



Organization for  
Human Brain Mapping

## Schedule of Poster Presentations and List of Posters

\*Indicates poster will also be presented during an Oral Session.  
Information listed below appears as author submitted.

### Schedule of Poster Presentations and List of Posters

Monday, June 16, 2008

11:30 – 12:30 *You Yangs Hall (Level 3)*

#### COGNITION & ATTENTION Attention (auditory, tactile, motor)

- Fractal based method for alertness measurement using EEG**, Sridhar Poosapadi Arjunan<sup>1</sup>, Dinesh Kant Kumar<sup>1</sup>, Tzyy-Ping Jung<sup>2</sup>, <sup>1</sup>SECE, RMIT University, Melbourne, Australia, <sup>2</sup>SCCN, University of California, San Diego, USA 1 M-AM
- Cortically constrained current source density analysis of duration-deviant mismatch negativity in schizophrenia**, Ross Fulham<sup>1</sup>, Ulrich Schall<sup>1,5</sup>, Patrica Michie<sup>2,5</sup>, Phillip Ward<sup>3,5</sup>, Matthew Hughes<sup>2,5</sup>, Patrick Johnston<sup>4</sup>, Paul Rasser<sup>1,5</sup>, <sup>1</sup>Centre for Brain and Mental Health Studies, Newcastle University, Newcastle, Australia, <sup>2</sup>School of Psychology, Newcastle University, Newcastle, Australia, <sup>3</sup>University of NSW, Sydney, Australia, <sup>4</sup>Swinburn University of Technology, Melbourne, Australia, <sup>5</sup>Schizophrenia Research Institute, NSW, Australia, <sup>6</sup>Hunter Medical Research Institute, Newcastle, Australia 5 M-AM
- Attention-dependent modulation of neural activity in primary motor cortex**, Annette Milnik, Isabella Nowak, Notger Müller, Cognitive Neurology Unit, Frankfurt, Germany 9 M-AM
- Chronotype-dependent performance modulation according to time of day : a functional neuroimaging approach**, Christina Schmidt<sup>1,2</sup>, Fabienne Collette<sup>1,2</sup>, Virginie Sterpenich<sup>1</sup>, Gilles Vandewalle<sup>1</sup>, Gilberte Tinguely<sup>1</sup>, Annabelle Darsaud<sup>1</sup>, Steffen Gais<sup>1</sup>, Manuel Schabus<sup>1</sup>, Martin Deseilles<sup>1</sup>, Thanh DangVu<sup>1</sup>, Eric Salmon<sup>1</sup>, André Luxen<sup>1</sup>, Pierre Maquet<sup>1</sup>, Christian Cajochen<sup>3</sup>, Philippe Peigneux<sup>4</sup>, <sup>1</sup>Cyclotron Research Center, University of Liège, Liège, Belgium, <sup>2</sup>Department of Cognitive Science, University of Liège, Liège, Belgium, <sup>3</sup>Center for Chronobiology Psychiatric University Clinics, Basel, Switzerland, <sup>4</sup>UR2NF-Neuropsychology and Functional Neuroimaging Research Unit, Brussels, Belgium 13 M-AM
- The effects of the glutamate antagonist memantine on brain activation to an auditory discrimination task: A pharmacological fMRI study**, Heidi van Wagneningen<sup>1</sup>, Hugo A. Jørgensen<sup>2</sup>, Tom Eichele<sup>1</sup>, Karsten Specht<sup>1</sup>, Kenneth Hugdahl<sup>1,2</sup>, <sup>1</sup>Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway, <sup>2</sup>Division of Psychiatry, Haukeland University Hospital, Bergen, Norway 17 M-AM

#### COGNITION & ATTENTION Attention (visual)

- Study of Distraction-related EEG Dynamics in Virtual Reality Driving Simulation**, Chin-Teng Lin<sup>1,2</sup>, Yu-Chieh Chen<sup>1,2</sup>, Chun-Ling Lin<sup>1,2</sup>, Chih-Feng Chao<sup>1</sup>, Jeng-Ren Duann<sup>1,3</sup>, Tzyy-Ping Jung<sup>1,3</sup>, <sup>1</sup>Brain Research Center, University System of Taiwan, Hsinchu, Taiwan, <sup>2</sup>Department of Electrical and Control Engineering, National Chiao-Tung University, Hsinchu, Taiwan, <sup>3</sup>Institute for Neural Computation, University of California, San Diego, USA 21 M-AM
- Top-down modulation of FFA by semantics associated with ignored and attended faces**, Francesco Gentile, Bernadette M. Jansma, Dept. of Cognitive Neuroscience, Faculty of Psychology, University of Maastricht, Maastricht, Netherlands 25 M-AM

**Increased activity in human visual cortex during fixation in the absence of foveal visual stimulation**, Xiaohu Huang<sup>1,2</sup>, Paul C. Knox<sup>3</sup>, Su Lv<sup>1</sup>, Hehan Tang<sup>1</sup>, Qiyong Gong<sup>1</sup>, <sup>1</sup>Huaxi Magnetic Resonance Research Center, Department of Radiology, West China hospital of Sichuan University, Chengdu, China, <sup>2</sup>Department of Psychiatry, West China hospital of Sichuan University, Chengdu, China, <sup>3</sup>Division of Orthoptics, School of Health Sciences, University of Liverpool, Liverpool, United Kingdom 29 M-AM

**Neural multivariate decoding in early visual cortex is not modulated by high attentional demands in an unrelated task.**, Christian Kaul<sup>1,2</sup>, Nilli Lavie<sup>3</sup>, Geraint Rees<sup>1,2</sup>, <sup>1</sup>Institute of Cognitive Neuroscience, University College London, London, United Kingdom, <sup>2</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>3</sup>Department of Psychology, University College London, London, United Kingdom 33 M-AM

**Activation during Joint Attention is Context Dependent as Measured with Magnetoencephalography (MEG): Substrates of Social Cognition**, Renee Lajiness-O'Neill<sup>1,2</sup>, Nicholas Velissaris<sup>1</sup>, Lesley Pawluk<sup>1</sup>, Susan Bowyer<sup>2,3,4</sup>, <sup>1</sup>Eastern Michigan University, Ypsilanti, USA, <sup>2</sup>Henry Ford Medical Group, Detroit, USA, <sup>3</sup>Oakland University, Rochester, USA, <sup>4</sup>Wayne State University, Detroit, USA 37 M-AM

**An fMRI study of item similarity effects in visual search**, Steven Phillips, Yuji Takeda, AIST, Tsukuba, Japan 41 M-AM

**Brain Substrates Associated with Working Memory among Subjects with Alcohol Use Disorders**, Mi-Sook Park<sup>1</sup>, In Kyu YU<sup>2</sup>, Hyunsoo Khang<sup>2</sup>, Sunju Sohn<sup>3</sup>, Jin-Hun Sohn<sup>1</sup>, <sup>1</sup>Dept. of Psychology, Institute for Brain Research, Chungnam National University Daejeon, Daejeon, South Korea, <sup>2</sup>Dept. of Radiology, College of Medicine, Eulji University, Daejeon, South Korea, <sup>3</sup>School of Social Work, University of Texas Austin, Austin, USA 45 M-AM

**Pathways for visual-spatial attention**, Roza Umarova<sup>1</sup>, Dorothee Saur<sup>1</sup>, Susanne Schnell<sup>2</sup>, Björn Kreher<sup>2</sup>, Magnus-Sebastian Vry<sup>1</sup>, Volkmar Glauche<sup>1</sup>, Cornelius Weiller<sup>1</sup>, <sup>1</sup>Freiburg Brain Imaging, Department of Neurology, University Hospital, Freiburg, Germany, <sup>2</sup>Medical Physics, Department of Diagnostic Radiology, University Hospital, Freiburg, Germany 49 M-AM

## COGNITION & ATTENTION

### Cognitive Aging

**Automated 3D mapping of caudate atrophy in Parkinson's disease with and without dementia**, Liana Apostolova<sup>1</sup>, Mona Beyer<sup>2</sup>, Amity Green<sup>1</sup>, Jonathan Morra<sup>1</sup>, Kristy Hwang<sup>1</sup>, Dag Aarsland<sup>2</sup>, Carmen Janvin<sup>2</sup>, Jan Larsen<sup>2</sup>, Jeffrey Cummings<sup>1</sup>, Paul Thompson<sup>1</sup>, <sup>1</sup>UCLA, Los Angeles, USA, <sup>2</sup>Stavanger University, Stavanger, Norway 53 M-AM

**Establishing Quantitative Linkages of Cognitive Impairments and Leukoaraiosis by CT Imaging**, Wei-Shih Huang<sup>1</sup>, Shu-Wen Huang<sup>2</sup>, Chon-Haw Tsai<sup>1</sup>, Chung-Ta Lu<sup>1</sup>, Chih-Chien Yang<sup>2,3</sup>, <sup>1</sup>Department of Neurology, China Medical University Hospital, Taichung, Taiwan, <sup>2</sup>Graduate School of Educational Measurement & Statistics, National Taichung University, Taichung, Taiwan, <sup>3</sup>Cognitive NeuroMetrics Laboratory, National Taichung University, Taichung, Taiwan 57 M-AM

