI: Effects of Prematurity and Ischemic Injury.** P.S. Hüppi, R. Kreis, G.P. Zientara, E.E. Holling, S. Maier, C. Boesch and F.A. Jolesz. Harvard Medical School, Boston, MA; University of Berne, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: combination MRI/MRS
 Keywords: newborn, DWI, 1H-MRS
95. **Localized 1H MR Spectroscopy as Early Predictor for Outcome in Infants with Birth Asphyxia.** K.-S. Kim, S.-Y. Pi, E.A. Kim, J.H. Lee, S.T. Kim, Y.-H. Auh and T.-H. Lim. University of Ulsan College of Medicine; Asan Institute for Life Sciences, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: birth asphyxia, lactate, MRS

96. **Subtle Brain Abnormalities in Children with Sickle Cell Disease: Evidence of Chronic Hypoxia?.** R.G. Steen, X. Xiong, R.K. Mulhern and W. Wang. St. Jude Children's Research Hospital, Memphis, TN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRI
 Keywords: brain, hypoxia, T1

Contrast-Enhanced MRA: New Techniques

97. **Young Investigator Awards Finalist: Arterial Phase Carotid and Vertebral Artery Imaging in Contrast-Enhanced 3D MRA by Combining Fluoroscopic Triggering with an Elliptical Centric View Order.** A.H. Wilman, S.J. Riederer, J. Huston III, J.T. Wald and J.P. Debbins. Mayo Clinic, Rochester, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: carotid, angiography, contrast-enhanced
98. **Outer Limits of Contrast-Enhanced MRA, Revisited.** N.J. Pelc, M.T. Alley, R.Y. Shifrin and R.J. Herfkens. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, SNR, contrast enhancement
99. **Imaging Parameter Optimization in Gd-Enhanced MRA.** D.L. Parker, K.C. Goodrich, H.R. Buswell, A.L. Alexander, B.E. Chapman, J. Tsuruda and D.D. Blatter. University of Utah; LDS Hospital, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: angiography, contrast, optimization
100. **Ultra-Fast Contrast-Enhanced 2D Projection MRA.** O. Unal, T.M. Grist, F.R. Korosec and C.A. Mistretta. University of Wisconsin, Madison, WI.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, rapid imaging, contrast enhanced

- 101. Time-Resolved Radial Projection MR-DSA of the Carotid Arteries.** R.M. Hoogeveen, C.J.G. Bakker, P.C. Buijs, O.E.H. Elgersma and M.A. Viergever. University Hospital, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: time-resolved MRA, MR-DSA, carotid arteries
- 102. Moving Bed Infusion Tracking (MobiTrak) Contrast Enhanced Peripheral MRA.** M. Kouwenhoven, J. Groen, W. Palstra, K.Y. Ho and J.M.A. van Engelshoven. Philips Medical Systems, Best; University of Maastricht, The Netherlands; Leeds General Infirmary, Leeds, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, MobiTrak, peripheral
- 103. Dynamic k-Space Filling for Bolus Chase 3D MR Digital Subtraction Angiography.** Y. Wang and H.M. Lee. Cornell University Medical College, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, subtraction, sequences
- 104. In Vitro Evaluation of 3D MRA Imaging Characteristics of Plain and Covered Stent Grafts.** P.R. Hilfiker, H.H. Quick, T. Pfammatter and J.F. Debatin. University Hospital, Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: stents, 3D MRA, artefacts
- 105. A Multi-Echo Technique for Time-Resolved Contrast-Enhanced 3D MR Angiography.** K.K. Vigen, F.R. Korosec, R. Frayne, T.M. Grist and C.A. Mistretta. University of Wisconsin, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, contrast agents, EPI

- 106. Rapid Evolvement of Object Selectivity in the Human Occipital Lobe.** T. Kushnir, K. Grill-Spector, I. Kahn, S. Edelman, P. Harvey, Y. Itzhak and R. Malach. The Chaim Sheba Medical Center, Tel Hashomer, Israel; Weizmann Institute of Science, Rehovot, Israel; University of Sussex, UK; Elscint, Ltd., Haifa, Israel.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, visual cortex, object recognition
- 107. Recovered Cognitive Function Following Stroke as Assesed by fMRI Using a Language Comprehension Paradigm.** K.R. Thulborn, C. Martin, D. Davis, P. Erb, P. Carpenter and M. Just. University of Pittsburgh; Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: stroke, function, language
- 108. Bilateral fMRI Activation of Motion-Sensitive Areas MT/MST and Basal Ganglia in Homonymous Hemianopia.** S.F. Bucher, T. Brandt, K.C. Seelos and M. Dieterich. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: homonymous hemianopia, brain activation, Cerebral infarction
- 109. fMRI Study of Phonetic and Pitch Discrimination During Auditory Stimulation with Speech Sounds.** T.P.L. Roberts, H.A. Rowley and D. Poeppel. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: fMRI, language, speech
- 110. Involvement of the Human Red Nucleus in Sensory Discrimination.** Y. Liu, Y. Pu, J.-H. Gao, L.M. Parsons, J. Xiong, M. Liotti, J.M. Bower and P.T. Fox. University of Texas Health Science Center, San Antonio, TX; California Institute of Technology, Pasadena, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, red nucleus, sensory

- 111. Deaf Cortical Reorganization of Visual Processing in the Temporal Lobe.** D.K. Shibata, T. Yoshiura, E. Kwok, J. Zhong, D.A. Shrier, U. Patel and Y. Numaguchi. University of Rochester, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Category not applicable
 Keywords: deaf, visual, fMRI
- 112. Differential Cortical Control of Extension and Flexion Movements of the Thumb.** G.H. Yue, J.Z. Liu, V. Simionow, V.K. Ranganathan, T.C. Ng and V. Sahgal. The Cleveland Clinic Foundation, Cleveland, OH.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: motor function, finger movement
- 113. fMRI in the Spinal Cord During Bilateral Finger Tapping.** J. Van Kylen, P.A. Bandettini and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: spinal cord, brain stem, BOLD
- 114. Cortical Representation of Phantom Limbs in Congenital Tetramelia Demonstrated by fMRI.** S. Kollias, P. Brugger, M. Regard, M.-C. Hepp-Reymond and A. Valavanis. University Hospital, Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Category not applicable
 Keywords: fMRI, sensorimotor, brain
- 115. New Findings of the Correlation Between Acupoints and Corresponding Brain Cortices Using Functional MRI.** S.C. Chung and Z.H. Cho. Korea Advanced Institute of Science and Technology, Seoul, Korea; University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: acupuncture, fMRI, visual and acupuncture stimulation

- 116. Measuring Disease Activity in Multiple Sclerosis: A Correlative Study of Serial Weekly Gadolinium-Enhanced MRI and Immunological Markers.** N.C. Silver, C.D. Good, G. Giovannoni, M. Lai, E.J. Thompson and D.H. Miller. Institute of Neurology; National Hospital for Neurology and Neurosurgery, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: MS, gadolinium, inflammation
- 117. Navigated Spin Echo Diffusion-Weighted Imaging in Clinical Phenotypes of Multiple Sclerosis.** A.G. Droogan, C.A. Clark, D.J. Werring, G.J. Barker and D.H. Miller. Institute of Neurology; University College London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: multiple sclerosis, diffusion
- 118. T2 Lesion Load and Disability Measurements.** J.C. Fulton, R.I. Grossman, L. Mannon, L. Wei, J. Udupa and M. Polansky. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, lesion volume, disability
- 119. The Structural Properties of Multiple Sclerosis (MS) Lesions Demonstrated by Diffusion Tensor Imaging.** D.J. Werring, C.A. Clark, G.J. Barker, M.R. Symms, F. Franconi, A.J. Thompson and D.H. Miller. Institute of Neurology, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: multiple sclerosis, diffusion
- 120. Assessment of Disease Severity in Multiple Sclerosis Patients with Magnetization Transfer Histograms.** G. Iannucci, M. Rovaris, L. Minicucci, V. Martinelli, M. Rodegher, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Data Processing: MRI
 Keywords: MS, MTI, disease course

121. **Short-Term Evolution of the Magnetization Transfer Ratios of Multiple Sclerosis Lesions Enhancing After the Injection of a Standard Dose or a Triple Dose of Gadolinium-DTPA.** M.A. Rocca, G. Rizzo, M.A. Horsfield, M. Rovaris, L. Minicucci, B. Colombo, G. Comi and M. Filippi. University of Milan, Italy; University of Leicester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MTI, gadolinium
122. **A Longitudinal Study of Magnetization Transfer in Multiple Sclerosis.** G.B. Pike, N. De Stefano, S. Narayanan, G. Francis, J. Antel and D.L. Arnold. McGill University Montréal, Quebec, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Contrast Mechanisms
 Keywords: magnetization transfer, multiple sclerosis
123. **Quantitative Evaluation of Brain Atrophy in Multiple Sclerosis.** M. Quarantelli, B. Alfano, M. Larobina, A. Brunetti, E.M. Covelli, E. Tedeschi, G. Orefice, V. Brescia-Morra, G. Campanella and M. Salvatore. University "Federico II", Naples, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Data Processing: MRI
 Keywords: multiple sclerosis, brain atrophy, image processing
124. **Comparison of the Therapeutic Effects of Interferon Beta-1a on Different Levels of Baseline MRI Activity.** D.K.B. Li, G.J. Zhao, R. Hyde, F. Dupont, A. Abdul-Ahad, Y. Cheng, X.Y. Wang and D.W. Paty. University of British Columbia, Vancouver, BC, Canada; Ares-Serono, Geneva, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, interferon, activity
125. **White Matter Changes in Healthy 80-Year-old Persons Assessed by a Semiquantitative Visual Rating Scale.** E. Garde, K. Krabbe, E. Rostrup and H.B.W. Larsson. Copenhagen University Hospital, Hvidovre, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: white matter, aging, hyperintensity rating

- 126. Noise Compensation for Simultaneous Multislice Acquisitions Using Rosette Trajectories.** S.J. Peltier and D.C. Noll. University of Pittsburgh, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: rapid imaging, rosettes, noise compensation
- 127. Optimized Phase Preparation and Auto-Shimming Technique for Gradient Echo MRI.** N.K. Chen, L. Li and A. Wyrwicz. ENH Research Institute; Northwestern University, Evanston, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: shimming, tailored RF pulse, intravoxel dephasing
- 128. Correction for B1-inhomogeneity Using EPI-based Field Maps.** L.G. Hanson, S. Topp and O.B. Paulson. Hvidovre Hospital, Copenhagen, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: B1 mapping, inhomogeneity, correction
- 129. Correction of Concomitant Magnetic Field-Induced Image Artifacts in Non-Axial Echo-Planar Imaging.** Y.P. Du, X.J. Zhou and M.A. Bernstein. General Electric-Medical Systems, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: concomitant field, echo planar imaging
- 130. Susceptibility Artifact at the Cardiac Apex of Porcine Hearts at 3T is Primarily Due to the Heart-Lung Interface.** M.K. Atalay, B.P. Poncelet, H.L. Kantor, T.J. Brady and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Basic Research on MR
 Organ/Tissue: Heart
 Methods: Motion and Artifacts
 Keywords: susceptibility, 3T, cardiac

- 131. Burst-SPI: Fast Sequences for Elimination of Susceptibility Distortions.** Y. Crémillieux, O. Beuf and A. Briguet. Université Lyon, Villeurbanne, France.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Methods: Motion and Artifacts
 Keywords: susceptibility, artifacts, burst
- 132. Efficient Ghost Suppression by Analytical Gradient Energy Minimization.** S. Chavez and Q.-S. Xiang. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion artifacts, gradient energy, image processing
- 133. Separation of Physiological Motion Artifacts in Single-Shot EPI to Improve Reproducibility for Functional MRI Studies.** E. Moser and C. Windischberger. Institute of Medical Physics; University of Vienna, Austria.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: brain, physiology, fuzzy clustering
- 134. The Use of Intelligent Re-Acquisition to Reduce Scan Time in MRI Degraded by Motion.** Q. Nguyen, M. Clemence and R.J. Ordidge. University College London, U.K.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: diffusion, artefacts, processing
- 135. MRI Detection of Shear Wave Propagation: Remote Palpation with Focussed Ultrasound.** S.D. Swanson, J.B. Fowlkes, S.Y. Emelianov and A.P. Sarvazyan. The University of Michigan, Ann Arbor, MI; Artann Laboratories, East Brunswick, NJ.
 Type of Study: Methodological Development
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: elasticity, ultrasound

136. **Quantitative T1 ρ Imaging of Acute Brain Ischaemia in Rats.** O.H.J. Gröhn, J.A. Lukkarinen, M.J. Silvennoinen, T.R.M. Pirttilä, N. Huuskonen, P.C.M. van Zijl and R.A. Kauppinen. University of Kuopio, Finland; Johns Hopkins University, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: ischaemia, T1 ρ , diffusion

137. **MRI Calorimetry for Tissue Ultrasound Absorption Measurement.** Y. Wang, F.S. Foster and D.B. Plewes. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: absorption, calorimetry, MRI

138. **Magnetic Susceptibility Measurement Using MRI: A Dipolar Field Method.** S. Li, Z. Wang and J.S. Leigh. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: susceptibility, dipolar, MRI

139. **Differences in Microvascular Random Flow and Vascular Volume Between the Malignant and Benign ENU Induced Breast Tumors Measured by Diffusion Weighted and Gd-DTPA-Albumin Enhanced MRI.** Z. Wang, M.-Y. Su, P. Carpenter, X. Lao, A. Najafi and O. Nalcioglu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: malignant, benign, microcirculation

140. **2D-Selective Excitations for Fast and Accurate T2 Measurements.** C.K. Macgowan, G.A. Wright, J.A. Stainsby, M.J. Bronskill and M.L. Wood. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: T2 relaxation, selective excitation, real-time

- 141. T1 Imaging Using Phase Acquisition of Composite Echoes.** S. Ropele, R. Stollberger, F. Fazekas and F. Ebner. University of Graz, Austria.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: T1, phase
- 142. Magnetic Susceptibility Measurement Using MRI: A Contact Reference Method.** Z.J. Wang, S. Li, A.R. Cohen, A.M. Hubbard, J.S. Leigh and J.C. Haselgrove. Children's Hospital of Philadelphia and University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: susceptibility, quantitation
- 143. MR-Derived Trabecular Bone Volume Fraction and its Relationship to Susceptibility-Induced Bone Marrow R2'.** F.W. Wehrli, J.A. Hopkins and H.K. Song. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: bone volume fraction, relaxation rate, cancellous bone
- 144. Multivariate Image Analysis of Magnetic Resonance Images with the Direct Exponential Curve Resolution Algorithm.** J.P. Hornak, B.J. Antalek and W. Windig. Rochester Institute of Technology; Eastman Kodak Company, Rochester, NY.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
- 145. Generating Flip Angle Maps by Nonlinear Estimation from the Initial Non-Equilibrium EPI Signal.** V. Roopchansingh, P.A. Bandettini, R.W. Cox and B.D. Ward. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: flip angle, RF homogeneity, transient

146. **Pyruvate Effects on High Energy Phosphate Abnormalities During High Workstates.** Y.K. Cho, Y. Murakami, Y. Zhang, Y. Ye, G. Gong, W. Chen and J. Zhang. University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Spectroscopy
 Keywords: 31P-MRS, deoxymyoglobin, ATP

147. **Oxygen Supply and Limitation to Oxidative Phosphorylation in Myocardium *In Situ*.** U. Kreutzer, Y. Mekhamer, T.K. Tran and T. Jue. University of California Davis, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: heart, myoglobin, oxygen

148. ***In Vitro* and *In Vivo* Studies of 1H NMR Visibility to Detect Deoxyhemoglobin and Deoxymyoglobin Signals in Myocardium.** W. Chen, Y. Cho, H. Merkle, Y. Zhang, Y. Ye, G. Gong, J. Zhang and K. Ugurbil. University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: deoxyhemoglobin, 1H NMR visibility, deoxymyoglobin in heart

149. **Myocardial Function During Carbon Monoxide Inhibition of Myoglobin.** A. Glabe, Y. Chung, D. Xu and T. Jue. University of California, Davis, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: myoglobin, heart, oxidative phosphorylation

150. **Intracellular Sodium in Isolated Perfused Rodent Heart and Na TQF NMR.** V.D. Schepkin, I.O. Choy, T.F. Budinger and S. Taylor. Wake Forest University School of Medicine, Winston-Salem, NC; University of California at Davis, Oakland, CA; Lawrence Berkeley National Lab, Berkeley, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: sodium, homeostasis, NMR

- 151. Changes of Intracellular Sodium T2 Relaxation Times during Ischemia and Reperfusion in Isolated Rat Hearts.** J.G. van Emous and C.J.A. van Echteld. University Hospital, Utrecht, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: sodium, T2, rat heart
- 152. Na⁺/Ca²⁺ Exchange during Ca²⁺ Repletion is Not a Prerequisite for the Ca²⁺ Paradox in Isolated Rat Hearts.** M.A. Jansen, C.J.A. van Echteld and T.J.C. Ruigrok. University Hospital; Interuniversity Cardiology Institute of the Netherlands, Utrecht, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: ²³Na NMR, lithium, calcium
- 153. Detrimental Effects of Fatty Acids on the Reperfused Heart May be Overcome by High Glycogen.** B.E. Jones, L.M. King, H. Taegtmeyer, G.K. Radda and K. Clarke. University of Oxford, UK; The University of Texas Houston Medical School, Houston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: glycogen, fatty-acids, myocardial-ischaemia
- 154. Intravascular MRI of Atherosclerotic Plaque: Correlation with Histology.** W.J. Rogers, J.W. Prichard, Y.-L. Hu, P.R. Olson, D.H. Benckart, C.M. Kramer and N. Reichek. Allegheny University of the Health Sciences, Pittsburgh, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: coils, heart, rf
- 155. Osmotic Shock: Modulation of Myocardial Function and pH_i.** D.E. Befroy, T. Powell, G.K. Radda and K. Clarke. University of Oxford, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Trauma
 Methods: Basic NMR
 Keywords: pH_i, osmotic shock, myocardial function

DAY TWO

Spatio-Temporal Imaging of Neuronal Activity: From Single Cells to Human Brain

156. **Cortical Physiology of Motor and Cognitive Functions.** Apostoles Georgopoulos. Veterans Administration Medical Center, Minneapolis, MN.
157. **Optical Imaging of Architecture and Function in the Living Brain.** Amiram Grinvald. Weizmann Institute of Science, Rehovot, Israel.
158. **Temporal Resolution of Brain Function in fMRI.** Randy L. Buckner. Massachusetts General Hospital, Charlestown, MA.

Single-Event fMRI

159. **fMRI During Stimulus Correlated Motion and Overt Subject Responses Using a Single Trial Paradigm.** R.M. Birn, P.A. Bandettini, R.W. Cox and R. Shaker. Medical College of Wisconsin, Milwaukee, WI.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Motion and Artifacts
Keywords: single-trial, FMRI, artifacts
160. **Utilizing the Hemodynamic Lag to Detect fMRI Signal Change without Auditory Interference.** G.F. Eden, J.E. Joseph, H.E. Brown, C.P. Brown and T.A. Zeffiro. Georgetown University Medical Center, Washington, D.C.; Sensor Systems, Sterling, VA.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Data Processing: MRI
161. **Contrast in Single Trial fMRI: Interstimulus Interval Dependency and Comparison with Blocked Strategies.** P.A. Bandettini and R.W. Cox. Medical College of Wisconsin, Milwaukee, WI.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Data Processing: MRI
Keywords: FMRI, single-trial, BOLD

- 162. Real Time fMRI on a Clinical Whole Body Scanner: Single Trial Detection of Sensorimotor Stimulation and Visual Recall Activation.** S. Posse, S. Schor, D. Gembris, E. Müller, M. Peyerl, R. Kroeker, M.L. Grosse-Ruyken, B. Elghawaghi and J.G. Taylor. Research Center Jülich GmbH, Jülich, Germany; Siemens Medical Systems, Erlangen Germany; King's College, London, England.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: real, time, fMRI
- 163. The Application of Double Voxel fMRS to Single Trial Cognitive Experiments.** R. Dymond, S. Zysset, D. Norris and S. Pollmann. Max-Planck-Institute of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: combination MRI/MRS
 Keywords: single trials, fMRS, timecourse
- 164. Event-Related fMRI.** O. Josephs, R. Turner and K.J. Friston. Institute of Neurology, London, United Kingdom.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, SPM, trial
- 165. Variability of the Hemodynamic Response to Different Stimuli in Single Event Paradigms.** C. Janz, C. Schmitt, H. Fischer, O. Speck and J. Hennig. University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, BOLD, hemodynamic
- 166. The Supplementary Motor Area is Associated with the Initiation of the Motor Task Using Event Related fMRI.** M. Fukunaga, C. Tanaka, T. Ebisu, M. Umeda, Y. Someya, I. Aoki, Y. Watanabe, T. Higuchi, S. Naruse and T. Takegami. Meiji University of Oriental Medicine; Kyoto Prefectural University of Medicine, Kyoto, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, SMA, motor task

- 167. Mental Chronometry Using Single Trials and EPI at 4T.** D.C. Luknowsky, J.S. Gati and R.S. Menon. University of Western Ontario; The John P. Robarts Research Institute, London, ON, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: fMRI, BOLD, blood flow
- 168. Reproducible Localisation of Interictal Epileptiform Discharges Using EEG-Correlated fMRI.** M.R. Symms, P.J. Allen, F.G. Woermann, G. Polizzi, K. Krakow, G.J. Barker, D.R. Fish and J.S. Duncan. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: fMRI, EEG, epilepsy

Non-Neuro Vascular Imaging

- 169. Contrast-Enhanced 3D MR Angiography Using Fluoroscopic Triggering: Technical Reliability and Applicability in 250 Patient Studies.** S.J. Riederer, D.G. Kruger, A.H. Wilman, P.J. Rossman, B.F. King, J. Huston, R.L. Ehman, J.F. Breen and C.L. LaPlante. Mayo Clinic, Rochester, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: contrast, triggering, fluoroscopy
- 170. Pulmonary MRA during Continuous Breathing Using a Blood Pool Agent and Navigator Echo.** H. Ahlström, L. Johansson, A. Ragnarsson and A. Börseth. Uppsala University Hospital, Uppsala, Sweden; Nycomed AS, Oslo, Norway.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: blood pool agent, MRA, pulmonary vessels
- 171. Open-Label, Phase 1 Trial of a New Blood Pool Contrast Agent (NC100150) in 12 Healthy Volunteers: Safety and Vascular Imaging Characteristics.** S. Wildermuth, B. Dubno, B.J. Romanowski, A. Borseth, A. Annweiler and J.F. Debatin. University Hospital, Zurich, Switzerland; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: MRA, vascular, paramagnetic contrast agent

- 172. Blood Flow Dynamics after Total Cavopulmonary Connection Measured with MR Phase Velocity Mapping.** K. Houliind, E.V. Stenbøg, K.E. Sørensen, K. Emmertsen, O.K. Hansen, L. Rybro, E.M. Pedersen and V.E. Hjortdal. Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: flow, heart, TCPC
- 173. Oxidized LDL is Associated with Decreased Aortic and Carotid Compliance in Healthy Young Men.** J.O. Toikka, P. Niemi, M. Ahotupa, H. Niinikoski, J.S.A. Viikari, T. Rönnekaa, J.J. Hartiala and O.T. Raitakari. Turku University Hospital and University of Turku, Finland; Royal Prince Alfred Hospital, Sydney, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: ox-LDL, compliance, aorta
- 174. Comparison of the Efficacy of Gd-BOPTA and Gd-DTPA for MR Angiography: A Phase I Pilot Study.** M.V. Knopp, S.O. Schoenberg, C. Rehm, M. Bock, M. Essig, F. Floemer, R. Hentrich and G. van Kaick. German Cancer Research Center, Heidelberg, Germany; Bracco-Byk Gulden, Konstanz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, Gd-BOPTA, Phase I pilot study
- 175. 3D MRA in Patients with Abdominal Aortic Aneurysm Post Stent-Grafting.** P.R. Hilfiker, T. Pfammatter, T. Hany, M. Lachat and J.F. Debatin. University Hospital, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: stent, 3D MRA, aorta
- 176. A Comparison of Ultrafast Contrast-Enhanced 3D MR Angiography and Cardiac-Gated Spin-Echo MRI for the Evaluation of Aortic Disease.** I.R. Francis, B.D. Daniels, R.J. Herfkens, Y. Amano, R.Y. Shifrin, S.G. Heiss and M.T. Alley. University of Michigan, Ann Arbor, MI; Stanford University Medical Center, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: aortic diseases, contrast media, MR angiography

177. **Pitfalls in Enhanced MR Angiography: View Order and Contrast Bolus Trajectory.** S. Isogai, Y. Takehara, H. Isoda, N. Kodaira, H. Masunaga, H. Takeda, Y. Igarashi, M. Kaneko, A. Nozaki and H. Kabasawa. Hamamatsu University School of Medicine, Hamamatsu, Japan; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MR angiography, gadolinium, artifact
178. **A Pharmacokinetic Model for Quantification of the Perfusion Rate and Capillary Permeability from Dynamic T1-Weighted MRI.** A.S. Horvath, W.G. Schreiber, U. Hoffmann, M.V. Knopp, H. Hawighorst and G. Brix. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Perfusion
 Keywords: dynamic MRI, perfusion, contrast agent

Unconventional Sampling Strategies

179. **Young Investigator Awards Finalist: An Optimal and Efficient New Gridding Algorithm Using Singular Value Decomposition (SVD).** D. Rosenfeld. Elscint MRI Center, Haifa, Israel.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: Gridding, SVD, Spiral
180. **Reduced Circular Field-of View Imaging.** K. Scheffler and J. Hennig. University of Basel, Basel, Switzerland; University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: polar sampling, undersampling, dynamic
181. **Projection Reconstruction Reduced FOV Imaging.** S. Weiß and V. Rasche. Philips Research, Hamburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: projection reconstruction, reduced FOV, rapid imaging

- 182. Using Projection Reconstruction with a Limited Number of Projections to Increase Image Resolution or Acquisition Speed.** D.C. Peters, C.A. Mistretta, F.R. Korosec, J. Holden, F. Kelcz, K.L. Wedding and T.M. Grist. University of Wisconsin, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: rapid imaging, projection reconstruction, small FOV
- 183. Motion Compensated Projection Reconstruction for Reducing Artifacts.** T. Schäffter, V. Rasche and I. Carlsen. Philips Research, Hamburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: production reconstruction, motion, artefact reduction
- 184. MR Fluoroscopy Using Radial Multi-Gradient-Echo (rMGE) MRI.** V. Rasche, D. Holz and R. Proksa. Philips Research, Hamburg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR Fluoroscopy, projection reconstruction, interactive MRI
- 185. A Multi Axis Projection Prescan.** M. Saranathan and S.G. Hushek. GE Medical Systems, Waukesha, WI.
 Methods: Sequences: Imaging
- 186. Fast Three-Dimensional Spiral Imaging with a Cone-Stack Hybrid Trajectory.** D.R. Thedens, P. Irarrazaval and D.G. Nishimura. Stanford University, Stanford, CA; Universidad Católica de Chile, Santiago, Chile.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: three-dimensional, spiral, coronary
- 187. A New Sampling Theorem for FT MRI of Multiple Regions.** S.K. Nagle, D.N. Levin and V.Y. Kuperman. University of Chicago, Chicago, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: sampling, fast imaging, reconstruction

188. **Magnetization Transfer Imaging in the Detection of Injury in Mild Head Trauma Patients.** J.H. Yang, L.J. Bagley, R.I. Grossman, J.I. Berman, R. Plotkin and J.C. McGowan. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Contrast Mechanisms
 Keywords: brain, neuropsychology, splenium'

189. **Use of Diffusion-Weighted Imaging in the Evaluation of Traumatic Brain Injury.** A.Y. Liu, J.A. Maldjian, L.J. Bagley and R.I. Grossman. Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Diffusion
 Keywords: brain, trauma, diffusion

190. **Early 1H Magnetic Resonance Spectroscopy of Acute Head Injury in Humans: 4 Cases.** B. Condon, D. Hadley, D. Oluoch-Olunya, G. Teasdale, A. Wagstaff and A. Inglis. Institute of Neurological Sciences, Glasgow, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Sequences: Spectroscopy
 Keywords: MRS, brain, trauma

191. **Is Loss of Cholesterol an Early Event Leading to Secondary Injury in Spinal Trauma? *In Vivo* MRI and Biochemical Studies.** P. Narayana, R. Abbe, S.J. Liu and P. Dash. University of Texas Medical School, Houston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Spine
 Pathology: Trauma
 Methods: Contrast Mechanisms
 Keywords: spinal cord injury, cholesterol, neurobehavioral measures

192. **Conventional MRI, Magnetization Transfer Imaging and Proton-Spectroscopy in Migraine Patients Using Ergotamine.** D. Bakker, K.I. Roon, M.D. Ferrari, J. Doornbos and M.A. van Buchem. Leiden University Medical Center, Leiden, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: combination MRI/MRS
 Keywords: migraine, H-MRS, ergotamine

- 193. Ethanol in Human Brain: Relaxation and Magnetization Transfer.** D.J. Meyerhoff. University of California San Francisco, CA.
Keywords: magnetization transfer, alcohol, compartmentation
- 194. Characterisation of the Nature of Ischaemic Damage in Leukoaraiosis with Diffusion Tensor Imaging.** D.K. Jones, H.S. Markus, D. Lythgoe, S.C.R. Williams, A. Simmons and M.A. Horsfield. University of Leicester; Kings College School of Medicine and Dentistry, London, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain Vascular
Pathology: Vascular Diseases
Methods: Diffusion
Keywords: Leukoaraiosis, diffusion, tensor
- 195. Registration of Serial MRI Detects Pre-Symptomatic Brain Atrophy in Familial Alzheimer's Disease.** N.C. Fox, P.A. Freeborough, W.R. Crum, K.F. Mekkaoui and M.N. Rossor. The National Hospital for Neurology and Neurosurgery, London, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain
Pathology: Degeneration
Methods: Quantitation: MRI
Keywords: registration, Alzheimer's, Diagnosis
- 196. Lumbar Spine Hypoplasia and Adult Degenerative Disc Disease.** P.T. Weatherall, C.S. Cottingham and E.A. Murray. University of Texas Southwestern Medical Center, Dallas, TX.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Spine
Pathology: Degeneration
Methods: Category not applicable
Keywords: spine (lumbar), hypoplasia, degeneration (disc)
- 197. Current Density Magnetic Resonance Imaging of Excised Normal and Injured Rat Spinal Cord.** E.L. Bossart, E.D. Wirth III, X.S. Silver, T.H. Mareci, S.J. Blackband and A.J. Freeman. University of Florida, Gainesville, FL.
Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Spine
Pathology: Trauma
Methods: Contrast Mechanisms
Keywords: current density imaging, spinal cord, injury

- 198. Dynamics of Liver Glycogen Breakdown.** G.W. Cline, B.M. Jucker and G.I. Shulman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: liver, glycogen, dynamics
- 199. Renal and Hepatic Citrate Metabolism *In Vivo*.** J.A. Woods, C.J. Storey, E.E. Babcock, S. Aruga, C.R. Malloy and R.J. Alpern. University of Texas Southwestern Medical Center, Dallas, TX.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Renal
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: renal, citrate, metabolism
- 200. The Effect of Insulin-Induced Acute Maternal Hypoglycemia on Fetal Liver Glucose Metabolism. ¹³C NMR Isotopomer Analysis.** A. Lapidot, S. Hindi and C. Barak. The Weizmann Institute of Science, Rehovot, Israel.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: ¹³C NMR, isotopomer analysis, fetal liver
- 201. ³¹P NMR Assessment of Intestinal Ischaemia and Reperfusion Injury in Rat Liver.** K.K. Changani, V. Lauro, A. Pierro and S.R. Williams. University College London Medical School; The Royal Free Hospital School of Medicine, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: ischaemia, reperfusion, liver
- 202. Fructose-Enhanced Metabolism During Hepatic Cold Hypoxia: Whole Organ ³¹P NMR Studies in Porcine Liver.** K.K. Changani, B.J. Fuller, J.D. Bell, S. Mierisova, S.D. Taylor-Robinson and B.R. Davidson. The Royal Free Hospital School of Medicine; Hammersmith Hospital, London, England; Slovak University of Technology, Bratislava, Slovakia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: liver, ATP, fructose

- 203. Monitoring the Outcome of Kidney Transplantation and Recognition of Graft Rejection by ¹H-NMR Spectra of Blood Plasma Using Self-Organizing Maps.** K. Schober, J. Monnerjahn, T. Castedello, E. Meyer, T. Derr, A.-E. Lison and D. Leibfritz. University of Bremen, Bremen, Germany; Central Hospital Sankt-Jürgen-Straße, Bremen, Germany.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Cells/Body Fluids
Pathology: Category not applicable
Methods: Category not applicable
Keywords: body fluids, renal, neural networks
- 204. Non-Invasive Measurements of Gluconeogenesis and Citric Acid Cycle Fluxes in Humans by ¹³C NMR Analysis of Hexose Isotopomers Following Ingestion of [U-¹³C] Propionate and Acetaminophen.** J.G. Jones, M.A. Solomon, A.D. Sherry, F.M.H. Jeffrey and C.R. Malloy. UT Southwestern Medical Center, Dallas, TX.
- Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Healthy Tissue
Methods: Basic NMR
Keywords: carbon 13, gluconeogenesis, isotopomer
- 205. Mechanism of Hepatic Uptake of 2-Amino-Ethylphosphonate and Phenylphosphonate.** K. Bruynseels, P. Van Hecke and F. Vanstapel. K.U. Leuven, Leuven, Belgium.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Category not applicable
Methods: Quantitation: MRS
Keywords: liver, phosphonate, ³¹P NMR
- 206. Towards the Development of a Bioartificial Pancreas: Effects of Long-Term Hypoxia on Alginate-Entrapped Mouse Insulinoma β TC3 Cells.** I. Constantinidis, K.K. Papas, R.C. Long, Jr. and A. Sambanis. Emory University, Atlanta, GA; Georgia Tech., Atlanta, GA.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Cells/Body Fluids
Pathology: Category not applicable
Methods: Basic NMR
Keywords: β TC3, pancreas, hypoxia
- 207. In Vitro Monitoring of Total Choline Levels in a Bioartificial Pancreas: ¹H NMR Spectroscopic Studies of the Effect of Oxygen Level on Immunoprotected β TC3 Insulinoma Cells.** R.C. Long, Jr., K. Papas, A. Sambanis and I. Constantinidis. Emory University School of Medicine, Atlanta, GA; Georgia Institute of Technology, Atlanta, GA.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Cells/Body Fluids
Pathology: Category not applicable
Methods: Basic NMR
Keywords: ¹H NMR, choline, hypoxia

- 208. Evaluation of Equilibrium Transcytolemmal Water Exchange in Intact Rat Brain.** T.Q. Duong, C.S. Springer, C.H. Sotak, G.L. Bretthorst, G. Vetek, I. Palyka, J.J.H. Ackerman and J.J. Neil. Washington University, St. Louis, MO; Brookhaven National Laboratory, Upton, NY; Worcester Polytechnic Institutes, Worcester, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: water exchange, brain, contrast
- 209. Gd-DTPA Perfluorocarbon Emulsions as Novel Paramagnetic Particulate Contrast Medium: T1 and T2 Relaxometry.** J.W.M. Bulte, G.M. Lanza, R. Fuhrhop, R. Kaufman, V. Herynek, J.A. Frank and S.A. Wickline. National Institutes of Health, Bethesda, MD; Washington University, St. Louis, MO; Gateway Chemical Technology, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: perfluoro-carbon, relaxometry, paramagnetic
- 210. Design of a pH-Sensitive Contrast Agent for Functional MRI.** M. Mikawa, N. Miwa, T. Akaike and A. Maruyama. Tokyo Institute of Technology, Yokohama, Japan; Nihon Schering K.K., Osaka, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: pH, polyion-complex, contrast agent
- 211. Effect of Ischemia Reperfusion on the Uptake of Gd-EOB-DTPA by the Isolated Mouse Liver.** F. Seghi, J.-M. Colet and R.N. Muller. University of Mons-Hainaut, Mons, Belgium.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Infarction
 Methods: Contrast Agents
 Keywords: liver, ischemia, contrast agent
- 212. Comparison of Gadolinium-Enhanced Magnetic Resonance Angiography to Conventional Angiography in a Porcine Model of Segmental Mesenteric Ischemia.** S.G. Heiss, K.C.P. Li, F.P. Chan, S. Wadhwa, M. Razavi, R.Y. Shifrin and D. Sze. Stanford University School of Medicine, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: mesentery, ischemia, MRA

213. **Hepatic and Renal Enhancement with Gd-EOB-DTPA in Normal and Biliary Obstructed Guinea Pigs.** S.-C. Wang, B. Shuter, J. Roche and G. Briggs. Royal North Shore Hospital, Sydney, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: Gd-EOB-DTPA, biliary obstruction, MR contrast agents
214. **The T1-Dependence of Single T1 Estimations of R1 (=T1-1) *in vivo* Following a Bolus Injection of GdDTPA2-.** C.S. Landis, X. Li, G. Véték, F.W. Telang and C.S. Springer, Jr. Brookhaven National Laboratory, Upton; State University of New York, Stony Brook, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: bolus CR, exchange, relaxography
215. **MR Angiography at 0.5T With Gadomer-17, A New Blood Pool Agent: Dose Study and Comparison with 2D TOF in Rabbits.** S.E. Clarke, H.-J. Weinmann, A. Lucas, E. Dai and B.K. Rutt. University of Western Ontario, London, ON, Canada; Schering Research Laboratories, Berlin, Germany; Robarts Research Institute, London, ON, Canada.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, blood pool agent, contrast
216. **Interstitial MR Lymphography. Initial Experiences with a New Contrast Medium.** B. Misselwitz, J. Platzeck and H.-J. Weinmann. Research Laboratories of Schering AG, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: MR imaging, Lymphography, contrast media
217. **Characterization of a Dual Labeled Probe for MRI and Neutron Capture Therapy.** A.T. Tatham, H. Nakamura, E.C. Wiener and Y. Yamamoto. University of Illinois at Urbana-Champaign, IL; Tohoko University, Sendai, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast agents, neutron capture therapy

- 218. Simultaneous Gadolinium Enhanced 2D Perfusion and 3D Angiography.** J.W. Goldfarb, P.V. Prasad, M.V. McConnell, Q. Chen and R.R. Edelman. Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: contrast agent, angiography, perfusion
- 219. Ultrafast MR Venography of the Lungs.** S.O. Schoenberg, M.V. Knopp, A. Grau, G. Laub, M. Bock and P. Kosmaoglou. German Cancer Research Center, Heidelberg; University Hospitals, Heidelberg; Siemens Medical Systems, Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: 3D MR angiography, pulmonary veins, venous thrombi
- 220. Superior Vena Cava Syndrome; Evaluation by Contrast Enhanced Three Dimensional MR Angiography.** M. Amanuma, E. Eito, E. Sugimoto, K. Enomoto, T. Watabe and A. Heshiki. Saitama Medical School, Iruma, Saitama, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, SVC, contrast media
- 221. Breathhold 3D Contrast Enhanced Turbo-MRA versus Intra-Arterial DSA in Orthotopic Liver Transplantation Candidates.** W.J. Boeve, R.L. Kamman, T. Kok, E.B. Haagsma, M.J.H. Sloof, M.C.C. de Lange and R.A. Prinsze. University Hospital Groningen; Siemens, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MRA, transplantation, liver
- 222. Gadolinium Enhanced 3-D TOF MRA in the Preoperative Mapping of Hepatic Arteries Prior to Isolated Perfusion Therapy of Metastatic Disease of the Liver.** P.L. Choyke, B. Damaska and J.H. Zeh. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Angiography
 Keywords: liver, MRA, metastasis

223. **Breathhold 3D Contrast Enhanced Turbo-MRA versus Intra-Arterial DSA in Kidney and/or Pancreas Transplantation.** W.J. Boeve, R.L. Kamman, T. Kok, A.M. Tegzess, R.J. Ploeg, M.C.C. de Lange and R.A. Prinsze. University Hospital Groningen; Siemens, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MRA, transplantation, kidney
224. **MR Imaging and MR Angiography Prior to Post-Chemotherapy Retroperitoneal Lymphadenectomy for Nonseminomatous Germ Cell Testicular Cancer.** D.G.K. Varma, E.F. Jackson, D.A. Corral and L.L. Pisters. University of Texas M.D. Anderson Cancer Center, Houston, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Angiography
 Keywords: angiography, MR, retroperitoneum
225. **MRA of the Pelvis in Patients with Arterial Occlusive Disease; Accuracy and Reliability of 3D Gadolinium-Enhanced Subtraction MRA and 2D Time of Flight MRA.** Y. Saito, H. Yodono, H. Noda, T. Sasaki, H. Miura, K. Mizuno, Y. Abe, M. Shimizu and S. Suzuki. Hirosaki University Hospital, Hirosaki, Aomori, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, 3D-enhanced MRA, arterial occlusive disease

Breast Cancer Diagnosis and Staging

226. **Assessing Contrast Enhanced MRI as a Method of Screening Women at Genetic Risk of Breast Cancer: Study Design, Methodology and Analysis.** M.O. Leach. Institute of Cancer Research and Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast, screening, MRI
227. **Comparison of Kinetic Features and Architectural Based Features in the Differentiation Between Malignant and Benign Enhancing Breast Lesions.** S. Rosten, S. Englander, L. Bolinger, S. Orel and M.D. Schnall. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: breast, enhancement, kinetics

228. **Optimal Time Resolution for Dynamic Breast Imaging.** W.B. Edmister and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA; Harvard-MIT Division of Health Science and Technology, Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Perfusion
 Keywords: breast, perfusion, cancer
229. **Comparison of 2D and 3D Dynamic Breast MRI with Spiral Trajectory.** Y.-F Yen, K. Han, B.L. Daniel, S. Heiss, R.J. Herfkens, R. Birdwell, A.M. Sawyer-Glover and G.H. Glover. Stanford University School of Medicine, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast, 3D, spiral
230. **Partial Volume Effects in Dynamic Contrast Enhanced MRI of the Breast.** M.G. Hochman, M.A. Griswold, C.A. Hulka and R.R. Edelman. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: breast, partial volume, tumor
231. **Integrated Multi-Nuclear MRI/MRS Technology: Application in Rapid Diagnosis, Staging and Monitoring of Breast Cancer.** G.X. Shen, V.G. Vogel and K.R. Thulborn. University of Pittsburgh, Pittsburgh, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: breast, MRS, MRI
232. **Comparison of Breast Imaging at 1.5T and 4.0T.** L. Bolinger, K. Cecil, S. Englander and A. Stolpen. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: breast,

233. **Magnetic Resonance Elastography of the Breast: Preliminary Experience.** A.J. Lawrence, R. Muthupillai, P.J. Rossman, J.A. Smith, A. Manduca and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast, elasticity, MRI

Perfusion and Diffusion MRI in Cerebral Ischemia

234. **Bilateral Assessment of Perfusion Abnormalities in Patients with Carotid Occlusive Disease.** M. Kluytmans, J. van der Grond and M.A. Viergever. University Hospital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, brain, occlusion
235. **Evaluation of Diffusion - and Perfusion-Based Predictive Models of Tissue Outcome in Hyperacute Human Cerebral Ischemia.** O. Wu, A.G. Sorensen, D. Bakker, F. Buonano, W.A. Copen, R.G. Gonzalez, C. Harmath, L. Østergaard, B.R. Rosen, L. Schwamm, G. Rordorf, R.M. Weisskoff, W.M. Wells, K. Yamada, G. Zaharchuk and W.J. Koroshetz. Massachusetts Institute of Technology, Cambridge; Brigham & Women's Hospital, Boston; Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: ischemia, diffusion, perfusion
236. **Analysis for Single Shot FLAIR-Weighted Diffusion and Perfusion EPI in Stroke Evaluation.** Y. Liu, R. Breger, J. Blechinger, D. Hinke and D. Weber. St. Luke's Medical Center; GE Medical Systems, Milwaukee, WI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: stroke, diffusion, perfusion
237. **Inter- and Intra-Person Variation in Quantitative Dynamic Susceptibility Contrast MRI.** E.P.A. Vonken, C.J.G. Bakker and M.A. Viergever. University Hospital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, quantitative, bolus

238. **Diffusion and Perfusion Weighted Imaging Following Administration of Tissue Plasminogen Activator (rt-PA) in Humans with Acute Ischemic Stroke.** D.C. Tong, M.G. Lansberg, M.A. Yenari and M.E. Moseley. Stanford Medical Center, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: rt-PA, DWI
239. **MR Monitored Neuroangiographic Balloon Test Occlusion (BTO).** H. Liu, A.J. Martin and C.K. Truwit. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Perfusion
 Keywords: BTO, perfusion, cerebral blood flow
240. **Cerebral MR Perfusion Imaging: First Clinical Application of a 1 Molar Gadolinium Chelate in a Double-Blinded Randomized Dose Finding Study.** T. Benner, P. Reimer, G. Erb, G. Schuierer, S. Heiland, C. Fischer, V. Geens, K. Sartor and M. Forsting. University of Heidelberg Medical School; Westfälische Wilhelms-Universität Münster; University of Tübingen Medical School; Schering AG, Berlin; University of Essen Medical School, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: cerebral perfusion, paramagnetic contrast agent, gadolinium chelate
241. **Diffusion and Perfusion MR Imaging in the Evaluation of Ischemic Stroke During the First Week.** J. Karonen, P. Vainio, K. Partanen, R. Vanninen, K. Korhonen, Y. Liu, J. Nuutinen, R. Roivainen, J. Onatsu, J. Sivenius, E. Vanninen, M. Könönen, J. Kuikka and H. Aronen. Kuopio University Hospital, Kuopio, Finland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: stroke, diffusion, perfusion
242. **MRI of the Ischemic Penumbra: Paradoxical Early Perfusion and T2-Dark White Matter.** H.A. Rowley, N.J. Fischbein, P.E. Grant, W.P. Dillon and T.P.L. Roberts. University of California, San Francisco, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: ischemia, perfusion, white matter

243. **Cerebrovascular Reserve Testing Using Perfusion MRI with Arterial Spin Labeling in Normal Subjects and Patients with Cerebrovascular Disease.** J.A. Detre, D.C. Alsop, O.B. Samuels, J. Gonzalez-Atavales and E.C. Raps. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, spin labeling, stroke

fMRI: Modeling and Data Analysis

244. **Single Trial fMRI: The Optimal Inter-Stimulus Interval.** R.W. Cox and P.A. Bandettini. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, BOLD, stimulus
245. **Understanding Differential Responses in Event Related fMRI Through Linear Simulation.** M.A. Burock, R.L. Buckner and A.M. Dale. Harvard-MIT Division of Health Sciences and Technology, Cambridge; Massachusetts General Hospital, Charlestown, MA; Washington University, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: event-related, fMRI, modeling
246. **Signal Processing in fMRI: A New Hemodynamic Response Model and Estimation Method.** P.L. Purdon, V. Solo, R. Savoy, K. O'Craven, E. Brown and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA; Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA; Macquarie University, Sydney, Australia; Rowland Institute for Science, Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, hemodynamic response, signal processing
247. **Statistical Analysis of Functional MRI Data.** B.A. Ardekani, J. Kershaw, K. Kashikura and I. Kanno. Research Institute for Brain and Blood Vessels, Akita, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, statistical analysis, activation detection

- 248. Probabilistic Analysis of fMRI Data II: Estimation of the Activation Delay.** L.R. Frank, R.B. Buxton and E.C. Wong. University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: probability, BOLD, time series analysis
- 249. Hierarchical Unsupervised Clustering of fMRI Time-Series by Deterministic Annealing.** A. Wismüller, D.R. Dersch, B. Lipinski, K. Hahn and D. Auer. University of Munich, Germany; University of Sydney, Australia; Max Planck Institute of Psychiatry, Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, neural networks, clustering
- 250. Robust Clustering of fMRI Data by Correlation.** B.C. Tom, R. Akhavein and A.M. Wyrwicz. Northwestern University, Evanston, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, clustering, correlation
- 251. Detection of the Negative Early Response in fMRI Using Model-Free Neural Network Analysis.** J. Chen, E. Yacoub and X. Hu. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, processing, mechanism
- 252. Reducing Systematic Spatially Correlated Noise in fMRI.** G.M. Saenz, Y. Zhang, T.B. Harshbarger and D.B. Twieg. University of Alabama at Birmingham, Birmingham, AL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, processing, physiological noise

253. **fMRI Noise Variability Across Subjects and Trials: Insights for Signal Processing Strategies.** P.L. Purdon, V. Solo, M. Rotte, R.L. Buckner, E. Brown and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA; Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA; Macquarie University, Sydney, Australia.
- Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Data Processing: MRI
Keywords: fMRI, physiological fluctuations, signal processing

Gradients and Systems Hardware

254. **Design and Manufacture of the World's First Whole Body MRI Magnet Operating at a Field Strength Above 7.0 Telsa: Initial Findings.** R. Warner, S. Pittard, P.J. Feenan, F. Goldi, A.M. Abduljalil and P.M.L. Robitaille. Magnex Scientific Ltd, Abingdon, England; Ohio State University, Columbus, OH.
- Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Basic NMR
Keywords: magnet, high field, safety
255. **Minimum-Cost Solenoid Design for Prepolarized MRI.** S.M. Conolly, G.C. Scott and A. Macovski. Stanford University, Stanford, CA.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Administration/Economics
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Category not applicable
Keywords: PMRI, solenoid, design
256. **MR-PET: Sub-Millimeter MR and PET Images in the Same Scanner.** B.E. Hammer, N.L. Christensen and R.R. Raylman. University of Minnesota, Minneapolis, MN; University of Auckland, Auckland, New Zealand; West Virginia University, Morgantown, WV.
- Type of Study: Basic Research on MR
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Basic NMR
Keywords: MRI, PET, multimodality
257. **Construction and Testing of a 100mT/m Neck Gradient Coil Set.** B.A. Chronik, A. Alejski and B.K. Rutt. University of Western Ontario; Robarts Research Institute, London, ON, Canada.
- Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Gradients
Keywords: neck, gradient, coils

258. **An "Openable", High Strength Gradient Set for Orthopaedic Imaging.** S. Crozier, W.U. Roffmann, K. Luescher, G. Hinds, N. Mills, P. McCarragher, S. Teed and D.M. Doddrell. Queensland University, Brisbane, Australia.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: gradient, knee, openable
259. **Improved Design of Elliptic Cylinder Transverse Gradient Coil of Minimum Inductance.** Q. Liu, D.G. Hughes and P.S. Allen. GE Medical Systems, Milwaukee, WI; University of Alberta, Edmonton, Alberta, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: gradient coil, elliptic cylinder, field homogeneity
260. **Optimal Design of Gradient Coils in MR Imaging: Optimizing Coil Performance vs. Minimizing Cost Functions.** Y.P. Du and D.L. Parker. General Electric-Medical Systems, Milwaukee, WI; University of Utah, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: gradient coil, optimal design
261. **Finite Size Uniplanar Gradient Set for Interventional MRI Systems with Vertically Directed Main Fields.** L.S. Petropoulos. Picker International Inc., Highland Heights, OH.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: interventional, uniplanar, gradients
262. **Thermal Model for NMR Gradient Driver Improves Performance for Arbitrary Waveforms.** J.S. Katcha, W.F. Wirth and T.G. McFarland. GE Medical Systems, Milwaukee, WI.
 Methods: Gradients
 Keywords: gradients, spiral, slewing
263. **Design and Implementation of Two Channel Phase Array EPI.** G.X. Shen, J.F. Wu and B. Zhang. University of Pittsburgh, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Administration/Economics
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: phase array, EPI, MRI

- 264. Normal and Pathologic Sphincter of Oddi: Evaluation with Dynamic Single-Shot MR Cholangiography.** L. Van Hoe, D. Vanbeckevoort, H. Bosmans and G. Marchal. Catholic University Leuven, Leuven, Belgium.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: rapid imaging, pancreatic ducts, bile ducts
- 265. MR Imaging of Pancreatobiliary Disease: Comparison of Moderate TE with Single Projection vs Long TE with Maximal Intensity Projection Techniques.** M.-J. Kim, B.W. Choi, J.B. Chung, B.I. Choi, J.-J. Chung, H.S. Yoo and J.T. Lee. Yonsei University College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: pancreatobiliary, MRCP, comparative studies
- 266. Investigation of Erythromycin Induced Alterations of Antroduodenal Motility by Combined MRI and Manometry.** H. Faas, G. Hebbard, P. Kunz, J.G. Brasseur, W. Schwizer, K. Indireskumar, C. Feinle, J. Dent, M. Fried and P. Boesiger. University and ETH Zurich, Switzerland; Royal Adelaide University Hospital, Adelaide, Australia; Penn State University; University Hospital Zurich, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: gastrointestinal MRI, erythromycin, gastric motility
- 267. MR Imaging of Crohn's Disease Using IV Gadolinium and Oral Dilute Barium Sulfate Compared to Helical CT.** R.N. Low and I.R. Francis. Sharp and Children's MRI Center, San Diego, CA; University of Michigan, Ann Arbor, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inflammation
 Methods: Contrast Agents
 Keywords: GI tract, Crohn's, gadolinium
- 268. Detection of Colorectal Polyps with MR-Colonography (MRC).** W. Luboldt, S. Wildermuth, M. Schmidt, P. Bauerfeind and J.F. Debatin. University Hospital, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: MR-colonography, polyps, screening

269. **The Usefulness of MRI in Small Bowel Obstruction: Comparison of True FISP and HASTE Sequence with Other Radiographic Examinations.** E.J. Yun, B.I. Choi, J.K. Han, T.K. Kim, A.Y. Kim and K.Y. Lee. Seoul National University Hospital, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR, pulse sequences, intestines
270. **The Gastrointestinal Response to Meal Viscosity and Caloric Content: EPI Monitoring of Intragastric Meal Viscosity, Emptying, Flow and Motility in Normal Subjects.** L. Marciani, P. Manoj, P. Young, R.J. Moore, S. Al-Sahab, A. Fillery-Travis, R.C. Spiller and P.A. Gowland. University of Nottingham, UK; Institute of Food Research, Norwich, UK; University Hospital, Nottingham, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: EPI, gastrointestinal, digestion
271. **Combined Morphologic and Functional Analysis of the Mesenteric Circulation by MRA in Detection and Follow-up of Patients with Chronic Mesenteric Ischemia.** M. Wasser, J.H. van Bockel, J. van Baalen and P. Pattynama. Leiden University Medical Center, Leiden, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: MRA, flow, mesenteric
272. **Evaluation of the Mesenteric Vasculature Using Flow Measurement and Contrast-Enhanced 3D MR-Angiography Before and After Caloric Stimulation.** T.F. Hany, A.S. Schoenenberger and J.F. Debatin. University Hospital Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Angiography
 Keywords: mesenteric vasculature, MR-angiography, flow measurement
273. **Endoanal Sonography versus Endoanal MR Imaging in Fecal Incontinence.** E. Rociu, J. Stoker, M.J.C. Eijkemans, W.R. Schouten and J.S. Laméris. University Hospital Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: anus, incontinence, endoluminal coil

274. **Young Investigator Awards Finalist: Sources of Variability of MR Coronary Flow and Coronary Flow Reserve Measurements in a Canine Model.** K.L. Wedding, T.M. Grist, J.D. Folts, N. Maalej, K.K. Vigen, D.C. Peters, H. Osman and C.A. Mistretta. University of Wisconsin, Madison, WI.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: Flow, Coronary, CFR
275. **Assessment of Coronary Flow Reserve Based on Phase-Contrast Cine MR Measurements of Coronary Sinus Blood Flow: Validation of the Method.** J. Schwitter, M. Ciopor, A. von Smekal, S. Kneifel, J.F. Debatin, A. Buck and G.K. von Schulthess. University Hospital Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Flow
 Keywords: flow, positron emission tomography, coronary physiology
276. **Diaphragm Motion During Suspended Breathing: Implications for MR Imaging of the Heart.** A. Holland, J.W. Goldfarb, J.O. Barentsz and R.R. Edelman. St. Radboud University Hospital Nijmegen, Netherlands; Harvard Medical School, Boston, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: heart, motion, breath-hold
277. **Heart Motion Adapted Cine Phase Contrast Flow Measurements Through the Aortic Valve.** S. Kozerke, M.B. Scheidegger, E.M. Pedersen and P. Boesiger. University and ETH Zürich, Switzerland; Aarhus University Hospital, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: flow, aortic regurgitation, velocity mapping
278. **Simultaneous MRI Tagging and Through-Plane Velocity Quantification: A Three-Dimensional Myocardial Motion Tracking Algorithm and *in vivo* Validation.** J.P.A. Kuijer, J.T. Marcus, M.J.W. Götte, A.C. van Rossum and R.M. Heethaar. Vrije Universiteit, Amsterdam, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: heart, motion, dynamics

279. **Ultrafast and Real Time Myocardial Motion Assessment by Tagging.** M. Spiegel, M.B. Scheidegger, M. Stuber and P. Boesiger. University and ETH Zurich, Switzerland; Beth Israel Deaconess Medical Center, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: tagging, real time, optimization
280. **Quantitative Comparisons of Myocardial Fiber Orientation Measured Using MR Microscopy and Histology.** E.W. Hsu, A.L. Muzikant, S.A. Matulevicius, R.C. Penland and C.S. Henriquez. Duke University, Durham, NC.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: fiber orientation, diffusion tensor, histology
281. **Displacement Encoding in Cardiac Functional MRI.** A.H. Aletras, S. Ding, R.S. Balaban and H. Wen. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: cardiac, phase, tagging

Epilepsy: Imaging, Spectroscopy, and FMRI

282. **Comparative Localization of Temporal Lobe Epilepsy by 1H-MRSI, Relaxometry, and Volumetry.** J.W. Hugg, E.J. Butterworth, H.P. Hetherington, E. Rothstein, F.G. Gilliam, R.E. Faught and R.I. Kuzniecky. University of Alabama at Birmingham, AL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: combination MRI/MRS
 Keywords: epilepsy, localization, MRI/MRS
283. **Comparison of Proton Single Voxel MR Spectroscopy and Chemical Shift Imaging in Controls and in Patients with Complex Partial Seizure.** Y.Y. Hsu, C. Chang, K.E. Lim, C.N. Chang and N.S. Chu. Chang Gung Memorial Hospital, Taipei; Academia Sinica, Taipei, Taiwan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: MR spectroscopy, complex partial seizure

- 284. Ketosis and Epilepsy: 31P Spectroscopic Imaging at 4.1T.** J.W. Pan, E.M. Bebin, W.J. Chu and H.P. Hetherington. Center for Nuclear Imaging Research, University of Alabama, Birmingham, AL; Brookhaven National Laboratory, Upton, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: bioenergetics, epilepsy, 31P
- 285. The Anterior Temporal Lobe in TLE: Quantitative MRI and Histopathological Assessment.** L.A. Mitchell, G.D. Jackson, R.M. Kalnins, M.M. Saling, G.J. Fitt and S.F. Berkovic. Austin & Repatriation Medical Centre; University of Melbourne, Melbourne, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: temporal lobe epilepsy, magnetic resonance imaging, hippocampal sclerosis
- 286. Simultaneous EEG Recording with MR Data-Acquisition.** L. Jäger, A. Hoffmann, M. Joppich and M. Reiser. University of Munich; Schwarzer GmbH, Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: EEG, fMRI, Hall-effect
- 287. Increased Homocarnosine is Associated with Improved Seizure Control.** O.A.C. Petroff, F. Hyder, K.L. Behar, R.H. Mattson and D.L. Rothman. Yale University, New Haven, CT.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
- 288. Localized 1H NMR Measurements of 2-Pyrrolidinone in Human Brain *in vivo*.** F. Hyder, D.L. Rothman and O.A.C. Petroff. Yale University, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: pyrrolidinone, GABA, editing

- 289. Time Course of Postoperative Brain Enhancement: Evaluation of 161 MR Scans from Patients without Neoplasms.** N. Sato, R.A. Bronen, G. Sze, Y. Kawamura, W. Coughlin, C.M. Putman and D.D. Spencer. [Gunam University School of Medicine, Maebashi, Gunman, Japan; Yale University School of Medicine, New Haven, CT.](#)
 Type of Study: **Clinical Applications of MR**
 Main Target of Study: **Morphology**
 Organ/Tissue: **Brain**
 Pathology: **Seizures**
 Methods: **Quantitation: MRI**
 Keywords: **enhancement, MR, epilepsy**
- 290. Clinical Imaging of GABAergic Neuronal Activity by Neuropharmacological fMRI.** T. Yoshizawa, I. Anno, A. Matsumura, T. Enomoto, Y. Itai and T. Nose. [University of Tsukuba and Tsukuba Memorial Hospital, Tsukuba, Japan.](#)
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Brain**
 Pathology: **Seizures**
 Methods: **Data Processing: MRI**
 Keywords: **GABA, fMRI, seizure**
- 291. Fully Automatic Brain Segmentation from MRI-T1 Data.** R. Stokking, K.L. Vincken and M.A. Viergever. [Utrecht University/University Hospital Utrecht, The Netherlands.](#)
 Organ/Tissue: **Brain**
 Pathology: **Seizures**

DAY THREE

MR Imaging and Spectroscopy of Brain Tumors

292. **Pre-Operative Evaluation of Neurosurgical Patients with fMRI.** Gregory McCarthy. Veterans Administration Medical Center, West Haven, CT.
293. **Intra-Operative Image Guidance for Neurosurgery.** Ron Kikinis. Brigham and Women's Hospital, Boston, MA.
294. **Post-Operative Evaluation of Irradiated CNS Tumors.** Sarah J. Nelson. University of California, San Francisco, CA.

fMRI - Techniques

295. **Whole Brain Real-Time FMRI.** R.W. Cox and A. Jesmanowicz. Medical College of Wisconsin, Milwaukee, WI.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Data Processing: MRI
Keywords: fMRI, real-time, reconstruction
296. **Multi Axis Real-Time Prospective Motion Correction in fMRI.** H.A. Ward, C.C. Lee, R.C. Grimm, P.J. Rossman, J.P. Felmlee, R.L. Ehman, S.J. Riederer and C.R. Jack. Mayo Clinic, Rochester, MN.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: fMRI, real-time MRI, motion
297. **3D Spiral Cardiac/Respiratory Ordered fMRI Data Acquisition at 3T.** V.A. Stenger, S. Peltier, F.E. Boada and D.C. Noll. University of Pittsburgh, Pittsburgh, PA.
Type of Study: Basic Research on MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: fMRI, rapid imaging, physiological noise
298. **Reduction of Susceptibility Effects in BOLD fMRI Using Tailored RF Pulses.** G.H. Glover and S. Lai. Stanford University, Stanford, CA.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Imaging

- 299. Single Shot T2*-Sensitive Spectroscopic Imaging Increases fMRI Sensitivity: Preliminary Evidence from Visual and Olfactory Activation.** S. Posse, S. Wiese, C. Kessler, D. Gembris, U. Weiss, M. Peyerl, M.L. Grosse-Ruyken, B. Elghawaghi, T. Richards and S. Dager. Research Center Julich GmbH, Julich, Germany; Siemens Medical Systems, Erlangen Germany; University of Dusseldorf, Germany; University of Washington, Seattle, WA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: combination MRI/MRS
 Keywords: fMRI, T2, olfactory
- 300. Functional Imaging by Single Shot I0 and T2* Parameter Mapping.** O. Speck and J. Hennig. University Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, EPI, multiecho
- 301. Functional Imaging Using Susceptibility Weighted Ultrafast Low Angle RARE at High Magnetic Field Strength.** T. Niendorf. Max-Planck-Institut of Cognitive NeuroScience, Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, UFLARE, T2
- 302. High fMRI Contrast Using Repeated Intrinsic Diffusional Enhancement (RIDE).** A.W. Song, H. Mao and W.T. Dixon. Emory University, Atlanta, GA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, intrinsic, diffusion
- 303. Adaptive Functional MRI Using Non-Fourier Encoding.** S.-S. Yoo, L. Zhao, P. Saiviroonporn, C.R.G. Guttman and L.P. Panych. Harvard Medical School, Boston, MA; Harvard-M.I.T. Division of Health Science and Technology, Cambridge, MA; Boston University, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, adaptive, non-Fourier

- 304. Simultaneous Multislice Acquisition Using Rosette Trajectories (SMART): A New Imaging Method for Functional MRI.** D.C. Noll, S.J. Peltier and F.E. Boada. University of Pittsburgh, Pittsburgh, PA.
- Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, rapid imaging, rosettes

Contrast Agents - New Concepts

- 305. MION-46L as a Paramagnetic, Superparamagnetic, and Antiferromagnetic MR Contrast Agent: Relaxometry, Magnetometry, and EPR Studies.** J.W.M. Bulte, R.A. Brooks, B. Moskowitz, L.H. Bryant Jr. and J.A. Frank. National Institutes of Health, Bethesda, MD; University of Minnesota, Minneapolis, MN.
- Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: superparamagnetic, relaxometry, iron oxide
- 306. Detection of Abdominal and Gastrointestinal Bleeding with a New MR Blood Pool Agent in Conjunction with Fast 3D MRI: an Experimental Study.** P.R. Hilfiker, G.G. Zimmermann, H.H. Quick, H.P. Klotz, A. Borseth and J.F. Debatin. University Hospital Zurich, Switzerland; Nycomed Imaging SA.
- Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: G1 bleeding, blood pool agent, 3D MRA
- 307. Magnetoimmunodetection of (Transfected) ICAM-1 Gene Expression.** J.W.M. Bulte, J.M. Verkuyl, V. Herynek, E. Katsanis, S. Brocke, M. Holla and J.A. Frank. National Institutes of Health, Bethesda, MD; University of Arizona, Tucson, AZ.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Inflammation
 Methods: Contrast Agents
 Keywords: inflammation, monoclonal antibody, iron oxide
- 308. Experimental Acute and Chronic Induced Intravascular Haemolysis in Rats: Quantitative MR Analysis of Iron Overload.** T.H. Dao, C. Terem, A. Rahmouni, P. Chariot, H. Kobeiter, N. Vasile and D. Mathieu. Henri-Mondor Hospital, Creteil, France.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: iron, haemolysis, MRI

- 309. 2-Dimensional Polyacrylamide Electrophoresis (2-D PAGE) to Investigate Opsonization of SPIO *In Vitro*.** M. Kresse, K. Thode, R.H. Müller and W. Semmler. Freie Universität Berlin, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: SPIO, 2-D page, Opsouiu
- 310. Screens for Measuring the Flexibility of Ligands in Contrast Agent Design.** R. Shukla, A. Nunn and M. Tweedle. Bracco Research USA, Inc., Princeton, NJ.
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: RF-Pulses
 Keywords: contrast, gadolinium, paramagnetic
- 311. Interstitial Application of a Contrast Medium for Magnetic Resonance Lymphography (MRLY). An Investigation of Bolus Optimization.** H. Oellinger, T. Ehrenstein, C. Siewert, C. Stroszczynski, B. Misselwitz and R. Felix. University Hospital Charite, Humboldt University, Berlin; Schering AG, Berlin, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast agent, lymphography, MR imaging
- 312. Using *In vivo* MR Oximetry for Early Diagnosis of Segmental Mesenteric Ischemia in a Porcine Model.** K.C.P. Li, F.P. Chan, S.G. Heiss, S. Wadhwa, M. Razavi and G.A. Wright. Stanford University School of Medicine, Stanford, CA; University of Toronto, Toronto, Ontario, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: mesenteric, oxygen, ischemia
- 313. Delineation of the Distribution of the Murine Olfactory, and Visual Pathways Utilizing Mn²⁺ Enhanced MRI Neuronal Tract Tracing.** R.G. Pautler and A.P. Koretsky. Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: Manganese, olfactory, tracts

- 314. 19F-MRI of the Gastrointestinal Tract - a Novel Contrast Mechanism for Abdominal Imaging.** R. Schwarz, B. Künnecke, M. Schuurmans and J. Seelig. Biocenter of the University, Basel, Switzerland.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: contrast agent, gastrointestinal tract, 19F-MRI

Coronary Artery Imaging and Flow

- 315. Coronary Arteries: Three-dimensional Breath-Hold MR Angiography Using a Gadolinium-Enhanced Ultrafast Gradient-Echo Technique.** W. Kessler, S. Achenbach, W. Moshage, D. Ropers and G. Laub. University of Erlangen-Nuernberg; Siemens Medical Engineering Group, Erlangen, Germany.
- Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary arteries, MR angiography, gadolinium
- 316. Coronary Artery Imaging with the Intravascular Contrast Agent MS-325.** M. Stuber, R.M. Botnar, M.V. McConnell, P.G. Danias, K.V. Kissinger, R.R. Edelman and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: intravascular contrast agents, coronary arteries, navigators
- 317. Contrast-Enhanced 3D Breath-Hold MRA for the Visualization of the Coronary Arteries in Oblique Projection Angiograms.** W. Kessler, G. Laub, D. Ropers, S. Achenbach, W. Moshage and K. Bachmann. University of Erlangen-Neurnberg; Siemens Medical Engineering Group, Erlangen, Germany.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, coronary arteries, 3D imaging
- 318. 3D Coronary Imaging with Phase Reordering for Optimal Scan Efficiency.** P. Jhooti, J. Keegan, P.D. Gatehouse, A.M. Taylor, S. Collins, A. Rowe and D.N. Firmin. Royal Brompton Hospital, London, UK.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: coronaries, artefact, respiration

319. **Three-Dimensional MR Coronary Angiography with a Segmented Echo Planar Imaging Sequence and Retrospective Respiratory Gating.** G.M. Beck, D. Li, J. Zheng, E.M. Haacke, T.G. Noll and L.R. Schad. German Cancer Research Center, Heidelberg, Germany; Washington University, St. Louis, MO; University of Technology, RWTH Aachen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: segmented EPI, navigates, coronary arteries
320. **Two-Dimensional Multi-Shot Echo-Planar Coronary MR Angiography.** G.S. Slavin, R.L. Ehman and S.J. Riederer. Mayo Clinic, Rochester, MN.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: EPI, coronary, angiography
321. **Three-Dimensional Coronary Angiography Using Partial k-Space Acquisition and T2-Prep Contrast.** D.R. Thedens, P. Irarrazaval, C.H. Meyer, T.S. Sachs and D.G. Nishimura. Stanford University, Stanford, CA; Universidad Católica de Chile, Santiago, Chile.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: three-dimensional, spiral, coronary
322. **Improved MR Coronary Angiography Using Real-Time Navigator Echos and A Subject Specific Calculated Adaptive Motion Correction Factor.** A.M. Taylor, P. Jhooti, J. Keegan, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: navigator, coronary, motion
323. **Three-Dimensional Double-Oblique Coronary Artery MR Imaging Using Real-Time Respiratory Navigator and Linear Phase Shift Processing.** T.K.F. Foo, V.B. Ho and K.F. King. GE Medical Systems, Milwaukee, WI; National Institutes of Health, Bethesda, MD; Uniformed Services University of the Health Sciences, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: cardiac, motion, angiography

324. **Clinical Evaluation of Breath-hold MR Coronary Angiography Using Targeted Volumes.** R.J.M. van Geuns, P.A. Wielopolski, B. Rensing, H.G. de Bruin, P.J. de Feyter and M. Oudkerk. University Hospital Rotterdam, The Netherlands.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: MRI, coronary arteries, coronary angiography

Spectroscopy of Animal Brain

325. ***In vivo* 15N NMR Support for a Model of Glutamate-Glutamine Cycling and Ammonia Detoxification in the Brain.** N.R. Sibson, J. Shen, C. Choy, E. Adams, K.L. Behar, D.L. Rothman and R.G. Shulman. Yale University School of Medicine, New Haven, CT.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: glutamate, brain, metabolism
326. **The Rate of Glutamate Synthesis from Leucine Measured in Rat Brain *in vivo* by 15N NMR.** K. Kanamori, B.D. Ross and R.W. Kondrat. Huntington Medical Research Institutes, Pasadena, CA; University of California, Riverside, CA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: glutamate, leucine, 15N
327. **Stoichiometric Coupling of Brain Glucose Metabolism and Glutamatergic Neuronal Activity Determined by *In vivo* 13C NMR Spectroscopy.** N.R. Sibson, A. Dhankhar, G.F. Mason, K.L. Behar, D.L. Rothman and R.G. Shulman. Yale University School of Medicine, New Haven, CT.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: glutamate, brain, metabolism
328. **Utilization of Glutamate by Glial Cells During Moderate Hypoglycemia: A 13C NMR Spectroscopy Study.** U. Flögel, A. Brand, C. Richter-Landsberg and D. Leibfritz. Heinrich-Heine-Universität Düsseldorf; Universität Bremen; Universität Oldenburg, Germany.
- Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: glial cells, glutamate, hypoglycemia

329. **Off Resonance Magnetization Transfer Measurements on Rat Brain *In Situ*.** R.A. de Graaf, A. van Kranenburg and K. Nicolay. Utrecht University, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: magnetization transfer, brain, rat
330. **A Homonuclear Lactate-Edited ¹H-Spectroscopic Imaging Study of Focal Brain Ischemia in the Rat, Following ¹³C-Glucose Infusion.** R.M. Dijkhuizen, R.A. de Graaf, M. Garwood, C.A.F. Tulleken and K. Nicolay. University Hospital Utrecht, The Netherlands; Utrecht University, The Netherlands; University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Spectroscopy
 Keywords: lactate, ischemia, brain
331. **Postical Lactate Detected by Proton MRSI in a Rat Kindling Model of Epilepsy.** Y. Wang, B. Maton, I. Najm, H. Lüders and T. Ng. The Cleveland Clinic Foundation, Cleveland, OH.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Spectroscopy
 Keywords: MRS, lactate, kindling model
332. **Quantitation of Blood-Brain-Barrier Permeability to Trifluridine, a Fluorinated Nucleoside Analog Measured by ¹⁹F NMR Spectroscopy.** R. Pouremad, Y.J. Shen, K.D. Bahk and A.M. Wyrwicz. Northwestern University, Evanston, IL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: BBB, trifluorothymidine, metabolism
333. **Synthesis of the Organic Osmolytes Hypotaurine and Taurine in Astroglial Cells.** A. Brand, D. Liebfritz, B. Hamprecht and R. Dringen. Universität Bremen; Universität, Tübingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: astrocytes, osmolytes, taurine

334. **Organic Osmolyte Efflux in Primary Cultured Brain Cells: a ^1H NMR Study.** J.H. Bothwell, C. Rae, P. Styles and K.K. Bhakoo. University of Oxford, UK; Sydney University, Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inflammation
 Methods: Basic NMR
 Keywords: ^1H -MRS, osmolyte, brain

Diffusion of Water and Metabolites: Animal Models

335. **Young Investigator Awards Finalist: Evaluation of Extra- and Intracellular Diffusion in Normal and Globally-Ischemic Rat Brain via ^{19}F NMR.** T.Q. Duong, J.J.H. Ackerman, H.S. Ying and J.J. Neil. Washington University School of Medicine, Saint Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ADC, DWI, diffusion
336. **MR Diffusion, Regional Brain Tissue Sodium and CBF in a Focal Cerebral Ischemic Model.** Y. Wang, W. Hu, A.W. Majors, T.C. Ng and S.C. Jones. The Cleveland Clinic Foundation, Cleveland, OH.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, sodium, blood flow
337. **Early Changes in Water Diffusion During Acute Subarachnoid Hemorrhage in Rat Brain.** E. Busch, C. Beaulieu, A. de Crespigny and M.E. Moseley. University of Essen, Germany; Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: subarachnoid hemorrhage, diffusion, rats
338. **Estimation of the Ischemic Penumbra in the Rat Brain by Multispectral Analysis.** R.A.D. Carano, F. Li, K.G. Helmer, K. Irie, M. Fisher and C.H. Sotak. Worcester Polytechnic Institute; The Medical Center of Central Massachusetts; University of Massachusetts Medical School, Worcester, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: Ischemia, rat brain, multispectral analysis

- 339. The Temporal Relationship between ADC, DC Potential and Extracellular Glutamate in the Rat Brain following Cardiac Arrest: Simultaneous MRI, Electrophysiology and Microdialysis.** N.G. Harris, J. Houseman, E. Zilkha, T.P. Obrenovitch and S.R. Williams. Institute of Child Health, London; St. Thomas Hospital, London; Postgraduate Pharmacology, Bradford; Applied Neurosciences, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, ischemia, EPI
- 340. Diffusion-Weighted Imaging Evidence of Spreading Depolarization after Subarachnoid Hemorrhage in Rats.** C. Beaulieu, E. Busch, A. de Crespigny and M.E. Moseley. Stanford University, Stanford, CA; University of Essen, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: diffusion, spreading depression, subarachnoid hemorrhage
- 341. Transient Focal Cerebral Ischemia in Mice Studied by Diffusion - and Perfusion - Weighted MRI.** F.A. van Dorsten, R. Hata, K. Maeda, M. Hoehn-Berlage and K.-A. Hossmann. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: mice, ischemia, brain
- 342. Extracellular and Intracellular Apparent Diffusion in Normal and Focally-Ischemic Rat Brain via ¹H MRS.** T.Q. Duong, J.J.H. Ackerman, D. Yablonskiy and J.J. Neil. Washington University School of Medicine, Saint Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ADC, DWI, ischemia
- 343. Apparent Diffusion Coefficients of Metabolites with Uncoupled and Coupled Resonances Measured in the Healthy Rat Brain by Diffusion Weighted ¹H-CT-PRESS.** W. Dreher and D. Leibfritz. Universität Bremen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: spectroscopy, diffusion, brain

- 344. Catheter-Tracking FOV MR Fluoroscopy.** E. Atalar, D.L. Kraitchman, J. Lesho, B. Carkhuff, O. Ocali, M. Solaiyappan and M.A. Guttman. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: intravascular MRI, interventional MRI, MR fluoroscopy
- 345. Active Visualization of Catheters and Guidewires for MR Fluoroscopy.** M.E. Ladd, G.G. Zimmermann, H.H. Quick, P.R. Hilfiker, M. Schmidt, J.F. Debatin, P. Boesiger, G.K. von Schulthess and G.C. McKinnon. University Hospital, Zürich, Switzerland; Institute of Biomedical Engineering and Medical Informatics, Zürich, Switzerland; GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: interventions, catheters, visualization
- 346. Rapid 2D Time-Resolved MR Technique for Passive Catheter Tracking.** O. Unal, F.R. Korosec, R. Frayne, C.M. Strother and C.A. Mistretta. University of Wisconsin-Madison, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: rapid imaging, interventional catheter, tracking
- 347. 'In Vitro' Assessment of a Perfused Intravascular MR-Imaging Balloon.** H.H. Quick, G.G. Zimmermann-Paul, E. Hofmann, G.K. v.Schulthess and J.F. Debatin. University Hospital, Zürich, Switzerland; Schneider Europe AG, Bülach, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: intravascular, balloon-catheter, single loop
- 348. MR Guided Radiofrequency Ablation: Creation and Visualization of Atrial Lesions.** A.C. Lardo, P. Jumrussirikul, C. Yeung, E.R. McVeigh and H.R. Halperin. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: MR, cardiac, ablation

- 349. The Precision and Accuracy of a MR-Guided, Focused-Ultrasound Ablation System in Preparation for Clinical Trials.** K.R. Kendell, T. Wu, J.P. Felmlee, B.D. Lewis and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: focused-ultrasound, MR-guidance, precision/accuracy
- 350. Fast Lipid Suppressed Temperature Mapping for the Monitoring of Focused Ultrasound Heated Tissue.** J.A. de Zwart, F.C. Vimeux, C. Delalande and C.T. Moonen. University Victor Segalen, Bordeaux, France.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: temperature mapping, interventional, lipid suppression
- 351. Focused Ultrasound Surgical Vascular Occlusion Dosimetry Using Gradient Echo MRI Methods.** I.J. Rowland, I.H. Rivens, M.L. Denbow, N.M. Fisk, G.R. ter Haar and M.O. Leach. Institute of Cancer Research and Royal Marsden NHS Trust, Sutton; Queen Charlotte's and Chelsea Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: FUS, dosimetry, contrast agents
- 352. MRI-guided Cryotherapy of Experimentally Induced Liver Tumors with an Artifact-Free Nitrogen Supplied Cryoprobe.** J. Tacke, R. Speetzen, K. Brucksch, B. Krauß, G. Adam, I. Heschel, G. Rau, J.J. van Vaals and R.W. Günther. University of Technology, Aachen, Germany; Philips, Best, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: cryotherapy, MRI, liver
- 353. Magnetic Resonance Imaging of Frozen Tissues — Temperature Dependent MR Signal Characteristics and Relevance for MR Monitoring of Cryosurgery.** B.L. Daniel, K. Butts and W.F. Block. Stanford University, Stanford, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: cryosurgery, temperature, relaxation times

- 354. Outer Volume Suppression for ^{31}P *In vivo* Cardiac Spectroscopy.** H.W. Kim and K.N. Scott. University of Florida; Veterans Affairs Medical Center, Gainesville, FL.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Spectroscopy
 Keywords: OVS, heart, MRS
- 355. Spectroscopic Imaging with Simultaneous Short and Long TE Acquisition.** J.W.C. van der Veen, J.A. Frank, G. Tedeschi and J.H. Duyn. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, short TE, water reference
- 356. Motion Correction and Lipid Suppression for *in vivo* ^1H MRS-Applications to the Study of the Human Kidney and Liver.** J.M. Star-Lack, E. Adalsteinsson, G.E. Gold and D.M. Spielman. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, motion, kidney
- 357. Separate Signal Detection of Glutamate and Glutamine in the Rat Brain *in vivo* at 4.7T Using Optimized ^1H -CT-PRESS with Effective Homonuclear Decoupling.** W. Dreher and D. Leibfritz. Universität Bremen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, glutamate, glutamine
- 358. LASER: Adiabatic Single Shot Localization with J-Refocusing.** L. DelaBarre and M. Garwood. University of Minnesota, Minneapolis, MN.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: adiabatic, localization, spectroscopy

- 359. 13C-Spectroscopic Imaging in the Isolated Rat Heart at 11.75T.** C. Weidensteiner, T. Lanz, A. Haase and M. v. Kienlin. Universität Würzburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: carbon, CSI, heart
- 360. Human Brain Glucose Metabolism Mapping Using Multislice 1H-13C HSQC Spectroscopy.** H. Watanabe, M. Umeda, Y. Ishihara, K. Okamoto, M. Oda, T. Kanamatsu and Y. Tsukada. Toshiba R&D Center, Kawasaki; Soka University, Hachioji, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: 13C-MRS, 13C-MRI, HSQC
- 361. Reduced Spatial Sidelobes in Chemical-shift Imaging with Variable-Density Spiral Trajectories.** E. Adalsteinsson, C.H. Meyer, J. Star-Lack and D.M. Spielman. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: spiral, spectroscopy, density
- 362. Automated Proton Spectroscopic Imaging Using Head Multi Channel Array Coil.** P.A. Martin, J.M. Constans, J. Fernandez, S. Phillipe, T. Schirmer and J. Tropp. Caen University, France; MPI, Munich, Germany; GE Medical Systems, France & USA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: coil, CSI, processing
- 363. Segmented Spectroscopy: A Flexible Alternative to Single Voxel Methods.** L.G. Hanson and O.B. Paulson. Hvidovre Hospital, Copenhagen, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, EPI, segmentation

- 364. Diagnosis of Focal Brain Disorders by *In vivo* Proton Nuclear Magnetic Resonance Spectroscopy and Artificial Neural Networks.** H. Poptani, J. Kaartinen, R.K. Gupta, M. Niemitz, Y. Hiltunen and R.A. Kauppinen. University of Kuopio, Finland; SGPGIMS, Lucknow, India; The Raahe Institute of Computer Engineering, Raahe, Finland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRS
 Keywords: tumor, tuberculoma, abscess
- 365. Proton Magnetic Resonance Spectroscopy as a Tool for Clinical Neurosurgical Decision Making for Intracranial Mass Lesions.** H. Shimizu, T. Kumabe, S. Fujiwara, T. Yoshimoto and N. Arai. Kohnan Hospital; Tohoku University School of Medicine, Sendai; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: proton MRS, brain, mass lesion
- 366. Single- vs Triple Dose Gadodiamide Injection in MRI of Brain Metastases.** P.O. Tolleson, O. Flodmark, L. Cavallin, Å. Forssell and P. Åkeson. Sahlgrenska University Hospital, Göteborg; Karolinska Hospital, Stockholm; Lund University Hospital, Lund Sweden; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: brain neoplasm, MRI, gadolinium-contrast media
- 367. Functional MRI of the Motor Cortex: The Influence of Edema of Intra- and Extraaxial Tumors.** U. Hubbe, A. Schreiber, S. Ziyeh, J. Spreer, J. Klisch, J. Hennig and J. Zentner. University of Freiburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: functional MRI, tumors, edema
- 368. Total Choline Peak in Supratentorial Pediatric Gliomas Correlates with Outcome.** J.S. Taylor, R.J. Ogg, P.B. Kingsley, W.E. Reddick, J.J. Jenkins and R.H. Heideman. St. Jude Children's Research Hospital, Memphis, TN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: tumor grading, glioma, proton MRS

369. **Topospecific Inverse Correlation of Proton Spectroscopic Imaging Readings with Apparent Diffusion Coefficient in Human Glioma.** R.K. Gupta, U. Sinha, T.F. Cloughesy and J.R. Alger. UCLA Medical Center, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: brain tumor, diffusion, spectroscopy
370. **Effects of Anti-VEGF Antibody on Malignant Gliomas Assessed by Dynamic Contrast Enhanced MRI.** A. Gossmann, S. Ostrowitzki, T. Helbich, T. Roberts, N vanBruggen, D. Shames, M Wendland, M. Israel and R. Brasch. University of California, San Francisco, CA; Genentech Inc., South San Francisco, CA; University of Cologne, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: permeability, anti-VEGF, tumor
371. **Intraoperative Dynamic MRI: Quantitative Analysis to Differentiate Recurrent Brain Tumor from Radiation Induced Necrosis.** D.F. Kacher, R.B. Schwartz, T.Z. Wong, L. Hsu and F.A. Jolesz. Brigham and Women's Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: intraoperative, dynamics, tumor
372. ***In vivo* Lactate Editing with Simultaneous Detection of Choline in Human Head and Neck Tumors at 1.5T Using PRESS Excitation.** J.M. Star-Lack, E. Adalsteinsson, D.J. Terris and D.M. Spielman. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, tumors, lactate
373. **An *In vivo* Proton MR Spectroscopy Study of Late Delayed Radiation Necrosis at the Temporal Lobes in Patients Treated for Nasopharyngeal Carcinoma.** D. Yeung, Y.L. Chan, S.F. Leung, W.W.M. Lam, G. Cao and C. Metreweli. Chinese University of Hong Kong, Shatin; Philips Medical Systems, Hong Kong.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: necrosis, radiation, MRS

- 374. *Young Investigator Awards Finalist: Continuous Assessment of Perfusion by Tagging Including Volume and Water Extraction (CAPTIVE): A New Steady-State Contrast Agent Technique for Measuring Blood Flow, Relative Blood Volume Fraction, and Water Extraction Fraction.*** G. Zaharchuk, A.A. Bogdanov Jr., J.J.A. Marota, M. Shimizu-Sasamata, R.M. Weisskoff, K.K. Kwong, B.G. Jenkins, R. Weissleder and B.R. Rosen. MIT-Harvard Division of Health Sciences and Technology; Massachusetts General Hospital, Charlestown, MA.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Brain Vascular**
 Pathology: **Category not applicable**
 Methods: **Perfusion**
 Keywords: **perfusion, contrast agents, arterial spin labeling**
- 375. *Estimation of Arterial Arrival Time and Cerebral Response Characteristics of Perfusion Measurements with Arterial Spin Labeling.*** C.A. Branch, L. Hernandez, M. Yongbi and J.A. Helpert. The Nathan Kline Institute for Psychiatric Research, Orangeburg, NY; Albert Einstein College of Medicine, Bronx, NY; New York University, NY, NY; University of North Carolina at Chapel Hill, NC.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Brain**
 Pathology: **Category not applicable**
 Methods: **Perfusion**
 Keywords: **perfusion, diffusion, model**
- 376. *A New Pulsed Arterial Spin Labeling Technique for Transit Delay Insensitive Multislice Perfusion Imaging: Delay Insensitive Multiplexed FAIR (DIM-FAIR).*** E.C. Wong, L.R. Frank and R.B. Buxton. University of California, San Diego, CA.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Brain**
 Pathology: **Vascular Diseases**
 Methods: **Perfusion**
 Keywords: **perfusion, ASL, FAIR**
- 377. *Quantitative Measurement of Regional Cerebral Blood Flow: Correlation of MRI Perfusion Measurements Using Arterial Spin Tagging or Bolus Tracking with the 14C-Iodoantipyrine Method.*** P.R. Allegrini, D. Bochen, M. Eis, A. Sauter and M. Rubin. Novartis Pharma Ltd., Basel, Switzerland; Boehringer-Ingelheim, Ingelheim, Germany.
 Type of Study: **Methodological Development**
 Main Target of Study: **Category not applicable**
 Organ/Tissue: **Brain**
 Pathology: **Infarction**
 Methods: **Perfusion**
 Keywords: **perfusion, brain, mouse**

- 378. Lower Limitation of Cerebral Perfusion Measurement Using Arterial Spin Labeling and Gadolinium Dynamic Study.** I. Aoki, T. Takegami, C. Tanaka, M. Umeda, T. Ebisu, M. Fukunaga, Y. Watanabe, Y. Someya, T. Higuchi, S. Naruse, K. Fukuda and K. Shinohara. Meiji University of Oriental Medicine, Kyoto; Kyoto Prefectural University of Medicine, Kyoto, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, ASL, rCBF
- 379. An Extended Model for the Interpretation of Labeling Perfusion Techniques Allowing the Calculation of rCBV and rCBF.** X. Golay, R. Luechinger, M.B. Scheidegger, O.M. Weber, D. Meier and P. Boesiger. University and ETH, Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: rCBV, labeling, perfusion
- 380. Dynamic Perfusion Analysis Based on Arterial Spin Labeling.** E.L. Barbier, A.C. Silva, H.J. Kim, D.S. Williams and A.P. Koretsky. Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, transit time, filtering
- 381. Multi-slice Perfusion MRI Using Continuous Arterial Water Labeling: Controlling for MT Effects with Simultaneous Proximal and Distal RF.** S.L. Talagala, E.L. Barbier, D.S. Williams, A.C. Silva and A.P. Koretsky. University of Pittsburgh; Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, brain, kidney
- 382. Multislice Imaging of Quantitative Cerebral Perfusion with Pulsed Arterial Spin-Labeling.** Y. Yang, J.A. Frank, L. Hou, F.Q. Ye, A.C. McLaughlin and J.H. Duyn. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, CBF, pulse sequence

- 383. *In vivo* 31P NMR Diffusion Spectroscopy of Phosphocreatine and ATP in Rat Skeletal Muscle.** R.A. de Graaf, A. van Kranenburg and K. Nicolay. Utrecht University, The Netherlands.
Type of Study: Methodological Development
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Sequences: Spectroscopy
Keywords: diffusion, ATP, muscle
- 384. Creatine Kinase Deficiency Alters the Off-Resonance Magnetization Transfer Effect of the Creatine Methyl 1H-MR Signal from Mouse Skeletal Muscle.** M.J. Kruiskamp, G. van Vliet and K. Nicolay. Utrecht University, The Netherlands.
Type of Study: Basic Research on MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Sequences: combination MRI/MRS
Keywords: skeletal muscle, MT, creatine
- 385. Creatine Signals in Localized 1H-MR Spectra of Human Skeletal Muscle Vary Linearly with Muscular Phosphocreatine Content.** R. Kreis, B. Jung, J. Felblinger, J. Slotboom and C. Boesch. University of Bern, Switzerland.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Category not applicable
Keywords: creatine, exercise, visibility
- 386. Muscle Perfusion, Oxygen Extraction and Mitochondrial Respiration Determined from Interleaved 1H/31P Imaging and Spectroscopy NMR Data During Ischemic Exercise Recovery.** C. Brillault-Salvat, G. Bloch, A. Leroy-Willig and P.G. Carlier. SHFJ-DRM, Orsay; ARM, Paris, France.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Sequences: combination MRI/MRS
Keywords: muscle, oxygen, perfusion
- 387. Observing the Deoxy Hemoglobin Signal in Human Muscle as an Index of Vascular pO₂.** U. Kreutzer, N. Sailasuta, Y. Chung, T.K. Tran, R. Hurd and T. Jue. University of California Davis, Davis, CA; GE Medical Systems, Inc.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Category not applicable
Keywords: muscle, myoglobin, hemoglobin

- 388. Skeletal Muscle Triglyceride Stores are Increased in Insulin Resistant States.** D.T. Stein, L.S. Szczepaniak, R.L. Dobbins, P. Snell and J.D. McGarry. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: muscle, insulin resistance, triglyceride
- 389. ^{13}C and ^1H NMR Assessment of Glycogen and Intramyocellular Lipid Utilization During Prolonged Exercise and Recovery in Man.** M. Krssak, K.F. Petersen, R. Bergeron, T. Price, M. Roden and G.I. Shulman. Yale University School of Medicine, New Haven, CT; University of Vienna, Vienna, Austria.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: glycogen, lipids, exercise
- 390. Effects of Glycogen Supercompensation on Muscle Glycogen Metabolism in Man.** D. Laurent, T.B. Price, R.S. Hundal, A. Dresner, S. Vogel and G.I. Shulman. Yale University School of Medicine, New Haven, CT; Howard Hughes Medical Institute.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: glycogen, muscle, diet
- 391. $^{13}\text{C}/^{31}\text{P}$ NMR Studies of Glucose Transport in Human Skeletal Muscle.** R. Roussel, P.G. Carlier, G. Velho and G. Bloch. SHFJ-DRM, Orsay, France; Hôpital Saint Vincent de Paul, Paris, France.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: glucose, muscle, transport
- 392. Simultaneous Intramuscular Glycolytic and TCA Cycle Flux Measurements in Conscious Rats.** B.M. Jucker, G.W. Cline and G.I. Shulman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: glycolysis, TCA cycle, acetate

- 393. Captopril MR Renography: Functional Evaluation of Renal Artery Stenosis Using MRI.** P.V. Prasad, Q. Chen, J.W. Goldfarb, J. Yang, W. Li and R.R. Edelman. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: renal artery, stenosis, MR renography
- 394. Low-dose Gd-DTPA Magnetic Resonance Urography. Comparison with a T2-weighted Turbo Spin Echo Sequence.** K. Szopinski, M. Szopinska, A. Borówka, W. Jakubowski, R.K. Mlosek and A. Teska. II Medical Faculty, Warsaw; Regional Hospital, Warsaw; Central Railway Hospital, Warsaw, Poland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR, kidney, urography
- 395. Dynamic MRI of the Kidney Function.** J.A. den Boer, K. de Priester, E.L.W. Giele, E.L. Barbier, M. Christiaans and J.M.A. van Engelshoven. Academisch Ziekenhuis Maastricht; Eindhoven University of Technology, The Netherlands; Groupe de Recherche en Imagerie et Spectroscopie Nucléaires, Lyons, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: dynamic MRI, kidney, function
- 396. BOLD MR Signal Changes due to Hypoxia and Renal Vasoconstriction in Rat Kidney.** H. Trillaud, C. Delalande, B. Quesson, C. Combe, C. Moonen and N. Grenier. CNRS-Université de Bordeaux II, Bordeaux, France.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: kidney, oxygenation, perfusion
- 397. Changes in Intra-Renal Oxygenation during Water Diuresis as Evaluated by BOLD MRI: Effects of Inhibition of Prostaglandin Synthesis.** P.V. Prasad and F.H. Epstein. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: kidney, oxygenation, BOLD-MRS

398. **γ -Lactone in Chronic Rejection of Renal Allografts as Investigated in the Rat *in vivo* by Magnetic Resonance Imaging.** N. Beckmann, E.O. Schraa, R. Pórszász, K. Bruttel and H.-J. Schuurman. Novartis Pharma Inc., Basel, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: renal transplantation, perfusion MRI, gamma-lactone
399. **Analysis of Kidney Function Markers by 1H-NMR Spectra of Blood Plasma Using Class- and Attribute Planes of Self-Organizing Maps.** J. Monnerjahn, K. Schober, T. Castedello, E. Meyer, T. Derr, A.E. Lison and D. Leibfritz. Universität Bremen, Germany; Central Hospital Sankt-Jürgen-Straße, Bremen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: body fluids, neural networks, renal
400. **MR of Renal Masses that Enhance on CT.** R. Tello, M. O'Malley, H.M. Fenlon, K.R. Thomson, D.J. Witte and L. Harewood. Boston University, Boston, MA; University of Melbourne, Melbourne, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: renal, tumors, gadolinium
401. **Prenatal MRI of the Fetal Urinary Tract: Normal and Abnormal Anatomy with US and Pathological Correlation.** A.M. Hubbard, M.P. Harty, E. Ruchelli, B. Coleman, N.S. Adzick, A. Flake, T. Crombleholme and L.J. Howell. Children's Hospital of Philadelphia, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: fetal anomalies, fetal urinary track, prenatal MRI
402. **MRI of the Fetus.** R. Vanninen, P. Kirkinen, P. Vainio and K. Partanen. Kuopio University Hospital, Finland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fetus, malformation, tumour

- 403. Effect of Prostaglandin and Bisphosphonate on Cancellous Bone Volume and Structure in the Ovariectomized Rat Studied by Quantitative NMR Microscopy.** M. Takahashi, F.W. Wehrli, M.W. Lundy, S.L. Wehrli and S.N. Hwang. University of Pennsylvania Medical Center, Philadelphia, PA; P&G Pharmaceuticals, Mason, OH; Children's Hospital of Philadelphia, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: microscopy, Osteoporosis, Histomorphometry
- 404. Quantitative Analysis of MR Microscopy Images of Trabecular Bone Architecture in a Rat Model of Osteoporosis.** R.D. Kapadia, S. Majumdar, G.B. Stroup, S.J. Hoffman, H. Zhao, M. Gowen and S.K. Sarkar. SmithKline Beecham Pharmaceuticals, King of Prussia, PA; University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: trabecular, quantitation, osteoporosis
- 405. Visualization of Pressure Distribution within Loaded Joint Cartilage by Application of Magic Angle Sensitive NMR Microscopy.** W. Gründer, M. Kanowski, M. Wagner and A. Werner. Universität Leipzig, Leipzig, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Microscopy
 Keywords: cartilage, elasticity, NMR microscopy
- 406. In vivo MR Microscopy at 2.0 T Using a Superconducting Probe.** J.R. Miller, S.E. Hurlston, Q.Y. Ma, D.W. Face, D.J. Kountz, J.R. MacFall, L.W. Hedlund and G.A. Johnson. Columbia University, New York, NY; Duke University Medical Center, Durham, NC; Dupont, Wilmington, DE.
 Methods: Microscopy
 Keywords: superconducting, microscopy, *in vivo*
- 407. T2*-Weighted Microimaging at 14 Tesla with the GESEPI Method for Removal of Magnetic Susceptibility Distortion.** Q.X. Yang, R.W. Briggs and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey, PA; University of Florida, Gainesville, FL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: microscopy, susceptibility, T2*

- 408. T1 and Magnetization Transfer Contrast at 7 Tesla in Acute Ischemic Infarct in the Rat.** J.R. Ewing, Q. Jiang, Z.G. Zhang, R.A. Knight, G.W. Divine and M. Chopp. Henry Ford Health Sciences Center and NMR Research Center; Detroit, MI.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Category not applicable
Organ/Tissue: Brain
Pathology: Infarction
Methods: Contrast Mechanisms
Keywords: stroke, MTC, contrast mechanisms
- 409. Quantitative Tissue Sodium Concentration Mapping During Focal Cerebral Ischemia.** F.E. Boada, I. Hancu, A. Goldberg, G.X. Shen and K.R. Thulborn. University of Pittsburgh Medical Center, Pittsburgh, PA.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Infarction
Methods: Non-proton MRI and ESR
Keywords: stroke, sodium, ischemia
- 410. MRI Determination of the Lobular Structure of Rat Liver.** G. Regan, P. Kinches, R.D. Cohen, R.A. Iles and S.P. Burns. St. Bartholomews and the Royal London Hospital School of Medicine and Dentistry; Queen Mary and Westfield College, London, UK.
- Type of Study: Methodological Development
Main Target of Study: Morphology
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Inborn Error of Metabolism
Methods: Category not applicable
Keywords: liver, imaging, fetal programming
- 411. Dynamic Study of the Movement of ¹³C Labelled Sucrose in Castor Bean Seedlings by MRI with Cyclic J Cross Polarization Transfer (CYCLCROP).** W. Köckenberger, M. Heidenreich, N. Chandrakumar, R. Bowtell and R. Kimmich. University of Nottingham, UK; Universität Ulm, Germany.
- Type of Study: Methodological Development
Main Target of Study: Metabolism
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Microscopy
Keywords: ¹³C-NMR, metabolism, plants

DAY FOUR

Diagnosis of Lung Pathology with MR

412. **Pulmonary Vascular Disease: Techniques and Applications.** Hiroto Hatabu. Kyoto University Hospital, Kyoto, Japan.
413. **Airway Disease: Hyperpolarized Gas MRI.** Mitchell S. Albert. Brigham and Women's Hospital Boston, MA.
414. **Lung Parenchymal and Interstitial Disease.** Yves Berthezene. Hopital Cardiologique.

Rapid Imaging I — Echo Planar Imaging

415. **3-D Coronary MR Angiography Using Zonal Echo Planar Imaging.** G.Z. Yang, P.D. Gatehouse, J. Keegan, R.H. Mohiaddin and D.N. Firmin. Royal Brompton Hospital, London, UK.
Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Heart
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: coronary, 2D RF, EPI
416. **Conjugate Gradient Restoration of EPI Images.** P. Munger, G. Crelier, T.M. Peters and G.B. Pike. McGill University, Montréal, Quebec, Canada.
Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Data Processing: MRI
Keywords: EPI, correction, distortion
417. **Automated Signal Recovery of Signal Void Arising from Static Field Inhomogeneities in Echoplanar Imaging by Z-Gradient Refocusing.** D. Cordes, P.A. Turski and J.A. Sorenson. University of Wisconsin, Madison, WI.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: EPI, refocusing, automation
418. **A k-space Trajectory that Decreases Motion Artifacts in Interleaved Echo Planar Imaging.** M.D. Robson and J.C. Gore. Yale University School of Medicine.
Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Motion and Artifacts
Keywords: EPI, motion, artifact

- 419. Undescribed Flow Artifacts in Echo-Planar and Spiral Imaging.** P.D. Gatehouse, J. Keegan and D.N. Firmin. Royal Brompton Hospital; National Heart & Lung Institute Imperial College, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Flow
 Keywords: artifacts, EPI, flow
- 420. "Compensation Blips" for Referenceless EPI.** A.Z. Faranesh, S.B. Reeder and E.R. McVeigh. Johns Hopkins University, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: EPI, calibration, compensation blips
- 421. Rapid T2* Mapping Using Interleaved Echo Planar Imaging.** D.L. Thomas, A.M. Howseman, G.S. Pell, S.R. Williams and R.J. Ordidge. University College, London; University College London Medical School, London; Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: EPI, interleaved, T2*
- 422. Oblique EPI Ghost Artifact Elimination for Real-Time Interactive Imaging.** J. Pauly, K. Butts, A. Kerr and A. Macovski. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: echo planar imaging, artifacts, real-time imaging
- 423. Alternative EPI Acquisition Strategies Using SMASH.** M.A. Griswold, P.M. Jakob, R.R. Edelman and D.K. Sodickson. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: EPI, SMASH, artifacts

424. **Comparing True Resolution in Square versus Circular K-space Sampling.** P. van Gelderen. National Institutes of Health, Bethesda, MD.
- Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: resolution, k-space

MRS of the Brain: White Matter and Degeneration

425. **Correlation of Brain Metabolite Concentration with Dementia Severity in Alzheimer Disease: A Quantitative *In vivo* 1H MRS Study.** W. Huang, G.E. Alexander, L. Chang, B. Levine, V. Ibanez, S.I. Rapoport and M.B. Schapiro. National Institute of Health, Bethesda, MD.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: MRS, Alzheimer, NAA
426. **Stability Measure of 1H MRS in Normal Older Adults: Implications for Longitudinal Monitoring of Alzheimer's Disease.** S.E. Rose, G.I. de Zubizaray, G.J. Galloway, J.B. Chalk, D. Wang, D.M. Doddrell, S.C. Eagle and J. Semple. University of Queensland, Brisbane, Australia; Smithkline Beecham Pharmaceuticals, Harlow, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: Alzheimer's Disease, MRS, brain metabolism
427. **1H MRS Study of Normal Appearing White Matter in Multiple Sclerosis Patients.** O. Presciutti, P. Sarchielli, G. Gobbi, R. Tarducci, G.P. Pelliccioli and V. Gallai. Azienda Ospedaliera di Perugia, Perugia; Perugia University, Perugia, Italy.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRS
 Keywords: 1-H MRS, multiple sclerosis, NAWM
428. **Quantitation of 1H Metabolites in Subtypes of Multiple Sclerosis by Spectroscopic Imaging at 4.1T.** J.W. Pan and J.N. Whitaker. University of Alabama, Birmingham, AL.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: spectroscopic imaging, multiple sclerosis, quantitation

- 429. 3D Multivoxel 1H MRS in Multiple Sclerosis Using an 8th Order 1D-Hadamard/2D-CSI Hybrid.** O. Gonen, R. Stoyanova and R.I. Grossman. Fox Chase Cancer Center; University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, multiple sclerosis, 3-dimensional
- 430. Phosphorus MRS Helps to Differentiate Multiple System Atrophy (MSA) from Parkinson's Disease (PD).** B. Barbiroli, P. Martinelli, A. Patuelli, R. Lodi, S. Iotti, P. Cortelli and P. Montagna. Università di Bologna, Italy.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: Parkinson, MSA, diagnosis
- 431. Neurochemistry and Brain Dysfunction in Systemic Lupus Erythematosus.** W.M. Brooks, R.E. Jung, C.C. Ford, E.J. Greinel and W.L. Sibbitt Jr. The University of New Mexico Health Sciences Center, Albuquerque, NM.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: lupus, brain function, spectroscopy
- 432. Diffusion Status of Metabolites in Human Brain Measured by Clinical MR Instrument - Difference Between Gray Matter and White Matter.** M. Harada, H. Fang, O. Takizawa, H. Miyoshi, H. Otsuka and H. Nishitani. University of Tokushima; Siemens-Asahi Medical Technologies Co. Ltd., Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: diffusion, metabolites, white matter
- 433. Viability and Neural Proliferation in Human Fetal Tissue Transplants.** T.Q. Hoang, B.D. Ross, S. Bluml, D. Dubowitz, J. Tan, R. Moats, O.V. Kopyov and D. Jacques. Huntington Medical Research Institutes, Pasadena, CA; Schulte Research Institutes, Santa Barbara, CA; Good Samaritan Hospital, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: neurotransplants, Parkinson's, Huntington's

434. ***In vivo* Proton Magnetic Resonance Spectroscopy of the Medial Temporal Lobes of Subjects with Combat-Related Post-Traumatic Stress Disorder.** T.W. Freeman, D. Cardwell, C.N. Karson and R.A. Komoroski. University of Arkansas for Medical Sciences; McClellan VA Medical Center, Little Rock, AR.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: PTSD, hippocampus, NAA

RF Coils

435. **A Small Superconductive Surface Coil with Enhanced Bandwidth and Active Decoupling.** L.D. Mann, J.L. Duerk, M. Wendt, K.L. Hansen and W.W. Brey. University Hospitals of Cleveland/Case Western Reserve University, Cleveland, OH; Conductus, Inc., Sunnyvale, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: surface coil, superconductor
436. **Implementation of Adiabatic Pulses for High Temperature Superconducting Coils.** S.E. Hurlston, J.R. Miller, E.W. Hsu, S.A. Suddarth, Q.Y. Ma and G.A. Johnson. Duke University Medical Center, Durham, NC; Columbia University, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: HTS coils, adiabatic pulse, microscopy
437. **An RF Array Designed for Cardiac SMASH Imaging.** M.A. Griswold, P.M. Jakob, R.R. Edelman and D.K. Sodickson. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, array, SMASH
438. **Switchable 12 Element Coil Array for MR Microimaging of Breast Lesions.** D. Artemov, G. Revelon, E. Atalar, D.A. Bluemke, Z.M. Bhujwalla and E.A. Zerhouni. The Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: RF-Coils
 Keywords: breast MRI, RF coil, microimaging

- 439. Phased Array Coil Design for High Resolution Imaging of Axillary Lymph Nodes.** L. Carvajal, S. Partridge, K. Kinkel and N. Hylton. University of California, San Francisco, CA.
 Methods: RF-Coils
 Keywords: RF coil, axillary, lymph node
- 440. Twelve Antenna Element Lower Extremity/Pelvic Array for MRI(A).** R. Jones. ScanMed R&D Center, Omaha, NE.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: MRA, peripheral, vascular
- 441. Transceive Phased Array Designed for Imaging at 3.0T.** G.R. Duensing, D.M. Peterson, B.L. Wolverson and J.R. Fitzsimmons. University of Florida Brain Institute, Gainesville, FL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: 3T, transceive, phased array
- 442. A Spiral Volume Coil for Improved Radio Frequency Field Homogeneity at High Static Magnetic Field Strength.** D.C. Alsop, T.J. Connick and G. Mizsei. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, high field
- 443. B1 Field and SAR Distributions in a Heterogeneous Human Head Model.** C.M. Collins and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey, PA; The University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: high-frequency SAR, simulations
- 444. Use of Multiple/Stacked Laminates in MR RF Shield Design.** P.S. Frederick. GE Medical Systems, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF, coil, shield

- 445. MR Imaging of the Lungs with Hyperpolarized Helium-3 Gas.** E.E. de Lange, J.P. Mugler III, J.R. Brookeman, T.M. Daniel, J.D. Truwit, C.D. Teates and J. Knight-Scott. University of Virginia, Charlottesville, VA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: chest, hyperpolarized gas, helium-3
- 446. Diffusion Map of Hyperpolarized Gas in the Guinea Pig Lung.** X.J. Chen, M.S. Chawla, G.P. Cofer, B. Driehuys, L.W. Hedlund, H.E. Möller and G.A. Johnson. Duke University Medical Center, Durham, NC; Magnetic Imaging Technologies, Durham, NC.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Healthy Tissue
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized, luna, diffusion
- 447. MRI of Pulmonary Ventilation/Perfusion Using Hyperpolarized ^3He Gas and Arterial Spin-Tagging: Preliminary Results in Healthy Subjects.** R.R. Rizi, D.A. Roberts, I.E. Dimitrov, M.D. Schnall and J.S. Leigh. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: ventilation, perfusion, hyperpolarized
- 448. Interleaved Echo-Planar Imaging of the Lungs with Hyperpolarized ^3He .** J.P. Mugler III, J.R. Brookeman, J. Knight-Scott, T. Maier, E.E. de Lange and P.L. Bogorad. University of Virginia Health Sciences Center, Charlottesville, VA; Magnetic Imaging Technologies, Inc., Durham, NC.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized gas, lung, rapid imaging
- 449. Low Field Single Shot ^3He MRI in Human Lungs.** L. Darrasse, G. Guillot, P.J. Nacher and G. Tastevin. U2R2M, Orsay; Laboaratoire Kastler Brossel, Paris, France.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized helium, low field imaging

- 450. Spatially Localized T2* Measurements of Hyperpolarized 3He in the Lung.** X.J. Chen, M.S. Chawla, G.P. Cofer, B. Driehuys, L.W. Hedlund, J.R. MacFall, H.E. Möller and G.A. Johnson. Duke University Medical Center, Durham, NC; Magnetic Imaging Technologies, Durham, NC.
- Type of Study: Basic Research on MR
Main Target of Study: Morphology
Organ/Tissue: Chest
Pathology: Healthy Tissue
Methods: Non-proton MRI and ESR
Keywords: hyperpolarized, lung, T2
- 451. Hyperpolarized 129Xe T2 and Diffusion Measurements for Fast Spin-Echo MRI.** L. Zhao, R. Mulkern, A. Venkatesh, H. Gubbjartsson, F.A. Jolesz and M.S. Albert. Brigham and Women's Hospital and Harvard Medical School, Boston; Boston University, Boston; Children's Hospital and Harvard Medical School, Boston, MA.
- Type of Study: Methodological Development
Main Target of Study: Morphology
Organ/Tissue: Chest
Pathology: Healthy Tissue
Methods: Non-proton MRI and ESR
Keywords: hyperpolarized gas, xenon, spin-echo
- 452. Hyperpolarized 3Helium-Magnetic Resonance Imaging (3He-MRI) of the Lung: A New Method for Assessment of Alveolar Oxygen (O2) Partial Pressure.** K. Markstaller, B. Eberle, H.-U. Kauczor, N. Weiler, R. Surkau, W. Schreiber, T.P.L. Roberts and M. Thelen. Johannes Gutenberg-University Mainz, Germany.
- Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Chest
Pathology: Healthy Tissue
Methods: Non-proton MRI and ESR
Keywords: hyperpolarized gases, oxygen partial pressure, quantitative MRI
- 453. Ventilation-Perfusion MRI of Pulmonary Embolism.** Q. Chen, V. David, D. Levin, M. McNicholas, J. Galdfarb, P. Jakob and R. Edelman. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Chest
Pathology: Vascular Diseases
Methods: Sequences: Imaging
- 454. Multisection Ventilation Imaging of the Human Lung after Breathing of 100% Oxygen.** H. Penzkofer, R. Löffler, M. Peller, U. Mueller-Lisse, M. Deimling, V. Scholz and M. Reiser. Ludwig-Maximilians-Universität, Munich; Siemens Medizintechnik, Erlangen, Germany.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Function
Organ/Tissue: Chest
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: lung ventilation, oxygen, data analysis

455. **Orientation of Trabecular Bone in Human Vertebrae Assessed by MRI Measurements.** T. Brismar, M. Karlsson, T.Q. Li and H. Ringertz. Karolinska Hospital, Stockholm, Sweden.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Morphology
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Quantitation: MRI
Keywords: osteoporosis, vertebra, trabecula
456. **Improved Vertebral Fracture Prediction in Osteoporosis by Combined Bone Mineral Densitometry and Quantitative MR (QMR).** F.W. Wehrli, J.A. Hopkins, H.K. Song, S.N. Hwang, J.D. Haddad and P.J. Snyder. University of Pennsylvania Medical Center, Philadelphia, PA.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Category not applicable
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Quantitation: MRI
Keywords: osteoporosis, relaxation rates, cancellous bone
457. **MRI T2* Decay Characteristics of the Proximal Femur for Assessment of Osteoporosis and Fracture Discrimination.** T.M. Link, J.C. Lin, P. Augat, D. Newitt, H.K. Genant and S. Majumdar. University of California, San Francisco, CA; Westfälische Wilhelms-Universität Münster, Germany.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Quantitation: MRI
Keywords: osteoporosis, T2*, quantitative MR
458. **Comparison of MRI and Radiography for Monitoring Erosive Changes in Rheumatoid Arthritis.** C.G. Peterfy, E. Dion, Y. Maiux, D. White, Y. Lu, S. Zhao, Y. Jiang, K. Sack, M. Stevens, K. Fye, F. Tayefeh, S. Majumdar, R. Stevens, P. Van der Auwera and H.K. Genant. University of California San Francisco, CA; Hoffman-La Roche.
Type of Study: Clinical Applications of MR
Main Target of Study: Category not applicable
Organ/Tissue: Musculoskeletal/Joints
Pathology: Inflammation
Methods: Basic NMR
Keywords: rheumatoid arthritis, MRI, radiography
459. **Corticosteroid Effects on the Blood Flow of the Proximal Femur in SLE Patients - The Evaluation of the Hemodynamics with Dynamic MR Imaging.** S. Ikenoue, Y. Harada, I. Abe, K. Oinuma, K. Kamikawa, H. Kitahara, F. Morita and H. Moriya. Chiba University, Japan.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Musculoskeletal/Joints
Pathology: Vascular Diseases
Methods: Sequences: Imaging
Keywords: hemodynamic, corticosteroid, hip joint

- 460. Proton Double Quantum Filtered MRI - A Novel Modality for Imaging Ordered Tissues.** L. Tsoref, H. Shinar, Y. Seo, U. Eliav and G. Navon. Tel Aviv University, Tel Aviv, Israel; Kyoto Prefectural University of Medicine, Kyoto, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: 1H DQF MRI, tendon, connective tissues
- 461. *In vivo* Longitudinal Magnetic Resonance Imaging Studies of Muscle Disuse Atrophy and Recovery.** L.K. Fotedar, P.A. Narayana and I.J. Butler. University of Texas Medical School, Houston, TX; National Research Council, Houston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: atrophy, muscle, imaging
- 462. Application of Cine Phase Contrast MR Imaging to Characterize Strain Heterogeneity along the Contracting Biceps Brachii Muscle.** G. Pappas, F. Sheehan, Y. Zhu, F. Zajac and J. Drace. VA Palo Alto HCS, Palo Alto, CA; Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: muscle, strain, cine PC
- 463. Functional MR Elastography of Human Skeletal Muscle.** M.A. Dresner, G.H. Rose, P.J. Rossman, J.A. Smith, R. Muthupillai and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: elastography, muscle, functional
- 464. MR Velocity Profiles as a Measure of Musculoskeletal Force Developed *in vivo*.** J.E. Drace and F.T. Sheehan. VA Palo Alto HCS, Palo Alto, CA; Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: muscle, motion, phase contrast

- 465. Intravascular MR-Monitored Balloon Angioplasty Process: A Feasibility Study on Rabbit Models.** X. Yang, B.D. Bolster, Jr., D.L. Kraitchman and E. Atalar. Johns Hopkins University, Baltimore, MD; Kuopio University Hospital, Kuopio, Finland.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: interventional MRI, MR fluoroscopy, balloon angioplasty
- 466. Magnetic Resonance Guided Transjugular Intrahepatic Portosystemic Shunt (TIPS) in a Swine Model.** Ss. Kee, K. Butts, A. Arakawa, J. Pauly, B. Daniel, A. Kerr and M. Dake. Stanford University Hospital, Stanford, CA.
 Main Target of Study: Interventions
 Keywords: TIPS, intrahepatic, smunt
- 467. MR-Guided Percutaneous Sclerotherapy of Low Flow Vascular Malformations: Safety and Feasibility.** J.S. Lewin, E.M. Merkle, J.L. Duerk and R.W. Tarr. University Hospitals of Cleveland/Case Western Reserve University, Cleveland, OH.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Head and Neck
 Pathology: Malformation
 Methods: Category not applicable
 Keywords: therapy, intervention, malformation
- 468. MR Thermometry for *in vivo* Human Prostate Thermocoagulation Therapy.** R.D. Peters, J.C. Chen, J.A. Moriarty, J.A. Derbyshire, R.S. Hinks, G.A. Wright, D.B. Plewes, M.J. Bronskill, J. Trachtenberg, S. Bell, R.M. Henkelman and W. Kucharczyk. University of Toronto; Sunnybrook Health Science Centre; The Toronto Hospital, Toronto, Canada.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: prostate, thermometry, thermal
- 469. MR-Guided Joint Puncture and Real-Time MR-Assisted Contrast Media Application.** S. Trattnig, M. Breitenseher, M. Pretterklieber, S. Schick, T. Rand, T. Zontsich and H. Imhof. University Hospital of Vienna, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Category not applicable

- 470. Freehand MR-Guided Needle Localization of Breast Lesions.** B.L. Daniel, R.L. Birdwell, D.M. Ikeda, S.S. Jeffrey, J.W. Black, S. Heiss, W.F. Block, A.M. Sawyer-Glover, C. Cooper and R.J. Herfkens. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast, needle, freegabd
- 471. Intra-Operative MR Imaging for Guidance of Trans-Sphenoidal Procedures: Imaging Characteristics and Issues.** J.S. Lewin, M.L. Hlavin, J.L. Duerk, M.E. Clampitt and W.R. Selman. University Hospitals of Cleveland/Case Western Reserve University, Cleveland, OH.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: surgery, pituitary, tumor
- 472. Magnetic Resonance Colonoscopy: A Combined Fibre Optic and Cross-Sectional Imaging Approach to Evaluating the Large Bowel.** A.D. Williams, G.A. Coutts, A.S. Hall, W.A. Kmiot, D.J. Gilderdale, M. Dinneen, I.R. Young and N.M. deSouza. Hammersmith Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: RF-Coils
 Keywords: colonoscopy, coil, cancer
- 473. RF Heating of Actively Visualized Catheters and Guidewires.** M.E. Ladd, H.H. Quick, P. Boesiger and G.C. McKinnon. University Hospital; Institute of Biomedical Engineering and Medical Informatics, Zürich, Switzerland; GE Medical Systems, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: safety, heating, catheters
- 474. Effects of Landmark, Gradient Axis and Ramp Time on Gradient-Induced Nerve Stimulation.** D.J. Schaefer, S.D. Wolf and J.F. Schenck. General Electric Medical Systems, Milwaukee, WI; National Institutes of Health, Bethesda, MD; General Electric Corporate Research and Development Center, Schenectady, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: safety, stimulation, gradient

- 475. Three Dimensional Left Ventricular Deformation in Hypertensive LV Hypertrophy.** A.A. Young, R.W.W. Biederman, M. Doyle, S. Thrupp and L.J. Dell'Italia. University of Auckland, New Zealand; University of Alabama at Birmingham, AL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: tagging, hypertrophy, 3D
- 476. Abdominal Aortic Wall Shear Stress Measured by Multiple Sected Three-dimensional Paraboloid Fitting of MR Velocity Data. Correlation with Histopathology.** E.M. Pedersen, M. Agerbaek, I.B. Kristensen, M. Scheidegger, S. Kozerke, P. Boesiger and S. Oyre. Aarhus University Hospital, Aarhus University, Aarhus, Denmark; University of Zürich and ETH, Zürich, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: abdominal aorta, wall shear stress, atherosclerosis
- 477. Age-Associated LV Remodeling in Normal Men and Women Detected by 3D MRI.** P.S. Hees, S.L. Bosley and E.P. Shapiro. Johns Hopkins University, Baltimore, MD.
 Organ/Tissue: Heart
 Keywords: Myocardium, aging
- 478. Age Dependent Changes in Spatial and Temporal Blood Velocity Distribution during Early Diastolic Filling of the Left Ventricle.** K. Houliind, A.P. Schroeder, H. Egeblad and E.M. Pedersen. Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: flow, heart, diastole
- 479. Do Flow Void Signals on FASTCARD MRI Predict Valvular Flow Abnormalities as Seen by 2-D Echocardiography?.** A. Moalemi, J.A. Panza, S.D. Wolff and A.E. Arai. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: valves, fastcard, echocariography

- 480. The Influence of Papillary Muscles and Through Plane Motion on Left Ventricular Volume and Mass Measurements.** J.T. Marcus, M.J.W. Götte, M.R. Stam, L.K. de Waal, R.J. van der Geest and A.C. van Rossum. Vrije Universiteit Amsterdam; Leiden University Medical Centre, Leiden, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: cardiac function, cardiac volume, cardiac mass
- 481. Mechanisms of Reduced Coronary Flow Reserve in Patients After Orthotopic Heart Transplantation Assessed by Phase Contrast Cine MR Imaging.** J. Schwitter, T. DeMarco, H. Arheden, G.P. Reddy, A. Shimakawa, K. Chatterjee, W.W. Parmley and C.B. Higgins. University of California, San Francisco, CA; General Electric, Milwaukee, WI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow, cardiac hypertrophy, transplantation
- 482. Initial Studies of MR Oximetry in Patients with Congenital Heart Defects.** G. Kim, G. Webb, N. Merchant and G.A. Wright. Sunnybrook Health Science Centre and The Toronto Hospital, Toronto, Ontario, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Malformation
 Methods: Contrast Mechanisms
 Keywords: oximetry, relaxometry, congenital heart disease

Pelvic Cancer and Fetal Imaging

- 483. Staging of Endometrical Carcinoma: A Comparative Study Using Endovaginal US and MR Imaging.** C. Reinhold, L. Wang, M. Atri, J. Arseneau, L. Liang, R. Zakarian, A. Mehio, A. Aldis and R.J. Seymour. McGill University, Montreal, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: MRI, ultrasound, staging
- 484. Cervical Carcinoma: Can Contrast-Enhanced Semiquantitative and Quantitative MR Imaging Assess Histomorphometrically Determined Tumor Angiogenesis and Patient Survival?.** H. Hawighorst, M.V. Knopp, P.G. Knapstein, G. Brix, A. deVries, J. Griebel, S.O. Schönberg and G. van Kaick. German Cancer Research Center, Heidelberg; University of Mainz; University of Innsbruck; GSF, Neuherberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Perfusion
 Keywords: pharmacokinetic, uterine, MRI

- 485. Prostate Cancer Tumor Grade Differentiation by Dynamic Contrast-Enhanced MRI: Comparison of Macromolecular and Small-Molecular Contrast Media.** A. Gossmann, Y. Okuhata, T.H. Helbich, T.P.L. Roberts, D.M. Shames, S. Huber, M. Wendland and R.B. Brasch. University of California, San Francisco, CA; University of Cologne, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: prostate, tumor, permeability
- 486. Effect of Hormonal Treatment on Prostate Morphology, Tumour Detection and Tumour Vascular Permeability.** A.R. Padhani, C. Gapinski, P.B. Revell, G.J.M. Parker, J. Suckling, D. MacVicar, I.J. Rowland, D.P. Dearnaley, M.O. Leach and J.E. Husband. Institute of Cancer Research and the Royal Marsden N.H.S. Trust, Sutton, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: prostate, contrast, permeability
- 487. Addition of MR Spectroscopic Imaging to MRI Significantly Improves Detection and Localization of Prostate Cancer.** R. Males, D. Vigneron, S. Nelson, J. Scheidler, H. Hricak, P. Carroll and J. Kurhanewicz. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: MRSI, prostate, cancer
- 488. 3D MRSI of Prostate Cancer: Correlation with Histologic Grade.** D.B. Vigneron, R. Males, S. Noworolski, S.J. Nelson, J. Scheidler, D. Sokolov, H. Hricak, P. Carroll and J. Kurhanewicz. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: prostate, cancer, MRS
- 489. Prenatal MRI of the Fetus with Congenital Diaphragmatic Hernia Post *In Utero* Fetal Surgery.** E. Bergey, T.M. Quinn, A.M. Hubbard, N.S. Adzick, B. Coleman, A. Flake and J.S. Meyer. Children's Hospital of Philadelphia, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: fetal anomalies, fetal surgery, diaphragmatic hernia

490. ***In Utero* Diffusion Measurements to Assess Fetal Lung Maturation.** R.J. Moore, P. Tokarczuk, B. Issa, K. Duncan, R. Bowtell, B. Worthington, P. Baker, I. Johnson and P.A. Gowland. University of Nottingham, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gynecology/Obstetrics
Pathology: Healthy Tissue
Methods: Diffusion
Keywords: fetus, diffusion, EPI

MRA of the Carotid Arteries

491. **Comparison of Contrast-Enhanced MR Angiography, 2D Time-of-Flight MR Angiography and Catheter Angiography in the Evaluation of the Extracranial Carotid Artery.** H.K. Lee, M.J. Lee, K.R. Kim, J.K. Park, C.G. Choi, D.C. Suh and K.E. Kim. University of Ulsan, Seoul, Korea.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Head and Neck
Pathology: Vascular Diseases
Methods: Angiography
Keywords: angiography, MR angiography, carotid artery
492. **Contrast Enhanced MRA of the Carotids: A Simple Foolproof Method?.** L. Teresi, D.J. Atkinson, D.Y. Chen and W.G. Bradley. Long Beach Memorial Medical Center, Long Beach, CA; Siemens Medical Systems, Iselin, NJ.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain Vascular
Pathology: Vascular Diseases
Methods: Sequences: Imaging
Keywords: MRA, carotid, contrast
493. **Two-Dimensional MR Digital Subtraction Angiography (MRDSA) of the Carotid Arteries: Comparison with 2D and 3D Time of Flight (TOF).** J.P. Comunale, Jr., Y. Wang, N.D. Gai and R.D. Zimmerman. Cornell University Medical College, New York, NY.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain Vascular
Pathology: Vascular Diseases
Methods: Angiography
Keywords: MRDSA, carotid, TOF
494. **High Resolution Dynamic Imaging of the Carotid Bifurcation and Carotid Stenoses Using a 3" Surface Coil.** M.S. NessAiver and C. Hisley. University of Maryland, Baltimore, MD.
Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Head and Neck
Pathology: Vascular Diseases
Methods: Angiography
Keywords: carotid, stenosis, cine

495. **MR Angiography of the Carotid Arteries: Preliminary Results Using an Intravascular Contrast Agent (MS-325).** D.A. Bluemke and T. Borman. Johns Hopkins University, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: intravascular contrast, contrast, carotid artery
496. **3D High Resolution CE MRA of Carotids in Comparison with Conventional 3D MOTSA MRA and i.a. DSA — Preliminary Experiences.** M. Boos, K. Scheffler, H.W. Ott, P. Buser, G. Bongartz and E. Radü. University-Hospital Basel, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Angiography
 Keywords: MRA, contrast, depasing
497. **Keyhole Dynamic Gadolinium-Enhanced 3-D MRA of the Proximal Great Vessels.** C.A. Holder, S. Sheppard, R. Muthupillai, J.D. Eastwood, G.P. Chatzimavroudis and P.A. Hudgins. Emory University, Atlanta, GA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: keyhole, MRA, dynamic
498. **Contrast Enhanced Ultrafast 3D-TOF MRA of Carotid Artery: Time Optimization for Discrimination of Arterial-Venous Phase Using Manual Injection of Contrast Media.** W. -C. Kwon, T. -S Chung, D. Chien and G. Laub. Yonsei University College of Medicine, Seoul, Korea; Siemens AG, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, carotid artery, contrast media

fMRI and MRS of Psychiatric Disease

499. **Cocaine Induced Brainstem and Subcortical Activity Observed Through fMRI with Cardiac Gating.** H. Breiter, R. Gollub, W. Edmister, T. Talavage, N. Makris, J. Melcher, D. Kennedy, H. Kantor, I. Elman, J. Riorden, D. Gastfriend, T. Campbell, M. Foley, R. Weisskoff and B. Rosen. Massachusetts General Hospital, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: cocaine, FMRI, brainstem

- 500. Abnormal Lateralisation of Motor Systems in Schizophrenia.** G.D. Honey, W. Soni, E.T. Bullmore, M. Varatheesan, A. Simmons, S.C.R. Williams, C.M. Andrew and T. Sharma. Institute of Psychiatry, City University, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, schizophrenia, motor
- 501. Altered Prefrontal Function in Medication-Naï ve, First Episode Schizophrenic Patients: An fMRI Study.** D.F. Braus, G. Ende, W. Weber-Fahr, M. Ruf, P. Hubrich-Ungureanu and F.A. Henn. Central Institute of Mental Health, Mannheim, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: first episode Schizophrenia, fMRI, prefrontal cortex
- 502. A Multi Regional 1H MRSI Study in Schizophrenic Patients.** G. Ende, D.F. Braus, J. Kühnen, M. Ruf, W. Weber-Fahr and F.A. Henn. Central Institute of Mental Health, Mannheim, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: MRSI, schizophrenia, neuroleptics
- 503. Schizophrenic Prefrontal [PDE] Correlates with Residual Symptoms Following Neuroleptic Treatment.** J.D. Christensen, J. Holcomb, T.R. Nair and D.L. Garver. University of Texas Southwestern Medical School, Dallas, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: schizophrenia, brain, phosphorus
- 504. Lithium Induced Neurochemical Changes in Manic Depressive Illness: *In vivo* Investigation of the Inositol Depletion Hypothesis.** G. J. Moore, J. M. Bebachuk, J. K. Parrish, M. W. Faulk, C. L. Arfken, J. Strahl-Bevacqua and H. K. Manji. Wayne State University School of Medicine, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: myo-inositol lithium, bipolar disorder, frontal lobe

- 505. Right Frontal Lobe Myo-Inositol Correlates with Mood in Bipolar Disorder.** C.M. Moore, J.L. Breeze, S.A. Gruber, S.M. Babb, A. Stoll, L.L. Wald, D.A. Yurgelun-Todd, B.M. Cohen and P.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston; Brigham and Womens Hospital, Boston; Massachusetts Institute of Technology, Cambridge, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: bipolar, inositol, mood
- 506. Monitoring the Effects of Rapid Transcranial Magnetic Stimulation in Comparison to Electroconvulsive Therapy by Means of Multislice 1H MRSI.** G. Ende, D.F. Braus, J. Kühnen, I. Müller, N. Schuff and F.A. Henn. Central Institute of Mental Health, Mannheim, Germany; VA Medical Center, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: MRSI, depression, transcranial magnetic stimulation

fMRI Potpourri

- 507. Cerebral Pharmacodynamics Determined by fMRI.** T. Yoshizawa, I. Anno, A. Matsumura, T. Enomoto, Y. Itai and T. Nose. University of Tsukuba and Tsukuba Memorial Hospital, Tsukuba, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, acetazolamide, benzodiazepine
- 508. Interleaved Transcranial Magnetic Stimulation (TMS) and fMRI.** D.E. Bohning, A. Shastri, Z. Nahas, J.P. Lorberbaum, W.R. Dannels, D.J. Vincent and M.S. George. Medical University of South Carolina, Charleston, SC; Picker International, Inc. Highland Heights, OH.
 Type of Study: Feasibility Studies of MR Methods
 Keywords: TMS, fMRI, interleaved
- 509. Spatiotemporal Imaging of Motion Selective Areas in Human Cortex Using Combined fMRI and MEG.** A.K. Liu, A.M. Dale, S. Ahlfors, H. Aronen, M. Huottilainen, R. Ilmoniemi, A. Korvenoja, G. Simpson, R.B.H. Tootell, J. Virtanen and J.W. Belliveau. Massachusetts General Hospital, Charlestown, MA; Albert Einstein College of Medicine, New York; Helsinki University Central Hospital, Helsinki, Finland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, MEG, vision

- 510. Pitfalls in the Comparison of fMRI and Electrophysiology Data.** D.L.G. Hill, A. Simmons, A.D. Castellano Smith, T.C.S. Cox, R. Elwes, M.J. Brammer and C.E. Polkey. Guy's Hospital, London; King's College Hospital, London, UK.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Motion and Artifacts
 Keywords: neurosurgery, registration, fMRI
- 511. Functional Organization of Lateral Geniculate Nucleus in Human Brain: A fMRI Study at 3.0T.** W. Chen, J.T. Voyvodic, C. Martin, D. Davis, K. Ugurbil and K.R. Thulborn. University of Minnesota Medical School, Minneapolis, MN; University of Pittsburgh, Pittsburgh, PA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Methods: Basic NMR
 Keywords: fMRI, lateral geniculate, visual stimulation
- 512. BOLD-fMRI Changes in Regions of rCBF-PET Increases and Decreases during Vibrotactile Stimulation.** R.C. McKinstry, J.G. Ojemann, A.Z. Snyder, E. Akbudak, J.M. Ollinger, H. Burton, K.B. McDermott, T.L. Davis, M.E. Raichle and T.E. Conturo. Washington University School of Medicine, St. Louis, MO.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: BOLD, PET, negatives
- 513. Effects of the Acoustic Noise of MR Gradient Systems on Motor and Visual Cortices.** Z.H. Cho, S.C. Chung and E.K. Wong. University of California, Irvine, CA; Korea Advanced Institute of Science & Technology, Seoul, Korea.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: acoustic noise, fMRI, acpistoc pr sound noise effects on fMRI
- 514. Magnetic Resonance Imaging of Stimulus-Motion-Induced Activation in Cat Visual Cortex.** D.-S. Kim, B. Tian, H.H. Qiu, M.P. O'Reilly, D. Malonek, P. Jezzard, J.P. Rauschecker and J.J. Pekar. Georgetown University Medical Center, Washington D.C.; Harvard Medical School, Boston, MA; National Institutes of Health, Bethesda, MD.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, vision, CAT

515. **Magnetic Field Dependence of T2* in the Somatosensory Cortex of Rat Brain: Implications for Functional BOLD Experiments.** M. Grüne, F. Pillekamp, H. Krep and M. Hoehn-Berlage. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: functional MRI, T2*, field strength
516. **Odor-Elicited Activation in Rat Olfactory Bulb Mapped by BOLD fMRI.** X. Yang, R. Renken, F. Hyder, M. Siddeek, C. Greer, G. Shepherd and R.G. Shulman. Yale University, New Haven, CT; University of Groningen, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: olfactory bulb, fMRI, odor

Liver Imaging

517. **A New Rapid T1-Weighted Multiplanar Spoiled Gradient-Echo Sequence for Simultaneous Acquisition of In-Phase and Opposed-Phase Images (SINOP).** M. Taupitz, M. Deimling, R. Malcher, T. Schröter, M. Bollow and B. Hamm. Humboldt-Universität zu Berlin; Siemens AG, Erlangen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: rapid imaging, liver, neoplasms
518. **Phase II Double-Blind, Dose-Ranging Clinical Evaluation of Gadobenate Dimeglumine (MultiHance™) in Focal Liver Lesions.** V.M. Runge, C.M. Kenney and W.J. John. University of Kentucky, Lexington, KY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: neoplastic disease, gadolinium, liver
519. **Hepatic Lesion Detection: A Comparison of SPIO Enhanced MRI and Dual Phase Helical CT.** J. Ward, K.S. Naik, J.A. Guthrie, D. Wilson and P.J. Robinson. St. James University Hospital, Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, metastases, CT

520. **Ferumoxides-Enhanced Hepatic MR: A Prospective Comparison of Five T2-Weighted Imaging Sequences.** J.P. Earls, S.C. Shaves and U. Schmeidal. University of Washington School of Medicine, Seattle, WA; Johns Hopkins Hospital, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: ferumoxides, liver, FSE
521. **MR Imaging of Focal Lesions in Fatty Degeneration of the Liver: Visualization of a Hyperintense Peritumoral Rim on Opposed-Phase Gradient-Echo Images.** M. Taupitz, T. Schröter, R. Malcher, D. Kivelitz, M. Bollow, M. Deimling and B. Hamm. Humboldt-Universität zu Berlin; Siemens AG, Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, neoplasms, sequences
522. **Pre- and Postoperative Magnetic Resonance Imaging of Liver Tumors in Patients Undergoing Cryotherapy.** K. Altmeyer, G. Schüder, G. Pistorius, G. Feifel, F. Poralla, B. Kramann and G. Schneider. University Hospital, Homburg/Saar, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: CE biphasic MRI, liver tumors, cryosurgery
523. **Comparison of Respiratory Triggered Fast Spin Echo with Single Shot Fast Spin Echo Sequences Using Different TE in T2 Weighted Images of Focal Hepatic Lesions.** Y.T. Oh, M.J. Kim, J.J. Chung, P.S. Choi, Y.J. Cheon, D.J. Kim, B.W. Choi, B.I. Choi, J.T. Lee and H.S. Yoo. Yonsei University College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, RARE, HASTE
524. **Fast 3D Dynamic MR Imaging of the Liver with MR SmartPrep: Comparison with Helical CT in Detecting Hepatocellular Carcinoma.** T. Tomemori, K. Yamakado, H. Sakuma, K. Matsumura and K. Takeda. Mie University School of Medicine, Mie, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: dynamic MRI, helical CT, hepatocellular carcinoma

525. **Speed of Contrast-Enhancement on Multi-Phased Dynamic MR Imaging can Predict Sonographic Pattern of Hepatic Cavernous Hemangioma or Vice Versa?.** J.-S. Yu, M.-J. Kim, B.-J. Jo and K.W. Kim. Yonsei University College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Flow
 Keywords: liver MR, liver neoplasms, liver vs
526. **Clinical Evaluation of Short Inter-Echo Spacing Fast Asymmetric Spin Echo (FASE) for T2-Weighted Liver MR Imaging: Comparison of Conventional Spin Echo, Single-Shot FASE, and 4-shot FASE.** H. Sugimura, M. Takesako, S. Kitane, Y. Machida, M. Asato, Y. Yuki, X.Q. Tong, R. Ochiai and S. Tamura. Miyazaki Medical College, Miyazaki; Toshiba Nasu Works, Tochigi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver neoplasms, pulse sequences, rapid imaging

Anisotropic Diffusion and Transport Processes

527. **Electrical Conductivity Tensor Map of the Human Brain Using NMR Diffusion Imaging: An Effective Medium Approach.** D.S. Tuch, V.J. Wedeen, A.M. Dale and J.W. Belliveau. Massachusetts General Hospital, Charlestown, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: conductivity, diffusion, anisotropy
528. **White Matter Tract Visualisation in Infants by Diffusion Tensor MRI.** M.J. Miranda, P. Born and M.R. Wiegell. Danish Research Center of Magnetic Resonance, Hvidovre; Copenhagen University Hospital, Hvidovre; The John F. Kennedy Institute, Glostrup, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion tensor, fractional anisotropy
529. **Magnetic Resonance Diffusion Imaging of the Human Cervical Spinal Cord *in vivo*.** C.A. Clark, G.J. Barker and P.S. Tofts. University College, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: imaging, spine, diffusion

530. **The Temporal Evolution of Diffusion Anisotropy in the Ischemic Rat Brain.** R.A.D. Carano, F. Li, K. Irie, M. Fisher and C.H. Sotak. Worcester Polytechnic Institute; The Medical Center of Central Massachusetts; University of Massachusetts Medical School, Worcester, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: rat brain, diffusion anisotropy, ischemia
531. **Non-Invasive Assessment of Structural Connectivity in White Matter by Diffusion Tensor MRI.** D.K. Jones, A. Simmons, S.C.R. Williams and M.A. Horsfield. Leicester Royal Infirmary, Leicester; Institute of Psychiatry, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: connectivity, diffusion, tensor
532. **Application of MR Microscopy to the Study of Water Transport in Human Eye Lenses.** B.A. Moffat, K.A. Landman, R.J.W. Truscott, M.H.J. Sweeney and J.M. Pope. Queensland University of Technology; University of Melbourne; University of Wollongong, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: lens, presbyopia, diffusion
533. **Influences of Diffusion Time and Osmotic Stress on Intracellular Metabolite Signals in Perfused Glial Cells as Detected by DW 1H NMR Spectroscopy.** J. Pfeuffer, U. Flögel, W. Willker and D. Leibfritz. Universität Bremen; Bremen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: intracellular, metabolite, diffusion
534. **NMR 'Diffusion-Diffraction' in Erythrocyte Suspensions: Correlation of Shapes and Sizes with Electron Microscopy.** P.W. Kuchel, A.M. Torres, R.J. Michniewicz and B.E. Chapman. University of Sydney, Australia.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Cells/Body Fluids
 Pathology: Inborn Error of Metabolism
 Methods: Diffusion
 Keywords: diffusion-diffraction, erythrocytes, q-space

535. **Apparent Diffusion Coefficient of Intra- and Extracellular Water in Yeast Suspension Measured by Combined Diffusion and Relaxography.** S.S. Han, G. Vetek, C.S. Springer and C.H. Sotak. Worcester Polytechnic Institute, Worcester, MA; State University of New York, Stony Brook, NY; Brookhaven National Laboratory, Upton, NY; University of Massachusetts Medical School, Worcester, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, relaxography, compartment
536. **The Transmural Component of Muscle Fiber Direction in the Left Ventricle Measured by Diffusion Tensor Imaging.** J. Rijcken, P.H.M. Bovendeerd, D.H. van Campen, T. Arts and K. Nicolay. Maastricht University; Eindhoven University of Technology; Utrecht University, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: heart, diffusion, fiber direction

Human Brain Spectroscopy - Pediatric and Other

537. **Enzymatic Initiators of the Lethal Neurochemical Cascade of Shaken Baby Syndrome.** T. Chen, N. Farrow, S. Bluml, C. Huang and B. Ross. Huntington Medical Research Institutes, Pasadena, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Basic NMR
 Keywords: trauma, shaken baby syndrome, phospholipase
538. **In vivo Proton Brain MRS of Galactosemia.** Z.J. Wang, G.T. Berry, S.F. Dreha, S. Segal and R.A. Zimmerman. The Children's Hospital of Philadelphia; University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Sequences: Spectroscopy
 Keywords: brain, galactosemia, spectroscopy
539. **Metabolite Changes in the Frontal Lobe and Basal Ganglia Correlate with Clinical Severity of HIV-1 Encephalitis.** L. Chang, T. Ernst, M. Leonido-Yee, I. Walot and E. Singer. UCLA School of Medicine, Torrance, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: Category not applicable
 Keywords: HIV, spectroscopy, viral load

- 540. Quantitative ¹H MRS Predicts Long-Term Outcome Following Traumatic Brain Injury.** S.D. Friedman, W.M. Brooks, R.E. Jung, S.J. Chiuli, J.H. Sloan, B.L. Hart, B.T. Montoya, W.L.Jr. Sibbitt and R.A. Yeo. University of New Mexico, Albuquerque, NM.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: trauma, spectroscopy, brain
- 541. Measurement of ¹³C Glutamate and Glutamine Turnover in Human Brain at 2.1 T with Enhanced Sensitivity.** J. Shen, K.F. Peterson, K.L. Behar, P.B. Brown, T.W. Nixon, G.F. Mason, O.A.C. Petroff, G.I. Shulman, R.G. Shulman and D.L. Rothman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: brain metabolism, ¹³C NMR, neurotransmitter cycling
- 542. Acute and Chronic Alterations in Human Cerebral GABA Levels in Response to Topiramate, Lamotrigine and Gabapentin.** H.P. Hetherington, R.I. Kuzniecky, S. Ho and J.W. Pan. Brookhaven National Laboratory, Upton, NY; University of Alabama, Birmingham, AL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Spectroscopy
 Keywords: GABA, anti-epileptics, controls
- 543. ¹H Spectroscopic Imaging of Gray and White Matter of Normal Aging Brain at 4.1T.** W.-J. Chu, G.F. Mason, J.W. Pan, H.P. Hetherington, E.C. San Pedro and J.M. Mountz. University of Alabama Birmingham, AL; Yale University, New Haven, CT; Brookhaven National Laboratory, Upton, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: aging, ¹H spectroscopy, segmentation
- 544. Biochemical Abnormalities in Williams Syndrome. Evidence for a Cerebellar Role in Cognition?.** C. Rae, M.A. Lee, J. Grant, A. Karmiloff-Smith, R.M. Dixon, A.M. Blamire, C.H. Thompson, P. Styles and G.K. Radda. Oxford University, Oxford, UK; The University of Sydney, Australia; Radcliffe Infirmary, Oxford, UK; MRC Cognitive Development Unit, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Basic NMR
 Keywords: Williams Syndrome, cerebellum, cognition

545. **Bioenergetic Changes in Migraine Detected by ³¹P Spectroscopic Imaging.** M.D. Boska, K.M.A. Welch, J.A. Nelson and L. Schultze. Henry Ford Hospital, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: migraine, ³¹P si, magnesium
546. **Further Evidence that Human Hepatic Encephalopathy is a Disturbance of Osmoregulation and Energy Metabolism.** S. Blüml, J. Tan, E. Zuckerman and B.D. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; University of Southern California, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: hepatic encephalopathy, glycerophosphorylethanolamine, energy failure

Myocardial Perfusion and Function

547. **Myocardial Signal Response to Contrast Injection in Dynamic Contrast-Enhanced MRI.** S. Ding, S.D. Wolff, R.S. Balaban and A.E. Arai. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, heart, dosage
548. **MR Contrast Enhancement Patterns in Myocardial Stunning.** D.L. Kraitchman, H.B. Hillenbrand, I. Oznur, A.Z. Faranesh, J.A.C. Lima, E.R. McVeigh and D.A. Bluemke. Johns Hopkins University, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Contrast Mechanisms
549. **Myocardial Perfusion Assessment with a High-Dose Injection of an Intravascular Agent and Multiple Linear Regression Analysis.** S. Ding, A.E. Arai, F.H. Epstein and R.S. Balaban. National Institutes of Health, Bethesda, MD; GE Medical Systems, Waukesha, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: perfusion, heart, infant

550. **First Pass Myocardial Perfusion Imaging with the Intravascular Contrast Agent NC100150: Phase I Study.** J.R. Panting, A.M. Taylor, P.D. Gatehouse, J. Keegan, P. Jhooti, G.Z. Yang, J.M. Francis, E.D. Burman, S. McGill, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: contrast, intravascular, heart
551. **Comparison of Gadophrin-2 and Gd-DTPA after Intracoronary Administration for MRI Diagnosis of Acute Myocardial Infarction in Dogs.** Y. Ni, C. Pislaru, H. Bosmans, S. Pislaru, Y. Miao, S. Dymarkowski, J. Bogaert, F. Van de Werf, W. Semmler and G. Marchal. University Hospitals, Leuven, Belgium; Insitut für Diagnostikforschung GmbH, Berlin, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Contrast Agents
 Keywords: metalloporphyrins, necrosis, intracoronary
552. **Accurate Characterization of Myocardial Viability with Gadophrin-2.** D.L. Kraitchman, I. Oznur, A.Z. Faranesh, E.R. McVeigh and H.J. Weinmann. Johns Hopkins University, Baltimore, MD; Schering AG, Berlin, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: contrast agents, myocardial infarction, LV function
553. **Quantification of Recovery of Regional Contractile Function after First LAD-Related Myocardial Infarction Using MR Tissue Tagging.** M.J.W. Götte, J.T. Marcus, A.C. van Rossum and C.A. Visser. Free University Hospital Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: myocardial infarction, myocardial function, MR tissue tagging
554. **Assessment of Cardiac Wall Thickening and Ejection Fraction from Real Time Cardiac MR Images in Patients with Left Ventricular Dysfunction.** M.B. Scheidegger, M. Spiegel, M. Stuber, P. Bonetti, P. Dubach and P. Boesiger. University and ETH Zurich, Switzerland; Kantonsspital Chur, Switzerland; Beth Israel Deaconess Medical Center, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: real time, cardiac, function

555. **The Time Course of *In vivo* ^{23}Na MRI Intensity Changes in Myocardium Subjected to Acute Coronary Occlusion and Reperfusion.** C.E. Rochitte, R.J. Kim, H.B. Hillenbrand, E.-L. Chen and J.A.C. Lima. Johns Hopkins Medical Institutions, Baltimore, MD; Northwestern University Medical School, Chicago, IL; University of Pennsylvania, Philadelphia, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Non-proton MRI and ESR
 Keywords: sodium, infarct, heart
556. **Physiologic Basis for Potassium (^{39}K) MRI of the Heart.** D.S. Fieno and R.M. Judd. Northwestern University Medical School, Chicago; Northwestern University, Evanston, IL.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Non-proton MRI and ESR
 Keywords: potassium, infarct, heart

Image Processing

557. **Four Dimensional Modeling of Left Ventricular Motion.** A.A. Young and B.R. Cowan. University of Auckland, New Zealand.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: infarction, ventricular, modeling
558. **Validation of an Optical Flow Method for Tag Displacement Estimation.** L. Dougherty, J.C. Asmuth, A. Blom, R. Kumar and L. Axel. Hospital of the University of Pennsylvania, Philadelphia, PA; Sarnoff Corporation, Princeton, NJ.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: heart, motion, SPAMM
559. **Automatic Integration of a Thalamic Atlas with 3-D MRI for Image-Guided Neuro-Surgery.** P. St-Jean, D. Clonda, R. Kasrai, A. Evans, C. Holmes, A. Sadikot and T. Peters. McGill University, Montreal, Quebec; The J P Robarts Research Institute, London ON, Canada; UCLA School of Medicine, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: image-guided surgery, image registration, atlases

- 560. Multislice Data Acquisitions for Multiplanar Reformatting and Image Registration.** J.V. Hajnal, A. Oatridge, J. Murdoch, N. Saeed and G.M. Bydder. Hammersmith Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: reformatting images, registration, interpolation
- 561. Bayesian Tissue Segmentation with Outlier Detection, Parameter Updating, and Signal Inhomogeneity Correction.** A.M. Fenstad, A. Lundervold and T. Taxt. University of Bergen, Norway.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: segmentation, inhomogeneity, EM-algorithm
- 562. A New Method for 3D Cartilage Thickness Measurement with MRI, Based on Euclidean Distance Transformation, and its Reproducibility in the Living.** T. Stammberger, F. Eckstein, K.-H. Englmeier and M. Reiser. Institut für Radiologische Diagnostik; GSF-Institut für Medizinische Informatik; Anatomische Anstalt, Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: Cartilage, tickness measurement, image processing
- 563. Automatic Segmentation of MRI of the Knee.** S. Warfield, C. Winalski, F. Jolesz and R. Kikinis. Brigham & Women's Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: segmentation, knee, cartilage
- 564. Structural Analysis of Trabecular Bone Using High Resolution MR Imaging.** W.J. Niessen, M.A. Viergever and K. Nicolay. Utrecht University/University Hospital Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: bone, structure, trabecular

565. **Automatic Correction of Scaling Errors in MR Image Volumes.** D.L.G. Hill, C.R. Maurer, C. Studholme, J.M. Fitzpatrick and D.J. Hawkes. Guy's Hospital, London, UK; Vanderbilt University, Nashville, TN.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: scaling, registration, validation
566. **Improving the Performance of 3D Dynamic Gd-Enhanced Carotid Artery Imaging Using the Eigenimage Filter.** D.W. Kaandorp, P.F.F. Wijn and K. Kopinga. Eindhoven University of Technology; Saint Joseph Hospital Veldhoven, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, carotid, eigenimage

DAY FIVE

Atherosclerosis: Pathophysiology, Present and Future Applications of Magnetic Resonance

567. **Pathophysiology of Atherosclerotic Plaque Formation and Rupture.** Colin J. Schwartz. University of Texas Health Sciences Center, San Antonio, TX.
568. **MR Imaging of Atherosclerotic Plaque.** Howard L. Kantor. Massachusetts General Hospital, Boston, MA.
569. **MR Spectroscopic Techniques for the Evaluation of Atherosclerotic Plaque and Ordered Cell Structures.** Gil Navon. Tel Aviv University, Tel Aviv, Israel.

Rapid Imaging II - Hybrid Techniques

570. **Virtual Frequency Encoding: Achieving Symmetry in K-Space.** R.S. Hinks, J.A. Derbyshire and P.L. LeRoux. Sunnybrook Health Science Centre, Toronto, Ontario, Canada; Allegheny University of the Health Sciences, Pittsburgh, PA; General Electric Medical Systems, Buc, France.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: artifacts, distortion, reconstruction
571. **Strategies to Minimize Phase Errors Induced by Maxwell Field.** X.J. Zhou, M.A. Bernstein and S. Tan. General Electric Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: Maxwell field, fast spin echo, artifacts

572. **Artifact Transformation Technique: Shifted Interleaved Multi-Volume Acquisition (SIMVA) for 3D FSE.** K. Liu, Y. Xu and M. Loncar. Picker International Inc., Highland Heights, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: artifact, transform, 3D FSE
573. **Geometric Distortion Correction of Gradient Echo Images Using Dynamic Time Warping.** S.A.R. Kannengießer, Y. Wang and E.M. Haacke. Aachen University of Technology, Aachen, Germany; Washington University, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: magnetic field inhomogeneity, geometric distortion correction, dynamic time warping
574. **Non CPMG Fast Spin Echo with Full Signal.** P. Le Roux and G. McKinnon. GE Medical Systems, Buc France and Waukesha, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: CPMG, phase, modulation
575. **UNaliasing by Fourier-Encoding the Overlaps Using the Temporal Dimension (UNFOLD), Applied to Cardiac Imaging and fMRI.** B. Madore, G.H. Glover and N.J. Pelc. Stanford University School of Medicine, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fast MRI, dynamic MRI, encoding scheme
576. **3D Black Blood Cardiac MR Images in Breathhold Times with: Proton Density, MR and T2 Contrast Options.** U. Sinha and S. Sinha. University of California, Los Angeles, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: cardiac, 3D, breathhold

577. **Eightfold Improvements in MR Imaging Speed Using SMASH with a Multiplexed Eight-Element Array.** D.K. Sodickson, J.A. Bankson, M.A. Griswold and S.M. Wright. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Texas A&M University, College Station, TX.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: SMASH, rapid, arrays
578. **Removal of Local Field Gradient Artifacts in T2* Measurement and T2* Contrast at High Field.** Q.X. Yang, B.J. Dardzinski, R.J. Demeure, R.W. Briggs and M.B. Smith. Penn State University College of Medicine, Hershey, PA; Universite Catholique de Louvain, Brussels, Belgium; University of Florida, Gainesville, FL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: susceptibility, contrast, T2*
579. **Coil Sensitivity Encoding for Fast MRI.** K.P. Pruessmann, M. Weiger, M.B. Scheidegger and P. Boesiger. University and ETH Zürich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: sensitivity encoding, fast MRI, reconstruction

MRI and MRS of Brain Ischemia

580. **Course of Diffusion-Weighted Hyperintensity of Hyperacute Cerebral Ischemia after Recirculation.** H. Shimizu, M. Ezura, A. Takahashi, S. Fujiwara, T. Yoshimoto and T. Tsukamoto. Kohnan Hospital; Tohoku University School of Medicine, Sendai; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: diffusion, cerebral ischemia, recirculation
581. **Can Diffusion-Weighted MRI Provide Any Information of the Reversibility in Human Cerebral Ischemia.** T. Ebisu, C. Tanaka, M. Umeda, M. Kitamura, M. Fukunaga, I. Aoki, Y. Watanabe, Y. Someya, S. Naruse, T. Higuchi, S. Ueda and H. Sato. Meiji University of Oriental Medicine; Kyoto Prefectural University of Medicine, Kyoto; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, EPI, ischemia

- 582. The Tissue Viability of High Signal Intensity Lesions on Diffusion Weighted MR Images in the Subacute Phase of Embolic Stroke.** T. Shimizu, H. Naritomi, W. Kakuda, K. Kondo, S. Yanagimoto, H. Kinugawa and N. Yamada. National Cardiovascular Center, Osaka, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, PET, stroke
- 583. Diffusion Weighted Imaging in Ischemic Stroke: A Follow-Up Study.** J. Weber, O. Heid, K.-O. Lövblad, G. Schroth and H. Mattle. University of Essen, Germany; University of Berne, Berne Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: cerebral ischemia, diffusion weighted imaging, clinical study
- 584. Reduction of T2 in the Early Phase of Brain Ischaemia Indicates Hypoperfusion and Reversible Lesion.** O.H.J. Gröhn, J.A. Lukkarinen, J.M.E. Oja, P.C.M. van Zijl, J.A. Ulatowski, R.J. Traystman and R.A. Kauppinen. University of Kuopio, Finland; Johns Hopkins University Medical School, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Contrast Mechanisms
 Keywords: ischaemia, hypoperfusion, T2
- 585. Efficacy and Secondary Effects of Thrombolysis after rt-PA Intervention in Middle Cerebral Artery Embolic Stroke in Rat Measured by MRI.** Q. Jiang, R.L. Zhang, Z.G. Zhang, J.R. Ewing, G.W. Divine, U. Senaratne and M. Chopp. Henry Ford Hospital, Detroit; Oakland University, Rochester, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, perfusion, embolic stroke
- 586. MRI Controlled Transient Focal Cerebral Ischemia in the Mouse: Dependence of the Lesion Size on the Ischemic Period.** P.R. Allegrini and C. Wiessner. Novartis Pharma Ltd., Basel, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: brain ischemia, mouse, perfusion

587. **Initial Infarct Volume and N-Acetyl Aspartate Concentration Predicts Outcome in Middle Cerebral Artery Infarction in Humans.** A.C. Pereira, D.E. Saunders, V.L. Doyle, F.A. Howe, J.R. Griffiths and M.M. Brown. St. George's Hospital Medical School, London, England.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: stroke, NAA, volume
588. **Diffusion of Brain Metabolites and Water after Excitotoxic Injury and Global Ischemia in Neonatal Rat Brain.** R.M. Dijkhuizen, R.A. de Graaf, C.A.F. Tulleken and K. Nicolay. University Hospital Utrecht; Utrecht University, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, brain, metabolites
589. **Diffusion Weighted Magnetic Resonance Imaging of Brain in Rats with Subarachnoidal Hemorrhage during Mild Hypothermia as Therapeutic Strategy.** V. Elste, A. Piegras, W. Reith, S. Schöppenthau, Schilling and K. Sartor. University of Heidelberg; Faculty of Clinical Medicine, Mannheim, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: diffusion weighted MRI, hypothermia, subarachnoidal hemorrhage

Vascular MRI: Atherosclerosis and Non-Contrast Methods

590. **High Resolution Magnetization Transfer Imaging for Assessment of Unstable Atherosclerotic Plaque Components.** M. Pachot-Clouard, L. Darrasse, F. Vaufrey and J.F. Toussaint. S.H.F.J., Orsay; U2R2M, U.P.S., Orsay; CNRS.URA, Paris, France.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Mechanisms
591. **Carotid Bifurcation Plaque Structure: High Resolution MRI with Histologic Correlation.** B.D. Coombs, P.C. Ursell, L.M. Reilly, J.H. Rapp and D. Saloner. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Microscopy
 Keywords: carotid, atherosclerosis, histology

- 592. High Resolution Intravascular MR: Monitoring of Plaque Formation in Heritable Hyperlipidemic Rabbits.** G.G. Zimmermann-Paul, H.H. Quick, P. Vogt, G.K. v.Schulthess and J.F. Debatin. University Hospital Zürich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: atherosclerosis, high resolution, intravascular
- 593. High Resolution MRI of Atherosclerotic Lesions in Genetically-Engineered Mice.** Z.A. Fayad, M. Shinnar, J.T. Fallon, S. Wehrli, H.M. Dansky, M. Poon, J.J. Badimon, E.A. Fisher, J.L. Breslow and V. Fuster. Mount Sinai School of Medicine, New York, NY; Children's Hospital of Philadelphia, PA; Rockefeller University, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Microscopy
 Keywords: atherosclerosis, transgenic mice, microscopy
- 594. Effects of Temperature and Histopathologic Preparation on the Size and Morphology of Atherosclerotic Arteries as Imaged by Magnetic Resonance Imaging.** S. Dalager-Pedersen, E. Falk, S. Ringgaard, I.B. Kristensen and E.M. Pedersen. University Hospital; Aarhus University, Aarhus, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: atherosclerosis, preparation, temperature
- 595. Diagnostic Accuracy of MRI in Classifying Atherosclerotic Plaque Components.** M. Shinnar, J.T. Fallon, S. Wehrli, M. Levin, D. Dalmacy, M. Harrington, E. Harrington and V. Fuster. The Mount Sinai School of Medicine, New York, NY; Children's Hospital of Philadelphia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: atherosclerosis, plaque image, carotid artery
- 596. Flow-Independent 3D Carotid Angiography.** S.S. Vasanawala, J.H. Brittain, G.E. Gold, E.W. Olcott and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: carotid, angiography, flow-independent

597. **The Effects of Pulsatile Blood Flow in High Resolution Time-of-Flight MRA.** D.L. Parker, D.J. Parker, M.D. Anderson, K.C. Goodrich, A.L. Alexander, B.E. Chapman, J.A. Roberts, J.R. Hadley and J. Tsuruda. University of Utah, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: angiography, motion, pulsation
598. **Fast Sliding Interleaved *ky*(SLINKY) Acquisition for 3D TOF MRA: No Navigator Echo Collection for Restoring Data Consistency.** K. Liu, J. Tantt, A. Castrén and B.K. Rutt. Picker International Inc., U.S.A.; Picker Nordstar Inc., Finland; Roberts Research Institute, London, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Angiography
 Keywords: sliding, interleaved, MRA
599. ***In vivo* Vascular Imaging Using Hyperpolarized ³He Microbubbles.** M.S. Chawla, X.J. Chen, H.E. Möller, G.P. Cofer, C.T. Wheeler, L.W. Hedlund and G.A. Johnson. Duke University Medical Center, Durham, NC.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Non-proton MRI and ESR
 Keywords: Hpaas, vascular imaging, microbubbles

Nuclei Other Than ¹H and Unusual Contrast Mechanisms

600. **Quantitative Solid State NMR Imaging of Tricalcium Phosphate Implants.** C. Ramanathan and J.L. Ackerman. Massachusetts General Hospital, Charlestown, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: bone, phosphorus, solid
601. **Inverse Reconstruction of Elasticity Maps for Magnetic Resonance Elastography Images.** A. Manduca, V. Dutt, D.T. Borup, R. Muthupillai, J.F. Greenleaf and R.L. Ehman. Mayo Clinic, Rochester, MN; University of Utah, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: elastography, mechanical properties, inverse problems

- 602. The Origin of T2 Relaxation Time of Protons and its Orientation Dependence in Connective Tissues.** U. Eliav, L. Tsoref, H. Shinar, S. Lüsse and G. Navon. Tel Aviv University, Tel Aviv, Israel.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: OQF, relaxation times anisotropy, connective tissues
- 603. MR Imaging Contrast Enhancement Based on Intermolecular Zero Quantum Coherences.** R.R. Rizi, S. Ahn, J. Hopkins, J.S. Leigh and W.S. Warren. University of Pennsylvania, Philadelphia, PA; Princeton University, Princeton, NJ.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: contrast, zero quantum, imaging
- 604. Multi-Echo Frequency-Domain Image Contrast (MEFIC): Improved Signal to Noise Ratio and T2 (T2*) Contrast.** Q.X. Yang, R.J. Demeure, B.J. Dardzinski, S.G. Tan and M.B. Smith. Pennsylvania State University College of Medicine, Hershey, PA; Université Catholique de Louvain, Brussels, Belgium; GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Contrast Mechanisms
 Keywords: contrast, T2*, SNR
- 605. Radio-Frequency Current Density Imaging of Kainate Evoked Depolarization.** K. Beravs, R. Frangez, U. Mikac, I. Serša and F. Demsar. Institute "Jozef Stefan", Ljubljana, Slovenia; University of Ljubljana, Slovenia.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Imaging
 Keywords: RF-CDI, MRI, brain
- 606. 3D TQF 23Na Imaging with Multiple Echo Summation.** N. Bansal and R. Kalyanapuram. University of Texas Southwestern Medical Center, Dallas, TX.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: sodium, multiple quantum, imaging

- 607. Visualization of Infarction in Isolated Pig Hearts by Three-Dimensional ^{87}Rb Imaging.** V.V. Kupriyanov, G. Dai, J. Shen, B. Xiang, J. Sun and R. Deslauriers. National Research Council, Winnipeg, Manitoba, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: ischemia, reperfusion, ^{87}Rb imaging
- 608. Solid State Differential Cross Polarization Studies of Very Early Bone Mineral.** Y. Wu, J.L. Ackerman and M.J. Glimcher. Children's Hospital, Harvard Medical School; Massachusetts General Hospital, Charlestown, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: bone, solid, spectroscopy
- 609. Intravenous Delivery of Hyperpolarized Xenon.** J. Wolber, I.J. Rowland, T. Prock, D.J. Collins, G.S. Payne, M.O. Leach and A. Bifone. The Royal Marsden NHS Trust, Surrey, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: Xenon, polarization enhancement, perfluorocarbons

Tumor Spectroscopy Models

- 610. Nm23-Transfected MDA-MB-435 Human Breast Carcinoma Cells form Tumors with Altered Phospholipid Metabolism and pH. A ^{31}P NMR Study *in vivo* and *In Vitro*.** Z.M. Bhujawalla, E.O. Aboagye, R.J. Gillies, C.E. Mendola and J.M. Backer. The Johns Hopkins University School of Medicine, Baltimore, MD; University of Arizona, Tucson, AZ; New York Medical College, Valhalla, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: breast cancer, metastasis, transfection
- 611. Assessment of Transgene Expression and Metabolic Response to a Novel Oxidative Stress-Inducing Cancer Gene Therapy Paradigm Using ^{13}C and ^{31}P Magnetic Resonance Spectroscopy.** L.D. Stegman, J.P. Freyer, E.R. Neal and B.D. Ross. University of Michigan, Ann Arbor, MI; Los Alamos National Laboratory, Los Alamos, NM.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: gene therapy, ^{13}C , ^{31}P