**Brain Localization of Cognitive Domains with Diffusion MRI**, Efrat Sasson<sup>1</sup>, Glen Doniger<sup>2</sup>, Ofer Pasternak<sup>3</sup>, Yaniv Assaf<sup>1,4</sup>, <sup>1</sup>Department of Neurobiochemistry, Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel, <sup>2</sup>Department of Clinical Science, NeuroTrax Corporation, Newark, USA, <sup>3</sup>School of Computer Science, Tel Aviv University, Tel Aviv, Israel, <sup>4</sup>Functional brain imaging unit, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel 61 M-AM

## COGNITION & ATTENTION

### Cognitive Development

**Neural correlates of successful and partial inhibitions in children: An ERP study of go/no-go performance**, Lucy Cragg<sup>1,3</sup>, Allison Fox<sup>2</sup>, Kate Nation<sup>3</sup>, Corinne Reid<sup>4</sup>, Mike Anderson<sup>2</sup>, <sup>1</sup>Brain and Body Centre, University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>School of Psychology, University of Western Australia, Perth, Australia, <sup>3</sup>Dept. of Experimental Psychology, University of Oxford, Oxford, United Kingdom, <sup>4</sup>School of Psychology, Murdoch University, Perth, Australia 65 M-AM

**Abnormal Structural Integrity of the Ventral Frontostriatal pathway: A Diffusion Tensor Tractography Study of Young Male children with Fragile X Syndrome**, Brian W. Haas<sup>1</sup>, Naama Barnea-Goraly<sup>1</sup>, Amy Lightbody<sup>1</sup>, Sweta Patnaik<sup>1</sup>, Fumiko Hoeft<sup>1</sup>, Joseph Piven<sup>2</sup>, Reiss Allan<sup>1</sup>, <sup>1</sup>Center for Interdisciplinary Brain Sciences Research, Stanford University Medical Center, Stanford, USA, <sup>2</sup>Neurodevelopmental disorder Research Center, University of North Carolina, Chapel Hill, USA 69 M-AM

**Effects of Donepezil on neural network reorganization in patients with post-stroke cognitive impairment: a preliminary study**, Yun-Hee Kim<sup>1</sup>, Yun H. Park<sup>1</sup>, Suk Hoon Ohn<sup>1</sup>, Duk Ryul Na<sup>2</sup>, Sung Tae Kim<sup>3</sup>, Chang-hyun Park<sup>1,4</sup>, Woo-Kyoung Yoo<sup>1</sup>, Peter K.W. Lee<sup>1</sup>, <sup>1</sup>Department of Physical Medicine and Rehabilitation, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>2</sup>Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>3</sup>Department of Radiology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>4</sup>Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea 73 M-AM

**Response inhibition is associated with right inferior frontal gyrus and right preSMA white matter microstructure in children**, Kathrine Skak Madsen<sup>1,2</sup>, Martin Vestergaard Hansen<sup>1</sup>, William F. Baaré<sup>1,2</sup>, Lisser Rye Ejersbo<sup>4</sup>, Christian Gerlach<sup>4</sup>, Olaf B. Paulson<sup>1,2</sup>, Terry L. Jernigan<sup>1,2,3</sup>, <sup>1</sup>Danish Research Centre for MR, Copenhagen University Hospital, Hvidovre, Denmark, <sup>2</sup>Center for Integrated Molecular Brain Imaging, Copenhagen, Denmark, <sup>3</sup>Laboratory of Cognitive Imaging, University of California, San Diego, USA, <sup>4</sup>Learning Lab Denmark, Danish School of Education, University of Aarhus, Copenhagen, Denmark 77 M-AM

**Relation between the cerebral organization of arithmetic and language correlates: perspective from a large scale database of healthy subjects**, philippe pinel<sup>1,2,3</sup>, alex lopez Rolon<sup>4</sup>, stanislas dehaene<sup>1,2,3,5</sup>, <sup>1</sup>inserm, saclay, France, <sup>2</sup>cea, saclay, France, <sup>3</sup>Université Paris-Sud, orsay, France, <sup>4</sup>Medizinische Universität Innsbruck, Innsbruck, Austria, <sup>5</sup>college de France, paris, France 81 M-AM

#### COGNITION & ATTENTION Perception, Imagery, Awareness

**Visual awareness during binocular rivalry: Structural connectivity and a truly nonrivalrous comparison condition**, Juliane C. Wilcke<sup>1,2</sup>, Robert P. O'Shea<sup>3</sup>, Richard Watts<sup>1,4</sup>, <sup>1</sup>Department of Physics and Astronomy, University of Canterbury, Christchurch, New Zealand, <sup>2</sup>Department of Psychology, University of Canterbury, Christchurch, New Zealand, <sup>3</sup>Department of Psychology, University of Otago, Dunedin, New Zealand, <sup>4</sup>Van der Veer Institute for Parkinson's and Brain Research, Christchurch, New Zealand 85 M-AM

**Implication of two distinct neuronal networks in the awareness of environment and of self**, Audrey Vanhauzenhuysse<sup>1</sup>, Athena Demertzi<sup>1</sup>, Manuel Schabus<sup>2</sup>, Christophe Phillips<sup>1</sup>, Serge Bredart<sup>3</sup>, Steven Laureys<sup>1,4</sup>, Melanie Boly<sup>1,4</sup>, <sup>1</sup>Coma Science Group, Cyclotron Research Center, University of Liège, Liège, Belgium, <sup>2</sup>Department of Psychology, University of Salzburg, Salzburg, Belgium, <sup>3</sup>Department of Cognitive Science, University of Liège, Liège, Austria, <sup>4</sup>Neurology Department, CHU Sart Tilman, University of Liège, Liège, Belgium 89 M-AM

**Differential Neuromagnetic Activity Associated with Time Perception of Short and Long Tones**, Frederick Carver<sup>1</sup>, Brita Elvevaag<sup>1</sup>, Tom Holroyd<sup>1</sup>, Terry Goldberg<sup>2</sup>, Richard Coppola<sup>1</sup>, <sup>1</sup>NIMH, Bethesda, USA, <sup>2</sup>Albert Einstein CoM, Glenn Oaks, USA 93 M-AM

**When the brain takes BOLD 'steps': Controlling differential brain activation levels via real-time fMRI-based neurofeedback training**, Brigitte Dahmen<sup>1,2</sup>, Bettina Sorger<sup>1,2</sup>, Charlotte Sinke<sup>1,2</sup>, Rainer Goebel<sup>1,2</sup>, <sup>1</sup>Department of Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands, <sup>2</sup>Maastricht Brain Imaging Center (M-BIC), Maastricht, Netherlands 97 M-AM\*

**Neural Correlates of Perception in Chess**, Merim Bilalic, Michael Erb, Wolfgang Grodd, Section Exp. MR of the CNS, Department of Neuroradiology, University of Tübingen, Tuebinge, Germany 101 M-AM

**Does Mental Rotation of Hands and Feet Involve Somatotopically Organized Brain Regions?**, Takashi Hanakawa, Chihiro Hosoda, Manabu Honda, National Center of Neurology and Psychiatry, Kodaira, Japan 105 M-AM

**The Comparison of Buddhist Meditation with Different Phrases by Using fMRI,** *Chao-Hsien Hsieh<sup>1</sup>, Chien-Hui Liou<sup>1</sup>, Chang-Wei Hsieh<sup>1</sup>, Chi-Hong Wang<sup>2</sup>, Li-Kang Ho<sup>3</sup>, Jyh-Horng Chen<sup>1</sup>,* *<sup>1</sup>Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Department of Neurology, Cardinal Tien Hospital Yung Ho Branch, Taipei, Taiwan, <sup>3</sup>Department and Institute of Pharmacology, National Yang-Ming University, Taipei, Taiwan* 109 M-AM

**An fMRI Investigations of Temporal Discrimination: The Relationship Between Right Prefrontal Cortex and Interval Duration.,** *Kelly Jantzen<sup>1</sup>, Steve Sedita<sup>2</sup>, J.A. Scott Kelso<sup>2</sup>,* *<sup>1</sup>Western Washington University, Bellingham, USA, <sup>2</sup>Florida Atlantic University, Boca Raton, USA* 113 M-AM

### COGNITION & ATTENTION Reasoning & Problem Solving

**Dynamics of conditional inference and top down effects : A MEG study,** *Mathilde Bonnefond<sup>1</sup>, Jean-Baptiste Van Der Henst<sup>1</sup>, Anne Cheylus<sup>1</sup>, Olivier Bertrand<sup>2</sup>, Ira Noveck<sup>1</sup>,* *<sup>1</sup>CNRS-Laboratoire sur le langage, le cerveau et la cognition, France, France, <sup>2</sup>INSERM-U821 Dynamique Cérébrale et Cognition, France, France* 117 M-AM

**Sex differences in cortical activation patterns during mental rotation task in schizophrenia patients.,** *Jose Jimenez<sup>1,2</sup>, Adham Mancini-Marie<sup>1,2</sup>, Melissa Rinaldi<sup>1,2</sup>, Emmanuel Stip<sup>1,2</sup>, Marc Lavoie<sup>1,2</sup>, Francois Guillem<sup>1,2</sup>, Adrianna Mendrek<sup>1,2</sup>,* *<sup>1</sup>Department of Psychiatry, Fernand-Seguin Research Center, Louis-H Lafontaine Hospital, University of Montreal, Montreal, Canada, <sup>2</sup>Department of Psychiatry, Biomedical Sciences Program, Faculty of Medicine, University of Montreal, Montreal, Canada* 121 M-AM

**The Effect of Chicken Essence on Cognitive Processing in the Brain Revealed by fMRI Using the Tower of London Task,** *Jin-Hun Sohn<sup>1</sup>, Ji-Eun Park<sup>1</sup>, Jin-Sup Eom<sup>1</sup>, Chia Chew Sern<sup>2</sup>, Daniel Tsi<sup>2</sup>, Hajime Nagai<sup>2</sup>,* *<sup>1</sup>Dept. of Psychology, Institute for Brain Research, Chungnam Nat'l University, Daejeon, South Korea, <sup>2</sup>BRAND'S Health Science Center, Cerebos Pacific Limited, China square central, Singapore* 125 M-AM

### COGNITION & ATTENTION Space, Time, & Number Coding

**Numerical Specialisation: Within and Between Dimensions,** *Roi Cohen Kadosh, Bahador Bahrami, Vincent Walsh, Brian Butterworth, Cathy Price, University College London, London, United Kingdom* 129 M-AM

**Effective Connectivity of Frontal and Parietal Cortex in Quantifier Comprehension,** *Vanessa Troiani, Jonathan Peelle, Murray Grossman, University of Pennsylvania, Philadelphia, USA* 133 M-AM

### DISORDERS OF THE NERVOUS SYSTEM Alzheimer & Dementia

**Diffusion tensor analysis of optic radiation changes after optic neuritis,** *Clare Bajraszewski<sup>1</sup>, Scott Kolbe<sup>1,2</sup>, Caron Chapman<sup>2</sup>, Peter Mitchell<sup>3</sup>, Helmut Butzkueven<sup>1,2,3</sup>,* *Trevor Kilpatrick<sup>1,2,3</sup>, Gary Egan<sup>1,2</sup>,* *<sup>1</sup>Howard Florey Institute, Florey Neuroscience Institutes, Australia, <sup>2</sup>Centre for Neuroscience, University of Melbourne, Australia, <sup>3</sup>Royal Melbourne Hospital, Australia* 137 M-AM

**Regional brain changes in Mild Alzheimer's Disease: A Combination of Voxel-based Morphometry and Diffusion Tensor Imaging,** *Qin Chen<sup>1,2</sup>, Ling Zou<sup>2</sup>, Zheng-Yan Li<sup>2</sup>, Luo Ou-Yang<sup>3</sup>, Wei-Wei Zhang<sup>2</sup>, Li-Jun Jiang<sup>4</sup>, Dong Zhou<sup>1</sup>, Qi-Yong Gong<sup>2,5</sup>, Qiang Yuan<sup>1</sup>,* *<sup>1</sup>Department of Neurology, West China hospital of Sichuan University, Chengdu, China, <sup>2</sup>Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Chengdu, China, <sup>3</sup>Department of Psychology, Southwest University, Chongqing, China, <sup>4</sup>Psychiatric Center, West China Hospital of Sichuan University, Chengdu, China, <sup>5</sup>Division of Medical Imaging, University of Liverpool, Liverpool, United Kingdom* 141 M-AM

**Evidence for cortical reorganisation in cognitive domains in Multiple Sclerosis from functional MRI**, Christian Enzinger<sup>1,3</sup>, Marisa Loitfelder<sup>1,2</sup>, Stefan Ropele<sup>1</sup>, Christa Neuper<sup>2</sup>, Katja Petrovic<sup>1</sup>, Faton Gorani<sup>1</sup>, Siegrid Fuchs<sup>1</sup>, Franz Fazekas<sup>1</sup>, <sup>1</sup>Dept. of Neurology, Medical University Graz, Graz, Austria, <sup>2</sup>Institute of Psychology, Karl Franzens University Graz, Graz, Austria, <sup>3</sup>Section of Neuroradiology, Dept. of Radiology, Medical University Graz, Graz, Austria 145 M-AM

**Physical Fitness is Associated with Preservation of Hippocampal Volume in Alzheimer's Disease**, Robyn Honea<sup>1</sup>, George Thomas<sup>1</sup>, Amith Harsha<sup>1</sup>, Benjamin Cronk<sup>1</sup>, Joseph Donnelly<sup>2</sup>, William Brooks<sup>1</sup>, Jeffrey M. Burns<sup>1</sup>, <sup>1</sup>Departments of Neurology, University of Kansas Medical Center, Kansas City, USA, <sup>2</sup>Energy Balance Laboratory and Center for Physical Activity, Nutrition, and Weight, Kansas City, USA 149 M-AM

**Diffusion tensor imaging in clinically isolated syndrome and relapsing-remitting multiple sclerosis**, Yaou Liu<sup>1,3</sup>, Chunshui Yu<sup>1</sup>, Kuncheng Li<sup>1</sup>, Yunyun Duan<sup>1</sup>, Wen Qin<sup>1</sup>, Fuchun Lin<sup>2</sup>, Gary Egan<sup>3</sup>, <sup>1</sup>Department of radiology, Xuanwu Hospital, Capital University of Medical Sciences, Beijing, China, <sup>2</sup>Institute of Physics and Mathematics, Chinese Academic of Science, Wuhan, China, <sup>3</sup>Howard Florey Institute, Melbourne, Australia 153 M-AM

**Stability of fMRI Hippocampal Activation in Normal Older Subjects Over Two Years**, Jacqueline O'Brien<sup>1</sup>, Peter LaViolette<sup>2</sup>, Kelly O'Keefe<sup>1</sup>, Amy DeLuca<sup>1</sup>, Keith Johnson<sup>2</sup>, Reisa Sperling<sup>1</sup>, <sup>1</sup>Brigham and Women's Hospital, Boston, USA, <sup>2</sup>Massachusetts General Hospital, Boston, USA 157 M-AM

**Cortical neurodegeneration syndromes target human structural-functional covariance networks**, William Seeley<sup>1</sup>, Richard Crawford<sup>1</sup>, Bruce Miller<sup>1</sup>, Michael Greicius<sup>2</sup>, <sup>1</sup>Memory & Aging Center, University of California, San Francisco, San Francisco, USA, <sup>2</sup>Stanford University, Palo Alto, USA 161 M-AM

**How Treatment of donepezil influence the brain structures in Alzheimer's: A Diffusion Tensor Imaging Study at 3T**, Ling Zou<sup>1</sup>, Qin Chen<sup>2</sup>, Qiang Yuan<sup>2</sup>, Zhengyan Li<sup>1</sup>, Weiwei Zhang<sup>1</sup>, Yi Wei<sup>1</sup>, Xiaoling Wen<sup>1</sup>, Qiyong Gong<sup>1</sup>, <sup>1</sup>Huaxi MR Research Center(HMRRRC), Huaxi Hospital, Sichuan University, Chengdu, China, <sup>2</sup>Department of Neurology, Huaxi Hospital, Sichuan University, Chengdu, China 165 M-AM

## DISORDERS OF THE NERVOUS SYSTEM

### Mood & Anxiety Disorders

**Decreased Amygdala Anisotropy by DTI in Early Onset MDD: An Epidemiologic Twin Study**, Kelly Botteron<sup>1</sup>, Tomoyuki Nishino<sup>1</sup>, Melissa Munn<sup>2</sup>, Dimitrios Alexopoulos<sup>1</sup>, Babb Casey<sup>1</sup>, McKinstry Robert<sup>1</sup>, <sup>1</sup>Washington University School of Medicine, St Louis, USA, <sup>2</sup>University of Colorado, Boulder, USA 169 M-AM

**Thinner Prefrontal Cortex in Veterans with Posttraumatic Stress Disorder**, Elbert Geuze<sup>1,2</sup>, Eric Vermetten<sup>1,2</sup>, Rainier Goebel<sup>3</sup>, Herman Westenberg<sup>2</sup>, <sup>1</sup>Research Centre-Military Mental Healthcare, Utrecht, Netherlands, <sup>2</sup>Utrecht University Medical Centre, Utrecht, Netherlands, <sup>3</sup>Maastricht University, Maastricht, Netherlands 173 M-AM