- 612. Tumor Selective Drug Activation by Monoclonal Antibody-Cytosine Deaminase Conjugates Monitored by Magnetic Resonance Spectroscopy and Spectroscopic Imaging.** E.O. Aboagye, D. Artemov, P.D. Senter and Z.M. Bhujwalla. The Johns Hopkins University School of Medicine, Baltimore, MD; Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, WA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: L6-CD antibody conjugate, 5-FU/5-FCvt, detection
- 613. ¹H MRS of Prostatic Tissue Focused on the Detection of Spermine, a Possible Biomarker of Malignant Behavior in Prostate Cancer.** M. van der Graaf, R.G. Schipper, G.O.N. Oosterhof, J.A. Schalken, A.A.J. Verhofstad and A. Heerschap. University Hospital, Nijmegen, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: spermine, prostate, tumor
- 614. The Choline Phospholipid Resonances as Tumor Markers in Mammary Epithelial Cells: Underlying Mechanisms.** E.O. Aboagye and Z.M. Bhujwalla. The Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: breast cancer, neoplastic transformation, phospholipid-metabolism
- 615. Ethanolamine Metabolism in Human Breast Cancer Cells as a Function of Metastatic Potential: MRS and Radiotracer Analyses.** N.R. Aiken, Y.-L.T. Ting, M. Zhao and R.J. Gillies. University of Arizona Health Sciences Center, Tucson, AZ.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: phospholipids, cancer, cells
- 616. Distinction of Early Necrosis from Apoptosis in Human Cervical Carcinoma Cells.** C.P. Schultz, T. Bezabeh, M. Mowat, L. Jarolim, A.H. Greenberg, I.C.P. Smith and H.H. Mantsch. National Research Council; Manitoba Cancer Foundation, Winnipeg, Manitoba, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: necrosis, apoptosis, cancer cells

- 617. MR Detects Metabolic Events Associated with Apoptosis Prior to Other Markers of Cell Death.** S.M. Ronen, P.A. Clarke, F. DiStefano, C.L. McCoy, D. Robertson, T.A.D. Smith, J.R. Griffiths, D. Cunningham and M.O. Leach. Royal Marsden Hospital, Sutton, Surrey; St. George's Hospital Medical School, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: apoptosis, cells, metabolism
- 618. Early Detection of Etoposide-Induced Apoptosis In HeLa Cells Using Combined ¹H NMR and IR Spectroscopy.** T. Bezabeh, C.P. Schultz, M. Mowat, L. Jarolim, A.H. Greenberg, H.H. Mantsch and I.C.P. Smith. National Research Council; Manitoba Cancer Foundation, Winnipeg, Manitoba, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: apoptosis, cervical carcinoma cells, IR spectroscopy
- 619. Maintenance of Malate-Aspartate Shuttle is Important Role for Glutamine in Promoting Lipid Synthesis in Hep G2 Cells.** D.A. Lewis, T.A. Aldaghlis, J.K. Kelleher and M.R. Laughlin. The George Washington University, Washington D.C.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: lipids, amino-oxy-acetate, NADH

Chemical Shift (Selective) Imaging

- 620. Fast Spectroscopic Imaging for Noninvasive Thermometry Using the Pr-MOE-DO3 Complex.** M. Hentschel, W. Dreher, W. Włodarczyk, R. Boroschewski, S.A. Röhl, P. Wust, D. Leibfritz and R. Felix. Humboldt Universität zu Berlin; Universität Bremen, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopic imaging, Pr-MOE-DO3A, hyperthermia
- 621. Improved Chemical Shift Imaging of the Basal Ganglia: Another Role for 0.5T Proton MRS.** R. Prost, L. Mark and S. Li. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: CSI, 0.5 T, proton

- 622. Multi-Point Dixon Imaging with Reduced Time and Increased Reliability.** J. Ma. General Electric Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: Dixon imaging, time reduction, phase correction
- 623. Use of high Resolution Echo-Planar Spectroscopic Imaging in Anatomic Studies.** G.J. Metzger, S. Sarker and X. Hu. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Methods: Sequences: combination MRI/MRS
 Keywords: spectroscopy, echo-planar, imaging
- 624. In vivo Lactate Editing in Single Voxel Proton Spectroscopy and Proton Spectroscopic Imaging by Homonuclear Polarisation Transfer.** J.M. Wild and I. Marshall. University of Edinburgh, Scotland.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Spectroscopy
 Keywords: lactate, hope, stroke
- 625. Automated Spectral Analysis and Formation of Metabolite Images for 1H MRSI.** B.J. Soher, K. Young, V. Govindaraju and A.A. Maudsley. DVA Medical Center, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: MRSI, proton, spectral analysis
- 626. Automated Production of Quantitative Metabolite Maps from Short Echo Time 1H-CSI of the Brain.** M.A. McLean, G.J.M. Parker and G.J. Barker. National Society for Epilepsy, Chalfont St. Peter; Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: brain, quantitation, CSI
- 627. Chemical Shift Imaging of GABA in the Human Brain.** J. Shen, D.C. Shungu and D.L. Rothman. Yale University School of Medicine, New Haven, CT; Columbia University, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Spectroscopy
 Keywords: epilepsy, CSI, GABA

- 628. NAA Weighted Imaging of Human Brain Using a Conventional Readout Gradient.** L.L. Wald, B.deB. Frederick and R.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: brain, NAA, sequence
- 629. Reduced Truncation of High Intensity Signals in Spectroscopic Imaging.** G.J. Metzger and X. Hu. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: spectroscopy, localization, imaging

POSTER WALKING TOURS

Contrast Agents

- 630. Electronic Structure Methods Predict Increased Gd-OH₂ Bond Length for Rigid Gd-Chelates.** R. Shukla, A. Nunn and M. Tweedle. Bracco Research USA, Inc., Princeton, NJ.
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: RF-Pulses
 Keywords: contrast, gadolinium, paramagnetic
- 631. Preliminary Experience with 17O₂ - Perfluorocarbon as a Tissue Viability Agent.** L. Arena and P. Gupte. NY VA Medical Center, New York; NY Medical College, Valhalla, NY.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Contrast Mechanisms
 Keywords: contrast, metabolism, cardiac
- 632. Bone Marrow Imaging with AMI 227.** H.E. Daldrup, T.M. Link, S. Blasius, D. Wiedermann and E.J. Rummeny. University Hospital Muenster, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: USPIO, bone marrow, Microvascular permeability

633. **MR Plaque Imaging Using Superparamagnetic Iron Oxide Particles.** M. Kresse, S. Wagner, K. Thode, L. Dinkelborg and W. Semmler. Freie Universität, Berlin; Schering AG, Berlin, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: SPIO, plaque, MRI
634. **Early Detection of Radiation Induced Liver Injury in Rat by Superparamagnetic Iron Oxide Enhanced MR Imaging.** N. Morimoto, M. Ebara, H. Kato, T. Obata, J. Fujita, F. Kondo, H. Tsujii and H. Saisho. Chiba University School of Medicine; National Institution of Radiological Sciences, Chiba, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: radiation, liver, SPIO
635. **The Nonlinear Dependence of R1 (=T1-1) on the Extracellular Concentration of Contrast Reagent CR0, *In vivo*.** C.S. Landis, X. Li, G. Véték, I. Pályka, F.W. Telang, P.E. Molina and C.S. Springer, Jr. Brookhaven National Laboratory, Upton; State University of New York, Stony Brook; North Shore University Hospital, Manhasset, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: relaxivity, bolus CR, exchange
636. **Bioactivated MRI Contrast Agents: Preliminary Results in Sensing Alkaline Phosphatase via Changes in Protein Binding.** T.J. McMurry, S.U. Dunham, S.A. Dumas, M.M. Murr, D.M. Scott, E. Mottram and R.B. Lauffer. EPIX Medical, Inc., Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: contrast agent, enzyme, bioactivation
637. **Evaluation of Topical Liver Function by Gd-EOB-DTPA Enhanced MR Imaging.** T. Murakami, J. Shimizu, T. Kim, K. Dono, M. Goto, N. Kato, T. Miyazawa, M. Monden and H. Nakamura. Osaka University Medical School; Nihon Schering K.K., Osaka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: MRI, Gd-EOB-DTPA, function

- 638. Long Term Observation of Hepatic Lesions Developed in Long-Evans Cinnamon Rats Using Magnetic Resonance Imaging.** H. Yoshioka, H. Onaya, Y. Itai, M. Doy and F. Mistumori. National Institute for Environmental Studies; University of Tsukuba; Tsukuba Medical Center, Tsukuba, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: HCC, doubling time, LEC rat
- 639. Synthesis and Characterization of [Gd(DTPA-BAA)], [Gd(DTPA-BMOBA)], [(Gd(DTPA-BMOPA))] and [Gd(ETTPA)]²⁻ as Contrast Agents for MR Imaging.** Y.M. Wang, G.C. Liu, Y.J. Wang, C.H. Lee, R.S. Sheu and Y.T. Kuo. Kaohsiung Medical College, Taiwan, R.O.C.
 Methods: Contrast Agents
 Keywords: Gd complexes, contrast, magnetopharmaceutical
- 640. Dynamic MR Gd-EOB-DTPA Enhanced Cholangiography with the SIP Fast GRE Sequence in Rats (Preliminary Study).** M. Shimada, S. Hayashi, A. Senoo, K. Yoshikawa, H. Moriya, T. Nanba, S. Yamauchi, K. Ito, T. Kogure, T. Miyazawa, T. Takayashi, H. Nakayama, I. Kaneko and M. Tsubuku. Toho University, Tokyo, Japan.
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Keywords: dynamic, cholangiography, Gd-EOB-DTPA
- 641. Safety and Dialysability of Gadobutrol (1 M) as a New Neutral Extracellular MR Contrast Agent in Patients with Chronically Impaired Renal Function: Preliminary Results of a Randomized Clinical Trial.** B. Tombach, C. Bremer, R.M. Schäfer, V. Geens and P. Reimer. Westfalian Wilhelms-University, Münster; Schering AG, Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: Gadobutrol, safety, dialysability

RF Coils

- 642. An Improved Local Quasi-Quadrature Transmit/Receive Breast Coil for 3.0 T MRI System.** J. Mao and J.R. Ballinger. University of Florida, Gainesville, FL.
 Type of Study: Basic Research on MR
 Organ/Tissue: Category not applicable
 Methods: RF-Coils
 Keywords: local, quadrature, transceive
- 643. A Simple, Versatile, and Effective Method for Birdcage-Type Coil Optimization.** C.M. Collins, Q.X. Yang and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey; The University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coils, design, optimization

- 644. A Quadrature Highpass Distributed RF Resonator.** L.S. Petropoulos, H. Fujita, M.A. Morich, S.M. Shvartsman and R.W. Brown. Picker International Inc., Highland Heights; Case Western Reserve University, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: quadrature, distribution, resonator
- 645. An Optimized Open Quadrature Distributed RF Surface Coil.** H. Fujita, W.O. Braum, S.M. Shvartsman, R.W. Brown, T.J. Reisker, D.A. Molyneaux and M.A. Morich. Case Western Reserve University, Cleveland; Picker International Inc., Highland Heights, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, quadrature, method of moments
- 646. An RF Volume Coil Comparison Study: 1.5T to 9.4T.** J.T. Vaughan. Massachusetts General Hospital & Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: high-field, RF coils
- 647. Wireless Interventional Head Coils Using Inductive Coupling.** W. Renz, M. Vester, G. Lenz, A. Staubert and V.M. Tronnier. Siemens Corporate Technology; Siemens Med MRA, Erlangen; University Hospital, Heidelberg, Germany.
 Methods: RF-Coils
 Keywords: interventional, wireless, inductive
- 648. A Novel Implanted 31P RF Coil for the Study of MR Spectroscopy of Spinal Cord Metabolism.** W.X. Ni, X. Silver, E.D. Wirth, B. Inglis, R. Duensing and T.H. Mareci. University of Florida, Gainesville, FL; National High Magnetic Field Laboratory.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Spine
 Pathology: Trauma
 Methods: RF-Coils
 Keywords: RF Coil, P-31, metabolism

- 649. Estimating Local SAR Produced by RF Transmitter Coils: Examples Using the Birdcage Body Coil.** J.F. Schenck, E.B. Boskamp, D.J. Schaefer, W.D. Barber and R.H. Vander Heiden. General Electric Corporate Research and Development Center, Schenectady, NY; General Electric Medical Systems, Waukesha, WI; STM Consulting, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF safety, SAR, FEM
- 650. Evaluation of SAR in Clinical MRS Decoupling Experiments by 3D Finite Element Methods.** A.C. Woodward, G.S. Payne, D.J. Collins, A.J. Schwarz and M.O. Leach. Royal Marsden Hospital, Sutton, Surrey, UK.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: RF-Coils
 Keywords: spectroscopy, decoupling, SAR
- 651. Whole Body Hyperthermia Applicator Inside MR System: Simulations of Influence of RF Shield of MR Scanner on the Performance of Hyperthermia Applicator.** W. Włodarczyk, J. Nadobny, P. Wurst, G. Mönich and R. Felix. Humboldt Universität; Technische Universität, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: intervention, RF coils, RF compatibility
- 652. Finite Difference Time Domain Simulations for High-Field MRI.** T.S. Ibrahim, Y. Yu, R. Lee, B.A. Baertlein, A. Kangarlu and P. Robitaille. Ohio State University, Columbus, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: coils, modeling, FDTD
- 653. Software Development for Accurate and Efficient Birdcage Coil Design.** C.L. Chin, B.J. Dardzinski, S. Li and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey; The Pennsylvania State University, University Park, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: birdcage, RF coil, software

- 654. Improved Reduction of Motion Artefacts in Diffusion Imaging Using Navigator Echoes and Motion Compensation.** C.A. Clark, G.J. Barker and P.S. Tofts. University College London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, motion, artefact
- 655. High Resolution Diffusion Imaging of Human Stroke Using Navigated Interleaved Echo Planar Imaging and Conventional Gradient Hardware.** R. Bammer, R. Stollberger, M. Augustin, P. Kapeller, J. Simbrunner, F. Fazekas, H. Kooijman and F. Ebner. University of Graz, Austria; Philips Medical Systems, Hamburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: stroke, diffusion, navigator echo
- 656. 3D Diffusion Weighted RARE Imaging.** H. Takai, H. Kanazawa, S. Nozaki, M. Miyazaki, Y. Machida and F. Kojima. Toshiba Nasu Works, Tochigi, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, RARE, 3D
- 657. Single Shot RARE Sequence with Multipulse Diffusion Weighted Preparation Period: Reduction of the Artifacts and the Sensitivity to Background Gradients.** K.A. Il'yasov and J. Hennig. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, pulse sequences, artifacts reduction
- 658. Superstimulated Echoes and other z-Modulation Signals: Basic Principles and Applications to Diffusion Imaging.** J. Hennig and K. Il'yasov. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: stimulated echo, diffusion

- 659. ADC and TRACE Diffusion Mapping: Comparison of Diffusion Prepared EPI, SSFSE and SPIRAL Scan Methods.** S. Skare, T.Q. Li and B. Nordell. Karolinska Institute, Stockholm, Sweden.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion, ADC, trace
- 660. Single Shot Diffusion Imaging on a 0.2 Tesla Scanner-Applications to Liver and Kidney.** U. Sinha and S. Sinha. University of California, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: 0.2T, diffusion, body
- 661. Eddy Current Induced Image Warping in Diffusion Weighted EPI.** A.J. de Crespigny and M.E. Moseley. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: diffusion, stroke, eddy currents
- 662. Correction for Eddy Current Induced B0 Shifts in Diffusion-Weighted EPI.** F. Calamante, D.A. Porter, D.G. Gadian and A. Connelly. University College London, Medical School, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, EPI, eddy current
- 663. Diffusion NMR Facilitated by a Refocused Eddy-Current EPI Pulse Sequence.** T.G. Reese, R.M. Weisskoff and V.J. Wedeen. Massachusetts General Hospital, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: diffusion, eddies, distortion

- 664. Selective Diffusion Trace Measurements of Gray- and White-Matter in Human Brain with Double-Suppression EPI Sequence.** N. Zacharopoulos and P. Narayana. University of Texas Medical School, Houston, TX.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, EPI, brain
- 665. The Effect of Residual Nyquist Ghost in Quantitative Echo-Planar Diffusion Imaging.** D.A. Porter, F. Calamante, D.G. Gadian and A. Connelly. University College London Medical School, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: DWI, EPI, trace

Unconventional Sampling Strategies

- 666. Virtual 2D Reconstruction with SLINKY for Interactive MIP in MRA.** K. Liu, J. Tantt and P. Margosian. Picker International Inc., U.S.A.; Picker Nordstar Inc., Finland.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: parallel, interactive, MIP
- 667. Bayesian Image Reconstruction from an Arbitrarily and Sparsely Sampled K-Space without Gridding and Density Correction.** F.T.A.W. Wajer, R. de Beer, M. Fuderer, A.F. Mehlkopf and D. van Ormondt. Delft University of Technology, Delft; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: bayesian reconstruction, gridding, density correction
- 668. Reconstruction of MR Images from Data Sampled along Arbitrary k-Space Trajectories.** V. Rasche and R. Proksa. Philips Research, Hamburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: reconstruction, gridding, sampling density

- 669. Improved Kaiser-Bessel Window Parameter Selection for Gridding.** J.H. Zwaga, F.T.A.W. Wajer, R. de Beer, M. Fuderer, A.F. Mehlkopf and D. van Ormondt. Delft University of Technology, Delft; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: gridding, optimal, window
- 670. Randomized Trajectories for Reduced Aliasing Artifact.** K.S. Nayak and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: k-space, aliasing, field-of-view
- 671. General Optimization of Wavelet Encoding for Practical MRI and Implementation on a High Field System.** E.X. Wu, A. Laine, R.L. DeLaPaz and P.O. Alderson. Columbia University, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: localized, wavelet, encoding
- 672. Motion Compensated Generalized Series Reconstruction.** C.P. Hess and Z.-P. Liang. University of Illinois, Urbana-Champaign, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: motion, dynamic, constraints
- 673. Reconstruction-Based Image Artifacts for Non-Linear k-Space Trajectories.** K. Ruppert and J.P. Mugler III. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: reconstruction, artifacts, spiral
- 674. Elliptic and Oval Field-of-Views.** K. Scheffler. University of Basel, Switzerland.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: polar, undersampling, reduced FOV

- 675. Trajectories through k-space Guided by *a Priori* Information.** G. Raskin, R. Van de Walle, G. Lateur, I. Lemahieu and E. Achten. University of Ghent; Ghent University Hospital, Ghent, Belgium.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: trajectory, constrained, *a priori* information
- 676. EPI Image Reconstruction by RegridDED Interpolation.** Y. Zhang, D.B. Twieg and E.M. Stokly. University of Alabama, Birmingham, AL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: EPI, regridding, reconstruction
- 677. Rhombus Hankel Transform Reconstruction (RHTR) and Rosette Trajectories.** N.E. Myridis and C. Chamzas. Democritus University of Thrace, Greece.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: Rhombus, Hankel, Rosette

Interventional MRA/MR Tracking

- 678. Single-Loop Coil Concepts for Intravascular MR-Imaging.** H.H. Quick, M.E. Ladd, G.G. Zimmermann-Paul, E. Hofmann, G.K. v.Schulthess and J.F. Debatin. University Hospital, Zürich; Schneider Europe AG, Bülach, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: intravascular, single loop, catheter
- 679. Singal Localization Using Catheter Coils for Interventional MRI.** B.D. Bolster, Jr. and E. Atalar. Johns Hopkins University, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: interventional, localization, catheter coil

- 680. MR-guiding Percutaneous Angioplasty of Iliac Artery Stenoses in an Interventional MR System.** P.R. Hilfiker, G.G. Zimmermann-Paul, M.E. Ladd, H.H. Quick, G.K. v.Schulthess, J.F. Debatin and T. Pfammatter. University Hospital, Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: PTA, MR-guidance, MR-tracking
- 681. Endovascular Interventional MR: Balloon Angioplasty in a Model of a Hemodialysis Access Graft Taped onto the Forearm of a Volunteer.** C.J.G. Bakker, H.F.M. Smits, C. Bos, R. van der Weide, K.J. Zuiderveld, W.F. Hurtak, J.J. van Vaals, W.P.T.M. Mali and M.A. Viergever. University Hospital Utrecht; Cordis Europa NV, Roden; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Renal
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
- 682. *In vivo* Target-Specific Delivery of Genetic Materials with MR-Guided Focused Ultrasound.** M.D. Bednarski, J.W. Lee, E.L. Yuh and K.C.P. Li. Stanford University School of Medicine, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: ultrasound, MR-guidance, genetic
- 683. Passive MRI — Visualization of a Gastrointestinal Catheter for Real-Time Position Monitoring during Manometry.** P. Kunz, H. Faas, G.S. Hebbard, C. Feinle, W. Schwizer, K. Indreshkumar, J.G. Brasseur, J. Dent, M. Fried and P. Boesiger. University and ETH Zurich; University Hospital, Zurich, Switzerland; Royal Adelaide Hospital, Australia; Pennsylvania State University, University Park, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: gastrointestinal MRI, manometry, passive catheter marking
- 684. Fast Passive Catheter Tracking Using Projection Techniques.** C. Bos, C.J.G. Bakker and M.A. Viergever. University Hospital, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: interventions, tracking, projection techniques

- 685. Simultaneous Imaging and Active Tip-Tracking for Interventional Procedure Guidance.** M. Wendt, Q. Zhang, M. Busch, R. Wetzler, F. Wacker, E.M. Merkle, J.L. Duerk and J.S. Lewin. University Hospitals/Case Western Reserve University, Cleveland, OH; Mediort Consult GmbH, Berlin; Freie Universität Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: intervention, localization, tracking
- 686. Fundamental Evaluation of MR Guided Intravascular Procedures; Assessment of Active MR Tracking System at 0.2T MR Imager and Passive Tracking of Susceptibility-Based MR Imaging.** T. Araki, S. Aoki, A. Nanbu, N. Shimazu, H. Kumagai, H. Nakajima, T. Ichikawa, T. Araki, X. Ma, T. Tsukamoto and H. Moriya. Yamanashi Medical University, Yamanashi; GE-Yokogawa Medical Systems, Tokyo, Medical Co., Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: MR, intravascular, intervention
- 687. A Multiplexed Active Tip Tracking System with Automated Scan Plane Definition for Interventional MRI on a 0.2T MR Imager.** Q. Zhang, M. Wendt, A. Shankaranarayanan, E.M. Merkle, K. Patel, J.L. Duerk and J.S. Lewin. Case Western Reserve University; University Hospitals, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: RF-Coils
 Keywords: interventional MRI, tip-tracking, multiplexing
- 688. Active MR Tracking Using an External Tracking Coil at 0.2T for Scan Plane Registration during Kinematic Imaging of Moving Joint.** X. Ma, S. Aoki, K. Suzuki, C.L. Dumoulin and R.D. Darrow. GE Yokogawa Medical Systems, Tokyo; Yamanashi Medical University, Yamanashi, Japan; GE Corporate R&D, Schenectady, NY.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR tracking, interventional, low field
- 689. MRI-Guided Cholangiography and Drainage: Assessment of Passive Catheter Tracking in an Animal Model.** F. Wacker, G. Branding, A. Wagner, A. Ewert, M. Wendt and K.-J. Wolf. Free University, Berlin, Germany; Case Western University, Cleveland, OH.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: biliary, intervention, MR-guidance

- 690. Minimally Invasive MRI-Guided Cryotherapy of the Brain with an Artifact-Free Nitrogen Supplied Cryoprobe.** J. Tacke, R. Speetzen, A. Bücken, G. Adam, I. Heschel, R. Schorn, G. Rau, J.J. van Vaals and R.W. Günther. University of Technology, Aachen, Germany; Philips, Best, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: cryotherapy, MRI, brain
- 691. MRI Evaluation of Tissue Damage Immediately After Cryosurgical Freezing of Canine Prostate.** J.C. Gilbert, K Yu, S. Fell, H. Hricak, K.M. Brennan and J. Kurhanewicz. University of California, San Francisco; Lawrence Berkeley National Laboratory, Berkeley, CA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: prostate, cryosurgery, tissue evaluation
- 692. MR-Imaging Characteristics and Accuracy of Dimension Depiction of RF Induced Lesions in Normal Rabbit Liver Using a Saline-Perfused RF Electrode.** T.L. Boaz, E.M. Merkle, J.L. Duerk, S.N. Goldberg and J.S. Lewin. University Hospitals of Cleveland/ Case Western Reserve University, Cleveland OH; Massachusetts General Hospital, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: interventional MR, animal model, radiofrequency
- 693. MR Imaging of Low Frequency Shear Waves Generated by Focused Ultrasound Radiation Force.** T. Wu, J.P. Felmlee, P. Rossman, T. Hulshizer, J.F. Greenleaf and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: magnetic resonance elastography, focused ultrasound, ultrasound ablation field
- 694. Control of Focused Ultrasound Heating Based on Rapid MR Thermometry and On-Line Data Processing.** J.A. de Zwart, F.C. Vimeux, C. Delalande, N. Grenier and C.T.W. Moonen. University Victor Segalen, Bordeaux, France.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: temperature mapping, interventional, fast imaging

- 695. Direct Comparison of Chemical Shift Imaging and Spectroscopy as a Method of Showing Temperature Changes *in vivo*.** I.R. Young, J.D. Bell, N. Saeed, J.V. Hajnal, G. Jenkinson and D.J. Larkman. Hammersmith Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: temperature, chemical shift, phase methods
- 696. An Optically Tissue-Like Phantom Material for MRI-based Quality Assurance in Interstitial Laser Thermotherapy.** J. Olsrud, R. Wirestam, A.M.K. Nilsson, K.-G. Tranberg, F. Ståhlberg and B.R.R. Persson. Lund University Hospital; Lund Institute of Technology, Lund, Sweden.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: Phantom, thermotherapy, laser
- 697. NMR Temperature and pH Measurements Using a Paramagnetic Lanthanide Complex.** C.S. Zuo, K.R. Metz, Y. Sun and A.D. Sherry. Harvard Medical School, Boston, MA; University of Texas Southwestern Medical Center, Dallas, TX.
 Type of Study: Methodological Development
 Keywords: temperature, pH, simultaneous
- 698. Changes in MR Parameters Due to Thermal Coagulation in Ex-Vivo Tissues.** S.J. Graham, E. Lai, M.J. Bronskill and R.M. Henkelman. University of Toronto; Sunnybrook Health Science Centre, Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: thermal coagulation, relaxation times, diffusion
- 699. Comparing Models of Tissue Damage for MR-Guided Thermal Therapy.** S.J. Graham, R.M. Henkelman and D.B. Plewes. University of Toronto; Sunnybrook Health Science Centre, Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: thermal coagulation therapy, MR thermometry, tissue damage models

- 700. Temperature Monitoring on a Clinical Scanner Using a Fast Hybrid Imaging Technique.** C. Hillenbrand, R. Löffler, R. Deichmann, P.M. Jakob, M. Reiser, D. Hahn and A. Haase. Universität Würzburg; Klinikum Großhadern, München, Germany; Beth Israel Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: thermometry, hybrid sequence, temperature monitoring
- 701. Temperature Dependence of Relaxation Times in Bovine Adipose Tissue.** S. Gandhi, B.L. Daniel and K. Butts. Stanford University, Stanford, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Interventions
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: breast, fat, thermometry

Abdominal MRI

- 702. Comparison of the Iron Oxide-Enhanced MR Imaging versus Biphasic Contrast-Enhanced CTAP in Presurgical Detection and Characterization of Liver Tumors.** T.J. Vogl, S. Schwarz, R. Hammerstingl, S. Blume, W.O. Bechstein, R. Lobeck and R. Felix. Humboldt University of Berlin, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: iron oxide, enhanced MRI, detection of focal liver lesions
- 703. Comparison with Single-Shot T2-Weighted Sequence in the Evaluation of Hepatic Lesions: HASTE, EPI, or Diffusion-Associated EPI?.** H. Haradome, T. Ichikawa, T. Nitatori and J. Hachiya. Kyorin University, Japan; Yamanashi Medical University, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver tumor, HASTE, EPI
- 704. Breathhold MR Imaging Protocol for Focal Liver Lesions: Is it Enough for the Routine MR Examination?.** A. Tanimoto, Y. Yuasa, M. Jinzaki, S. Nakatsuka, T. Takeda and K. Hiramatsu. Keio University School of Medicine, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, SSFSE, gadolinium

- 705. High-Contrast Dynamic MR Imaging of Hepatocellular Carcinoma.** Y. Watanabe, A. Okumura, M. Dohke, K. Oda, T. Ishimori, Y. Amoh, S. Koike, T. Kiyono, M. van Cauteren and Y. Dodo. Kurashiki Central Hospital, Kurashiki; Philips Medical Systems Co., Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, tumor, dynamic
- 706. Evaluation of the Effect of Chemoembolization of Hepatocellular Carcinomas By Blood Oxygen Level Dependent MRI.** T. Helmberger, V. H. Scholz, N. Holzknecht, M. Gregor, J. Gauger and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, BOLD, metabolism
- 707. Contrast-Enhanced FISP 3D MR Angiography in Hilar Cholangiocarcinoma: Comparison with Conventional Arterial Angiography.** M.-G. Lee, Y.M. Shin, Y.K. Jeong, K.B. Sung, H.K. Yoon, M.H. Kim, S.G. Lee, E.M. Kang, D. Chien, G. Laub and Y.H. Auh. University of Ulsan Asan Medical Center; Sungshin Women's University, Seoul, Korea; Siemens Ltd.; Hong Kong; Siemens Medical Engineering, Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Angiography
 Keywords: MRA, biliary neoplasm MR, comparative study
- 708. Breath-hold Three-dimensional Magnetic Resonance Cholangio-Pancreaticography.** P.A. Wielopolski, J. Gaa, D.R. Wielopolski and M. Oudkerk. University Hospital, Rotterdam, The Netherlands; University Hospital, Mannheim, Germany; Hospital San Juan de Dios, Caracas, Venezuela.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MRCP, breath-hold, 3D
- 709. Dynamic Gadolinium-Enhanced MR Imaging of the Liver: Optimal Period of Arterial and Portal Venous Phase in Liver Cirrhosis.** M.G. Kim, Y.H. Kim, S.B. Cho, N.J. Lee, J.H. Kim, K.B. Chung and W.H. Suh. Korea University Hospital, Seoul, South Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: liver, liver cirrhosis, dynamic study

710. **T2-Weighted Breath-Hold MR Imaging of the Liver at 1.0 T: Comparison of Turbo Spin-Echo and HASTE Sequences with and without Fat Suppression.** T.K. Kim, H.J. Lee, H.-J. Jang, A.Y. Kim, J.K. Han and B.I. Choi. Seoul National University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, MRI, comparative Studies
711. **Single-Shot Diffusion-Weighted Echo-Planar MR Imaging of Normal and Cirrhotic Livers Using a Phased-Array Multi-coil.** Y. Amano, T. Kumazaki, M. Ishihara, H. Hayashi, J. Watari and M. Amano. Nippon Medical School, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: cirrhosis, diffusion, EPI
712. **Optimization of 3D Dynamic Contrast Imaging of the Liver with SmartPrep Sequence.** T. Masui, N. Yamamoto, Y. Takehara, K. Ichijo, I. Imaoka, M. Naito, H. Watahiki, M. Kaneko, A. Nozaki and H. Kabasawa. Seirei Hamamatsu General Hospital; Seirei Mikatabara General Hospital; Hamamatsu University School of Medicine, Hamamatsu, Japan; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, contrast, pynamic
713. **Inflammatory Lesions of the Adrenal Gland: Differentiation from Non-Fat Containing Masses Based on T2-W and Dynamic Contrast Enhanced MR.** G.G. Zimmermann-Paul, G.P. Krestin and J.F. Debatin. University Hospital Zürich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: adrenal gland, inflammation, T2-W

Motion and Artifacts

714. **Can High Resolution Steady State MRI Depict Cochlear Fluid Motion?.** P. Schmalbrock and J. Monroe. Ohio State University, Columbus, OH.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: cochlear mech., fluid motion, steady state MR

715. **Vectorcardiographic Investigation of the Magnetohydrodynamic ECG Artifact and Correlation to Aortic Blood Flow and Large Vessel Geometry Obtained by MRI.** S.E. Fischer, S.A. Wickline, R.M. Setser, M.B.M. Hofman and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: ECG, patient monitoring, safety
716. **Improved Image Registration of Echo-Planar Images by Including Magnetic Field Correction.** R.M. Birn and R.W. Cox. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion, B-field, registration
717. **Resampling Noise in Motion Corrected Functional MRI Data Sets.** L.C. Maas and P.F. Renshaw. McLean Hospital, Belmont; Harvard University - Massachusetts Institute of Technology Division of Health Sciences and Technology (LCM), Cambridge; Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: FMRI, motion, artifacts
718. **A Simple Method for Slice Thickness Error Reduction.** Q.S. Xiang, A.L. MacKay and D.I. Janzen. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: metal artifact, pulse sequences, image processing
719. **On the Cause of Increased Slice Select Aliasing in 3D Contrast Enhanced MR Angiography.** A.H. Wilman and S.J. Riederer. Mayo Clinic, Rochester, MN.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: RF profile, aliasing, 3D

720. **A Flexible Method for Overcoming Quantization Noise Limits in Large-Volume 3D Imaging.** J.P. Mugler III. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: signal-to-noise, 3D imaging, dynamic range
721. **Relationship of Cardiac and Diaphragmatic Respiratory Motion Assessed by Real-Time Magnetic Resonance Imaging.** P.G. Danias, M. Stuber, K.V. Kissinger, R.M. Botnar and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: respiration, heart, diaphragm
722. **Heavily T1-Weighted High Contrast Images in the Abdomen Without Respiratory Motion Ghost: VaPSE Technique with Respiratory Triggering.** H. Kawamitsu, K. Sugimura and M. Van Cauteren. Shimane Medical University, Izumo; Philips Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: respiratory triggering, fast imaging, T1-weighted imaging
723. **Artifact Elimination by T1-Independent Prepulse Prepared Steady State (PPSS) Prepulses.** E.H. Haselhoff and E. Nagel. Philips Medical Systems, The Netherlands; Humboldt University, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: prepulses, artifacts, PPSS
724. **A Method for Motion Artifact Control in MR Endoscopy.** G.A. Coutts, D.J. Gilderdale, A.D. Williams and N.M. deSouza. Hammersmith Hospital, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: endoscope, motion, tracking

725. **Local Elastic Motion Correction in MR-Mammography.** H. Fischer, M. Otte, C. Ehrhrit-Braun, M. Buechert, S. Peschi and J. Hennig. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Motion and Artifacts
 Keywords: MR-mammography, motion correction

MRS of Degenerative Disease of the Brain

726. **MRSI and Neuropsychological Tests in Patients with Alzheimer's Disease: NAA/Cr in Paraviscual and Temporo Parietal Cortex Correlated with Memo 1 Test.** H. Kugel, B. Naumann, R. Mielke and W. Heindel. University of Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: spectroscopic imaging, Alzheimer's disease
727. **Clinical Response in Patients with Alzheimer's Disease Treated with Xanomeline Correlates with a Decrease in Cho/Cr: a 1H CSI Study.** B. deB. Frederick, A. Satlin, L.L. Wald and P.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: Alzheimer's disease, CSI, drug therapy
728. **Automated Proton MRS of the Brain at 1.0 T: Reproducibility and Clinical Utility in Alzheimers Disease.** A.D. Waldman, J.R. McConnell, G.S. Rai, M. Chaudry, D.S. Grant and P.A. Martin. Middlesex Hospital, London, UK; University of Nebraska, Omaha, NE; Whittington Hospital, London, UK; GE Medical Systems, Paris, France.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: alzheimers, brain, spectroscopy
729. **NAA Reductions in Parietal and Frontal Cortex of Alzheimer's Disease.** N. Schuff, D.L. Amend, A. Capizzano, B.J. Soher, K. Young, A.A. Maudsley, G. Fein and M.W. Weiner. DVA Medical Center and University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: combination MRI/MRS
 Keywords: Alzheimer, NAA, cortical neurodegen

730. **Quantification of Cerebral Metabolites in Alzheimer's Patients Using Proton Magnetic Resonance Spectroscopic Imaging.** X. Yu, T.F. Blitchington, M.F. Danish, K.R.R. Krishnan and H.C. Charles. Duke University Medical Center, Durham, NC.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Data Processing: MRS
 Keywords: brain, Alzheimer's, spectroscopy
731. **Quantitative Proton MR Spectroscopic Imaging in Rett Syndrome.** A. Horská, P.B. Barker and S. Naidu. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: RETT, spectroscopy, quantitation
732. **Evidence for Subclinical Cortical Dysfunction in Parkinson's Disease Patients: A Cerebral Phosphorus-31 and Proton MR Spectroscopy Study.** M.T.M. Hu, S.D. Taylor-Robinson, J.D. Bell, H. Turjanski, C. Clough, D.J. Brooks and K.R. Chaudhuri. King's College Hospital; Hammersmith Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: Parkinson's, MRS, 1H
733. **Higher Levels of Brain myo-Inositol and Choline Compounds are Related to Poorer Cognitive Functions in Down Syndrome: An *In vivo* 1H MRS Study.** W. Huang, G.E. Alexander, H.U. Shetty, J.S. Krasuski, J. Szczepanik, S.I. Rapoport and M.B. Schapiro. National Institute on Aging, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: MRS, Down syndrome, myo-inositol
734. **Quantitative Assessment of NAA Reductions in the Motor Cortex of Amyotrophic Lateral Sclerosis.** N. Schuff, D.L. Amend, W.D. Rooney, D.F. Gelinas, R. Miller, B.J. Soher, K. Young, A.A. Maudsley, G. Fein and M.W. Weiner. DVA Medical Center and University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: combination MRI/MRS
 Keywords: ALS, NAA, motor cortex

735. **The Assessment of Neuronal Dysfunction in Motor Neuron Disease Using Proton Magnetic Resonance Spectroscopy: Correlation with Clinical Findings.** C.M. Ellis, A. Simmons, I. Newsom-David, C. Andrews, A. Glover, M. Adamson, S.C.R. Williams and P.N. Leigh. Institute of Psychiatry and Kings Healthcare; Maudsley Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: MRS, MND, ALS
736. **Cerebral Glycerophosphorylcholine and Ethanolamine Concentrations are Elevated in Young Schizophrenics.** S. Blüml, J. Tan, N. Adatia, A. Karme, T. Sproull, K. Harris and B.D. Ross. Hunington Medical Research Institutes, Pasadena; Rudi Schulte Research Institute, Santa Barbara; Huntington Memorial Hospital, Pasadena, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: Spectroscopy
 Keywords: schizophrenia, proton DC 31P MRS, glycerophosphorylcholine
737. **Quantitative Proton Magnetic Resonance Spectroscopic Evidence of Brain Metabolic Abnormalities in Congestive Heart Failure.** J.H. Lee, C.W. Lee, J.J. Kim, S.T. Kim and T.-H. Lim. Asan Institute of Life Sciences; University of Ulsan College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: CHF, metabolism, MRS

POSTER SESSIONS

Safety and Economics

738. ***In vivo* Histology: MRI in the Study of Kidney Toxins.** P. Mullins, S. Polley, D. Bradley, P. Hockings, A. Dhiri, D. Middleton, D. Reid and J. Connelly. University of Queensland, Brisbane, Australia; SmithKline Beecham Pharmaceuticals, Welwyn, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: nephrotoxin, MRI, kidney

739. **Do Static Magnetic Fields of Diagnostic MR Imagers Influence Fetal Cell Growth? - An *In Vitro* Study.** E.F. Grönwäller, J. Wiskirchen, R. Kehlbach, H.P. Rodemann, C. Belka, C.D. Claussen and S.H. Duda. University of Tübingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: *In Vitro* study, magnetic fields, teratology
740. **Short and Middle-Term Effects of Repetitive Magnetic Field Exposure (1.5 T) on Cell Cycle and Overall Cell Growth of Human Fetal Lung Fibroblasts.** J. Wiskirchen, E. Groenewaeller, R. Kehlbach, K. Winter, H.P. Rodemann, C.D. Claussen and S.H. Duda. Eberhard-Karls-Universität Tübingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: MR, biological effects, safety
741. **Effect of High-Field Magnetic Resonance on Morphology of Human Peripheral Blood Lymphocytes.** K.A. Chun and K.S. Shinn. The Catholic University of Korea, Seoul, South Korea.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: MR, lymphocytes, morphology
742. **Robust Real-Time R-Wave Detection Algorithm Based on the Vectorcardiogram.** S.E. Fischer, S.A. Wickline and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: patient monitoring, ECG, cardiac MRI
743. **Implementation of an MR Compatible Vectorcardiograph.** S.E. Fischer, G.R. Morris, S.A. Wickline and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands; Magnetic Resonance Equipment Corporation, Bay Shore, NY.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: ECG triggering, patient monitoring, cardiac MRI

744. **EEG Recording during MR Examination for Presurgical Evaluation of Epilepsy.** F. Lazeyras, M. Seeck and C.M. Michel. University Hospital of Geneva, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: fMRI, mouibriue, epilepsy
745. **Safe Coil Configurations for 1H-decoupled 13C-MRS *in vivo*.** Y. Ishihara, M. Umeda, H. Watanabe, K. Okamoto, M. Oda, T. Kanamatsu and Y. Tsukada. Toshiba R&D Center, Kawasaki; Soka University, Hachioji, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: temperature, safety, 13C-MRS
746. **"Interference - Free" Receiver Coils and Internal Magnets for the Design of MRI-Compatible Implanted Stimulators.** C. Teissl, C. Kremser and E.S. Hochmair. University of Innsbruck, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: safety, MRI compatibility, implanted stimulators
747. **Can Gradient-Induced Nerve Stimulation be Electrically Shielded?.** D.G. Wiesler, A.H. Aletras, J.F. Schenck, R.S. Balaban and H. Wen. National Institutes of Health, Bethesda, MD; General Electric Corporate Research and Development Center, Schenectady, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: peripheral stimulation, shielding, electric field
748. **Slew Rate is Not the Fundamental Determinant of Magnetostimulation.** B.A. Chronik and B.K. Rutt. University of Western Ontario; Robarts Research Institute, London, ON, Canada.
 Keywords: slew, gradient, magnetostimulation
749. **Real-Time Active Noise Cancellation System for MRI.** C. Chen, T.D. Chiueh and J.H. Chen. National Taiwan University, Taiwan, R.O.C.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: noise cancellation, fMRI, neural network

750. **Acoustic Noise Levels in a Head Gradient Coil During Echo Planar Imaging at 3T.** T.E. Prieto, K. Bennett and D. Weyers. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: scanner sounds, head gradient coil, echo planar imaging
751. **Feasibility Studies of Temperature Monitoring During Clinical Applications.** Y. Ishihara, M. Umeda, H. Watanabe, K. Okamoto, M. Oda, T. Kanamatsu and Y. Tsukada. Toshiba R&D Center, Kawasaki; Soka University, Hachioji, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: temperature, hypothermia, ¹³C-MRS
752. **The Cooling Effects of Water Bags on the Temperature Distributions of a Human Leg: Finite Element Modeling and Measurements.** J.X. Ling, I.R. Young and J.V. Hajnal. Picker International Inc., Cleveland, OH; Hammersmith Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: hyperthermia, FEA, probe
753. **Ferromagnetic Detector used Prior to MR Imaging on Strongly and Weakly Ferromagnetic Instruments to Predict Size and Shape of Artifact on Subsequent MR Imaging.** D.T. Boll, M. Wendt, E.M. Merkle, A.A. Zwarun, J.L. Duerk and J.S. Lewin. University Hospitals/Case Western Reserve University, Cleveland, OH; ITI Medical Technologies, Inc., Livermore, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: artifact, safety, detector
754. **Evaluation of Infusion Pump Performance in an MR Environment.** E.J. Williams, Y.C. Tam, I.V. Kendall, T.A. Carpenter and D.K. Menon. Addenbrookes Hospital, Cambridge, UK.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: infusion, pump, compatibility

755. **MR Compatibility Testing of Intracranial Pressure Probes.** E. Williams, C. Bunch, T. Carpenter, S. Downey, I. Kendall, P. Minhas, M. Czosnyka, J. Pickard, J. Martin and D. Menon. Addenbrookes Hospital, Cambridge, UK.
 Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: compatibility, ICP, brain
756. **Cardiac MR and Pacemakers: How Absolute is the Contraindication?.** D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: pacemaker, MRI, safety
757. **Influence of Low Field Open MR Imaging Systems on Cochlear Implants: An *ex vivo* Evaluation.** C. Teissl, C. Kremser and E.S. Hochmair. University of Innsbruck, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: safety, MRI compatibility, cochlear implants
758. **A New Two Echo, Relative Timing, First Order Shimming Technique.** M.C. Steckner. Picker International, Highland Heights, OH.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: shimming, sequence, magnetic field
759. **The Efficient Use of Scanning Services: Preliminary Results.** T. Grajewski, S. Moss and T. Lewis. University of Wales Cardiff; Frenchay Healthcare NHS Trust, UK.
 Main Target of Study: Administration/Economics
 Keywords: quality, efficiency, provision

- 760. Contrast-Enhanced Magnetic Resonance Angiography of the Iliac Arteries: Optimization by Injection Simulation.** M.A. Schmidt, A.J. Britten, M.A. Tomlinson, S. Powell, S. Cleminson, H. Chaudhry, T. Buckenham and C.W. Heron. St. George's Hospital, London, UK.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Angiography**
 Keywords: **angiography, contrast agent, iliac artery**
- 761. Quantification of Carotid Stenosis in a Pig Model: Comparison of Blood Pool Contrast Enhanced Time-of-Flight, and Phase Contrast MRA with Digital Subtraction Angiography.** C. Gyldensted, C.Z. Simonsen, P. Vestergaard-Poulsen, L.H. Sørensen, A. Bjørnerud and L. Østergaard. Århus University Hospital, Denmark; Nycomed Imaging, Oslo, Norway.
 Type of Study: **Biomedical Applications of MR**
 Main Target of Study: **Morphology**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Angiography**
 Keywords: **angiography, blood pool agent, MRA**
- 762. Gd-Enhanced Carotid MRA: Locally Focused 3D Imaging in 5-10 Seconds.** V.Y. Kuperman, S.K. Nagle, D.N. Levin, M.T. Alley and G.H. Glover. University of Chicago, IL; Stanford University, Stanford, CA.
 Type of Study: **Methodological Development**
 Main Target of Study: **Morphology**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Angiography**
 Keywords: **reconstruction, angiography, fast imaging**
- 763. Bounds on Spatial Resolution in Contrast Enhanced 3D MR Angiography.** S.B. Fain, D.G. Kruger, A.H. Wilman and S.J. Riederer. Mayo Clinic, Rochester, MN.
 Type of Study: **Clinical Applications of MR**
 Main Target of Study: **Morphology**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Angiography**
 Keywords: **contrast, enhanced, MRA**
- 764. Pharmacokinetic Analysis of Aortic Contrast Enhancement Timing in Gd-Enhanced MRA.** K.T. Bae, J.P. Heiken, D. Li, J. Zheng and E.M. Haacke. Washington University School of Medicine, St. Louis, MO.
 Type of Study: **Methodological Development**
 Main Target of Study: **Morphology**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Contrast Agents**
 Keywords: **angiography, contrast agent, physiology**

765. **Contrast-Enhanced 3D TOF MRA in the Dog.** M. Moseley, A. de Crespigny, C. Beaulieu and M. Alley. Stanford University, Stanford, CA.
 Organ/Tissue: Body Vascular
 Methods: Angiography
 Keywords: MRA, Gd-DTPA, TOF
766. **Automated Contrast Bolus Detection and Triggered True Centric 3D MRA of the Carotid Arteries.** J.A. Derbyshire, J.K. Kim, R.I. Farb and G.A. Wright. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, carotids, rapid imaging
767. **Numerical Simulations of Contrast-Enhanced MRA.** L.-D. Jou and D. Saloner. University of California, San Francisco, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, contrast, simulation
768. **Fixed Contrast-Dosage Scheme vs Fixed Contrast-Volume Scheme for Contrast-Enhanced 3D MR-Angiography.** T.F. Hany, R. Wegener, M. Schmidt, T. Balzer and J.F. Debatin. University Hospital Zurich, Switzerland; Schering AG, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Administration/Economics
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Angiography
 Keywords: MR-angiography, dosage, optimization
769. **In Vitro Evaluation of Dynamic Contrast-Enhanced MRA.** T.J. Carroll, K.K. Vigen and R. Frayne. University of Wisconsin, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, contrast
770. **Contrast Agent Injection Protocols for 3D MR DSA: Effects of Injection Order, Volume and Rate.** R. Frayne, T.M. Grist, J.S. Swan, D.C. Peters, F.R. Korosec and C.A. Mistretta. University of Wisconsin, Madison, WI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: MRA, contrast, angio

771. **Differentiating Arteries and Veins Using Phase in Contrast Enhanced MRA.** Y. Wang, E.M. Haacke, D. Li and K.T. Bae. Washington University, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: phase, angiography, contrast agent
772. **The Optimal Contrast Injection Protocol for Contrast-Enhanced MR Angiography: Volunteer Study.** K. Mitsuzaki, Y. Yamashita, I. Ogata, Y. Abe, T. Namimoto and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, contrast media, vascular study
773. **Dynamic Thick Slab MR-DSA with Asymmetric Echo Acquisition and Complex Subtraction: Improved Lumen and Stenosis Visualization.** R.M. Hoozeveen, C.J.G. Bakker and M.A. Viergever. University Hospital Utrecht, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR-DSA, complex subtraction, stenosis
774. **Concurrent Acquisition and Reconstruction for Elliptical Centric View Ordering.** M.A. Bernstein, J.A. Polzin and S.J. Riederer. GE Medical Systems, Milwaukee, WI; Mayo Clinic, Rochester, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: elliptical, centric, smartprep
775. **Delineation of Simulated Vascular Stenosis with 3D Gd-DTPA MR Angiography: Experimental Study.** K. Mitsuzaki, Y. Yamashita, M. Onomichi, N. Tsuchigame and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MR angiography, contrast media, vascular study

776. **MR Angiography of the Carotid Bifurcation: A Comparison of Three Different Techniques.** G. Laub and D. Chien. Siemens Medical Engineering, Erlangen, Germany; Siemens Asia Product Center, Hong Kong.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, fast imaging, ce-MRA
777. **A Method of Distinguishing Arteries and Veins in Intra-Vascular Contrast Agent Enhanced MR Angiography.** O. Simonetti, A. Krishnan, B. Geiger and J. Bundy. Siemens Medical Systems, Chicago, IL; Siemens Corporate Research, Princeton, NJ.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, display, contrast-enhanced

MRA Techniques: Non-Contrast

778. **MRA Optimized Non-Uniformity Correction for Rigid Synergy Coils.** M Kouwenhoven, M. Fuderer, P. Grootes, K.Y. Ho and J.M.A. van Engelshoven. Philips Medical Systems, Best; University of Maastricht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, synergy, uniformity
779. **Spiral Imaging of Flow Through Tortuous Vessels: Numerical Simulations.** R. van Tyen and D. Saloner. University of California, San Francisco; V.A. Medical Center, San Francisco, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: spiral, flow, stimulation
780. **Fresh Blood Imaging at 0.5-T: Natural Blood Contrast 3D MRA within Single Breathhold.** M. Miyazaki, F. Tateishi, S. Sugiura, Y. Machida, Y. Kassai and H. Abe. Toshiba Nasu Works, Tochigi; Kumamoto Central Hospital, Kamamoto, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: FBI, 3D MRA, ECG gating

- 781. Multislice Swap Phase Encode Extended Data (SPEED) Acquisition for Pulmonary MRA.** M. Miyazaki, S. Sugiura, N. Ichinose and Y. Machida. Toshiba Nasu Works, Tochigi, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: SPEED, pulmonary, MRA
- 782. Flow-Independent Angiography with Reduced Scan Times.** J.H. Brittain, G.T. Luk Pat, A.B. Kerr, G.E. Gold, E.W. Olcott and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: flow-independent angiography, echo-planar imaging, peripheral angiography
- 783. A Method for Objectively Comparing Magnetic Resonance and Digital-Subtraction Angiograms.** M. Bakar and T. Peters. McGill University, Montreal QC; The J P Robarts Research Institute, London ON, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: MRA, registration, multi-modal
- 784. NMR Signal Loss in Turbulent Shear Flow.** L.-D. Jou and D. Saloner. University of California, San Francisco, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Basic NMR
 Keywords: MRA, turbulence, simulation
- 785. MRA CNR Studies of Magnetization Transfer with a Temporal Lobe Phased Array Coil.** K.C. Goodrich, H.R. Buswell, B.E. Chapman, R. Hadley, J.A. Roberts, D.D. Blatter, M. Fukuzaki and D.L. Parker. LDS Hospital; University of Utah, Salt Lake City, UT; Tokai University Junior College.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, MT, CNR

- 786. Constrained Reconstruction and Interpolation Effects on Vessel Visibility Measured with a Two Alternative Forced Choice Experiment.** B.E. Chapman, K.C. Goodrich, A.L. Alexander, D.D. Blatter and D.L. Parker. University of Utah; LDS Hospital, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: angiography, image, quality
- 787. Neural Network Image Analysis of Post-Stenotic Signal Loss Can Estimate Percent Stenosis.** H.L. Bergman, S.D. Peterman, J.N. Oshinski, R.I. Pettigrew and D.N. Ku. Georgia Institute of Technology; Emory University, Atlanta, GA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, flow artifact, neural networks
- 788. A New Method for MR Angiography and Flow Velocity Measurement.** M. Mescher, H. Merkle and M. Garwood. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: angiography, flow, MRA
- 789. Acquisition of Fast Stereoscopic MR Roadmaps.** V. Rasche, D. Holz, H. Kooijman and M.H. Kuhn. Philips Research; Philips Medical Systems, Hamburg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MR Roadmap, stereo, MR angiography
- 790. Rapid and Robust ToF-MRA with Mask Subtraction.** J.G. Pipe. Wayne State University, Detroit, MI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, spiral, fast
- 791. Rapid ToF-MRA with Reduced Artifact.** J.G. Pipe. Wayne State University, Detroit, MI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, subtraction, ToF

- 792. Three-Dimensional Flow Independent Angiography of Aortic Aneurysms Using Standard Fast Spin Echo.** D.W. Kaandorp, P.F.F. Wijn and K. Kopinga. Eindhoven University of Technology; Saint Joseph Hospital Veldhoven, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: aneurysm, FIA, FSE
- 793. MR Angiography with Spectral-Spatial Fat Saturation.** J. Forster, F. Schick, J. Breuer, L. Sieverding, W.-I. Jung and O. Lutz. Universität Tübingen; Max Grundig Clinic, Bühl, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: angiography, fat suppression, spectral-spatial pulses
- 794. Ascending Aortic Atherosclerosis in Familial Hypercholesterolemia: A Comparison of MRI and Ultrafast CT.** A.H. Stolpen, D.M. Kolansky, S. Magosin, C.A. Friedrich and D.J. Rader. University of Pennsylvania Health System, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: hypercholesterolemia, MRI, CT
- 795. Partial Fourier Acquisition and Improved Interpolation of 3DFSE Black-Blood Images for Cerebral MRA.** A.L. Alexander, J. Roberts, H.R. Buswell, J.R. Hadley, J.S. Tsuruda and D.L. Parker. University of Utah, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: black-blood, MRA, interpolation
- 796. Using High Resolution Black Blood MR Imaging to Monitor the Progression of Human Carotid Atherosclerosis: Assessment of Lumen and Artery Wall Area Measurement.** L.H. Smith, C. Yuan, C.E. Walden, J.A. Nelson and R.H. Knopp. University of Washington, Seattle, WA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: atherosclerosis, wall area, black blood

- 797. *In vivo* Measurement of T2* and Field Inhomogeneity: Implications for Cardiac EPI.** S.B. Reeder, A.Z. Faranesh and E.R. McVeigh. Johns Hopkins University, Baltimore, MD.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: cardiac imaging, T2*, field inhomogeneities
- 798. MR-Sequences and Hardware Optimized for Imaging of Rat-Hearts at 4.7T.** A. Stensgaard, S. Topp, H. Simonsen and T.F. Hansen. Danish Research Center for Magnetic Resonance, Hvidovre, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: heart, imaging, rat
- 799. Accelerated Cardiac Breathhold Imaging Using Coil Sensitivity Encoding.** M. Weiger, K.P. Pruessmann, P. Boesiger and M.B. Scheidegger. University and ETH Zürich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: cardiac imaging, breathhold, sensitivity encoding
- 800. The Use of Intravascular Contrast Agent NC100150 in Spin Echo and Gradient Echo Cine Imaging of the Heart.** A.M. Taylor, J.R. Panting, J. Keegan, P.D. Gatehouse, P. Jhooti, G.Z. Yang, J.M. Francis, E.D. Burman, S. McGill, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast, intravascular, heart
- 801. Fast Cine Imaging Using Segmented k-space Interleaved Gradient-Echo EPI.** F.H. Epstein, T.K.F. Foo, S.D. Wolff, R.S. Balaban and A.E. Arai. General Electric Medical Systems, Waukesha, WI; National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: fast imaging, cardiac MRI, pulse sequences

- 802. 3D Cine Cardiac Ventriculography with an Iron Oxide Blood Pool Agent.** M.T. Alley, Y. Amano, R.Y. Shifrin, N.J. Pelc and R.J. Herfkens. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: cardiac cine imaging, 3D, contrast agents
- 803. Cardiac Real-Time Acquisition Using Coil Sensitivity Encoding.** M. Weiger, M. B. Scheidegger, K. P. Pruessmann and P. Boesiger. University and ETH Zürich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: real-time imaging, cardiac imaging, sensitivity encoding
- 804. 3 Second Cine-MRI at Target Heart Rate Exercise Stress.** G.P. Chatzimavroudis, J.N. Oshinski, W.T. Dixon and R.I. Pettigrew. Emory University School of Medicine, Atlanta, GA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: heart, stress, function
- 805. Real-Time MR Imaging of Cardiac Perfusion.** P.C. Yang, A.B. Kerr, C.H. Mayer, A. Macovski, J.M. Pauly and B.S. Hu. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: real-time imaging, perfusion, cardiac
- 806. 3D Half-Fourier RARE with MTC for Cardiac Imaging.** Y. Kassai, M. Miyazaki, S. Sugiura, J. Makita and H. Yamagata. Toshiba Medical Engineering Laboratory; Toshiba Nasu Works, Tochigi, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: half-Fourier RARE, MTC, cardiac

- 807. Multiple Phase, Black-Blood Imaging of the Heart Using Real-Time Acquisition: Initial Results.** J.P. Ridgway, A. Kassner, U.M. Sivananthan and M.A. Smith. United Leeds Teaching Hospitals; The University of Leeds, Leeds; Philips Medical Systems, Hammersmith, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: heart, real-time, black blood
- 808. Quantitative Comparison of ECG Gated Cardiac Magnetic Resonance Imaging Using Conventional, Fast and Echo-Planar Imaging (EPI) Techniques.** D.H. Feiglin, G. Tillapaugh-Fay, F.D. Thomas, B. Hellwig and N. Szeverenyi. University Hospital, Syracuse, NY.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: cardiac, function, sequences
- 809. Double Inversion Recovery and Outer Volume Suppression to Improve Contrast and Resolution in Single-Shot Fast Spin Echo Imaging of the Heart.** P.G. Carlier, R.J. Gilles, P. Merlet and P. Le Roux. SHFJ, Orsay; GE Medical Systems, Buc, France.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: heart, fast-MRI, black blood
- 810. Determination of LV-mass in Patients with Myocardial Infarction Using Breathhold Black Blood Prepared Turbo Flash MR Imaging: Comparison with Cine MR.** S.L. Brinckman, M.J.W. Götte, J.T. Marcus, A.C. van Rossum and C.A. Visser. University Hospital VU Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: myocardial Infarction, cardiac mass, cardiac evaluation

Non-neuro Vascular Imaging

- 811. A New Segmentation Algorithm for Visualizing Complex Vessel Geometries Acquired by Gd-Enhanced 3D MR Angiography.** D.W. Kaandorp, G. Schep, K. Kopinga and P.F.F. Wijn. Eindhoven University of Technology; Saint Joseph Hospital Veldhoven, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: segmentation, kinking, angiography

- 812. Accurate Measurement of Local Elastic Properties Using High Resolution Tagged MRI.** K.C. Chu and B.K. Rutt. University of Western Ontario; Robarts Research Institute, London, ON, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: elasticity, arterial, tag
- 813. *In Vitro* and *In vivo* MR Imaging of Atherosclerotic Plaques; Limits of the T2 Weighting.** J.M. Serfaty, L. Chaabane, A. Tabib, A. Briguët and P.C. Douek. Croix Rousse Hospital, Lyon; Laboratoire de RMN, Villeurbanne; Hôpital Cardiologique, Bron, France.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Microscopy
 Keywords: atherosclerosis, microscopy, vascular imaging
- 814. *In Vitro* Studies for Coronary Imaging with Endovascular Receiver Probes.** L. Chaabane, J.M. Serfaty, C. Marguet, P. Desgoutte, B. Favre, P. Douek and A. Briguët. Laboratoire de RMN UPRESA, Villeurbanne, France; Hôpital de la Croix-Rousse, Lyon, France.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: atherosclerosis, vascular imaging, endovascular probes
- 815. High-Resolution 3D Imaging of Atherosclerotic Plaque.** G.T. Luk Pat, G.E. Gold, E.W. Olcott, B.S. Hu and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: atherosclerotic, plaque, grase
- 816. Blinded *In Vitro* Detection and Quantification of Artherosclerosis Using T2-weighted Magnetic Resonance Imaging.** S. Dalager-Pedersen, E. Falk, S. Ringgaard, I.B. Kristensen and E.M. Pedersen. Aarhus University Hospital; Aarhus University, Aarhus, Denmark.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: atherosclerosis, T2-weighting, quantification

- 817. Contrast-Enhanced Magnetic Resonance Angiography of the Internal Mammarian Arteries — Preoperative Assessment Before Minimally Invasive Coronary Artery Bypass Grafting (MICABG).** M.G. Lentschig, P. Reimer, A. Hoffmeier, R. Soeparwata, E.J. Rummeny and H.H. Scheld. Westfalian Wilhelms-University Münster, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, internal mammarian arteries, bypass grafting
- 818. The Usefulness of Digital Subtraction MR Angiography in the Evaluation of the Great Vessel Abnormalities.** H. Masunaga, Y. Takehara, H. Isoda, S. Isogai, N. Kodaira, M. Kaneko, H. Takeda, Y. Igarashi and A. Nozaki. Hamamatsu University School of Medicine, Hamamatsu, Japan; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: DSA, subtraction, vascular
- 819. Gadolinium-Enhanced MRA vs. 3D-CTA: Clinical Efficacy for the Assessment of Aortic Diseases.** Y. Kobayashi, O. Tanaka, H. Fujisawa, K. Sato, H. Matsushima, K. Matsuura, J. Nagai, N. Imai, H. Adachi, H. Ino, H. Yamada, K. Kudo and F. Kojima. Omiya Medical Center, Omiya, Japan; Toshiba Medical Systems.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: Gd-MRA, CTA, aorta
- 820. Contrast-enhanced 3D MR Angiography in the Follow-up of Patients Operated for Aortic Coarctation.** R.A. Niezen, M. Wasser, H. Vliegen, E.E. vanderWall and A. de Roos. Leiden University Medical Center, Leiden; the Interuniversity Cardiology Institute of the Netherlands, Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coarctation, MRA, follow-up
- 821. Technical Aspects on MRI Evaluation of Stents Grafts for Abdominal Aortic Aneurysms.** L. Engellau, U. Albrechtsson, M. Bolling, L. Norgren, J. Olsrud, F. Ståhlberg and E.-M. Larsson. University Hospital, Lund, Sweden.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: stent grafts, artifacts, MRA

- 822. Dynamic Contrast Enhanced Magnetic Resonance Angiography: Evaluation of Abdominal Aortic Aneurysms Prior to Endovascular Repair.** C.N. Ludman, S.W. Yusef, S.C. Whitaker, R.H.S. Gregson, S. Walker and B.R. Hopkinson. University Hospital, Nottingham, England.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: aneurysm, stenting, MRA
- 823. Dynamic Contrast Enhanced Abdominal MR Angiography: A Comparison to Conventional Angiography.** V.H. Scholz, T. Helmberger, N. Holzknecht, B.J. Wintersperger and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Angiography
 Keywords: MRA, abdominal, dynamic
- 824. Contrast-Enhanced 3D MR Angiography: Advantages of Slice-Selective MIP, Addition, Source Images and a MR Compatible Power Injector.** K. Ohgi, M. Isoda, S. Tanaka, M. Toyoshima, T. Abe, T. Furukawa, H. Akiyama, S. Kimuma, K. Uehara, K. Murata, H. Yamada and M. Higashi. Japanese Red-Cross Medical Center, Tokyo; Kasukabe-Shuwa Hospital, Saitama; Kitazato-Institute Hospital, Tokyo; Toshiba Medical Inc., Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: MR angiography, contrast enhancement, vascular diseases
- 825. Hemodynamic Effects of Nonionic Contrast Media: Quantification by 2D Cine Phase Contrast MRA.** B. Wong, B.B. Forster, K.P. Whittall, R.D. Johnstone, P.J. Trepanier and L.S. Machan. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Flow
 Keywords: MRA, contrast, flow
- 826. Detection and Vascularity of Focal Hepatic Lesions: Comparison Between Dual-Phase CT and MR Imaging During Arterial Portography.** A. Nakatsuka, T. Tagami, K. Yamakado, N. Tanaka, H. Sakuma, T. Hirano, K. Matsumura and K. Takeda. University of Mie, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: CT-AP, MR-AP, liver neoplasm

- 827. Breath-hold Contrast-Enhanced 3D MR Angiography in the Portal Systems; Comparison of Current Sequences.** H. Haradome, T. Ichikawa, T. Nitatori, T. Araki and J. Hachiya. Kyorin University; Yamanashi Medical University, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: contrast-enhanced MRA, portal system, fast GRE sequence
- 828. Patient's Acceptance of Breathhold 3D Contrast Enhanced Turbo-MRA Compared to Intra-Arterial DSA in Liver, Kidney and Pancreas Transplantation.** W.J. Boeve, R.L. Kamman, E.B. Haagsma, A.M. Tegzess, M.C.C. de Lange and R.A. Prinsze. University Hospital Groningen; Siemens, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MRA, transplantation, healthcare
- 829. MR Angiography of the Extra Hepatic Portal Venous System: Value of 3D FLASH Sequence by Using Subtraction Technique and Target MIP Retro-Processing.** K. Yoshikawa, K. Sugimura, I. Mouri and S. Yamamoto. Shimane Adult Disease Center, Hamada; Shimane Medical University, Izumo; Hirata Municipal Hospital, Hirata, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: portal vein, 3D-FLASH, MR angiography
- 830. Pulse Wave of Portal Vein Detected by Cine Phase-Contrast MR Imaging.** S. Nakano, T. Katoh, K. Wakimaru, Y. Mori, J. Kageyama, I. Hino, M. Ohkawa and M. Tanabe. Kagawa Medical University, Kagawa, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Flow
 Keywords: phase contrast, portal, pulse
- 831. Diagnostic Value of Gadolinium-Enhanced Magnetic Resonance Angiography in the Preoperative Diagnostic of Nephron-Sparing Surgery.** D. Gohl, M. Uder, K. Altmeyer, B. Kramann and G. Schneider. University Hospital, Homburg/Saar, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Tumors
 Methods: Angiography
 Keywords: MRA, renal tumor, partial nephrectomy

- 832. MRA Stenosis Quantification in Flow Phantoms and Renal Arteries.** J.J.M. Westenberg, R.J. van der Geest, M.N.J.M. Wasser, J. Doornbos, J. Vanderschoot and J.H.C. Reiber. Leiden University Medical Centre, Leiden, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: stenosis, MRA, signal loss
- 833. Timing Algorithm for Bolus Chase MR Digital Subtraction Angiography.** Y. Wang, H.M. Lee, R. Avakian, P.W. Winchester, N.M. Khilnani and D.W. Trost. Cornell University Medical College, New York, NY.
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, hemodynamics, subtraction
- 834. Clinical Experience with MR Digital Subtraction Angiography.** H.M. Lee, Y. Wang, P.A. Winchester, N.M. Khilnani and J.P. Comunale. Cornell University Medical College, New York, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, MRDSA, peripheral
- 835. MR Angiography of the Lower Extremities.** N. Kodaira, H. Isoda, Y. Takehara, H. Takeda, Y. Igarashi, M. Kaneko and A. Nozaki. Hamamatsu University School of Medicine, Hamamatsu; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
- 836. 2DTOF MRA, 3D Flow-Independent MRA, 3D Gd-Enhanced MRA: Initial SNR and Resolution Studies in Peripheral Vasculature.** G. Kim, R. Ahmed, J. Kim, J. Stainsby, J. Brittain, P. Kalman, D. Kucey, N. Merchant and G. Wright. University of Toronto, Ontario, Canada; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, SNR/resolution, peripheral vascular disease

- 837. Evaluation of the Results of Lower Extremity Surgical Revascularization: Role of Non-Contrast TOF Magnetic Resonance Angiography.** Yu.N. Belenkov, E.A. Timonina, V.Ye. Sinitsyn and A.A. Chiriaev. [Cardiology Research Center, Moscow, Russia.](#)
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: TOF MRA, lower limb, surgery
- 838. Preliminary Results of an Operator Independent Peripheral MR Angiographic Outflow Study (MoBI-track) in 4 Minutes.** K.Y. Ho, T. Leiner, M.W. de Haan, P. Kitslaar and J.M.A. van Engelshoven. [University Hospital Maastricht, the Netherlands.](#)
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angio, peripheral, gadolinium
- 839. Non-bolus Magnetic Resonance Angiography of the Vascular Tree from Aorta to the Foot: Results of a Prospective Study Correlating MRA with Conventional DSA.** J. Laubenberger, J. Winterer, A. Einert, J. Hennig, G. Laub, F. Beyersdorf and M. Langer. [University of Freiburg; Siemens AG, Erlangen, Germany.](#)
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Infarction
 Methods: Angiography
 Keywords: angiography, contrast, vessels
- 840. High-Resolution MRI of Human Popliteal Artery *in vivo* with Reference to Intravascular US.** P. Vainio, H. Räsänen, H. Manninen, R. Vanninen, Y.W. Liu and H. Söder. [Kuopio University Hospital, Kuopio, Finland.](#)
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: atherosclerosis, high-resolution MR, vascular MR
- 841. Low-dose Gadolinium-Enhanced Three Dimensional Peripheral MR Venography.** W. Li, V. David, J.W. Goldfarb, R. Kaplan and R.R. Edelman. [Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.](#)
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR-venography, MR contrast agent, fast imaging

- 842. BOLD-MRI Observation of Ca²⁺ Channel Blocker-Induced Changes in Tumor Oxygenation.** M. Muruganandham, A. Kasiviswanathan, N.R. Jagannathan, P. Raghunathan, P.C. Jain and V. Jain. Institute of Nuclear Medicine and Allied Sciences, Delhi; All India Institute of Medical Sciences, New Delhi; University of Delhi, India.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Flow
 Keywords: MRI, radiosensitivity, tumor oxygenation
- 843. Intravenous Vascular Access Planning: Evaluation of the Entire Body Using MR Venography.** D.A. Bluemke and J.L. Boxerman. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: venous thrombosis, MR venography
- 844. Gadolinium-Enhanced MR Angiography and Perfusion Imaging of the Hand.** B. Buff, J.W. Goldfarb, M.G. Hochman, A. Rawal and R.R. Edelman. Harvard Medical School, Boston, MA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, hand, gadolinium

Coronary Artery Imaging

- 845. Coronary Artery Diameter Determination from Contrast Enhanced MR Angiography; Comparison with Selective X-ray Contrast Angiography.** M.B.M. Hofman, T.P. Kerwin, S.J. Kovács, S.A. Wickline and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; University Hospital Vrije Universiteit, Amsterdam, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: coronary imaging, contrast enhanced angiography, diameter
- 846. 3D MR Coronary Artery Segmentation.** H.E. Cline, D.R. Thedens, P. Irarrazaval, C.H. Meyer, B.S. Hu, D.G. Nishimura and S. Ludke. GE Corporate Research and Development, Schenectady, NY; Stanford University, Stanford, CA; Universidad Catolica, Santiago, Chile.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary, 3D, artery

- 847. Fast 3D Coronary Artery Imaging Using Real Time Navigator Tracking and Breath Holding.** M. Stuber, K.V. Kissinger, R.M. Botnar, P.G. Danias and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: ultrafast imaging, navigators, coronary arteries
- 848. Coronary Angiography with Double IR FSE.** A.E. Arai and K.E. Bove. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary, blackblood, angiography
- 849. Multi-Slice Breath-Hold MR-Coronary Angiography.** P.M. Jakob, M.A. Griswold, D.K. Sodickson and R.R. Edelman. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MR-coronary angiography, segmented MRI, multi-slice
- 850. Difference in Imaging Accuracy of 2D Coronary MRA According to the Severity of Stenosis — A Study of 170 Clinical Cases.** T. Nitatori, K. Yokoyama, J. Hachiya, T. Seki, H. Yoshino and K. Ishikawa. School of Medicine, Kyorin University, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: MR, coronary vessels, vascular studies
- 851. Experience with Navigator-Echo-Based Respiratory Gating in Healthy Volunteers and in Patients with Proximal Coronary Artery Sclerosis.** A. Huber, K. Niklaou, B. Wintersperger, H. Penzkofer, P. Gonschior, A. Knez and M. Reiser. University of Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary artery, navigator, echo

- 852. Coronary MR Angiography in Patients with Kawasaki Disease.** A.J. Duerinckx and M. Takahashi. West Los Angeles VA Medical Center; Childrens Hospital, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: coronary, angio, kawasaki
- 853. 3D Gadolinium Enhanced Coronary MRA: Initial Experience.** J. Zheng, D. Li, K.T. Bae, E.M. Haacke and P.K. Woodard. Washington University Medical Center, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Contrast Agents
 Keywords: coronary, angiography, contrast agent
- 854. Three-Dimensional Coronary MR Angiography: Effect of Gadodiamide Administration.** M. Gotoh, H. Sakuma, N. Kawada, Y. Nomura, N. Kato, K. Takeda and C.B. Higgins. Mie University School of Medicine, Mie, Japan; University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary artery, MR angiography, contrast medium
- 855. Using Real Time Imaging to Determine the Correlation Between the Position of the Heart and a Navigator Echo Positioned on the Diaphragm.** L.O. Johansson, S.E. Fischer, J. Smink, M.B.M. Hofman and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: navigator, angiography, coronary artery
- 856. Assessment of Coronary Bypass Graft Patency by a Multimodal Approach: Correlation of MR Imaging with Coronary Angiography.** K.-F. Kreitner, Th. Voigtländer, P. Kalden, J. Meyer and M. Thelen. University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: bypass graft, HASTE, 3D angiography

- 857. Comparison of Subsecond MR DSA with 3D MRA for Determination of Aorto Coronary Bypass Graft Patency.** R. Strecker, J. Hennig, J. Winterer, H. Weber and J. Laubenberger. University of Freiburg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR DSA, bypass, graft patency
- 858. Magnetic Resonance Flow Quantification in the Left Anterior Descending and Right Coronary Artery, Corrected for Through-Plane Myocardial Motion.** J.T. Marcus, J.P.A. Kuijer, A.C. Van Rossum, M.J.W. Götte, R.J. Van der Geest and R.M. Heethaar. Vrije Universiteit, Amsterdam; Leiden University, Leiden, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: flow, coronary arteries, myocardial contraction
- 859. MR Assessment of Blood Flow and Flow Reserve in Internal Mammary Artery Graft: Comparison with the Measurement by Doppler Guide Wire.** N. Kawada, H. Sakuma, K. Takeda, B.P. Cruz, I. Yada and C.B. Higgins. Mie University School of Medicine, Mie, Japan; University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: blood flow, flow reserve, coronary artery bypass graft
- 860. MR Oximetry for Measurements of Coronary Flow Reserve.** W.D. Foltz, N. Merchant, J.A. Stainsby and G.A. Wright. University of Toronto, Ontario, Canada.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: MR oximetry, coronary flow reserve, ischemic heart disease
- 861. Myocardial Flow Reserve in Porcine Model of Focal Hyperemia and Ischemia Quantitative Assessment Using Double Gated FAIR MRI.** B.P. Poncelet, M.K. Atalay, T.M. Koelling, T.G. Reese, T.J. Brady, H.L. Kantor and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Spine
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: myocardial perfusion, fair, porcine model

- 862. A Novel Method for Improved Visualization of Coronary Arteries: Prospective Slice Selective Adjustment for Coronary Artery Positional Variation over the Cardiac Cycle (Vessel Tracking).** T.K.F. Foo, V.B. Ho and M.N. Hood. GE Medical Systems, Milwaukee, WI; National Institutes of Health, Bethesda, MD; Uniformed Services University of the Health Sciences, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: cardiac, angiography, pulse sequence
- 863. 3D MR Angiography of the Coronary Arteries: Comparison Between Retrospective Respiratory Gating and Breath-Hold Imaging.** W. Kessler, D. Ropers, S. Achenbach, W. Moshage and G. Laub. University of Erlangen-Neurnberg; Siemens Medical Engineering Group, Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR angiography, coronary arteries, 3D imaging
- 864. Vessel Tracked Scanning - Application to the Coronary Arteries.** S. Kozerke, M.A. Spiegel, P. Boesiger and M.B. Scheidegger. University and ETH, Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary, vessel tracking, 2D
- 865. Two-Dimensional Contrast Enhanced Coronary MR Angiography.** H.A. Silber, J.A.C. Lima and D.A. Bluemke. Johns Hopkins University, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: coronary artery, contrast enhancement, angiography

Cardiac Function

- 866. Comparison of Regional Wall Motion in Patients and Normals to Radionuclide Ventriculography.** S. Nekolla, W. Bachmann, G. Dzewas, F. Roder, U. Schricke and M. Schwaiger. Nuklearmedizinische Klinik rechts der Isar der TU München, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: wall motion, RNV, polar map

- 867. Age-Related Left Ventricular Diastolic Dysfunction Detected in Rodents by Tagged Cardiac Cine MRI.** P.S. Hees and E.P. Shapiro. Johns Hopkins University, Baltimore, MD.
Organ/Tissue: Heart
Keywords: myocardium, rat, aging
- 868. Assessment of Systolic Left Ventricular Function by Measurement of Midwall Circumferential Fiber Shortening: Influence of Change in Left Ventricular Mass on Contractility.** J. Schwitter, T. DeMarco, S. Globits, H. Sakuma, C. Klinski, K. Chatterjee, W.W. Parmley and C.B. Higgins. University of California, San Francisco, CA.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Heart
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: contractile function, cardiac hypertrophy, transplantation
- 869. Evidence of Myocardial Stunning from Non-Critical Coronary Flow Reduction Assessed Noninvasively with MRI.** D.L. Kraitchman, D.A. Bluemke, H.B. Hillenbrand, I. Oznur, J.A.C. Lima, E.R. McVeigh and E.A. Zerhouni. Johns Hopkins University, Baltimore, MD.
Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Heart
Pathology: Infarction
Methods: Motion and Artifacts
Keywords: myocardial stunning, myocardial function, blood flow
- 870. Strain Rates in the Normal and Ischemic Human Heart with MRI Tagging.** I. Oznur, B.T. Wyman and E.R. McVeigh. Johns Hopkins University School of Medicine, Baltimore, MD.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Heart
Pathology: Infarction
Methods: Quantitation: MRI
Keywords: MRI, heart, strain rate
- 871. Serial Magnetic Resonance Imaging for Monitoring Structural and Functional Changes in Rats with Moderate Heart Failure.** K. Gurbanov, S. Chandra, R. Strittmatter, E. Ohlstein, G. Feuerstein and S. Sarker. SmithKline Beecham Pharmaceuticals, King of Prussia, PA.
Type of Study: Biomedical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Heart
Pathology: Malformation
Methods: Quantitation: MRI
Keywords: heart, hemodynamics, morphology
- 872. Fourier Analysis of Cardiac MR Images in Patients with Previous Myocardial Infarction.** P. Gibbs and S. Burn. Hull Royal Infirmary, Hull, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Interventions
Organ/Tissue: Heart
Pathology: Infarction
Methods: Data Processing: MRI
Keywords: fourier, phase, infarction

- 873. Regional Left Ventricular Dysfunctions in Patients with Reperfused Anterior Myocardial Infarction.** P. Balzer, A. Furber, F. Rouleau, S. Delépine, F. Lethimonnier, P. Geslin, A. Tadéi, P. Jallet and J.J. Le Jeune. The University Hospital of Angers, France.
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Infarction**
 Methods: **Data Processing: MRI**
 Keywords: **left ventricle, function, infarction**
- 874. Reduced Regional Left Ventricular Wall Thickening in Adults Operated for Tetralogy of Fallot.** R.A. Niezen, R.J. van der Geest, H. Vliegen, E.E. van der Wall and A. de Roos. Leiden University Medical Center, Leiden; the Interuniversity Cardiology Institute of the Netherlands, Utrecht, The Netherlands.
 Type of Study: **Clinical Applications of MR**
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Malformation**
 Methods: **Quantitation: MRI**
 Keywords: **fallot, heart, wall thickening**
- 875. A Lagrangian Strain Approach to Velocity-Based Quantification of Myocardial Function and Tissue Deformation.** Y. Zhu, R.J. Herfkens, G. Pappas, J.E. Drace and N.J. Pelc. Stanford University, Stanford, CA.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Category not applicable**
 Methods: **Sequences: Spectroscopy**
 Keywords: **motion analysis, myocardial function, tissue deformation**
- 876. A Modal Description of LV Motion During Ejection.** W.G. O'Dell and E.R. McVeigh. University of California San Diego, La Jolla, CA; Johns Hopkins University, Baltimore, MD.
 Type of Study: **Biomedical Applications of MR**
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Infarction**
 Methods: **Quantitation: MRI**
 Keywords: **tagging, mechanics, LV**
- 877. Procedure for the Assessment of Left Ventricular Heart Motion under Ergometer Stress.** M. Spiegel, O.M. Weber, P. Boesiger and M.B. Scheidegger. University and ETH Zurich, Switzerland.
 Type of Study: **Feasibility Studies of MR Methods**
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Category not applicable**
 Methods: **Motion and Artifacts**
 Keywords: **tagging, stress, ergometer**

- 878. Unity of Compact and Trabecular Myocardial Structure and Function in Humans Demonstrated by MRI.** W.-Y.I. Tseng, T.G. Reese, R.M. Weisskoff and V.J. Wedeen. Massachusetts Institute of Technology, Cambridge; Massachusetts General Hospital, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: myocardium, trabeculum, heart
- 879. Mechanical Activation in the Bi-Ventricular Paced Heart with High-Resolution MRI Tagging.** B.T. Wyman, W.C. Hunter, O.P. Faris and E.R. McVeigh. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: bi-ventricular, pacing, tagging
- 880. Improved Accuracy in EPI Measurement of Myocardial Perfusion Using Motion-Tracking Images.** T.G. Reese, B.P. Poncelet, R.M. Weisskoff and T.J. Brady. Massachusetts General Hospital, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: ischemia, gating, respiration
- 881. Definition of the Temporal Relationship Between Left Ventricular Pressure and Torsion in the Pig.** R.M. Setser, R.E. Henson, S.E. Fischer, S.A. Wickline and C.H. Lorenz. Washington University, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: tagging, LV torsion, LV contractility
- 882. Measurement of Myocardial Wall Motion with Segmented Breathhold Phase Contrast Gradient Echo Imaging: Findings in Healthy Volunteers and Patients Suffering from Ischaemic Heart Disease.** B. Schneider, M. Markl, S. Peschl, J. Winterer, H. Weber, J. Laubenberger, T. Krause, J. Hennig and M. Langer. University of Freiburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Motion and Artifacts
 Keywords: phase contrast, heart, motion