**Increased Amygdala Activation in Subjects with Bulimia Nervosa**, Timo Lukkarinen<sup>1,2,3</sup>, Ilkka Nissilä<sup>1,3</sup>, Aila Rissanen<sup>2</sup>, Jaakko Kaprio<sup>4,5</sup>, Anna Keski-Rahkonen<sup>2,4</sup>, Elina Sihvola<sup>4,6</sup>, Leila Karhunen<sup>7</sup>, Salla Kaurijoki<sup>7</sup>, Oili Salonen<sup>3</sup>, Milla Linna<sup>1,2</sup>, Synnöve Carlson<sup>1,8</sup>, <sup>1</sup>Neuroscience Unit, Institute of Biomedicine/physiology, University of Helsinki, Helsinki, Finland, <sup>2</sup>Obesity Research Unit, Department of Psychiatry, University of Helsinki, Helsinki, Finland, <sup>3</sup>Functional Brain Imaging Unit, HBRC, Medical Imaging Center, University of Helsinki, Helsinki, Finland, <sup>4</sup>Department of Public Health, University of Helsinki, Helsinki, Finland, <sup>5</sup>Department of Mental Health and Alcohol Research, National Public Health Institute, Helsinki, Finland, <sup>6</sup>HUS Department of Psychiatry, Helsinki University Central Hospital, Helsinki, Finland, <sup>7</sup>Department of Clinical Nutrition, University of Kuopio, Kuopio, Finland, <sup>8</sup>Medical School, University of Tampere, Tampere, Finland 177 M-AM

**Hippocampo-amygdaloid structure predicts HPA axis dysregulation in the acute phase of major depression (MD)**, Philipp Sämann, David Höhn, Stefan Kloiber, Natalya Chechko, Susanne Lucae, Michael Czisch, Max Planck Institute of Psychiatry, Munich, Germany 181 M-AM

**Aberrant functional connectivity of dorsolateral prefrontal and cingulate networks in patients with major depression during working memory processing**, Nenad Vasic<sup>1</sup>, Henrik Walter<sup>2</sup>, Fabio Sambataro<sup>3</sup>, Robert Christian Wolf<sup>1</sup>, <sup>1</sup>University CLinic of Ulm, Department of Psychiatry III, Ulm, Germany, <sup>2</sup>Department of Psychiatry, Division of Medical Psychology, University of Bonn, Bonn, Germany, <sup>3</sup>Clinical Brain Disorders Branch, Genes Cognition and Psychosis Program, National Institute of Mental Health, National Institutes of Health, Bethesda, Washington, USA

185 M-AM

## DISORDERS OF THE NERVOUS SYSTEM Parkinson's Disease & Other Basal Ganglia

**White matter degeneration in early Huntington's disease; a Diffusion Tensor Imaging and Tract-Based Spatial Statistics study**, India Bohanna<sup>1</sup>, Gary Egan<sup>1</sup>, Anusha Sritharan<sup>2</sup>, Leigh Johnston<sup>1,3</sup>, Hamed Asadi<sup>1</sup>, Ross Cunnington<sup>4</sup>, Andrew Churchyard<sup>5</sup>, Nellie Georgiou-Karistianis<sup>2</sup>, <sup>1</sup>Howard Florey Institute, Florey Neuroscience Institutes, Melbourne, Australia, <sup>2</sup>School of Psychology, Psychiatry and Psychological Medicine, Monash University, Melbourne, Australia, <sup>3</sup>Department of Electrical and Electronic Engineering, University of Melbourne & NICTA Victorian Research Laboratory, Melbourne, Australia, <sup>4</sup>Queensland Brain Institute, University of Queensland, Brisbane, Australia, <sup>5</sup>Department of Neurology, Monash Medical Centre, Melbourne, Australia

189 M-AM

**A Joint Conditional-Independence, FDR-Controlled Method for Functional Connectivity — Insights into L-Dopa Effectiveness in Parkinson's Disease**, Martin McKeown<sup>1,2,3</sup>, Junning Li<sup>4</sup>, Samantha Palmer<sup>2</sup>, Jane Wang<sup>4</sup>, <sup>1</sup>Pacific Parkinson's Research Center, Vancouver, Canada, <sup>2</sup>Brain Research Center, Vancouver, Canada, <sup>3</sup>Dept. of Medicine (Neurology), Vancouver, Canada, <sup>4</sup>Dept. of Electrical and Computer Engineering, Vancouver, Canada

193 M-AM

**Spatial mapping of coherence and phase shift between electromyographic activities and local field potentials in the subthalamic nucleus in patients with Parkinson's disease and resting tremor**, Christiane Reck<sup>1,2</sup>, Esther Florin<sup>1,4</sup>, Lars Wojtecki<sup>2</sup>, Holger Krause<sup>2</sup>, Stefan Groiss<sup>2</sup>, Jürgen Voges<sup>3</sup>, Mohammad Maarouf<sup>3</sup>, Volker Sturm<sup>3</sup>, Alfons Schnitzler<sup>2</sup>, Lars Timmermann<sup>1</sup>, <sup>1</sup>Department of Neurology, Cologne, Germany, <sup>2</sup>Department of Neurology, Düsseldorf, Germany, <sup>3</sup>Department of Stereotactic Neurosurgery, Cologne, Germany, <sup>4</sup>Institute of Neuroscience and Biophysics-Medicine, Jülich, Germany

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## DISORDERS OF THE NERVOUS SYSTEM Schizophrenia

**Prefrontal cortical activation in people at ultra-high risk of psychosis: An fMRI study of voluntary eye movements.**, Elizabeth Bowman<sup>1,2</sup>, Larry Abel<sup>1</sup>, Cali Bartholomeusz<sup>2,3</sup>, Barnaby Nelson<sup>3</sup>, Alison Yung<sup>3</sup>, Murat Yucel<sup>2</sup>, Christos Pantelis<sup>2</sup>, Beatriz Luna<sup>4</sup>, Katerina Velanova<sup>4</sup>, Patrick McGorry<sup>3</sup>, Stephen Wood<sup>2</sup>, <sup>1</sup>Department of Optometry and Vision Sciences, The University of Melbourne, Melbourne, Australia, <sup>2</sup>Melbourne Neuropsychiatry Centre, Department of Psychiatry, The University of Melbourne, Melbourne, Australia, <sup>3</sup>ORYGEN Youth Health, Melbourne, Australia, <sup>4</sup>Department of Psychiatry, The University of Pittsburgh, Pittsburgh, USA

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**On the difference between auditory verbal hallucinations and inner speech; a group-wise analysis of fMRI scans in 24 psychotic patients**, Iris Sommer<sup>1</sup>, Kelly Diederen<sup>1</sup>, Jan Dirk Blom<sup>2</sup>, Leila Kushan<sup>1</sup>, Karin Slotema<sup>2</sup>, Marco Boks<sup>1</sup>, Kirstin Daalman<sup>1</sup>, Wijbrand Hoek<sup>2</sup>, Bas Neggers<sup>1</sup>, Rene Kahn<sup>1</sup>, <sup>1</sup>University Medical Centre, Utrecht, Netherlands, <sup>2</sup>Parnassia Psycho-Medical centre, The Hague, Netherlands

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**Mapping grey matter reductions in schizophrenia: an ALE meta-analysis of voxel-based morphometry studies**, Alex Fornito<sup>1</sup>, Yücel Murat<sup>1,2</sup>, Jessica Patti<sup>3</sup>, Stephen Wood<sup>1</sup>, Christos Pantelis<sup>1</sup>, <sup>1</sup>Melbourne Neuropsychiatry Centre, The University of Melbourne, Melbourne, Australia, <sup>2</sup>ORYGEN Research Centre, The University of Melbourne, Melbourne, Australia, <sup>3</sup>Department of Psychology, The University of Melbourne, Melbourne, Australia

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**Functional and anatomical connectivity abnormalities of left inferior frontal gyrus in schizophrenia**, Bum Seok Jeong<sup>1,2,3</sup>, R.W. McCarley<sup>2</sup>, M.E. Shenton<sup>3</sup>, C.G. Wible<sup>3</sup>, M. Kubicki<sup>3</sup>, R.H. Hashimoto<sup>2</sup>, <sup>1</sup>Dept. of Psychiatry, Eulji University, Daejeon, South Korea, <sup>2</sup>Clinical Neuroscience Division, Laboratory of Neuroscience, Boston VA Healthcare System, Dept. of Psychiatry, Harvard Medical School, Boston, USA, <sup>3</sup>Psychiatry Neuroimaging Laboratory, Department of Psychiatry, Brigham and Women's Hospital and Harvard Medical School, Boston, USA

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**EEG alpha activity reflects hypofrontality in schizophrenia**, Maria G. Knyazeva<sup>1,2</sup>, Mahdi Jalili<sup>3</sup>, Reto Meuli<sup>2</sup>, Martin Hasler<sup>3</sup>, Oscar De Feo<sup>4</sup>, Kim Q. Do<sup>5</sup>, <sup>1</sup>Dept of Neurology, Centre Hospitalier Universitaire Vaudois and University of Lausanne, Lausanne, Switzerland, <sup>2</sup>Dept of Radiology, Centre Hospitalier Universitaire Vaudois and University of Lausanne, Lausanne, Switzerland, <sup>3</sup>École Polytechnique Fédérale de Lausanne (EPFL), School of Computer and Communication Sciences, IC-LANOS, Lausanne, Switzerland, <sup>4</sup>Department of Microelectronic Engineering, University College Cork, Cork City, Ireland, <sup>5</sup>Center for Psychiatric Neuroscience, Dept of Psychiatry, Centre Hospitalier Universitaire, Lausanne, Switzerland 217 M-AM