- 883. Quantitative Assessment of Intra Myocardial Contraction Patterns in Ischaemic Heart Disease Using Dobutamine Stress Magnetic Resonance Imaging with Tagging.** D.J. Beacock, A.A. Cubukcu, W.R. Crum, E. Berry, J.P. Ridgway, L.-B. Tan and U.M. Sivananthan. University of Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: quantitative, myocardial, tagging
- 884. Regional Analysis of Left Ventricular Motion after Myocardial Infarction.** B.R. Cowan and A.A. Young. University of Auckland, New Zealand.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: regional, ventricular, infarction
- 885. Assessment of Right Ventricular Regional Wall Motion Using 3D Phase Contrast MR Velocity Mapping.** H.W.M. Kayser, R.J. van der Geest, E.E. van der Wall, J.H.C. Reiber and A. de Roos. Leiden University Medical Centre, Leiden; Interuniversity Cardiology Institute of The Netherlands, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: heart, velocity mapping, regional function
- 886. Measurement of Regional and Transmural Variation in Left Ventricular Myocardial Motion in Normal Volunteers Using 3D Velocity Encoded Cine MR Imaging.** R.J. van der Geest, H.W.M. Kayser, E.E. van der Wall, A. de Roos and J.H.C. Reiber. Leiden University Medical Centre, Leiden; Interuniversity Cardiology Institute of the The Netherlands, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: heart, function, wall motion

Cardiac Perfusion

- 887. Evaluation of the Direct *in vivo* Correlation between Myocardial R2* and Venous Blood Oxygenation Level.** W.R. Oellerich, D. Li, T.L. Sharp and R.J. Gropler. Washington University School of Medicine, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: oxygen, T2*, myocardium

- 888. Cardiac MRI at 3T: BOLD Signal Changes During Breath Hold and Nitrogen Breathing.** M.K. Atalay, B.P. Poncelet, T.J. Brady, H.L. Kantor and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Methods: Contrast Mechanisms
 Keywords: BOLD, 3T, cardiac
- 889. A New *in vivo* Cardiac Gating Scheme for Perfusion Imaging Studies.** V.M. Mai, T. Maier and S.S. Berr. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: cardiac, fairer, perfusion
- 890. Viable Myocardium in Acute Myocardial Infarction: Assessment with Steady-state and First-pass MR Imaging During ATP-Induced Hyperemia and at Rest After Gadomer-17 Enhancement.** K.I. Chung, T.-S. Chung, H.-J. Weinmann and T.-H. Lim. Ajou University Hospital; Yonsei University Severance Hospital; Schering AG; Asan Medical Center University of Ilsan, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: myocardium, magnetic resonance, contrast enhancement
- 891. Multislice First Pass MR Perfusion Imaging in Comparison to Regional Myocardial Wall Thickening Analysis.** B. J. Wintersperger, H. Penzkofer, A. Knez and M. Reiser. University of Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: heart function, heart perfusion, infarction
- 892. Sodium MRI of Acute Myocardial Infarction at 1.5 Tesla.** P.A. Bottomley, R.F. Lee, C.D. Constantinides and R.G. Weiss. Johns Hopkins University, Baltimore, MD.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Non-proton MRI and ESR
 Keywords: sodium, heart, infarction

- 893. Potential of Cardiac MR to Detect Regions of Low Perfusion from MT Contrast: Correlation of MR Images with MTC to PET Metabolic Images.** S. Sinha, R. Mather, U. Sinha, J. Goldin, A. Daniel and J. Czernin. University of California, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: cardiac, MTC, MR-PET correlation
- 894. High Resolution 3D Contrast Enhanced MRI of Chronic Myocardial Infarction.** T.B. Parrish, R.J. Kim, D.S. Fieno, O. Simonetti, P. Finn, F.J. Klocke and R.M. Judd. Northwestern University Medical School; Siemens Medical Systems, Chicago, IL.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: heart, contrast, infarction
- 895. Detection of Viable Myocardium by Dobutamine Stress Tagging MRI with 3D Analysis of Neural Network by Automatic Trace Method.** I. Saitoh, S. Watanabe, Y. Masuda and H. Sato. Chiba University, Chiba; GE Yokokawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: tagging, neural network, Isao Saitoh
- 896. Equilibrium Myocardial Signal Changes with an Intravascular Contrast Agent NC100150: Possible Utility for Steady State Myocardial Perfusion Assessment.** J.R. Panting, A.M. Taylor, P.D. Gatehouse, J. Keegan, P. Jhooti, G.Z. Yang, J.M. Francis, E.D. Burman, S. McGill, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: contrast, intravascular, heart
- 897. Oxygenation and Perfusion Measurements in the Human Heart under Pharmacological Stress with Dipyridamole.** C.M. Wacker, M. Bock, A.H. Hartlep, G. Beck, G. van Kaick, G. Ertl, W.R. Bauer and L.R. Schad. German Cancer Research Center, Heidelberg; University of Mannheim, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: heart, oxygenation, perfusion

- 898. A Fast Method of Mapping First Pass Myocardial MR Images.** A. Boudraa, E. Canet, M. Janier, J. Champier, F. Behloul, J.P. Roux, M. Lionnet and D. Revel. CREATIS, Villeurbanne; CERMEP, Lyon; Laboratoire de Biophysique, Lyon; Hôpital Cardiologique, Lyon, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, image segmentation, time series analysis
- 899. Prospective Comparison of Contrast Enhanced MRI with Thallium 201 SPECT and 2D Echocardiography in the Localisation of Acute Myocardial Infarction.** G.R. Cherryman, J. Tranter, R. Keal, A. McCullough, N. Hudson, A. Jivan, B. Morgan, A.R. Moody, M. Horsfield, K.L. Woods, D.B. Barnett, G. Pirovano and A. Spinazzi. University of Leicester, UK; Bracco SpA, Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Contrast Agents
 Keywords: Myocardial, infarction, perfusion
- 900. Optimal Flip Angle with Prepared Symmetric Fast Gradient Echo Sequences for Myocardial Perfusion Quantification.** J.-P. Vallée, F. Lazeyras, L. Kasuboski and D. Didier. Geneva University Hospital, Geneva, Switzerland; Picker International, Inc., Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: heart, blood flow, MRI
- 901. Myocardial Perfusion Imaging Using Color Coded Parameter Maps Comparison to 99mSesta MIBI SPECT.** H. Penzkofer, B. J. Wintersperger, A. Knez, J. Weber and M. Reiser. University of Munich, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: perfusion, heart, data analysis
- 902. Practical Myocardial Perfusion Studies via Adenosine Pharmacologic Stress.** J.E. Siebert, J.D. Eisenberg, J.R. Pernicone and T.G. Cooper. Michigan State University, East Lansing, MI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: myocardial stress test, perfusion, adenosine

- 903. Myocardial Perfusion Using a New Ultra Small Paramagnetic Iron Oxide, Enabling T2* Perfusion with Very Short Echo-Times: First Trials in Humans.** L.O. Johansson, P. Åkeson, A. Ragnarsson and H. Ahlström. Uppsala University Hospital, Uppsala, Sweden; Nycomed Imaging A/S, Oslo, Norway; Regionsjukhuset Örebro, Sweden; Philips Medical Systems, Sweden.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Perfusion
 Keywords: contrast agent, perfusion, myocardium
- 904. Magnetic Resonance Imaging (MRI) in Evaluation of Chronic Myocardial Infarction (MI).** T. Zaleska, H. Mularczyk, J. Walecki, J. Adamus, W. Kwiatkowski and J. Polkowski. Central Railway Hospital; Veterans Hospital; Institute Cardiology, Warsaw, Poland.
 Type of Study: Clinical Applications of MR
 Keywords: MRI, myocardial infarction

Cardiac Imaging

- 905. Left Ventricular Inflow Propagation Speed by Magnetic Resonance Phase Velocity Mapping: Aortic Valve Stenosis Patients vs. Controls.** S.F. Milet, H.R. Ivarsen, O. Eschen, P. Schroeder, K. Houliid, E.M. Pedersen and A.P. Yoganathan. Georgia Institute of Technology, Atlanta, GA; Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: diastole, aortic, MRPVM
- 906. Left Ventricular Diastolic Inflow Quantification by Magnetic Resonance Phase Velocity Mapping in Aortic Valve Stenosis Patients.** S.F. Milet, O. Eschen, H.R. Ivarsen, H. Egeblad, E.M. Pedersen and A.P. Yoganathan. Georgia Institute of Technology, Atlanta, GA; Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: diastole, aortic, MRPVM
- 907. Quantification of Flow Rate Through Diseased Heart Valves Using a Control Volume Approach: an *In Vitro* Study.** M. Drangova, D. Galea, A. Wheatley and D.R. Boughner. J.P. Robarts Research Institute; University of Western Ontario, London, ON, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: heart valve, flow, control volume

- 908. Selection of Imaging Level for Magnetic Resonance Phase Velocity Mapping in the Quantification of Aortic Regurgitation -- A Comparison with a Volumetric Method.** M. Kon, F.W. Wiesmann, N. Moat and D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: heart, MRI, valves
- 909. Modified Fontan Flow Quantification by Magnetic Resonance Phase Velocity Mapping.** A. Ensley, G. Chatzimavroudis, P. Lynch, T. Meier, D. Norman, R. Pettigrew, K. Hopkins, S. Sharma and A. Yoganathan. Georgia Institute of Technology; Emory University School of Medicine, Atlanta, GA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: cardiac, pediatric, MRPVM
- 910. Vortex Flow Demonstrated in the Healthy and the Dilated Left Ventricle by MR Velocity Mapping and an Automated Flow Pattern Recognition Method.** R.H. Mohiaddin, G.Z. Yang, D.N. Firmin and D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Flow
 Keywords: heart, flow, vortex
- 911. Transesophageal Magnetic Resonance Imaging of Thoracic Aorta Using an Esophageal Loopless Antenna.** K.A. Shunk, J.A.C. Lima, A.W. Heldman and E. Atalar. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: MRI, aorta, tagging
- 912. Noninvasive Diagnosis of Acute Myocarditis by Contrast-Enhanced Magnetic Resonance Imaging.** M.G. Friedrich, O. Strohm, J. Schulz-Menger, H. Marciniak and R. Dietz. Humboldt Universität zu Berlin; Städtisches Klinikum, Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Inflammation
 Methods: Data Processing: MRI
 Keywords: myocarditis, contrast, media

- 913. Visualizing Normal and Abnormal Valves by Black Blood MRI.** A.E. Arai and K.E. Bove. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Category not applicable
- 914. Simultaneous and Alternate Antegrade/Retrograde Cardioplegia Provide Equal Protection of Myocardial Energy Metabolism and Contractile Function. A 31P MR Spectroscopy Study in Isolated Blood Perfused Pig Hearts.** Z. Luo, B. Xiang, G. Tian, G. Dai, J. Sun, J. Shen, A. Hamilton, W.G. Lindsay and R. Deslauriers. National Research Council of Canada; University of Manitoba, Winnipeg, Manitoba, Canada; GE Medical Systems, Milwaukee, WI.
 Keywords: MR spectroscopy, cardioplegia, myocardial protection
- 915. Magnetic Resonance Perfusion Imaging of Retrograde Cardioplegia: Comparison of Three Different Techniques.** G. Tian, W.G. Lindsay, J. Shen, G. Dai, Z. Luo, J. Sun, B. Xiang, A. Hamilton, R. Somorjai and R. Deslauriers. National Research Council of Canada; University of Manitoba, Winnipeg, Manitoba Canada; GE Medical Systems, Milwaukee, WI.
 Organ/Tissue: Heart
 Keywords: cardioplegia, perfusion imaging, myocardial protection
- 916. Transmyocardial Laser Revascularisation: *In vivo* and *In Vitro* Assessment by Histology and MR-Imaging.** B.H. Walpoth, M. Müller, B. Celik, B. Nicolaus, H.-J. Altermatt, M. Frenz, U. Althaus and T. Carrel. University Hospital, Berne, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: transmyocardial, laser, revascularisation
- 917. Aortic Distensibility and Myocardial Iron Overload Studied by MRI in b-Thalassemia Major.** S. Mavrogeni, T. Maris, D. Tsiapras, I. Paraskevaidis, K. Flessa, A. Gouliamos, L. Vlahos, V. Markussis and D. Kremastinos. Onassis Cardiac Surgery Center; Drakopoulion Hospital; Areteion Hospital, Athens, Greece.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: distensibility, MRI, iron
- 918. Characterization of the Morphological Structure of the Right Ventricular Myocardium.** N. Oesingmann, U. Sprengel, J. Neuzner and W. Ricken. Kerckhoff-Clinic, Bad Nauheim, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: heart, morphology, dysplasia

- 919. MRI Assessment of Transcoronary Alcohol Ablation in Patients with Hypertrophic Obstructive Cardiomyopathy.** J.H. Ahn, S.I. Choi, C.H. Lim, C.W. Lee and T.-H. Lim. University of Ulsan College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: T2-weighted MRI, HOCM, TAA
- 920. Sensitive Detection of Early-Stage Diabetic Cardiomyopathy in the Rat with MRI.** C.H. Lorenz, M. Janif, J.S. Allen, M.J. Scott and S.A. Wickline. Washington University Medical Center, St. Louis, MO.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: cardiomyopathy, rat, diabetes
- 921. Visualization of Pericardial Adhesion in Constrictive Pericarditis by Using Magnetic Resonance Tagging Cine.** N. Yamada, S. Urayama, M. Takamiya, S. Kuribayashi, S. Imakita and M. Toba. National Cardiovascular Center, Osaka, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: heart, tag, pericardium
- 922. Effect of Revascularization on Left Ventricular Geometry as Assessed by MRI in Advanced Coronary Artery Disease.** F. Roder, S. Nekolla, J. Neverve, J. Stollfuß, F. Haas, H. Meissner and M. Schwaiger. Klinikum rechts der Isar der TU München; Deutsches Herzzentrum, München, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Quantitation: MRI
 Keywords: wall motion, revascularization, remodeling
- 923. Cardiac Extralysic Spin Tagging - CEST Perfusion.** S.S. Berr and V.M. Mai. University of Virginia, Charlottesville, Virginia.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: cardiac, perfusion

- 924. Accurate Quantification of Myocardial Mass in the Rat Using Cine MRI at 1.5T.** C.H. Lorenz, J.S. Allen, S.E. Fischer, R.E. Henson, R.M. Setser and S.A. Wickline. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: rat, ventricular function, ventricular mass
- 925. Functional Cardiac Imaging Using the Intravascular Contrast Agent MS-325.** R. Botnar, M. Stuber, M.V. McConnell, P.G. Danias, K.V. Kissinger and W.J. Manning. Beth Israel Deaconess Medical Center; Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: contrast agents, heart, function
- 926. Good Correlation But Modest Agreement Between Short-Axis Stack and BiPlane Breathhold Cine Assessment of Left Ventricular Volumes and Function in Dilated Cardiomyopathies.** M.L. Chuang, M.G. Hibberd and W.J. Manning. Beth Israel Deaconess Medical Center; Harvard Medical School, Boston, MA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: LV, heart function, ejection fraction
- 927. Validation of a Rapidly Acquired Uniplanar MRI Assessment of Ejection Fraction by Comparison with Ejection Fraction and Infarct Size after Myocardial Infarction.** B. Morgan, G.R. Cherryman, R. Keal, N. Hudson, A.M. McCullough, K. Woods and D. Barnett. University of Leicester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: heart, function, infarction

Breast and Chest Imaging

- 928. Classification of Benign and Malignant Breast Disease by Neural Network Analysis of Dynamic Imaging.** A.J. Knowles, B. Issa, S. Burton, G.P. Liney, P. Gibbs and L.W. Turnbull. Hull Royal Infirmary, Hull, UK.
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: breast, neural, network

- 929. A Breast Phantom for Quality Assurance in a Multi-Centre Screening Trial.** C. Hayes, J. Utting and M.O. Leach. Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: phantom, breast, imaging
- 930. Classification Algorithms for MRI Breast Lesions.** S.K. Plevritis, B.L. Daniel, Y.F. Yen, G. Glover and R.J. Herfkens. Stanford University, Stanford, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: breast, multivariate, ROC
- 931. Diagnostic Criteria of Ductal Carcinoma *in-situ* (DCIS) in Dynamic Contrast-Enhanced Breast MRI: Comparison with Invasive Breast Cancer (IBC) and Benign Lesions.** C.K. Kuhl, P. Mielcarek, C.C. Leutner and H.H. Schild. University of Bonn, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: DCIS, breast, MRI
- 932. Differentiating Benign and Malignant Breast Lesions with T2*-Weighted First Pass Perfusion Imaging.** K.A. Kvistad, S. Lundgren, H. Fjøsne, E. Smenes, H.-B. Smethurst and O. Haraldseth. University Hospital, Trondheim, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Perfusion
 Keywords: MRI, breast, perfusion
- 933. Clinical Evaluation of a Three-Time Point Breast MRI Method.** N.M. Hylton, L.J. Esserman, S.C. Partridge, W.L. Wang, E. Schwerin, N. Weidner and E. Sickles. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: breast, high resolution, specificity

- 934. A Comparison of Analytical Models for Improved Discrimination of Benign and Malignant Breast Tissue.** S. Partridge, N. Hylton and W.L. Wang. University of California, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: breast, models, MRI
- 935. Pharmacokinetic Analysis of Contrast Enhancement in Breast Lesions.** M.V. Knopp, H. Junkermann, U. Hoffmann, S. Zabel, U. Juschka, J. Radeleff, H.P. Sinn, G. Brix and G. van Kaick. German Cancer Research Center; University Hospitals, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: MR-mammography, pharmacokinetics, breast cancer
- 936. The Use of Pixel Thresholding in the Region of Interest Analysis of Dynamic Breast MR Imaging.** P. Gibbs and S. Mussurakis. Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: thresholding, breast, dynamic
- 937. Motion Correction in Breast 3D Dynamic MR Imaging.** K. Tobe, K. Katanoda, S. Asai, K. Yoshikawa, Y. Inoue and M. Sugishita. University of Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Motion and Artifacts
 Keywords: dynamic MRI, breast, motion correction
- 938. Absence of Magnetization Transfer Effects in 3D Breast Imaging with Water-Selective RF Pulses.** P.L. Lee, W. Edminster, M. Foley and R.M. Weisskoff. Massachusetts General Hospital and Harvard Medical School, Charlestown, MA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: tumors, MT contrast, breast imaging

- 939. MR-guided Stereotactic Interventions of MR-suspicious Breast Lesions: Clinical Significance and Pitfalls.** C.K. Kuhl, C.C. Leutner, P. Mielcarek, A. Elevelt, J. Gieseke and H.H. Schild. University of Bonn, Germany; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: intervention, breast, MRI
- 940. Elastic Matching of Dynamic MR Image Data Sets of the Female Breast.** R.E.A. Lucht, M.V. Knopp and G. Brix. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: dynamic MRI, elastic matching
- 941. *In vivo* Differential Diagnosis between Malignant and Benign Human Breast Diseases Using Localized PRESS Proton Magnetic Resonance Spectroscopy.** J.-K. Kim and S.-H. Park. Hospital of Catholic University of Taegu-Hyosung, Taegu City, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: ¹H-MRS, choline, breast lesion
- 942. Evaluation of Suspicious Breast Masses with MR Spectroscopy.** K. Cecil, J. Roebuck, L. Bolinger, M. Schnall, C. Langlotz and R. Lenkinski. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: choline, breast, spectroscopy
- 943. Clinical and Diagnostic Value of Preoperative MR Mammography and FDG-PET in Suspicious Breast Lesions.** C. Walter, K. Scheidhauer, A. Scharl, U. Pietrzyk, H. Kugel, T. Krahe and K. Lackner. University of Cologne; Max-Plank-Institut für Neurologische Forschung, Köln, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: breast, MR-mammography, FDG-PET

- 944. Biomechanics of Breast Tissue: Preliminary Study of Shape Deformation of Normal Breast Tissue.** C. Williams, B. Clymer, P. Schmalbrock and K. Fujimura. Ohio State University, Columbus, OH.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: image processing, deformation, morphing
- 945. *In vivo* Mircoscopic MR Imaging of Breast Lesions.** G. Revelon, D. Artemov, Z. Bhujwalla, E. Atalar, R. Brem, E. Zerhouni and D.A. Bluemke. Johns Hopkins University, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Microscopy
 Keywords: high resolution, breast, cancer
- 946. Are T2-weighted Images Useful to Assist in the Differential Diagnosis of Enhancing Lesions in Dynamic Breast MRI?.** C.K. Kuhl, S. Klaschik, P. Mielcarek, C.C. Leutner, J. Gieseke and H.H. Schild. University of Bonn; Philips Medical Systems, Hamburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: T2, breast, MRI
- 947. Assessment of Response to Treatment in Human Breast Cancer by 31P Magnetic Resonance Spectroscopy.** M.O. Leach, M. Verrill, J. Glaholm, T.A.D. Smith, D.J. Collins, G.S. Payne, J.C. Sharp, S.M. Ronen, V.R. McCready, T.J. Powles and I.E. Smith. Institute of Cancer Research and Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: spectroscopy, tumour, breast
- 948. A Novel Method for Silicone Detection in the Breast: Spatial Spectral Excitation.** M.J. Lowe, H. Reynolds and R. Sood. Indiana University Medical School, Indianapolis, IN.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Healthy Tissue
 Methods: RF-Pulses
 Keywords: breast implants, RF pulses

- 949. Evaluation of Diaphragmatic Paralysis Using MR Fluoroscopy.** T. Iwasawa and M. Kawamoto. Kanagawa Cardiovascular and Respiratory Center, Yokohama, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: lung, respiration, fluoroscopy
- 950. Navigator Echo Diaphragm Monitoring in the Assessment of Diaphragm Paralysis.** A.M. Taylor, P. Jhooti, J. Keegan, A.K. Simonds and D.J. Pennell. Royal Brompton Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: navigator, diaphragm, paralysis
- 951. Chest Wall Invasion by Carcinoma of the Lung: Evaluation with Respiratory Motion Cine MRI.** K. Yokoyama, T. Nitatori and J. Hachiya. Kyorin University, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: magnetic resonance (MR), motion studies, lung neoplasms
- 952. New Black Blood Pulse Sequence in 16 Cardiac Cycles for Studies of the Mediastinum.** V. Martinez-Sanjuan, J.J. Garcia Nieto, V. Belloch, A. Lucas, S. Campos, M.J. Masip, G. Montoliu, J.C. Martinez, G. Zannoli, H. Lejay and J. Celma. Hospital General Universitario de Valencia, Spain; S. Diagnostico por Imagen-Unidad de R.M. - ERESA; General Electric Medical Systems, Buc, France.
 Organ/Tissue: Chest
- 953. MR Imaging of Thymomas: Differential Diagnostic Appearances of Invasive Thymoma Correlated with Pathologic Findings.** M. Endo, Y. Takada, K. Obayashi, S. Hirota, T. Soejima, K. Yamazaki, M. Kusumoto and M. Kono. Hyogo Medical Center for Adults, Asashi; Kobe University, Kobe, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: thymoma, MR imaging, pathology
- 954. Slice Tracking and Navigator Gating Provide Good Image Quality without the Need for Breath-Holding in Lung Imaging.** J.B. Rodenburg, J. Smink, P. Salverda, C. Leutner, G. Lutterbey and J. Gieske. Philips Medical Systems, The Netherlands; University of Bonn, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: navigators, slice tracking, lung

- 955. MR Perfusion Imaging for Human Lung Disease.** O. Haraldseth, T. Amundsen, J. Kværness, A. Waage and L. Bjørner. MR Center; Norwegian University of Technology and Science, Trondheim, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Inflammation
 Methods: Perfusion
 Keywords: lung, perfusion, MRI
- 956. Dynamic MR Imaging for Evaluating Abnormal Respiratory Coordination in Obstructive Airways Disorders.** K. Suga, T. Tsukuda, H. Awaya, N. Matsunaga, K. Sugi and K. Esato. Yamaguchi University School of Medicine, Yamaguchi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: dynamic MR, chest, ventilation
- 957. Dependence of T2 on Lung Water Density.** M.R. Estilaei and A. MacKay. The University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: lung, T2, water density
- 958. Measurements of the Inherent T2 Relaxation in Lung.** M. Estilaei and A. MacKay. The University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: lung, density, inherent T2
- 959. Breath-hold ECG-Gated Black-Blood T2-Weighted and Short-Inversion-Time Inversion-Recovery (STIR) MR Imaging of the Lung.** Y. Yamashita, T. Yokoyama, S. Tomiguchi, T. Matsuno and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: lung, fast SE, STIR

- 960. Breath-Hold Magnetic Resonance Techniques for the Detection of Bronchiectasis.** A.R. Moody, P.S. Morgan, A.L. Martel, W. Kinnear, I.D. Johnson and N. Scriven. Nottingham University, Nottingham, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: lung, bronchiectasis, breath-hold
- 961. Comparison of Short Inversion Time Inversion Recovery (STIR) and Fat-Saturated (Chemisat) Techniques for Background Fat Intensity Suppression in the Cervical and Thoracic MR Imaging.** M. Nakatsu, H. Hatabu, K. Morikawa, T. Shimono, H. Itoh and J. Konishi. Kyoto University Hospital, Kyoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: STIR, fat suppression, chest

Genitourinary Imaging

- 962. MR Vesicography: Role of a 3D Ultrafast T2-Weighted Sequence.** K. Ohgi, M. Isoda, S. Tanaka, M. Toyoshima, T. Abe, T. Furukawa, H. Akiyama, S. Kimuma, K. Uehara, K. Murata, H. Yamada and M. Higashi. Japanese Red-Cross Medical Center, Tokyo; Kasukabe-Shuwa Hospital, Saitama; Kitazato-Institute Hospital, Tokyo; Toshiba Medical Inc., Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Male GU
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: urinary bladder, ultrafast sequences, 3D sequences
- 963. High-Resolution MR Imaging of Acute Scrotum.** Y. Watanabe, T. Ishimori, M. Dohke, Y. Amoh, A. Okumura, K. Oda, S. Koike, Y. Dodo, K. Ohkubo and Y. Arai. Kurashiki Central Hospital, Kurashiki, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Male GU
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: testis, torsion, inflammation
- 964. Quantification of Intra Voxel Incoherent Motion of Normal and Malignant Prostatic Tissue.** B. Issa, G.P. Liney and L.W. Turnbull. Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Diffusion
 Keywords: IVIM, prostate, tumor

- 965. MRS and Dynamic Contrast Enhanced MRI of Prostatic Carcinoma and Benign Prostatic Hypertrophy.** G.P. Liney, L.W. Turnbull and M. Lowry. Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: prostate, spectroscopy, contrast-enhanced MRI
- 966. Quantitative Dynamic Contrast Enhanced MRI in the Prostate Following Radiation Therapy: Preliminary Results.** G.P. Liney, P. Singh and L.W. Turnbull. Royal Hull Hospitals, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: prostate, radiotherapy, contrast-enhanced MRI
- 967. Combined Endorectal/Phased-Array MR Imaging and 3-D 1H-MR Spectroscopic Imaging for Improved Diagnosis of Extracapsular Extension in Prostate Cancer.** J. Kurhanewicz, R. Males, D. Sokolov, S. Nelson, J. Scheidler, K. Yu, H. Hricak, P Carroll and D. Vigneron. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: MRSI, prostate, extracapsular extension
- 968. Multiple-Slice Proton Spectroscopic Imaging of the Human Prostate with a Single Spin Echo Pulse Sequence.** A. Heerschap, M. Van der Graaf, G. Jager, W. Bovee and J. Barentsz. University Hospital Nijmegen; Technical University Delft, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: multi-slice, spectroscopy, prostate
- 969. Magnetic Resonance Imaging of Stage I Cervical Carcinoma: A Comparison of a Dedicated Cervical Coil with External Phased Array Coil Techniques.** N.M. deSouza, A.D. Williams, D.J. Gilderale, G.A. Coutts, G.A. McIndoe and W.P. Soutter. Hammersmith Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: RF-Coils
 Keywords: cervix, coil, cancer

- 970. Endometrial Carcinoma: Evaluation of Depth of Myometrial Invasion by MR Imaging.** M.H. Sheu, J.H. Wang, M.W. Liu, H. Chiang and M.H. Teng. Veterans General Hospital-Taipei, Taiwan, R.O.C.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: uterine neoplasms, uterus endometrium, uterus MR
- 971. MRI and Serum CA-125 for Prognostic Assessment of Patients Suspected for Ovarian Cancer.** T.H.M Falke, M.A. Heitbrink, C.W. Burger, R.H.M Verheijen and P. Kenenmans. Free University Medical Centre, Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: ovarian, MRI, cancer
- 972. A Pilot Study to Investigate the Effects of a Progestogen on the Endometrium of Long Term Tamoxifen Treated Breast Cancer Patients Using TVS and MRI.** L.W. Turnbull, P. Ballard, R.L. Tetlow, S.J. Bowsley, S. Burton and D.W. Purdie. Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: uterus, tamoxifen
- 973. 3D MRI for the Study of Ovarian Follicular Dynamics in a Bovine Model.** G.E. Sarty, E.J. Kendall, G.P. Adams and R.A. Pierson. University of Saskatchewan, Saskatchewan, Saskatoon, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: ovary, FISP, follicles
- 974. Mature Cystic Teratoma of the Ovary with Little Fat Component.** J. Takahama, S. Hirohashi, M. Takewa, T. Ito, R. Hirohashi, Y. Yoshimura, H. Ohishi and H. Uchida. Saiseikai Chuwa Hospital; Nara Medical University, Nara, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MR imaging, ovarian teratoma

- 975. Ovarian Brenner Tumors: MR Imaging Characteristics.** E.K. Outwater, E.S. Siegelman, B. Kim, P. Chiowanick and A. Kilger. Thomas Jefferson University Hospital; University of Pennsylvania Medical Center, Philadelphia, PA; Samsung Medical Center, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: ovarian, tumors, Brenner
- 976. Endovaginal MRI of the Urethra.** J. Stoker, F.A.A. Blok, I.L. Tan, J.L.H.R. Bosch and J.S. Laméris. University Hospital, Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: urethra, endoluminal coil, anatomy
- 977. The Value of MR Imaging in Predicting Outcome Following Surgery for Perianal Fistula.** J. Ward, J.A. Spencer, K. Chappell, D. Wilson, A.C.J. Windsor and N.S. Ambrose. St. James's University Hospital, Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: anus, fistula, outcome
- 978. Functional Imaging of the Pelvic Floor through Strain Manoeuvres Using an Endoanal Receiver Coil with Position Tracking.** G.A. Coutts, D.J. Gilderdale, A.D. Williams and N.M. deSouza. Hammersmith Hospital, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Degeneration
 Methods: RF-Coils
 Keywords: anal, tracking, function
- 979. Pelvic Floor Descent in Females: Comparison of Colpocystodefecography and Single-Shot MR Imaging.** L. Van Hoe, D. Vanbeckevoort, J. Deprest, R. Oyen, E. Ponette and G. Marchal. Catholic University Leuven, Belgium.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: colpocystodefecography, pelvic descent, fast MR imaging

- 980. Fast and Ultrafast Sequences with Fat Suppression and Breath Hold Mode: New Standard in Renal Imaging?.** C. Walter, M. Krüssell, W. Heindel, H. Kugel, G. Jung and A. Gindele. University of Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: kidney, tumor, fast imaging technique
- 981. Functional Imaging of the Kidney with Diffusion-Weighted Echo-Planar MR Imaging.** T. Namimoto, Y. Yamashita, Y. Tang, Y. Abe, Y. Komohara and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: kidney, diffusion, function
- 982. Functional MR Urography: Towards a Comprehensive Evaluation of Ureteropelvic Junction Obstruction Using MRI.** P.V. Prasad, J.W. Goldfarb, M. Mostafavi, J. Yang, W. Li and R.R. Edelman. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: MR-urography, Gd-DTPA, renal pelvis
- 983. Dual Phase 3D MRA of the Kidneys in the Pre-operative Evaluation of Renal Cancer.** P.L. Choyke, W. Rayford, J.C. Lyne, W.M. Linehan and M.M. Walther. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Tumors
 Methods: Angiography
 Keywords: renal artery, MRA, renal cancer
- 984. Usefulness of T2 Weighted Images, Chemical Shift Imaging and Gd-DTPA Dynamic Studies for MRI Differentiation of Adrenal Masses at 1.5 Tesla, based on Examinations of 110 Tumors.** R.Z. Slapa, W. Jakubowski, L. Królicki, A. Januszewicz, E. Dabrowska, T. Feltynowski, A. Kasperlik-Zaluska and J. Fijuth. Warsaw Medical School; Centre for Postgraduate Medical Education; Oncology Institute; Warsaw, Poland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: adrenals, tumors, differentiation

- 985. Mapping Placental Longitudinal Relaxation Times in Normal and Compromised Pregnancies.** S.T. Francis, K.R. Duncan, R.J. Moore, R.W. Bowtell, P.N. Baker, I.R. Johnson, B.S. Worthington and P.A. Gowland. University of Nottingham, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: placenta, T1 mapping, NSIS
- 986. Postmortem Perinatal MR Imaging: Comparison with Prenatal Ultrasound and Necropsy.** R.A. Huch, T.A.G.M. Huisman, T. Stallmach, R. Huch, G.P. Krestin, P. Pelkonen and J. Wisser. University Hospital, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: fetus, malformation, necropsy

Imaging of the Abdomen

- 987. MR Imaging in Detecting and Characterizing Small Tumors in Cirrhotic Livers, Correlation with Pathologic Findings of Explanted Livers.** G. Picaud, A. Rode, B. Bancel, L. Henry, M. Chevallier, V. Vilgrain, F. Berger, C. Ducerf and P.C. Douek. Hôpital de la Croix-Rousse, Lyon, France.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver, tumor, gadolini
- 988. Functional and Morphological Evaluation of Hepatic Lesions by Multiphase Breathhold 3D Gd-Enhanced MRA.** H. Hawighorst, S.O. Schönberg, M. Essig, M.V. Knopp, P. Miltner and G. van Kaick. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: functional, MRA, liver
- 989. Comparison of Spoiled GRASS and Single Shot Fast SE and Echo Planar Imaging with Conventional SE Sequences in the Detection of Hepatic Tumors.** M. Hori, T. Murakami, T. Kim, S. Takahashi, K. Tomoda, Y. Narumi, H. Oi and H. Nakamura. Osaka University Medical School, Osaka, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MRI, liver, neoplasms

- 990. Comparison of Iron Colloid Enhanced Various Breath Hold T2-Weighted MR Imaging of Liver Tumor.** S. Sugihara, Y. Suto, M. Kamba and T. Ogawa. Tottori University Faculty of Medicine, Nishimachi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MR imaging, HCC, fast imaging
- 991. Fast T2-Weighted MR Imaging before and after Intravenous Administration of Superparamagnetic Iron Oxide in the Detection of Liver Metastases.** M.E.J. Pijl, M.N.J.M. Wasser, E.L. van Persijn van Meerten and J.L. Bloem. Leiden University Medical Center, Leiden, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: liver, metastases, SPIO
- 992. Dynamic Enhanced Fast Gradient Echo (efgre 3D): Comparison with Three Phase Helical CT in Diagnosis of Hepatocellular Carcinoma.** K.T. Yoh, W.H. Kim, J.H. Kim, Y.S. Kim and C.H. Suh. Inha University College of Medicine, Incheon, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Gradients
 Keywords: liver neoplasms, MR, diagnosis
- 993. A Comparison of Ultrafast Multiphase Contrast-Enhanced 3D MR and Conventional SE Imaging in the Evaluation of Liver Neoplasms.** I.R. Francis, R.J. Herfkens, N.C. Chen, M.J. Lane, B.D. Daniels, R.Y. Shifrin, S.G. Heiss and M.T. Alley. University of Michigan, Ann Arbor, MI; Stanford University Medical Center, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: liver neoplasms, contrast media, MR imaging methods
- 994. WITHDRAWN**
- 995. Classification of Liver Lesions: Subjective and Objective Signal Intensity Characterization on Dual Echo T2 Weighted MRI.** R. Tello, H.M. Fenlon, V.L. DeCarvalho and E.K. Yucel. Boston University, Boston, MA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: liver, T2, malignant

- 996. Assessment of Liver Regeneration after a Major Surgical Resection: A MRI Study.** D. Šuput, A. Pleskovic, I. Šersa and F. Demsar. School of Medicine; Jozef Stefan Institute, Ljubljana, Slovenia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Degeneration
 Methods: Basic NMR
 Keywords: liver, regeneration
- 997. Gadolinium-Enhanced Dynamic MR Imaging Using Fast Sping Echo (FSE) Sequence: Comparison of Spoiled Gradient Echo, FSE, FSE with a Half-Fourier Technique, and FSE with Fat Saturation.** H. Sugimura, M. Takesako, S. Kitane, Y. Machida, X.Q. Tong, M. Asato, Y. Yuki, R. Ochiai and S. Tamura. Miyazaki Medical College, Miyazaki; Toshiba Nasu Works, Tochigi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: neoplasms, pulse sequences, rapid imaging
- 998. Differential Diagnosis of Hepatic Hemangiomas and Cysts without Contrast Enhancement by Fluid-Attenuated Inversion Recovery (FLAIR) Imaging.** S. Nakano, T. Katoh, N. Fujiwara, Y. Mori, I. Hino, M. Ohkawa and M. Tanabe. Kagawa Medical University, Kagawa, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: FLAIR, liver, hemangioma
- 999. Liver Parenchyma Regeneration After Surgical Resection in Patients with Liver Tumors: Results of MR-Volumetry.** R. Hammerstingl, Th.J. Vogl, G. Paul, J.O. Balzer, W.O. Bechstein and R. Felix. Humboldt University of Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: liver regeneration, MR volumetry, normal liver parenchyma
- 1000. 3D Fast Low Angle Shot (FLASH) Sequence with Target MIP for Esophageal Varices: Evaluating Effect of Sclerotherapy and Predicting Recurrence.** K. Yoshikawa, K. Sugimura, I. Mouri and S. Yamamoto. Shimane Adult Disease Center, Hamada; Shimane Medical University, Izumo; Hirata Municipal Hospital, Hirata, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: esophageal varices, 3D-FLASH, MR angiography

- 1001. Functional MRI and 31P MRS Studies of the Effects of Acute Ethanol and Hypoxia on Livers of Chronic Ethanol Treated Rats.** M. Brauer and I. Bengtsson. University of Guelph, Ontario, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Vascular Diseases
 Methods: Sequences: combination MRI/MRS
 Keywords: fMRI, bioenergetics, liver
- 1002. Assessment of Hepatocellular Carcinoma and Portal Hypertension in Patients with Cirrhotic Liver: Thin-Section Whole Liver Dynamic MR Imaging Combined with Simultaneous Whole Abdominal MR Portography with Gadolinium-Enhanced Three-Dimensional MR Angiographic Sequence.** T. Ichikawa, S. Ohsawa, T. Araki, H. Moriya, H. Kumagai and S. Aoki. Yamanashi Medical University, Yamanashi; Yokogawa Medical System, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: hepatic neoplasm, contrast agent, liver cirrosis
- 1003. Clinical Application of MR Cholangiopancreatography in Children.** H.-K. Yoon, S.H. Kim, D.G. Na, J.M. Ahn and B.K. Han. Sung Kyun Kwan University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Malformation
 Methods: Category not applicable
 Keywords: MR, bileduct radiography, children
- 1004. Optimization of Echo Train Spacing in Half-Fourier RARE for MRCP.** N. Ichinose, M. Miyazaki, Y. Kassai, S. Sugiura, H. Takai and F. Kojima. Toshiba Nasu Works; Toshiba Medical Engineering Laboratory, Tochigi, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: RARE, MRCP, echo train spacing
- 1005. Comparataive Study of ssfse and Respiratory Triggered FSE Sequences for MRCP.** K. Itoh, T. Tabuchi, N. Kojima, Y. Maetani, T. Shibata and J. Konishi. Kyoto University Faculty of Medicine, Kyoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MRCP, pulse sequence, bile duct

- 1006. MR Cholangiopancreatography in Pancreaticobiliary Diseases: Value Comparison of Single-Slab RARE versus Multislice Half-Fourier RARE Sequences.** M.-G. Lee, Y.K. Jeong, M.H. Kim, S.G. Lee, E.M. Kang, D. Chien, G. Laub, H.K. Ha, P.N. Kim and Y.H. Auh. University of Ulsan; Sungshin Women's University, Seoul, Korea; Siemens Ltd., Hong Kong; Siemens Medical Engineering, Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MRCP, biliary diseases, comparative studies
- 1007. MR Imaging of Pancreatic Cancer: Comparison of Manganese-DPDP and Gadolinium Chelate.** S.J. Diehl, K.-J. Lehmann, J. Gaa, I. AlNasser, S. McGill and M. Georgi. Faculty of Clinical Medicine, Mannheim; University of Heidelberg, Germany; Nycomed, Oslo, Norway.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: MRI, pancreas, Manganese
- 1008. Diagnostic Imaging of Klatskin Tumors: Comparison of Plain and Contrast-Enhanced MR-Cholangiography, MRI, and ERC.** Th.J. Vogl, R. Hammerstingl, N. Bakhtari, J.O. Balzer, R.E. Hintze, W.O. Bechstein and R. Felix. Humboldt University of Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: Klatskin tumors, bile ducts, comparison of MRC with ERC
- 1009. Efficacy of High-Resolution Dynamic MR Imaging for Differentiation between Malignant and Benign Polypoid Lesions of the Gallbladder.** K. Honjo, T. Fujita, S. Koike, K. Takano, H. Awaya, H. Okazaki, M. Yasui, A. Hiyama, S. Katayama and N. Matsunaga. Yamaguchi University School of Medicine, Ube, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: gall bladder, high-resolution, neoplasms
- 1010. Dual Contrast MR Cholangiopancreatography (MRCP): A Technique to Manipulate the Signal Intensity Arising from Intestinal Fluid.** T. Takahara, Y. Kurihara, M. Van Cauteren, M. Takahashi, I. Tani, T. Kazama and T. Ishikawa. St. Marianna University, Kanagawa; Philips Medical Systems Japan; Yokohama Sakae Kyosai Hospital, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: dual contrast MRCP, ferric ammonium citrate, FerriSeltz

- 1011. Virtual Cholangioscopy with MRI.** B. Dubno, W. Luboldt, T.F. Hany and J.F. Debatin. University Hospital, Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: MR-Cholangioscopy, virtual, MRCP
- 1012. Sclerosing Cholangitis: MR Imaging Findings with Pathologic Correlation.** G. Revelon, A. Rashid and D. Bluemke. Johns Hopkins University, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: liver, pathology, imaging
- 1013. Detection of Hepatocellular Carcinoma: Comparison of T2-Weighted Breath-hold Fast Spin — Echo Sequences and High-Resolution Dynamic MR Imaging with a Phased-Array Body Coil.** T. Fujita, K. Honjo, A. Hiyama, H. Okazaki, M. Yasui and N. Matsunaga. Yamaguchi University School of Medicine, Yamaguchi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: detection, dynamic MR, HCC
- 1014. Utility of Single Shot Fast Spin Echo Technique in Evaluating Pancreaticobiliary Disease: T2 Weighted Image and MR Cholangiopancreatography.** B.W. Choi, M.-J. Kim, H.K. Ko, D.J. Kim, J.H. Kim, J.J. Chung, H.S. Yoo and J.T. Lee. Yonsei University College of Medicine, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: pancreatobiliary, MRCP, HASTE
- 1015. Influence of Mangafodipir Trisodium (Mn-DPDP) on the Imaging Properties of Abdominal Organs.** G. Jung, W. Heindel, T. Krahe, H. Kugel, C. Walter and R. Fischbach. University of Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Contrast Agents
 Keywords: contrast media, Mn-DPDP, abdomen

- 1016. 3D-MR Proctography in Children after Treatment for Anorectal Anomalies.** H. Tonami, K. Konuma, M. Matoba, Y. Kuginuki, H. Yokota, H. Ikawa, T. Okimura and I. Yamamoto. Kanazawa Medical University, Ishikawa, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: proctography, children, anorectum
- 1017. High-Resolution MR Imaging of the Anal Sphincter in Children Using Endoanal Receiver Coils.** N.M. deSouza, D.J. Gilderale, A.D. Williams, G.A. Coutts, D.K. MacIver and H.C. Ward. Hammersmith Hospital; Lewisham Childrens Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Malformation
 Methods: RF-Coils
 Keywords: anal, coil, pediatric
- 1018. Intragastric Echo-Planar Imaging Measurements of Meal Viscosity *in-vivo*.** L. Marciani, P. Manoj, P. Young, J. Wright, R.J. Moore, D. Bush, S. Al-Sahab, A. Fillery-Travis, R.C. Spiller and P.A. Gowland. University of Nottingham; Institute of Food Research, Norwich; University Hospital, Nottingham, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: EPI, gastrointestinal, viscosity
- 1019. Diagnosis of Extraserosal Invasion in Advanced Gastric Cancer: Value of Out-of-Phase MR Image.** S.H. Kim, H.K. Lim, S.J. Lee, S.H. Choi and Y.O. Lee. Sung Kyun Kwan University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: stomach, tumor, MRI
- 1020. Staging of Gastric Adenocarcinoma *In Vitro* with 1.0-T MR Imaging.** I.Y. Kim, Y.H. Kim, Y.T. Kim, W.S. Cho, W.K. Bac and C.J. Kim. Soonchunhyang University Hospital, Chunan, South Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: neoplasm, specimen, stomach

- 1021. Effects of Isoflurane and Edrophonium on Small Bowel Motility Monitored with Real-Time Interactive MRI.** F.P. Chan, K.C.P. Li, S.G. Heiss, J.M. Pauly, A.B. Kerr and S. Wadhwa. Stanford University Medical Center, Stanford, CA.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Healthy Tissue
Methods: Sequences: Imaging
Keywords: small bowel motility, real-time MRI, isoflurane
- 1022. MR Enema in Crohn's Disease - A Correlation to Conventional Enteroclysis.** T. Helmberger, N. Holzknecht, S. Faber, M. Gregor, J. Gauger and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
- Type of Study: Methodological Development
Main Target of Study: Morphology
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Inflammation
Methods: Contrast Agents
Keywords: Crohn's disease, contrast, inflammatory disease
- 1023. Dynamic Analysis of Gastric Motor Function with RARE Sequences.** D. Bilecen, K. Scheffler, W. Steinbrich and J. Seelig. University of Basel; University Hospital, Basel, Switzerland.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Category not applicable
Methods: Motion and Artifacts
Keywords: stomach, dynamic, tap water
- 1024. Dynamic Magnetic Resonance Defaecating Proctography — A New Method for Assessing Anorectal Dysfunction?.** S. Gould, G. Lamb, N. Vaughan, A. Wan, W. Gedroyc and A. Darzi. Imperial College School of Medicine at St. Mary's, London, UK.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Degeneration
Methods: Category not applicable
Keywords: MRI, dynamic, proctography
- 1025. External Sphincter Atrophy on Endoanal MRI: Correlation with Histopathology.** J. Stoker, E. Rociu, J.W. Briel, D.D.E. Zimmerman, W.J. Mooi, W.R. Schouten and J.S. Laméris. Erasmus University, Rotterdam, The Netherlands.
- Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Category not applicable
Methods: Category not applicable
Keywords: anus, incontinence, endoluminal coil

- 1026. Staging of Abdominal Lymphoma: Is MR Imaging Using an Ultrashort Fast Spin Echo Sequence (UTSE) as Diagnostic as Spiral CT?.** W. Heindel, G. Jung, R. Fischbach, H. Tesch, A. Gossmann, H. Kugel, H.G. Brochhagen, C. Walter, P. Landwehr, Th. Krahe, V. Diehl and K. Lackner. University of Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: lymphoma, staging, CT/MRI
- 1027. T-staging of Stomach Cancer: Comparison of Imaging Planes on MRI.** K.Y. Lee, T.K. Kim, S.H. Hong, A.Y. Kim, J.K. Han and B.I. Choi. Seoul National University, Seoul, Korea.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Keywords: MR, stomach, neoplasm
- 1028. Dynamic Real-Time Magnetic Resonance Imaging - A New Diagnostic Modality for Groin Pain?.** S. Gould, G. Lamb, N. Vaughan, W. Gedroyc, A. Mansfield and A. Darzi. Imperial College of Medicine at St. Mary's, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Methods: Category not applicable
 Keywords: MRI, dynamic, groin pain
- 1029. Enema Contrast Optimization for Assessment of the Colonic Wall and Lumen in MR-Colonography (MRC).** W. Luboldt, S. Wildermuth, M. Schmidt and J.F. Debatin. University Hospital, Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MR-colonography, contrast, bowel disease

Paramagnetic Contrast Agents

- 1030. Clearance of Gadolinium Contrast Agent by Hemodialysis: *In Vitro* and Clinical Studies.** K. Katagiri, S. Okada and T. Kumazaki. Nippon Medical School, Chiba; Nippon Medical School, Tokyo, Japan.
 Methods: Contrast Agents
 Keywords: MRI, contrast agent, hemodialysis
- 1031. Susceptibility-Sensitive Dynamic Echo-Planar Imaging with a Superparamagnetic Iron Oxide (SHU-555A): Evaluation of Tumor Vascularity within Hepatocellular Carcinoma.** T. Ichikawa, H. Haradome, A.S. Arbab, T. Araki and J. Hachiya. Yamanashi Medical University, Yamanashi; Kyorin University, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: EPI, dynamic study, perfusion

- 1032. Gadodiamide-Enhanced MRI for the Detection of Ovarian Cancer in Postmenopausal Women.** M.A. Heitbrink, T.H.M. Falke, C.W. Burger, R.H.M. Verheijen and P. Kenemans. Free University Medical Centre, Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: ovarian, MRI, contrast
- 1033. MR Cholangiography with a Hepatobiliary Agent in a Rat Hepatitis Model.** S. Hirohashi, R. Hirohashi, H. Uchida, N. Matsuo, M. Takewa, W. Ono, H. Ohishi, N. Kato, M. Takahashi and T. Miyazawa. Nara Medical University, Nara; Nihon Schering, Osaka, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: cholangiography, bile, duct
- 1034. Improving MR Cholangiopancreatography Using a New Negative Oral Contrast Agent: a Controlled Study of Ferumoxsil.** B.E. Marchetto, T.L. Krebs, B.D. Daly and R.P. Gullapalli. University of Maryland, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast, MRI, cholangiopancreatography
- 1035. Slow Infusion of Gadolinium Improves Coronary Visualization in 3D Navigator Acquisitions.** W.J. Rogers, C.M. Kramer, Y.-L. Hu, D. Pakstis and N. Reichek. Allegheny University of the Health Sciences, Pittsburgh, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: heart, contrast, angiography
- 1036. Imaging After Renal Revascularization: Role of MRI and Gadolinium-Enhanced MRA.** R.C. Carlos, Q. Dong, W. Weadock, J.S. Ward, T.L. Chenevert, F.J. Londy and M.R. Prince. University of Michigan, Ann Arbor, MI.
 Organ/Tissue: Renal
 Keywords: gadolinium, MRA, revascularization
- 1037. Gd-BOPTA Enhanced MR Imaging of Liver Tumors; Comparison with Gd-DPTA.** N. Marugami, S. Hirohashi, H. Uchida, W. Ono, K. Ueda and H. Ohishi. Nara Medical University, Nara, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: liver, comparative, study

- 1038. The Relaxivity of Gd-EOB-DTPA in the Normal and Biliary Obstructed Guinea Pig.** B. Shuter, S.-C. Wang, J. Roche, G. Briggs and J.M. Pope. Royal North Shore Hospital, Sydney; Queensland University of Technology, Brisbane, Australia.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: relaxivity, *in-vivo*, GD-EOB-DTPA
- 1039. Animal Studies of the Contrast Agents [Gd(DTPA-BBA)], [Gd(DTPA-BTBA)] and [Gd(DTPA-BMOBA)] for MR Imaging.** G.C. Liu, R.S. Sheu, Y.T. Kuo, Y.M. Wang, P.T. Chu and T.S. Jaw. Kaohsiung Medical College, Kaohsiung, Taiwan, R.O.C.
 Methods: Contrast Agents
 Keywords: MR imaging, Gd complexes, contrast
- 1040. Dynamic Contrast Enhancement of Liver and Kidney: Evaluation of CH₃-DTPA-Gd and Gd-DTPA.** M. Moseley, C. Beaulieu and A. de Crespigny. Stanford University, Stanford, CA.
 Methods: Contrast Agents
 Keywords: Gd-DTPA, contrast agents, kidney
- 1041. Synthesis and Relaxometric Investigations of G = 7 and G = 9 Starburst® Dendrimer-DOTA-M Chelates, Where M = Gd(III), Mn(II), and Fe(III).** L.H. Bryant, M.W. Brechbiel, C. Wu, J.W.M. Bulte, V. Herynek and J.A. Frank. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: dendrimer, relaxometry, contrast agent
- 1042. Relaxometric Evaluation of Novel Mn(II) Complexes as Contrast Agents for MRI.** S. Aime, S. Canton, E. Terreno, F. Fedeli, G. Manfredi, L. Paleari, L. Calabi and F. Uggeri. Università di Torino; Bracco S.p.A., Milano, Italy.
 Methods: Contrast Agents
 Keywords: relaxometry, interaction, albumin
- 1043. ¹H-NMRD and ¹⁷O-NMR Assessment of Gd[DTPA-bis(methoxyethylamide)]; the Active Ingredient in OptiMARK™, A Non-Ionic MRI Agent.** K. Adzhami, F. Connac, M. Spiller, E. Toth, M.P. Periasamy, S.H. Koenig and A. Merbach. Mallinckrodt, St. Louis, MO; University of Lausanne, Switzerland; New York Medical College, Valhalla, NY; Relaxometry, Inc., Mahopac, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: OptiMARK, relaxivity, water exchange

- 1044. Perfusion-Weighted MR Imaging in the Upper Abdomen: Preliminary Clinical Experience in 61 Patients and 5 Volunteers.** H. Haradome, T. Ichikawa, T. Nitatori and J. Hachiya. Kyorin University, Tokyo; Yamanashi Medical University, Yamanashi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, EPI, abdomen
- 1045. Quantification of Blood Volume in Experimental Rat Liver Tumors by Dynamic Magnetic Resonance Imaging with Ultrasmall Iron Oxide Particles.** C. Pöckler-Schöniger, W. Schreiber, P. Bannasch, O. Schueler, J. Koepke and M. Georgi. University of Heidelberg; University of Mainz; German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Perfusion
 Keywords: liver blood volume, dynamic MRI, USPIO
- 1046. Abdominal Vessel Enhancement with the Blood Pool Agent NC100150; Relation to Dose and Echo Time.** J. Wikström, L. Johansson, A. Ericsson, A. Börseth, P. Åkeson and H. Ahlström. Uppsala University Hospital, Uppsala, Sweden; Nycomed Imaging AS, Oslo, Norway.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: MRA, blood pool agent, abdominal vessels
- 1047. In vivo Measurements of T1 and T2 Relaxivity in Pig Kidney Cortex.** J. Mørkenborg, F. Taagehøj Jensen, N. Væver Petersen, J. Frøkiær, J.C. Djurhuus and H. Stødkilde-Jørgensen. Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Healthy Tissue
 Methods: Contrast Agents
 Keywords: kidney, relaxivity, Gd-DTPA
- 1048. Paramagnetic Relaxation Studies of Brain Metabolites.** P.S. Murphy, I.J. Rowland and M.O. Leach. Institute of Cancer Research and The Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: paramagnetic, metabolites, proton

- 1049. The *in vivo* Measurements of Intracellular and Extracellular Components of Relaxation Times and Volume Fractions.** Y. Chang, H.K. Ryeom, H.J. Park, K.J. Suh, Y.S. Kim, J.M. Lee and D.S. Kang. Kyungpook National University Hospital, Taegu, Korea.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: liver, contrast agent, relaxation
- 1050. Why are Breast Lesions Enhanced Contrast-Medium at Magnetic Resonance Imaging?.** B. Boné, M.K. Wiberg, U. Falkmer, C. Parrado and P. Aspelin. Karolinska Institute, Stockholm, Sweden.
- 1051. Use of Subcutaneous Combidx® Induced Magnetic Susceptibility Artifact Sizes to Identify Sentinel Lymph Nodes and Lymphatic Drainage Patterns.** J.M. Rogers, C.W. Jung, J. Lewis and E.V. Groman. Advanced Magnetics, Inc., Cambridge, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: lymph, USPIO, Combidx®

Contrast Agents

- 1052. Study of Lymphatic Drainage Using Subcutaneous USPIO Induced Magnetic Susceptibility Artifact Sizes and Fe-59 Biodistribution.** J.M. Rogers, E.V. Groman and C.W. Jung. Advanced Magnetics, Inc., Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: Combidx, USPIO, lymph
- 1053. MRI in Liver Transplantation: Prospective Preoperative Evaluation Using Iron Oxide-Enhanced Studies in Comparison to Clinical and Histopathologic Findings.** R. Hammerstingl, Th.J. Vogl, W. Schwarz, O. Söllner, R. Lobeck, W.O. Bechstein and R. Felix. Humboldt University of Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: liver transplatation, HCC, iron-oxide-enhanced MRI

- 1054. Primary and Secondary Liver Tumors in Dynamic T2-Weighted Iron Oxide-Enhanced MR Imaging Compared with Conventional Techniques.** T.J. Vogl, S. Blume, W. Schwarz, R. Hammerstingl, W.O. Bechstein, R. Lobeck and R. Felix. Humboldt University of Berlin, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: iron-oxide, enhanced MRI, dynamic imaging
- 1055. Reversibility of Experimental Acute Renal Failure in Rats: Assessment with USPIO-Enhanced MR Imaging.** A. Loshkajian, J.P. Laissy, S. Benderbous, J.M. Idée, S. Chillon, H. Beaufile and E. Schouman-Claeys. Hôpital Bichat, Paris; Laboratoire Guerbet, Aulnay-sous-Bois, France.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: kidney diseases, studies, USPIO
- 1056. MR Staging of Mediastinal Lymph Nodes: Evaluation Using a Superparamagnetic Contrast Agent.** D.A. Bluemke and K.P. Wang. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: superparamagnetic contrast agent, lymph nodes, lung cancer
- 1057. Pre-Polarized Saline: an *In vivo* Feasibility Study of a Safe and Novel Contrast Agent.** I.R. Young, N.M. deSouza, G.A. Coutts, A.D. Williams, A.S. Hall and J.V. Hajnal. Hammersmith Hospital, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: pre-polarization, contrast agent, intravascular
- 1058. Magnetic Resonance Contrast Agents for Cerebral Dynamic Susceptibility Imaging: Hemodynamic Effects after Intravenous Bolus Injection.** A. Doerfler, J. Weber, I. Wanke, W. Reith, S. Heiland and M. Forsting. University of Essen; University of Heidelberg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast agents, perfusion MRI, hemodynamics

- 1059. Assessment of Pulse Sequence Quality Following SPIO Enhancement.** K.U. Wentz, J.M. Fröhlich, C.A. von Weymarn, M. Decurtins and C.L. Zollikofer. Kantonsspital Winterthur; Guerbet AG, Zürich, Switzerland.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: SPIO, focal liver lesion, sequence assessment

Musculoskeletal Imaging

- 1060. Pharmacokinetic Modelling of Dynamic Gd-DTPA Enhanced MRI in Hypervascular Tissues.** A. Radjenovic, J.P. Ridgway, E. Berry, P.J. O'Connor, S. Tanner, W.W. Gibbon, R. Reece, P. Emery and M.A. Smith. Leeds General Infirmary; The University of Leeds, UK.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Contrast Agents
 Keywords: pharmacokinetic, arthritis, Gd-DTPA
- 1061. Antigen-Induced Arthritis in the Rabbit Knee: An Investigation by High Resolution 3D Magnetic Resonance Imaging.** N. Beckmann, S. Gustard, M. Rudin and J. Dawson. Novartis Pharma Inc., Basel, Switzerland.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Microscopy
 Keywords: antigen-induced arthritis, knee, rabbit
- 1062. Quantification of Changes in Articular Synovial Lining Volume in a Randomised Trial of Intra-Articular Samarium- 153 Particulate Hydroxyapatite.** G.P.R. Clunie, I.D. Wilkinson, M.A. Hall-Craggs, E. O'Duffy, M.N. Paley, J.C.W. Edwards and P.J. Ell. University College London Hospitals NHS Trust, London, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Quantitation: MRI
 Keywords: synovial, volume, trial
- 1063. Using Groups of 2D-Active Shape Models for 3D Segmentation of Femoral Articular Cartilage.** S. Solloway, C.E. Hutchinson, J.C. Waterton and C.J. Taylor. University of Manchester; Zeneca Pharmaceuticals, UK.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: cartilage, segmentation, models

- 1064. *In vivo* Morphology of Articular Cartilage at 3.0T in Normal and Pathologic States.** C. Carruthers, K. Meister, J. Fitzsimmons and M. Werner. University of Florida, Gainesville, FL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: cartilage, morphology, osteoarthritis
- 1065. High Resolution MRI: Impact of Spatial Resolution on SNR and the Diagnostic Performance in the Detection of Cartilage Lesions.** T.M. Link, S. Majumdar, C. Peterfy, H.E. Daldrup, M. Uffmann, C. Dowling, L. Steinbach and H.K. Genant. University of California, San Francisco, CA; University Hospital, Muenster, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: cartilage, SNR, ROC-analysis
- 1066. *In vivo* Diffusion-Weighted Imaging of Cartilage.** G.E. Gold, K. Butts, K.P. Fechner, G. Bergman, C.F. Beaulieu, P.K. Lang and A. Macovski. Stanford University, Stanford, CA; VA Health Care System of Palo Alto, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: cartilage, diffusion, *in vivo*
- 1067. Imaging of Articular Cartilage Using Driven Equilibrium.** B.A. Hargreaves, G.E. Gold, P.K. Lang, G. Bergman, S.M. Conolly and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: cartilage, driven equilibrium, contrast
- 1068. Cartilage Imaging: Comparison of Driven Equilibrium with Gradient-Echo, SPGR, and Fast Spin-Echo Sequences.** P. Lang, B.A. Hargreaves, G. Gold, S. Conolly, G. Bergman, C. Beaulieu and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: cartilage, MR imaging, driven equilibrium

- 1069. NMR Microscopic Visualization of Collagenase Induced Cartilage Degradation.** M. Wagner, A. Werner and W. Gründer. Universität Leipzig, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Microscopy
 Keywords: cartilage, collagenase, contrast agents
- 1070. Monitoring Glycosaminoglycan Replenishment in Carilage Explants with MRI.** R.G. Allen, D. Burstein and M.L. Gray. Harvard-MIT Division of Health Sciences and Technology, Cambridge; Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Contrast Agents
 Keywords: cartilage, culture, contrast agent
- 1071. Sodium Imaging of Skeletal Muscle at 4.0T.** U. Duvvuri, E.A. Noyszewski, I. Dimitrov, R. Dandora, E. Insko, J.S. Leigh and R. Reddy. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Non-proton MRI and ESR
 Keywords: sodium MRI, muscle, high field
- 1072. Discrimination between Muscular Dystrophies and the Juvenile Spinal Muscular Atrophy by Means of MRI.** D. Šuput, A. Zupan and F. Demsar. School of Medicine; University Rehabilitation Institute; Jozef Stefan Institute, Ljubljana, Slovenia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inborn Error of Metabolism
 Methods: Basic NMR
 Keywords: muscle, dystrophy, MRI
- 1073. Differentiation of Muscle Fiber Types by MR Imaging.** M. Hatakenaka, M. Otsuka and K. Masuda. Kyushu University, Beppu; Kyushu University, Fukuoka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: MRI, muscle, relaxation time

- 1074. Streamlining MRI of Muscle in Neuromuscular Disorders.** J.L. Fleckenstein, D.P. Chason, R. Parkey, P. Weatherall and D.B. Mendelsohn. University of Texas Southwestern Medical Center, Dallas, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Administration/Economics
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: muscles, economics, optimization
- 1075. Actin-Myosin Interaction Reduces Proton T2 Relaxation Time.** M. Hatakenaka, M. Otsuka and K. Masuda. Kyushu University, Beppu; Kyushu University, Fukuoka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: muscle, contraction, relaxation-time
- 1076. FAWSETS Measurements of Perfusion in Human Skeletal Muscle.** K.I. Marro, C.E. Hayes and M.J. Kushmerick. University of Washington, Seattle, WA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, blood, muscle
- 1077. Differentiation Between Residual or Recurrent Soft Tissue Sarcomas and Post-Treatment Changes by Magnetization Transfer Analysis of MR Images.** E. Kim and E. Jackson. The University of Texas M.D. Anderson Cancer Center, Houston, TX.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: sarcoma, post-treatment changes, magnetization transfer
- 1078. MRI Findings of Primary and Recurrent Synovial Sarcoma.** E. Kim and R. Valenzuela. The University of Texas M.D. Anderson Cancer Center, Houston, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: synovial sarcoma, post-treatment changes, MRI

- 1079. Multiple Fractionated and Single Dose Irradiation of Bone Marrow: Evaluation by MRI and Correlation with Histopathological Findings.** X.Q. Tong, H. Sugimura, A. Kisanuki, M. Asato, Y. Yuki, S. Tamura and A. Sumiyoshi. Miyazaki Medical College, Miyazaki, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: bone marrow, irradiation, fatty changes
- 1080. The Correlation between R2' and Vertebral Bone Mineral Content in Human Vertebrae.** T.B. Brismar, M. Karlsson, T.Q. Li, E. Brosjö and H. Ringertz. Karolinska Hospital, Stockholm; Danderyds Hospital, Sweden.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: osteoporosis, vertebra, trabecula
- 1081. Single Acquisition Fat-Water Separation Using 3-Point Dixon Technique with "Sandwich" Echoes at 0.35T - 2:Initial Clinical Experience and the Preliminary Results.** E. Nihei, H. Fukatsu, S. Naganawa, T. Ito, E. Iwayama, T. Ishigaki, T. Segawa and Z. Weiguo. Nagoya University, Nagoya; Toshiba Inc, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: water fat separation, joint imaging, 0.35T
- 1082. Single Acquisition Fat-Water Separation Using 3-Point Dixon Technique with "Sandwich" Echoes at 0.35T - 1:Scan Parameter Optimzation with Volunteer Studies.** H. Fukatsu, E. Nihei, S. Naganawa, T. Ito, E. Iwayama, T. Ishigaki, T. Segawa and Z. Weiguo. Nagoya University, Nagoya; Toshiba Inc., Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: water fat separation, joint imaging, 0.35T
- 1083. Bone Evaluation by MRI for Dental Implant Assessment.** C.F. Gray, F.W. Smith and T.W. Redpath. University of Aberdeen; Woodend Hospital, Aberdeen, UK.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: dental, implant, bone

- 1084. *In vivo* NMR-Microimaging of the Human Finger at 3T.** M. Klarhöfer, A. Berg, R. Hoda, C. Szeles and E. Moser. University of Vienna; University Hospital of Vienna, Austria.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: high resolution, finger, diffusion
- 1085. Ulnar Nerve Entrapment at the Elbow: The Role of MRI.** T. Sachinwalla, C. Yiannikas and B. Huard. Rayscan Imaging, Sydney, Australia.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: medioterapy, tumors, MRI localization
- 1086. Motion of the Median Nerve Visualised Using a Specialised MRI System.** M. Paley, J. Greening, B. Lynn, J. McGinley, I.D. Wilkinson and M.A. Hall-Craggs. University College London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: median, nerve, RSI
- 1087. 3D Visualization of Knee Motion.** S. Totterman, J. Tamez-Pena, E. Kwok, J. Strang, J. Smith, D. Rubens and K. Parker. University of Rochester, NY.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: image segmentation, MRI, musculoskeletal
- 1088. The Plica Syndrome: Diagnostic Value of MR Imaging with Arthroscopic Correlation.** W. -H. Jee, B. -Y. Choe, J. -M Kim, H. -H. Song, K. -H. Choi and K. -S. Shinn. Catholic University Medical College, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: knee, MR, plica

- 1089. Infrapatellar Fat Pad Impingement. Correlation Between Clinical and MR Findings.** P.D. Brukner, J. McConnell, A.G. Bergman, C.F. Beaulieu and G.O. Matheson. Olympic Park Sports Medicine Centre, Melbourne; Private Physiotherapy Practice, Sydney, Australia; Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: infrapatellar, fat, pad
- 1090. Fast Recovery RARE for Knee Imaging.** K. Oshio, D.S. Williamson, C.S. Winalski, S. Miyamoto, S. Kosugi and K. Suzuki. Brigham and Women's Hospital, Harvard Medical School, Boston, MA; G.E. Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: knee, RARE, fast recovery
- 1091. Low-Field MRI of the Knee Joint: First Results of a Double Blinded, Prospective Study.** K.-F. Kreitner, S. Schadmand-Fischer, M. Hansen, M. Runkel and F. Krummenauer. University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: meniscus, cruciate ligament, low-field MRI
- 1092. Comparison of Scan Techniques in MR Imaging of the Knee Using Prospective Report as Gold Standard.** L. Robinson, C. Hutchinson, B. Ilango and H. Mamtara. Hope Hospital, Salford, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: knee, technique, gold standard
- 1093. Evaluation of Anterior Cruciate Ligament After Surgical Reconstruction: Kinematic-MRI of the Knee Using Dedicated-System.** M.V. Maffey, A. Barile, V. Calvisi and C. Maschiocchi. University of L'Aquila, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: anterior cruciate ligament, MRI, knee

- 1094. MRI of Meniscectomy-Induced Osteoarthritis in Rabbits.** D.L. White, Y. Jiang, J. Zhao, H. Genant and C.G. Peterfy. University of California, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: cartilage, arthritis, MRI
- 1095. Low-Field MRI of the Ankle Joint: First Experiences in the Pediatric Age Group.** K.-F. Kreitner, P. Kalden, R. Löw and F. Linke. University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: ankle, trauma, low-field MRI
- 1096. MR Utility in Detection of Talar Dome Osteochondral Injuries.** T.H. Magee and G.W. Hinson. Menorah Medical Center, Overland Park, KS.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: MRI, ankle, injury
- 1097. Tibio-Talar Joint Impingement Syndrome of the Ankle: MRI vs. Arthroscopy.** A. Barile, M. Bonamini, M.V. Maffey, F. Matri and C. Masciocchi. University of L'Aquila, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Quantitation: MRS
 Keywords: MRI, ankle joint, synovial pathology
- 1098. Coxa Pedis Syndrome of the Ankle: Anatomical and Pathological MRI Evaluation.** A. Barile, M.V. Maffey, R.E. Vestuto and C. Masciocchi. University of L'Aquila, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: MRI, tarsal bones, coxa pedis

- 1099. High Resolution Gradient Echo MRI of Painful Achilles Tendon.** P.T. Karjalainen, K. Soila, H.K. Pihlajamäki, O. Tynnenen, T. Paavonen and H.J. Aronen. Helsinki University Central Hospital, Helsinki, Finland; Mt. Sinai Medical Center, Miami Beach, FL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: MRI, Achilles, tendon
- 1100. Fat Suppression MRI of the Triangular Fibrocartilage Complex.** T. Nakamura, Y. Yabe, Y. Horiuchi and T. Mizushima. Fujita Health University, Nagoya; Keio University, Tokyo; Saiseikai Central Hospital, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: TFCC, fat suppression, morphology
- 1101. Intramuscular Rotator Cuff Cysts Associated with Rotator Cuff Tears. MRI Findings and Clinical Significance.** T.K. Wischer, T.G. Sanders, P.F.J. Tirman, M.A. Bredella, S.M.C. Moelleken, J.L. McIntyre and H.K. Genant. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: rotator cuff, cyst, MRI
- 1102. MR Imaging of the Shoulder After Rotator Cuff Repair: Findings in Asymptomatic Individuals.** A.L. Spielmann, B.B. Forster, P. Kokan, D.L. Janzen and R.H. Hawkins. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: Sequences: Imaging
 Keywords: shoulder, post-op, MRI
- 1103. Dynamic Imaging of Glenohumeral Instability with Open MRI.** C.F. Beaulieu, D.K. Hodge, G. Thabit III, P. Lang and A.G. Bergman. Stanford University, Stanford; Sports, Orthopedics and Rehabilitation, Menlo Park, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: should, instability, open MR

- 1104. Low Field MR Gadolinium Arthrography of the Shoulder - First Experiences with a 0.2 T Open MR System in 60 Patients.** R. Loew, K.-F. Kreitner, M. Runkel, J. Zoellner and M. Thelen. University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: low field-MRI, shoulder
- 1105. MR Gadolinium Arthrography of the Shoulder. A Comparison of Low Field (0.2 T) versus High-Field (1.5 T) Examinations.** R. Loew, K.-F. Kreitner, M. Runkel, J. Zoellner and M. Thelen. University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: shoulder, MRI, low-field
- 1106. First Clinical Experiences with a Combined Contrast Agent for both MR- and RX/CT-Arthrography in 80 Patients.** K.U. Wentz, K.E. Leupi-Skibinski, J. Froehlich, C.A. von Weymarn and C.L. Zollikofer. Kantonsspital Winterthur; Guerbet AG, Zürich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: MR-arthrography, iodine+gadolinium, RX/CT-aarthrography
- 1107. Safety Data of Intra-Articular Injection of 2 mmol/l Gadolinium DTPA for MR Imaging.** D. Kallend. Schering AG, Berlin, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: contrast, joints, safety
- 1108. MR Appearance of Isolated Osteochondral Injuries of the Femoral Trochlea. Arthroscopic Correlation and Clinical Significance.** S.M.C. Moelleken, P.F.J. Tirman, T.K. Wischer, M.A. Bredella, A. Gindele, T.G. Sanders, J.J. McIntyre, C.G. Peterfy and H.K. Genant. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: trochlea, cartilage, MRI

- 1109. Magnetic Resonance Imaging in Evaluating Prosthetic Sockets.** V.S.P. Lee, W.D. Spence, S.E. Solomonidis, B. Condon and D. Hadley. University of Strathclyde; Southern General Hospital, Glasgow, Scotland, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: amputee, prostheses, biomechanics

Spine Imaging

- 1110. MRI Appearance of the Asymptomatic Lumbar Intervertebral Disc in the Neutral Seated Position.** P. Grondin, S. Crawford, M. Dufour, G. Bouchard, J.M. Moutquin and C. Lindsay. St. François d'Assises Hospital, Quebec, Canada; Allegheny General Hospital, Pittsburgh, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: disk, upright, MRT
- 1111. The Influence of Lumbar Spine MRI on the Management of Patients with Low Back and Leg Pain.** J.J. Rankine, K.P. Gill, C.E. Hutchinson, E.R.S. Ross and J.B. Williamson. University of Manchester; Hope Hospital, Salford, Manchester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: magnetic resonance, sciatica, surgery
- 1112. Redundant Nerve Roots: MR Imaging Evaluation.** S.H. Hong, S.Y. Cho, H.W. Chung and H.S. Kang. Seoul National University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: spinal canal stenosis, nerves roots, spinal canal abnormalities
- 1113. Guidelines for Lumbar Spine MRI. The Clinical Signs and Symptoms which Best Predict a Surgical Outcome in Patients Undergoing Lumbar Spine MRI for Back and Leg Pain.** J.J. Rankine, K.P. Gill, C.E. Hutchinson, E.R.S. Ross and J.P. Williamson. University of Manchester; Hope Hospital, Manchester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: magnetic resonance, sciatica, surgery

- 1114. Measurement of Lumbar Spine Flexion-Extension Using a Low-Field Open Magnet MRI Scanner.** S.B. Harvey, F.W. Smith and D.W.L. Hukins. University of Aberdeen; Woodend Hospital, Aberdeen, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: flexion-extension, open-magnet, lumbar spine
- 1115. Usefulness of Real-Time Dynamic Study in Cervical Spine Using HASTE.** K. Nakamura, Y. Suto, S. Sugihara, M. Kamba and T. Ogawa. Tottori University Faculty of Medicine, Nishimachi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: HASTE, cervical spine, dynamic study
- 1116. Fast MRI of Spinal Metastases: Comparison between CHESS and STIR in Fat Suppression Techniques.** G.M. Giannatempo, T. Scarabino, T. Popolizio, M.G. Scarale, M. Cammisa and U. Salvolini. Scientific Institute "Casa Sollievo della Sofferenza" San Giovanni Rotondo; University of Ancona, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: fat suppression, spine, metastases
- 1117. Signal Void Artifact in Thoracic CSF-Space: Angioma or CSF-Flow?.** U. Hubbe, J. Klisch, A. Schreiber, J. Hennig and J. Zentner. University of Freiburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Spine
 Pathology: Malformation
 Keywords: CSF flow, artifacts, angioma
- 1118. The Usefulness of SPAMM Technique for Predictability of Postsurgical Outcome in Syringomyelia.** S. -K Lee, T. -S. Chung, Y. -S. Kim, D. Chien and G. Laub. Yonsei University College of Medicine, Seoul, Korea; Siemens AG., Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: Flow
 Keywords: spinal cord, MRI, syringomyelia

- 1119. MR Imaging of Intraspinous Neural Tissue Allografts in Patients with Posttraumatic Syringomyelia.** E.D. Wirth, III, R.G. Fessler, P.J. Reier, R.G. Quisling and D.K. Anderson. University of Florida College of Medicine; VA Medical Center, Gainesville, FL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Spine
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: spine, injury, transplant
- 1120. Acute Benign Versus Malignant Vertebral Compression Fractures: Distinction with Fast Spin-Echo and Gadolinium-Enhanced MR Imaging.** W.-H. Jee, B.-Y. Choe, K.-Y. Ha, H.-H. Song, K.-H. Choi and K.-S. Shinn. Catholic University, Seoul, South Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: MR, spine, fracture
- 1121. Analysis of Intravertebral Axial Rotation in Adolescent Idiopathic Scoliosis Using Three Dimensional MRI.** D. Birchall, D.G. Hughes, L. Robinson and J.B. Williamson. Hope Hospital, Salford, Manchester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Malformation
 Methods: Data Processing: MRI
 Keywords: scoliosis,

Head and Neck and Skull Base Imaging

- 1122. The Anatomy of the Olfactory Apparatus of the Brown Marsupial Mouse, *Antechinus Stuartii*, Using MRI.** K.L. McMahon, C.L. Toftegaard, G. Galloway and A.J. Bradley. University of Queensland, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: antechinus, olfactory, anatomy
- 1123. Quantification of the Effects of the Topical Decongestant Oxymetazoline by MRI.** P. Gibbs, L.W. Turnbull, K. Watkins, J. Hummel, S. Neil and P. Feldschleiber. Hull Royal Infirmary, Hull; Procter and Gamble Technical Centres Limited, Staines, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Head and Neck
 Pathology: Inflammation
 Methods: Quantitation: MRI
 Keywords: sinuses, cold, decongestant

- 1124. MR Imaging of Hyperpolarized ^3He Gas in Human Paranasal Sinuses.** I. Dimitrov, R. Rizi, A. Thompson, G. Jones, T. Gentile, M. Ishii, R. Reddy, M. Schnall and J.S. Leigh. University of Pennsylvania, Philadelphia, PA; National Institute of Standard and Technology, Gaithersburg, MD.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized, helium-3, sinuses
- 1125. Nasal Cavity Lesions Associated with the Infundibular Widening on CT: Differentiation with MR FSE T2 Weighted Images.** E.K. Youn, E.C. Chung and Y.U. Lee. Sung Kyun Kwan University; Kangbuk Samsung Hospital, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: nose, neoplasm, MRI
- 1126. Tagged Cine Magnetic Resonance Imaging of Tongue Movement.** R.P. Gullapalli, M. Stone, M.A. NessAiver, A. Lundberg, E. Davis and L. Kasuboski. University of Maryland, Baltimore, MD; Johns Hopkins University, Baltimore, MD; Picker International, Highland Heights, OH.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: MR tagging, tongue, motion
- 1127. Characterization of Lingual Mechanics During Swallowing by Strain Mapping with Tagging MRI.** V. Napadow, Q. Chen, V. Wedeen and R. Gilbert. Massachusetts Institute of Technology, Cambridge; Beth Israel Deaconess Medical Center; Massachusetts General Hospital, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: tongue, tagging MRI, biomechanics
- 1128. Can a New Head-and-Neck Phased-Array Coil Improve the Imaging of Head and Neck Lesions?.** U. L. Müller-Lisse, R. Helmberger, G. U. Müller-Lisse, N. Rotter and M. Reiser. Klinikum Großhadern, Munich, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: head and neck, coil design, phased array

- 1129. Diagnosis of Oropharyngeal Obstruction with Dynamic MR in Sleeping Patients with Obstructive Sleep Apnea Syndrome (OSA).** S.O. Schoenberg, F. Floemer, A. Hoffmann, M. Joppich, M. Bock, H. Kroeger and M.V. Knopp. German Cancer Research Center, Heidelberg; Clinic for Chest Diseases (Thoraxklinik), Heidelberg; SCHWARZER, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: dynamic MR, obstructive sleep apnea syndrome, EEG
- 1130. Morphological Diagnosis and Occlusion Mechanism Analysis Using MR Fluoroscopy in Patients with Adult Obstructive Sleep Apnea Syndrome - Review of 83 cases.** H. Fukatsu, K. Yosida, E. Nihei, S. Naganawa, T. Ito, E. Iwayama, T. Ishigaki and T. Okada. Nagoya University, Nagoya; Okada Clinic, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: OSAS, MR fluoroscopy, upper airway
- 1131. Clinical Trial of Assessment of Prosthetic Mandibular Advancement Therapy in Patients with Sleep Apnea Using Pharyngeal Fast MR Imaging.** Y. Suto, Y. Inoue, M. Ishida, S. Sugihara, M. Kamba and T. Ogawa. Tottori University Faculty of Medicine, Nishimachi, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR imaging, pharynx, sleep apnea
- 1132. Carcinoma of the Larynx. Comparison of MRI and CT with Histopathologic Correlation in Staging and Pre-Treatment Assessments.** L. Oleaga, J. Grande, F. Díez, J.M. Sánchez, C. Ereño and D. Grande. Hospital de Basurto, Bilbao, Spain.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: laryngeal neoplasms, larynx CT, larynx MR studies
- 1133. The Value of Diagnostic Imaging in the Evaluation of Vocal Cord Paralysis.** A.Y. Liu, D.M. Yousem, A.A. Chalian and C.P. Langlotz. Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Administration/Economics
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: head, neck, economics

- 1134. MRI Evaluation of TMJ Internal Derangement and its Relationship to Dental History.** S.J. Gibbs, H.C. Simmons and S. Martinez-Cruz. Vanderbilt University, Nashville, TN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: TMJ, orthodontics, dentures
- 1135. The Blood-Labyrinth Barrier Alterations: Role of MRI.** V. Martinez-Sanjuan, R. Barona, A. Campos, E. Zapater, J.J. Garcia-Nieto, V. Belloch, G. Montoliu, S. Campos, A. Lucas, M.J. Masip, J.C. Martinez, J.V. Lopez Mut and J. Celma. Valencia University General Hospital, Valencia, Spain.
 Organ/Tissue: Head and Neck
- 1136. 3D MRI in the Case of Labyrinthine Fibrosis.** P. Held, C. Fellner, F. Fellner, J. Seitz, H. Albrich, A. Geissler and J. Strutz. University of Regensburg; University of Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: 3D MRI, labyrinth, fibrosis
- 1137. High-Resolution MR Cisternography of the Cerebellopontine Angle Using a 3D-Fast Asymmetric Spin Echo Sequence in a 0.35 T Open MR Unit.** S. Naganawa, T. Ito, H. Fukatsu, T. Ishigaki, T. Segawa and N. Ichinose. Nagoya University School of Medicine, Nagoya; Toshiba Corporation, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: ear, fast spin echo, 3D
- 1138. Evaluation of T2* Weighted 3D MRI for the Diagnosis of Acoustic Schwannomas.** P. Held, C. Fellner, F. Fellner, J. Seitz, H. Albrich, S. Graf and J. Strutz. University of Regensburg; University of Erlangen, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: 3D MRI, ear, Schwannoma
- 1139. High Resolution MR Cisternography of Cerebellopontine Angle: 2D vs 3D Fast Spin Echo Sequence.** E. Iwayama, S. Naganawa, T. Ito, H. Fukatsu, T. Ishigaki and N. Ichinose. Nagoya University School of Medicine, Nagoya; Toshiba Corporation, Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: cisternography, 3D, fast spin echo

- 1140. Identification of the Abducens Nerve and Dorello's Canal by 3 DFT-CISS Sequences.** I. Yousry, M. Wiesmann, S. Camelio and T.A. Youry. Ludwig-Maximilians-University, Munich, Germany.
- Type of Study: Clinical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Sequences: Imaging
Keywords: cranial, nerves, MRI

Ischemic and Hemorrhagic Brain Imaging

- 1141. Assessment of Borderzone Ischemia with a Combined MR Imaging - MR Angiography - MR Spectroscopy Protocol. Determination of Flow and Metabolic Limits.** J. van der Grond, K.J. van Everdingen, W.P.T.M. Mali, J. Kénez and B.C. Eikelboom. University Hospital Utrecht, The Netherlands.
- Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain Vascular
Pathology: Vascular Diseases
Methods: Category not applicable
Keywords: MRI, MRA, MRS
- 1142. The Effect of Collateral Flow on Intracranial Volume Flow, Metabolism, CO₂ Reactivity and the Presence of Borderzone Infarcts in Patients with a Unilateral ICA Occlusion.** K.J. van Everdingen, G.H. Visser, C.J.M. Klijn, L.J. Kappelle, W.P.T.M. Mali and J. van der Grond. University Hospital Utrecht, The Netherlands.
- Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain Vascular
Pathology: Vascular Diseases
Methods: Category not applicable
Keywords: MRA, MRS, TCD
- 1143. Estimation of Cerebral Perfusion Reserve Using BOLD Contrast During Normo- and Hypercapnia.** D.J. Lythgoe, S.C.R. Williams, M. Cullinane, A. Simmons and H. Markus. King's College School of Medicine and Dentistry; Institute of Psychiatry, London, UK.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Vascular Diseases
Methods: Category not applicable
Keywords: bold, carotid, stenosis
- 1144. Evidence for a Cerebral Post-arteriole Windkessel.** J.B. Mandeville, J.J.A. Marota, G. Zaharchuk, C. Ayata, T.L. Davis, M. Moscovitz, R.M. Weisskoff and B.R. Rosen. Massachusetts General Hospital NMR Center, Charlestown, MA.
- Type of Study: Basic Research on MR
Main Target of Study: Function
Organ/Tissue: Brain Vascular
Pathology: Category not applicable
Methods: Contrast Mechanisms
Keywords: fMRI, CBV, BOLD

- 1145. Increased Perfusion and Early Blood Brain Barrier Disruption in Acute Stroke Following rt-PA.** P.B. Barker, J. Ewing, J. Nelson, M. Gorman, M. Boska and K.M.A. Welch. Henry Ford Hospital, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: stroke, perfusion, rt-PA
- 1146. Evaluation of Cerebral Infarction by Diffusion-Weighted Echo-Planar Imaging Combined with Fluid - Attenuated Inversion Recovery Echo-Planar Imaging.** T. Okubo, O. Abe, N. Hayashi, N. Yoshioka, T. Masumoto and K. Ohtomo. University of Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: EPI, diffusion, FLAIR
- 1147. Changes in Cerebral Infarct Volume and Neurological Condition Over Time in Human Stroke Patients.** A.C. Pereira, J. Brady, V.L. Doyle, F.A. Howe, J.R. Griffiths and M.M. Brown. St. George's Hospital Medical School, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: stroke, volume, outcome
- 1148. Time Course of Optic Nerve Pathway Degeneration After Stroke Studied by Diffusion Weighted MR Imaging.** K. Kondo, N. Yamada, T. Shimizu, W. Kakuda, H. Kinugawa and H. Naritomi. National Cardiovascular Center, Osaka, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: optic radiation, stroke, diffusion
- 1149. Diffusion Imaging in Patients with Cerebral Microangiopathy and Acute Cerebral Deficit.** J. Simbrunner, M. Augustin, F. Fazekas, J. Offenbacher, R. Bammer, R. Stollberger and F. Ebner. University of Graz, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion imaging, cerebral microangiopathy, infarction

- 1150. Echo-Planar Perfusion and Diffusion Imaging in Acute Stroke Therapy.** J.L. Sunshine, J.S. Lewin, R.W. Tarr, C.F. Lanzieri, D.M.D. Landis and W.R. Selman. University Hospitals of Cleveland/Case Western Reserve University, Cleveland, OH.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, perfusion, stroke
- 1151. Evaluation of Acute Human Stroke Performing Diffusion and Perfusion-Weighted MRI and Simultaneous 99Tc-HMPAO-SPECT.** S.R. Rosenbaum, B. Sperling, E. Rostrup, A. Lassen, P. Petersen and O.B. Paulson. Hvidovre Hospital, Hvidovre; Bispebjerg Hospital, Copenhagen, Denmark.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: stroke, perfusion, diffusion
- 1152. Differentiation between Lacunar Infarctions and Large Virchow-Robin Spaces with Fast FLAIR.** N. Hirabuki, H. Tanaka, N. Fujita, Y. Tokuda and M. Masuike. Osaka University; Yao Municipal Hospital, Osaka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: FLAIR, infarction, Virchow-Robin space
- 1153. The Effect of Sequential Contrast Agent Studies on the Assessment of Relative Cerebral Blood Volume.** A.P. Pathak, P.A. Bandettini, R. Risinger, E. Stein and K.M. Donahue. Marquette University; Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Contrast Agents
 Keywords: rCBV, susceptibility contrast, sequential
- 1154. The Evolution of Diffusion Anisotropy in Ischemic Human Brain.** F. Zelaya, N. Flood, J. Chalk, D. Wang, W. Strugnell and D. Doddrell. University of Queensland; Princess Alexandra Hospital, Brisbane, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: stroke, diffusion, anisotropy

- 1155. A Comparison of BOLD MRI and PET OEF Measurements on Patients with Carotid Artery Occlusion.** W. Lin, C.P. Derdeyn, A. Celik, R.L. Grubb, W.J. Powers and E.M. Haacke. Washington University, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: PET, MRI, BOLD
- 1156. Magnetic Resonance Imaging and Computed Tomography in Acute Stroke.** J. van der Grond, N.W.A.M. Swinkels, J. Kénez and L.M.P. Ramos. University Hôpital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: stroke, MRI, CT
- 1157. Cerebral Perfusion Imaging Using FAIR in Acute and Chronic Strokes.** I. Shirouzu, T. Machida, S. Kiryu, M. Noda, S. Inaoka, H. Satoh and Y. Takahashi. NTT Kanto-Teishin Hospital; GE-Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: FAIR, cerebral infarction, perfusion
- 1158. Sub-Arachnoid Haemorrhage Induced Delayed Neurological Deficits Associated with Lactate and Increase Blood Volume.** T.A.D. Cadoux-Hudson, A.M. Blamire, J.G. Rowe, Z. Domingo and P. Styles. John Radcliffe Hospital; Radcliffe Infirmary, Oxford, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: combination MRI/MRS
 Keywords: vasospasm, deficit, metabolism
- 1159. Sensitivity to Intracerebral Hemorrhage of Different MR Sequences.** W. Reith and V. Elste. University of Heidelberg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Administration/Economics
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: hemorrhage, vascular disease, MR imaging

- 1160. Cerebral Oxygen Delivery *In vivo*: NMR Measurements of CBF and CMRO₂ at Different Levels of Brain Activity.** F. Hyder, R.P. Kennan, N.R. Sibson, G.F. Mason, K.L. Behar, D.L. Rothman and R.G. Shulman. Yale University, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: CBF, CMRO₂, BOLD
- 1161. Endothelin Receptor Subtype A Blockade Prevents Cerebral and Renal Injury in a Rat Model of Malignant Hypertension.** E.L.A. Blezer, K. Nicolay, H.A. Koomans and J.A. Joles. University Hospital Utrecht; Utrecht University, Utrecht, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Basic NMR
 Keywords: hypertension, SHRSP, endothelin
- 1162. Interaction between Mild Acidosis and MK-801 during Focal Cerebral Ischemia in the Rat Monitored by Diffusion-Weighted MRI at 4.7T.** L.H. Chang and N. Derugin. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ischemia, acidosis, drug
- 1163. Pathophysiological Analysis of Rat Middle Cerebral Artery Occlusion by Measuring rCBF and ADC.** T. Takegami, I. Aoki, C. Tanaka, M. Umeda, T. Ebisu, M. Fukunaga, T. Higuchi, S. Naruse, T. Tokumitsu, Y. Horikawa and S. Ueda. Kyoto Prefectural University of Medicine; Meiji University of Oriental Medicine, Kyoto, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: rCBF, ADC, MCAO
- 1164. Influence of Osmotic and Thrombolytic Therapy on Longterm Brain Recovery after Cardiac Arrest and Resuscitation: an Experimental MR-Study in the Cat.** H. Krep, B.W. Böttiger, C. Bock, C.M. Kerskens, M. Hoehn-Berlage and K.A. Hossmann. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: cardiac arrest, perfusion IM, spectroscopy

- 1165. Multispectral Analysis of the Temporal Evolution of Lesion Volume in the Ischemic Rat Brain.** R.A.D. Carano, F. Li, K.G. Helmer, K. Irie, M. Fisher and C.H. Sotak. Worcester Polytechnic Institute; The Medical Center of Central Massachusetts; University of Massachusetts Medical School, Worcester, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: ischemia, rat brain, multispectral analysis
- 1166. A Sensitive MRI Indicator of Tissue Edema in Acute Stroke.** R.A. Knight, J.R. Ewing, P. Jiang, N. Jiang, U. Pschorn and M. Chopp. Henry Ford Health Sciences Center, Detroit, MI; Boehringer IngelheimKG, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: ischemia, relaxation, brain
- 1167. Effects of Repeated Cerebral Ischaemia on the Apparent Diffusion Coefficient of Water and T2 Relaxation Using Two Animal Models.** M.F. Lythgoe, G.S. Pell, D.L. Thomas, F.C. Calamante, A.M. Howseman, S.R. Williams, R.J. Ordidge and D.G. Gadian. University College London Medical School; Institute of Neurology, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ischaemia, diffusion, brain
- 1168. Association and Dissociation Between Water Homeostasis and Lactate Accumulation: A ^1H NMR Study in a Rat Model of Thromboembolic Stroke.** C. Franke, G. Brinker, U. Uhlenkücken, M. Hoehn-Berlage and K.-A. Hossmann. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: combination MRI/MRS
 Keywords: infarct, diffusion, spectroscopy
- 1169. Arterial Spin Tagging Perfusion Imaging of Rat Brain at 7T.** C. Franke, F. van Dorsten, H. Krep and M. Hoehn-Berlage. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, 7 T, functional MRI

- 1170. "Autoregulation" of Cerebral Blood Volume.** J.J.A. Marota, J.B. Mandeville, G. Zaharchuk, M. Moskowitz and B.R. Rosen. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: autoregulation, CBV, CBF
- 1171. Detection of Exercise-Induced Angiogenesis in the Rat Motor Cortex Using Magnetic Resonance Imaging Techniques.** A.B. Harris, E.C. Wiener, R.A. Swain, M.V. Dutka, H.D. Morris, W.T. Greenough and P.C. Lauterbur. University of Illinois, Urbana, IL; University of Wisconsin, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: angiogenesis, exercise, capillary
- 1172. Sequential Change of MR Signal Intensity of the Brain Following Manganese Administration in Rabbits: Correlation with Manganese Concentration and Histopathology.** K.H. Chang, S.H. Kim, C.K. Sung, M.H. Han, J.G. Chi, J.Y. Kim and M.C. Han. Seoul National University College of Medicine, Seoul, Korea.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: manganese, rabbit, T1
- 1173. 59FE Containing Liposomes as a Potential Specific Contrast for MR Imaging and Micro-Autoradiography.** E. Wittendorp-Rechenmann, I.J. Namer, J. Steibel, C.D. Lam, D. Pouliquen and J. Chambron. Faculté de Médecine, Strasbourg; Faculté de Médecine, Angers, France.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: liposome, nanoparticle, 59FE
- 1174. Quantitating Functional Responses of Hippocampal Slices to NMDA Receptor Stimulation Using High Resolution NMR Imaging.** J.D. Bui, D.L. Buckley, M.I. Phillips and S.J. Blackband. University of Florida, Gainesville, FL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ischemia, hippocampus, diffusion

- 1175. Magnetic Resonance Imaging (MRI) for Therapeutic Responses of Doxorubicin Encapsulated in Long-Circulating Liposomes Directed Against Rat Brain Tumor Model.** R. Zhou, R. Mazurchuk and R. Straubinger. Roswell Park Cancer Institute; State University of New York, Buffalo, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: brain tumor, liposome, doxorubicin
- 1176. Neuroprotective Effects of Propentofylline in a Transient Focal Ischemic Rat Model.** H.P. Juretschke, U. Belz, U. Nöring, F.J. Hock and K.A. Rudolphi. Hoechst Marion Roussel, Frankfurt, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: brain, ischemia, propentofylline
- 1177. Exo-Focal Post-Ischemic Neuronal Death in Substantia Nigra Monitored by MRI.** H.P. Juretschke, U. Belz, U. Nöring, F.J. Hock and M. Keil. Hoechst Marion Roussel, Frankfurt, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: neuron, rat, substantia nigra
- 1178. Changes in T2-Weighted Images during Cerebral Hypoxia-Ischemia are Age-Dependent: A Study in 2-and 4-Week Old Rats.** G. Ning, K.L. Malisza, P. Kozlowski, S. Bascaramurty and U.I. Tuor. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: T2-weighted, ischemia, rats
- 1179. Ornithine Decarboxylase Overexpressing Transgenic Rats Are Resistant to Stroke Damage Upon Transient, But Not Permanent Focal Ischaemia.** J.A. Lukkarinen, R.A. Kauppinen, O.H.J. Gröhn, J.M.E. Oja, R. Sinervirta, A. Järvinen, L.I. Alhonen and J. Jänne. University of Kuopio, Finland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: transgenic, stroke, ODC

- 1180. Evidence for Delayed Cerebral Infarction Following Focal Ischemia in the Rat: A Diffusion-Weighted Imaging Study.** N. van Bruggen, M. van Lookeren Campagne, H. Thibodeaux, J.T. Palmer, S.-P. Williams and G.R. Thomas. Genentech Inc., South San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: stroke, ischemia, DWI
- 1181. Diffusion-Weighted MRI of Focal Cerebral Ischemia and Cortical Spreading Depression under Conditions of Mild Hypothermia.** M.A. Yenari, D. Onley, M. Hedehus, A. de Crespigny, G.H. Sun, G.K. Steinberg and M.E. Moseley. Stanford University Medical Center, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: stroke, hypothermia, spreading depression
- 1182. MR Diffusion Weighted Imaging Combined with Radionuclide Scanning Investigation of Apoptosis in Neonatal Rabbit HIE.** H.E. d'Arceuil, W. Rhine, A.J. de Crespigny, M. Yenari, M.E. Moseley and W. Strauss. Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, hypoxia, apoptosis
- 1183. Serial Magnetic Resonance Imaging of a Rodent Model of Neuroinjury.** B.C. Albeni, S. Knobloch, B.G.M. Chew, M.P. O'Reilly, A.I. Faden and J.J. Pekar. Georgetown University Medical Center, Washington D.C.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Sequences: Imaging
 Keywords: TBI, rat, diffusion
- 1184. A Temporal MRI Assessment of Neuropathology Following Transient MCAO in the Rat: Correlations with Behaviour.** D. Virey, J.S. Beech, S.C. Smart, S.C.R. Williams, H. Hodges and A.J. Hunter. Institute of Psychiatry, London; SmithKline Beecham, Harlow UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: MCAO, behavior, imaging

- 1185. Intra-parenchymal Diffusion Study of Kaolin-Induced Hydrocephalic Brain.** Y. Kinoshita, A. Yokota and N. Iriguchi. University of Occupational and Environmental Health, Kitakyushu; Siemens-Asahi Medical Technologies Limited, Tokyo, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Diffusion
 Keywords: hydrocephalus, kaolin, diffusion
- 1186. Perfusion-Weighted Magnetic Resonance Imaging for Monitoring Decompressive Craniectomy in Malignant Hemispheric Stroke.** A. Doerfler, T. Engelhorn, W. Reith, S. Heiland, J. Weber and M. Forsting. University of Essen; University of Heidelberg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: perfusion MRI, cerebral ischemia, craniectomy

Cerebral Perfusion: Techniques

- 1187. CBF Measurements in the Presence of Delay and Dispersion of the Arterial Input Function: Analysis with a Vascular Model.** L. Østergaard, A.G. Sorensen, R.M. Weisskoff, D.A. Chesler and B.R. Rosen. Massachusetts General Hospital, Charlestown; Harvard Medical School, Boston; Harvard-MIT Division of Health Sciences, Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: CBF, modeling, susceptibility contrast
- 1188. CBF and CBV Measurements by Bolus Tracking of an Iron Based Contrast Agent.** C.Z. Simonsen, L. Østergaard, P. Vestergaard-Poulsen, A. Bjørnerud and C. Gyldensted. Århus University Hospitals, Århus, Denmark; Nycomed Imaging, Oslo, Norway.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, blood pool agent, animal
- 1189. Simultaneous Blood Flow, Blood Volume and Permeability Mapping Using Dual-Echo SPIRAL Imaging: Methodology and Initial Validation with SPIRAL-FAIR.** T. -Q. Li, L. Østergaard and P. Skejō. Karolinska MR Research Center, Stockholm, Sweden; Århus University Hospital, Århus, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Perfusion
 Keywords: perfusion, tumors, SPIRAL imaging

- 1190. Measurement of Perfusion Using Arterial Spin Tagging With the FOCI Pulse.** G.S. Pell, D.L. Thomas, M.F. Lythgoe, F.C. Calamante, A.M. Howseman, S.R. Williams, D.G. Gadian and R.J. Ordidge. University College, London; University College London Medical School, London; Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, fair, FOCI
- 1191. QUIPSS II with Thin-Slice T11 Periodic Saturation (Q2TIPS): A Method for Improving Accuracy of Quantitative Perfusion Imaging.** W.-M. Luh, E.C. Wong, P.A. Bandettini and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI; University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: pulsed ASL, quantitative, perfusion
- 1192. Sequence Considerations in Single Shot Spiral FAIR Imaging.** A.M. Takahasi, T.Q. Li, M.E. Moseley and G.H. Glover. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: spiral, perfusion, FAIR
- 1193. Measurement of CBF with Arterial Spin Labeling: Correlate with Microspheres.** L. Hernandez, C.A. Branch and J.A. Helpert. The Nathan S. Kline Institute, Orangeburg, NY; Albert Einstein College of Medicine, Bronx, NY; New York University, New York, NY; University of North Carolina, Chapel Hill, NC.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, microsphere, activation
- 1194. Simultaneous Fast MR Acquisition of Arterial and Brain Signal-Time Curves Using an Echo-Shifted Technique.** W.H. Perman. Saint Louis University School of Medicine, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging

- 1195. Driven Magnetization in Arterial Spin Tagging (DMAST): A New MR Method Capable of Producing Steady-State and Dynamic Qualitative Perfusion Images.** V.M. Mai, A.L. Stith and S.S. Berr. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: DMAST, perfusion, spin tagging
- 1196. Multi-slice Activation Imaging with Arterial Spin Tagging: The Effects of Flow and Transit Time Changes.** D.C. Alsop, L. Li and J.A. Detre. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, activation, brain
- 1197. ΔR^* and $\Delta \Phi$ Contrast Agent Perfusion Effects in Blood: Quantitation and Linearity Assessment.** E. Akbudak, R.M. Hsu, Y. Li and T.E. Conturo. Washington University of School of Medicine, St. Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: susceptibility, gadolinium, perfusion
- 1198. Characteristics of Arterial Inflow Signals in CBF-weighted Images.** S.-G. Kim. University of Minnesota Medical School, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, CBF, FAIR
- 1199. Direct and Indirect Measurements of the Time of Exchange of Tagged Arterial Water into Brain Tissue in Pulsed ASL.** E.C. Wong, R.B. Buxton and L.R. Frank. University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, ASL, CBF

- 1200. A Theoretical and Experimental Comparison of Continuous and Pulsed Arterial Spin Labeling Techniques for Quantitative Perfusion Imaging.** E.C. Wong, R.B. Buxton and L.R. Frank. University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, ASL, CBF
- 1201. Quantitative Perfusion Imaging at 4.0T.** U. Duvvuri, D.A. Roberts, L. Bolinger and M.D. Schnall. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, high field, quantitation
- 1202. Perfusion Imaging with Lateralized Labeling of Arterial Spins (PILLARS).** J.D. Eastwood and A.W. Song. Emory University, Atlanta, GA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: labeling, perfusion, flow
- 1203. Regional Cerebral Blood Volume: A Comparison of the Dynamic Imaging and the Steady State Methods.** A. Çelik, W. Lin and R. Paczynski. Washington University, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: rCBV, steady state, dynamic
- 1204. Line Scan Perfusion Measurement with Arterial Spin Labeling.** C.A. Branch, L. Hernandez, M. Yongbi and J.A. Helpert. The Nathan Kline Institute for Psychiatric Research, Orangeburg, NY; Albert Einstein College of Medicine, Bronx, NY; New York University, NY, NY; University of North Carolina, Chapel Hill, NC.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, labeling, inversion

- 1205. Alternation of Selective Inversion Pulses (ASI): An MR Perfusion Imaging Technique with Shorter Transit Time of Labeled Blood Than Signal Targeting Alternating Radiofrequency (STAR).** V.M. Mai and S.S. Berr. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: ASI, perfusion, spin tagging
- 1206. Multislice Functional Perfusion Imaging Using a Magnetisation Transfer Insensitive Labeling Technique (TILT).** X. Golay, M. Stuber, K. Pruessmann, R. Luechinger, O.M. Weber, M.B. Scheidegger, D. Meier and P. Boesiger. University and ETH, Zurich, Switzerland; Beth Israel Deaconess Medical Center, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: multislice, perfusion, functional
- 1207. The Impact of the Arterial Input Function (AIF) on Quantitative Evaluation of Dynamic Susceptibility Contrast Enhanced MR Studies.** R. Ellinger, Ch. Kremser, M. Schocke, A. Auer, St. Felber and F. Aichner. University of Innsbruck, Austria.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: blood volume, blood flow, arterial input function
- 1208. Regional Cerebral Blood Volume Mapping with Gd-DTPA as an Intravascular T1 Contrast Agent: Slow vs. Fast Exchange.** N. Fujita, H. Tanaka, N. Hirabuki, Y. Ohshiro and H. Nakamura. Osaka University Medical School, Osaka, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Agents
 Keywords: CBV, Gd-DTPA, water exchange
- 1209. Absolute Quantification of Cerebral Blood Flow from Susceptibility-Contrast Enhanced Dynamic Echo-Planar Imaging: A Volunteer Study.** W.G. Schreiber, M. Essig, F. Gückel, P. Stritzke, M. Knopp, G. Brix and M. Thelen. Germany Cancer Research Center, Heidelberg; Johannes Gutenberg-University, Mainz; Klinikum Mannheim, Mannheim; SAM GmbH, Bad Oeynhausen, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: blood flow, contrast media, dynamic MRI

- 1210. Noise Reduction in 3-D Perfusion Imaging Using Background Suppression.** F.Q. Ye, J.A. Frank, D.R. Weinberger and A.C. McLaughlin. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, brain, human
- 1211. 0° Slice-Selective RF Pulses: MT-Equivalence for Multi-Slice Perfusion Imaging.** D.G. Norris. Max-Planck-Institute of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, RF pulse
- 1212. Initial Comparison of rCBV and Perfusion Fraction in Healthy Volunteers.** R. Wirestam, M. Bolling, S. Brockstedt, G. Geijer, A. Lindgren, M. Borg, S. Holtås and F. Ståhlberg. Lund University Hospital, Lund, Sweden.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, rCBV, IVIM
- 1213. Measurement of Cerebral Microperfusion Using T2-Weighted Dynamic Susceptibility Contrast HASTE Imaging.** Y. Koshimoto, H. Yamada, H. Kimura, M. Maeda, C. Tsuchida, Y. Kawamura and Y. Ishii. Fukui Medical University, Fukui, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: microperfusion, HASTE, MRI
- 1214. Maximum Likelihood Estimate of the Response Function in Dynamic Susceptibility Contrast MRI.** E.P.A. Vonken, C.J.G. Bakker and M.A. Viergever. University Hospital, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: quantitative, perfusion, deconvolution

- 1215. Quantification of Steady-State Perfusion Rates Using Flow-Sensitive Alternating Inversion Recovery with an Extra Radiofrequency Pulse (FAIRER).** V.M. Mai, J. Knight-Scott, D.F. Kallmes, W. Marx, W.S. Cail, J.S. Christopher and S.S. Berr. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Perfusion
 Keywords: FAIRER, perfusion, quantitative
- 1216. Noise Reduction in Dynamic Contrast Enhanced MR Perfusion Mapping.** K.L. Li, X.P. Zhu, A. Jackson and N.A. Thacker. University of Manchester, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, noise reduction, image analysis
- 1217. Contrast Arrival Time Mapping in Dynamic Susceptibility Gd-DTPA Enhanced MR Imaging.** A. Jackson, X.P. Zhu, K.L. Li and N.A. Thacker. University of Manchester, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, arrival time, image processing
- 1218. Theoretical Effects of Magnetization Transfer on Inversion Efficiency in Steady State Arterial Inversion for Measurement of Cerebral Perfusion.** L. Hernandez and C.A. Branch. The Nathan S. Kline Institute, Orangeburg, NY; University of North Carolina, Chapel Hill, NC; Albert Einstein College of Medicine, Bronx, NY.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, MTC, inversion

Diffusion

- 1219. High-Resolution Diffusion Imaging Using Segmented EPI.** S. Brockstedt, J.R. Moore, C. Thomsen and F. Ståhlberg. Lund University Hospital, Lund, Sweden; Siemens Medical Systems, Iselin, NJ; Copenhagen University, Copenhagen, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Methods: Diffusion
 Keywords: diffusion, EPI, segmentation

- 1220. The Effect of Experimental Noise on the Calculation of Diffusion Anisotropy in Diffusion Tensor and Diffusion Weighted Imaging.** M.E. Bastin, P.A. Armitage and I. Marshall. University of Edinburgh, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: DWI, noise, Monte Carlo
- 1221. Fast Diffusion Weighted Imaging Using an Echo-Shifted Gradient-Echo Sequence.** C. Delalande, J.A. deZwart, P. Canioni and C.T.W. Moonen. Université Victor Segalen-Bordeaux II, Bordeaux, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion imaging, fast imaging, echo shifting
- 1222. Characterisation and Correction of Head Motion in Navigated Diffusion Imaging.** C.A. Clark, G.J. Barker and P.S. Tofts. University College London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, motion, artefacts
- 1223. A Quantitative Method for Fast Diffusion Imaging Using Magnetisation Prepared TurboFLASH.** D.L. Thomas, G.S. Pell, M.F. Lythgoe, D.G. Gadian and R.J. Ordidge. University College London Medical School; University College London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: diffusion, turboflash, eddy currents
- 1224. The ADC Cross-Term Due to Microscopic Susceptibility Variation.** M.D. Does, R.P. Kennan and J.C. Gore. Yale University School of Medicine, New Haven, CT.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, cross-term, susceptibility

- 1225. Oscillating Gradient Spin Echo Measurements of Restricted Diffusion.** M. Schachter, J. Zhong and J.C. Gore. Yale University, New Haven, CT.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: oscillating, gradients, diffusion
- 1226. Fiber-Tractography via Diffusion Tensor MRI (DT-MRI).** P.J. Basser. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: fiber-tract, diffusion, tensor
- 1227. Diffusion Anisotropy and Pixel Dimensions.** D. Lu, C.Y. Tang, X. Zhou, B. Buchsbaum, M.S. Buchsbaum and S.W. Atlas. Mount Sinai Medical Center, New York, NY; University of California, Irvine, CA; GE Medical Systems, Milwaukee, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: diffusion, anisotropy, resolution
- 1228. In vivo Measurements of Trace Diffusion Coefficient in Muscle-Tetrahedrally Encoded Diffusion Gradients with Echo Planar Acquisition.** U. Sinha and S. Sinha. University of California, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: EPI, trace diffusion, muscle
- 1229. Measuring Translational Diffusion in a Fringe-Field Gradient: Application to Lung Tissue.** G. Laicher, B. Geil, D.C. Ailion and A.G. Cutillo. University of Utah, Salt Lake City, UT; University of Dortmund, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, lung, gradients

- 1230. Oversampling Rejecting Averaging Correction (ORAC) a Movement Correction Algorithm for Non-Gated Single Shot Diffusion Weighted EPI.** U.C. Wieshmann, L.L. Lemieux, M.R. Symms, F. Franconi, C.A. Clark, G.J. Barker and S.D. Shorvon. National Society for Epilepsy; Insitute for Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: artefact, diffusion, EPI
- 1231. Noise Considerations of the Anisotropy Index in Diffusion Imaging.** S. Skare, T.Q. Li and B. Nordell. Karolinska Institute, Stockholm, Sweden.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, anisotropy, EPI
- 1232. *In vivo* Measurement of ADC Change Due to Intravascular Susceptibility Variation.** M.D. Does, J. Zhong and J.C. Gore. Yale University School of Medicine, New Haven, CT.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, susceptibility, oxygenation
- 1233. Improved Representation of the Directional Information Contained in the Diffusion Tensor.** S. Pajevic and C. Pierpaoli. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, tenksor, color
- 1234. An Analysis for Determining Time-Dependent Diffusion Coefficients Using a Constant b-Value PGSE Experiment.** B.A. Inglis, F.O. Zelaya and T.H. Mareci. University of Florida, Gainesville, FL; University of Queensland, Brisbane, Australia.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, time, restriction

- 1235. Echo-Planar Diffusion Spectroscopic Imaging: Reduction of Motion Artifacts Using Line-Scan Technique.** Y. Bito, S. Hirata and K. Tsukada. Hitachi Ltd., Saitama and Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: spectroscopic imaging, motion artifacts, echo-planar
- 1236. Prediction of the Size of Cerebral Ischemic Lesions with Diffusion Weighted MR Imaging.** K.J. van Everdingen, L.M.P. Ramos, W.P.T.M. Mali and J. van der Grond. Utrecht University Hospital, Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: diffusion, stroke, MRI
- 1237. Effects of Image Registration on Diffusion Anisotropy Measurements in Ischaemic Stroke.** P.A. Armitage, M.E. Bastin, I. Marshall, J.M. Wardlaw and J. Cannon. University of Edinburgh, Scotland, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, anisotropy, stroke
- 1238. Improved Delineation of Ischemic Lesion Volume in Human Brain by Combination of Diffusion Contrast, Diffusion Tensor Trace and Anisotropy Images.** N. Flood, F. Zelaya, J. Chalk and D. Doddrell. University of Queensland; Princess Alexandra Hospital, Brisbane, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: stroke, image, processing
- 1239. MR Evaluation of Acute and Early Subacute Stroke - Comparison between Diffusion Weighted Imaging, Turbo Spin-Echo T2-Weighted and Fluid Attenuated Inversion Recovery Sequences.** Y.L. Chan, K.S. Wong, G. Cao, W.W.M. Lam, A. King, D. Yeung and C. Metreweli. Chinese University of Hong Kong; Philips Medical Systems, Hong Kong.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: stroke, diffusion weighted, imaging

- 1240. Diffusion-Weighted Spin-Echo EPI Sequence in Combination with the FLAIR-Technique: Application to Intraaxial Tumors.** J.G. Hirsch, M. Essig, M. Bock and L.R. Schad. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: diffusion, brain, tumors
- 1241. Quantitative Diffusion Tensor Anisotropy Imaging: Normative Human Cerebral Data.** J.S. Shimony, R.C. McKinstry, E. Akbudak, J.A. Aronovitz, A.Z. Snyder and T.E. Conturo. Washington University, St. Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: anisotropy, diffusion, white matter
- 1242. Diffusion Imaging Interpretation Strategies: Characterizing the Light Bulb Lesion.** R.S. Patel, J.A. Maldjian and J.C. McGowan. Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: MR, diffusion, ischemia
- 1243. Tumor Cellularities of Gliomas: Evaluation with Diffusion-Weighted Echo-Planar MR Imaging.** T. Sugahara, Y. Korogi, I. Ikushima, Y. Shigematsu, T. Hirai, T. Okuda, L. Liang, Y. Ge and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: diffusion, neoplasm, echo-planar
- 1244. Quantitation of Water Diffusion in Hippocampal Sclerosis.** U.C. Wieshmann, C.A. Clark, M.R. Symms, G.J. Barker, K.D. Birnie and S.D. Shorvon. National Society for Epilepsy and Insitute for Neurology, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Quantitation: MRI
 Keywords: quantitation, diffusion, epilepsy

- 1245. Reduced Diffusion Anisotropy in Malformations of Cortical Development.** U.C. Wieshmann, M.R. Symms, F. Franconi, C.A. Clark, G.J. Barker and S.D. Shorvon. National Society for Epilepsy and Institute for Neurology, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Diffusion
 Keywords: diffusion, anisotropy, epilepsy
- 1246. Comparison of Diffusion Weighted Imaging (DWI) with Spin Echo - Echo Planar Imaging (SE-EPI) and Single Shot Fast Spin Echo (SSFSE) Methods in Patients with Acute Clinical Stroke.** P. Skejød, S. Skare, B. Nordell, A. Wägner, C.E. Söderström, K. Ericson, A. Lilja and T. Hindmarsh. Karolinska Hospital, Stockholm, Sweden.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, stroke, brain
- 1247. Diffusion MRI of Wallerian Degeneration. A new Tool to Investigate Neural Connectivity *in vivo*?** C. Pierpaoli, A. Barnett, A. Virta, L. Peniz and R. Chen. National Institutes of Health, Bethesda, MD.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
- 1248. Diffusion MR Imaging of Eclampsia.** P. Corr, M. Hoffman, C. Sanyika, J. Smit and J. Moodley. University of Natal, Durban, South Africa.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: diffusion, oedema, ischemia
- 1249. Evaluation of Diffusion-weighted MR Imaging in Patients with Amyotrophic Lateral Sclerosis.** R. H. Wu, R. Bruening, C. Berchtenbreiter, T. Borrasio, A. Heuck and M. Reiser. University of Munich, Germany.
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: MRI, diffusion, ALS

- 1250. Apparent Diffusion Anisotropy in Normal and Ischaemic Human Brain.** Q. Yang, P.M. Desmond, B.M. Tress, A. Barber, D. Darby, R. Gentry and S. Davis. The University of Melbourne, Australia.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, anisotropy, stroke
- 1251. Anisotropy of NAA Diffusion in Human Brain by Proton NMR Spectroscopy *in vivo*.** M.S. Zwanger and P. Bachert. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: spectroscopy, diffusion, NAA
- 1252. *In vivo* EPI Measurements of Apparent Diffusion Tensor of Normal and Injured Spinal Cord.** D.A. Fenyes and P.A. Narayana. University of Texas Medical School, Houston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Spine
 Pathology: Trauma
 Methods: Diffusion
 Keywords: diffusion, EPI, spinal cord
- 1253. Evaluation of Compartment-Specific Motion in Normal and Globally-Ischemic Rat Brain via 1H MRS.** T.Q. Duong, J.J.H. Ackerman, D. Yablonskiy and J.J. Neil. Washington University School of Medicine, St. Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: ischemia, DWI, ADC
- 1254. Temporal Changes of the ADC of the Water and Metabolites in Rats with a Hemispheric Infarct Measured by Short TE STEAM Sequence: Transhemispheric Diaschisis in the Contralateral Hemisphere.** O. Abe, N. Iriguchi, N. Saito, Y. Kojima, T. Okubo, N. Hayashi, I. Shirouzu, A. Seno, K. Ohtomo, K. Yoshikawa and Y. Sasaki. University of Tokyo; Siemens Asahi Medical Technology, Tokyo, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: brain metabolites, diffusion, focal cerebral ischemia

- 1255. Modelling Variable Intra/Extracellular Exchange During Cerebral Ischemia in the Water Signal Attenuation of Diffusion-Weighted 1H NMR Experiments.** J. Pfeuffer, W. Dreher, C. Meier and D. Leibfritz. Universität Bremen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: ADC, water-exchange, ischemia
- 1256. The Correlation of ADC Change to Regional Water Content in Early Focal Ischemia.** T. Nagaoka, T. Kuoiwa, N. Miyasaka, H. Akimoto, M. Ueki, I. Yamada and K. Kirakawa. Tokyo Medical and Dental University, Tokyo, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Diffusion
 Keywords: ADC, ischemia, water content
- 1257. Diffusion Properties of the Rat Brain Measured with a 1.5 T/m Gradient System.** A. Metzler, S. Roell and D. Liebfritz. University of Bremen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion, compartmentation
- 1258. Initial CBV Measurements Predict ADC Changes during Recovery in Two Models of Reversible Ischaemia in the Rat.** A.M. Blamire, Z. Domingo, P. Styles and B. Rajagopalan. John Radcliffe Hospital, Oxford, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: reperfusion, diffusion, perfusion
- 1259. Time Dependent Diffusion Coefficients of Water within Hollow Fibers.** L. Gates and I. Cameron. Ottawa General Hospital, Ottawa, ON, Canada; Dalhousie University, Halifax, NS, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, phantom, simulation

- 1260. Transport of Formate in Human Erythrocytes.** U. Himmelreich, B.E. Chapman and P.W. Kuchel. University of Sydney, Australia.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: formate, transport, erythrocytes
- 1261. Ferric Ion Diffusion Effects in NMR-Fricke-Agarose Dosimetry.** W.C. Chu, Y.-H. Kao, W.Y. Chung, W.Y. Guo and H.C. Pan. Yang Ming University; Veterans General Hospital-Taipei, Taiwan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: ferric ion diffusion, Fricke-agarose gel, gamma knife radiosurgery
- 1262. q-Space Spectroscopy of Choline in Bovine Optic Nerve.** Y. Assaf and Y. Cohen. Tel-Aviv University, Tel-Aviv, Israel.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion, q-space, choline
- 1263. Diffusion MRS and MRI of Fibers in Bovine Optic Nerve and in Rat Brain *in vivo*.** Y. Assaf and Y. Cohen. Tel-Aviv University, Tel-Aviv, Israel.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion, brain, nerve
- 1264. Diffusional Anisotropy of T2 Components in Bovine Optic Nerve.** G.J. Stanisz and R.M. Henkelman. University of Toronto, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: diffusion, T2, white matter
- 1265. Diffusion Weighted EPI of the Human Optic Nerve at 3T.** A.J. Freeman, R. Ballinger, M. Werner and J. Guy. University of Florida, Gainesville, FL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: optic nerve, diffusion

- 1266. MR Measurement of Regional Relative Cerebral Blood Volume in Epilepsy.** R. H. Wu, R. Bruening, S. Noachtar, S. Arnold, C. Berchtenbreiter, P. Bartenstein, A. Drzezga, K. Tatsch and M. Reiser. University of Munich; Technical University of Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Perfusion
 Keywords: MR perfusion, blood volume, epilepsy
- 1267. H217O Enhanced Imaging of Focal Ischemia Using 17O Decoupling.** A.J. de Crespigny, H.E. D'Arceuil and M.E. Moseley. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: Imaging
 Keywords: ischemia, oxygen-17, perfusion
- 1268. Regional Cerebral Blood Volume: A Comparison Between MR and PET in Human Subjects.** W. Lin, C.P. Derdeyn, A. Celik, K. Gurleyik, R.L. Grubb and W.J. Powers. Washington University, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: rCBV, PET, MR
- 1269. Eigenimage Filtering of Temporal Perfusion in Acute Stroke.** V. Nagesh, J.P. Windham, K.J. Robbins, D.J. Peck, J.R. Ewing, D. Hearshen, S. Patel and K.M.A. Welch. Henry Ford Health Sciences Center and NMR Research Center, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, stroke, lesion segmentation
- 1270. MRA and MR Quantitative Flow Evaluation of Ischemic Neurovascular Disease in Children.** K.J. Poskitt. University of British Columbia, Vancouver, British Columbia, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow, ischemia, neuro

- 1271. Evaluation of Whole Brain 3D Perfusion Imaging in the Diagnosis of Cerebrovascular Disorders.** E. Keller, P.J.M. Folkers, S. Flacke, J.S. van den Brink, J. Gieseke, H. Urbach and H.H. Schild. University Hospital, Bonn, Germany; Philips Medical Systems.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: brain, perfusion, 3-D
- 1272. Cerebral Hemodynamics Assessed with MRI and SPECT: A Comparison in Patients with Ischemic Cerebrovascular Disease.** T. Benner, G. Erb, Z. Marchl, H. Elser, S. Heiland, V. Geens, K. Sartor and M. Forsting. University of Heidelberg Medical School; University of Tübingen Medical School; Schering AG, Berlin; University of Essen Medical School, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, cerebral, SPECT
- 1273. Evaluation of the Combined Use of DWI, Perfusion Imaging and FLAIR-TSE in the Assessment of Stroke.** S. Flacke, E. Keller, H. Urbach, P. Mürtz, P.J.M. Folkers, J. Gieseke, F. Träber and H.H. Schild. University Hospital, Bonn, Germany; Philips Medical Systems.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, perfusion, stroke
- 1274. Clinical Application of Non-invasive Perfusion Weighted MRI.** T. Kajima, M. Iida, K. Miyasaka, K. Itoh and H. Sato. Hiroshima University School of Medicine, Hiroshima; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: perfusion, EPI, CNS
- 1275. Final Infarct Size Prediction by Perfusion Weighted Imaging in Patients with an Acute Cerebral Infarction.** M. Kluytmans, K.J. van Everdingen, L.M.P. Ramos, M.A. Viergever and J. van der Grond. University Hospital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: stroke, brain, perfusion

- 1276. Contrast Enhanced MR Angiography Versus Non-Enhanced TOF MR Angiography in Comparison with Transcranial Doppler Findings of Vertebrobasilar Stenoses: First Clinical Results.** A. Sommer, K.W. Neff, M. Daffertshofer, A. Gass, S. Ries, J. Gaa, M. Fritzing, M. Georgi, M. Hennerici and A. Schwartz. Hospital Mannheim, Medical School, Mannheim; University of Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: vertebrobasilar stenoses, CE/NCE-MRA
- 1277. MR Digital Subtraction Angiography (DSA) of the Brain.** A. Nambu, S. Aoki, T. Araki, T. Ichikawa and T. Araki. Yamanashi Medical University, Yamanashi, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: angiography, brain, DSA
- 1278. MR Angiography of the Posterior Fossa in Acute Subarachnoid Haemorrhage.** W.J. Gunawardena, C.M.A. Coutinho, E.A. Hanley and A.P. Jones. Royal Preston Hospital, Preston, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, subarachnoid haemorrhage, posterior fossa
- 1279. Phase-Contrast MRA of Intracranial Dural Arteriovenous Fistulas.** M. Cellerini, M. Mascalchi, S. Mangiafico, E. Marin, G. Dal Pozzo and L. Capaccioli. University of Florence, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, DAVF, MRI
- 1280. Usefulness of MRA in Patients with Subarachnoid Hemorrhage Caused by Ruptured Cerebral Aneurysms.** S. Nakamura, K. Kusunoki, K. Sadamoto, H. Miki, J. Ikezoe and K. Nagasawa. Washokai Sadamoto Hospital, Matsuyama; Ehime University, Ehime; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, SAH, aneurysm

- 1281. Cerebral Venography Using High-Resolution BOLD Imaging.** J.R. Reichenbach, L.R. Schad, M. Essig, Ch. Przetak, E.M. Haacke, G. van Kaick and W.A. Kaiser. Friedrich-Schiller University, Jena, Germany; German Cancer Research Center, Heidelberg, Germany; Washington University, St. Louis, MO.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR venography, vascular disease, BOLD imaging
- 1282. Comparison of 3D Time-of-Flight Turbo MR Angiography with Conventional 3D-FISP MR Angiography; Experimental and Clinical Evaluation for the Intracranial Arteries.** Y. Shigematsu, Y. Korogi, T. Hirai, T. Okuda, T. Sugahara, L. Liang, Y. Ge and M. Takahashi. Kumamoto University School of Medicine, Kumamoto, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, aneurysm, stenosis
- 1283. Stereoscopic and Virtual Endoscopic MR Imaging of Intracranial Aneurysms.** S. Kollias, C. Binkert and A. Valavanis. University Hospital, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: brain, aneurysm, MRA
- 1284. Vasculopathy and Cranial Artery Ectasia in Sickle Cell Disease Patients.** R.G. Steen, W.E. Reddick, J. Glass and W. Wang. St. Jude Children's Research Hospital, Memphis, TN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRI
 Keywords: brain, MRA, ectasia
- 1285. Cerebral Arteriovenous Malformations: Morphologic Evaluation by Ultrashort 3D Gadolinium-Enhanced MR Angiography.** M. Essig, M.V. Knopp, S.O. Schoenberg, H. Hawighorst, F. Wenz, J. Debus and G. van Kaick. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: CE-MRA, AVM cerebral, morphology

- 1286. Volume Flow Evaluation in Basilar Artery Stenosis Using 2D Cine Phase-Contrast MR Imaging.** K.W. Neff, A. Sommer, A. Schwartz, M. Hennerici and M. Georgi. University of Heidelberg, Klinikum Mannheim, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: basilar artery, blood flow, stenosis
- 1287. Functional Variations in the Circle of Willis: a 3D MR Angiographic Study.** J. van der Grond, M.J. Hartkamp-Krabbe and W.P.Th.M. Mali. University Hospital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: Willis, MRA, occlusion
- 1288. Potential Pitfalls of First Pass Contrast Enhanced Magnetic Resonance Angiography: Delayed Visualization of Narrow Neck Aneurysm in Phantom Studies.** T.-S. Chung, J.-K. Joo, D. Chien and G. Laub. Yonsei University College of Medicine, Seoul, Korea; Siemens AG, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MRA, aneurysm, Gd
- 1289. MR Angiography of the Intracranial Aneurysm Model — A Comparison of Contrast Enhanced 3D MR Angiography with TOF MR Angiography.** H. Isoda, Y. Takehara, S. Isogai, H. Masunaga, M. Takahashi, M. Kaneko, T. Tanaka and A. Nozaki. Hamamatsu University School of Medicine, Hamamatsu; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: intracranial aneurysm, MR angiography, contrast medium
- 1290. Virtual Cisternography of Intracranial Vessels - A New Kind of Virtual Reality: First Clinical Results.** F. Fellner, M. Blank, C. Fellner, H. Böhm-Jurkovic, W.A. Kalender and W. Bautz. Friedrich-Alexander University, Erlangen-Nürnberg, Germany; ÖÖ Landesnervenklinik Wagner-Jauregg, Linz, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: MR angiography, virtual reality, intracranial vascular malformation

- 1291. Internal Carotid Artery Stenosis: Phantom Evaluation of the Accuracy of Two Dimensional Time-of-Flight, Twisted Radial Line Time-of-Flight and Gadolinium-Enhanced MR Angiography.** A. Reid, J.K. Kim, H.T.C. Nielsen, G.A. Wright and R.R. Farb. University of Toronto, ON, Canada; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, carotid arteries, arterial stenosis
- 1292. Clinical Utility of Fast Contrast-Enhanced MR Angiography of the Major Branches of the Aortic Arch.** S.O. Seong, K.H. Chang, M.H. Han, H.D. Kim, I.C. Song, K.M. Yeon and M.C. Han. Seoul National University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: MR, contrast enhancement, blood vessels
- 1293. Carotid Stenosis: A Comparison between Conventional MRA (3D TOF) versus Contrast-Enhanced MRA.** T. Scarabino, A. Carriero, G.M. Giannatempo, F. Florio, L. Bonomo and U. Salvolini. Scientific Institute "CSS", San Giovanni Rotondo; University of Chieti; University of Ancona, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: carotid arteries, MRA, CE MRA
- 1294. Carotid Bifurcation Models for Validation of MRA and DUS.** D. Saloner, J.H. Rapp and A.M. Siddiqui. University of California, San Francisco, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: phantoms, carotid, MRA
- 1295. Dynamic Contrast Enhanced 3D MR Angiography of the Spine: A Feasibility Study.** C. Binkert, A. Valavanis and S. Kollias. University of Zurich, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: spine, MR angio, contrast

- 1296. Testing and Analysis Procedures for the Inter-System Comparison of MRA Imaging of a Stenotic Phantom.** A. Papadaki, J. De Wilde, D. Price, J. Williams and R.I. Kitney. Imperial College, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MRA, phantoms, stenosis
- 1297. MR Digital Subtraction Angiography (DSA) of the Carotid Arteries Using Hadamard Encoding and a Fast 2D Gradient Echo Sequence.** N.D. Gai, Y. Wang and J.P. Comunale, Jr. Cornell University Medical College, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: carotid, MRDSA, Hadamard
- 1298. Dynamic MRI/A of the Carotid Bifurcation: Assessment of High Resolution 3DGR, Gated 3DGR and Multiphase/Multislice PC with Special Attention to Wall Enhancement.** S. Aoki, K. Aoki, H. Nakajima, H. Kumagai, T. Araki and H. Moriya. Yamanashi Medical University, Yamanashi; GE-Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Contrast Mechanisms
 Keywords: dynamic, atherosclerosis, carotid
- 1299. In Vitro Comparative Flow Phantom Study About the Difference of Relaxivity Between Gadomer-17 and Gd-DTPA Using High Resolution 3D-TOF MRA with Slice Interpolation Technique.** B. -J Jo, T. -S Chung, J. -Y Joo, W. Ebert, H. -J. Weinmann, D. Chien and G. Laub. Yonsei University College of Medicine, Seoul, Korea; Schering AG, Germany; Siemens AG, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Vascular Diseases
 Methods: Contrast Agents
 Keywords: carotid artery, contrast media, MRS
- 1300. MRA of the Carotid Arteries: The TWIRL Sequence.** J.K. Kim, R.I. Farb, A. Reid, H.T.C. Nielsen, D.G. Nishimura and G.A. Wright. University of Toronto, Ontario, Canada; Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: angiography, carotids, contrast agents

- 1301. Improved Evaluation of Human Carotid Atherosclerotic Plaque *in vivo* Using Time-of-Flight (TOF) MRA and Shared-View Acquisition Using Repeated Echoes (SHARE) MR Imaging.** C. Yuan, T.S. Hatsukami, P.J. Keller and K.R. Maravilla. University of Washington, Seattle, WA; Barrow Neurological Institute, Phoenix, AZ.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: atherosclerosis, fast spin echo
- 1302. The Effect of a Stenosis or Occlusion of the ICA on Volume Flow and Metabolism.** K.J. van Everdingen, C.J.M. Klijn, L.J. Kappelle, W.P.T.M. Mali and J. van der Grond. Utrecht University Hospital, Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: MRA, MRS, stroke
- 1303. Improvement of Cerebral Hemodynamics after Carotid Endarterectomy - Value of Pre- and Postoperative Magnetic Resonance Perfusion Imaging.** S. Heiland, A. Dörfler, T. Benner, H.H. Eckstein, M. Eichbaum, J. Allenberg, M. Forsting and K. Sartor. University Heidelberg Medical School; University Essen Medical School, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, stenosis, edarterectomy
- 1304. Measurements of Adjustable Pulsating Movements in Simulated Ventricular Systems in Comparison to CSF *in-vivo* Studies Using EPI.** C. Kiefer, U. Klose, J. Dick and M. Erb. University of Tübingen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Flow
 Keywords: CSF, EPI, simulation

Imaging of White Matter

- 1305. Evaluation of Magnetization Transfer in Periventricular White Matter.** M. Nakahara, H. Hayashi, R. Takagi, M. Ishihara, Y. Amano and T. Kumazuki. Nippon Medical School, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: magnetization transfer, white matter, reactive astrocytes

- 1306. Diffusion Tensor MRI of CNS White Matter Pathology: Importance of Secondary Structure.** M.R. Wiegell, T. Reese, H.B.W. Larsson, A. Tievsky, O.B. Paulson and V.J. Wedeen. Massachusetts General Hospital, Boston, MA; Danish Research Center of Magnetic Resonance, Hvidovre, Denmark.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: diffusion, tensor, white matter
- 1307. Magnetic Resonance Imaging in Monitoring the Treatment of Multiple Sclerosis: Statistical Powers of Crossover and Parallel-Group Designs with Variable Frequencies of Scanning.** M.P. Sormani, P. Molyneux, M.A. Rocca, C. Gasperini, F. Barkhof, T.A. Yousry, D.H. Miller and M. Filippi. MS Biosignal Analysis Center, Milan, Italy; Institute of Neurology, London, UK; University of Rome, Italy; Free University Hospital, Amsterdam, The Netherlands; University of Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, clinical trials
- 1308. How Does Brain MRI Lesion Volume Change on Serial Scans in Patients with Multiple Sclerosis?.** M.P. Sormani, M. Rovaris, M.A. Rocca, C. Pereira and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MRI, lesion load
- 1309. Serial Standard- and Triple-Dose MRI to Monitor the Effect of Interferon β -1a on Multiple Sclerosis Activity.** M. Rovaris, R. Capra, C. Gasperini, M.P. Sormani, G. Comi and M. Filippi. University of Milan; University of Brescia; University "La Sapienza", Rome, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, IFN/B1a
- 1310. Correlations between MRI and Short-Term Clinical Activity in MS: A Comparison between Standard and Triple Dose Gd-Enhanced MRI.** M. Rovaris, G. Mastronardo, C. Pereira, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, gadolinium

- 1311. Short-Term Evolution of New Multiple Sclerosis Lesions Enhancing on Standard and Triple Dose Gadolinium-Enhanced Brain MRI Scans.** M. Rovaris, G. Mastronardo, F. Prandini and M. Filippi. University of Milan; University of Brescia, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, gadolinium
- 1312. Measurement of Water Self-Diffusion in Patients with Multiple Sclerosis Using Diffusion Weighted Echo Planar Image.** M. Iida, T. Kajima, K. Miyasaka, T. Nakanishi, C. Ono, K. Ito and Y. Takahashi. Hiroshima University School of Medicine, Hiroshima; GE Yokogawa Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: diffusion, EPI, multiple sclerosis
- 1313. Correlations between Clinical and MRI Cerebellar Involvement in Multiple Sclerosis: Assessment with T2, T1 and MT Histograms.** G. Iannucci, L. Minicucci, G. Mastronardo, M.A. Rocca, M. Rovaris, M.E. Rodegher, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Data Processing: MRI
 Keywords: MS, MRI, cerebellum
- 1314. A Comparison of the Sensitivity of Monthly Unenhanced and Enhanced MRI Techniques in Detecting New Multiple Sclerosis Lesions.** G. Mastronardo, M.A. Rocca, M. Rovaris, D. Origgi, P. Reganati, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, FLAIR
- 1315. Quantitative Volumetric Analysis of Brain MRI from Patients with Multiple Sclerosis.** G. Mastronardo, M.A. Rocca, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MRI, Atrophy

- 1316. Magnetization Transfer Changes in the Normal-Appearing White Matter Precede the Appearance of Enhancing Lesions in Patients with Multiple Sclerosis.** M.A. Rocca, M.S. Horsfield, G. Comi and M. Filippi. University of Milan, Italy; University of Leicester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MTI, NAWM
- 1317. Intra- and Inter-Observer Variability in Measuring Lesion Volume Changes on Serial Brain MR Scans in Patients with Multiple Sclerosis.** M.A. Rocca, M. Rovaris, M.P. Sormani, M.A. Horsfield, G. Comi and M. Filippi. MS Biosignal Analysis Center; University of Milan, Italy; University of Leicester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MRI, lesion load
- 1318. Long-Term Changes of Magnetization Transfer Ratios of Lesions from Patients with Relapsing-Remitting and Secondary Progressive Multiple Sclerosis.** M.A. Rocca, B. Colombo, G. Comi and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MTI, disease course
- 1319. MR Outcome Parameters in Multiple Sclerosis Comparison of Conventional Parameters and MTR Parameters in Association with Disability.** J.H.T.M. van Waesberghe, R. van der Boom, M. Filippi, J.A. Castelijns, C.H. Polman, M.A. van Buchem and F. Barkhof. Academic Hospital "Vrije Universiteit", Amsterdam; Leiden University Medical Center, Leiden, The Netherlands; Ospedale San Raffaele, Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, MTR, histogram
- 1320. Sample Size Requirements for Phase III Multiple Sclerosis Treatment Trials Based on Changes in Total Brain Lesion Load on T2 Weighted Images: A Model Based Approach to Power Calculations.** P.D. Molyneux, D.H. Miller, M. Filippi, T. Yousry, L. Kappos, C. Gasperini, H.J. Adèr and F. Barkhof. Institute of Neurology, London, UK; Hospital San Raffaele, Milan, Italy; Klinikum Grosshadern, Munich, Germany; Kantonspital, Basel, Switzerland; University of Rome, Italy; Free University Hospital, Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: power, trial, lesion load

- 1321. The Effect of Slice Thickness between 1 and 5mm with 3D Fast-FLAIR on MRI Lesion Detection and Quantification in Multiple Sclerosis.** P.D. Molyneux, N. Tubridy, G.J.M. Parker, G.J. Barker, D.G. MacManus, P.S. Tofts, I.F. Moseley and D.H. Miller. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: resolution, quantification, multiple sclerosis
- 1322. Evaluation of Magnetization Transfer Ratio Histogram Analysis Methods in Multiple Sclerosis.** N.C. Silver, A. Gass, G.J. Barker, P.S. Tofts and D.H. Miller. Institute of Neurology, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MIR, histogram
- 1323. Chronic Enlargement Producing An Increase in Multiple Sclerosis Lesion Burden.** G.J. Zhao, D.K.B. Li, Y. Cheng, X.Y. Wang and D.W. Paty. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, chronic enlargement, lesion activity
- 1324. Quantitative Apparent Diffusion Coefficient and Diffusion Anisotropy Analysis of Multiple Sclerosis Plaques.** J. Zhong, G.D. Graham, J.B. Guarnaccia, Y. Hadeishi and J.C. Gore. University of Rochester, NY; University of New Mexico, Albuquerque, NM; Yale University, New Haven, CT.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: MS, diffusion, demyelination
- 1325. Finding Optimal Features for MS vs Normal MTR Histogram Analysis.** J. Ostuni, N. Richert, B. Lewis, H. McFarland and J.A. Frank. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MTR, histogram

- 1326. Serial Monthly Magnetization Transfer Histogram Analysis in Multiple Sclerosis Patients: Correlation with Bulk White Matter Lesion Load.** N. Richert, J. Ostuni, C. Bash, J. Duyn, L. Stone, B. Lewis, H. McFarland and J. Frank. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: multiple sclerosis, magnetization transfer, white matter disease
- 1327. The Natural Course of Relapsing-Remitting and Chronic Progressive Multiple Sclerosis.** C.R.G. Guttmann, H.L. Weiner, L. Hsu, S.J. Khoury, E.J. Orav, M.J. Hohol, S.S. Ahn, R. Kikinis and F.A. Jolesz. Brigham and Women's Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, segmentation, lesions
- 1328. Assessment of the Apparent Diffusion Coefficient in Contrast-Enhancing and Chronic MS Lesions.** A. Gass, J. Gaa, W. Schreiber, A. Sommer, A. Schwartz, M. Georgi and M.G. Hennerici. University of Heidelberg; University of Mainz, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: hs, diffusion, ADC
- 1329. Hypointense Lesion Load on Fast-FLAIR MRI Scans from Multiple Sclerosis Patients: A New Marker of Disease Evolution?.** M. Rovaris, M.A. Rocca, G. Mastronardo, C. Pereira, G. Comi, B. Colombo and M. Filippi. University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: MS, MRI, FLAIR
- 1330. Intra and Inter-Observer Variation in Reporting Activity on Serial T2 Weighted Brain MR Images in Multiple Sclerosis.** P.D. Molyneux, D.H. Miller, M. Filippi, T. Yousry, E.W. Radu, H.J. Ader and F. Barkhof. Institute of Neurology, London, UK; Hospital San Raffaele, Milan, Italy; Klinikum Grosshadern, Munich, Germany; Kantonspital, Basel, Switzerland; Free University Hospital, Amsterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Methods: Category not applicable
 Keywords: kappa scores, MRI, multiple sclerosis

- 1331. Development of a Quality Assurance Protocol for Magnetisation Transfer Imaging.** N.C. Silver, J.P. Mottershead, A. Green, E. Hughes, K. Birnie, G.J. Barker, P.S. Tofts and D.H. Miller. University College London, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: MTR, phantom, quality assurance
- 1332. Collection of Z-Spectra in a Single Run Using Frequency-Sweep EPI.** R. Zhang, R.S. Balaban, R.W. Cox and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI; National Institutes of Health, Bethesda, MD.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: magnetization transfer, Z-spectra, EPI
- 1333. Comparison between Proton Density/T2 and Gadolinium-Enhanced T1 MRI in Demonstrating A Treatment Effect and Dose Difference in the PRISMS Trial of Interferon Beta-1a (Rebif®).** D.K.B. Li, G.J. Zhao, R. Hyde, F. Dupont, A. Abdul-Ahad, Y. Cheng, X.Y. Wang and D.W. Paty. University of British Columbia, Vancouver, BC, Canada; Ares-Serono, Geneva, Switzerland.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, interferon, activity
- 1334. Postmortem Correlation Between Axonal Loss, MTR, and Hypointensity on T1 SE in MS.** J.H.T.M. van Waessberghe, M.A.A. van Walderveen, C. de Groot, R. Ravid, G.J. Lycklama à Nijeholt, W. Kamphorst and F. Barkhof. Academic Hospital "Vrije Universiteit", Amsterdam; The Netherlands Brain Bank, Amsterdam, The Netherlands.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: pathology, MTR, multiple sclerosis
- 1335. Serial Magnetization Transfer and Gadolinium Contrast-Enhanced Imaging to Evaluate the Temporal Relationship of Demyelination and Blood-Brain Barrier Leakage in New Multiple Sclerosis Lesions.** N.C. Silver, M. Lai, M.R. Symms, G.J. Barker, W.I. McDonald and D.H. Miller. University College London, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: MS, MTR, blood-brain barrier

- 1336. Quantification of Pathological Changes Within the Spinal Cord Due to Multiple Sclerosis (MS) Using Texture Analysis.** J.M. Mathias, P.S. Tofts and N.A. Losseff. University College, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: quantitation, texture, MS
- 1337. *In vivo* T2 Quantification of Experimental Allergic Encephalomyelitis in the Spinal Cord of Living Mice at 7T.** M.E. Meyerand, Y. Zaim Wadghiri, T. Owens and J.F. Dunn. Dartmouth Medical School, Hanover, NH; Montreal Neurological Institute, Montreal, Quebec, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: spine, EAE, microscopy
- 1338. Diffusion Tensor Imaging in X-Linked Adrenoleukodystrophy.** P.B. Barker, A.M. Ulug, G.V. Raymond, H. Moser and P.C.M. van Zijl. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: diffusion, MRI, ALD
- 1339. *In vivo* Multi-Component T2 Relaxation of Normal Guinea Pig Brain at 1.5T and 4.0T.** P.J. Gareau, J.R. Mitchell, S.J. Karlik and B.K. Rutt. Robarts Research Institute; London Health Sciences Center, London, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
- 1340. Multi-Component T2 Analysis Using CPMG at 4.0 Tesla.** P.J. Gareau, J.R. Mitchell, S.J. Karlik and B.K. Rutt. Robarts Research Institute; London Health Sciences Center, London, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging

- 1341. Diffusion Anisotropy in Patients Treated with Radiotherapy.** M.R. Wiegell, K. Krabbe, M. Schmiegelow, H.S. Poulsen, J. Müller, H. Laursen and O.B. Paulson. Danish Research Center for Magnetic Resonance, Hvidovre; Rigshospitalet, Copenhagen, Denmark.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: radiotherapy, diffusion, tensor
- 1342. Mapping of White Matter Tracts in Schizophrenics Using Diffusion Tensor Imaging.** M. Hedehus, A. de Crespigny, V. Menon, M.E. Moseley and K.O. Lim. Stanford University, Stanford, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: diffusion, tensor, schizophrenia
- 1343. Observation of AIDS Dementia Complex by Proton Localized Brain MR Spectroscopy.** K. Yoshikawa, Y. Inoue, S. Asai, Y. Hoshino, A. Iwamoto, K. Tobe, M. Umeda, T. Matsuda and N. Aria. University of Tokyo; Tokyo Metropolitan Bokutoh Hospital, Tokyo; College of Oriental Medicine, Kyoto; GE Yokogawa Medical Systems, Ltd., Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: Category not applicable
 Keywords: MRS, Brain, AIDS dementia complex
- 1344. Description of a Characteristic Lesion Pattern on Brain MRI and Correlation of T1- and T2- Lesion Volume with Neurological and Neuropsychological Findings in Patients with CADASIL.** T.A. Yousry, K. Seelos, M. Mayer, M. Filippi, R. Brünig, I. Uttner, M. Dichgans, A. Straube and N. Mai. Ludwig-Maximilians-University, Munich, Germany; University of Milan, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: CADASIL, quantitation, MRI
- 1345. Optimized Gradient-Echo Microimaging of Radiation Induced Demyelination in the Rat Spinal Cord at 7T.** M.E. Meyerand, Y. Cremillieux, Y. Zaim Wadghiri, A. Azzawi, P.J. Hoopes and J.F. Dunn. Dartmouth-Hitchcock Medical Center, Hanover, NH; Université Lyon-I, Villeurbanne, France; SMIS Limited, Guilford, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Microscopy
 Keywords: radiation, microscopy, spine

- 1346. Clinical Use of Diffusion Anisotropy in Cerebral White Matter Lesions: A Preliminary Analysis.** A. Gass, J. Hirsch, J. Gaa and L. Schad. University of Heidelberg; German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: MS, diffusion, anisotropy
- 1347. Diffusion Anisotropy Changes in Normal Aging. A Study of the Descending Projection Pathways at the Level of the Cerebral Peduncle.** A. Virta, A. Barnett and C. Pierpaoli. National Institutes of Health, Bethesda, MD.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: diffusion, brain, aging
- 1348. Magnetization Transfer Imaging of Progressive Multifocal Leukoencephalopathy and HIV-Associated White Matter Lesions in AIDS.** T. Ernst, L. Chang, M. Witt, H. Aronow, I. Walot, M. Leonido-Yee and E. Singer. Harbor-UCLA Medical Center, Torrance; USC Medical School; UCLA Medical School, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: Category not applicable
 Keywords: PML, AIDS, magnetization transfer
- 1349. Assessment of Deterioration in Diffusional Anisotropy of Commissural Association Fibers Using Diffusion-weighted Echo Planar Imaging with FLAIR in Patients with Multiple Lacunar Infarctions.** M. Ishihara, H. Hayashi, Y. Amano, R. Takagi, M. Nakahara, K. Cho and T. Kumazaki. Nippon Medical School, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: corpus callosum, diffusional anisotropy, FLAIR-EPI
- 1350. Failure of FLAIR Sequences to Suppress CSF in the Posterior Fossa: Diagnosis of a Problem and Solution with Adiabatic Inversion Pulses.** J.V. Hajnal, A. Oatridge, J. Murdoch, L. Kasuboski and G.M. Bydder. Hammersmith Hospital, London, UK; Picker International, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: FLAIR, adiabatic pulses, brain imaging

- 1351. Phase-Sensitive IR (TrueIR) of Pediatric Brain Disorders.** L. Teresi, D.J. Atkinson, D.Y. Chen and W.G. Bradley. Long Beach Memorial Medical Center, Long Beach, CA; Siemens Medical Systems R&D, Iselin, NJ.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Imaging
 Keywords: white matter, IR, pediatric
- 1352. Clinical Pediatric Experience Using Three-Point Water-Fat Imaging for Fat Suppression.** M.A. Sargent, R.A. Cairns, K.J. Poskitt, M.S. Johnson, Q.S. Xiang and L. An. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: water, fat, imaging
- 1353. Obstruction of Intramedullary Veins by Germinal Matrix Hemorrhage.** S.J. Counsell, E.F. Maalouf, M.A. Rutherford, A.H. Herlihy, A.D. Edwards and G.M. Bydder. Hammersmith Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: hemorrhage, infarction, medullary veins
- 1354. Hemosiderin-Sensitive MR Imaging in Detection of Germinal Matrix Hemorrhage in Premature Infant.** Y. Watanabe, K. Mitsudo, M. Dohke, T. Ishimori, Y. Amoh, A. Okumura, K. Oda, M. van Cauteren, K. Kato and Y. Dodo. Kurashiki Central Hospital, Kurashiki, Japan; Philips Medical Systems Co., Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: premature infant, hemorrhage, MR
- 1355. Three-Dimensional MRI Analysis of Germinal Matrix Using Formaldehyde-Fixed Fetuses.** Y. Kinoshita, A. Yokota and T. Okudera. University of Occupational and Environmental Health, Kitakyushu; Akita Research Institute of Brain and Blood Vessels, Akita, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: three-dimension, germinal matrix, fetus

- 1356. Flow Quantitation in the Superior Sagittal Sinus in Normal and Achondroplastic Children with MR Imaging.** N. Hirabuki, Y. Watanabe, T. Mano, N. Fujita and H. Tanaka. Osaka University, Osaka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Flow
 Keywords: flow, superior sagittal sinus, achondroplasia
- 1357. Increased rCBV in Patients with ICA Occlusions: What Does it Mean?.** M. Kluytmans, J. van der Grond, G.H. Visser and M.A. Viergever. University Hospital Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: rCBV, brain, occlusion
- 1358. MRA and MR Quantitative Flow Evaluation of Intracranial Vascular Malformations in Children.** K.J. Poskitt and J.A.G. Culham. B.C.'s Children's Hospital and University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow, AVM, neuro
- 1359. MRA Imaging in Tuberous Sclerosis: A Comparison of Magnetisation Transfers and FLAIR Imaging.** A.M. Cahill, K.J. Poskitt and M.A. Sargent. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Sequences: Imaging
 Keywords: FLAIR, magnetisation, transfer
- 1360. Cranial MRI in Nijmegen Syndrome.** M. Bekiesinska-Figatowska, J. Sikorska, J. Walecki and K. Chrzanowska. Central Railway Hospital; Medical Centre for Postgraduate Education; Children's Memorial Health Institute, Warsaw, Poland.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Basic NMR
 Keywords: MRI, brain, Nijmegen

- 1361. Diffusion Mapping of Chemotherapy-Treated Experimental Intracranial Brain Tumors.** T.L. Chenevert and B.D. Ross. University of Michigan, Ann Arbor, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: tumors, therapy, diffusion
- 1362. Assessment of Amphetamine Induced Stimulus Using *in vivo* 13C MRS in Rat Brain.** E.H.G.K. Küstermann, E.D. Lewandowski, B.R. Rosen and B.G. Jenkins. Massachusetts General Hospital, Charlestown, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: 13C MRS, brain
- 1363. Efficacy of Lamotrigine Against Post-ictal CNS Damage in the Pilocarpine Model of Seizures.** L.A. Lynch, B.S. Meldrum, G.D. Pratt, J.C. Barnes and S.C.R. William. Institute of Psychiatry, London, UK; Glaxo Wellcome Research and Development, Stevenage, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Diffusion
 Keywords: seizures, lamotrigine, diffusion
- 1364. Diffusion-Weighted Imaging Demonstrated Cellular Swelling in a Cold Injury Model of Vasogenic Edema.** C. Beaulieu, E.W. Busch, T. Engelhorn, A.J. de Crespigny, M. Hedehus and M.E. Moseley. Stanford University, Stanford, CA; University of Essen, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Trauma
 Methods: Diffusion
 Keywords: cold lesion, diffusion, edema
- 1365. The Effect of Ouabain on Water Diffusion in the Rat Hippocampal Slice Measured by High Resolution NMR Imaging.** D.L. Buckley, J.D. Bui, M.I. Phillips, T. Zelles, B.A. Inglis, H.D. Plant and S.J. Blackband. University of Florida, Gainesville, FL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: brain, diffusion, ischemia

- 1366. Comparison of the Validity of CT and MRI in the Detection of Intracerebral Hemorrhage in Rats.** V. Elste, W. Reith, B. Ertl-Wagner, S. Schöppenthau, S. Kuhn and K. Sartor. University of Heidelberg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Administration/Economics
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: hemorrhage, brain MRI, vascular disease
- 1367. A New MRI Model to Investigate the Course of Experimental Herpes Simplex Virus Encephalitis in Mice. Comparison between Acyclovir Treated and Untreated Groups.** V. Elste, U. Meyding Lamadé, C. Oberlinner, K. Heinrich, B. Wildemann and K. Sartor. University of Heidelberg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: encephalitis, cranial MRI, treatment
- 1368. Diffusion Weighted Imaging of Focal Demyelination in the Rat.** P. Mullins, S. Shields, D. Reid and R. Franklin. University of Queensland, Australia; University of Cambridge, UK; SmithKline Beecham Pharmaceuticals, Welwyn, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: diffusion, demyelination, MRI
- 1369. Temporal Evolution of 3-Nitropropionic Acid-Induced Neurodegeneration in the Rat Brain by T2-Weighted, Diffusion-Weighted, and Perfusion MRI.** T. Chyi and C. Chang. Academia Sinica, Taipei, Taiwan, ROC.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: perfusion, time-course, neurodegeneration
- 1370. Diffusion Anisotropy in the Cortex of a Rat Brain and its Collapse in the Methylmercury-Intoxicated Rat.** F. Mitsumori and K. Yamane. National Institute for Environmental Studies, Tsukuba, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Diffusion
 Keywords: diffusion, brain, methylmercury

1371. *In vivo* Neuro MRI Microscopy of L1 Knockout Mice Demonstrated Similarities with Human CRASH Syndrome. M. Verhoye, J. Sijbers, E. Fransen, F. Kooy, P. Soriano, P.J. Willems and A. Van der Linden. University of Antwerp, Belgium; Fred Hutchinson Cancer Research Center, Seattle, WA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: FSE, transgenic, brain

1372. MRI Characterization of Axonometric vs. Neurotmetic Peripheral Nerve Injury in a Rat Model. B. Aagaard, K. Maravilla, L. Lankerovich, M. Kliot and C. Hayes. University of Washington, Seattle, WA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Spine
 Pathology: Trauma
 Methods: Category not applicable
 Keywords: nerve, injury, animal model

Other Brain Imaging

1373. Aging per se Does Not Affect the Hippocampus: High-Resolution T2R Studies on a 3T System. I.L. Kwee, Y. Yoneoka, Y. Fujii and T. Nakada. University of California, Davis, CA; University of Niigata, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: aging, hippocampus, amnesia

1374. The Role of Brain Iron in Determining Age-Related Changes in Regional Brain T1. R.J. Ogg, S. Cho and R.G. Steen. St. Jude Children's Research Hospital, Memphis, TN.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: brain iron, relaxation, contrast

1375. A New and Extensive Rating Scale for the Aging Brain: Quality Control and Inter- and Intrarater Variability: The Rotterdam Scan Study. E. Achten, F.E. de Leeuw, J.C. de Groot, R. Heijboer, M. Breteler and M. Oudkerk. University Gent, Belgium; Erasmus University; Daniel Den Hoed Clinic Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: aging brain, white matter lesions, atrophy

- 1376. Relationship of the Transverse Relaxation Rates, R2' and R2, to Estimated Regional Iron Levels in Human Brain at 3 Tesla.** N. Gelman, J.M. Gorell, P.B. Barker, R.M. Savage, E. Spickler, J.P. Windham and R.A. Knight. Henry Ford Hospital and Health Sciences Center, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: brain iron, basal ganglia, transverse relaxation
- 1377. Heschl's Gyrus: Anatomic Description and Methods of Identification in MRI.** T.A. Yousry, G. Fesl, A. Büttner, S. Noachtar and U.D. Schmid. Ludwig-Maximilians-University, Munich, Germany; Klinik Im Park, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: cortex, anatomy, MRI
- 1378. Sylvian Fissure Asymmetry in Schizophrenia - A Reliability and Validity Study.** S.L. Rossell, J. Shapleske, A.S. David, A. Simmons and P.W.R. Woodruff. Institute of Psychiatry, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: sylvian, fissure, schizophrenia
- 1379. Thin Slice, High Resolution Imaging of the Brain at 4T.** L. Bolinger, G. Liu, N. Butler and F. Lexa. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: brain, 4T, nerves
- 1380. Estimation of Brain Compartment Volumes with Cavalieri Slices: A New Approach.** V. Spark, N. Roberts, X. Gual-Arnau, L.M. Cruz-Orive and C.J. Holmes. University of Liverpool, UK; Universitat Jaume I, Castellón, Spain; Universidad de Cantabria, Santander, Spain; UCLA School of Medicine, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: Cavalieri, stereology, error prediction

- 1381. Quantitation of Brain Changes seen on Serially Registered MRI in Normal Pregnancy and Pre-Eclampsia.** A. Oatridge, N. Saeed, J.V. Hajnal, B.K. Puri, L. Mitchell, A. Holdcroft and G.M. Bydder. Imperial College School of Medicine; Hammersmith Hospital, London UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: quantitation, brain, pregnancy
- 1382. White Matter Changes in Temporal Lobe Epilepsy: Correlation of MR with PET, Clinical, and Pathologic Findings.** D.G. Na, D.I. Choi, Y.L. Seo, S.E. Kim and H.S. Byun. Sung Kyun Kwan University, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Imaging
 Keywords: brain, seizure, MRI
- 1383. Longitudinal DWI and MRS Changes Correlate with Recovery in a Patient Following Severe Head Injury.** T.A.D. Cadoux-Hudson, A.M. Blamire, M.R. Garnett, B. Rajagopalan, Z. Domingo and P. Styles. John Radcliffe Hospital, Oxford; Radcliffe Infirmary, Oxford, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: combination MRI/MRS
 Keywords: diffusion, perfusion, trauma
- 1384. Blood Clots with Different Ages Evaluated by FLAIR MRI: An *In Vitro* Study.** M. Maeda, T. Yamamoto, Y. Kawamura, T. Murata and Y. Ishii. Fukui Medical University, Fukui, Japan.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Imaging
 Keywords: FLAIR, blood clots, SAH
- 1385. Surface Anatomy Scanning of the Brain Using FASE Sequences with Demonstration of the Cortical Veins.** K. Tsuchiya, N. Yamakami, S. Katase, J. Hachiya, T. Hiyama and Y. Kassai. Kyorin University, Tokyo; Toshiba Corporation, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: brain, anatomy, half-Fourier imaging

- 1386. Hypophysitis: Endocrinological and Dynamic MR Findings.** N. Sato, G. Sze and K. Endo. Gunma University School of Medicine, Gunma, Japan; Yale University School of Medicine, New Haven, CT.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Inflammation
 Methods: Quantitation: MRI
 Keywords: hypophysitis, pituitary, MR
- 1387. Signal Loss in Dynamic Susceptibility Contrast MRI Comparison of Spin-Echo (SE) Echo Planar Imaging and Free Induction Decay (FID) EPI.** R. Scholdei, M. Essig, R. Brüning, C. Berchtenbreiter, M. Niewei and M.V. Knopp. University of Heidelberg; German Cancer Research Center, Heidelberg; Klinikum Grosshadern, München; Nycomed Imaging, Ismaning, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: SE EPI, T1D PEI, signal loss
- 1388. Dynamic MRI of Human Brain Using T1W Burst Imaging.** S. Muramoto, T. Matsuda, H. Inoue, K. Hayashi and Y. Ishii. Rakuwakai Otowa Hospital, Kyoto; Kyoto University Hospital, Kyoto; Fukui Medical University, Fukui, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: BURST imaging, dynamic study, human brain
- 1389. Line Scan Diffusion Imaging with a High Performance Gradient System.** S.E. Maier and F.A. Jolesz. Harvard Medical School, Boston, MA.
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Diffusion
 Keywords: cine-scan, diffusion, tensor
- 1390. T2 Relaxometry of the Hippocampus in Temporal Lobe Epilepsy: Normal and Pathological Values.** J. Pires, P.C. Miranda, M.F. Secca, P. Evangelista and A. Jacinto. Instituto de Biofísica e Engenharia Biomédica, FCUL; Faculdade Ciência e Tecnologia, UNL; Hospital de Egas Moniz, Lisbon, Portugal.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Quantitation: MRI
 Keywords: relaxometry, epilepsy, hippocampus

- 1391. Structural Abnormalities Revealed by Analysis of Magnetic Resonance Brain Images in a Large Family with an Inherited Speech and Language Disorder.** K.E. Watkins, R.E. Passingham, F. Vargha-Khadem, J. Ashburner, K.J. Friston, A. Connolly and D.G. Gadian. University College London Medical School; Institute of Neurology, London; University of Oxford, UK.

Type of Study: Biomedical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Brain
Pathology: Malformation
Methods: Quantitation: MRI
Keywords: caudate nucleus, brain, speech

fMRI: Fundamentals and Physiology

- 1392. Quantification of Dynamic Changes in Cerebral Venous Oxygenation with MR Phase Imaging.** Y. Liu, J.-H. Gao and P.T. Fox. University of Texas Health Science Center, San Antonio, TX.

Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: oxygenation, phase, BOLD

- 1393. Analysis of Activation -Induced and Post - Activation Undershoot $\Delta R2^*$ and $\Delta R2$ Magnitudes and Ratios at 1.5 Tesla Using Synchronous Gradient-Echo and Spin-Echo (SGS) - EPI.** P.A. Bandettini and K.M. Donahue. Medical College of Wisconsin, Milwaukee, WI.

Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Contrast Mechanisms
Keywords: fMRI, BOLD, undershoot

- 1394. A Comparison of Blood Agent Level Dependent (BALD) and Blood Oxygenation Level Dependent (BOLD) $\Delta R2^*$ and $\Delta R2$ Magnitudes and Ratios Using Synchronous Gradient-Echo and Spin-Echo (SGS) EPI.** P.A. Bandettini, K.M. Donahue, W.-M. Luh, R.C. Risinger, E.A. Stein and S.-J. Li. Medical College of Wisconsin, Milwaukee, WI.

Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Contrast Mechanisms
Keywords: BOLD, susceptibility, gadolinium

- 1395. The Effect of Diffusion Weighting on Activation - Induced $\Delta R2^*$ / $\Delta R2$ Ratio.** P.A. Bandettini, W.-M. Luh, A. Jesmanowicz and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.