**Morphological abnormalities of the cerebral cortical thickness in schizophrenia**, Tao Liu<sup>1</sup>, Feng Shi<sup>2</sup>, Yuan Zhou<sup>2</sup>, Wanlin Zhu<sup>4</sup>, Lei Lin<sup>2</sup>, Jesse Jin<sup>1</sup>, Tianzi Jiang<sup>2</sup>, Suhuai Luo<sup>1</sup>, Mira Park<sup>1</sup>, Paul Rasser<sup>3</sup>, Ulrich Schall<sup>3</sup>, <sup>1</sup>School of Design, Communication & I.T, The University of Newcastle, Callaghan NSW, Australia, <sup>2</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>3</sup>Schizophrenia Research Institute, Sydney, Australia, Priority Centre for Brain & Mental Health Research, University of Newcastle, Newcastle, Australia, Hunter Medical Research Institute, Newcastle, Australia, <sup>4</sup>Neuropsychiatric Institute, Prince of Wales Hospital, Randwick NSW, Australia 221 M-AM

**LINKING CEREBRAL GREY MATTER AND MISMATCH NEGATIVITY (MMN) IN SCHIZOPHRENIA**, Paul E. Rasser<sup>1,2</sup>, Juanita Todd<sup>1,2</sup>, Paul M. Thompson<sup>3</sup>, Patricia T. Michie<sup>1,2</sup>, Philip B. Ward<sup>4</sup>, Patrick Johnston<sup>5</sup>, Katrin Helmbold<sup>2,6</sup>, Vanessa Case<sup>2</sup>, Paul A. Tooney<sup>1,2</sup>, Ulrich Schall<sup>1,2</sup>, <sup>1</sup>Schizophrenia Research Institute, Sydney, Australia, <sup>2</sup>Priority Centre for Brain & Mental Health Research, University of Newcastle, Newcastle, Australia, <sup>3</sup>Laboratory of Neuro Imaging, University of California Los Angeles, Los Angeles, USA, <sup>4</sup>Schizophrenia Research Unit, Liverpool Hospital, University of New South Wales, Sydney, Australia, <sup>5</sup>Brain Sciences Institute, Swinburne University of Technology, Melbourne, Australia, <sup>6</sup>Department of Psychology, University of Konstanz, Konstanz, Germany 225 M-AM

**3D Pattern of Brain Abnormalities in Chronic Schizophrenia Visualized Using Tensor-Based Morphometry: a Multi-Site Structural Imaging Study**, Theo G.M. van Erp<sup>1</sup>, Ming-Chang Chiang<sup>2</sup>, Daqiang Sun<sup>1</sup>, Molly E. Hardt<sup>1</sup>, Jeremy H. Bockholt<sup>3</sup>, Jessica A Turner<sup>4</sup>, Vince D. Calhoun<sup>3,5,6</sup>, Hans J. Johnson<sup>7</sup>, Doug N. Greve<sup>8</sup>, Greg G. Brown<sup>9</sup>, Judith M. Ford<sup>10</sup>, Steven G. Potkin<sup>4</sup>, Tyrone D. Cannon<sup>11</sup>, Paul M. Thompson<sup>2</sup>, Arthur W. Toga<sup>2</sup>, F. BIRN<sup>1</sup>, <sup>1</sup>Department of Psychology, University of California Los Angeles, Los Angeles, USA, <sup>2</sup>Lab of Neuroimaging and Department of Neurology, University of California Los Angeles, Los Angeles, USA, <sup>3</sup>The Mind Research Network, Albuquerque, USA, <sup>4</sup>Department of Psychiatry and Human Behavior, University of California Irvine, Irvine, USA, <sup>5</sup>Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, USA, <sup>6</sup>Department of Psychiatry, Yale University, New Haven, USA, <sup>7</sup>Iowa Mental Health Clinical Research Center, The University of Iowa Hospitals and Clinics, Iowa City, USA, <sup>8</sup>Department of Radiology, Massachusetts General Hospital, Boston, USA, <sup>9</sup>Psychology Services, Veterans Administration San Diego Healthcare System, and Psychiatry Department, University of San Diego, San Diego, USA, <sup>10</sup>Department of Psychiatry, Yale University School of Medicine, West Haven, USA, <sup>11</sup>Departments of Psychology and Psychiatry and Biobehavioral Sciences, University of California Los Angeles, Los Angeles, USA 229 M-AM

## EMOTION & MOTIVATION

### Reward

**Anterior Cingulate and Vulnerability to Depression; Blunted Response to Incongruous Feedback in a Novel Reward-Related Task.**, Darragh Downey<sup>1</sup>, Shane McKie<sup>2</sup>, JFW Deakin<sup>2</sup>, Ian Anderson<sup>2</sup>, Rebecca Elliott<sup>2</sup>, <sup>1</sup>Imaging Science and Biomedical Engineering, University of Manchester, Manchester, United Kingdom, <sup>2</sup>Neuroscience and Psychiatry Unit, University of Manchester, Manchester, United Kingdom 233 M-AM\*

**The roles of expectation and dopamine release in the mechanism of the placebo effect in Parkinson's disease: A high-resolution PET study with [11C] raclopride**, Sarah Lidstone<sup>1</sup>, Katherine Dinelle<sup>2</sup>, Stephan Blinder<sup>1</sup>, Tom Ruth<sup>3</sup>, Vesna Sossi<sup>2</sup>, Jon Stoessl<sup>1</sup>, <sup>1</sup>Pacific Parkinson's Research Centre, Vancouver, Canada, <sup>2</sup>Department of Physics & Astronomy, Vancouver, Canada, <sup>3</sup>TRIUMF, Vancouver, Canada 237 M-AM

**Neural Activity in a Delay Discounting Task Correlates with Interindividual Differences in Impulsivity and Self-Control**, Lioba Schmitz, Corinna Nuesser, Susanne Erk, Dina Schardt, Henrik Walter, Dept. of Psychiatry, Div. of Medical Psychology, University of Bonn, Bonn, Germany 241 M-AM

**Detachment effectuates suspension of reward magnitude and prediction error coding in ventral striatum**, Markus Staudinger<sup>1</sup>, Susanne Erk<sup>2</sup>, Birgit Abler<sup>3</sup>, Henrik Walter<sup>4</sup>, <sup>1</sup>University of Bonn, Bonn, Germany, <sup>2</sup>University of Bonn, Bonn, Germany, <sup>3</sup>University of Ulm, Ulm, Germany, <sup>4</sup>University of Bonn, Bonn, Germany 245 M-AM

**Neural encoding of object valence using parametric modulation and multivariate pattern classification**, Anita Tusche<sup>1</sup>, John-Dylan Haynes<sup>1,2</sup>, <sup>1</sup>Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience Berlin, Charité – Universitätsmedizin, Berlin, Germany 249 M-AM

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### Sexual Behavior

**The resting frontal alpha asymmetry across the menstrual cycle: a magnetoencephalographic study**, Ren-Jen Hwang<sup>1</sup>, Li-Fen Chen<sup>2,3,4</sup>, Tzu-Chen Yeh<sup>2,3,4</sup>, Pei-Chi Tu<sup>1</sup>, Chung-Haow Tu<sup>1</sup>, Jen-Chuen Hsieh<sup>1,2,3,4</sup>, <sup>1</sup>Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Institute of Brain of Brain Science, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Dept. Medical Research & Education, Taipei Veterans General Hospital, Taipei, Taiwan, <sup>4</sup>Brain Research Center, National Yang-Ming University, Taipei, Taiwan 253 M-AM

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### Social Behavior

**Learning to like: social observation influences prefrontal activation for viewing others**, Jeffrey C. Cooper, Tamar Kreps, Brian Knutson, Department of Psychology, Stanford University, Stanford, USA 257 M-AM

**Investigation of Brain Activity under Social Pressure using the Asch Paradigm: An fNIRS study**, Takashi X. FUJISAWA, Toyoharu HOSOKAWA, Noriko NAGATA, Haruhiro KATAYOSE, Kwansai Gakuin University, Hyogo, Japan 261 M-AM

**Investigating Neural Correlates of Frustration with fMRI**, Johan Lambregts<sup>1</sup>, Johan Ormel<sup>2</sup>, André Aleman<sup>1</sup>, <sup>1</sup>University Medical Center Groningen, BCN-NIC, Groningen, Netherlands, <sup>2</sup>University Medical Center Groningen, Dept. Psychiatry, Groningen, Netherlands 265 M-AM

**Functional Imaging of “Development of Parenting Brain” in Adolescents**, Akio NAKAI<sup>1</sup>, Ayako SASAKI<sup>2</sup>, Hirotaka KOSAKA<sup>3</sup>, Ken-ichi MATSUKI<sup>4</sup>, Michiko TANABE<sup>2</sup>, <sup>1</sup>Department of Pediatrics, Faculty of Medical Sciences, University of Fukui, Fukui, Japan, <sup>2</sup>Department of Maternity, Child Health Nursing, and Midwifery, Faculty of Medical Sciences, University of Fukui, Fukui, Japan, <sup>3</sup>Department of Neuropsychiatry, Faculty of Medical Sciences, University of Fukui, Fukui, Japan, <sup>4</sup>Department of Developmental Sciences, Faculty of Education and Regional Studies, Fukui, Japan 269 M-AM