Type of Study: Methodological Development
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Contrast Mechanisms
Keywords: BOLD, diffusion weighting, deoxy-hemoglobin

- 1396. Echo Time Dependence of Activation - Induced Signal Change Revisited Using Diced K-Space (DK) Acquisition.** P.A. Bandettini and E.C. Wong. Medical College of Wisconsin, Milwaukee, WI; University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: susceptibility, BOLD, fMRI
- 1397. Analytical Model of Susceptibility Induced MR Signal Dephasing in a Microvascular Network.** V.G. Kiselev and S. Posse. Research Centre Jülich GmbH, Jülich, Germany; Institute of Physics, Minsk, Byelorussia.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: BOLD, fMRI, modelling
- 1398. Effect of Coupling Between Blood Flow and Metabolism on the BOLD Effect.** P.C.M. van Zijl, J.M.E. Oja and R.A. Kauppinen. Johns Hopkins University, Baltimore, MD; University of Kuopio, Finland.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: brain, fMRI, mechanisms
- 1399. Quantification of Blood Volumes Using the BOLD Effect and Absolute T2.** P.C.M. van Zijl, S.M. Eleff, J. Ulatowski, J.M.E. Oja, R.J. Traystman, A.M. Ulug and R.A. Kauppinen. Johns Hopkins University, Baltimore, MD; University of Kuopio, Finland.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: brain, blood volume, fMRI
- 1400. A Model of Blood Inflow and BOLD Effects in Functional MRI Signals.** S. Banakar and M. Singh. University of Southern California, Los Angeles, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: fMRI, model, BOLD/Inflow

- 1401. BOLD Signal Dynamics: The Balloon Model with Viscoelastic Effects.** R.B. Buxton, K. Miller, L.R. Frank and E.C. Wong. University of California, San Diego; San Diego Supercomputer Center, San Diego, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: BOLD mechanisms, biomechanical model
- 1402. Linking Blood Volume and Blood Oxygenation. Dynamic Measurements of Blood Oxygenation and Blood Volume During Functional Activation Using Combined Optical Near Infrared Spectroscopy and fMRI.** C. Hirth, J. Mandeville, J. Marota, J. Moore, Y. Ma, B. Chance and B.R. Rosen. Massachusetts General Hospital, Charlestown, MA; University of Pennsylvania, Philadelphia, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, optical methods, neurovascular coupling
- 1403. A Permeability Surface Area Dependent Model for Cerebral Oxygen Delivery.** F. Hyder, R.G. Shulman and D.L. Rothman. Yale University, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: permeability, oxygen, brain
- 1404. Quantitative Mapping of T2* Relaxation during Visual Stimulation at 3T.** T. Niendorf. Max-Planck-Institut of Cognitive NeuroScience, Leipzig, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: T2*, visual cortex, UFLARE
- 1405. BOLD Contrast Response in Human Brain During Simple Breathhold Measured at 1.5 Tesla.** C.H. Moritz, M.E. Meyerand and A.J. Saykin. Dartmouth Medical School, Hanover, NH.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: fMRI, breathhold, BOLD

- 1406. Differentiation of Vascular Environment in Human Motor Cortex by Using Multi Gradient Echo fMRI and Fuzzy Cluster Analysis.** M. Barth, J.R. Reichenbach, R. Venkatesan, E. Moser and E.M. Haacke. AKH-Wien, Vienna, Austria; Friedrich-Schiller-Universität Jena, Germany; Washington University, St. Louis, MO; Universität Wien, Vienna, Austria.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, high resolution, multi-gradient echoes
- 1407. Origins of BOLD Contrast — Diffusion and MTC Weighted Functional Imaging of the Human Brain.** M. Koch, T. Niendorf and D.G. Norris. Max-Planck-Institute of Cognitive Neuroscience, Leipzig, Germany.
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: BOLD, diffusion, MTC
- 1408. A Quantitative Comparison of Oxygenation Contrast fMRI and H215O PET During Complex Motor Task Performance.** M.J. Lowe, V.P. Mathews, J.T. Lurito, B.T. Weinzapfel, M.D. Phillips and G.D. Hutchins. Indiana University School of Medicine, Indianapolis, IN.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: fMRI, BOLD contrast, motor cortex
- 1409. Characteristics of Baseline fMRI Power Spectrum in Human V1 at 4 Tesla.** C.G. Thomas and R.S. Menon. University of Western Ontario; The John P. Robarts Research Institute, London, Ontario, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: BOLD, fMRI, power spectra
- 1410. Functional Connectivity During Continuous Task Activation.** B.B. Biswal and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: functional connectivity, task activation, fMRI

- 1411. Physiologic Noise in fMRI at 1.5T.** D. Raj, M.D. Robson and J.C. Gore. Yale University, New Haven, CT.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, physiologic noise, artifact reduction
- 1412. Pre- and Post- Contrast Agent Assessment of BOLD fMRI for a Patient.** C.X. Tan, A.P. Krikke and M.J. Staal. University of Groningen; Academic Hospital of Groningen, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: BOLDfMRI, brain tumor, motor cortex
- 1413. Effects of Acute Normovolemic Hemodilution on T2*-Weighted Images of Rat Brain.** W. Lin, R.P. Paczynski, A. Celik, C.Y. Hsu, W.J. Powers and E.M. Haacke. Washington University, St. Louis, MO.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Quantitation: MRI
 Keywords: BOLD, hemodilution, animal study
- 1414. Simultaneous Multi-Slice BOLD and Perfusion Based fMRI at 9.4 T.** A.C. Silva, S.-P. Lee and S.-G. Kim. University of Minnesota Medical School, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: CBF, BOLD, fMRI
- 1415. Comparison of Functional MRI in Conscious and Propofol Anesthetized Rats Using Electrical Stimulation of a Hind Paw.** K.M. Lahti, C.F. Ferris, F. Li, C.H. Sotak and J.A. King. Worcester Polytechnic Institute; University of Massachusetts Medical School; Memorial Health Care, Worcester, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, conscious, rats

- 1416. fMRI and 18FDG Imaging Studies of Intracranial Electrode Stimulations in Rodents.** C.S. Landis, A. Gifford, J.-H. Lee, M. Sammi, X. Li, N.D. Volkow and C.S. Springer, Jr. Brookhaven National Laboratory, Upton; State University of New York, Stony Brook, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, electrode, radiography
- 1417. Functional MR Neuro-Imaging In An Awake Behaving Macaque.** D. Dubowitz, D.Y. Chen, D.J. Atkinson, K.L. Grieve, W.G. Bradley and R.A. Andersen. California Institute of Technology, Pasadena, CA; Long Beach Memorial Medical Center, Long Beach, CA; Siemens Medical Systems R&D, Iselin, NJ.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: monkey, fMRI, optimization
- 1418. Cerebral Hemodynamic Measurements During Photoc Stimulation in an Anesthetized Cat Model at 4.7 Tesla.** P. Jeppard, K. K. Kwong, J. J. A. Marota, J. B. Mandeville and D. Malonek. National Institutes of Health, Bethesda, MD; Massachusetts General Hospital, Charlestown, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: animal, fMRI, hemodynamics
- 1419. Brainmapping of α -Chloralose Anesthetized Rats with T2*-Weighted Imaging: Distinction between the Representation of the Forepaw and Hindpaw in the Somatosensory Cortex.** M. Hoehn-Berlage, C. Bock, H. Krep and G. Brinker. Max-Planck-Institute for Neurological Research, Cologne, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, rat, somatosensory cortex
- 1420. BOLD-Based fMRI of the Rat Brain during Forepaw Stimulation at 9.4T.** S.-P. Lee, A.C. Silva, C. Iadecola and S.-G. Kim. University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, BOLD, forepaw

- 1421. Anisotropy of the BOLD Effect in the Skeletal Muscle.** V. Lebon, P.G. Carlier, C. Brillault-Salvat, G. Bloch and A. Leroy-Willig. SHFJ-DRM, Orsay, France.
- Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: BOLD, muscle, ischemia
- 1422. CBV Response Exhibits 2 Phases During Rat Forepaw Stimulation.** J.B. Mandeville, J.J.A. Marota, C. Ayata, M. Moskowitz, B.R. Rosen and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown, MA.
- Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: CBV, fMRI, brain
- 1423. The Temporal Evolution of Oxygenation-Sensitive MRI Signals: Implications for Interpretation and Protocol Design.** P. Fransson, G. Krüger, K.D. Merboldt and J. Frahm. Biomedizinische NMR Forschungs, Göttingen, Germany.
- Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: fMRI, visual cortex, cerebral blood oxygenation
- 1424. A Study of the Time-Invariant Properties of the BOLD Response.** A.L. Vazquez and D.C. Noll. University of Pittsburgh, Pittsburgh, PA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Keywords: BOLD, linear-systems, visual stimulation
- 1425. Pseudo Fast Response in Functional MRI.** S. Lai, G.H. Glover and H.A. Baseler. Stanford University, Stanford, CA.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, artifact, fast response

- 1426. Timing Characteristics of BOLD Response in Human Striate and Extrastriate Cortex.** C.G. Thomas and R.S. Menon. University of Western Ontario; The John P. Robarts Research Institute, London, Ontario, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, BOLD, visual system
- 1427. High Temporal Resolution Functional MRI Using Time-Shift Technique.** T. Yoshiura, D.K. Shibata, W.E. Kwok, J. Zhong, U. Patel, D.A. Shrier and Y. Numaguchi. University of Rochester, NY.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, temporal resolution, brain
- 1428. Signal Undershoots Following Visual Stimulation: A Comparison of Gradient and Spin Echo BOLD Sequences.** R.A. Jones, T. Schirmer, G.K. Elbel and D.P. Auer. Max Planck Inst. Für Psychiatrie, München, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, visual, CBV
- 1429. A Robust Approach for Predicting Temporal Characteristics of fMRI Signals and for Optimizing Experimental Design.** S. Lai, G.H. Glover and H.A. Baseler. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, visual cortex, BOLD
- 1430. The Effect of Inter-Stimulus Interval on Signal Response in fMRI.** C. Hutton, A.M. Howseman, O. Josephs, K. Friston and R. Turner. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, inter-stimulus interval, event-related
- 1431. Hemodynamic Response Limitations in Functional MRI.** W.-C. Liu, A.J. Kalnin and K. Mosier. University of Medicine and Dentistry of New Jersey, Newark, NJ.
 Keywords: FMRI, characterization

- 2196. Pharmacologic Dissection of Pre-synaptic and Post-synaptic Contributions to Neurovascular Coupling in Functional Magnetic Resonance Imaging.** A.J.-W. Chen, Y.-C.I. Chen, V. Nguyen, J.R. Keltner, B.R. Rosen and B.G. Jenkins. Massachusetts General Hospital, Charlestown, MA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: pre-synaptic, dopamine, fMRI

fMRI: Techniques

- 1432. Ultrafast Whole-Brain 3D fMRI Using PRESTO with the Acquisition Shifted over 2 Excitation Pulses.** J.S. van den Brink, H. Hoogduin, N.F. Ramsey and P.J.M. Folkers. Philips Medical Systems, Best; University Hospital Utrecht, The Netherlands.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fast imaging, BOLD, navigators
- 1433. ²³Na Functional MR Imaging at 4 T Using Gradient-Recalled Echo FLASH.** B.G. Goodyear, J.S. Gati and R.S. Menon. University of Western Ontario; The John P. Robarts Research Institute, London, Ontario, Canada.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: sodium, imaging, function
- 1434. A Phased Array Echoplanar Imaging System for fMRI.** B. deB. Frederick, L.L. Wald, L.C. Maas and P.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston, MA.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: phased array, echoplanar, hardware
- 1435. Clinical Research Application of 3D PRESTO fMRI: Improvement by Dual Navigator Phase Correction.** N.F. Ramsey, J.M. Jansma, J.S. van den Brink, P.J.M. Folkers and R.S. Kahn. University Hospital, Utrecht; Philips Medical Systems, Best, The Netherlands.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: fMRI, patients, motion

- 1436. Functional I0 and T2* Parameter Maps Using a Single-Shot Multi-Image Inversion Recovery Technique.** A.-C. Schulte, O. Speck and J. Hennig. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: CSF, BOLD, ssIR-multi-image EPI
- 1437. Quantitative Comparison of Phase Correction Methods for Partial Fourier 3D Gradient Echo Functional MRI.** V.A. Stenger, D.C. Noll and F.E. Boada. University of Pittsburgh, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, rapid imaging, partial k-space
- 1438. FMRI Using ADC-Dependent Contrast.** A.W. Song and C.A. Popp. Emory University, Atlanta, GA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Diffusion
 Keywords: ADC, fMRI, perfusion
- 1439. A Dual-Echo Spiral Single-shot Technique for Functional MRI.** D.B. Twieg, Y.T. Zhang and G.M. Saenz. University of Alabama, Birmingham, AL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: spiral, fMRI, snapshot
- 1440. Functional Imaging in Real-Time (FIRE).** S. Schor, D. Gembris, J.G. Taylor, M. Peyerl, E. Müller and S. Posse. Research Center Jülich GmbH, Jülich, Germany; Kings College, London, UK; Siemens Medical Systems, Erlangen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: real-time, fMRI, correlation
- 1441. Clinical 3D-fMRI Compared to Single Shot EPI fMRI.** L. Scheef, Ch. Kuhl, R. König, J. Gieseke, P. Folkers, B. Ostertun and H.H. Schild. University Hospital, Bonn, Germany; Philips Medical Systems.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, 3D-FFE, ssh-EPI

- 1442. Gradient Echo EPI T2* fMRI Without and With Inversion Recovery CSF Suppression.** G.A. Hatfield, J.L. Steinberg, L.A. Kramer and P.A. Narayana. University of Texas Health Science Center, Houston, TX.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: fMRI, brain, CSF
- 1443. Removal of the Signal Loss Artifacts in T2*-Weighted EPI.** Q.X. Yang, W.B. Edmister, K.K. Kwong, R.J. Demeure and M.B. Smith. The Pennsylvania State University College of Medicine, Hershey, PA; Massachusetts General Hospital, Boston, MA; Université Catholique de Louvain, Brussels, Belgium.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: susceptibility, ERI, T2*
- 1444. Comparison of Reduced Encoding Methods for fMRI.** J.B.M. Goense, H.D. Morris, C.P. Hess, Z.-P. Liang and P.C. Lauterbur. University of Illinois at Urbana-Champaign, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, keyhole, RIGR
- 1445. Reducing Task Acquisition Time By Interleaving Functional MRI Tasks.** M.A. Quigley, D. Cordes, D. Li, P.A. Turski, G.J. Wendt and J.A. Sorenson. University of Wisconsin, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: functional MRI, data analysis, interleaved tasks
- 1446. Functional Magnetic Resonance Imaging Using Optimized Z-Gradient Refocusing.** D. Cordes, B.J. Mock, P.A. Turski and J.A. Sorenson. University of Wisconsin, Madison, WI.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: FMRI, refocusing, compensation

- 1447. The Use of Off-resonance Saturation to Enhance fMRI Contrast.** A.W. Song, S.D. Wolff, R.S. Balaban and P. Jezzard. Emory University, Atlanta, GA; National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, off-resonance, saturation
- 1448. fMRI with GRASE: Initial Evaluation Using Split Echo Technique at 3T.** J. Jovicich and D.G. Norris. Max-Planck-Institut of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: GRASE, fMRI, fast imaging
- 1449. Dual-echo EPI: an fMRI Method for Regions of Varying B0 Homogeneity.** C.J. Wiggins and D.G. Norris. Max-Planck-Institut für Neuropsychologische Forschung, Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: EPI, fMRI, susceptibility
- 1450. Combined Diffusion Sensitisation and CSF Suppression in Functional MRI.** M. Bolling, R. Wirestam and F. Ståhlberg. Lund University, Lund, Sweden.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: fMRI, diffusion, vessels
- 1451. Half Encode and Double Shot (HEADS) EPI.** E. Yoshitome, R.A. Waggoner, H. Takeichi, K. Cheng, T. Ong and K. Tanaka. Brain Science Institute, Saitama, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, EPI, ghost
- 1452. BOLD fMRI with Driven-Equilibrium Contrast Preparation.** Y. Yang, H.D. Morris, P.C. Lauterbur, J.A. Frank and J.H. Duyn. National Institutes of Health, Bethesda, MD; University of Illinois, Urbana, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, contrast mechanism, pulse sequence

- 1453. Comparison of Generalized Series and Keyhole Reconstruction Techniques with a Bolus Tracking Simulation.** A.B. Harris, E.C. Wiener and P.C. Lauterbur. University of Illinois, Urbana, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: RIGR, keyhole, rCBV
- 1454. Single Compartment Measurement of H217O with Gadolinium Quenching.** S. Charagundla, A.H. Stolpen, J.S. Leigh and R. Reddy. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Sequences: combination MRI/MRS
 Keywords: perfusion, oxygen, gadolinium
- 1455. Use of a Combined C4S-Keyhole Imaging Technique to Study the Dynamics of Cryoprotective Agents in an Engineered Tissue.** N.P. Bidault, B.E. Hammer and A. Hubel. University of Minnesota, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: cryoprotection, engineered tissue, imaging
- 1456. A Capillary Phantom for Testing Dynamic Perfusion-Weighted MRI.** S.K. Holland, P.M. Williams, R.S. Dunn, J.P. Wansapura and W.S. Ball, Jr. Children's Hospital Medical Center and University of Cincinnati College of Medicine, Cincinnati, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, phantom, pMRI
- 1457. Simultaneous Multiplanar BOLD-Imaging at Multiple Echo Times.** T. Loenneker, K.A. Il'yasov and J. Hennig. University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, TE-dependence, excitation pulse

- 1458. Echo Time Dependence of Brain Activation Measured with Single Shot, High Resolution, Multiple Echo Spiral Imaging.** A. Metzler, M. Barth, S. Roell, M. Klarhoefer, D. Liebfritz and E. Moser. University of Bremen, Germany; University of Vienna, Austria.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, multi echo, spiral
- 1459. Investigation of BOLD Contrast in fMRI Using Multi-Shot EPI.** C.G. Thomas, J.S. Gati and R.S. Menon. University of Western Ontario; The John P. Robarts Research Institute, London, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, multi-shot EPI, contrast
- 1460. An Optimized Period of Stimulation to Improve Quality of fMRI Derived from Quantitative Noise Analysis.** S. Kumazawa, T. Yamamoto, T. Yamamoto and K. Miyasaka. Hokkaido University, Sapporo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: functional MRI, stimulation, noise
- 1461. Single Shot T2* Measurement to Establish Optimum Echo Time for fMRI at 3.0T.** S. Clare, R. Bowtell and P. Morris. University of Nottingham; University of Oxford, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: T2*, fMRI, high-speed
- 1462. Whole Brain EPI Gradient Echo fMRI: Optimizing TE to Maximize Signal Activation and Minimize Susceptibility Artifact in the Orbitofrontal Cortex.** A.M. Smith, K. Kiehl, B.B. Forster, K. Whittall, A.L. MacKay, P.F. Liddle and R.D. Hare. University of British Columbia, Vancouver, British Columbia, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: echotime, fMRI, susceptibility

- 1463. Effect of Sampling Bandwidth and Image Matrix Size on EPI BOLD fMRI - An Auditory Stimulation Study.** W.E. Kwok, D. Shibata, T. Yoshiura and J. Zhong. University of Rochester Medical Center, Rochester, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: bandwidth effect, EPI BOLD fMRI, auditory stimulate
- 1464. Integral ROC Analysis for fMRI Data Acquisition Optimisation.** D.W. McRobbie. The Hammersmith Hospitals NHS Trust & Imperial College School of Medicine, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, methods, ROC
- 1465. Simultaneous Measurement of Cerebral Perfusion and R2* Changes during Photic Stimulation.** V. Lebon, P.G. Carlier, E. Giacomini, P.F. Van De Moortele, D. Le Bihan and A. Leroy-Willig. SHFJ-DRM, Orsay, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: BOLD, perfusion, brain
- 1466. Quantification of Relative Perfusion Changes in Functional Brain Imaging Using Diffusion Weighted FAIR: Comparison of T1 Model and Kinetic Model.** W.-M. Luh, P.A. Bandettini and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: fMRI, FAIR, perfusion models
- 1467. 3-D Imaging of Cerebral Blood Flow Changes during Motor Activation.** F.Q. Ye, A. Smith, Y. Yang, J. Duyn, V. Mattay, J. Frank, D. Weinberger and A. McLaughlin. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, human, brain

- 1468. High Resolution Functional Perfusion and BOLD Imaging Using Q2TIPS, Half k-space EPI, and Simultaneous Two-Channel Acquisition.** W.-M. Luh, A. Jesmanowicz, P.A. Bandettini and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: high resolution, fMRI, perfusion
- 1469. Quantitation of Focal CBF Changes in Prefrontal Cortex During Cognitive Tasks.** F.Q. Ye, A.M. Smith, V. Mattay, U. Ruttiman, J. Frank, D. Weinberger and A. McLaughlin. National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: perfusion, brain, human
- 1470. Perfusion-Based Functional Magnetic Resonance Imaging with Single-Shot GRASE Acquisitions.** G.R. Crelier, B. Gill, R.D. Hoge, P. Munger and G.B. Pike. McConnell Brain Imaging Center; Montreal Neurological Institute; McGill University, Montreal, Quebec, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: fMRI, perfusion, GRASE
- 1471. EPISTAR MRI: Multislice Mapping of Cerebral Blood Flow.** R.R. Edelman and Q. Chen. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: EPISTAR, perfusion

fMRI: Analysis

- 1472. Detection and Analysis of Event-Related Responses in fMRI.** A.H. Andersen, D.D. Danner, W. Friesen, R. Greene Avison and M.J. Avison. University of Kentucky, Lexington, KY.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: functional, neuro, imaging

- 1473. Event-Related fMRI Data Analysis - Temporal Ratio Mapping.** D. Dai, B. Condon and D. Hadley. Southern General Hospital, Glasgow, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, event-related, neuroactivation
- 1474. fMRI of Facial Muscle Movement Using a Single-Trial Paradigm.** R.M. Birn, A.K. Gosain and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: FMRI, smiling, single-trial
- 1475. Embedded Single Trial Design for fMRI.** A. Dove, S. Pollmann and C. Wiggins. Max-Planck-Institut of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, single trial, methods
- 1476. Short Inter-Trial Intervals in Single-Trial fMRI-Experiments.** S. Pollmann, C. Wiggins, D.Y. von Cramon and T. Schubert. Max-Planck-Institut of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, single trial, methods
- 1477. Application of Neural Networks to the Analysis of fMRI Time-Course Data Reveals Increased Sensitivity to Functional Activation.** A.J. Knowles, D.J. Manton, B. Issa and L.W. Turnbull. Hull Royal Infirmary, Hull, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: fMRI, neural, network
- 1478. Fuzzy Clustering and Correlation Analysis of Functional MR Images: A Quantitative Comparison.** R. Baumgartner, C. Windischberger and E. Moser. Institute of Medical Physics; University of Vienna, Austria.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: fMRI, correlation analysis, fuzzy clustering

- 1479. Clique Analysis to Study Functional Connectivity.** X. Zhao, R.W. Cox, W.-M. Luh and S.-J. Li. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: clique, graph, functional connectivity
- 1480. Improved Inter-Regional Connectivity Mapping by Use of Covariance Analysis Within Rest Condition.** J. Xiong, L.M. Parsons, Y. Pu, J.-H. Gao and P.T. Fox. University of Texas Health Science Center, San Antonio, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, connectivity, rest condition
- 1481. Detecting Brain Activations with EPI fMRI Data Using a Region-Growing Algorithm.** J.-F. Rohmer, M. Zanca and M. Rossi. CHU Montpellier; PraXis Informatique, Nîmes, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, region growing, EPI
- 1482. Use of Statistical Resampling for fMRI Data Analysis.** M.H. Buonocore, C.M. Wessinger, M. Girelli and G.R. Mangun. UC Davis Medical Center, Sacramento; University of California, Davis CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: functional MRI, statistical analysis, resampling
- 1483. Un-True False-Positive Rates Due to Temporal Autocorrelation in fMRI Statistical Mapping.** P.L. Purdon and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown; Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, temporal autocorrelation, statistical parametric mapping

- 1484. Mutli-Frequency Reference Function to Reduce Noise in fMRI.** L. Al-Dayeh, P. Patel, T. Kim and M. Singh. University of Southern California, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, noise, artifact
- 1485. Bayesian Processing for fMRI.** T. Kim, L. Al-Dayeh, P. Patel and M. Singh. University of Southern California, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, artifacts, bayesian
- 1486. Methodology of Fast Correlation Analysis for Real-Time fMRI Experiments.** D. Gembris, J.G. Taylor, S. Schor, V. Kiselev, D. Suter and S. Posse. Research Center Jülich GmbH, Jülich, Germany; Kings College, London, UK; Institute of Physics, Minsk, Byelorussia; University of Dortmund, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: real-time, fMRI, correlation
- 1487. Reproducibility of BOLD-based Functional MRI Obtained at 4T.** C. Tegeler, S.C. Strother, J.R. Anderson and S.-G. Kim. University of Minnesota; VA Medical Center, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, reproducibility, notor
- 1488. The Empirical Influence Function and Principal Component Analysis of the Transient fMRI Response.** A.H. Andersen, W.S. Rayens, D.M. Gash and M.J. Avison. University of Kentucky, Lexington, KY.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: functional, neuro, imaging

- 1489. Fusion of fMRI Time-Series Across Sessions.** L. Itti, T. Ernst, J. Braun and L. Chang. Harbor-UCLA Medical Center, Torrance; California Institute of Technology, Pasadena, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, registration, SNR
- 1490. Semi-Automated MRI Brain Segmentation.** J.S. Kippenhan and T.A. Zeffiro. Sensor Systems, Sterling, VA; Georgetown University Medical Center, Washington, D.C.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: segmentation, visualization
- 1491. Automated Spatial Normalization of fMRI for Intersubject Analysis.** T.A. Zeffiro, T.M. Ellmore, R.P. Woods and G.F. Eden. Sensor Systems, Sterling, VA; Georgetown University Medical Center, Washington, D.C.; UCLA School of Medicine, Los Angeles, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: talairach, registration
- 1492. Mapping Speech Perception: A Comparison of fMRI and Magnetic Source Imaging.** T.P.L. Roberts, D. Poeppel and H.A. Rowley. University of California, San Francisco, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, MSI, registration
- 1493. fMRI of Brain Activity during A Rhythm.** M. Singh, P. Patel and L. Al-Dayeh. University of Southern California, Los Angeles, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, alpha-rhythm, EEG

- 1494. The Amplitude and Distribution of EEG Pulse Artifact in the MR Scanner: Its Effect on the Detection of EEG Events.** K. Krakow, P.J. Allen, G. Polizzi, L. Lemieux and D.R. Fish. Insitute for Neurology and National Society for Epilepsy; National Hospital for Neurology and Neurosurgery, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: EEG, fMRI, epilepsy
- 1495. Current-Induced Magnetic Resonance Phase Imaging.** S.-J. Li, A. Jesmanowicz, J. Bodurka and J. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: phase imaging, contrast, current
- 1496. Simultaneous EEG Correlation with Resting-State Vector Time Courses in Fast EPI.** A. Jesmanowicz, J. Myklebust, J. Blimke and J.S. Hyde. Medical College of Wisconsin; Marquette University, Milwaukee, WI.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, EEG, correlation
- 1497. Exploring Links Between Brain Structure and Function: Combining Diffusion Tensor Imaging (DTI) with Functional Magnetic Resonance Imaging (fMRI).** D.J. Werring, C.A. Clark, G.J.M. Parker, G.J. Barker, M.R. Symms, F. Franconi, D.H. Miller and A.J. Thompson. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: fMRI, diffusion
- 1498. Noise Reduction for fMRI by Navigator Echo and/or Spatial Realignment on 3.0T System.** T. Nakai, T. Okada, K. Matsuo, C. Kato, T. Moriya and G.H. Glover. Electrotec Laboratories, Tsukuba; Kyoto University, Kyoto; Toyohashi Sozo College, Toyohashi, Japan; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: fMRI, navigator, realignment

- 1499. Testing for Slice Acquisition Order in Event-Related Functional Magnetic Resonance Imaging Experiments.** A.L. Paradis, P.F. Van de Moortele, V. Cornilleau-Pérès, D. LeBihan and J.B. Poline. Service Hospitalier Frédéric Joliot, Orsay; CNRS Collège de France, Paris, France.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, event-related, EPI
- 1500. Respiration Induced Changes of Field Homogeneity in the Brain: Implications for fMRI.** P. van Gelderen and C.T.W. Moonen. National Institutes of Health, Bethesda, MD; University of Bordeaux 2, France.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, respiration, homogeneity
- 1501. Stimulus Correlated Motion as a Source of Artifact in fMRI.** E.J. Burton, Y. Watson, N. Thacker and A. Jackson. University of Manchester, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Motion and Artifacts
 Keywords: stimulus, correlated motion
- 1502. Quantification of the Impact of fMRI Scanner Noise on Auditory Cortex.** T.M. Talavage, W.B. Edmister, P.J. Ledden and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown; MIT-Harvard Division of Health Sciences and Technology, Cambridge MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: auditory cortex, acoustic noise, fMRI
- 1503. Comparison of Impact of fMRI Sequence Acoustics on Auditory Cortex Activation.** T.M. Talavage, W.B. Edmister, P.J. Ledden and R.M. Weisskoff. Massachusetts General Hospital NMR Center, Charlestown; MIT-Harvard Division of Health Sciences and Technology, Cambridge, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: auditory cortex, acoustic noise, fMRI

- 1504. "Sparse" Temporal Sampling in fMRI for the Detection of Auditory Activation.** M.R. Elliott, D.A. Hall, R.W. Bowtell, E. Gurney, P.G. Morris and M.P. Haggard. University of Nottingham, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: auditory, noise, masking
- 1505. A Novel T2* Phantom for Testing of fMRI Techniques.** R.C. Dymond, R. Köhler and D.G. Norris. Max-Planck-Institute of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: phantom, fMRI, T2
- 1506. Baseline-to-Error Ratio (BER) Maps: Activation-Independent Noise Maps for Quality Control, Paradigm Comparison, and Prediction of Stimulus Detectability in fMRI.** M.A. Quigley, D. Li, D. Cordes and J.A. Sorenson. University of Wisconsin, Madison, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: functional MRI, data analysis, BER maps
- 1507. Assessment of the Variability in fMRI Data Sets Due to Positioning and Calibration of the MRI Scanner.** A. Howseman, S. Grootoink, J. Ramdeen, B.S. Athwal and R. Turner. Institute of Neurology, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: fMRI, reproducibility, analysis
- 1508. Quality Control for Functional MRI Using Automated Data Analysis and Shewhart Charting.** A. Simmons, E. Moore and S.C.R. Williams. Institute of Psychiatry; Maudsley Hospital; Kings College Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fMRI, quality, control

- 1509. Abnormalities in the Temporoparietal Lobe and Cerebellum in Developmental Dyslexia.** C. Rae, M.A. Lee, R.M. Dixon, A.M. Blamire, C.H. Thompson, P. Styles, J. Talcott, A.J. Richardson and J.F. Stein. MRC MRS Unit, Oxford; The University of Sydney, Australia; Radcliffe Infirmary, Oxford, UK; University of Oxford, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: dyslexia, cerebellum, 1H MRS
- 1510. Functional MRI Study of Language Organization in Patients with Arteriovenous Malformations.** Y. Cao, E.M. Vikingstad, A.J. Thomas, A.F. Johnson, G.M. Malik and K.M.A. Welch. Henry Ford Health Sciences Center; Case Western Reserve University, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: fMRI, language, AVM
- 1511. When can fMRI Replace Wada for Language Lateralization?.** D.J. Vincent, A.E. Bryant, W.C. Worthington, V.M. Chandler, D.R. Roberts, M.T. Wagner, C.L. Vera and M.S. George. Medical University of South Carolina; Roper Hospital, Charleston, SC.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: fMRI, Wada, language
- 1512. Non-Invasive fMRI-Wada to Assess Cognitive Lateralization in Patients with Surgical Brain Disease.** J.C. Lin, J.R. Gates, F.J. Ritter, M.B. Dunn, X. Hu, D.E. Miulli, T. Kato, C.A. Nelson and C.L. Truwit. University of Minnesota, Minneapolis; Minnesota Epilepsy Group, St. Paul; Neurosurgery Associates, St. Paul, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Imaging
 Keywords: fMRI, language, memory
- 1513. fMRI of Language Laterlisation in Patients with Left Hemispheric Lesions.** D. Khorram-Sefat, S. Herminghaus, T. Dierks, R. Goebel, H. Hacker, F.J. Klose and F.E. Zanella. Philipps Universität, Marburg; Johann Wolfgang Goethe Universität, Frankfurt; Max Planck Institut für Hirnforschung, Frankfurt, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: FMRI, brain-tumors, language-lateralization

- 1514. Reading Braille Predominantly Activates Extrastriate Cortex in Persons with Severe Visual Disability: A fMRI Study.** P. Melzer, D.R. Pickens, R.R. Price, V.L. Morgan, F.J. Symons and R.S. Wall. Vanderbilt University, Nashville, TN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: brain, plasticity, function
- 1515. Effects of Complexity and External Guidance on Localization of Brain Activity during Silent Word Generation.** R.W. Briggs, B.A. Crosson, J.R. Sadek, A.J. Freeman, D. Gokcay and M.B. Gordon. University of Florida, Gainesville, FL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, language, medial frontal
- 1516. Functional MRI Study of Cortical Localization of Semantic Association in Normal Subjects.** Y. Cao, E.M. Vikingstad, K.P. George, A.F. Johnson and K.M.A. Welch. Henry Ford Health Sciences Center; Case Western Reserve University, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, language, brain
- 1517. Cerebral Multi-phasic Sustained Responses (CMSR) of Non-averaged Single Word Processing Detected on a Commercial 1.5T scanner, A Combined 1.5T and 4T Effort.** T. Kato, J.C. Lin, T.H. Le, M. Harada, P. Erhard, S. Ogawa and K. Ugurbil. University of Minnesota, Minneapolis, MN; Lucent Technologies, Murray Hill, NJ.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: CMSR, single word, temporal behavior
- 1518. Prefrontal Cortex Involvement in Selective Letter Generation: A Functional Magnetic Resonance Imaging Study.** G.I. de Zubicaray, S.C.R. Williams, S.J. Wilson, S.E. Rose, M.J. Brammer, E.T. Bullmore, A. Simmons, J.B. Chalk, J. Semple, G.A. Smith and D.M. Doddrell. University of Queensland, Brisbane, Australia; Institute of Psychiatry, London; Smithkline Beecham Pharmaceuticals, Harlow, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, prefrontal cortex, working memory

- 1519. An fMRI Study of the Motor Cortices under Retrieval of Japanese Morphograms: An Analysis of the Interaction between Response Mode and Task Difficulty.** C. Kato, H. Isoda, Y. Takehara, T. Nakai, K. Matsuo, T. Moriya and M. Kaneko. Toyohashi Sozo College, Toyohashi; Hamamatsu University, Hamamatsu; Electrotechnical Laboratories, Tsukuba, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, kanji, retrieval
- 1520. An fMRI Experiment of Counting Strokes of Kanji.** K. Matsuo, C. Kato, T. Nakai, T. Moriya and G.H. Glover. Electrotechnical Laboratories, Tsukuba; Toyohashi Sozo College, Toyohashi, Japan; Stanford University, Stanford, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: fMRI, kanji, motor cortex
- 1521. Brain Activation of Reading of Secondary Language is Dependent on the Primary Language, not Ethnical Background.** T. Nakada, Y. Fujii, K. Suzuki, K. Nakada and I.L. Kwee. University of Niigata, Niigata, Japan; University of California, Davis, CA; California Institute of Technology, Pasadena, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, language, bilingual
- 1522. High Resolution fMRI for Hippocampal Formation Involved in Memory Function.** T. Kato, H. Liu, C. Neves, S. Ogawa and K. Ugurbil. University of Minnesota, Minneapolis, MN; Bell Laboratories, Murray Hill, NJ.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: hippocampus, high resolution, LTSR
- 1523. Activation in the Hippocampal Region Increases as Function of Encoding Load.** S.A.R.B. Rombouts, F. Barkhof, F.G.C. Hoogenraad, W.C.M. Machielsen, M. Sprenger, M.P. Witter and Ph. Scheltens. Graduate School of Neurosciences; Vrije Universiteit, Amsterdam, The Netherlands.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, hippocampus, encoding

- 1524. Whole-Brain fMRI of Encoding and Retrieval in Episodic Declarative Memory.** N.J. Shah, B.J. Krause, D. Schmidt, F.M. Mottaghy, M.-L. Grosse-Ruyken, L. Jäncke and H.-W. Müller-Gärtner. Research Centre Jülich GmbH, Jülich, Germany.

Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Category not applicable
Keywords: fMRI, memory, learning

fMRI: Auditory/Vestibular

- 1525. High Resolution fMRI of Cortical and Subcortical Areas during Horizontal and Vertical Optokinetic Stimulation with and without Fixation Suppression.** K.C. Seelos, M. Dieterich, S.F. Bucher and T. Brandt. University of Munich, Germany.

Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Sequences: Imaging
Keywords: brain activation, fMRI, optokinetic stimulation

- 1526. Cerebral Functional MRI of Vestibular and Auditory Areas during Galvanic Stimulation.** S.F. Bucher, M. Wiesmann, M. Dieterich, R. Zink, A. Weiss, T.A. Yousry and T. Brandt. Ludwig-Maximilians-University, Munich, Germany.

Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Sequences: Imaging
Keywords: Galvanic Stimulation, brain activation, fMRI

- 1527. Music Literacy is an Extension of Language Reading and Requires Specific Recruitment of the Antero-Lateral Occipital Cortex.** T. Nakada, Y. Fujii, N. Nakayama, K. Suzuki and I.L. Kwee. University of Niigata, Niigata, Japan; University of California, Davis, CA; University of Hokkaido, Sapporo, Japan.

Type of Study: Basic Research on MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Category not applicable
Keywords: music, literacy, language

- 1528. Disruptions of Expected Temporal Patterns in Music and Speech as Studied with fMRI.** C. Tempelmann, H. Weyerts, M. Besson, M.G. Woldorff, H. Scheich and H.J. Heinze. Federal Institute for Neurobiology, Magdeburg; Department of Clinical Neurophysiology, Magdeburg, Germany; Centre National de la Recherche Scientifique, Marseille, France; University of Texas Health Science Center, San Antonio, USA.

Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Category not applicable
Keywords: disruption, temporal lobe

- 1529. Application of the Keyhole-Method for fMRI-Studies of the Human Auditory Cortex.** T. Kaulisch, D. Stiller, F. Baumgart and H. Scheich. Federal Institute for Neurobiology, Magdeburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: keyhole, fMRI, implementation
- 1530. Processing of Complex Sounds in Human Auditory Cortex Examined with Functional Magnetic Resonance Imaging.** C.M. Wessinger, B. Tian, J.W. VanMeter, R.C. Platenberg, J.J. Pekar and J.P. Rauschecker. Georgetown University Medical Center, Washington D.C.; Sensor Systems, Inc., Sterling, VA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, auditory, human
- 1531. Measurements of the Temporal fMRI Response of the Human Auditory Cortex to Trains of Tones.** M.D. Robson, J.L. Dorosz and J.C. Gore. Yale University School of Medicine, New Haven, CT.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, linearity, temporal resolution
- 1532. Supramodal Involvement of the Right Frontal Lobe in Simple Executive Functions: An fMRI Study.** D.F. Braus, G. Ende, M. Ruf, W. Weber Fahr, P. Hubrich-Ungureanu and F.A. Henn. Central Institute of Mental Health, Mannheim, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, frontal lobe, attention

fMRI: Visual System

- 1533. Brain Functional MRI During Normal Development in Infants.** H. Yamada, N. Sadato, Y. Konishi, K. Kimura, M. Tanaka, Y. Yonekura and Y. Ishii. Fukui Medical University, Fukui, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Flow
 Keywords: fMRI, brain, infant

- 1534. fMRI Studies on Face Encoding and Retrieval Processes.** T. Okada, S. Tanaka, T. Inui and J. Konishi. [Kyoto University, Kyoto, Japan.](#)
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, working memory, face
- 1535. fMRI Responses to Infrequent Visual Configurations.** M.W. Greenlee, P.J. Bennett, F.M. Kraemer and J. Hennig. [University of Freiburg, Germany; University of Toronto, Ontario, Canada.](#)
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, vision, bold-contrast
- 1536. EPI BOLD fMRI Reveals Ocular Dominance Dependence on Dominant Eye.** B.G. Goodyear and R.S. Menon. [University of Western Ontario; The John P. Robarts Research Institute, London, Ontario, Canada.](#)
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: fMRI, ocular, dominance
- 1537. Comparison of Perfusion and BOLD Responses in Human Visual Cortex to Blob-Selective Stimuli, Inter-Blob-Selective Stimuli, and Hypercapnia.** R.D. Hoge, B. Gill, G.R. Crelier and G.B. Pike. [McGill University, Montreal, Quebec, Canada.](#)
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: FMRI, CMRO2, vision
- 1538. fMRI Spatial Resolution in the Visual Cortex.** P. Jezzard, S. Kastner, A. Karni, I. Elizondo, L. G. Ungerleider and P. De Weerd. [National Institutes of Health, Bethesda, MD.](#)
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, resolution, vision

- 1539. Representation of Contours in Human Visual Cortex.** C. Schmitt, C. Janz, J. Hennig and M. Bach. University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, texture segregation, visual cortex
- 1540. Activation of Area V5A and the Influence of Attention: An fMRI Study.** J. Baudewig, B.A. Haug and W. Paulus. University of Göttingen, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, VSA, attention
- 1541. Comparison of fMRI to H215O PET Studies of a Visual Confrontation Naming Task.** C.A. Popp, J.R. Votaw, T.L. Faber, T.R. Henry, J.D. Trudeau, J. Woodard, H. Mao, R.M. Woods, J.M. Hoffman and A.W. Song. Emory University, Atlanta, GA; University of California, Los Angeles, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: fMRI, PET, naming
- 1542. Brain Activation During Oddball Tasks: Whole-Brain Single-Event Functional MRI Study.** T. Yoshiura, D.K. Shibata, W.E. Kwok, J. Zhong, U. Patel, D.A. Shrier and Y. Numaguchi. University of Rochester, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: functional MR, odd ball task, brain
- 1543. Hemispheric Asymmetry of Topological Perception: Evidence from FMRI.** M. Lin, Z.L. Wang, Y. Zhuo, G.Z. Li and L. Chen. Chinese Academy of Sciences; Beijing Hospital, Beijing, China.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: fMRI, topological perception, lingual

- 1544. Regional Differences in the Hemodynamic Response to Different Visual Stimuli Observed with Block Paradigms vs. Single Event Observations.** C. Janz, C. Schmitt, O. Speck and J. Hennig. University of Freiburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: fMRI, BOLD, hemodynamic
- 1545. Checkerboard Stimulation in Functional MRI: A New Diagnostic Tool in Optic Neuritis?.** M.O. Russ, H.J. Wittsack, U. Cleff, H. Lanfermann, F.E. Zanella and W. Enzensberger. J.W. Goethe University, Frankfurt am Main, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, optic neuritis, visual cortex
- 1546. Visual Field Defects Detected with Functional MR Imaging in Patients with Lesions Involving the Occipital Lobe and/or the Afferent Visual System.** S. Kollias, X. Golay, N. Khan, C. Landau, P. Boesiger, Y. Yonekawa and A. Valavanis. University and ETH, Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: fMRI, visual, tumors
- 1547. Visually Induced Posterior Cerebral Artery Flow Changes Measured by MRI Phase Mapping.** P. Born and E. Rostrup. Danish Research Center for Magnetic Resonance, Hvidovre; The John F. Kennedy Institute, Glostrup, Denmark.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Healthy Tissue
 Methods: Flow
 Keywords: posterior cerebral artery, flow, visual stimulation

fMRI: Somatosensory

- 1548. Somatotopy in Human Primary Somatosensory Cortex — a fMRI Study.** R. Kurth, K. Villringer, J. Repenthin, T. Stoll, G. Curio, J. Schwiemann, A. Villringer and K.-J. Wolf. Benjamin Franklin Hospital, Free University; Charité, Humboldt University, Berlin, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: somato sensory, cortex, functional

- 1549. Functional Magnetic Resonance Imaging of the Human Sensorimotor Cortex Before and After 48 Hours of Dry Water Immersion.** S. Golaszewski, C. Kremser, S. Lechner-Steinleitner, F. Zschiegner, M. Berger, F. Gerstenbrand, M.R. Dimitrijevic, S. Felber and F. Aichner. University of Innsbruck, Austria; Baylor College of Medicine, Houston, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
- 1550. Activation of the Sensorimotor Cortex with Vibrotactile and Airpuff Stimulation: A Functional MRI Study.** S.M. Hummel, S.M. Arnold, A. Schreiber, M. Otte, C.H. Lücking, M. Büchert and J. Hennig. Neurologische Universitätsklinik; Radiologische Universitätsklinik, Freiburg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, somatosensory, airpuff
- 1551. Functional MRI Signal in Response to Frequency and Amplitude of Somatosensory Stimulation in Rats.** W. Reith, E. Hempl, V. Elste, B. Ertl-Wagner, M. Treier and K. Sartor. University of Heidelberg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, animals, stimulation
- 1552. Isometric and Dynamic Force-Related Activity in Sensorimotor Cortex Measured with fMRI.** G.W. Thickbroom, B.A. Phillips, I. Morris, M.L. Byrnes and F.L. Mastaglia. QEII Medical Centre, Nedlands, Australia.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: functional, motor, force
- 1553. Functional MRI Demonstrates Expanded Somatotopical Representations in Congenital and Traumatic Amputees.** D. Khorram-Sefat, S. Herminghaus and H. Hacker. Philipps Universität, Marburg; Johann Wolfgang Goethe Universität, Frankfurt, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: FMRI, EPI, language

- 1554. New Findings of the Correlation Between Acupuncture Stimulation and Functional MRI Changes in the Occipital Cortex.** Z.H. Cho, S.C. Chung, J.B. Park, H.J. Park, H.J. Lee and E.K. Wong. University of California, Irvine, CA; Korea Advanced Institute of Science & Technology, Seoul, Korea; Oriental Medical College, Kyung Hee University, Seoul, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: acupuncture, fMRI, visual and acupuncture stimulation
- 1555. Visual Cortex Activity After Acupuncture Stimulation As Measured with fMRI Using EPI.** Z.H. Cho, S.C. Chung, I.C. Song, H.J. Park, J.B. Park, H.J. Lee, K.H. Chang, M.C. Han and E.K. Wong. University of California, Irvine, CA; Korea Advanced Institute of Science & Technology, Seoul, Korea; College of Medicine, SNUH, Seoul, Korea; Oriental Medical-College, Kyung Hee University, Seoul, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: acupuncture, fMRI, EPI
- 1556. Pharmacologically Modulated fMRI Studies: Functional Representation of Pain and Analgetic Effects.** V. H. Scholz, R. Bruening, P. Burkhardt, L. Jaeger, J. Weber and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, pain, analytic
- 1557. fMRI Imaging of Sex Differences in Pain Response.** C.Y. Tang, M.S. Buchsbaum, B. Buchsbaum, D. Lu, T.C. Wei, J.L. Spiegel-Cohen and S.W. Atlas. Mount Sinai Medical Center, New York , NY; University of California, Irvine, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: FMRI, pain, analysis

- 1558. fMRI Studies of Pain-Evoked Activation Centers and the Modulation of the Levels of Activation Using Mental Imagery.** E.F. Jackson, C.S. Cleeland, K.O. Anderson, R.R. Allen, T. Mendoza, N.E. Leeds, A.J. Kumar and R. Payne. University of Texas M.D. Anderson Cancer Center, Houston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Perfusion
 Keywords: functional MRI, pain, brain
- 1559. Functional MR Mapping of Brain Activation during Painful Electrical Finger Stimulation: Significance of the SII-Insular Region.** Y. Ohsiro, N. Fujita, H. Tanaka, N. Hirabuki and H. Nakamura. Osaka University Medical School, Osaka, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fMRI, pain, brain
- 1560. The fMRI Study of Somatosensory Brain Regions Activated by Non-Noxious and Noxious Electrical Stimuli in Rats.** B.C. Shyu, R.W. Chen, L.T. Yang, C.H. Chao and C. Chang. Academia Sinica, Taipei, Taiwan, ROC.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: fMRI, pain, electric stimulation
- 1561. High Resolution fMRI in a Monkey Model of Visceral Pain.** M.J. Quast, E. Al-Chaer, J. Wei, Y. Feng, N. Illangasekare, J.M. Gonzalez, D. Deyo, S. Sell, K.J. Gondesens and W.D. Willis. The University of Texas Medical Branch, Galveston, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: monkey, pain, fMRI

fMRI: Motor

- 1562. Functional Mapping of Human Motor Cortical Areas with T2* Sensitized Split-Echo UFLARE.** T. Niendorf. Max-Planck-Institut of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Imaging
 Keywords: motor cortex, fMRI, high magnetic field

- 1563. fMRI Signal Origin Study of Motor Task Activation in a Single Run Using MT-Interleaved EPI.** R. Zhang, P.A. Bandettini, R.W. Cox and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: magnetization transfer, EPI, fMRI
- 1564. Reproducibility of Localization and Total Volume of Activation in Functional MRI with EPI.** D. Jäger, A. Schreiber, C. Oesterle, M. Otte, R. Scheremet and J. Hennig. University of Freiburg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, reproducibility, localization
- 1565. A Network for Controlling Self-Determined Finger Movements: a Study with fMRI.** T. Schubert, D.Y. von Cramon, T. Niendorf and S. Pollmann. Max-Planck-Institute of Cognitive Neuroscience, Leipzig, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fMRI, finger movements, intraparietal sulcus
- 1566. Which Areas of Human Cortex Are Responsible for Long-Range Apparent Movement? -- A Mapping Study Using fMRI.** T.G. Zhou, Y. Zhou, Z.L. Wang, G.Z. Li and L. Chen. Chinese Academy of Sciences and Beijing Hospital, Beijing, China.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: fMRI, motor, mapping
- 1567. Time-Resolved fMRI of Activity in Motor Areas During Mental Rotation.** W. Richter, C. Tegeler, A.P. Georgopoulos, K. Ugurbil and S.-G. Kim. University of Minnesota; Veterans Affairs Medical Center, Minneapolis, MN.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, cognition, motor

- 1568. Primary and Secondary Motor Areas in fMRI and EEG.** A. Schreiber, T. Ball, R. Kristeva-Feige, T. Mergner, B. Feige, R. Scheremet, C.H. Lücking and J. Hennig. University of Freiburg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, EEG, motor cortex
- 1569. Localization of Human Motor-, Somatosensory and Auditory Cortex by Functional Magnetic Resonance Imaging (fMRI) and Magnetoencephalography (MEG).** C. Stippich, P. Freitag, J. Kassubek, P. Sörös, K. Kamada, H. Kober, R. Hopfengärtner, K. Scheffler, E.W. Radü and J.B. Vieth. University of Heidelberg; University of Erlangen-Nürnberg, Germany; University of Basel, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: brain, FMRI, MEG
- 1570. fMRI of a Digit Ordering Working Memory Task with Auditory Presentation and Vocal Response.** M. Singh, L. Al-Dayeh, P. Patel, T. Kim, M. MacDonald, V. Henderson and P. Colletti. University of Southern California, Los Angeles, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, working-memory, verbal-response
- 1571. A Study of Motor Recovery: The Complementary use of Functional Magnetic Resonance Imaging (fMRI) and Diffusion Tensor Imaging (DTI).** D.J. Werring, C.A. Clark, G.J. Barker, M.R. Symms, G.J.M. Parker, F. Franconi and A.J. Thompson. Institute of Neurology, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Diffusion
 Keywords: fMRI, diffusion, recovery
- 1572. Supplementary Motor Area Activity During a Single Digit Movement Measured by fMRI.** W. Richter, R.S. Menon, J.S. Gati and S.-G. Kim. University of Minnesota, Minneapolis, MN; The John P. Robarts Research Institute, London, Ontario, Canada.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: single-trial, fMRI, motor

- 1573. The Role of Basal Ganglia in Motor Control - A Functional MRI Study at 3T Using a Typing Task.** E. Kraft, A. Chen, K.K. Kwong, Y.I. Chen, J.D. Schaechter, B.R. Rosen and B.G. Jenkins. Massachusetts General Hospital NMR Center, Charlestown; Northeastern University, Boston, MA.
Keywords: fMRI, basal ganglia, motor
- 1574. Functional MRI of Fetal Tissue Transplants in the Basal Ganglia of Parkinsons and Huntingtons Disease Patients.** S. Blüml, O. Kopyov, D. Jacques and B.D. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; Good Samaritan Hospital, Los Angeles, CA.
Type of Study: Basic Research on MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Degeneration
Methods: Basic NMR
Keywords: transplant, fMRI, Parkinsons
- 1575. fMRI Study of Motor Function Recovery from Focal Ischemic Brain Lesions.** O. Presciutti, R. Tarducci, G. Gobbi, G.P. Pelliccioli, E. Gentile, M. Franceschini and M. Zampolini. Azienda Ospedaliera di Perugia; Ospedale di Foligno, Italy.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Degeneration
Methods: Quantitation: MRI
Keywords: fMRI, ischemic lesion, motor recovery

fMRI: Drug Effects

- 1576. Functional MRI for Evaluating the Effectiveness of Thyrotropin Releasing Hormone in the Patients with Spinocerebellar Degeneration.** T. Taoka, S. Iwasaki, H. Uchida, A. Fukusumi, S. Yanagimoto, T. Takayanagi, H. Nakagawa, K. Kichikawa, M. Takewa, T. Yoshioka and H. Ohishi. Nara Prefecture Hospital; Nara Medical University, Nara, Japan.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Degeneration
Methods: Quantitation: MRI
Keywords: fMRI, cerebellum, SCD
- 1577. fMRI of Cognitive Dysfunction during Controlled Hypoglycaemia.** M.R. Humberstone, L. Simpson, A. Peters, G.V. Sawle, I.A. Macdonald and P.G. Morris. University of Nottingham, UK.
Type of Study: Biomedical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Quantitation: MRI
Keywords: functional MRI, hypoglycaemia, cognition

- 1578. Temporal Evolution of Striatal Sensitivity to Levodopa Following MPTP Measured by fMRI.** M. Zhang, A.H. Andersen, Z. Zhang, R. Greene-Avison, E. Manning, M. Smith, D.M. Gash and M.J. Avison. University of Kentucky, Lexington, KY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: Parkinson's disease, dopamine, Amygdala
- 1579. Temporal Evolution of Striatal Sensitivity to Apomorphine Following MPTP Measured by fMRI.** Z. Zhang, A.H. Andersen, R. Greene-Avison, M. Zhang, E. Manning, M. Smith, D.M. Gash and M.J. Avison. University of Kentucky, Lexington, KY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: apomorphine, dopamine, MPTP
- 1580. Cerebral Response to Cocaine and Cocaine Methiodide in the Adult Rat Studied by fMRI.** M. Zhang, R.M. Booze, M.A. Nicholls, A.H. Andersen, M.A. Welch, B.J. Strupp, C.F. Mactutus and M.J. Avison. University of Kentucky, Lexington, KY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: cocaine, cocaine methiodide, rat
- 1581. Menstrual Cycle Phase Modulates Cocaine-Induced Cerebral Blood Volume Reduction in Women.** M.J. Kaufman, J.M. Levin, T.J. Kukes, R.A. Villafuerte, S.B. Hsia, S.E. Lukas, J.H. Mendelson, B.M. Cohen and P.F. Renshaw. McLean Hospital, Harvard Medical School, Belmont, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: cocaine, blood flow, gender
- 1582. Olfactory Stimulated Functional MRI: Effects of Age, Sex, and Handedness.** J.A. Maldjian, D.M. Yousem, T. Hummel, D. Alsop, R. Geckle and R. Doty. Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: brain, functional, olfaction

- 1583. Simultaneous Alteration of Perfusion-weighted and BOLD-weighted Contrast by Acetazolamide Infusion.** G.G. Brown, L.T. Eyler Zorrilla, B. Georgy, R.B. Buxton, S.S. Kindermann and E.C. Wong. University of California, San Diego, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: ASL, perfusion, acetazolamide
- 1584. Region Specific Decreases in Cerebral Blood Volume and Cerebral Blood Flow Induced by D1 Antagonist SCH-23390.** J.J.A. Marota, J.B. Mandeville, C. Ayata, B. Kosofsky, S. Hyman, M. Moskowitz, R.M. Weisskoff and B.R. Rosen. Massachusetts General Hospital NMR Center, Charlestown, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: cocaine, CBV, CBF
- 1585. fMRI of the Rat Brain by Mapping Transient Changes in Cerebral Blood Volume: Pharmacological Stimulation by Administration of Bicuculline.** T. Reese, B. Bjelke, D. Baumann, A. Sauter and M. Rudin. Novartis Pharma Inc., Basel, Switzerland; Karolinska Institute, Stockholm, Sweden.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Contrast Agents
 Keywords: fMRI, rat brain, bicuculline
- 1586. Increases in Cerebral and Muscular Blood Flow Detected by the Flow-Weighted MRI after an Injection of Pentobarbital in Awake Rats.** T. Kondoh, T. Ono and K. Torii. Ajinomoto Co., Kawasaki; Toyama Medical and Pharmacologic University, Toyama, Japan; ERATO, JRDC, Yokohama, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Flow
 Keywords: functional MRI, blood flow, pentobarbital

fMRI: Psychiatry

- 1587. Quantitative, Multi-slice Perfusion Imaging of Patients Diagnosed with Alzheimer's or Frontal Dementia.** D.C. Alsop, M. Grossman and J.A. Detre. University of Pennsylvania Medical Center.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Perfusion
 Keywords: perfusion, dementia, brain

- 1588. Hypofrontality in ADHD During Motor Timing: A Study Using Functional Magnetic Resonance Imaging.** K. Rubia, S. Overmeyer, E. Taylor, M. Brammer, S.C.R. Williams, A. Simmons and E. Bullmore. Institute of Psychiatry, London, United Kingdom.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: schizophrenia, response inhibition, motor control
- 1589. Differential Effects of Typical versus Atypical Neuroleptics: An fMRI and MRSI Study in Schizophrenic Patients.** D.F. Braus, G. Ende, A. Sartorius, A. Krier, M. Ruf, W. Weber-Fahr and F.A. Henn. Central Institute of Mental Health, Mannheim, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: fMRI, neuroleptics, schizophrenia
- 1590. fMRI of Schizophrenic and Normal Subjects During Performance of a Working Memory Task.** J.L. Steinberg, G.A. Hatfield, D.M. Dougherty, P.A. Narayana, L.A. Kramer, F.G. Moeller, N.N. Shah and A.A. Wasef. University of Texas Health Science Center, Houston, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: FMRI, schizophrenia, memory
- 1591. Left Hemisphere Underactivation in Schizophrenia During a Mental State Attribution Task: An fMRI Study.** T.A. Russell, K. Rubia, E.T. Bullmore, M.J. Brammer, S.C.R. Williams, A. Simmons, C.M. Andrew and T. Sharma. Institute of Psychiatry, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: schizophrenia, fMRI, mental state attribution
- 1592. Effects of Myo-Inositol Ingestion on Human Brain Myo-Inositol Levels and Mood.** C.M. Moore, J.L. Breeze, T.J. Kukes, S.L. Rose, C.M. Bonello, L.L. Wald, S.T. Dager, D.A. Yurgelun-Todd and P.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston, MA; University of Washington, Seattle, WA; Massachusetts Institute of Technology, Cambridge, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: inositol, mood, spectroscopy

- 1593. An Intravenous Caffeine Model of Anxiety: Dynamic Monitoring of Cerebral Lactate and Blood Flow.** G. J. Moore, M. E. Tancer and T. W. Uhde. Wayne State University School of Medicine, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: caffeine, lactate, anxiety
- 1594. Olfactory Stimulated Functional MRI In Congenital Anosmia and Parkinson's Disease.** J.A. Maldjian, D.M. Yousem, T. Hummel, D. Alsop, R. Geckle and R. Doty. Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Category not applicable
 Keywords: brain, functional, olfactory

fMRI: Surgical Planning

- 1595. Presurgical Mapping with Functional MR Imaging versus Transcranial Magnetic Stimulation Combined with Surface Anatomy Scanning.** M. Morikawa, M. Kaminogo, M. Ochi, H. Ishimaru and K. Hayashi. Nagasaki University School of Medicine, Nagasaki, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: fMRI,
- 1596. Presurgical Evaluation of the Motor Hand Area with fMRI in Patients with Tumors and Dysplastic Lesions: Protocol Optimization.** E. Achten, G.D. Jackson, J.A. Cameron, D.F. Abbott, D.L. Stella and G.C.A. Fabinyi. A&RMC, Heidelberg, Victoria, Australia.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Category not applicable
 Keywords: fMRI, motor function, dysplasia
- 1597. fMRI of the Motor Cortex: Comparison of Healthy Volunteers and Patients with Tumors Near or at the Primary Motor Cortex.** C. Fellner, J. Schlaier, F. Fellner, J. Schwerdtner, P. Held, A. Brawanski and W.A. Kalender. Friedrich-Alexander University, Erlangen-Nürnberg; University of Regensburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Methods: Sequences: Imaging
 Keywords: fMRI, motor cortex, brain tumors

- 1598. Mapping of the Sensorimotor Area in Patients with Malignant Brain Tumor.** A. Okumura, M. Kawaguchi, K. Takenaka, K. Deguti and N. Sakai. Gifu University School of Medicine, Gifu, Japan.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Tumors
Methods: Sequences: Imaging
Keywords: brain tumor, functional MRI, sensorimotor

Perfusion: Tumors

- 1599. Permeability of Meningiomas and Neurinomas Evaluated by Double Echo Dynamic MR.** H. Uematsu, M. Maeda, N. Sadato, T. Matsuda, H. Yamada, H. Kimura, Y. Kawamura, Y. Ishimori, T. Matsuda, N. Hayashi, Y. Yonekura and Y. Ishii. Fukui Medical University, Fukui; GE-Yokogawa Medical Systems, Tokyo; Kyoto University Hospital, Kyoto, Japan.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Tumors
Methods: Perfusion
Keywords: meningiomas, neurinomas, double echo
- 1600. Assessment of Renal Function with Dynamic MRI Using Simultaneous Measurements of T2 and T2*.** H. Uematsu, T. Matsuda, N. Sadato, S. Muramoto, H. Inoue, K. Hayashi, H. Yamada, T. Tsuchida, N. Hayashi, K. Yamamoto, Y. Yonekura and Y. Ishii. Fukui Medical University, Fukui; Kyoto University Hospital; Rakuwakai Otowa Hospital, Kyoto, Japan.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Function
Organ/Tissue: Renal
Pathology: Healthy Tissue
Methods: Perfusion
Keywords: renal function, dynamic MRI, GFR
- 1601. Prognostic Significance of Tumor Angiogenesis Determined by Pharmacokinetic MRI and Microvessel Density in Cancer of the Uterine Cervix.** H. Hawighorst, W. Weikel, M.V. Knopp, U. Schaeffer, P.G. Knapstein and G. van Kaick. German Cancer Research Center, Heidelberg; University of Mainz, Germany.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gynecology/Obstetrics
Pathology: Tumors
Methods: Perfusion
Keywords: angiogenesis, cervix, MRI
- 1602. Tumor Oxygenation as an Enhancer of Tumor Angiogenesis Assessed by Dynamic, Contrast-Enhanced MRI in Cancer of the Uterine Cervix.** H. Hawighorst, P.G. Knapstein, P. Vaupel, M.V. Knopp, J. Griebel and G. van Kaick. German Cancer Research Center, Heidelberg; University of Mainz; GSF, Neuherberg, Germany.
- Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Gynecology/Obstetrics
Pathology: Tumors
Methods: Perfusion
Keywords: oxygenation, uterine, 97R

- 1603. Imaging of Dynamic Perfusion and BOLD Changes in Human Skeletal Muscle During Exercise with Arterial Spin Labeling.** L.R. Frank, L.J. Haseler, E.C. Wong and R.B. Buxton. University of California, San Diego, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Vascular Diseases
 Methods: Perfusion
 Keywords: perfusion, ASL, muscle
- 1604. Image Analysis of Dynamic Gd-DTPA Tumour Enhancement Pre- and Post-Radiotherapy, and Correlation with Treatment Outcome.** H. Baddeley, N.J. Taylor, J.J. Stirling, L.J. Livingstone, M. Thoumine, P.J. Hoskin, K. Goodchild, M.E.B. Powell and M.I. Saunders. Mount Vernon Hospital, Northwood, Middlesex, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Perfusion
 Keywords: perfusion, radiotherapy, prognosis
- 1605. PGSE-based Measurements of Intravascular Perfluorocarbon Flow in Tumors.** S.D. Kennedy, S.L. Gibson, R. Hilf, T.H. Foster and B.M. Fenton. University of Rochester, NY.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Perfusion
 Keywords: 19F, IVIM, PFC

Brain Tumors, MR Spectroscopy and Imaging

- 1606. In vivo 1H Single Voxel MR Spectroscopy of Different Brain Lesions Serial Study and Illustrative Cases.** G. Vucurevic, D. Bogdanovic, K. Koprivšek, V. Ivanovic, O. Adijc, D. Đilas, D. Kozic and M. Prvulovic. Institute of Oncology, Sremska Kamenica, Yugoslavia.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: MRS, brain, tumors
- 1607. Relaxometry and Histopathology of Human Intracranial Tumors: Implications for Specificity of MRI.** M. Spiller, M.S. Tenner, M.P. Valsamis and S.H. Koenig. New York Medical College, Valhalla, NY; Relaxometry, Inc., Mahopac, NY; University of Illinois, Urbana, IL.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: brain tumors, NMRD, histology

- 1608. Relaxometry and Histopathology of Ependymomas of the Human Central Nervous System: Implications for MRI.** M. Spiller, M.S. Tenner, M.P. Valsamis, S. Childress, K. Cairns and S.H. Koenig. New York Medical College, Valhalla, NY; Relaxometry, Inc., Mahopac, NY; University of Illinois, Urbana, IL.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: ependymoma, NMRD, histology
- 1609. Metabolic Heterogeneity in Brain Tumors Observed by Using ¹H-CSI.** S. Furuya, S. Naruse, M. Ikejiri, O. Kizu, M. Ide, H. Morishita, T. Takegami, T. Higuchi, S. Ueda and T. Maeda. Kyoto Prefectural University of Medicine, Kyoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: ¹H-CSI, brain tumor, metabolite mapping
- 1610. Characterization of Choline Compounds with *In Vitro* ¹H MRS in Primary Brain Tumors.** J. Sabatier, V. Gilard, J.P. Ranjeva, S. Breil, M. Malet-Martino, M.B. Delisle, M. Tremoulet, C. Manelfe and I. Berry. CHU Purpan, Toulouse; Paul Sabatier University, France.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: choline, brain tumors, ¹H MRS
- 1611. Pattern Recognition Analysis of 2D NMR Spectra.** R.A. Mazucco, S.L. Howells and J.R. Griffiths. St. George's Hospital Medical School; University of Greenwich, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRS
 Keywords: pattern recognition, 2D, neural network
- 1612. Comparison of *in vivo* ¹H MRS of Human Brain Tumors with ¹H HR-MAS Spectroscopy of Intact Biopsy Samples Improves Assignment of Peaks *in vivo*.** S.J. Barton, F.A. Howe, A.M. Tomlins, J.K. Nicholson, V.L. Doyle, S.A. Cudlip, B.A. Bell and J.R. Griffiths. St. George's Hospital Medical School, London; Birkbeck College; Atkinson and Morley's Hospital, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: tumours, ¹H, MAS

- 1613. High Volume Clinical Scanning Using Proton Spectroscopic Imaging: Feasibility Assessment.** J.R. Alger and R.K. Gupta. University of California, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: clinical, spectroscopic, imaging
- 1614. Classification of Clinically Identified Brain Tumors Using Peak Area Ratios from Single Voxel MRS.** M.E. Meyerand, J.M. Pipas, T. Tosteson, A. Mamourian and J.F. Dunn. Dartmouth-Hitchcock Medical Center, Hanover, NH.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: MRS, tumors, spectroscopy
- 1615. Multi-Slice Proton Spectroscopic Imaging of Cerebral Gliomas: Correlation With Image Directed Biopsy.** D.O. Hearshen, T. Mikkelsen, S. Patel, L.N. Scarpace, M.L. Rosenblum and P.B. Barker. Henry Ford Health System, Detroit, MI; Johns Hopkins University, Baltimore, MD.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: spectroscopic, imaging, brain tumor
- 1616. Chemical Shift Imaging of CNS Neoplasm: Experience at 0.5T with Short Echo Time PRESS.** R. Prost, L. Mark and S. Li. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: CSI, neoplasm, 0.5 T
- 1617. In vivo Lactate and Choline Levels in Head and Neck Tumors: Correlations with pO₂ Measurements.** D.M. Spielman, J.M. Star-Lack, E. Adalsteinsson, D.J. Terris, M. Adam and H. Pinto. Stanford University, Stanford, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: lactate, choline, head and neck tumors

- 1618. 1H MR Spectroscopy Monitoring of Changes in Choline Peak Area and Line Shape After Gd-Contrast Administration.** P.E. Sijens, P. van Dijk and M. Oudkerk. University Hospital, Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: brain tumor, contrast agent, spectroscopy
- 1619. Proton CSI Characterization of Human Brain Tumor and Edema Using TE=135ms/ PRESS at Repetition Times of 1.5 and 5 Seconds.** P.E. Sijens, P. van Dijk and M. Oudkerk. University Hospital, Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: brain tumor, edema, T1 relaxation
- 1620. Characterization of Non-Enhancing Primary Brain Tumors by MRSI.** M. Day, W. Dillon, R. Henry, S. Noworolski, D. Vigneron and S. Nelson. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: brain, tumor, MRSI
- 1621. Correlation of 1H MRSI to Image Guided Biopsies of Human Brain Tumors.** S. Noworolski, C. Dowling, A. Bollen, M. Day, R. Henry, M. McDermott, W. Dillon, S. Nelson and D. Vigneron. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: spectroscopy, biopsy, tumor
- 1622. Proton MR Spectroscopic Studies of Human Meningiomas *in vivo* Combined with Dynamic Contrast Enhanced MR Imaging.** D.J. Manton, M. Lowry, B. Issa, C. Rowland-Hill, K. Morris, B. Mathew and L.W. Turnbull. Y.C.R. Centre for MR Investigations; Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: human, brain, tumours

- 1623. Localized *in vivo* Proton Spectroscopy (PRESS) in Meningiomas Before and After the Application of Contrast Agents.** T. Thiel, M. Orszagh, E. Martin and J. Hennig. University of Freiburg, Germany; University Children's Hospital Zurich, Switzerland.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: spectroscopy, contrast agent, tumors
- 1624. Noninvasive Evaluation of Malignancy of Meningioma with Proton MR Spectroscopy.** A. Shiino, S. Nakasu, T. Inubushi, S. Morikawa, M. Matsuda and J. Handa. Shiga University of Medical Science, Shiga, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: MRS, meningioma, MIB-1
- 1625. Changes in Contrast-Enhancing Volume of Intracranial Neoplasms in Response to Γ Knife Radiosurgery.** E.E. Graves, S.J. Nelson, D.B. Vigneron, M.R. Day, S.M. Noworolski, R.G. Henry, L. Verhey and W.P. Dillon. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: contrast MRI, gamma knife, brain
- 1626. Changes of Individual 5-Fluorouracil Kinetics in Tumor Tissue during Combined Radio/Chemotherapy: ^{19}F MR Spectroscopy Study in Patients with Advanced Head and Neck Carcinoma.** H.P. Schlemmer, M. Becker, P. Bachert, A. Dietz, P. Wollensack, B. Vanselow, V. Rudat, M.V. Knopp, H. Weidauer, M. Wannenmacher and G. van Kaick. German Cancer Research Center; University Hospital, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: 5-Fluorouracil, Pharmacokinetics, ^{19}F NMR
- 1627. Recurrent Human Brain Tumors: Malignancy Differentiation of Gliomas by ^1H -NMR Spectroscopy.** M. Hoehn-Berlage, F. Lehnhardt, C. Bock, G. Röhn and R.I. Ernestus. Max-Planck-Institute for Neurological Research; University of Cologne, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: tumor, recurrent, spectroscopy

- 1628. Differentiation of Recurrent Gliomas from Radiation Necroses: Correlation of Histopathology and High Resolution Magic Angle Spinning Proton MRS of Biopsy Specimens with *in vivo* 3T MRS Evaluations.** L.L. Cheng, P.L. Lee, D.N. Louis, J. Robinov, G.R. Harsh IV, G.R. Cosgrove, J.W. Henson and R.G. Gonzalez. Massachusetts General Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: brain tumor, radiation necrosis, HRMAS
- 1629. Post Therapy Changes in Blood Volume and Proton Spectra for Patients with Gliomas.** R.G. Henry, N.J. Fischbein, D.B. Vigneron, P.E. Grant, M.R. Day, S.M. Noworolski, J.M. Star-Lack, W.P. Dillon, S.M. Chang and S.J. Nelson. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: glioma, perfusion, spectroscopy
- 1630. Dynamic MR Imaging of the Response of Pituitary Adenomas to Dopamine Agonists.** M. Lowry, S. Atkin, C. Rowland-Hill and L.W. Turnbull. Hull Royal Infirmary; University of Hull, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: pituitary, adenoma, dynamic
- 1631. Application and Validation of Three-Dimensional Data Sets from a Phase Contrast MR Angiography and a Functional MRI for Preoperative Computer Simulation of Brain Tumors.** H. Mamata, T. Komiya, I. Muro, Y. Mamata, H. Atsumi, R. Tsugane and S. Matsuyama. Tokai University School of Medicine; Tokai University Hospital, Isehara, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: brain tumor, motor cortex, simulation
- 1632. Late Radiation Injury of the Temporal Lobes in Patients Treated with Radiotherapy for Nasopharyngeal Carcinoma - MRI Evaluation.** Y.L. Chan, S.F. Leung, A. King, W.W.M. Lam, P.H.K. Choi and C. Metreweli. Chinese University of Hong Kong, Shatin, Hong Kong.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: radiation injury, temporal lobe, nasopharyngeal carcinoma

- 1633. Contrast Enhanced Fast Fluid-Attenuated Inversion-Recovery (FLAIR) MR Imaging in the Assessment of Cerebral Gliomas and Metastases.** M. Essig, M.V. Knopp, S.O. Schoenberg, H. Hawighorst, F. Wenz, J. Debus and G. van Kaick. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: fast FLAIR, gliomas, metastases
- 1634. Effect of Contrast Media Dosage and Contrast Media Extravasation on Dynamic Susceptibility-Contrast Enhanced Dynamic Echo-Planar Imaging of Cerebral Gliomas.** M. Essig, R. Scholdei, F. Wenz, R. Brünig, C. Berchtenbreiter, M. Niewel and M.V. Knopp. German Cancer Research Center, Heidelberg; Klinikum Grosshadern, München; Nycomed Imaging, Ismaning, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Perfusion
 Keywords: gliomas, EPI-DSC, contrast media
- 1635. Delayed Recovery in Blood Flow and Lactate in Peritumoural Oedema Adjacent to Intracranial Meningioma.** T.A.D. Cadoux-Hudson, A.M. Blamire, J.G. Rowe, Z. Domingo and P. Styles. John Radcliffe Hospital; Radcliffe Infirmary, Oxford, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: meningioma, metabolism, oedema
- 1636. Diffusion Tensor MRI Applied to Intra-axial Brain Tumours.** A. Simmons, A. Darekar, D.K. Jones, M.A. Horsfield, T.S. Cox, M.A. Jeffree and S.C.R. Williams. Institute of Psychiatry, London; Maudsley Hospital; Leicester University, Leicester, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: tumor, diffusion, tensor
- 1637. Perfusion MRI of Cerebral Toxoplasmosis and Lymphoma in AIDS.** T. Ernst, L. Chang, M. Witt, H. Aronow, M. Cornford and I. Walot. Harbor-UCLA Medical Center, Torrance; USC Medical School, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Perfusion
 Keywords: perfusion, lymphoma, toxoplasmosis

- 1638. MR Diffusion Imaging in Human Brain Tumors.** D.P. Auer, G.K. Elbel and R.A. Jones. Max-Planck-Institut of Psychiatry, München, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Diffusion
 Keywords: diffusion, brain, tumor
- 1639. Determination of Cerebral Tumor Infiltration Using Eigenimage Filtering: Validation by Directed Biopsy.** D.J. Peck, L.M. Scarpace, J.P. Windham, D.O. Hearshen and T. Mikkelsen. Henry Ford Health System, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: image processing, brain tumor, segmentation
- 1640. Evaluation of Human Brain Tumor Angiogenesis Using Simultaneously-Acquired Gradient-Echo & Spin-Echo EPI During Dynamic Susceptibility Contrast.** K.M. Donahue, S.D. Rand, A.P. Pathak, R.W. Prost, P.A. Bandettini and H.G. Krouwer. Biophysics Research Institute; Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Contrast Mechanisms
- 1641. Optimization of Pulsed Off-Resonance Magnetization Transfer and Its Clinical Application for Brain Tumor in Patients.** K. Takenaka, A. Okumura, K. Kuwata, M. Kawaguchi, K. Deguti, N. Sakai and S. Era. Gifu University School of Medicine, Gifu, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: magnetization transfer, brain tumor, neurosurgery

Tumor Imaging and Spectroscopy - Models

- 1642. Imaging of Extracellular pH Using 1H MRSI.** R. van Sluis, Z.M. Bhujwala, N. Raghunand, P. Ballesteros, J. Alvarez, S. Cerdán and R.J. Gillies. University of Arizona, Tucson, AZ; Johns Hopkins School of Medicine, Baltimore, MD; UNED; IIB CSIC, Madrid Spain.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: pH, cancer, MRSI

- 1643. 31P MRS Measurements of Intracellular and Extracellular pH in MCF-7 Human Breast Carcinoma Xenografts in SCID Mice Subjected to Dietary Alkaline Loads.** N. Raghunand, X. He, R. Van Sluis, Z.M. Bhujwalla and R.J. Gillies. University of Arizona HSC, Tucson, AZ; Johns Hopkins School of Medicine, Baltimore, MD.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: pH, cancer, MRS
- 1644. Plasmalemmal pH-Gradient in Drug-Sensitive and Drug-Resistant MCF-7 Human Breast Carcinoma Tumors Measured by 31P MRS.** N. Raghunand, X. He, R. Van Sluis, Z.M. Bhujwalla and R.J. Gillies. University of Arizona HSC, Tucson, AZ; Johns Hopkins School of Medicine, Baltimore, MD.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: pH, cancer, MRS
- 1645. Effect of Meta-Iodobenzylguanidine on pH Oxygenation of 9L Glioma *in vivo*.** K. Wróblewski, H. Fujioka, M. Pavlovic, N. Schmidt, T. Jenkins, G. Graczyk-Milbrandt, B. Chance and J.E. Biaglow. University of Pennsylvania School of Medicine, Philadelphia, PA.
- Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: glioma, pH, oxygen
- 1646. Can Gadopentetate Dimeglumine Differentiate Benign and Malignant Breast Tumors? Comparison of Analytical Methods.** H.E. Daldrup, M. Wendland, T. Helbich, W. Rosenau and R.C. Brasch. University of California, San Francisco, CA; University of Muenster, Germany.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: breast tumors, magnetic resonance mammography, tumor characterization
- 1647. Characterization of N-ethyl-N-nitrosourea Induced Benign and Malignant Mammary Tumors in Rats by Using Three Contrast Agents of Various Molecular Weights.** M.-Y. Su, Z. Wang, X. Lao, P.M. Carpenter, A. Mühler, M.K. Samoszuk, A.A. Najafi and O. Nalcioğlu. University of California, Irvine, CA; Berlex Laboratories, Montville, NJ.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: tumor, diagnosis, contrast

- 1648. Dynamic Contrast MR Imaging Can Distinguish Benign and Malignant Prostate Tumors in Rodents.** D.A. Kovar, C. Rinker-Scafeffer, M. Lewis and G.S. Karczmar. University of Chicago, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: contrast, metastatic, dynamic
- 1649. Application of Krogh's Cylindrical Model to Calculate Oxygen Tension from the Tumor Vascular Volume Fraction Measured by the Dynamic Gd-DTPA Enhanced MRI.** Z. Wang, M.-Y. Su, X. Lao and O. Nalcioglu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: Krogh's, oxygenation, Gd-DTPA
- 1650. Quantitative Analysis of Gadolinium Uptake in a V2-Carcinoma Animal Model.** S. Vajapeyam, H.M.W. Verheul, C.E. Barnewolt, R.V. Mulkern, R.J. D'Amato and G.A. Taylor. The Children's Hospital; Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Tumors
 Methods: Perfusion
 Keywords: tumor, perfusion, enhancement
- 1651. Influence of Capillary Blood Flow and First Pass Effects on Determination of Tissue Permeability.** M. Pedevilla, R. Stollberger, P. Wach and F. Ebner. University of Graz; Graz University of Technology, Graz, Austria.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: tumor, pharmacokinetics, model
- 1652. Analysis of Dynamic Contrast-Enhanced MRI in Tumors: Relationship of Derived Parameters with Physiologic Factors.** Z.Q. He and J.L. Evelhoch. Wayne State University School of Medicine, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: dynamic, contrast, tumor

- 1653. Measurement of Perfusion Rate and Capillary Permeability Using Two Low Molecular Weight Contrast Agents with Differing Extraction Fractions; A New Approach to Contrast Enhanced MRI.** D.A. Kovar, J. Mukherjee, M. Lewis, M.J. Lipton and G.S. Karczmar. University of Chicago, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: contrast, multiple, uptake
- 1654. A Novel Tracerkinetic Model for Gd-DTPA Enhanced MR Studies: Assessment of Tumor Microcirculation during Fractionated Radiotherapy.** J. Griebel, M. Brandl, A. DeVries, J. Hoflehner, H. Hawighorst and P.H. Lukas. GSF Research Center, Neuherberg; German Cancer Research Center, Heidelberg, Germany; University of Innsbruck, Austria.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: tumor microcirculation, contrast agent, tracerkinetic modeling
- 1655. From Qualitative to Quantitative Measurements of Permeability, Leakage Space and Relative Blood Volume.** I.C. Baustert, A. Padhani, P. Revell and M.O. Leach. The Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: permeability, perfusion, tumour
- 1656. Tumor Uptake of Contrast Agents: The Role of Molecular Conformation.** E.E. Uzgiris. General Electric Research and Development Center, Schenectady, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: contrast, tumors, extravasation
- 1657. The pH-Dependent Metalloporphyrin Contrast Agent Aggregation on Biological Structures: A Possible Mechanism.** V.E. Yushmanov. Universidade de São Paulo, São Carlos, Brazil.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: contrast agent, metalloporphyrin, micelles

- 1658. Sterically Stabilized Liposomes with Encapsulated GD-DTPA-BMA: Effect of Vesicle Size on Tumor Enhancement in Osteogenic Sarcoma.** P. Lang, M.F. Wendland, M. Saeed, O. Meyer, M. Bredella, K. Hong, C.A. Gooding and D. Papahajopoulos. Stanford University, Stanford; University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: liposome, gadolinium, neoplasm
- 1659. 3-D MRI of Rodent Tumors Using a Paramagnetic Metalloporphyrin Indicates Accumulation in Necrotic Tissue Areas.** H.A. Al-Hallaq, M.Z. Lewis, J.N. River, M.J. Lipton and G.S. Karczmar. University of Chicago, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: tumor, necrosis, radiation
- 1660. Intracellular Magnetic Labeling of Lymphocytes for *in vivo* Trafficking Studies.** U.J. Schoepf, E.M. Marecos, R.J. Melder, R.K. Jain and R. Weissleder. Massachusetts General Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: MR, lymphocytes, contrast agents
- 1661. Correlation Between the Measurement of Tumor Oxygenation by ¹⁹F MRI and the Vascular Volume Fraction from the Dynamic Gd-DTPA Enhanced MRI.** Z. Wang, M.-Y. Su, X. Lao and O. Nalcioglu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: F-19, Gd-DTPA, oxygenation
- 1662. Hypoxic Control of Angiogenesis in Normal Physiology: The Rat Ovarian Follicle as a Model for Avascular Tumors.** C. Tempel and M. Neeman. Weizmann Institute of Science, Rehovot, Israel.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: ovary, perfusion, angiogenesis

- 1663. Effect of Hydralazine on Tumor Microvascular Random Flow and Vascular Volume as Measured by Diffusion Weighted MRI in Conjunction with Gd-DTPA-Albumin Enhanced MRI.** Z. Wang, M.-Y. Su, X. Lao, A. Najafi and O. Nalcioğlu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Diffusion
 Keywords: hydralazine, diffusion, microcirculation
- 1664. Paradoxical Response Detected by Magnetic Resonance May Explain Why Carbogen is Not a Good Radiosensitizer.** H.A. Al-Hallaq, M.Z. Lewis, E. Barth, H.J. Halpern and G.S. Karczmar. University of Chicago, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: tumor, oxygenation, BOLD
- 1665. Simultaneous Measurement of Gradient-Echo 1H MR Images and pO₂ Using a Fibre-Optic Oxygen Sensor in Rodent Tumours and their Response to Carbogen Breathing.** R.J. Maxwell, S.P. Robinson, D.J.O. McIntyre, J.R. Griffiths, W.K. Young and B. Vojnovic. Gray Laboratory Cancer Research Trust, Northwood; St. George's Hospital Medical School, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: bold, PO₂, carbogen
- 1666. Tumour Response to Nicotinamide and Carbogen Monitored by Interleaved MRI and 31P MRS.** S.P. Robinson, F.A. Howe and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: hypoxia, oxygenation, tumors
- 1667. Anomalous Tumour pO₂ Response to Carbogen Breathing Studied by Quantitative 19F T1 Imaging.** D.J.O. McIntyre, C.L. McCoy and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Non-proton MRI and ESR
 Keywords: tumor, oxygen, fluorine

- 1668. Effects of Host Carbon Monoxide Breathing on the Metabolic Profile of Hepatoma 9618a: an Interleaved GRE MRI and 31P MRS Study.** S.P. Robinson, L.M. Rodrigues, M. Stubbs and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: metabolism, physiology, tumor
- 1669. *In vivo* T1-Mapping and Flow Monitoring During Hyperthermic Tumor Treatment.** M. Peller, R. Loeffler, M. Dellian, S. Pahernik, F. Bertsch, J. Weber, R.D. Issels, A.E. Goetz and M. Reiser. Ludwig-Maximilians-University, Munich, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: thermometry, flow, tumors
- 1670. Physiologic Manipulation of RIF-1 Tumor Enhances Sensitivity to Localized Hyperthermia *In vivo*: A 31P NMR Study.** W.M. Spees, J.L. Evelhoch and J.J.H. Ackerman. Washington University, St. Louis, MO; Wayne State University, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: tumors, hyperthermia, 31P NMR
- 1671. Characterization of Physiological and Metabolic Changes in the Tumor Environment Following γ -Irradiation.** U. Pilatus, E.O. Aboagye and Z.M. Bhujwalla. The Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: cancer, radiation, physiological environment
- 1672. Investigation of Vascular Changes Derived From Pharmacokinetic Analysis of Tracer Kinetics to Serve as Therapeutic Outcome Predictor after Chemotherapy.** M.-Y Su, Z. Wang, X. Lao and O. Malcioglu. University of California, Irvine, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: tumor, therapy, contrast

- 1673. Detection by HR 1H MRS of Early Alterations Induced by BCNU on Choline Metabolism of Rat Brain Glioma Tumours.** G. Carpinelli, C.M. Carapella, R. Canese, M. Giannini, F. Caroli, L. Raus and F. Podo. Istituto Superiore di Sanità; Istituto Tumori Regina Elena, Rome, Italy.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: glioma, choline, metabolism
- 1674. Chemotherapeutic Response Monitored by Diffusion Weighted MRI.** J.P. Galons, M.I. Altbach, G. Paine-Murrieta, C. Taylor and R.J. Gillies. University of Arizona Health Sciences Center, Tucson, AZ.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Diffusion
 Keywords: chemotherapeutic response, tumors, DWI
- 1675. Evidence of Restriction for the Slow Component in a Bi-Exponential Analysis of the Apparent Diffusion Coefficient in RIF-1 Tumors Measured *in vivo*.** S.J. Barton, F.A. Howe and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Diffusion
 Keywords: diffusion, tumour
- 1676. Assessment of the Intra- and Extracellular 5-Fluorouracil Uptake in Rats with Morris Hepatoma by Means of Contrast-Enhanced Metabolic 19F MR Imaging.** G. Brix, M.E. Bellemann, L. Gerlach and U. Haberkorn. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Non-proton MRI and ESR
 Keywords: 19F MRI, tumors, 5-FU
- 1677. Kinetic 19F-MRS Studies of Orally Administered Flutamide.** P.S. Murphy, I.J. Rowland, A. Ojugo, J.R. Griffiths and M.O. Leach. Institute of Cancer Research and The Royal Marsden NHS Trust, UK; St. George's Hospital Medical School, London.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: flutamide, kinetic, MRS

- 1678. Principal Component Analysis of Human Tumor Spectra.** F. Arias-Mendoza, R. Stoyanova and T.R. Brown. Fox Chase Cancer Center, Philadelphia, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRS
 Keywords: Hodgkin's lymphoma, MRS, PCA

Tumor Spectroscopy - Models

- 1679. An On-Line ^{19}F NMR Oxygen Consumption Meter Compatible with Simultaneous Metabolic and Physiological Measurements of Perfused Cells.** U. Pilatus, E. Aboagye, D. Artemov and Z.M. Bhujwalla. The Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: oxygen, ^{19}F NMR, cancer
- 1680. New ^{13}C NMR Method for Lipid Synthesis Rates.** D.A. Lewis, T.A. Aldaghlis, J.K. Kelleher and M.R. Laughlin. The George Washington University, Washington D.C.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: lipids, tracers, cholesterol
- 1681. An *In Vitro* ^1H -MRS Model of Oncogene Transfection: The Spectral Feature of c-erbB-2 and c-Ha-ras Transfected NIH3T3 Fibroblast Cells.** T. Nakai, R. Ishima, H. Sakahara, K. Endo, J. Konishi and K. Akasaka. Electrotechnical Laboratories, Tsukuba, Japan; Ontario Cancer Institute, Toronto, Ontario, Canada; Kyoto University Kyoto; Gunma University, Maehashi; Kobe University, Kobe, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: ^1H MRS, NIH3T3, malignancy
- 1682. ^{31}P -MRS of Human Tumor Cells: Influence of Culture Medium Components on Phosphate Metabolite Profiles.** W.E. Hull and U. Wildenberg. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: ^{31}P MRS, tumor, cells

- 1683. MRS Studies on Lipid and Perchloric Acid Extracts from HeLa Cells upon Changes in Progression Through Cell Cycle.** L. Guidoni, J. Bella, A.M. Luciani, A. Rosi and V. Viti. Istituto Superiore di Sanità; Area della Ricerca di Roma, Italy.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: lipid, PCA, extracts
- 1684. ¹H-NMR, Nile Red and Electron Microscopy Analyses of Mobile Neutral Lipids in NIH-3T3 Fibroblasts and their H-ras Transformed Cell Variants.** A. Ferretti, A. Knijn, S. Pulciani, E. Iorio, G. Arancia, A. Molinari, S. Meschini, A. Stringaro and F. Podo. Istituto Superiore di Sanità, Rome, Italy.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: neutral lipids, oncogene, cancer
- 1685. Fine Needle Biopsy of Human Lymph Nodes.** W. Lo, C. Lean, S. Dowd, P. Malycha, P. Russell and C. Mountford. University of Sydney, Australia.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: spectroscopy, lymphnode, cancer
- 1686. Prostate Carcinoma Distinguished from Benign Prostatic Hyperplasia by Ex-vivo Proton Magnetic Resonance Spectroscopy.** P. Swindle, M. Khadra, C. Lean, S. Dowd, P. Russell and C. Mountford. University of Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: spectroscopy, prostate, cancer
- 1687. Pathology of Cerebral Cryptococcomas and Gliomas Distinguished by *In vivo* ¹H MRS in the Rat.** T.E. Dzendrowskyj, S. Dowd, R. Towner, W. Lo, P. Russell, C. Mountford and T. Sorrell. University of Sydney; James Cook University, Queensland, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: spectroscopy, cryptococcus, alioma

- 1688. Pathology of Barrett's Oesophagus Subcategorised by 1D 1H MRS.** S. Doran, C. Wadstrom, P. Barry, G.L. Falk, P. Russell, C.L. Lean, R.P. Ekstein and C.E. Mountford. University of Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: spectroscopy, oesophagus, cancer
- 1689. 1H NMR Spectroscopy in Ovarian Cancer — *In Vitro* & *Ex Vivo* Study.** J.H. Na, J.H. Lee, Y.M. Kim, T.-H. Lim, K.H. Lim, E.J. Kim, J.H. Kim, Y.T. Kim, J.H. Nam and J.E. Mok. Asan Medical Center; University of Ulsan College of Medicine; Asan Institute for Life Sciences, Seoul, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Tumors
 Methods: Basic NMR
 Keywords: NMR, ovarian cancer
- 1690. 1H MR Spectroscopic Study of Pre-Neoplastic Lesions of the Rat Colon.** E. Krupnik, R.P. Bird and I.C.P. Smith. University of Manitoba; National Research Council of Canada, Winnipeg, Manitoba, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: ACF, colon, cancer
- 1691. 1H MR Spectral Changes with Cellular Differentiation Induced by Dimethyl Sulfoxide in Colorectal Carcinoma Cells Grown *In Vitro*.** A. Rekas, C.L. Lean and C. Mountford. University of Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: spectroscopy, differentiation, DMSO
- 1692. Quantitation of Hepatic Gluconeogenesis in Cancer Cachexia by Use of 31P MRS and L-Alanine Infusion.** S. Halfwerk, P.E. Sijens, J.W.O. van den Berg, M. Oudkerk and P.C. Dagnelie. Dandiel den Hoed Cancer Center; Erasmus University, Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: gluconeogenesis, lung cancer, cachexia

- 1693. Determination of the Apparent Dissociation Constant of Mg-ATP (at T=37°C, pH=7.2, I=0.15) Using a Combination of 31P NMR Spectroscopy and the Fluorescence Indicator Mag-fura-2.** K.M. Ward, J.E. Niemela, S.A. Cecco, N.N. Rehak, R.J. Elin and R.S. Balaban. National Institutes of Health, Bethesda, MD.
Type of Study: Basic Research on MR
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Basic NMR
Keywords: magnesium, 31P NMR, fluorescence
- 1694. WITHDRAWN**
- 1695. 31P NMR Bioenergetic Studies of 3-Dimensional Cartilage Grown in a Hollow Fiber Bioreactor.** E. Petersen, K. Fishbein and R.G.S. Spencer. National Institutes of Health, National Institute on Aging, Baltimore, MD.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Cells/Body Fluids
Pathology: Healthy Tissue
Methods: Sequences: Spectroscopy
Keywords: cartilage, tissue engineering, metabolism
- 1696. 1H-NMR Spectroscopy Assessment of the Effects of Unilateral Hyal Viscosupplementation on the Metabolic Profile of Synovial Fluid in Bilateral Canine Osteoarthritis.** A.Z. Damyanovich, J.R. Staples, V. Manolopoulos and K.W. Marshall. University of Toronto and Toronto Hospital, Western Division, Toronto, Ontario, Canada.
Type of Study: Basic Research on MR
Main Target of Study: Metabolism
Organ/Tissue: Cells/Body Fluids
Pathology: Degeneration
Methods: Quantitation: MRS
Keywords: osteoarthritis, viscosupplementation, 1H-NMR
- 1697. A Unique Observation of Bound Water in HMRS Analysis of Cerebrospinal Fluid and its MTR Variation in Children with Tubercular and Pyogenic Meningitis.** R. Roy, S. Vohra, A. Jha, P.K. Misra, R.K. Gupta, P.K. Mishra and R. Kumar. Central Drug Research Institute; K.G. Medical College; SGPGIMS, Lucknow, India.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Metabolism
Organ/Tissue: Cells/Body Fluids
Pathology: Infection
Methods: Sequences: Spectroscopy
Keywords: watergate, cerebrospinal fluid, Meningitis

- 1698. Investigation of the Surface Structure and Phospholipid Content of Low Density Lipoprotein Isolated from Hyperlipidemic Subjects Using ^1H NMR Spectroscopy.** H. Murphy, S. Bulusu and R.A. Iles. St. Bartholomews and the Royal London Hospital School of Medicine and Dentistry; Newham General Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: low density lipoprotein, hyperlipidaemia, phospholipids
- 1699. Hepatic Lobular Zonation in Diabetic Ketoacidosis Using ^{31}P MRS.** S.P. Burns, T.C.H. Goings, R.A. Iles and R.D. Cohen. Queen Mary and Westfield College, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: liver, hepatocyte heterogeneity, metabolism
- 1700. Integrated NMR Measurements of Hepatic Glucose Production and Absolute Gluconeogenic Fluxes.** J.G. Jones, R.A. Carvalho, A.D. Sherry, F.M.H. Jeffrey and C.R. Malloy. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: carbon ^{13}C , gluconeogenesis, isotopomer
- 1701. ^1H -MRS of *Ecchinococcus Granulosus* Cysts: Succinate, not Pyruvate is the Characteristic Marker Substance.** R. Kreis, P. Bigler, B. Gottstein and C. Boesch. University of Berne, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Infection
 Methods: Category not applicable
 Keywords: parasite, high-resolution NMR, diagnosis
- 1702. ^{133}Cs Nuclear Magnetic Resonance Demonstration of Cation Compartmentation in Isolated Perfused Rat Hepatocytes.** R.M. Wellard, V. Albert and W.R. Adam. Austin & Repatriation Medical Centre, Heidelberg West, Australia.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Perfusion
 Keywords: caesium, hepatocytes, compartmentation

- 1703. ¹H MRS of Mice Afflicted with Niemann Pick Type C Disease.** R.J. Gillies, J. Haney, K. Wallace, N. Aiken and N. Raghunand. University of Arizona HSC, Tucson, AZ.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inborn Error of Metabolism
 Methods: Basic NMR
 Keywords: lipid, disease, 1HMRS
- 1704. Methylene Tetrahydrofolate from Glycine and Sarcosine in Serine Formation in Rat Renal Proximal Tubules.** D.A. Willgoss, G.J. Cowin and Z.H. Endre. University of Queensland, Brisbane, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Renal
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: glycine, sarcosine, folate
- 1705. Magnetic Relaxation in the Kinetics of the Polymerization of Hemoglobin S. Clinical Diagnosis and Treatment with Vanillin.** C. Cabal, A. Fernández, M. Lores, E. Alvarez, J. Losada, C. Soler and E. Pérez. Universidad de Oriente, Santiago de Cuba, Cuba.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: relaxation, Sick Cell, Kinetics
- 1706. Incorporation of *de Novo* Synthesized Nucleosides into Cellular Nucleic Acids Determined by ¹³C NMR Spectroscopy.** U. Flögel, J. Engelmann, W. Willker and D. Leibfritz. Heinrich-Heine-Universität Düsseldorf; Universität Bremen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: metabolism, nucleic fluids, ¹³C-NMR spectroscopy

MRS of the Human Brain: Degeneration and White Matter

- 1707. Localized MRS of Lesions and Normal Appearing White Matter in Multiple Sclerosis Patients - Comparison with Healthy Controls.** F. Schubert, F. Seifert, H. Rinneberg, S. Mientus and J. Haas. Fachbereich Medizinische Meßtechnik; Schering AG; Jüdisches Krankenhaus, Berlin, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Category not applicable
 Keywords: multiple sclerosis, spectroscopy, metabolites

- 1708. Characterization of Small Vessel Disease by means of Proton Spectroscopy and Structural 3 Tesla-NMR.** M. Hund, D.G. Norris, T. Guthke and D. Yves von Cramon. Max-Planck-Institut of Cognitive Neuroscience, Leipzig, Germany.
Pathology: White Matter Disease
Keywords: white matter disease, 1H-MRS, cognitive deficits
- 1709. Does Cerebral Proton MR Spectroscopy Reflect Tissue Alterations and/or Clinical Impairment in HIV-related Encephalitis (Progressive Diffuse Leukoencephalopathy)?** G.-K. Elbel, T. Schirmer, D. Wiemer, C. Emminger and D.P. Auer. Max-Planck-Institut of Psychiatry; Krankenhaus München-Schwabing, Munich, Germany.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: White Matter Disease
Methods: Category not applicable
Keywords: spectroscopy, HIV, PDL
- 1710. Correlation Between Regional Blood Flow and pHi in the Cerebrum on Patients with tRNALEU(UUR) Mutation.** J.-I. Nishimura, K. Saitoh, T. Obata, T. Iwasawa, K. Tanohata, H. Oonishi, A. Kubota, S. Aoba and S. Matubara. Yokohama Rosai Hospital; Yokohama City University, Yokohama, Japan.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Degeneration
Methods: Sequences: Spectroscopy
Keywords: MELAS, metabolism, mutation
- 1711. Proton Magnetic Resonance Imaging and Spectroscopy of Brain in Patients with Cerebrotendinous Xanthomatosis.** N. De Stefano, M.T. Dotti, M. Mortilla, G. Dal Pozzo and A. Federico. University of Siena; University of Florence, Italy.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: White Matter Disease
Methods: Category not applicable
Keywords: spectroscopy, mitochondria, axons
- 1712. Tardive Dyskinesia and Schizophrenia. A Single Voxel *In vivo* Proton Magnetic Resonance Spectroscopy Study of the Putamen.** T. Sigmundsson, H. Wilson, A. Simmons, K. Ray Chaudhuri, S.C.R. Williams, P.N. Leigh and B.K. Toone. Institute of Psychiatry, London, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Quantitation: MRS
Keywords: tardive, schizophrenia, putamen

- 1713. "Chasing the Dragon" with Multislice 1H MRSI of the Human Brain Exposed to Heroin Vapors.** D.C. Shungu, W.S. Millar, A.R. Kreigstein, T. Lynch and R.L. DeLaPaz. Columbia University, New York, NY.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: combination MRI/MRS
 Keywords: drug abuse, heroin, white matter
- 1714. Acute Cocaine Administration Induces NAA Increase Detected by 1H MRS.** S.-J. Li, Y. Wang, R. Risinger, C. Rainey, H. Harsch, J. Pankiewicz, L. Sperry, J.-K. Cho, A.S. Bloom and E.A. Stein. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: cocaine, NAA, brain
- 1715. Cortical Metabolite Alterations in Recently Abstinent Cocaine and Cocaine/Alcohol Dependent Subjects.** D.J. Meyerhoff, C. Bloomer, G. Salas, N. Schuff, D. Norman, M.W. Weiner and G. Fein. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Sequences: combination MRI/MRS
 Keywords: alcohol abuse, cocaine abuse, neuronal damage
- 1716. Evidence of Neuronal Damage in the Midbrain of Chronic Heavy Drinkers.** D. Langleben, C. Bloomer, G. Fein and D.J. Meyerhoff. University of California, San Francisco, CA.
 Keywords: alcohol abuse, neuronal damage, brain atrophy
- 1717. MR Metabolite Measurements Using On-Line Image Guided Registration of ROIs in Alcoholics.** H. Lee, R.R. Price, B.M. Dawant, M. Parks and P. Martin. Vanderbilt University Medical Center, Nashville, TN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: MRS, alcoholics, relaxation
- 1718. A Significant Increase of Parenchymal Water in Basal Ganglia of Schizophrenic and Alcoholic Patients Measured by 1H MRS.** T. Yamamoto, T. Fujimoto, T. Nakano, T. Matsumoto, K. Takeuchi, T. Takano, T. Tsuji and H. Akimoto. Hokkaido University, Sapporo; Fujimoto Hospital; National Cardiovascular Center Research Institute; Matsuzawa Hospital, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: schizophrenia, alcoholism, quantification

- 1719. Proton Magnetic Resonance Spectroscopy Findings in Cirrhotic Patients Without Overt Hepatic Encephalopathy: Does the Myoinositol/Creatine Ratio Reflect Hepatic Functional Reserve?.** D.W. Seo, J.H. Lee, Y.-S. Lee, S.T. Kim, D.-J. Suh, Y.I. Min and T.-H. Lim. Asan Medical Center; University of Ulsan; Asan Institute for Life Science, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Quantitation: MRS
 Keywords: liver cirrhosis, myo-inositol, MRS
- 1720. Examination of Brain Metabolism in Kidney Transplanted Patients by ¹H MR-spectroscopy with Short Echo Times.** R. Fründ, A. Geissler, B. Krämer, F. Schweda and S. Freuerbach. University Regensburg, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Sequences: Spectroscopy
 Keywords: H1-MRS, brain metabolism, kidney transplantation
- 1721. Elevated Brain Water in Canavan Disease: Impact of a Diuretic Therapy.** S. Blüml, K. Seymour, M. Philippart, R. Matalon and B. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; University of California, Los Angeles, CA; University of Texas, Gainsville, TX; California Institute of Technology, Pasadena, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: brain water, canavan, aspartoacylase
- 1722. ¹H Chemical Shift Imaging Evidence of Metabolic Differences Between Male (n=261) and Female Brains (n=258) at Age 60-90.** P.E. Sijens, M. Oudkerk, J.C. de Groot, F.E. de Leeuw, A. Hofman and M.M.B. Breteler. University Hospital; Erasmus University Medical School, Rotterdam, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: brain, spectroscopy, quantitation
- 1723. Time-Dependent Levels of Magnesium in Intra- and Extracellular Compartments.** P. Konstanczak, K. Dick, P.M. Rob, H.B. Gehl and J. Sperner. Medical University of Lübeck, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: MRS, magnesium, brain

- 1724. Spectroscopic Imaging of Temporal Lobe Epilepsy: Enhanced Accuracy Using Image Segmentation.** H.P. Hetherington, W.J. Chu, J.W. Hugg, J.W. Pan and R.I. Kuzniecky. Brookhaven National Laboratory, Upton, NY; University of Alabama, Birmingham, AL.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Seizures
Methods: Sequences: combination MRI/MRS
Keywords: epilepsy, spectroscopy, image segmentation
- 1725. Effects of Vigabatrin on Brain GABA Levels in Epileptics Monitored by 1H MRS: Responder Identification.** A.H. Trabesinger, S.G. Mueller, O.M. Weber, C.O. Duc, D. Meier, H.G. Wieser and P. Boesiger. University and ETH; University Hospital, Zurich, Switzerland.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Seizures
Methods: Quantitation: MRS
Keywords: epilepsy, GABA, MR spectroscopy
- 1726. Tailored Single Voxel Short TE MR Spectroscopy in Temporal Lobe Epilepsy - Absolute Quantitation with Partial Volume Correction for Cerebrospinal Fluid.** F.G. Woermann, P.A. Bartlett, M.A. McLean, G.J.M. Parker, G.J. Barker and J.S. Duncan. National Society for Epilepsy; University College London, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Seizures
Methods: Quantitation: MRS
Keywords: epilepsy, MRS, quantitation
- 1727. 1H MR Spectroscopy as a Routine Tool for the Lateralization of the Epileptogenic Focus.** M. Dezortová, M. Hájek, P. Fendrych and E. Rolencová. Institute for Clinical and Experimental Medicine, Prague, Czech Republic.
Type of Study: Clinical Applications of MR
Main Target of Study: Function
Organ/Tissue: Brain
Pathology: Seizures
Methods: Sequences: combination MRI/MRS
Keywords: epilepsy, brain, 1H MR spectroscopy
- 1728. Reduced NAA Localizes the Seizure Focus in Neocortical Epilepsy. A Multislice MR Spectroscopic Imaging Study.** P. Vermathen, K.D. Laxer, N. Schuff, A.A. Maudsley, G.B. Matson and M.W. Weiner. University of California, San Francisco, CA.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Seizures
Methods: Sequences: combination MRI/MRS

- 1729. Simultaneous Detection of Reduced NAA in Hippocampal and Other Brain Regions in Mesial Temporal Lobe Epilepsy Using Multislice Proton MSRI.** P. Vermathen, K.D. Laxer, N. Schuff, A.A. Maudsley, G.B. Matson and M.W. Weiner. University of California, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: combination MRI/MRS
- 1730. Lateralization of Epileptic Focus in Temporal Lobe Epilepsy Patients Using Proton MR Spectroscopy.** J.C. Lin, J.R. Gates, F.J. Ritter, M.B. Dunn, C.M. Neves, C.A. Nelson and C.L. Truwit. University of Minnesota, Minneapolis; Minnesota Epilepsy Group, St. Paul; Neurosurgery Associates, St. Paul, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: combination MRI/MRS
 Keywords: MRS, epilepsy, hippocampus
- 1731. Decrease in NAA/Cr Ratio in the Basal Ganglia of Patients with Temporal Lobe Epilepsy.** T. Fujimoto, K. Nakamura, T. Matsumoto, S. Kodama, T. Uchida, T. Nonaka, M. Nakahshima, T. Asakura and H. Akimoto. Fijimoto Hospital, Miyakonojo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inflammation
 Methods: Quantitation: MRS
 Keywords: epilepsy, NAA, basal ganglia

MRS of Human Brain: Ischemia

- 1732. Quantitative Proton MR Spectroscopic Imaging in Acute Stroke: Abnormalities in the Contralateral Hemisphere.** B.J. Soher, J.H. Gillard and P.B. Barker. Johns Hopkins University School of Medicine, Baltimore, MD; DVA Medical Center, San Francisco, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: MRSI, quantitation, stroke
- 1733. Proton MR Spectroscopy Evaluation of Brain Metabolism in Patients with Steno-occlusive Carotid Artery Disease: Correlation with Cerebral Blood Flow and Oxygen Metabolism by PET.** C. Tsuchida, H. Kimura, N. Sadato, H. Yamada, M. Maeda, Y. Koshimoto, Y. Kawamura, Y. Yonekura and Y. Ishii. Fukui Medical University, Fukui, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Sequences: Spectroscopy
 Keywords: brain, ischemia, MR spectroscopy

- 1734. Prognosis of Neurodevelopment in Full-Term Neonates with Hypoxia-Ischemia, Using Cerebral 1H-MRS with Different Echo Times.** J. van der Grond, F. Groenendaal and L.S. de Vries. Utrecht University Hospital; Wilhemina Children's Hospital, Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: metabolism, neonates, prognosis
- 1735. Disordered Cerebral Metabolism is Associated with Decreased Transcranial Doppler - CO2 Reactivity in Patients with Internal Carotid Artery Obstruction.** J. van der Grond, G.H. Visser, A.C. van Huffelen and B.C. Eikelboom. University Hospital, Utrecht, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Category not applicable
 Keywords: metabolism, TCD, hemodynamics
- 1736. Reversibility of N-Acetyl Aspartate in Cerebral Ischaemia: A 1H-MRS Demonstration of the Ischaemic Penumbra in Man.** A.C. Pereira, V.L. Doyle, F.A. Howe, J.R. Griffiths and M.M. Brown. St. George's Hospital Medical School, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: stroke, NAA, penumbra
- 1737. A Fixed Bed Bioreactor as a Potential *In Vitro* Model for the Study of Cerebral Ischemia and Hypoxia.** P.E. Thelwall and K.M. Brindle. University of Cambridge, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Perfusion
 Keywords: bioreactor, cell swelling, hypoxia
- 1738. An 1H MRS Study in Newborn Infants with Hypoxic-Ischemic Encephalopathy.** Q.-F. Li, Y. Pu, D.-X. Luo, C.-M. Zeng, J. Gao and J.-H. Gao. People's Hospital of Beijing Medical University, Beijing, China; University of Texas Health Science Center, San Antonio, TX.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Quantitation: MRS
 Keywords: hypoxic ischemic encephalopathy, brain, MRS

- 1739. Initial Metabolic Changes in Acute Cerebral Ischemia: Proton MR Spectroscopy at 1.5 Tesla in a Cat Model.** J.-J. Seo, H.-K. Kang, Y.-H. Kim, Y.-Y. Jeong, J.-G. Park and G.-W. Jeong. Chonnam National University, Kwang-ju, South Korea.
- Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain Vascular
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: ischemia, steam, MRS

MRS of Human Brain: Other

- 1740. Three Dimensional Metabolite Imaging of Human Brain by Echo-Planar Spectroscopic Imaging.** T. Kimura, H. Taki, M. Hori, S. Naruse, S. Hirata, H. Shimizu and H. Takeuchi. Louis Pasteur Center for Medial Research, Kyoto; Kyoto Prefectural University of Medicine, Kyoto; Hitachi, Ltd., Tokyo; Hitachi Medical Corporation, Chiba, Japan.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: MRSI, aging, echo-planar
- 1741. CDP-Choline Decreases Brain Phosphomonoesters in Normal Elderly Subjects.** L.L. Wald, S.M. Babb, D.A. Yurgelun-Todd, B.M. Cohen and R.F. Renshaw. McLean Hospital, Belmont; Harvard Medical School, Boston, MA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: CDP-choline, phospholipid, phosphorus
- 1742. Regional Variation in the Lateralization of Brain Metabolites Assessed by Proton MRS.** R. Jayasundar and P. Raghunathan. All India Institute of Medical Sciences, New Delhi, India.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: proton MRS, brain, lateralization
- 1743. Human Brain Bioenergetics Relate to Cognitive Ability.** C. Rae, R.B. Scott, M.A. Lee, N. Hines, C. Paul and P. Styles. University of Oxford, UK; The University of Sydney, Australia; Radcliffe Infirmary, Oxford, UK.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: 31P MRS, cognition, bioenergetics

- 1744. Neuronal Accumulation in Parkinson's Disease with Unilateral Symptom by *In vivo* 1H MRS.** B.-Y. Choe, K.-S. Lee, M.-C. Kim, H.K. Lee, S.-E. Choi, T.-S. Suh, H.-K. Lee and K.-S. Shinn. Catholic University Medical College, Seoul, South Korea.
Main Target of Study: Metabolism
Organ/Tissue: Brain
Keywords: MRS, Parkinson, metabolism
- 1745. 1H-MR Spectroscopy in Twins Discordant for Late-Infantile Neuronal Ceroid Lipofuscinosis.** V. Diklic and D. Gambarelli. University of Novi Sad, Yugoslavia; Centre Hospitalier Regional, Marseille, France.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Spectroscopy
Keywords: 1H-MRS, brain, psychiatry
- 1746. Cerebral Magnetic Resonance Spectroscopy in Patients with Chronic Obstructive Pulmonary Disease.** R. Mathur, I.J. Cox, D.T.P. Shephard, R.J. Shaw and S.D. Taylor-Robinson. St. Mary's Hospital; Hammersmith Hospital, London, UK.
Type of Study: Basic Research on MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Quantitation: MRS
Keywords: brain, hypoxia, spectroscopy
- 1747. MR Imaging and Short-Echo Time Localized 1H Spectroscopy of the Brain in Hepatic Encephalopathy: Follow up after Liver Transplantation.** T. Nägele, U. Seeger, U. Klose, D. Seitz, R. Viebahn, W. Grodd and K. Voigt. University of Tübingen, Germany.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Spectroscopy
Keywords: MRS, HE, basal ganglia
- 1748. Correlations Between Cerebral Phosphorus-31 and Proton MR Spectroscopy in Patients with Subclinical Hepatic Encephalopathy.** S.D. Taylor-Robinson, C. Buckley, K.K. Changani, H.J.F. Hodgson and J.D. Bell. Hammersmith Hospital, London, UK.
Keywords: hepatic, encephalopathy
- 1749. Cerebral Phosphorus Metabolites in Human Hyponatremic Encephalopathy.** J. Tan, S. Bluml, A. Raj and B.D. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; Huntington Memorial Hospital, Pasadena, CA.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: White Matter Disease
Methods: Data Processing: MRS
Keywords: hyponatremia, osmolytes, quantitative proton dc 31P MRS

- 1750. Focal Brain Lesions Characterisation Using Single Voxel 1H MRS with Short Echo Time.** M. Tosetti, M.C. Bianchi, A.M. Valleriani, D. Montanaro, A. Abbruzzese and R. Canapicchi. Stella Maris Scientific Institute; S. Chiara Hospital, Pisa, Italy.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: spectroscopy, brain tumours, inflammation
- 1751. Is Brain Phenylalanine Concentration Relevant in PKU Patient Management?.** R.A. Moats, M.D. Nelson and R. Koch. Children's Hospital, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Data Processing: MRS
 Keywords: brain, PKU, phenylalanine
- 1752. Localised Cerebral Phosphorus-31 MR Spectroscopy of Patients Before and Immediately After Hypothermic Cardiopulmonary Bypass.** J.A. Wilson, S.D. Taylor-Robinson, D.J. Bryant, K.M. Taylor, D.N.F. Harris and J.D. Bell. Hammersmith Hospital, London, UK.
 Keywords: hypothermia, cardiac, bypass
- 1753. 1H-CSI of Normal Pressure Hydrocephalus.** O. Kizu, S. Naruse, S. Furuya, M. Ide, N. Yamakawa, K. Nakajima, H. Morishita and T. Maeda. Kyoto Prefectural University of Medicine, Kyoto, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: normal pressure hydrocephalus, proton chemical shift imaging, lactate
- 1754. Proton MRS of Total Creatine in Human Brain after Oral Administration of Creatine-Monohydrate.** P. Dechent, P.J.W. Pouwels, F. Hanefeld and J. Frahm. Biomedizinische NMR Forschungs GmbH; Universität Göttingen, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: creatine, MRS, brain
- 1755. Retardation of PML Progression by Protease Inhibitor.** J. Tan, B. Ross, T. Hoang, S. Bluml and R. Moats. Huntington Medical Research Institutes, Pasadena; Schulte Research Institutes, Santa Barbara, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: Quantitation: MRS
 Keywords: progressive multifocal leukoencephalopathy, N-acetylglutamate, protease inhibitor

- 1756. A Model of Compartmentalized Glutamate Metabolism Measured in the Human Brain by ^{13}C NMR.** R. Gruetter. University of Minnesota, Minneapolis, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: GABA, glucose, visual cortex

MRS of Animal Brain

- 1757. N-Acetyl-Aspartate and Neuronal Cell Count.** Y.L. Chung, M. Jeffrey, J.R. Fraser, W.G. Halliday, K. Bakhoo, S.C.R. Williams and J.D. Bell. Hammersmith Hospital, London; Lasswade Veterinary Laboratory, Midlothian; Institute for Animal Health, Edinburgh; University of Oxford; Institute of Psychiatry, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Basic NMR
 Keywords: NAA, neuron, scrapie
- 1758. Functional Significance in Anaplerosis *in vivo* Rat Brain: *Ex Vivo* Study by ^{13}C -NMR Using $[2-^{13}\text{C}]$ glucose.** T. Kanamatsu and Y. Tsukada. Soka University, Tokyo, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: $[2-^{13}\text{C}]$ glucose, anaplerosis, glutamine
- 1759. Feasibility of ^1H NMR Detection of Glucose and Glycogen in Rat Brain at $\text{TE}=2\text{ms}$.** R. Gruetter, I.-Y. Choi and I. Tkác. University of Minnesota, Minneapolis, MN.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: glucose, glycogen, MRS
- 1760. Ultra-short Echo-time "Dehydrated" *in vivo* ^1H NMR Spectroscopy.** I. Tkác, Z. Starcuk, I.-Y. Choi and R. Gruetter. University of Minnesota, Minneapolis, MN; Academy of Science of the Czech Republic, Brno, Czech Republic.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: short echo, water suppression, brain

- 1761. Two-Compartment Metabolic Modeling of Glutamate-Glutamine Cycle Using *in vivo* ¹³C NMR Spectroscopy.** J. Shen, N.R. Sibson, G.F. Mason, R.G. Shulman, K.L. Behar and D.L. Rothman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: ¹³C NMR, metabolic modeling, glutamate-glutamine cycle
- 1762. *In vivo* ¹³C NMR Spectroscopy Measurement of Anaplerotic Flux in Rat Brain during Hyperammonemia.** N.R. Sibson, J. Shen, Z. Herskovits, K.L. Behar, D.L. Rothman and R.G. Shulman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: glutamate, brain, metabolism
- 1763. Cerebral Utilization of Glucose and Alternative Substrates in Fetuses of Diabetic Rabbits.** S. Haber and A. Lapidot. The Weizmann Institute of Science, Rehovot, Israel.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: fetal brain, diabetes, ¹³C NMR isotopomer analysis
- 1764. Oral Creatine and Cerebral Metabolism. Metabolite Concentrations and Ischemic Challenge in Rat Brain.** T. Michaelis, W. Wick, H. Fujimori, A. Matsumura and J. Frahm. Biomedizinische NMR Forschungs GmbH, Göttingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: cerebral ischemia, ¹H MRS, creatine
- 1765. Proton Magnetic Resonance Spectroscopic Investigation of Hypoxic Newborn Piglets in Relation to Phosphorylation Potential by ¹H and ³¹P MR Spectroscopy.** K.-S. Kim, J.H. Lee, K.H. Lim, S.-Y. Pi and T.-H. Lim. University of Ulsan College of Medicine; Asan Institute for Life Sciences, Seoul, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: phosphorylation potential, hypoxia, MRS

- 1766. Oral Creatine and Brain Water ADC During Transient Global Ischemia in Rat Brain.** M. Wick, H. Fujimori, T. Michaelis and J. Frahm. Biomedizinische NMR Forschungs GmbH, Göttingen, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: diffusion, ischemia, creatine
- 1767. Metabolite T2 Relaxation during Transient Global Ischemia in Rat Brain.** H. Fujimori, M. Wick, T. Michaelis and J. Frahm. Biomedizinische NMR Forschungs GmbH, Göttingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: proton MRS, brain, ischemia
- 1768. Experimental Cerebral Radiation Injury: Evaluated with Proton MR Spectroscopy in Cats.** I. Maruyama, H. Kimura, M. Yoshida and Y. Ishii. Fukui Medical University, Fukui, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: MR spectroscopy, radiation, brain necrosis
- 1769. High Resolution ^1H -NMR Spectroscopy of Brain Extracts: Chloroform/Methanol Extraction is Superior to Perchloric Acid.** J.E. Le Belle, N.G. Harris, M.D. King and S.R. Williams. University College London Medical School; St. Thomas Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: brain, extracts, spectroscopy
- 1770. A ^{13}C NMR Study of Lactate Inhibition of Pyruvate Carboxylase in Superfused Brain Slices.** J.L. Griffin, P.M. Matthews, R.M. Dixon, P. Styles and C. Rae. University of Oxford; John Radcliffe Hospital, Oxford, UK; Sydney University, Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Basic NMR
 Keywords: lactate, ischaemia, pyruvate carboxylase

- 1771. ¹H MRS Study of Molecular Diffusion during Normoxia and Hypoxia in Rat Cortical Brain Slices *Ex Vivo*.** J.M. Hakumäki and R.A. Kauppinen. University of Kuopio, Finland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Diffusion
 Keywords: brain, diffusion, hypoxia
- 1772. Effect of Intracellular pH on the Onset of Secondary Energy Failure for Acute Hypoxia: ¹H and ³¹P MR Spectroscopic Investigations.** J.H. Lee, K.H. Lim, K.S. Kim, S.-Y. Pi and T.-H. Lim. Asan Institute for Life Sciences; University of Ulsan College of Medicine, Seoul, Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: hypoxia, intracellular pH, MRS
- 1773. Monitoring of Brain Water by Chemical Shift Imaging During Ammonia-Induced Edema Development in Rats.** B. Tom, P.N. Venkatasubramanian, A. Blei and A. Wyrwicz. ENH Research Institute; Northwestern University, Evanston, IL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: hyperammonemia, brain edema, chemical shift imaging
- 1774. Neuronal Injury in the SIV Macaque Model of Dementia Detected by High Resolution Magic Angle Spinning Proton MR Spectroscopy.** L.L. Cheng, S.V. Westmoreland, M. Alford, E. Masliah, A.A. Lackner and R.G. Gonzalez. Harvard Medical School, Boston, MA; University of California at San Diego, La Jolla, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infection
 Methods: Basic NMR
 Keywords: NAA, SIV, dementia
- 1775. High Resolution NMR Spectroscopic Analysis of Brain Microdialysates in Rat MCAO Model.** J. Wei, E.L. Ezell, N. Illangasekare and M.J. Quast. The University of Texas Medical Branch, Galveston, TX.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Quantitation: MRS
 Keywords: cerebral ischemia, spectroscopy, glutamate

- 1776. Proton Magnetic Resonance Spectroscopy of Disuse Atrophied Muscle: *In vivo* Lipid Level and Fluid Shift Changes.** L.K. Fotedar, P.A. Narayana and I.J. Butler. University of Texas Medical School; National Research Council, Houston, TX.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Degeneration
Methods: Quantitation: MRS
Keywords: ¹H-MRS, atrophy, muscle
- 1777. The Potential of *In vivo* ³¹P-MRS Monitoring Clinical Response of Soft Tissue Sarcomas Treated by Isolated Limb Perfusion.** Th.J. Vogl, M.v. Wickede, Ch. Hecht, P. Müller, Ch. Kettelhack, P. Hohenberger, P. Schlag and R. Felix. Humboldt University of Berlin, Germany.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Tumors
Methods: Sequences: combination MRI/MRS
Keywords: soft tissue sarcomas, ³¹P-MRS, isolated limb
- 1778. Localized ³¹P-MRS Study of Soleus and Gastrocnemius Muscles in Patients with Duchenne and Becker Muscular Dystrophy.** R. Lodi, F. Muntoni, D. Manners, J. Taylor, A. Blamire, P. Styles and D.J. Taylor. Oxford Radcliffe Hospital NHS Trust, Oxford; Hammersmith Hospital London, UK.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Degeneration
Methods: Quantitation: MRS
Keywords: ³¹P-MRS, muscle, dystrophy
- 1779. Metabolic Abnormalities in Muscles of Fibromyalgia Patients Detected with ³¹P Magnetic Resonance Spectroscopy.** J.H. Park, P. Phothimat, S. Kari, M. Hernanz-Schulman and N.J. Olsen. Vanderbilt Medical School, Nashville, TN.
Type of Study: Clinical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Quantitation: MRS
Keywords: ³¹P MRS, muscle, metabolism
- 1780. The Unusual Properties of the Methyl Proton Resonance of Cr/PCr in Muscle at Rest and in Ischemic Fatigue.** C.C. Hanstock, D. Gheorghiu, R.B. Thompson, M.E. Trump, P.W. Hochachka and P.S. Allen. University of Alberta, Edmonton; University of British Columbia, Vancouver, Canada.
Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Quantitation: MRS
Keywords: creatine, muscle, quantitation

- 1781. Long-term Creatine Intake is Beneficial to Muscle Performance during Resistance Training.** P. Van Hecke, K. Vandenberghe, M. Goris, M. Van Leemputte, L. Vangerven, F. Vanstapel and P. Hespel. Katholieke Universiteit Leuven, Belgium.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: muscle, creatine, 31P NMR
- 1782. *In vivo* 1H MRS of Human Gastrocnemius and Soleus Muscle: Implications for Assessment of Fiber Composition.** J. Hu and J.L. Evelhoch. Wayne State University School of Medicine, Detroit, MI.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: muscle, fiber type, T2
- 1783. Abnormal Muscle Carnitine Relaxation in Adult CPT II Deficiency: The Use of 1H MRS to Follow Myopathy.** L.J. Haseler, J.S. Videen and R.A. Terkeltaub. University of California, San Diego, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inborn Error of Metabolism
 Methods: Category not applicable
 Keywords: carnitine, myopathy, spectroscopy
- 1784. Differential Uptake of Carnitine in Human Calf Muscle: An *in-vivo* 1H MRS Study.** G. Jenkinson, E.L. Thomas, J. rico-Sanz, R. Iles and J.D. Bell. Hammersmith Hospital, London; Royal London Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: muscle, carnitine, MRS
- 1785. Validation of Intra-Myocellular Lipid (IMCL) Levels Determined by 1H-MRS, Using Morphometry and Chemical Analysis in Human Biopsy Samples.** C. Boesch, R. Kreis, H. Howald, S. Matter, R. Billeter, B. Essen-Gustavsson and H. Hoppeler. University of Berne, Switzerland; University of Uppsala, Sweden.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: muscle, IMCL, 1H-MRS

- 1786. Absence of Intramyocellular Lipids in Post Poliomyelitis Patients. An Indicator of the Severity of the Disease? *In vivo* Proton MRS Study.** N.R. Jagannathan and S. Wadhwa. All India Institute of Medical Sciences, New Delhi, India.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Category not applicable
Keywords: polio, EMCC, IMCL
- 1787. Depletion of Intramyocellular Triglyceride Stores with Chronic Intracerebroventricular (ICV) Leptin Administration.** R.L. Dobbins, L.S. Szczepaniak, D.T. Stein and J.D. McGarry. UT Southwestern Medical Center, Dallas, TX.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Sequences: Spectroscopy
Keywords: leptin, lipid, muscle
- 1788. Structure and Quantitation of Lipids Accumulated in Human Skeletal Muscle Measured by Localized Proton Spectroscopy.** L.S. Szczepaniak, J.D. McGarry and D.T. Stein. UT Southwestern Medical Center, Dallas, TX.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Inborn Error of Metabolism
Methods: Quantitation: MRS
Keywords: muscle, lipids, quantitation
- 1789. Myoglobin Desaturation and O₂ Consumption in Exercising Human Gastrocnemius Muscle.** P. Mole, Y. Chung, N. Sailasuta, T.K. Tran, R. Hurd and T. Jue. University of California, Davis; GE Medical Systems, Inc.
- Type of Study: Biomedical Applications of MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Healthy Tissue
Methods: Basic NMR
Keywords: myoglobin, muscle, oxygen
- 1790. Oxygen Uptake and 31P Response to Square Wave and Ramp Exercise: Implications for Oxygen Deficit, Debt and Metabolic Control.** L.J. Haseler, M.C. Hogan and R.S. Richardson. University of California, San Diego, CA.
- Type of Study: Basic Research on MR
Main Target of Study: Metabolism
Organ/Tissue: Musculoskeletal/Joints
Pathology: Category not applicable
Methods: Category not applicable
Keywords: 31P, VO₂, muscle

- 1791. Exercise Training Reduces Skeletal Muscle Intracellular PO₂ at Maximal Exercise in Hypoxia, Normoxia and Hyperoxia.** R.S. Richardson, E.A. Noyszewski, J.S. Leigh and P.D. Wagner. University of California, San Diego, CA; University of Pennsylvania, Philadelphia, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: myoglobin, VO₂max, muscle
- 1792. Comparison of Treadmill Testing of Peripheral Perfusion Deficits and Oxidative Indicators Determined by 31P MRS in Peripheral Vascular Occlusive Patients.** M.D. Boska, I.I. Pipinos, A.D. Shepard, J.A. Nelson and S. Richter. Henry Ford Hospital, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Vascular Diseases
 Methods: Basic NMR
 Keywords: muscle, 31P NMR, occlusive disease
- 1793. Comparison of 1H and 31P NMR Determination of Lactate and Buffer Capacity.** A. Hsu, C.D. Gregory and M.J. Dawson. University of Illinois at Urbana-Champaign, Urbana, IL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: muscle lactate, buffer capacity, 1H/31P spectroscopy
- 1794. Correlation of Simultaneously Measured Intramuscular High-Energy Phosphate and Pulmonary Oxygen Uptake Kinetics during Quadriceps Exercise.** H.B. Rossiter, V.L. Doyle, F.A. Howe, S.A. Ward, B.J. Whipp and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: muscle, 31P, exercise
- 1795. Regulation of Oxidative ATP Synthesis in Exercising Human Skeletal Muscle.** Y. Chung, P. Mole, N. Sailasuta, T. Tran, R. Hurd and T. Jue. University of California, Davis, CA; GE Medical Systems, Inc.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: oxygen, muscle, oxidative phosphorylation

- 1796. Influence of Cytosolic Free [Mg²⁺] on [ADP] Assessed *in vivo* by 31P MRS in the Human Calf Muscle.** S. Iotti, G. Gottardi and B. Barbiroli. Università di Bologna, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: magnesium, ADP, creatine-kinase
- 1797. Eccentric vs Concentric Exercise Efficiency in Human Skeletal Muscle *In vivo*: Metabolic Recruitment vs Metabolic Strain.** C.A. Combs, A.H. Aletras and R.S. Balaban. National Institutes of Health, Bethesda, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: Qmax, 31P NMR
- 1798. Analysis of Mitochondrial ATP Synthesis and Proton Efflux in Recovery from Exercise.** M. Roussel, G.J. Kemp, D. Bendahan, Y. Lefur and P.J. Cozzone. Centre de Résonance Magnétique Biologique et Médicale, Marseille, France; University Department of Orthopaedic & Accident Surgery, Liverpool, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: muscle, 31P MRS, mitochondria
- 1799. Bi-Exponential Transverse Relaxation of Lactate in Excised Rat Muscle.** L. Jouvensal, P.G. Carlier and G. Bloch. SHFJ-DRM, Orsay, France.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: lactate, editing, T2
- 1800. Maximal Isometric Muscle Contraction With and Without Glycolytic Inhibition: Effects on [Lactate], Water Content and Distribution, Water Proton T1 and T2, and Magnetization Transfer.** B.M. Damon, V. Gulani, C.D. Gregory and M.J. Dawson. University of Illinois at Urbana-Champaign, Urbana, IL.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: muscle, relaxation, MTC

- 1801. ¹³C NMR Study of Glycogen Resynthesis in Muscle after Glycogen-Depleting Exercise in Healthy Subjects Infused with Free Fatty Acids.** M.C. Delmas-Beauvieux, B. Quesson, E. Thiaudière, J.L. Gallis, P. Canioni and H. Gin. Hôpital Haut-Lévêque, Pessac; Université Bordeaux 2, France.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: muscle, glycogen, free fatty acids
- 1802. Early Effects of Free Fatty Acid Elevation on Muscular Glucose Transport/Phosphorylation Studied by *In vivo* ³¹P NMR Spectroscopy at 3 Tesla.** S. Gruber, M. Krssak, H. Stingl, E. Moser, W. Waldhäusl and M. Roden. Institute of Medical Physics; University of Vienna, Austria.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: ³¹P-MRS, muscle, glucose
- 1803. Studying the Metabolic Machinery of Contracting Squid Mantle Muscle *In vivo*: A Time Resolved ³¹P-NMR Study.** H.O. Pörtner, P.G. Lee, D.M. Webber, R.K. O'Dor, C. Bock and M. Quast. Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany; Marine Biomedical Institute, Galveston, TX; Dalhousie University, Halifax, NS, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: gated ³¹P-NMR, contraction, phosphagen

MRS of Bone and Cartilage

- 1804. NMR Studies of Exchangeable Hydrogen in Bone.** A. Borthakur, R. Reddy and F.W. Wehrli. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: bone, DOF, exchange
- 1805. Water Binding in Collagen Studied by ²H Double Quantum Filtered NMR Spectroscopy.** S. Lüsse and K. Arnold. Leipzig University, Leipzig, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: cartilage, collagen, water binding

- 1806. High Resolution MR Imaging and Mapping of Physiological Parameters of Articular Cartilage in the Knee with a Local Gradient Coil.** L.R. Frank, E.C. Wong, W.-M. Luh, J.M. Ahn and D. Resnick. University of California, San Diego, CA; Medical College of Wisconsin, Milwaukee, WI.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Gradients
 Keywords: cartilage, tissue parameters, gradient coil

Pediatric MRS and Body Composition

- 1807. Quantitative Age-Related Changes in Normal and Abnormal Myelination Using Proton-Decoupled 31P MRS of Brain.** K. Seymour, S. Blüml, G. McComb and B. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara; Children's Hospital of Los Angeles, CA.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Quantitation: MRS
 Keywords: myelination, dc 31P MRS, brain development
- 1808. 1H MRS Measurement of Caudate Glutamatergic Changes Associated with Paroxetine Therapy for Pediatric Obsessive Compulsive Disorder.** D. R. Rosenberg, F. P. MacMaster, J. K. Parrish, A. D. MacDonald, C. M. Stewart, L. D. Paulsen, E. Carroll and G. J. Moore. Wayne State University School of Medicine, Detroit, MI.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Malformation
 Methods: Category not applicable
 Keywords: caudate, glutamate, serotonin
- 1809. 1H MRS in Perinatal Asphyxia Patients: Correlation with Neurologic Outcome.** D.B. Vigneron, K. Baranski, D. Hallam, H. Clarke, J.C. Partridge, D.M. Ferriero and A.J. Barkovich. University of California, San Francisco, CA.
- Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: neonatal, asphyxia, MRS
- 1810. Familial Creatine Deficiency with a Myopathic Component: Near-Absent Signals in the 1H-Decoupled 31P Magnetic Resonance Spectra of Calf Muscle.** F. Arias-Mendoza, L. Konchanin, W.D. Grover and T.R. Brown. Fox Chase Cancer Center; Children's Hospital of Philadelphia; St. Christopher Hospital for Children, Philadelphia, PA.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inborn Error of Metabolism
 Methods: Category not applicable
 Keywords: creatine deficiency, 31PMRS, inborn error of metabolism

- 1811. Measurement of Neonatal Body Composition: Validation of ¹H-3D-CSI and MRI by Chemical Analysis in Piglets.** C. Fusch, J. Slotboom, U. Fuehrer, R. Schumacher, W. Zimmermann, A. Moessinger, J.W. Blum and C. Boesch. University of Berne, Switzerland.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Sequences: combination MRI/MRS
 Keywords: newborns, body composition, magnetic resonance
- 1812. Selective Body Fat Loss and Exercise.** E.L. Thomas, A. Byrnes, J.V. Hajnal, N. Saeed, G. Frost and J.D. Bell. Hammersmith Hospital, London, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: fat, exercise, cholesterol

MRS of Cardiac and Visceral Organs

- 1813. ³¹P NMR Studies of Age-Dependent Revascularization and Bioenergetic Recovery in Rat Skeletal Muscle Following Acute Ischemia.** X. Wang, K. Fishbein, R.G.S. Spencer and M. Capogrossi. National Institutes of Health, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Sequences: Spectroscopy
 Keywords: angiogenesis, muscle, aging
- 1814. More Efficient and Accurate Methods for Measuring Human Cardiac PCr/ATP Ratios: Benefits of Chemical Exchange.** R. Ouwkerk, H.J. Lamb and C.J.A. van Echteld. University Hospital, Utrecht; Leiden University Medical Center, Leiden, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: ³¹PMRS, heart, exchange
- 1815. ⁸⁷Rb NMR Measurements of K⁺ Transport in Vascular Smooth Muscle Cells: The Porcine Aorta Model.** M.L.H. Gruwel, B. Kuzio, R. Deslauriers and V.V. Kupriyanov. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: Rb uptake, smooth muscle, aorta

- 1816. Influence of Cytochalasin B on Glucose and Lactate Oxidation in the Isolated Working Heart.** J.A. Woods, L.S. Brennan, C.J. Storey, E.E. Babcock and C.R. Malloy. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: cytochalasia, heart, metabolism
- 1817. Secondary Cardioplegia Suppresses Fatty Acid Oxidation and Improves Post-Ischemic Ventricular Function.** M.K. Reed, M.P. Tauriainen, C.R. Malloy, R.Y. Chao and M.E. Jessen. University of Texas, Dallas, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: carbon-13, heart, metabolism
- 1818. Potassium Cardioplegia Suppresses Neonatal Myocardial Fatty Acid Metabolism.** M.P. Tauriainen, M.K. Reed, C.R. Malloy, S. Sudarshan, R.Y. Chao and M.E. Jessen. University of Texas, Dallas, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: carbon-13, heart, metabolism
- 1819. Pulmonary Substrate Oxidation *in vivo* Following Intravenous ¹³C Labeled Lactate and Acetate.** M.P. Tauriainen, M.E. Jessen, C.R. Malloy, A.D. Sherry and D.M. Meyer. University of Texas Southwestern Medical Center, Dallas, TX.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Metabolism
 Organ/Tissue: Chest
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: carbon-13, lung, metabolism
- 1820. Transient and Steady State Metabolic Changes during Myocardial Contraction.** Y. Chung and T. Jue. University of California, Davis, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: myocardium, oxygen, energetics

- 1821. Intracellular pH Modulation via Cl⁻ Dependent Transporters in the Isolated Rat Heart.** M. Mielke, F.F.-T. Ch'en, R.J. Sidell, Y.S. Anderson, G.K. Radda, R.D. Vaughan-Jones and K. Clarke. University of Oxford, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: proton transport, heart, Cl⁻/OH exchange
- 1822. Mechanisms of Action of Esmolol as a Cardioplegic Agent: ⁷Li⁺ and ⁸⁷Rb⁺ Magnetic Resonance Spectroscopy Studies on Na⁺ and K⁺ Kinetics in the Isolated Rat Heart.** M. Ede, B. Kuzio, B. Xiang and R. Deslauriers. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: ⁸⁷Rb, Li MRS, cardiac
- 1823. NMR Study of ⁸⁷Rb Efflux in Hypothermic Rat Hearts at 20°C: Do Mitochondria Play a Role?.** M.L.H. Gruwel, B. Kuzio, B. Xiang, R. Deslauriers and V.V. Kupriyanov. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: Rb efflux, hypothermia, mitochondria
- 1824. ⁸⁷Rb and ³¹P NMR Studies of the Effects of Intra- and Extracellular pH on K⁺ Efflux from Myocytes in Isolated Rat Hearts.** V.V. Kupriyanov, B. Xiang, B. Kuzio and R. Deslauriers. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: k⁺ efflux, intracellular pH, ⁸⁷Rb-NMR
- 1825. ³¹P NMR on the *in situ* Mouse Heart.** U. Himmelreich and G.P. Dobson. James Cook University, Townsville; University of Sydney, Australia.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: RF-Coils
 Keywords: surface coil, heart, scaling

- 1826. Thyroid Regulates Maturation of Myocardial Respiratory Control.** M.A. Portman, Y. Xiao and X.H. Ning. University of Washington School of Medicine, Seattle, WA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Inborn Error of Metabolism
 Methods: Sequences: Spectroscopy
- 1827. Glycolytic ATP Production is Not Essential for Na⁺ - K⁺ ATPase Function and Contractile Recovery during Postischemic Reperfusion in Isolated Rat Hearts.** J.G. van Emous, C.L.A.M. Lankamp, T.J.C. Ruigrok and C.J.A. van Echteld. Interuniversity Cardiology Institute; Utrecht University Hospital, Utrecht, The Netherlands.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Basic NMR
 Keywords: sodium, glycolysis, Na⁺/K⁺ ATPase
- 1828. Concurrent Evaluation of Gluconeogenesis and Phosphoenergetics in Rat Liver during Endotoxemia Using *In vivo* 13C and 31P NMR.** S. Morikawa, T. Inubushi, K. Takahashi and H. Ishii. Shiga University of Medical Science, Shiga, Japan.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inflammation
 Methods: Sequences: Spectroscopy
 Keywords: gluconeogenesis, phosphoenergetics, endotoxemia
- 1829. Proton MR Spectroscopy of the Human Liver: Application to Chronic Hepatitis and Liver Cirrhosis with Pathologic Correlation.** S.G. Cho, M.K. Lim, H.J. Kim, C.H. Suh and J.H. Lee. Inha University College of Medicine, Incheon; Asan Institute for Life Sciences, Seoul, Korea.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inflammation
 Methods: Quantitation: MRS
 Keywords: MR, spectroscopy, Hepatitis
- 1830. *In vivo* Localized Spectroscopy of the Human Ovary.** L.J. Friesen, J.C. Sharp and I.C.P. Smith. National Research Council of Canada; University of Manitoba, Winnipeg, MB, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: ovary, human, spectroscopy

- 1831. Simultaneous Fluorine Imaging of 5-FU and FBAL.** M. Bock and P. Bachert. Deutsches Krebsforschungszentrum, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: 19F-MRI, chemical shift artifact, chess

MRS Quantitation

- 1832. Quantification of 1H MRS Data by an Artificial Neural Network Trained with Individual Metabolite Spectra.** O.M. Weber, A.H. Trabesinger, C.O. Duc, D. Meier and P. Boesiger. University of Zurich and Swiss Federal Institute of Technology Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRS
 Keywords: artificial neural network, spectrum quantitation, brain MRS
- 1833. Dependence of T1 on Echo Time in Grey and White Matter of Human Brain in STEAM Localized 1H MRS: Water Compartments and *In vivo* Spectroscopy.** J. Knight-Scott. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: brain, 1H-MRS, relaxation
- 1834. Single Voxel NMR-Spectroscopy of Alanine with PRESS and HOPE: Optimized Measurement Parameters for Quantitative Spectroscopy.** M. Bunse, W.-I. Jung, M. Richter, R. Wißmann, G.J. Dietze and O. Lutz. Max Grundig Clinic, Bühl; Universität Tübingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: alanine, J-coupling, quantitation
- 1835. A Method for Determination of the Total Creatine Content in Perfused Rat Hearts by 1H-MRS.** J. Schneider, A. Weisser, S. Neubauer, A. Haase and M. von Kienlin. University Hospital of Würzburg, Germany.
 Methods: Quantitation: MRS
 Keywords: 1H MRS, absolute quantitation, rat heart

- 1836. Proton Spectroscopy Measurements of Tissue Water T2 in the Human Brain.** C. Andrews, S.C.R. Williams and A. Simmons. Maudsley Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: T2, spectroscopy, brain
- 1837. Combination of Time Domain Least Square Fitting Algorithms and *In Vitro* Acquired Spectral Models for the Quantitation of *in vivo* 1H MRS.** O.M. Weber, A.H. Trabesinger, C.O. Duc, D. Meier and P. Boesiger. University of Zurich and Swiss Federal Institute of Technology Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Data Processing: MRS
 Keywords: spectrum quantitation, model function, brain MRS
- 1838. Quantitative Evaluation of Dilution Changes of Gd-DTPA in Human Blood After Injections.** D.H. Lee, T.S. Chung and K.S. Hong. Pai Chai University, Taejon; Yonsei Medical School, Seoul; Korea Basic Science Institute, Seoul, Korea.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: relaxation, contrast agent, dilution
- 1839. Monitoring of Body Composition Changes During the Development of Genetic Obesity Using 1H MRS.** D.T. Stein, E.E. Babcock and L.S. Szczepaniak. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Inborn Error of Metabolism
 Methods: Quantitation: MRS
 Keywords: body composition, obesity, leptin
- 1840. Searching the Additional Reason of Protein α -CH Proton Chemical Shift Dispersions to have the Highest Values.** L.S. Kivaeva and G.T. Ibragimova. Russian Academy of Sciences; Kazan State University, Kazan, Russia.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: protein, 1H NMR, spectra explanation

- 1841. Spatial Interference Effects in Volume Localized Spectroscopy of J-Coupled Nuclei.** D.A. Yablonskiy, J.J. Neil, M.E. Raichle and J.J.H. Ackerman. Washington University, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: scalar coupling, lactate
- 1842. Automated Prior Knowledge Fitting of Over-Sampled J-Resolved Spectra.** N. Sailasuta, R.E. Hurd and S. Provencher. GE Medical Systems, Fremont, CA; Max Planck Institute for Biophysical Chemistry, Göttingen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
- 1843. Beneficial Influence of Prior Knowledge on Quantitation of Multiplets.** S. Cavassila, S. Deval, C. Huegen, D. van Ormondt and D. Graveron-Demilly. Université Lyon I, Villeurbanne, France; Delft University of Technology, Delft, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: MRS, quantitation, error estimation
- 1844. Automated Baseline Correction and Metabolite Peak Measurement in Brain 1H-MRSI Using Linear Discriminant Analysis.** S.B. Antel, L.M. Li and D.L. Arnold. McGill University, Montreal, QC, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: MR Spectroscopy, quantitation, automation
- 1845. Automatic Method for Reliable Analysis and Quantitation of Spectroscopic Imaging Data.** N. Petridou and C.T.W. Moonen. National Institutes of Health, Bethesda, MD; University of Bordeaux, France.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: automatic, time, reliability

- 1846. Wavelets Packets Method for the Automatic Extraction of 1H-2D-CSI Data for Metabolic Maps.** D. Origgi, L.T. Mainardi, N. Castelnovo, G. Ghezzi, P. Lucia, A. Paganini, A. Falini, G. Calabrese, S. Cerutti and G. Scotti. Institute H. San Raffaele; Polytechnic University, Milan, Italy.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: CSI, MRS, wavelet packet
- 1847. Quantitation Reproducibility in Serial 1H - 2DCSI Studies of the Brain Using an Immobilization Mask.** A.Z. Damyanovich, W. Mason, J.R. Staples and D.J. Mikulis. University of Toronto and Toronto Hospital, Western Division, Toronto, Ontario, Canada.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: reproducibility, 1H-CSI, serial
- 1848. Reliability of Internal Reference Evaluated by the Phantom Replacement Method with High Precision.** T. Yamamoto, T. Nambu and K. Miyasaka. Hokkaido University, Sapporo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: internal reference, quantitation, signal intensity
- 1849. Comparing Spectra.** R.G.S. Spencer. National Institutes of Health, National Institute on Aging, Baltimore, MD.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: signal-to-noise, statistics, stability
- 1850. Application of Principal Component Analysis (PCA) to Kinetic Muscle Data: An Integrated Analysis Approach.** R. Stoyanova, A.T. Paganini, R.A. Meyer and T.R. Brown. Fox Chase Cancer Center, Philadelphia, PA; Michigan State University, East Lansing, MI.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: PCA, kinetic, muscle

- 1851. Quantification of Uncertainty in Tissue Characterisation with NMR Spectra.** P.J.G. Lisboa, A. Vellido, H. Aung, W. El-Deredy, Y.Y.B. Lee and S.P.J. Kirby. Liverpool John Moores University, Liverpool, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRS
 Keywords: pattern, recognition, statistics
- 1852. Model-Based Fitting of NMR Spectra by 2D Registration Using Neural Networks.** I.D. Greaves, M.C. Newbold and S.F. Keevil. United Medical and Dental Schools fo Guy's and St. Thomas', London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: spectroscopy, quantitation, neural networks
- 1853. Improved Definition of Baseline in Localized 1H-MRS Based on T1-Differences.** L. Hofmann, J. Slotboom, C. Boesch and R. Kreis. University of Bern, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: quantitation, baseline, macromolecules
- 1854. Application of Principal Component Analysis (PCA) for Quantitation of Kinetic Muscle Data: Comparison with VARPRO.** R. Stoyanova, C.J. Houtman, D.F. Stegeman, A. Heerschap and T.R. Brown. Fox Chase Cancer Center, Philadelphia, PA; University Hospital Nijmegen, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: VARPRO, PCA, muscle
- 1855. Spectral Quantitation by Principal-Component Analysis Using Complex Singular Value Decomposition.** M.A. Elliott, G.A. Walter, A. Swift, K. Vandenborne, J.C. Schotland and J.S. Leigh. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: PCA, spectroscopy, SVD

- 1856. Using the E-RELAX Algorithm to Determine Frequency, Amplitude and Damping Ratio for Phosphorus NMR in the FID and Phased, Integrated Intensity in the Frequency Domain.** A. Bruner, K. Scott, Z.-S. Liu, Z. Bi, J. Li, C. Stopka and R. Ballinger. University of Florida; Veterans Affairs Medical Center, Gainesville, FL.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Data Processing: MRS
 Keywords: spectroscopy, processing, areas
- 1857. Automatic Peak Finding of Dynamic Batch Sets of Low SNR *In-Vivo* Phosphorus NMR Spectra.** A.P. Bruner, K. Scott, D. Wilson, B. Underhill, T. Lyles, C. Stopka, R. Ballinger and E.A. Geiser. University of Florida; Veterans Affairs Medical Center, Gainesville, FL.
 Type of Study: Basic Research on MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Data Processing: MRS
 Keywords: spectroscopy, processing, position
- 1858. Pitfall in the Determination of Free [Mg²⁺] by ³¹P NMR When Using the β/α -ATP Peak Height Ratio Method.** S. Widmaier, W.-I. Jung, G.J. Dietze and O. Lutz. Max Grundig Clinic, Bühl; Universität Tübingen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: ³¹P MRS, free Mg²⁺, ATP
- 1859. A Quantitative Assessment of Liver Metabolites in Jaundice Using Three-Dimensional Phosphorus Chemical Shift Imaging.** K.L. Zakian, M. D'Angelica, C.M. Matei, Y. Fong and J.A. Koutcher. Memorial Sloan-Kettering Cancer Center, New York, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: jaundice, phosphorus, spectroscopy
- 1860. Reproducibility and Absolute Quantification of Human Liver Glycogen from ¹H Decoupled ¹³C Spectra Using Extract RF Coil Information, MRI and an External Reference at 1.5T.** J. Slotboom, C. Flück, R. Kreis, B. Jung, J.M. Nuoffer, P. Mullis and C. Boesch. University of Berne, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: liver, ¹³C-MRS, glycogen

1861. Clinical 19F-MRS and 19F-CSI of Haloperidol Decanoate after Intramuscular Injection. T. Obata, T. Suhara, H. Ikehira, T. Sassa, F. Girard, S. Tanada and Y. Sasaki. National Institute of Radiological Sciences, Chiba, Japan.

Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Quantitation: MRS
 Keywords: 19F-MRS, Haloperidol, CSI

1862. In vivo 19F MR Spectroscopic T1 Measurement of α -Fluoro- β -Alanine (FBAL) in Patients Using a Fast 2-Point Method. B.S.Y. Li, G.S. Payne and M.O. Leach. The Royal Marsden NHS Trust, Sutton, UK.

Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: 19F MRS, T1, 2-point

Chemical Shift Imaging

1863. Multi-Frequency Reconstruction from an Intensity-Weighted, Locally-Averaged Field Map. H. Sedarat, P. Irrazabal and D.G. Nishimura. Stanford University, Stanford, CA; Universidad Católica de Chile, Santiago, Chile.

Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: image reconstruction, off-resonance correction, multi-frequency reconstruction

1864. Simultaneous Breathhold Fat and Water Selective Imaging of the Abdomen by a new Type of Spectral-Spatial Selective Excitation. F. Schick, J. Forster, J. Machann, W. Kaiser, P. Huppert, M. Laniado and C.D. Claussen. University of Tübingen, Germany.

Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: spatial-spectral, chemical shift imaging, abdominal imaging

1865. Separation of Chemical Shift Images by Rotating the Readout Gradient. M.I. Altbach, T.P. Trouard, H.H. Barrett and A.F. Gmitro. University of Arizona, Tucson, AZ.

Methods: Data Processing: MRI
 Keywords: chemical shift, lipid, silicone

1866. Water-Fat Imaging with Three Orthogonal-Phase Acquisitions. L. An and Q.-S. Xiang. University of British Columbia, Vancouver, BC, Canada.

Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Sequences: combination MRI/MRS
Keywords: chemical shift imaging, water-fat, phase encoding

1867. Single-Scan Single-Point Dixon Method for Automatic Separation of Water and Fat Pixels at 0.35 Tesla. W. Zhang and A. Li. Toshiba America MRI, Inc., South San Francisco, CA.

Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Data Processing: MRI
Keywords: water, fat, Dixon

Spectroscopic Localization and Imaging

1868. Spatially Localized MRI and MRS by Using Actively-Shielded Brain-Only R2 Gradient Coil. C.H. Oh, Y.J. Yang, S.K. Kim, H.J. Choi, D.R. Lee, Y. Yi and C.B. Ahn. Korea University; Kwangwoon University; Medison Ltd., Seoul, Korea.

Type of Study: Methodological Development
Main Target of Study: Category not applicable
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Gradients
Keywords: spatial localization, high-order gradient, head-only coils

1869. Direct ³¹P MRI of High-Energy Phosphate Metabolites at 1.5 Tesla. P.A. Bottomley, R.F. Lee, C.D. Constantinides and R.G. Weiss. Johns Hopkins University, Baltimore, MD.

Type of Study: Methodological Development
Main Target of Study: Metabolism
Organ/Tissue: Heart
Pathology: Category not applicable
Methods: Non-proton MRI and ESR
Keywords: imaging, metabolism, human

1870. Human Brain ¹³C-MRS & I with High SNR & 3D Localized Pulse Sequences and Specially Developed Probe Systems. K. Okamoto, M. Umeda, Y. Ishihara, H. Watanabe, M. Oda, T. Kanamatsu and Y. Tsukada. Toshiba R&D Center, Kawasaki; Soka University, Hachioji, Japan.

Type of Study: Methodological Development
Main Target of Study: Metabolism
Organ/Tissue: Brain
Pathology: Category not applicable
Methods: Sequences: Spectroscopy
Keywords: ¹³C-MRS, HSQC, INEPT

- 1871. Multiple-Voxel Double-Quantum Lactate Edited Spectroscopy Using 2D Hadamard Encoding.** H. Lei and J. Peeling. University of Manitoba, Winnipeg, Manitoba, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: hadamard, editing, lactate
- 1872. Echo-Planar Spectroscopic T2 Imaging Using Multiple Echo-Trains.** S. Hirata, Y. Bito and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: MRSI, EPSI, T2
- 1873. Echo Planar Spectroscopic Imaging (EPSI) at 3 Tesla for Non-Invasive Temperature Measurements Using the Lanthanide Complex Pr-ME-DO3A.** R. Noeske, F. Seifert, M. Hentschel, R. Felix and H. Rinneberg. Fachbereich Medizinische Meßtechnik; Humboldt Universität, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: combination MRI/MRS
 Keywords: temperature mapping, hyperthermia, spectroscopic imaging
- 1874. High-speed Magnetic Resonance Spectroscopic Imaging Using Amplitude-Modulated Burst RF Pulses.** S. Hirata, Y. Bito, H. Ochi and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: combination MRI/MRS
 Keywords: BURST, MRSI, high-speed
- 1875. Spectroscopic Imaging Using Spiral Encoding by Shifted Triangular Gradients: Reconstruction Issues and *in vivo* Demonstration.** S.A. Röhl, W. Dreher, A. Metzler and D. Liebfritz. Universität Bremen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: combination MRI/MRS
 Keywords: fast SI, spiral EPS, reconstruction

- 1876. Artifacts in CSI-Measurements Caused by Magnetic Field Instabilities.** O. Schmidt, S. Widmaier, W.-I. Jung, J. Breuer, G.J. Dietze and O. Lutz. Universität Tübingen; Max Grundig Clinic, Bühl, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: CSI, artifact, drift
- 1877. Chemical Shift Error and Artifact Reduction in CSF Using Very Selective Saturation Pulses.** T. Schirmer, R.A. Jones, R.E. Hurd, N. Sailasuta, J. Tropp and P. Le Roux. Max-Planck-Institut für Psychiatrie, München, Germany; General Electric Medical Systems, Fremont, CA; General Electric Medical Systems, Buc, France.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: CSI, RF pulses, PRESS
- 1878. Quantification of Contamination in Three Dimensions in Single Volume *in vivo* 1H-MR Spectroscopy.** E. Johansson, I. Burtscher, S. Holtås and F. Ståhlberg. University Hospital, Lund, Sweden.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: MRS, localization, contamination
- 1879. B1-Insensitive Slice Selection and Enhanced Water Suppression for Short-TE Chemical Shift Imaging.** J. Shen and D.L. Rothman. Yale University School of Medicine, New Haven, CT.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: CSI, adiabatic pulse, short TE
- 1880. Fat Suppression with Single Quadrature Acquisition.** Q.-S. Xiang. University of British Columbia, Vancouver, BC, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: fat suppression, qualitative, image processing

- 1881. An 8th Order (2D-Hadamard/1D-CSI) Hybrid for 3D Multivoxel 1H MRS of Human Brain.** A. Kasi Viswanathan, G. Goelman and O. Gonen. Fox Chase Center; University of Pennsylvania, Philadelphia, PA.
- Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: proton, spectroscopy, 3D

MR Spectroscopy: Proton and Multinuclear Techniques

- 1882. A New Approach to Retaining Choline and Creatine Singlets with Simultaneous Double Quantum Filtering of Lactate.** J.M. Star-Lack, E. Adalsteinsson and D.M. Spielman. Stanford University, Stanford, CA.
- Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: double quantum, lactate, choline
- 1883. In vivo Lactate and β -Hydroxybutyrate Editing Using a Pure Phase Refocusing Pulse Train.** J. Shen, E.J. Novotny and D.L. Rothman. Yale University School of Medicine, New Haven, CT.
- Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Seizures
 Methods: Sequences: Spectroscopy
 Keywords: editing, ketogenic diet, RF pulse
- 1884. Localized 2D J-Resolved Spectroscopy Combined with a Multiple Quantum Filter.** A.H. Trabesinger, O.M. Weber, C.O. Duc, D. Meier and P. Boesiger. University and ETH, Zurich, Switzerland.
- Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: multiple quantum filter, 2D spectroscopy, MR spectroscopy
- 1885. Adiabatic Water Suppression.** R.A. de Graaf and K. Nicolay. Utrecht University, Utrecht, The Netherlands.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: adiabatic, water suppression, hyperbolic secant

- 1886. Dangerous Increase of Taurine in the Human Brain after Consumption of an "Energy Drink"?.** W. Roser, C.O. Duc, W. Steinbrich and E.W. Radue. University Hospital Kantospital, Basel; Paul Scherrer Institute, Villigen; University & Swiss Federal Institute of Technology, Zürich, Switzerland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: spectroscopy, brain, taurine
- 1887. *In vivo* 1H-Magnetic Resonance Spectroscopy of the Spinal Cord in Humans.** B. Gomez-Anson, D. MacManus, G.J.M. Parker, C. Davie, G. Barker, V.L. Stevenson, P.S. Tofts, I.F. Moseley, W.I. McDonald and D.H. Miller. Institute of Neurology; The National Hospital for Neurology and Neurosurgery, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Spine
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: MR-spectroscopy, spine, proton-spectroscopy
- 1888. Adiabatic Hartmann-Hahn Polarization Transfer for 13C NMR of Humans.** R. Gruetter. University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
- 1889. An *In vivo* 13C MRS Investigation into the Effects of Glucose and Sucrose Ingestion on Post-Exercise Glycogen Resynthesis.** R.D. Mann, A. Casey, K. Bingham, J. Fox, I.A. Macdonald, P.L. Greenhaff and P.G. Morris. University of Nottingham; University of Nottingham Medical School, UK.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: 13C MRS, glycogen, metabolism
- 1890. A Half-Volume Coil for Proton Decoupled 13C MRS of the Human Brain at 1.5 Tesla.** S. Blüml, G. Adriany, R. Gruetter and B.D. Ross. Huntington Medical Research Institutes, Pasadena; Schulte Research Institute, Santa Barbara, CA; University of Minnesota, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Inborn Error of Metabolism
 Methods: RF-Coils
 Keywords: decoupled 13C, canavans, myoinositol

- 1891. Time-Share Modulation Method Applied to ^{19}F [- ^1H] Decoupling on a 1.5T Whole Body MR System.** B.S.Y. Li, G.S. Payne, D.J. Collins and M.O. Leach. The Royal Marsden NHS Trust, Sutton, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: Spectroscopy
 Keywords: ^{19}F MRS, decoupling, time-share
- 1892. Development of Novel ^{19}F NMR pH Indicators: Synthesis and Evaluation of a Series of Fluorinated Vitamin B6 Analogs.** S. Hunjan, S. He, R.P. Mason, V.D. Mehta, V. Arora, R. Katipally, P.V. Kulkarni and P.P. Antich. UT Southwestern Medical Center, Dallas, TX.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: pH, heart, vitamin B6
- 1893. Combined CW and Pulsed Detection allows Quantitation of Magnetization Transfer observed for (Phospho-) Creatine by *in vivo* ^1H Spectroscopy.** S.A. Röhl, W. Dreher and D. Leibfritz. Universität Bremen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Contrast Mechanisms
 Keywords: spectroscopy, magnetization transfer, creatine
- 1894. Measurement of Free $[\text{Mg}^{2+}]$ with ^{31}P MRS: Some Theoretical and Practical Problems.** P.J. Mulquiney and P.W. Kuchel. University of Sydney, Australia.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: ^{31}P MRS, magnesium, ATP
- 1895. Detection of Carboplatin *in vivo* by Means of ^{195}Pt NMR.** M. Becker, R.E. Port, H.-J. Zabel, W.J. Zeller and P. Bachert. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: platinum NMR, carboplatin, kinetics

- 1896. Measurement of ^{17}O Using a Surface Coil: STEAM Decoupling.** S. Charagundla, E.A. Noyszewski, R. Dandora, U. Duvvuri, A.H. Stolpen, J.S. Leigh and R. Reddy. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Spectroscopy
 Keywords: stroke, decoupling, STEAM
- 1897. Propagation of Error Analysis for Predicting and Optimizing ^{17}O Detection Sensitivity.** A.H. Stolpen, S.R. Charagundla, J.S. Leigh and R. Reddy. University of Pennsylvania Health System, Philadelphia, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: ^{17}O , error analysis, NMR
- 1898. Correction of Laser-Polarized ^{129}Xe Magnetic Resonance Spectroscopy Data Sets for Flip Angle Dependent Attenuation and T1 Relaxation: An Indirect Approach.** J. Knight-Scott, A.L. Stith and J.P. Mugler III. University of Virginia, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: xenon, hyperpolarized, spectroscopy
- 1899. Analysis of Short TE ^1H Spectra Using Spectral Simulation and Wavelet Baseline Characterization.** B.J. Soher, K. Young, V. Govindaraju and A.A. Maudsley. DVA Medical Center, San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: proton, analysis, wavelets
- 1900. Correction of *in vivo* Spectra for Individual CSF Content in the Human Brain.** T. Schirmer, B. Lipinski and D.P. Auer. Max-Planck-Institut für Psychiatrie, München, Germany.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: PRESS, quantification, brain

- 1901. Fitting with Prior Knowledge: Improvements in Quantitation of *In vivo* 1H MRS of Brain Metabolites.** N. Delcroix, F. Kauffman, J.C. Constans, B. Mazoyer and B. Victori. University of Caen, France.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: quantification, brain, metabolite
- 1902. Observation and Investigation of Polarisation-Induced Multiple Spin Echoes *in vivo*.** A. Bifone, G.S. Payne and M.O. Leach. Institute of Cancer Research and Royal Marsden N.H.S. Trust, Sutton, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Basic NMR
 Keywords: multiple spin echoes, diffusion, *in vivo*
- 1903. Effect of Oscillatory Eddy Currents on MR Spectroscopy.** L.N. Ryner, P. Stroman, T. Wessel, D.I. Hoult and J.K. Saunders. National Research Council Canada, Winnipeg, Manitoba, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRS
 Keywords: spectroscopy, eddy currents, B0-compensation

Hyperpolarized Gases, Other Nuclei and ESR/EPR

- 1904. Optimization of Gradient-Echo Sequences for Hyperpolarized Noble Gas MRI.** J.P. Mugler III. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized gas, rapid imaging, optimization
- 1905. Functional MRI of Obstructive Pulmonary Disease Using a Pig Model.** Q. Chen, D. Levin, D. Kim, V. Chen, W. Li, P. Jakob and R. Edelman. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Sequences: Imaging

- 1906. Regional Measurement of the ^3He Diffusion Coefficient in the Human Lung.** J.P. Mugler III, J.R. Brookeman, J. Knight-Scott, T. Maier, E.E. de Lange and P.L. Bogorad. University of Virginia Health Sciences Center, Charlottesville, VA; Magnetic Imaging Technologies, Inc., Durham, NC.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized gas, lung, diffusion
- 1907. Detection of Dissolved Hyperpolarized ^{129}Xe in the Human Brain.** T. Maier, B. Driehuys, D.P. Hinton, J. Knight-Scott, J.P. Mugler III and J.R. Brookeman. University of Virginia Health Sciences Center, Charlottesville, VA; Magnetic Imaging Technologies, Inc., Durham, NC.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: brain, spectra, hyperpolarized
- 1908. Vascular Infusion of Hyperpolarized ^{129}Xe for MRI.** L. Zhao, A. Venkatesh, D. Balamore, F.A. Jolesz and M.S. Albert. Brigham and Women's Hospital and Harvard Medical School; Boston University, Boston, MA; Nassau Community College, Garden City, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized gas, perfluorocarbon, xenon
- 1909. Real-Time MR Imaging of Pulmonary Gas-Flow Dynamics with Hyperpolarized ^3He .** K. Ruppert, J.R. Brookeman and J.P. Mugler III. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized GA, lung, gas dynamics
- 1910. Vascular ^{129}Xe MR Imaging in Live Rats.** H.E. Möller, M.S. Chawla, X.J. Chen, B. Driehuys, K.C. Hasson, L.W. Hedlund, C.T. Wheeler and G.A. Johnson. Duke University; Magnetic Imaging Technologies Inc., Durham, NC.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Body Vascular
 Pathology: Healthy Tissue
 Methods: Non-proton MRI and ESR
 Keywords: HP xenon, vascular MRI, contrast mechanism