## GENETICS

**Catechol-o-methyltransferase val<sup>158</sup>met genotype influences neural incentive processing**, Katharina Schmack<sup>1</sup>, Florian Schlagenhauf<sup>1</sup>, Philipp Sterzer<sup>1</sup>, Jana Wrase<sup>1</sup>, Anne Beck<sup>1</sup>, Theresa Dembler<sup>1</sup>, Peter Kalus<sup>1</sup>, Imke Puls<sup>1</sup>, Thomas Sander<sup>2</sup>, Jürgen Gallinat<sup>1</sup>, Andreas Heinz<sup>1</sup>, <sup>1</sup>Dept. of Psychiatry, Charité University Medical Center, Berlin, Germany, <sup>2</sup>Max-Delbrück Center for Molecular Medicine, Berlin, Germany 273 M-AM

**The impact of gene-environment interactions on neural pathways in risk for syndromal depression and anxiety**, Justine M. Gatt<sup>1,2</sup>, Charles B. Nemeroff<sup>3</sup>, Carol Dobson-Stone<sup>4</sup>, Stacey A. Kuan<sup>1,2</sup>, Robert H. Paul<sup>5</sup>, Richard A. Bryant<sup>1,6</sup>, Peter R. Schofield<sup>4</sup>, Evian Gordon<sup>1,2,7</sup>, Leanne M. Williams<sup>1,2</sup>, <sup>1</sup>The Brain Dynamics Centre, Westmead Millennium Institute, Westmead Hospital and Western Clinical School, University of Sydney, Sydney, Australia, <sup>2</sup>Psychological Medicine, Western Clinical School, University of Sydney, Sydney, Australia, <sup>3</sup>Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine, Atlanta, USA, <sup>4</sup>Prince of Wales Medical Research Institute, University of New South Wales, and Garvan Institute of Medical Research, Sydney, Australia, <sup>5</sup>Department of Psychiatry, Behavioral Neuroscience, University of Missouri, St. Louis, USA, <sup>6</sup>School of Psychology, University of New South Wales, Sydney, Australia, <sup>7</sup>The Brain Resource International Database and the Brain Resource Company, and Faculty of Medicine, University of Sydney, Sydney, Australia 277 M-AM



**Genetics of cerebral sulcation: Does genetics offer a new way of sulcal classification?**, Peter Kochunov<sup>1</sup>, David Glahn<sup>1</sup>, Peter Fox<sup>1</sup>, Oliver Coulon<sup>2</sup>, Karl Zilles<sup>3</sup>, Wendy Shelledy<sup>4</sup>, Jack Lancaster<sup>1</sup>, John Blangero<sup>4</sup>, Jeff Rogers<sup>4</sup>, <sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>Laboratoire des Sciences de l'Information et des Systèmes, Marseille, France, <sup>3</sup>Institut für Medizin (IME), Jülich, Germany, <sup>4</sup>Southwest Research Foundation, San Antonio, USA 281 M-AM

**Brain-Derived Neurotrophic Factor and Volumes of Hippocampus and Amygdala in Adolescents**, Tomas Paus<sup>1,2</sup>, Marie Chupin<sup>6</sup>, Line Garnero<sup>6</sup>, Gabriel Leonard<sup>2</sup>, Michel Perron<sup>3,4</sup>, Bruce Pike<sup>2</sup>, Alain Pitiot<sup>1</sup>, Louis Richer<sup>3</sup>, Roberto Toro<sup>1</sup>, Suzanne Veillette<sup>3,4</sup>, Zdenka Pausova<sup>1,3</sup>, <sup>1</sup>University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>McGill University, Montreal, Canada, <sup>3</sup>University of Montreal, Montreal, Canada, <sup>4</sup>CEGEP Jonquiere, Jonquiere, Canada, <sup>5</sup>University of Quebec, Chicoutimi, Canada, <sup>6</sup>CNRS, Paris, France 285 M-AM\*

**Neuroimaging endophenotypes for emotion perception? Variation with COMT Val<sup>108/158</sup>Met genotypes, level of awareness and sex differences**, Leanne (Lea) Williams<sup>1,2</sup>, Stacey Kuan<sup>1,2</sup>, Justine Gatt<sup>1,2</sup>, Dobson-Stone Carol<sup>3</sup>, Schofield Peter<sup>3</sup>, Gordon Evian<sup>1,2,4</sup>, <sup>1</sup>Brain Dynamics Centre, Westmead Millennium Institute, Sydney, Australia, <sup>2</sup>University of Sydney, Sydney, Australia, <sup>3</sup>Prince of Wales Medical Research Institute, Sydney, Australia, <sup>4</sup>Brain Resource, Sydney, Australia 289 M-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### EEG

**Modulation of Resting EEG Nonlinear Topography by NMDA Receptor Antagonist Nitrous Oxide**, Brett Foster, Mathew Dafilis, Peter Cadusch, David Liley, Brain Dynamics Research Unit, Brain Sciences Institute, Swinburne University of Technology, Melbourne, Australia 293 M-AM

**Tracking inter-hemispheric transfer with high-density event-related brain potentials**, Ryan D'Arcy<sup>1,2,3</sup>, Erin Mazerolle<sup>1,2</sup>, Nicole Pelor<sup>1</sup>, <sup>1</sup>Institute for Biodiagnostics (Atlantic), National Research Council, Halifax, Canada, <sup>2</sup>Department of Psychology/Neuroscience, Dalhousie University, Halifax, Canada, <sup>3</sup>Department of Radiology, Dalhousie University, Halifax, Canada 297 M-AM

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### Functional MRI

**Neuroimaging Analysis and Visualization Tools For Remote Collaboration**, Michael Andric, Uri Hasson, Steven Small, The University of Chicago, Chicago, USA 301 M-AM

**Oxygen Calibrated Functional MRI**, Daniel Bulte, Peter Jezzard, University of Oxford, Oxford, United Kingdom 305 M-AM

**Functional Changes in Cerebral Blood Flow and Venous Blood Volume: what is the Steady-State Relationship?**, J. Jean Chen, G. Bruce Pike, McConnell Brain Imaging Centre, Montreal Neurological Institute, Montreal, Canada 309 M-AM

**Test-Retest Reliability of Functional Activation in Schizophrenia and Unaffected Individuals During Working Memory Tasks: Differences, Implications, and the Effects of Denoising**, Kristen Haut<sup>1</sup>, Maria Prom<sup>2</sup>, Angus MacDonald III<sup>1</sup>, <sup>1</sup>University of Minnesota, Minneapolis, USA, <sup>2</sup>Carleton College, Northfield, USA 313 M-AM

**Effects of current timing and local shimming in neuronal current imaging: experiment and simulation**, Ivana Drobnjak<sup>1</sup>, Gaby Pell<sup>2</sup>, Mark Jenkinson<sup>1</sup>, <sup>1</sup>FMRIB Centre, University of Oxford, Oxford, United Kingdom, <sup>2</sup>Brain Research Institute, Melbourne, Australia 317 M-AM

**Faster response of diffusion-weighted fMRI signal compared to BOLD and NIRS signals in the human brain**, Satoru Kohno<sup>1,2</sup>, Nobukatsu Sawamoto<sup>1</sup>, Shin-ichi Urayama<sup>1</sup>, Toshihiko Aso<sup>1,4</sup>, Akitoshi Seiyama<sup>3</sup>, Denis Le Bihan<sup>4</sup>, Hidenao Fukuyama<sup>1</sup>, <sup>1</sup>Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>2</sup>R&D Department, Medical Systems Division, Shimadzu Corporation, Kyoto, Japan, <sup>3</sup>Human Health Science, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>4</sup>CEA, NeuroSpin, Saclay, France 321 M-AM

**Searching the reference image for selecting default network components in fMRI**, S-J Lin<sup>1</sup>, T-C Yeh<sup>1,2</sup>, C-M Cheng<sup>2</sup>, J-C Hsieh<sup>1,2</sup>, L-T Ho<sup>2</sup>, <sup>1</sup>Institute of Brain science, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan 325 M-AM

**Resting State Sensorimotor Functional Connectivity in Multiple Sclerosis Correlates with Transcallosal Motor Pathway Transverse Diffusivity**, Mark Lowe<sup>1</sup>, Erik Beall<sup>1</sup>, Ken Sakaie<sup>1</sup>, Katherine Koenig<sup>1</sup>, Lael Stone<sup>1</sup>, RuthAnn Marrie<sup>2</sup>, Micheal Phillips<sup>1</sup>, <sup>1</sup>Cleveland Clinic, Cleveland, USA, <sup>2</sup>University of Manitoba, Winnipeg, Canada 329 M-AM

**Exploring the Neuro-Cognitive Significance of the Negative BOLD Response: Attenuation of the BOLD Response Appears to Inhibit Hippocampal-Dependent Memory**, Sinéad Mullally, Shane O'Mara, Trinity College Institute of Neuroscience, Dublin, Ireland 333 M-AM\*

**Impact of COMT val<sup>158</sup>met polymorphism on processing speed in healthy volunteers**, Devon C. Nixon<sup>1</sup>, Bart Rypma<sup>2</sup>, Rachel G. Higier<sup>1</sup>, Steven Sust<sup>1</sup>, Morgan J. Prust<sup>1</sup>, Hao Yang Tan<sup>1</sup>, Brad Zolnick<sup>1</sup>, Jennifer K. Brooke<sup>1</sup>, Venkata S. Mattay<sup>1</sup>, Daniel R. Weinberger<sup>1</sup>, Joseph H. Callicott<sup>1</sup>, <sup>1</sup>CBDB/GCAP/NIMH/NIH, Bethesda, USA, <sup>2</sup>University of Texas at Dallas, University of Texas Southwestern, Dallas, USA 337 M-AM

**Measuring Brain Connectivity using Diffusion Tensor Imaging and Resting State Temporal Correlations**, Pawel Skudlarski<sup>1,2</sup>, Kanchana Jagannathan<sup>1</sup>, Vince Calhoun<sup>3</sup>, Beata Skudlarska<sup>4</sup>, Godfrey Pearlson<sup>1,2</sup>, <sup>1</sup>Olin Neuropsychiatry Research Center., Hartford, USA, <sup>2</sup>Department of Psychiatry Yale University School of Medicine, New Haven, USA, <sup>3</sup>The Mind Institute, Albuquerque, NM, University of New Mexico, Albuquerque, USA, <sup>4</sup>Center on Geriatrics, bridgeport Hospital, bridgeport, USA 341 M-AM

**Is T2\* always the optimum Echo Time in BOLD fMRI? Challenging a classic concept with a new functional Contrast to Noise Ratio model**, Pierre-Francois Van de Moortele<sup>1</sup>, Eddie Auerbach<sup>1</sup>, Kamil Ugurbil<sup>1</sup>, Stephane Lehericy<sup>1,2</sup>, <sup>1</sup>CMRR-University of Minnesota, Minneapolis, USA, <sup>2</sup>Université Pierre et Marie Curie, Hôpital Pitié-Salpêtrière, Paris, France 349 M-AM

**Direct measurement of neuronal magnetic field changes evoked by median nerve stimulation using MRI: TE dependence**, Yiqun Xue<sup>1,2</sup>, Thomas Grabowski<sup>3</sup>, Jinhua Xiong<sup>2</sup>, <sup>1</sup>Biomedical Engineering, University of Iowa, Iowa city, USA, <sup>2</sup>Radiology, University of Iowa, Iowa city, USA, <sup>3</sup>Neurology, University of Iowa, Iowa city, USA 353 M-AM

**High-Resolution fMRI at 7T using Generalized Series Parallel Imaging Technique**, Sungdae Yun<sup>1</sup>, Jun-Young Chung<sup>2</sup>, Sung Suk Oh<sup>1</sup>, Hyo Woon Yoon<sup>2</sup>, Zang-Hee Cho<sup>2,3</sup>, HyunWook Park<sup>1</sup>, <sup>1</sup>Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea, <sup>2</sup>Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, Korea, <sup>3</sup>Department of Radiological Sciences, University of California, Irvine, USA 357 M-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM MEG

**Simultaneous MEG source imaging and depth recordings in Humans**, Florence GOMBERT<sup>1</sup>, Claude ADAM<sup>1,2</sup>, Guido NOLTE<sup>3</sup>, Line GARNERO<sup>1</sup>, Sylvain BAILLET<sup>1</sup>, <sup>1</sup>Cognitive Neuroscience & Brain Imaging Laboratory LENA, CNRS, MEG-EEG center, UPMC University-Paris 6, Paris, France, <sup>2</sup>Epilepsy Unit, La Salpêtrière Hospital, Paris, France, <sup>3</sup>Fraunhofer FIRST, Berlin, France 361 M-AM\*

## LANGUAGE Language Acquisition

**Error-related Responses Supporting Grammatical Plasticity**, Douglas Davidson<sup>1,2</sup>, Peter Indefrey<sup>1,2</sup>, <sup>1</sup>F. C. Donders Centre for Cognitive Neuroimaging, Nijmegen, Netherlands, <sup>2</sup>Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands 365 M-AM

**Neural correlates of foreign language sound imitation**, Hiroshi Hashizume<sup>1</sup>, Hyeonjeong Jeong<sup>1,2</sup>, Naho Ikuta<sup>1</sup>, Motoaki Sugiura<sup>1,3</sup>, Ryuta Kawashima<sup>1</sup>, <sup>1</sup>Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan, <sup>2</sup>Japan Society for the Promotion of Science, Tokyo, Japan, <sup>3</sup>National Institute for Physiological Sciences, Okazaki, Japan 369 M-AM

**fMRI shows that language lateralisation is affected in BECTS**, Leasha Lillywhite<sup>1,2</sup>, Simon Harvey<sup>3</sup>, Michael Saling<sup>4</sup>, David Abbott<sup>1,2</sup>, John Archer<sup>1,2</sup>, Danya Vears<sup>2</sup>, Ingrid Scheffer<sup>2</sup>, Graeme Jackson<sup>1,2</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>Department of Medicine, The University of Melbourne, Melbourne, Australia, <sup>3</sup>Royal Children's Hospital, Melbourne, Australia, <sup>4</sup>Department of Psychology, The University of Melbourne, Melbourne, Australia 373 M-AM

**Functional Neuroimaging of Novel Word Learning**, Amy Clements-Stephens<sup>1,2</sup>, April Materek<sup>1,4</sup>, Pooja Gaur<sup>1</sup>, Laurie Cutting<sup>1,2,3</sup>, <sup>1</sup>Kennedy Krieger Institute, Baltimore, USA, <sup>2</sup>Johns Hopkins University, Baltimore, USA, <sup>3</sup>Johns Hopkins Medical Institute, Baltimore, USA, <sup>4</sup>Loyola University, Baltimore, USA 377 M-AM

## LANGUAGE Production

**Bold response changes with ageing evidenced during a semantic fluency task.**, Christophe Destrieux<sup>1,2,3,4</sup>, Florence Domengie<sup>1,3</sup>, Giovanni de Marco<sup>5</sup>, Jean-Philippe Cottier<sup>1,2,3,4</sup>, Caroline Hommet<sup>1,2,3,4</sup>, <sup>1</sup>CHRU, Tours, France, <sup>2</sup>INSERM, U619, Tours, France, <sup>3</sup>Université François Rabelais, Tours, France, <sup>4</sup>IFR135, Tours, France, <sup>5</sup>Université de Picardie Jules Verne, Amiens, France 381 M-AM

**Semantic context and visual feature effects on verbal self-monitoring measured with Arterial Spin Labelling**, Julia Hocking, Katie McMahon, Matthew Meredith, Greig de Zubicaray, fMRI Laboratory, University of Queensland, Brisbane, Australia 385 M-AM

**Second Language Communication: Effects of Interview Types and Oral Proficiency Levels on Brain Activation**, Hyeonjeong Jeong<sup>1,2</sup>, Hiroshi Hashizume<sup>2</sup>, Yuko Sassa<sup>2</sup>, Satoru Yokoyama<sup>2</sup>, Motoaki Sugiura<sup>2,3</sup>, Kensaku Ishimaki<sup>4</sup>, Ryuta Kawashima<sup>2</sup>, <sup>1</sup>Japan Society for the Promotion of Science, Tokyo, Japan, <sup>2</sup>Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan, <sup>3</sup>National Institute for Physiological Science, Okazaki, Japan, <sup>4</sup>The Society for testing English Proficiency, Tokyo, Japan 389 M-AM

**Intraoperative cortical stimulation mapping and presurgical fMRI – complement or contradiction ?**, Janpeter Nickel<sup>1</sup>, Michael C. Sabel<sup>2</sup>, Walter Stummer<sup>2</sup>, Hans-Jakob Steiger<sup>2</sup>, Rüdiger J. Seitz<sup>1</sup>, <sup>1</sup>Department of Neurology, University Hospital Düsseldorf, Düsseldorf, Germany, <sup>2</sup>Department of Neurosurgery, University Hospital Düsseldorf, Düsseldorf, Germany 393 M-AM

**Examining cortical representational overlap for singing with lyrics and propositional language**, Sarah Wilson<sup>1,2</sup>, David Abbott<sup>2,3</sup>, Anthony Waites<sup>2,3</sup>, Regula Briellmann<sup>2</sup>, Dean Lusher<sup>1</sup>, Gaby Pell<sup>2,3</sup>, Jenni Ogden<sup>4</sup>, Michael Saling<sup>1,2</sup>, Graeme Jackson<sup>2,3</sup>, <sup>1</sup>School of Behavioural Science, The University of Melbourne, Victoria, Australia, <sup>2</sup>Brain Research Institute, Austin Health, Melbourne, Victoria, Australia, <sup>3</sup>Department of Medicine, The University of Melbourne, Victoria, Australia, <sup>4</sup>Department of Psychology, The University of Auckland, Auckland, New Zealand 397 M-AM