- 1911. Production and Delivery of Polarized ^{129}Xe for *in vivo* MRS/MRI.** M.A. Rosen, T.E. Chupp, K.P. Coulter, S.D. Swanson and R.C. Welsh. The University of Michigan, Ann Arbor, MI.
 Type of Study: Basic Research on MR
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
- 1912. EPI Imaging of Lung Function Using Hyperpolarized Gas.** B. Saam, D.A. Yablonskiy, M.S. Conradi and D.S. Gierada. Washington University, St. Louis, MO.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Degeneration
 Methods: Non-proton MRI and ESR
 Keywords: hyperpolarized, helium, EPI
- 1913. Restricted Diffusion of Hyperpolarized ^3He in the Human Lung.** T. Maier, J. Knight-Scott, V.M. Mai, J.P. Mugler III and J.R. Brookeman. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: diffusion, hyperpolarized, ^3He
- 1914. Monitoring pO_2 in Bone Marrow Using Perfluorocarbon ^{19}F NMR.** S.R. Thomas, R.G. Pratt, A.J. McGoron, R.C. Samaratunga and R.W. Millard. University of Cincinnati Medical Center, Cincinnati, OH.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: perfluorocarbon, fluorine, pO_2
- 1915. Localization of Perfluorocarbon-Loaded Alginate-Capsules and Determination of Their Partial Oxygen Pressure *in vivo* by ^{19}F -MRI.** U. Nöth, P. Gröhn, G. Klöck, U. Zimmerman, A. Haase and J. Lutz. University of Würzburg, Germany.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: ^{19}F -MRI, oxygen, alginate
- 1916. NMR Studies of Relaxation Times for Spin $3/2$ Nuclide Ions in Liver of Carbon Tetrachloride-Intoxicated Rats.** M. Brauer and C. Barr. University of Guelph, Ontario, Canada.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Inflammation
 Methods: Non-proton MRI and ESR
 Keywords: quadrupolar, relaxation, liver

- 1917. Two-Dimensional 220 MHz Fourier Transform EPR Imaging.** G. Placidi, J.A. Brivati, M. Alecci, L. Testa and A. Sotgiu. Università dell' Aquila, L'Aquila, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: EPR, imaging, free radicals
- 1918. Direct *In vivo* Detection and Imaging of Nitric Oxide Generation Following Cardiac Arrest.** P. Kuppusamy, R.A. Shankar and J.L. Zweier. Johns Hopkins University School of Medicine, Baltimore, MD.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: NO, EPR, imaging
- 1919. *In vivo* Electron Paramagnetic Resonance Imaging of Tumor Heterogeneity and Oxygenation.** P. Kuppusamy, M. Afeworki, R.A. Shankar, D. Coffin, M.C. Krishna, S.M. Hahn, J.B. Mitchell and J.L. Zweier. Johns Hopkins University, Baltimore, MD; National Institutes of Health, Bethesda, MD; The Hospital of the University of Pennsylvania, Philadelphia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Non-proton MRI and ESR
 Keywords: tumor, oximetry, nitroxide
- 1920. Low Field (10 mT) Pulsed Dynamic Nuclear Polarisation.** M. Alecci and D.J. Lurie. University of Aberdeen, Foresterhill, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: DNP, Pulsed, EPR
- 1921. Nitric Oxide Spin Traps for Dynamic Nuclear Polarization.** T. Guiberteau, L. Marx, A. Rassat and D. Grucker. Institut de Physique Biologique, Strasbourg; Ecole Normale Supérieure de Chimie, Paris France.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Cells/Body Fluids
 Pathology: Inflammation
 Methods: Non-proton MRI and ESR
 Keywords: DNP, nitric oxide, spin trap

1922. Direct Imaging of Phosphocreatine in the Human Myocardium Using a RARE Sequence at 4.0T. R.L. Greenman, L. Axel and R.E. Lenkinski. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Metabolism
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Non-proton MRI and ESR

1923. Sodium Imaging of the Breast at 4.0T. L. Bolinger, G. Mizsei, K. Cecil and S. Englander. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Non-proton MRI and ESR
 Keywords: breast, sodium, 4T

MR Microscopy & High Resolution Imaging

1924. A Novel Approach to the MR Microscope: MR Microscope with an Independent Console System (MRMICS) Using a Clinical Whole Body Magnet. K. Kose, T. Haishi, N. Adachi and I. Anno. University of Tsukuba, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: MR microscope, portable, MRM

1925. A Microscope Slide Probe for Histologically-Prepared Samples. P.L. Gor'kov, A.B. Harris, H.D. Morris and P.C. Lauterbur. University of Illinois at Urbana-Champaign, IL.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: histology, microscopy, hardware

1926. Imaging Birds... in a bird cage: *In-vivo* MRI Microscopy of the Canary Brain at 7T. J. Van Audekerke, M. Verhoye, J. Sijbers, T.J. DeVoogd, T. Smulders, S.W. Newman, J. Balthazart and A. Van der Linden. RUCA, Antwerp, Belgium; Cornell University, Ithaca, NY; University Liège, Belgium.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: FSE, bird, brain

- 1927. Fast MR Microscopic Imaging Technique Using Burst RF Pulses.** Y. Taniguchi, H. Ochi and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: microscopy, BURST, simulation
- 1928. Fast NMR Flow Measurements of Xylem and Phloem Flow in "Adult" Plants Using FLASH Imaging.** M. Rokitta, A. Peuke, U. Zimmermann and A. Haase. Universität Würzburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRS
 Keywords: plants, flow, NMR microscopy
- 1929. NMR Study of Biodegradable Composites for Bone Tissue Engineering.** L. Kuhn-Spearing, M. Roach, M.J. Glimcher, J.L. Ackerman and L. Garrido. Massachusetts General Hospital and Harvard Medical School, Charlestown; Children's Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: scaffolds, bone, imaging
- 1930. Characterization of Changes in Renal Morphology in Murine Models of Polycystic Kidney Disease by MR Microscopy.** R.D. Kapadia, J.M. Levin, C.L. Clarke, S.M. Ali, L. Davis, R.W. Coatney, M.W. Landi and D.P. Brooks. SmithKline Beecham Pharmaceuticals, King of Prussia, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Renal
 Pathology: Malformation
 Methods: Microscopy
 Keywords: kidney, genetic, microscopy
- 1931. Quantitative Assessment of Injury in the Spinal Cord of a Rat Using MR Microscopy of Water Diffusion Tensor.** A. Krzyzak, A. Jasinski, W. Weglarz, D. Adamek, M. Baj, J. Kusmiderski and P. Sagnowski. Jagiellonian University, Kraków, Poland.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: microscopy, diffusion, tensor

- 1932. The Characterization of the Different Water Compartments in Optic Nerve by ^2H and ^1H Double Quantum Filtered NMR.** H. Shinar, L. Tsoref and G. Navon. Tel Aviv University, Tel Aviv, Israel.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: double quantum, nerve, anisotropy
- 1933. Biexponential Relaxation of ^{23}Na on Cell Culture Polystyrene Beads with Surface Treatment.** K.J. Jung, S. Das, P.J. Cannon and J. Katz. Columbia University, New York, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Non-proton MRI and ESR
 Keywords: cell, bead, MQF
- 1934. MRI Detection of Single T-cells Labeled with SPIO Particles.** S.J. Dodd, M. Williams, D.S. Williams, A.P. Koretsky and C. Ho. Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Cells/Body Fluids
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: microscopy, T-cell, SPIO particles
- 1935. MR Microscopy Study on Thin Skin Layers.** D.H. Lee, J.I. Kim and H.K. Lee. Pai Chai University, Taejeon; Pacific Corporation, Kyonggi-do, South Korea.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Inflammation
 Methods: Quantitation: MRI
 Keywords: skin pathology, NMR microscopy, relaxation
- 1936. The Impact of Proteoglycan Degradation on the Residual Quadrupolar Interaction in Articular Cartilage.** U. Duvvuri, A. Borthakur, R. Dandora, G. Dodge, J.S. Leigh and R. Reddy. University of Pennsylvania; Thomas Jefferson University, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Non-proton MRI and ESR
 Keywords: sodium, multiple quantum, cartilage

- 1937. 3D Experimental Validation of the Surface Charge Method for Computing the Susceptibility-Induced Field in Trabecular Bone.** S.N. Hwang and F.W. Wehrli. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: trabecular bone, susceptibility, field computation
- 1938. Influence of Trabecular Structure on MR Phase Imaging in the Study of Osteoporosis.** S. Allein, R. Luypaert, E. Mihalopoulou and H. Eisendrath. Free University, Brussels, Belgium; University of Patras, Greece.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Quantitation: MRI
 Keywords: osteoporosis, phase, model
- 1939. Quantitative Evaluation of the Apparent Thickening of Trabecular Bone in High-Resolution Gradient-Echo MR Images.** H.-W. Chung and F.W. Wehrli. National Taiwan University, Taipei, Taiwan, R.O.C.; University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: trabecular bone, apparent thickening, susceptibility
- 1940. Accounting for Partial Volume Effects in Trabecular Structure Assessment Using High Resolution Magnetic Resonance Imaging: Comparison with Optical Imaging.** M Kothari, D. Newitt and S. Majumdar. University of California, San Francisco, CA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: bone, architecture, imaging
- 1941. Three-Dimensional GESFIDE for Measuring R2 and R2.** J.A. Hopkins, F.W. Wehrli and H.K. Song. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: cancellous bone, osteoporosis, relaxation rates

- 1942. Continuous Scanning Using Single Shot Fast Spin Echo on a Short Bore Neonatal Scanner.** A.H. Herlihy, M.C. Steckner, G.A. Coutts, A.G. Collins and J.V. Hajnal. Hammersmith Hospital, London, UK; Picker International, Cleveland, OH.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: continuous scan, FSE, neonatal
- 1943. Fast Spiral Imaging with Trapezoidal Gradients.** J.H. Duyn and Y. Yang. National Institutes of Health, Bethesda, MD.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: spiral MRI, rapid imaging
- 1944. Single-Shot RARE Spiral Imaging.** W. Block, J. Pauly and D. Nishimura. Stanford University, Stanford, CA.
- Type of Study: Methodological Development
 Main Target of Study: Morphology
 Methods: Sequences: Imaging
 Keywords: T2, RARE, spiral
- 1945. Partial k-Space Acquisition for Real-Time MR Imaging.** A.B. Kerr, J.M. Pauly and D.G. Nishimura. Stanford University, Stanford, CA.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: spiral, real-time, partial
- 1946. WITHDRAWN.**
- 1947. Cardiac Fluoroscopy Using Projection Reconstruction MRI.** V. Rasche, P. Boernert, D. Holz and R. Proksa. Philips Research, Hamburg, Germany.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR fluoroscopy, cardiac, projection reconstruction

- 1948. Volume Fluoroscopy: Trajectory Design and Feasibility Studies.** F.E. Boada, D.C. Noll and A.L. Vazquez. University of Pittsburgh Medical Center, Pittsburgh, PA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fast imaging, k-space, volume MRI
- 1949. Analysis of J Coupling-Induced Fat Suppression in the DIET Sequence.** L.A. Stables, R.P. Kennan, R.T. Constable and J.C. Gore. Yale University School of Medicine, New Haven, CT.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: DIET, fat suppression, numerical simulations
- 1950. Half Acquisition Single Shot GRASE Imaging.** A. Ishikawa. Shimadzu Corporation; Kyoto, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: GRASE, Single Shot, Half
- 1951. Measurement of a Human Brain Function by Using Dual-Frequency Amplitude-Modulated BURST Imaging.** H. Ochi, Y. Taniguchi, H. Itagaki and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: ultra-fast, brain-function, BURST
- 1952. Three-Dimensional Skip-Echo Echo Planar Imaging.** V. Seshan and G.C. McKinnon. GE Yokogawa Medical Systems, Tokyo, Japan; GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: EPI, fMRI, skip-echo

- 1953. Real-Time Imaging and 3 Point Planscan — A Methodological Approach to Improve on Navigator Based Slice Tracking Techniques.** M. Stuber, P.G. Danias, J. deBecker, R.M. Botnar, K.V. Kissinger and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: ultrafast imaging, coronary arteries, navigatorss
- 1954. Multi-slice Single-shot Line Scan Imaging Using Stimulated Echoes.** J. Finsterbusch and J. Frahm. Biomedizinische NMR Forschungs GmbH, Göttingen, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: line scan, single-shot, multi-slice
- 1955. An Improved Analytical Design for Archimedian Spirals in 2D K-Space.** M. Amann, M. Bock and L.R. Schad. German Cancer Research Center, Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: spirals, gradient, design
- 1956. n-Rosette Trajectory: A New Scheme for Fast MRI.** N.E. Myridis and C. Chamzas. Democritus University of Thrace, Greece.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: rosette, trajectories, readout
- 1957. Signal-to-Noise Ratio and Signal-to-Noise Efficiency in SMASH Imaging.** D.K. Sodickson, M.A. Griswold, P.M. Jakob, R.R. Edelman and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: SMASH, SNR, arrays

- 1958. Interactive Cardiac Scan Planning on a Standard Clinical MR Scanner.** C.H. Lorenz, S.E. Fischer, G. Mens, L.O. Johansson and J.J. van Vaals. Washington University Medical Center, St. Louis, MO; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: interactive, cardiac, software
- 1959. T1-Weighted and T2-Weighted 3D Spin-Echo-Based Imaging of the Whole Brain: 1mm³ Resolution in under 10 Minutes.** J.P. Mugler III, J.R. Brookeman, R.V. Mulkern, C.R.G. Guttman and F.A. Jolesz. University of Virginia Health Sciences Center, Charlottesville, VA; Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: rapid imaging, 3D imaging, brain
- 1960. Spiral MRI Scan-Time Reduction through Omission of Interleaves and Bayesian Image Reconstruction.** F.T.A.W. Wajer, R. de Beer, M. Fuderer, A.F. Mehlkopf and D. van Ormondt. Delft University of Technology, Delft; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: spiral, scan-time reduction, bayesian reconstruction
- 1961. Visualization of Swallowing Using Projection Reconstruction MR Fluoroscopy.** V. Rasche, D. Holz and R. Proksa. Philips Research, Hamburg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MR fluoroscopy, swallowing, projection reconstruction
- 1962. Real Time Adaptive MRI.** L. Zhao, P. Saiviroonporn, S.-S. Yoo, G.P. Zientara, F.A. Jolesz and L.P. Panych. Boston University, Boston, MA; Siriraj Hospital, Bangkok, Thailand; Massachusetts Institute of Technology, Cambridge, MA; Brigham and Women's Hospital and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: adaptive, non-Fourier, real-time

- 1963. Reduction of Random in Plane Intrascan Rotation Artifacts.** M. Bourgeois, F.T.A.W. Wajer, G. Stijnman, Y. Crémillieux, A. Briguët, D. van Ormondt and D. Graveron-Demilly. Université Lyon I, Villeurbanne, France; Delft University of Technology, Delft, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: motion artefacts, reconstruction, rotation
- 1964. Echo-Planar Imaging at Ultra High Field (9.4 T).** S.-G. Kim, N.V. Tsekos, S.-P. Lee, A.C. Silva and H. Merkle. University of Minnesota Medical School, Minneapolis, MN.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Methods: Sequences: Imaging
 Keywords: EPI, high field, 9.4 T
- 1965. Radial Echo-Planar Imaging (rEPI).** A.C. Silva, E.L. Barbier, G. Metzger, S. Sarkar, I.J. Lowe, X. Hu and A.P. Koretsky. University of Minnesota Medical School, Minneapolis, MN; Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: ultra-fast MRI, radial
- 1966. A Real-Time Image Reconstruction System for Echo-Planar MRI.** P. Morgan, R. Iannuzzelli, F. Epstein and R. Balaban. Johns Hopkins Applied Laboratory, Laurel, MD; GE Medical Systems, Waukesha, WI; National Institutes of Health, Bethesda, MD.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: real-time MRI, cardiac MRI, echo-planar imaging
- 1967. Odd-Number Hybrid EPI.** M.H. Buonocore and D.C. Zhu. UC Davis Medical Center, Sacramento, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: echo planar, interleaved, ghost correction

- 1968. Real-Time Spiral MRI Using Nearest Neighbor Gridding.** A.F. Gmitro and G.H. Glover. University of Arizona, Tucson, AZ; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: real-time, spiral, reconstruction
- 1969. Real-Time Interactive MRI with Color Flow Mapping.** K.S. Nayak, A.B. Kerr, B.S. Hu, J.M. Pauly and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: real-time, cardiac, flow
- 1970. Spherical 3D EPI and EVI Pulse Sequences.** O. Heid. University of Bern, Switzerland.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: EPI, EVI, k-space
- 1971. Sensitivity to Direction of Flow on BURST Imaging with Phase Optimization and Half-Fourier Interpolation.** M. Motooka, T. Matsuda, H. Inoue, K. Hayashi, S. Muramoto, T. Takahashi and S. Sasayama. Kyoto University; Rakuwakai Otowa Hospital, Kyoto, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Flow
 Keywords: BURST, flow, CSF
- 1972. Development of an Image Reconstruction Method for AM BURST by Using a Computer Simulation.** Y. Taniguchi, H. Ochi and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: AM BURST, reconstruction, simulation
- 1973. Improved Temporal Resolution in FOV-Limited Dynamic Spiral Imaging.** H. Sedarat, A.B. Kerr, J.M. Pauly and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: dynamic imaging, FOV-limited reconstruction, temporal resolution

- 1974. T2-Weighted 3D-GRASE Imaging of the Whole Head.** J.P. Mugler III. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: 3D imaging, rapid imaging, brain
- 1975. AUTO-SMASH, A Self-Calibrating Technique for SMASH Imaging.** P.M. Jakob, M.A. Griswold, R.R. Edelman and D.K. Sodickson. Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: partial parallel imaging, RF coils, SMASH

Interventional MRI

- 1976. Magnetic Resonance Guided Breast Surgery.** N. Vaughan, S. Gould, G. Lamb, A. Ojo, D. Lomax, W. Gedroyc and A. Darzi. Imperial College School of Medicine at St. Mary's, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: MR, surgery, breast
- 1977. MR Monitored Neurosurgical Procedures at 1.5 Tesla.** H. Liu, A.J. Martin, W.A. Hall, C.H. Pozza, J.J. van Vaals and C.L. Truwit. University of Minnesota, Minneapolis, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: MR, guided, intervention
- 1978. MR-Guided Biopsy and Aspiration with a Modified Clinical C-Arm System in the Head and Neck.** E.M. Merkle, M. Strauss, D.W. Stepnick, A.L. Wise, J.L. Duerk, C.F. Lanzieri and J.S. Lewin. University Hospitals/Case Western Reserve University, Cleveland, OH.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Head and Neck
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: tumor, biopsy, intervention

- 1979. Interactive MR Fluoroscopy on a Clinical Scanner.** V. Rasche, R. Proksa, D. Holz, G. Mens, V. Hartog, W. Mosterman, J.J. v. Vaals, A. Buecker, A. Glowinski, J.M. Neuenburg, G. Adam and R. Guenther. Philips Research, Hamburg, Germany; Philips Medical Systems, Best, The Netherlands; University of Technology, Aachen, Germany.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Category not applicable
Keywords: MR fluoroscopy, interactive MRI, projection reconstruction
- 1980. Optimization of Fluoroscopic MR Sequences for MR-Guided Procedures on a Clinical 1.5T Closed Magnet System.** H. Mamata, T. Komiya, I. Muro, Y. Mamata and S. Matsuyama. Tokai University School of Medicine, Kanagawa, Japan.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Sequences: Imaging
Keywords: flouroscopy, closed magnet, MRI guided
- 1981. Optimization of Chemical Shift Selective Suppression of Fat.** K. Kuroda, K. Oshio, R.V. Mulkern and F.A. Jolesz. Brigham and Women's Hospital, Harvard Medical School, Boston, MA; Osaka City University, Osaka; Keio University, Tokyo, Japan.
- Type of Study: Methodological Development
Main Target of Study: Interventions
Organ/Tissue: Breast
Pathology: Tumors
Methods: Sequences: combination MRI/MRS
Keywords: fat suppression, optimization, chemical shift selective
- 1982. Interactive MR-Guided Inverse Frameless Stereotaxy for Interventional MR.** J.J. van Vaals, A.J. Martin, A. Glowinski, F.J. Katterbach and A. Buecker. Philips Medical Systems, Best, The Netherlands; University of Minnesota, Minneapolis, MN; RWTH Aachen, Germany.
- Type of Study: Clinical Applications of MR
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Tumors
Methods: Category not applicable
Keywords: interventional, biopsy, rapid
- 1983. Active MR Tracking System at 0.2 T MR Imager.** S. Aoki, A. Nanbu, T. Araki, H. Kumagai, N. Shimazu, H. Nakajima, T. Ichikawa, T. Araki, X. Ma, T. Tsukamoto, H. Moriya, C.L. Dumoulin and R.D. Darrow. Yamanashi Medical University, Yamanashi; GE-Yokogawa Medical Systems, Toykyo, Japan; GE Corporate Research and Development Center, Schenectady, NY.
- Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Data Processing: MRI
Keywords: tracking, intervention, low tesla

- 1984. Calibration Error Analysis for a Frameless Stereotactic System for Interventional MRI.** E.Y. Yen, J. Lim, M.L. Williams, M. Wendt, J.L. Duerk and J.S. Lewin. Case Western Reserve University and University Hospitals of Cleveland, OH; Radionics, Inc., Burlington, MA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: IMRI, localization, MR guidance
- 1985. Rotated Stripes Keyhole Imaging for Accurate Localization of the Needle Tip in Interventional MRI.** J. Lim, J.L. Duerk, M. Wendt and J.S. Lewin. Case Western Reserve University and University Hospitals, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: keyhole, reconstruction, interventional MRI
- 1986. Management of Biopsy Needle Artifacts.** K. Butts, J. Pauly, B. Daniel, A. Norbash and S. Kee. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: needle, artifact, interventional
- 1987. Creation of A Rabbit Model with Aortic Stenosis for *In vivo* Studies of Intravascular MR-Guided Interventions.** X. Yang, D.L. Kraitchman, B.D. Bolster, Jr. and E. Atalar. Johns Hopkins University School of Medicine, Baltimore, MD; Kuopio University Hospital, Kuopio, Finland.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: animal model, interventional MRI, intravascular MRI
- 1988. Real-Time 3D-Localization, Display and Tracking of Invasive Instruments Equipped with Multiple Miniature MR-Receive Coils.** K.-M. Lüdeke, V. Rasche, J. Köhler and M. Kuhn. Philips Research, Hamburg, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: device tracking, micro-coils, real-time

- 1989. The Role of MR in the Percutaneous Ablation of Liver Metastases Using a Combination of Ethanol and Interstitial Laser Therapy at 0.2T.** A.R. Gillams, P. Ripley, M. Paley and W.R. Lees. University College London and The Middlesex Hospital, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Category not applicable
 Keywords: MR intervention, liver, metastases
- 1990. Temperature Mapping Using Water Proton Thermal Shift: Self-Referenced Method with EPSI.** K. Kuroda, K. Oshio, L.P. Panych, R.V. Mulkern, T. Nakai, T. Moriya, K. Hynynen and F.A. Jolesz. Osaka City University, Osaka, Japan; Keio University, Tokyo, Japan; Harvard Medical School, Boston, MA; Electrotec Laboratories, Tsukuba, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Quantitation: MRS
 Keywords: temperature, chemical shift, EPSI
- 1991. A Phantom to Simulate Perfusion Effects in MR Thermometry.** F. Bertsch, R. Löffler, R. Issels and M. Reiser. Ludwig Maximilians Universität, Munich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: thermometry, perfusion, chemical shift
- 1992. 3D MR Monitoring of Small Temperature Changes in Pelvis.** W. Włodarczyk, R. Boroschewski, M. Hentschel, P. Wust, G. Mönich and R. Felix. Humboldt Universität; Technische Universität, Berlin, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Interventions
 Organ/Tissue: Gynecology/Obstetrics
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: intervention, image processing, MR thermography
- 1993. The Influence of Motion at the Accuracy of Phase Temperature Mapping for Monitoring Interstitial Laser Coagulation. An *In Vitro*, *Ex Vivo* and *In vivo* Approach.** N.A.A. Matheijssen, J. Heisterkamp, J. Stoker, R. van Hillegersberg, J.S. Laméris, J. van Vaals and J.N.M. Ijzermans. University Hospital, Rotterdam; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: temperature, mapping

- 1994. Evaluation of MR-Thermometry during Laser Induced Thermotherapy (LITT) of Liver Metastases by Intralesional Fluoroptical Temperature Measurements.** T.J. Vogl, N. Weinhold, P. Müller, W.R. Scholz, M.G. Mack, R. Straub, A. Roggan and R. Felix. Humboldt-University, Berlin; Laser Medical Center, Germany.
Main Target of Study: Interventions
Organ/Tissue: Gastrointestinal/Hepatobiliary
Pathology: Tumors
Keywords: laser, MRI, interventional
- 1995. Local Registration Compared with Other Methods for Tracking Regions of Interest in Temperature Measurement by MRI.** N. Saeed, J.V. Hajnal and I.R. Young. Hammersmith Hospital, London, UK.
Type of Study: Methodological Development
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Category not applicable
Methods: Motion and Artifacts
Keywords: temperature, motion, registration
- 1996. Temperature Imaging in a 0.2T Open Magnet Using Echo-Shifted Turbo-Flash.** Y.C. Chung, J.L. Duerk, A. Shankaranarayanan, M. Hampke, E.M. Merkle, M.E. Clouse and J.S. Lewin. Case Western Reserve University/University Hospitals, Cleveland, OH; Beth Israel Deaconess Medical Center, Boston, MA.
Type of Study: Methodological Development
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Tumors
Methods: Sequences: Imaging
Keywords: temperature imaging, interventional MRI, fast imaging
- 1997. The Use of MRI *In vivo* to Monitor Thermal Build-up During Focused Ultrasound Surgery.** N. McDannold, F.A. Jolesz and K. Hynynen. Tufts University, Medford, MA; Brigham and Women's Hospital, Boston, MA.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Interventions
Organ/Tissue: Category not applicable
Pathology: Tumors
Methods: Quantitation: MRI
Keywords: MRI thermometry, ultrasound, hyperthermia
- 1998. MRI Compatible Ultrasound Array for Induction of Hyperthermia in Prostate.** N.B. Smith, M.T. Buchanan and K. Hynynen. Harvard Medical School/Brigham and Women's Hospital, Boston, MA.
Type of Study: Biomedical Applications of MR
Main Target of Study: Interventions
Organ/Tissue: Male GU
Pathology: Category not applicable
Methods: Category not applicable
Keywords: MRI thermometry, ultrasound, hyperthermia

- 1999. Heat-Source Orientation and Geometry Dependence in Proton-Resonance Frequency Shift MR Thermometry.** R.D. Peters and R.M. Henkelman. University of Toronto; Sunnybrook Health Science Centre, Toronto, ON, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: thermometry, susceptibility, errors
- 2000. A Temperature Model to Study Temperature Errors in Proton Chemical Shift Temperature Imaging.** Y.C. Chung, J.L. Duerk and J.S. Lewin. Case Western Reserve University/ University Hospitals, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: fast imaging, interventional RI, temperature imaging
- 2001. Quantitative MR Temperature Monitoring during Laser-Induced Interstitial Thermotherapy (LITT).** C. Bohris, M. Klingenberg, W.G. Schreiber, M.H. Niemz, I. Simiantonakis, D. Wallwiener, R. Bader and G. Brix. German Cancer Research Center; University of Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: temperature, LITT
- 2002. Quantifying Tissue Damage due to Focussed Ultrasound Heating Observed by MRI.** S.J. Graham, L. Chen, R.D. Peters, M. Leitch, R.M. Henkelman and D.B. Plewes. University of Toronto; Sunnybrook Health Science Centre, Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: interventional MR, MR thermometry, focussed ultrasound
- 2003. Errors in Temperature Estimation Using MRI during Rapid Heating: A Simulation Study.** M.M. Lam and A.G. Webb. University of Illinois at Urbana-Champaign; Beckmkan Institute, Urbana, IL.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: temperature, simulation, artifact

- 2004. Real Time Imaging of Radiofrequency Heat Lesions in Ex-Vivo Liver Tissue.** T. Oshiro, S. Sinha, U. Sinha, D. Lu and R. Lufkin. University of California, Los Angeles, CA.
- Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Category not applicable
 Keywords: radiofrequency, temperature, interventional

Gradients and Systems Hardware

- 2005. Compact Magnet Designs for Magnetic Resonance Microscopy.** S. Crozier and D.M. Doddrell. Queensland University, Brisbane, Australia.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: compact, magnet, microscopy
- 2006. Minimum Power Homogeneous Magnet Design for Prepolarized MRI.** H. Xu, S.M. Conolly, G. Scott and A. Macovski. Stanford University, Stanford, CA.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Administration/Economics
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: PMRI, LP, optimization
- 2007. Thrust-Balanced Biplanar Gradient Set for Interventional MRI Applications.** L.S. Petropoulos and M.A. Morich. Picker International Inc., Highland Heights, OH.
- Type of Study: Methodological Development
 Main Target of Study: Patient Handling/Safety
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: thrust, biplanar, gradients
- 2008. A Gradient System for Projection MRI.** A. Jamea, R. Chettleburgh, N. Chhina, D. Jones, E. Liney, M. Prior and P. Morris. University of Nottingham, UK.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: projection, gradient, open systems

- 2009. A Local Gradient Feedback System for Use in MR Elastography.** P.J. Rossman, G.H. Rose, S.J. Riederer and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: gradient, MRE, strain wave
- 2010. Gradient Characteristics for Ultrasonic Field Measurement by MRI.** D.B. Plewes, S. Silver and C.L. Walker. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: ultrasound, gradients, motion
- 2011. An Approach to Characterizing Gradient Transition in the Presence of Induced B_0 Shifts.** W. Zhang and D.M. Kramer. Toshiba America MRI, Inc., South San Francisco, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: gradients, switching, transition
- 2012. Eddy Current Characterization Using Response Surface Methodology.** A. Ganin and K. King. GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: hardware, gradients, Eddy Currents
- 2013. Accurate Characterization of Eddy Current for MRI System.** J. Chen, J.M. Jin and L.L. Latour. University of Illinois, Urbana, IL; Medical Advances, Inc., Milwaukee, WI.
 Methods: Gradients
 Keywords: eddy currents, numerical, coupling
- 2014. Magnetic Fields Mapping with the Phase Reference Method.** D. Tomasi and H. Panepucci. Universidade de São Paulo, São Carlos, Brazil.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: Mapping, Gradients, Currents

- 2015. Novel Approaches for Analysis of k-space Trajectories Using a High Field MR System.** M. Pedersen, S. Ringgaard and H. Stødkilde-Jørgensen. Aarhus University Hospital; Aarhus University, Aarhus, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Gradients
 Keywords: k-space, spiral, comparative-study
- 2016. Analysis of Acoustic Noise in MRI.** Z.H. Cho, S.H. Park, S.T. Chung, S.C. Chung, C.W. Moon, J.H. Yi and C.H. Sin. University of California, Irvine, CA; Korea Advanced Institute of Science & Technology; Samsung Advanced Institute of Technology; Samsung Medical Center, Seoul, Korea.
 Type of Study: Basic Research on MR
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: acoustic noise, Lorentz force, fMRI
- 2017. Time Domain Multiplexing Phase Array EPI: Design and Experiment.** G.X. Shen, J.F. Wu and B. Zhang. University of Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Administration/Economics
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: phase array, EPI, MRI
- 2018. Phase Array EPI: Comparison of Multi-Channel and Time Domain Multiplexing.** G.X. Shen. University of Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Administration/Economics
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: phase array, EPI, MRI
- 2019. A/D Dynamic Range Enhancement in a Single Channel Using Multiple Converters.** A. Jesmanowicz and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: A/D converter, dynamic range, 3D imaging

- 2020. Polyphase Techniques for Low Cost MRI Receivers.** G. Scott, S. Conolly and A. Macovski. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: PMRI, receiver, electronics
- 2021. Development of a Flexible Pulse Programmer for MRI Using a Commercial Digital Signal Processor Board.** K. Kose and T. Haishi. University of Tsukuba, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: DSP, pulser
- 2022. A Fast Image Reconstruction and Display System Using a High Speed PC and Its Application to MR Microscope with an Independent Console System.** T. Haishi, N. Adachi, K. Kose and I. Anno. University of Tsukuba, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Microscopy
 Keywords: pentium, MRI, real-time

RF Coils

- 2023. An Eight Element Linear Array for SMASH Imaging.** J.A. Bankson, M.A. Griswold, S.M. Wright and D.K. Sodickson. Texas A&M University, College Station, TX; Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: phased arrays, rapid imaging, RF coils
- 2024. A Degenerate Bandpass Ladder Network for Spine Imaging in Lateral Magnetic Fields.** E. Boskamp, J. Tropp, T. Ishiguro and Y. Kato. GE Medical Systems, Milwaukee, WI; GE Medical Systems, Fremont, CA; GEYMS Medical Systems, Tokyo, Japan.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Spine
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, open MR, spine

- 2025. Novel Type of Quadrature Breast RF Coil with a Ladder Structure.** C.H. Oh, S.K. Kim, Y.J. Yang and C.B. Ahn. Korea University; Kwangwoon University, Seoul, Korea; Medison, Ltd.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, breast imaging, quadrature coil
- 2026. A Four-Coil Phased Array Coil for High Resolution MR Imaging of the Knee.** W.E. Kwok, M. Lechner, T. Hameed and S.M.S. Totterman. University of Rochester Medical Center, Rochester, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: RF-Coils
 Keywords: phased array coil, knee, high resolution MRI
- 2027. A Double-turn Dual Phased Array Coil for MR Microscopic Imaging at 1.5 Tesla.** W.E. Kwok, K.K. Lo, G.S. Seo and S.M.S. Totterman. University of Rochester Medical Center, Rochester, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Inflammation
 Methods: RF-Coils
 Keywords: phased array coil, microscopy, 1.5 Tesla
- 2028. 8-Element QD Domed Head Array Coil Using Inductive Decouplers.** T. Takahashi, C. Iizuka, H. Shimizu, K. Yasugi and Y. Matsunaga. Hitachi Medical Corporation, Chiba; Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: RF-Coils
 Keywords: RF coil, array coil
- 2029. Free Elements: Dedicated Wrist Coil for High Field Magnetic Resonance Imaging.** L. Fakri-Bouchet, Ch. Lapray and A. Briguet. Université Lyon I, Villeurbanne, France.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Healthy Tissue
 Methods: RF-Coils
 Keywords: free element coil, MRI, wrist
- 2030. A Four-Mode Shielded Loop Coil-System.** A. Stensgaard. Danish Research Center for Magnetic Resonance, Hvidovre, Denmark.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: coil, multimode shielded loop

- 2031. Mutli-Ring Surface Coils: A Means for Enhanced MR Spectroscopy *In vivo*.** S.B. King, L.N. Ryner, B. Tomanek and I.C.P. Smith. National Research Council of Canada; University of Manitoba, Winnipeg, MB, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: surface coil, MRS, localization
- 2032. The Optimum Geometry of the MR Dual Surface Coil.** W. Schnell, M. Vester, W. Renz and H. Ermert. Ruhr-Universität Bochum; Siemens Corporate Research and Development, Erlangen, Germany.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: optimization, SNR, surface coil
- 2033. Increased Signal to Noise Ratio Effects of the Arbitrary Placement Element.** D.A. Molyneaux and A. Haq Qureshi. Picker International, Highland Heights; Cleveland State University, Cleveland, OH.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF, coils, arbitrary
- 2034. Conformal Mapping Approach to Non-circular Birdcage Coil Design.** N.F. De Zanche and P.S. Allen. University of Alberta, Edmonton, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: Cassinian, conformal, optimal
- 2035. An Optimized Half Birdcage Coil for Cardiac MRI.** T. Reisker. Picker International, Highland Heights, OH.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: RF-Coils
 Keywords: coils, radio frequency, cardiac
- 2036. An Open-Coil Design for Functional Imaging of the Primate Brain.** S.J. Dodd, A.C. Silva, D.S. Williams, C.R. Olson and C. Ho. Carnegie Mellon University, Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil design, primate, fMRI

- 2037. Application of New Developed Endoluminal Coils in MRI — First Results at an Interventional MR-System (Signa-SP/GE).** A. Werner, E. Penner, J.-P. Schneider, F. Schmidt and W. Gründer. Universität Leipzig, Germany; GE Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coils, interventional MRI, endoscopy
- 2038. Optimal Shield Shape for Quadrature Elliptic Birdcage Coils.** J.S. Keller, M.C. Leifer, J. Lo Vetri, E.A. Barberi and B.K. Rutt. University of Western Ontario; Robarts Research Institute, London, ON, Canada; Varian Associates, Palo Alto, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: shield, elliptical, birdcage
- 2039. Measurement of RF Field Quality in High-Frequency Quadrature Coils.** N.F. De Zanche and P.S. Allen. University of Alberta, Edmonton, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: homogeneity, parameters, non-circular
- 2040. Measurements of the Radiofrequency Field in Magnetic Resonance Antennas.** L. Fakri-Bouchet, Ch. Lapray and A. Briguët. Université Lyon I, Villeurbanne, France.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF resonators, B1 field distribution, electronic system
- 2041. Three-Dimensional Full-Wave Analysis of Shielded and End-Capped Birdcage Coils Loaded with the Human Head.** J. Chen, Z. Feng and J. Jin. University of Illinois at Urbana-Champaign, Urbana, IL.
 Methods: RF-Coils
 Keywords: RF coil, SAR, B1-field
- 2042. 3D Simulations of B and E Fields in RF-Resonators by CONCEPT and MAFIA.** S. Junge and U. Haeberlen. MPI for Medical Research, Heidelberg, Germany.
 Methods: RF-Coils
 Keywords: coils, simulation, phantom

- 2043. Theoretical Model of the TEM Resonator Coil.** B. Baertlein, O. Ozbay, X. Zhang, A. Kangarlu, R. Lee and P.M.L. Robitaille. Ohio State University, Columbus, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Methods: RF-Coils
 Keywords: RF coils, TEM resonator, models
- 2044. The Helical Resonator: A High Q RF Coil for MRI and MRS.** M.E. Meyerand and J.F. Dunn. Dartmouth Medical School, Hanover, NH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: helix, helical, RF
- 2045. Optimisation of RF Axial Field Distribution of EPR Resonators.** R. Diodato, M. Alecci, J.A. Brivati and A. Sotgiu. Università dell'Aquila, L'Aquila, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: coupling, RF coils, EPR
- 2046. RF Coupling Between Antennas of Whole Body Hyperthermia Applicator and 3T MR System.** W. Wlodarczyk, F. Seifert, H. Fähring, P. Wust, H. Rinneberg, G. Mönich and R. Felix. Humboldt Universität; Technische Universität, Berlin, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: intervention, RF coils, RF compatibility
- 2047. Mapping of the Dielectric Resonance Distribution.** H. Mihara, N. Iriguchi, Y. Yukawa and S. Ueno. University of Tokyo, Graduate School of Medicine, Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: dielectric, mapping, SAR
- 2048. Magnetic Field Homogeneity and SAR Issues for High-Field MRI.** T.S. Ibrahim, R. Lee, B.A. Baertlein, A. Kangarlu and P. Robitaille. Ohio State University, Columbus, OH.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: coils, SAR, modeling

- 2049. Accurate Analysis of Arbitrary RF Coils for MRI.** Z.M. Feng and J.M. Jin. University of Illinois, Urbana, IL.
 Methods: RF-Coils
 Keywords: RF coil,
- 2050. Harmonisation of Ultimate SNR and Coil Performance Methodologies.** D.W. McRobbie. The Hammersmith Hospitals NHS Trust & Imperial College School of Medicine, London, UK.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: SNR, coils, limits
- 2051. Universal-Tuned (8 Nuclei) RF Probe with Remote Controller for MRI and MRS.** G.X. Shen. University of Pittsburgh, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Metabolism
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coil, MRI, MRS
- 2052. Reduction of RF-Coils Loading Effects on Quadrature Coupler of 3-T MRI Using 4-Ports Network Analysis.** W. Ryu, M. Sung, H. Kim, H. Lee and J. Kim. Korea Advanced Institute of Science and Technology; Catholic Medical School, Seoul, Korea.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: RF coils, mismatching, dynamic leading
- 2053. An Investigation of PIN Diode Failure Related to High Peak Power.** S.M. Varosi and G.R. Duensing. Applied Resonance Technology Inc; University of Florida, Gainesville, FL.
 Methods: RF-Coils
 Keywords: diode, RF coil, decoupling
- 2054. Immobilization System For Rat Brain Imaging.** P.L. Gor'kov, A.B. Harris and P.C. Lauterbur. University of Illinois at Urbana-Champaign, IL.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: RF-Coils
 Keywords: immobilization, brain, animal

- 2055. T2-Selective RF Pulses.** D.E. Rourke, S.D. Bush and A. Pines. University of California, Berkeley, CA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: RF, pulse, relaxation
- 2056. Off-Resonance Correction of 3D Spectrally and Spatially Selective RF Pulses.** H. Schomberg, T. Schäffter and P. Börnert. Philips Research, Hamburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: RF pulse, binomial RF pulse, off-resonance correction
- 2057. A Method to Compensate Eddy Current Perturbation for Spatial-Spectral Pulses.** X.J. Zhou and M.A. Bernstein. General Electric Medical Systems, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: eddy currents, spatial-spectral, pulses
- 2058. Simultaneous Spatial-Spectral Excitation and Cyclic Motion Encoding in MR Elastography.** R.C. Grimm, R. Muthupillai and R.L. Ehman. Mayo Clinic, Rochester, MA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: RF pulse, cyclic motion encoding, elastography
- 2059. Off-Resonance Correction of nD Spatially Selective RF Pulses.** H. Schomberg and P. Börnert. Philips Research, Hamburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: RF pulse, off-resonance correction

- 2060. Exciting 2D Profiles with Multiple-Shot Interleaved RF Excitation Pulses.** L.P. Panych and K. Oshio. Brigham and Women's Hospital, Harvard Medical School, Boston, MA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: RF pulse, selective excitation, multi-shot
- 2061. Iterative Refinement of RF Pulses for Magnetic Resonance Imaging.** E.T. Lebsack, J.A. Bankson, D.G. Brown and S.M. Wright. Texas A&M University, College Station, TX.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: iterative, optimization, RF
- 2062. Hadamard Encoding Without Gaps.** C.H. Cunningham and M.L. Wood. University of Toronto, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: Hadamard encoding, RF pulses, selective excitation
- 2063. A Phase-Sensitive Method for B1 Mapping.** G. Morrell and A. Macovski. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: RF-Pulses
 Keywords: B1 mapping, RF field mapping

Sampling Strategies

- 2064. Improved Keyhole Approach with Motion-Correction Technique in Contrast-Enhanced Dynamic MRI.** J. Medic, S. Tomazic, I. Sersa and F. Demsar. University of Ljubljana; J. Stefan Institute, Ljubljana, Slovenia.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: keyhole, dynamic-MRI, motion

2065. Reconstruct NMR Images from Arbitrary Scanning Trajectory Using Nonuniform Fast Fourier Transform. [R. Tong and R.W. Cox.](#) [Medical College of Wisconsin, Milwaukee, WI.](#)

Type of Study: **Methodological Development**
Main Target of Study: **Category not applicable**
Organ/Tissue: **Category not applicable**
Methods: **Data Processing: MRI**
Keywords: **nonuniform, Fourier, transform**

2066. A Two-Step Process for Deblurring Spiral MRI. [E.E. Ahunbay, P. Menon and J.G. Pipe.](#) [Wayne State University, Detroit, MI.](#)

Type of Study: **Methodological Development**
Main Target of Study: **Category not applicable**
Organ/Tissue: **Category not applicable**
Pathology: **Category not applicable**
Methods: **Data Processing: MRI**
Keywords: **spiral, deblurring, off-resonance**

2067. Re-Sampling of Data onto Arbitrary Grids. [V. Rasche.](#) [Philips Research, Hamburg, Germany.](#)

Type of Study: **Basic Research on MR**
Main Target of Study: **Category not applicable**
Organ/Tissue: **Category not applicable**
Pathology: **Category not applicable**
Methods: **Data Processing: MRI**
Keywords: **reconstruction, projection, arbitrary grids**

Image Processing

2068. Time to Join! Cluster-Merging in Unsupervised Fuzzy Clustering of Functional MRI Data. [M. Jarmasz and R.L. Somorjai.](#) [National Research Council, Winnipeg, MB, Canada.](#)

Type of Study: **Methodological Development**
Main Target of Study: **Function**
Organ/Tissue: **Brain**
Pathology: **Category not applicable**
Methods: **Data Processing: MRI**
Keywords: **fMRI, fuzzy, clustering**

2069. An Agglomerative Hierarchical Algorithm to Define Tissue Types in Images with No Intervention. [W.G. Waddington, A.M. Blamire, B. Rajagopalan and P. Styles.](#) [John Radcliffe Hospital, Oxford, UK.](#)

Type of Study: **Methodological Development**
Main Target of Study: **Category not applicable**
Organ/Tissue: **Brain**
Pathology: **Category not applicable**
Methods: **Data Processing: MRI**
Keywords: **clustering, multivariate, segmentation**

- 2070. Subvoxel Segmentation of MR Images: Necessity and Approach.** K.L. Vincken, W.J. Niessen and M.A. Viergever. Utrecht University/University Hospital Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: segmentation, partial volume, phantom
- 2071. Quantitative Evaluation of Image Segmentation Methods.** K.L. Vincken, A.S.E. Koster, O.C. Zander, C.N. de Graaf and M.A. Viergever. Utrecht University/University Hospital Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: evaluation, segmentation, cost analysis
- 2072. Reproducible 3D Segmentation of CSF, Grey and White Matter from MR Brain Images.** W.J. Niessen, K.L. Vincken, J. Weickert and M.A. Viergever. Utrecht University/University Hospital Utrecht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: segmentation, brain, multiscale
- 2073. Manual and Automatic Extraction of White Matter Lesions in FLAIR Images.** L. Itti, L. Chang and T. Ernst. Harbor-UCLA Medical Center, Torrance, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Data Processing: MRI
 Keywords: FLAIR, white matter lesions, segmentation
- 2074. Object Strength Correlates Closely with OCCA MS Brain Phantom Lesion Volume, and can Accurately Predict Lesion Volume.** P.S. Tofts. University College, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: phantom, lesion, volume

- 2075. Evaluation of Semi-automated Border Recognition Software for Quantitative Brain Morphometry and Topology from High-Resolution MRI.** S.D. Uttecht, C. Betancourt and K.R. Thulborn. University of Pittsburgh, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: morphometry, brain, segmentation
- 2076. Convolution Index Computation of the Cortex Using Image Segmentation and Contour Following.** N. Saeed, M. Ajayi-Obe, S. Counsell, J.V. Hajnal and M.A. Rutherford. Hammersmith Hospital, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: cortex, segmentation, convolutions
- 2077. Differentiation and Segmentation of Breast Tissue Components in MR Images.** J.R. Reichenbach, Ch. Przetak, G. Klinger and W.A. Kaiser. Friedrich-Schiller University, Jena, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: MRI, breast, image processing
- 2078. Demonstration of Heterogeneity in Human Stroke Foci.** V. Nagesh, J.P. Windham, K.J. Robbins, D.J. Peck, D. Hearshen, S. Patel and K.M.A. Welch. Henry Ford Health Sciences Center and NMR Research Center, Detroit, MI.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: stroke, diffusion, lesion segmentation
- 2079. Histological Validation of Eigenimaging in Cerebral Ischemia in Rat.** M.A. Jacobs, J.P. Windham, D.J. Peck, A.V. Goussev, Z.G. Zheng and R.A. Knight. Henry Ford Health Sciences Center, Detroit; Oakland University, Rochester, MI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: image processing, segmentation, cerebral ischemia

- 2080. Analysis of Perfusion in Cerebral Tumor.** J.P. Windham, D.O. Hearshen, D.J. Peck, E. Spickler, S. Patel, L.M. Scarpace, V. Nagesh and T. Mikkelsen. Henry Ford Health System, Detroit, MI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: perfusion, tumor
- 2081. Assessing the Contribution of Forearm Composition to Reactive Hyperemic Flow in Venous Occlusion Strain Gauge Plethysmography Using Segmented MR Data.** R. Bammer, R. Stollberger, T. Wascher, F. Ebner and P. Wach. University of Graz; Graz University of Technology, Graz, Austria.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: segmentation, reactive hyperemia, vascular function
- 2082. Automatic Estimation of the Random Noise Level in Difference Images from Matched Brain Scans Based on the Segmentation of Structure.** L. Lemieux. Insitute for Neurology, London; National Society for Epilepsy; Buckinghamshire, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: brain, noise, registration
- 2083. Identification of Spatially Random Signal Intensity Using Approximate Entropy (ApEn) - A Method for Image Noise Reduction.** G.J.M. Parker, J.A. Schnabel and G.J. Barker. University College, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: approximate, entropy, noise
- 2084. Removing Rician Noise in MRI via Wavelet-Domain Filtering.** R.D. Nowak, R.L. Gregg, T.G. Cooper and J.E. Siebert. Michigan State University, East Lansing, MI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: MRA, wavelets, filtering

- 2085. A Method of Correcting B1 Field Inhomogeneity in MR Imaging.** H. Mihara, N. Iriguchi, Y. Sasaki and S. Ueno. University of Tokyo, Graduate School of Medicine, Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
- 2086. A Simple Method for the Correction of Endorectal Surface Coil Inhomogeneity in Prostate MRI.** G.P. Liney, A.J. Knowles and L.W. Turnbull. Hull Royal Infirmary, Hull, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Male GU
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: prostate, endorectal, inhomogeneity
- 2087. Coil Sensitivity Maps for Sensitivity Encoding and Intensity Correction.** K.P. Pruessmann, M. Weiger, M.B. Scheidegger and P. Boesiger. University and ETH, Zürich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: Surface coils, sensitivity maps, intensity correction
- 2088. Reduction of Gibb's Artifact in Fast Spin Echo Imaging by Optimal Echo Arrangement and Two-Stage Filtering.** C.B. Ahn, C.Y. Kim, C.H. Oh, Y. Yi and W.S. Ryu. Kwangwoon University; Medison MRI Research Center; Korea University, Seoul, Korea.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: FSE, Gibb's, artifact
- 2089. Two-Dimensional Phase Unwrapping of MR Images Using Robust Derivative Estimation and Adaptive Integration.** J. Strand and T. Taxt. University of Bergen, Norway.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: unwrapping, phase, inhomogeneity
- 2090. A New Fast Non-Iterative Registration Algorithm.** M.A. Alexander. National Research Council, Winnipeg, MB, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: image processing, registration, motion

- 2091. A Simplified FFT-Based Algorithm for MR Image Registration.** J. You, Z. Liang and W. Lu. State University of New York, Stony Brook, NY.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: registration FFT, Fourier Series
- 2092. Fluid Registration: Accurate Non-Linear Image Matching Applied to Alzheimer's Disease.** W.R. Crum, N.C. Fox, P.A. Freeborough and M.N. Rossor. The National Hospital for Neurology and Neurosurgery, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: registration, non-linear, Alzheimer's
- 2093. Comparison of Methods of Measurement of Atrophy Progression in Dementia: Rigid-Body Registration and Fluid Registration.** W.R. Crum, N.C. Fox, P.A. Freeborough and M.N. Rossor. The National Hospital for Neurology and Neurosurgery, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Degeneration
 Methods: Data Processing: MRI
 Keywords: registration, non-linear, Alzheimer's
- 2094. Combined T1 & T2-weighted Contrast Visualisation of Low Grade Lesions by Volume Scan Co-Registration.** L. Lemieux and U.C. Wiesmann. University College, London; National Society for Epilepsy, Buckinghamshire, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: brain, registration, flair
- 2095. Reproducibility of Tracking of MR Tags in Clinical Cardiac Images Using a Semi-Automated Technique.** E. Berry, D. Beacock, W.R. Crum, J.P. Ridgway, U.M. Sivananthan, L.-B. Tan and M.A. Smith. University of Leeds, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: heart, tagging, reproducibility

- 2096. Detailed Motion Analysis of Left Ventricular Myocardium Using an MR Tagging Method with Narrow Stripes.** S. Urayama, T. Matsuda, N. Sugimoto, C. Uyama and N. Yamada. National Cardiovascular Center, Osaka, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: motion analysis, MR-tagging, narrow spacing tag
- 2097. Left Ventricular Early Diastolic Inflow Propagation Quantification by Magnetic Resonance Phase Velocity Mapping.** S.F. Milet and A.P. Yoganathan. Georgia Institute of Technology, Atlanta, GA.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: diastole, MRPVM, processing
- 2098. Myocardial Perfusion Mapping of First-Pass MR Studies by Supervised Classification.** A. Baskurt, D. Last, E. Canet, F. Dupont, J.P. Roux, D. Revel and M. Janier. CREATIS; CERMEP, Lyon, France.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: myocardial perfusion, classification, feature extraction
- 2099. Correlation of Abnormal Wall Thickening from MR Images with PET Functional Imaging Using MR and PET Polar Maps.** S. Sinha, R. Mather, J. Goldin, U. Sinha, A. Daniel and J. Czernin. University of California, Los Angeles, CA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Infarction
 Methods: Data Processing: MRI
 Keywords: cardiac, wall thickening, MR/PET Polar-maps
- 2100. Automated Curved Planar Reformatting (Vessel Tracking) Algorithm for Application to Coronary Arteries.** M.B. Scheidegger, S. Kozerke, M. Spiegel and P. Boesiger. University of ETH, Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: segmentation, coronary arteries, curved reformatting

- 2101. 3D FFT Mode Filtering For Phase Gradient Velocity Measurements.** J.A. Smith, A.J. Lawrence, S.J. Riederer and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: MRE, Mode filtering, shear velocity
- 2102. An Alternate Method for Calculating Elastic Properties of Breast Tissue.** J. Bishop and D.B. Plewes. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Healthy Tissue
 Methods: Data Processing: MRI
 Keywords: elastography, strain, breast
- 2103. Computational Fluid Dynamics Visualisation Applied to Phase Contrast Imaging.** G.D. Mallinson and B.R. Cowan. University of Auckland, New Zealand.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: CFD, visualization, phase
- 2104. Assessment of Post-Processing Routines for the Interactive Analysis of 3D MR Colonography.** S. Wildermuth, Ch. Stern, W. Luboldt, D. Nanz, B. Marincek and J.F. Debatin. University Hospital; University of Zurich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Administration/Economics
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: MR Colonography, Post-Processing, virtual intraluminal endoscopy
- 2105. Maximum Average Projection (MAP): A Fast and Robust Way to Visualize 3-Dimensional MR Data-Sets.** G.R.P. Thelissen. University Hospital Maastricht, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: 3D visualization, CNR

- 2106. Visualization Strategies for Three-dimensional MR Pulmonary Angiography in Patients with Pulmonary Embolism.** P.M.A. van Ooijen, P. Wielopolski and M. Oudkerk. University Hospital Rotterdam, The Netherlands.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Chest
 Pathology: Vascular Diseases
 Methods: Data Processing: MRI
 Keywords: pulmonaries, vizualization, 3D
- 2107. Efficient Simulation of Spin Echo, Gradient Echo, Fast, and Ultrafast NMR Imaging Sequences by Isochromat Summation.** P. Shkarin and R.G.S. Spencer. National Institutes of Health, National Institute on Aging, Baltimore, MD.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: simulation, fast imaging, artifacts
- 2108. Evaluation of Multispectral Image Compression Algorithms for M.R.I.** P.T. Cahill, T. Vullo, Y. Wang and J.A. Markisz. Cornell University Medical College; Cel-Tech Systems, New York, NY.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Administration/Economics
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: image, compression, evaluation

Motion & Artifacts

- 2109. In vivo Micro-Imaging with Alternating Navigator Echoes.** H.K. Song, S.N. Hwang and F.W. Wehrli. University of Pennsylvania Medical Center, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: navigator echo, motion correction
- 2110. Motion Artifacts in Diffusion-Weighted MR Images of the Brain: Efficacy of Navigator Echo Correction.** O. Dietrich, S. Heiland, T. Benner and K. Sartor. University of Heidelberg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion artifacts, diffusion, navigator echo

- 2111. Localization of Motion Artifact.** Y.M. Ro, J.Y. Chung and C.H. Oh. Information Communication University; Korea University, Korea.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Tumors
 Methods: Motion and Artifacts
 Keywords: motion artifact, localization, artifact
- 2112. Interleaved Projection Reconstruction Imaging for the Reduction of Artifacts Caused by General Rigid Motion.** R. Van de Walle, I. Lemahieu, G. Lateur, G. Raskin and E. Achten. University of Ghent; Ghent University Hospital, Ghent; Brussels Free University, Brussels, Belgium.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: artifacts, motion, projection reconstruction
- 2113. Rotational Motion Artifact Correction in MRI.** C. Weerasinghe and H. Yan. University of Sydney, Australia.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: MRI, Rotational, Artifacts
- 2114. Motion Artefact Reduction in a Variety of MR Sequences.** D. Atkinson, D.L.G. Hill, P.N.R. Stoyale, P.E. Summers, S. Clare, R. Bowtell and S.F. Keevil. Guy's Hospital, London; DRA Malvern; University of Nottingham, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: autofocus, motion, post-processing
- 2115. Radio-Frequency Eddy Currents of Palmaz Stents Cause Imaging Artifacts.** D. Lu and C.Y. Tang. Mount Sinai Medical Center, New York, NY.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: stent, artifacts, RF

- 2116. The Effect of Respiratory Motion on 1D CSI Data Sets.** V.L. Doyle, F.A. Howe and J.R. Griffiths. St. George's Hospital Medical School, London, UK.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Motion and Artifacts
 Keywords: 31P, CSI, artifacts
- 2117. Application of 3DFT CISS Imaging Technique: Demonstrations of Internal Auditory Canals, Salivary Ducts and Lacrimal Ducts.** E.C. Chung, E.K. Youn, Y.Y. Lee and Y.K. Kim. Sung Kyun Kwan University, Kangbuk Samsung Hospital; Ewha Womans University Medical Center, Seoul, Korea.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Morphology
 Organ/Tissue: Head and Neck
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: technique, CISS, head
- 2118. Automatic Shimming Effective in Improving H0 Homogeneities Deteriorated Because of Eddy Currents.** Y. Onodera and K. Tsukada. Hitachi, Ltd., Tokyo, Japan.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: shimming, eddy current, EPI
- 2119. Optimization of Image Quality for Low Field MRI.** F.M. Kraemer, M. Hauer, M. Uhl and J. Hennig. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: motion correction, low field scanner, signal to noise
- 2120. Use of Artificial Neural Networks (ANN) to Reduce Systematic Errors in Volume Measurement of a Moving Object.** P.H. Chan, D.C. Ailoin, A.G. Cutillo and C.H. Durney. University of Utah, Salt Lake City, UT.
 Methods: Motion and Artifacts
 Keywords: motion, systematic, errors
- 2121. Pitfalls in Keyhole Imaging.** R. Strohschein, C. Oesterle, M. Köhler, M. Schnell and J. Hennig. University of Freiburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: keyhole, phase encoding

- 2122. Breath-Hold Duration: Navigator Echo Assessment of Supplemental Oxygen and Hyperventilation.** P.G. Danias, K.V. Kissinger, M. Stuber, M.L. Chuang and W.J. Manning. Beth Israel Deaconess Medical Center & Harvard Medical School, Boston, MA; Philips Medical Systems, Best, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Chest
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: Breath-holding, oxygen, navigator
- 2123. Acceleration and Jerk Dependent Shifts in Magnetic Resonance Angiography.** J.D. Stefansic and C.B. Paschal. Vanderbilt University, Nashville, TN.
 Type of Study: Basic Research on MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain Vascular
 Pathology: Category not applicable
 Methods: Angiography
 Keywords: MRA, misregistration, flow compensation
- 2124. Velocity k-space Analysis of Flow Effects in Three-Dimensional Imaging.** P. Irarrázaval, J.M. Santos and D.G. Nishimura. Pontificia Universidad Católica de Chile, Santiago, Chile; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: velocity, flow, artifacts
- 2125. Transformation and Suppression of Motion Artifact with SLINKY.** K. Liu. Picker International Inc., Highland Heights, OH.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion, artifact, transform
- 2126. Cardiac/Respiratory Gated MRI with SPAMM-Tagging.** Q. Yuan, L. Dougherty, A.S. Blom, V.A. Ferrari and L. Axel. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: respiration, gating, SPAMM

- 2127. Extension of Real-Time MR Gating to Cope with Changes in Motion Pattern: Making MR Gating Autarkic.** R. Sinkus and P. Börnert. Philips Research, Hamburg, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: real-time gating, artefact reduction, drift effect
- 2128. Coronary MRA with Interactive Wireless Cardiac Triggering.** S.S. Vasanawala, C.H. Meyer and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Angiography
 Keywords: coronary, wireless, triggering
- 2129. Autofocusing of Clinical Shoulder MR Images for Correction of Motion Artifacts.** A. Manduca, K.P. McGee, E.B. Welch, J.P. Felmlee and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion correction, autofocusing, navigator echoes
- 2130. Image Metrics for Autofocusing of MR Shoulder Examinations.** K.P. McGee, A. Manduca, R.C. Grimm, J.P. Felmlee, S.J. Riederer and R.L. Ehman. Mayo Clinic, Rochester, MN.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Category not applicable
 Methods: Data Processing: MRI
 Keywords: motion, autofocus, correction
- 2131. Improved Liver Lesion Depiction for Respiratory-Triggered T2-Weighted Fast Spin Echo (FSE) Using a Modified FSE Pulse Sequence and a "Chopping" Phase Encoding Technique.** J.N. Rydberg, B.R. Douglas, R.M. Thompson and C.D. Johnson. Mayo Clinic, Rochester, MN.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Sequences: Imaging
 Keywords: respiratory triggered, liver imaging, motion

- 2132. A Novel Image Registration Technique for fMRI.** B.B. Biswal and J.S. Hyde. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, motion, image registration
- 2133. Characterization and Correction of Movement-Related Interpolation Effects in fMRI.** S. Grootenok, C. Hutton, J. Ashburner, K. Friston and R. Turner. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, motion, artefacts
- 2134. An Integrated Head Immobilization System for fMRI of Visual Paradigms at 1.5T.** K.R. Thulborn, C. Martin and G.X. Shen. University of Pittsburgh Medical Center, Pittsburgh, PA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: motion, function, brain
- 2135. fMRI Image Registration Using Total Local Density of Intensity Mapping Plot.** J. Tsao, J.B.M. Goense and P.C. Lauterbur. University of Illinois at Urbana-Champaign, IL.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: fMRI, registration, motion
- 2136. Dynamic Scan Plane Tracking Using MR Position Monitoring.** J.A. Derbyshire, G.A. Wright, R.M. Henkelman and R.S. Hinks. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Interventions
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: scan-plane tracking, motion correction, image registration
- 2137. Ghost Artifact in fMRI: Comparison of Techniques for Reducing the N/2 Ghost.** S. Clare, R. Bowtell and P. Morris. University of Nottingham; University of Oxford, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Motion and Artifacts
 Keywords: EPI, ghost, correction

- 2138. Phase Contrast RARE for Slow Flow.** H. Kanazawa, H. Takai, S. Nozaki, N. Ichinose, M. Miyazaki, Y. Kassai, Y. Machida and F. Kojima. Toshiba Nasu Works; Toshiba Medical Engineering Laboratory, Tochigi, Japan.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Cells/Body Fluids**
 Pathology: **Category not applicable**
 Methods: **Flow**
 Keywords: **flow, RARE, fast scan**
- 2139. Assessing Optimized MR Flow Quantification Sequences for Different Levels of Flow Encoding: Preliminary Results.** M.S. Nair, J.L. Duerk and S.E. Rittgers. University Hospitals of Cleveland, Case Western Reserve University, Cleveland; The University of Akron, OH.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Flow**
 Keywords: **flow quantification, sequence design, error reduction**
- 2140. Flow Quantification Using Fast Fourier Velocity Encoding.** C.-M Tsai, J. Brittain and D. Nishimura. Stanford University, Stanford, CA.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Body Vascular**
 Pathology: **Vascular Diseases**
 Methods: **Flow**
 Keywords: **flow quantification ?, Fourier velocity encoding ?, vascular disease**
- 2141. Three-dimensional Coronary Artery Fourier Velocity Imaging.** P.D. Gatehouse, G.Z. Yang, J. Keegan, R.H. Mohiaddin and D.N. Firmin. Royal Brompton Hospital; National Heart & Lung Institute Imperial College, London, UK.
 Type of Study: **Methodological Development**
 Main Target of Study: **Category not applicable**
 Organ/Tissue: **Heart**
 Pathology: **Category not applicable**
 Methods: **Flow**
 Keywords: **flow, EPI, coronary**
- 2142. Spiral Acquisition Increases Temporal Resolution and Reduces Motion Artifacts in Breath-Hold Coronary Flow Measurements.** M.B.M. Hofman, J. Groen, A. van Muiswinkel, S.E. Fischer, S.A. Wickline and C.H. Lorenz. Washington University Medical Center, St. Louis, MO; University Hospital Vrije Universiteit, Amsterdam; Philips Medical System, Best, The Netherlands.
 Type of Study: **Methodological Development**
 Main Target of Study: **Function**
 Organ/Tissue: **Heart**
 Pathology: **Vascular Diseases**
 Methods: **Sequences: Spectroscopy**
 Keywords: **coronary arteries, flow quantification, spiral imaging**

- 2143. Breathheld Renal Artery CINE Flow Measurements with Retrospective Gating.** M. Bock, S.O. Schönberg, G. Laub, M.V. Knopp and L.R. Schad. Deutsche Krebsforschungszentrum, Heidelberg; Siemens Medical Systems, Erlangen, Germany.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Renal
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: segmented EPI, breathhold, stenosis
- 2144. Real Time 2D Flow Quantitation.** M. Braunschweig and O. Heid. University of Bern, Switzerland.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow, EPI, real time
- 2145. Phase Velocity Measurements in Stenotic Flow Using the Low Echo Time FAcE and the Standard FFE Techniques.** A. Lombardi, S. Ringgaard, D. Meier, S. Kozerke, P. Bösigler and E.M. Pedersen. Århus University Hospital, Århus, Denmark; University and ETH, Zürich, Switzerland.
- Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: stenosis, flow, small vessels
- 2146. Velocity Quantitation in Small Stenoses by a New Jet Imaging Method.** A. Lombardi, S. Ringgaard and E.M. Pedersen. Aarhus University Hospital, Aarhus, Denmark.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: stenosis, jet imaging, small vessels
- 2147. Magnetic Resonance Phase Velocity Mapping of Flow Patterns Associated with Mechanical Valve Prostheses: Development of an *In Vitro* Model with Curved Aortic Arch and Pulsatile Flow.** M. Kon, K. McCormack, P. Kilner, P. Lawford, R. Hose, N. Moat, M. Black and D. Firmin. Royal Brompton Hospital, London; University of Sheffield, UK.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Flow
 Keywords: valve, flow, phantom

- 2148. Evaluation of Flow Patterns in Perfusion Cannulae by High-Field Three-Component MR Velocity Mapping.** S. Ringgaard, T. Madsen, E.M. Pedersen, H. Stødkilde-Jørgensen, H. Nygaard and J.M. Hasenkam. Aarhus University Hospital, Aarhus, Denmark.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: flow, cannulae, high-field
- 2149. Accurate Automatic Determination of Blood Flow, Vessel Area and Wall Shear Stress by Modelling of Magnetic Resonance Velocity Data from the Common Carotid Artery.** S. Ringgaard, S. Oyre, W.P. Paaske, S. Kozerke, P. Boesiger and E.M. Pedersen. Aarhus University Hospital, Aarhus, Denmark; University of Zürich and ETH, Zürich, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: haemodynamics, automatic, carotids
- 2150. Pulsewave Velocity Measurements Using an Optimized Phase Contrast Sequence with Retrospective Cardiac Gating.** J.M. Boese, M. Bock, S.O. Schoenberg and L.R. Schad. Deutsches Krebsforschungszentrum, Heidelberg, Germany.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: pulsewave velocity, retrogating, aortic aneurysm
- 2151. Descending Aorta Pulse Wave Velocity and Distensibility Measurements from In-Plane MR Phase-Contrast Velocity Mapping.** Y.-L. Hu, W.J. Rogers, C.M. Kramer and N. Reichek. Allegheny University of the Health Sciences, Pittsburgh, PA.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Body Vascular
 Pathology: Vascular Diseases
 Methods: Flow
 Keywords: pulse wave, velocity, distensibility
- 2152. Flow Relaxography.** J.-H. Lee, X. Li, M.K. Sammi and C.S. Springer, Jr. Brookhaven National Laboratory, Upton; State University of New York Stony Brook, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Flow
 Keywords: flow, fair, relaxography
- 2153. Correlation Between MRI Derived Craniospinal Elastance and Invasive Mean Intracranial Pressure.** N. Alperin, A. Yardimci, F. Loth, J.A. Goodwin and K. Slavin. University of Illinois at Chicago, IL.

- 2154. New Indicators of Successful Shunt in Normal Pressure Hydrocephalus by Phase Contrast Cine MR Velocity Measurements: Preliminary Observations.** M.C. Henry-Feugeas, P. Cornu, H. Lejay, G. Zannoli, J. Bittoun and E. Shouman-Claeys. Hôpital Bichat, Paris; Salpêtrière Hospital, Paris; General Electric Medical Systems, Buc; Bicêtre Hospital, le Kremlin-Bicêtre, France.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: MR imaging, hydrocephalus, CSF flow

Quantitation

- 2155. Phantom Design for the Assessment of Accuracy of M.R. Localization in Stereotactic Surgery.** E.M. Moore, C.E. Polkey, B. Smith and A. Simmons. King's College Hospital; Institute of Psychiatry, London, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Interventions
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: stereotactic, surgery, phantom
- 2156. 3-D Registration of *Ex Vivo* Specimens with *In vivo* MR Images.** A.S. Blom, L. Axel, D.L. Kraitchman, J. Giammarco, C.N. Chang, V.A. Ferrari and J. Pilla. University of Pennsylvania Medical Center, Philadelphia, PA.
- Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Heart
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: image registration, specimen scanning, quantitative MRI
- 2157. A Model of the Dual Effects of Gadopentetate Dimeglumine on Dynamic Brain MR Images.** E.L. Barbier, J.A. den Boer, A.R. Peters, A.R. Rozeboom, J. Sau and A. Bonmartin. Groupe de Recherche en Imagerie et Spectroscopie Nucléaires, Lyon, France; Medisch Spectrum Twente, Enschede, The Netherlands.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Brain
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: gadolinium, modeling, tumor
- 2158. Developing a Reliable Method for Measuring the Planum Temporale.** J. Shapleske, S.L. Rossell, A.S. David, A. Simmons and P.W.R. Woodruff. Institute of Psychiatry, London, UK.
- Type of Study: Clinical Applications of MR
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: planum, temporale, measure

- 2159. Combined Use of Quantitative MRI Segmentation and Hippocampal Voluming in Alzheimer's Disease and Mild Cognitive Impairment.** D. Amend, N. Schuff, G. Fein and M.W. Weiner. DVA Medical Center and University of California, San Francisco, CA.
Methods: Quantitation: MRI
Keywords: MRI, hippocampus, Alzheimer's
- 2160. The Detection and Significance of Subtle Changes in Mixed-Signal Brain Lesions by Serial MRI Scan Matching and Spatial Normalisation.** L. Lemieux, U.C. Wiesmann, N.F. Moran, D.R. Fish and S.D. Shorvon. University College, London; National Society for Epilepsy, Buckinghamshire, UK.
Type of Study: Methodological Development
Main Target of Study: Morphology
Organ/Tissue: Brain
Pathology: Tumors
Methods: Quantitation: MRI
Keywords: brain, tumors, signal changes
- 2161. Comparison of Quantitative T2 Measurements in Human Hippocampi with Double-Echo FLAIR and 64-Echo EPI Sequences.** J. Zhong, R.A. Bronen and O.A.C. Petroff. Yale University, New Haven, CT; University of Rochester, NY.
Type of Study: Methodological Development
Main Target of Study: Morphology
Organ/Tissue: Brain
Pathology: Seizures
Methods: Quantitation: MRI
Keywords: T2, quantitation, seizure
- 2162. Magnetization Transfer Imaging Provides a Highly Reproducible Quantitative Measure of Brain Tissue Structural Integrity.** N.C. Silver, E. Hughes, K. Birnie, P.D. Molyneux, D.G. MacManus, G.J. Barker, P.S. Tofts and D.H. Miller. University College London, UK.
Type of Study: Feasibility Studies of MR Methods
Main Target of Study: Category not applicable
Organ/Tissue: Brain
Pathology: Healthy Tissue
Methods: Quantitation: MRI
Keywords: MTR, brain, reproducibility
- 2163. Correlation of Spinal Cord Axonal Density with Post Mortem NMR Measurements in Multiple Sclerosis and Controls.** J.P. Mottershead, J.S. Thornton, M. Clemence, F. Scaravilli, J. Newcombe, M.L. Cuzner, G.J. Barker, P.S. Tofts, G.J.M. Parker, R.J. Ordidge, D.H. Miller and W.I. McDonald. Institute of Neurology; University College, London, UK.
Type of Study: Biomedical Applications of MR
Main Target of Study: Morphology
Organ/Tissue: Spine
Pathology: White Matter Disease
Methods: Quantitation: MRI
Keywords: MS, spine, axons

- 2164. Towards Fully Automated Quantitative Techniques for Lesion Volume Measurement in Multiple Sclerosis; an Evaluation of Global Thresholding after a Histogram Matching Correction.** P.D. Molyneux, L. Wang, M. Lai, G.J. Barker, P.S. Tofts and D.H. Miller. Institute of Neurology, London, UK.
 Type of Study: Feasibility Studies of MR Methods
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: quantification, histogram, thresholding
- 2165. The Impact of Phantom Based Image Non-Uniformity Correction on MRI Brain Lesion Load Quantification in Multiple Sclerosis.** P.D. Molyneux, M. Sailer, N. Barrett, D. Sauner, G.J. Barker, P.S. Tofts and D.H. Miller. Institute of Neurology, London, UK.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: phantom, non uniformity, quantification
- 2166. Fully Automated Measurement of Disease Burden in Multiple Sclerosis with a Relaxometric MR Approach.** B. Alfano, M. Larobina, A. Brunetti, M. Quarantelli, E. Tedeschi, E.M. Covelli, A. Ciarmiello, G. Tedeschi and M. Salvatore. University "Federico II"; "Second University"; "Istituto Pascale", Naples, Italy.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Brain
 Pathology: White Matter Disease
 Methods: Quantitation: MRI
 Keywords: multiple sclerosis, image processing, brain segmentation
- 2167. Basic NMR Relaxometry Studies of a Polymer Gel Dosimeter.** L.J. Schreiner, C. Audet, F. Mansour and H. Peemoeller. Kingston Regional Cancer Centre, Kingston, ON; Vancouver Cancer Centre, Vancouver, BC; University of Waterloo, ON, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: radiation, dosimetry, relaxometry
- 2168. $\Delta B0$ and $\Delta B1$ -insensitive T2 Measurements Using Crafted Refocusing Pulse.** J.G. Li, J.A. Stainsby, W.D. Foltz, G.A. Wright and R.M. Henkelman. University of Toronto, Ontario, Canada.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: refocusing train, T2 errors, robust pulse

- 2169. Accurate T2 Contrast when Using Magnetization Preparation Sequences.** W.D. Foltz, J.H. Brittain and G.A. Wright. University of Toronto, Ontario, Canada; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: T2 errors, magnetization preparation, robust pulses
- 2170. Phantom Validation of Inversion-Recovery Fast Spin Echo T1 Mapping: Importance of Careful Temperature Control.** P.B. Kingsley. North Shore University Hospital, Manhasset, NY.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: T1 map, temperature, fast spin echo
- 2171. Improved Accuracy in T1 Measurements.** D.L. Parker, B.A. Christian, K.C. Goodrich, A.L. Alexander, H.R. Buswell and C. Yoon. University of Utah; LDS Hospital, Salt Lake City, UT.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: T1 measurement, accuracy, relaxometry
- 2172. Improved Vascular T2 Measurements Around the Heart Using Respiratory Compensation.** J.A. Stainsby, T.S. Sachs and G.A. Wright. University of Toronto, Ontario, Canada; Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Heart
 Pathology: Vascular Diseases
 Methods: Motion and Artifacts
 Keywords: heart, T2, motion-compensation
- 2173. Quantitative Gadopentetate-enhanced MR Imaging of the Breast: Testing of Different Analytical Methods.** T.H. Helbich, A. Gossmann, S. Huber, M.F. Wendland, T.P.L. Roberts, D. Shames, W. Rosenau, M. Adachi and R.C. Brasch. University of California, San Francisco, CA.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Function
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: permeability, breast, kinetics

- 2174. Dynamic Contrast Breast Image Analysis Using Fuzzy Clustering.** L. Bolinger, C. Reynolds and M.D. Schnall. University of Pennsylvania, Philadelphia, PA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Breast
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: breast, clustering, dynamics
- 2175. Rapid Estimation of Fluid Volume Using Projection SSFSE.** D.J. Lomas, M.J. Graves and R.R. Sood. Addenbrooke's Hospital and University of Cambridge, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Cells/Body Fluids
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: SSFSE, volume, quantitation
- 2176. Impact of Methodology on Quantitative Analysis in Patients with Liver Metastases Before and After Intravenous Administration of Iron Oxide Particles.** M.E.J. Pijl, J.L. Turkenburg and M.N.J.M. Wasser. Leiden University Medical Center, Leiden, The Netherlands.
 Type of Study: Clinical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Data Processing: MRI
 Keywords: quantitative, liver, metastases
- 2177. MR Elastography of Human Liver: Preliminary Results.** D.J. Lomas, S.J.P. Meara, M.J. Graves and D.G.D. Wight. Addenbrooke's Hospital and University of Cambridge, UK.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Healthy Tissue
 Methods: Quantitation: MRI
 Keywords: elastography, liver, quantitation
- 2178. Quantitation of Active Phagocytic Kupffer Cells in the Liver: Analysis of Compartmental Model Using Dynamic Iron Oxide Enhanced MRI.** Y. -M Huh, J. -S. Suh, S. -H. Kim, S. -J. Kim, J. -Y. Choi, E. -K. Jeong, J. -P. Yun, K. -H. Son, J. -D. Lee and H. -J. Kim. Yonsei University, Seoul, Korea.
 Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Category not applicable
 Methods: Quantitation: MRI
 Keywords: iron oxide, pharmacokinetics, liver

- 2179. Characterization of Hepatic Blood Supply by Means of Dynamic MRI.** U. Hoffmann, J. Scharf, A.S. Horvath and G. Brix. German Cancer Research Center, Heidelberg, Germany.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Gastrointestinal/Hepatobiliary
 Pathology: Tumors
 Methods: Quantitation: MRI
 Keywords: dynamic MRI, liver, perfusion

Contrast Mechanisms

- 2180. Spectrally-Selective Gradient Waveforms: Applications in MR Elastography.** R. Muthupillai and R.L. Ehman. Mayo Clinic and Foundation, Rochester, MN.
- Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Infarction
 Methods: Category not applicable
 Keywords: MR Elastography, Elasticity Imaging, Cyclic Motion
- 2181. Magnetic Resonance Imaging of the Alternating Electric Current.** U. Mikac, I. Serša, K. Beravs and F. Demsar. Jozef Stefan Institute, Ljubljana, Slovenia.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: MRI, CDI, alternating current
- 2182. Pulse Sequences for Steady-State Saturation.** I. Marshall. University of Edinburgh, UK.
- Type of Study: Methodological Development
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: saturation, suppression, pulses
- 2183. 3-Dimensional Imaging of Sub-Micro Tesla Magnetic Fields.** I. Marshall. University of Edinburgh, UK.
- Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: magnetic fields, mapping, coils

- 2184. "Transmission" MRI for Linear Current Localization: Concept and Practice.** T. Nakada. University of Niigata, Japan; University of California, Davis, CA; University of Tsukuba, Japan.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Category not applicable
 Keywords: current, transmission, projection
- 2185. SPRITE Imaging of Short T2* Bone Materials.** B.J. Balcom, J.S. Dysart, C.B. Kennedy, A.R. Cross and N.J. Shah. University of New Brunswick, Fredericton, N.B., Canada; Institute fuer Medizin, Forschungszentrum, Juelich, Germany.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Musculoskeletal/Joints
 Pathology: Degeneration
 Methods: Sequences: Imaging
 Keywords: bone, SPRITE, solid
- 2186. Sensitivity Enhanced Single Point Imaging.** O. Heid. University of Bern, Switzerland.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: single point imaging, rapid imaging, short T2
- 2187. Technical Consideration for DEFT Imaging.** B.A. Hargreaves, G.E. Gold, S.M. Conolly and D.G. Nishimura. Stanford University, Stanford, CA.
 Type of Study: Methodological Development
 Main Target of Study: Morphology
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Sequences: Imaging
 Keywords: driven equilibrium, DEFT, contrast
- 2188. Relaxation Behavior of Vascular Radius Distributions.** K. Ruppert. University of Virginia Health Sciences Center, Charlottesville, VA.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Tumors
 Methods: Contrast Mechanisms
 Keywords: relaxation, contrast, mechanisms

- 2189. Tracking Oxygen Effects on MR Signal in Arterial Blood, Venous Blood, and Skeletal Muscle During Hyperoxia Exposure.** M.D. Noseworthy, J.K. Kim, J.A. Stainsby and G.A. Wright. University of Toronto, Ontario, Canada.
 Type of Study: Basic Research on MR
 Main Target of Study: Function
 Organ/Tissue: Body Vascular
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: hyperoxia, muscle, relaxometry
- 2190. Mean Field Approximation of NMR Relaxation Due to Magnetic Susceptibility Variations.** J.H. Jensen and R. Chandra. New York University School of Medicine, New York, NY.
 Type of Study: Basic Research on MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Category not applicable
 Pathology: Category not applicable
 Methods: Contrast Mechanisms
 Keywords: relaxation, susceptibility, mean field
- 2191. Quantitative Magnetization Transfer (MT) in the Human Brain: Extrapolation from Fast Pulse Repetition to CW Saturation.** A. Piringer and G. Helms. Karolinska Hospital, Stockholm, Sweden.
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: pulsed MT, MTR, CW
- 2192. Dynamic Evaluation of Magnetization Transfer (MT) in Human Brain: The Approach of Steady State After Pulsed Saturation.** G. Helms and A. Piringer. Karolinska Hospital, Stockholm, Sweden.
 Main Target of Study: Interventions
 Organ/Tissue: Heart
 Pathology: Healthy Tissue
 Methods: Sequences: Spectroscopy
 Keywords: pulsed MT, MTR, steady state
- 2193. Initial Iron Uptake by Ferritin: NMR Relaxometry Studies.** J. Vymazal, R.A. Brooks, J.W.M. Bulte, D. Gordon and P. Aisen. National Institutes of Health, Bethesda, MD; Albert Einstein Medical College, Bronx, NY.
 Type of Study: Biomedical Applications of MR
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain
 Pathology: Category not applicable
 Methods: Basic NMR
 Keywords: ferritin, iron, core
- 2194. Experimental Evaluation of T1 Exchange Minimization Methods for the Quantification of Compartment Volume Fraction.** Y.R. Kim and K.M. Donahue. Medical College of Wisconsin, Milwaukee, WI.
 Type of Study: Methodological Development
 Main Target of Study: Category not applicable
 Organ/Tissue: Brain Vascular
 Pathology: Tumors
 Methods: Contrast Agents
 Keywords: blood volume, contrast agent, water exchange

- 2195. Electrical Conductivity of Water at the Larmor Frequency.** N. Iriguchi, H. Mihara, O. Abe, Y. Kojima, K. Ohtomo and S. Ueno. University of Tokyo, Graduate School of Medicine, Tokyo, Japan.
- Type of Study: Methodological Development
- Main Target of Study: Function
- Organ/Tissue: Category not applicable
- Pathology: Category not applicable
- Methods: Contrast Mechanisms
- Keywords: conductivity, dielectric, impedance