## MEMORY & LEARNING Plasticity (normal & following pathology)

**Do Baseline Neurocognitive Deficits In Hypothyroid Patients Indicate A Difference In BOLD Activity?**, Gillian Cooke<sup>1</sup>, Sinead Mullally<sup>1</sup>, Neuman Correia<sup>2</sup>, Maria Fitzgibbon<sup>3</sup>, James Gibney<sup>2</sup>, Shane O'Mara<sup>1</sup>, <sup>1</sup>Trinity College Institute of Neuroscience & School of Psychology, Trinity College Dublin, Dublin, Ireland, <sup>2</sup>Adelaide & Meath Hospital, incorporating National Children's Hospital, Dublin, Ireland, <sup>3</sup>University College Hospital Galway, Newcastle Road, Galway, Ireland 401 M-AM

**Gender differences in navigation and neural plasticity: Does training matter?**, Petra Neumann, Georg Grön, University Ulm, Ulm, Germany 405 M-AM

**The structural and functional basis of variability in normal motor skill learning**, Valentina Tomassini, Saad Jbabdi, Tamas Kincses, Rose Bosnell, Paul M Matthews, Heidi Johansen-Berg, FMRIB Centre, University of Oxford, Oxford, United Kingdom 409 M-AM

## MEMORY & LEARNING

### Working Memory

- Tracking the cerebro-cerebellar verbal working memory circuitry using functional MRI and Diffusion Spectrum Imaging**, *Jing-Syun Yu<sup>1</sup>, Wen-Yang Chiang<sup>2</sup>, Yumie Ono<sup>3</sup>, Wen-Yih Isaac Tseng<sup>2</sup>, SH Annabel Chen<sup>1</sup>*, <sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Department of Radiology, National Taiwan University College of Medicine, Taipei, Taiwan, <sup>3</sup>Physiology and Neuroscience, Kanagawa Dental College, Kanagawa, Japan 413 M-AM
- Regional variability in the BOLD HRF assessed using concurrent TMS-fMRI**, *Eva Feredoes<sup>1</sup>, Tom Johnstone<sup>2</sup>, Giulio Tononi<sup>3</sup>, Bradley R Postle<sup>1,3</sup>*, <sup>1</sup>Dept. of Psychology, University of Wisconsin-Madison, Madison, USA, <sup>2</sup>School of Psychology and CLS, University of Reading, Reading, United Kingdom, <sup>3</sup>Dept. of Psychiatry, University of Wisconsin-Madison, Madison, USA 417 M-AM
- Nonlinear and factorial brain responses during associative working memory with increasing implicit task load**, *Nicole Kochan<sup>1</sup>, Perminder Sachdev<sup>1</sup>, Melissa Slavin<sup>1</sup>, Michael Valenzuela<sup>1</sup>, Michael Breakspear<sup>2</sup>*, <sup>1</sup>School of Psychiatry, University of New South Wales, Neuropsychiatric Institute, Prince of Wales Hospital, Sydney, Australia, <sup>2</sup>School of Psychiatry, University of New South Wales, Black Dog Institute, Prince of Wales Hospital, Sydney, Australia 421 M-AM
- Fronto-parietal Dysfunction during Spatial Working Memory Task in Subjects at Ultra-High-Risk for Schizophrenia**, *Ji-Young Park<sup>1</sup>, Do-Hyung Kang<sup>2</sup>, Jung-Suk Choi<sup>2</sup>, Myeong-Hoon Jung<sup>2</sup>, Wi-Hoon Jung<sup>3</sup>, Na-Young Shin<sup>1</sup>, Chi-Hoon Choi<sup>4</sup>, Jong-Min Lee<sup>5</sup>, Jun Soo Kwon<sup>1,3</sup>*, <sup>1</sup>Interdisciplinary Program in Cognitive Science, Seoul National University, Seoul, Korea, <sup>2</sup>Department of Psychiatry, Seoul National University Hospital, Seoul, Korea, <sup>3</sup>Interdisciplinary Program in Brain Science, Seoul National University, Seoul, Korea, <sup>4</sup>Department of Radiology, National Medical Center, Seoul, Korea, <sup>5</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea 425 M-AM
- A cortico-hippocampal network emerging with subsequent memory dependent theta oscillation**, *Naoyuki Sato<sup>1</sup>, Takashi Ozaki<sup>1</sup>, Yoshiaki Someya<sup>2</sup>, Kimitaka Anami<sup>2</sup>, Seiji Ogawa<sup>2</sup>, Hiroaki Mizuhara<sup>1,3</sup>, Yoko Yamaguchi<sup>1</sup>*, <sup>1</sup>RIKEN Brain Science Institute, Saitama, Japan, <sup>2</sup>Hamano Life Sci Res Foundation, Tokyo, Japan, <sup>3</sup>Kyoto Univ, Kyoto, Japan 429 M-AM

## MODELING & ANALYSIS

### Bayesian Modeling

- A predictive coding account of the mismatch negativity**, *Marta I Garrido, James M Kilner, Stefan J Kiebel, Karl J Friston*, Wellcome Trust Centre for Neuroimaging, UCL, London, United Kingdom 433 M-AM
- Stratification and Complexity of Brain Connectivity**, *Gloria Haro<sup>1</sup>, Christophe Lenglet<sup>2</sup>, Guillermo Sapiro<sup>3</sup>, Paul Thompson<sup>4</sup>*, <sup>1</sup>Universitat Politecnica de Catalunya, Barcelona, Spain, <sup>2</sup>Siemens Corporate Research, Princeton, USA, <sup>3</sup>University of Minnesota, Minneapolis, USA, <sup>4</sup>UCLA Medical School, Los Angeles, USA 437 M-AM
- Regularisation of High Angular Resolution Diffusion Imaging Data**, *Leigh Johnston<sup>1,2</sup>, Scott Kolbe<sup>2,3</sup>, Iven Mareels<sup>1</sup>, Gary Egan<sup>2,3</sup>*, <sup>1</sup>Department of Electrical and Electronic Engineering, University of Melbourne & NICTA Victorian Research Laboratory, Melbourne, Australia, <sup>2</sup>Howard Florey Institute, Florey Neuroscience Institutes, Melbourne, Australia, <sup>3</sup>Centre for Neuroscience, University of Melbourne, Melbourne, Australia 441 M-AM
- Evaluation of Probabilistic Tractography on Bayesian Tensor Estimation**, *Dae-Jin Kim, Hae-Jeong Park*, Department of Diagnostic Radiology, Yonsei University, College of Medicine, 134 Shinchon-dong, Seodaemun-gu, Seoul, South Korea 445 M-AM
- Multimodal Fusion: A generative model for EEG and fMRI**, *Maria Joao Rosa<sup>1</sup>, James Kilner<sup>1</sup>, Felix Blankenburg<sup>2</sup>, Oliver Josephs<sup>1</sup>, Will Penny<sup>1</sup>*, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>2</sup>Department of Neurology, Charité, Humboldt-University, Berlin, Germany 449 M-AM\*

11:30 – 12:30 Corryong Hall (Level 2)

**MODELING & ANALYSIS**  
**Classification & Predictive Modeling**

- Classification of Resting State fMRI Scans using Temporal Network Associations in Schizophrenic and Normal Patients**, Ariana Anderson<sup>1</sup>, Mark Cohen<sup>2</sup>, Ivo Dinov<sup>1,3</sup>, Javier Quintana<sup>4</sup>, Jon Sherin<sup>4</sup>, Alan Yuille<sup>1</sup>, <sup>1</sup>Department of Statistics, University of California, Los Angeles, Los Angeles, USA, <sup>2</sup>Psychiatry & Behavioral Sciences, University of California, Los Angeles, Los Angeles, USA, <sup>3</sup>Center for Computation Biology, Los Angeles, USA, <sup>4</sup>West Los Angeles Veterans Administration, UCLA, Los Angeles, USA 453 M-AM
- Gaussian smoothing and brain area activation relationship – determination of optimal filter size through ROC curves**, Lilian Contin<sup>1</sup>, João Sato<sup>1</sup>, Griselda Garrido<sup>2</sup>, <sup>1</sup>NIF/LIM44 Institute of Radiology - University of São Paulo, São Paulo, Brazil, <sup>2</sup>Instituto Israelita de Ensino e Pesquisa, São Paulo, Brazil 461 M-AM
- An investigation of the visual coding of faces using kernel canonical correlation analysis**, Nicholas Furl<sup>1</sup>, David Hardoon<sup>1</sup>, Janaina Mourão-Miranda<sup>2</sup>, Nikolaus Weiskopf<sup>1</sup>, John Shaw-Taylor<sup>1</sup>, Raymond Dolan<sup>1</sup>, <sup>1</sup>University College London, London, United Kingdom, <sup>2</sup>Kings College London, London, United Kingdom 465 M-AM
- Feature Analysis of Event-related Brain Potentials by Statistical Classification: Application of Naive Bayes Method and Principal Component Analysis to Predicting Auditory Stimuli**, Yasuyuki Inoue<sup>1</sup>, Akitoshi Ogawa<sup>2</sup>, Kota Arai<sup>3</sup>, Hidehiko Matsumoto<sup>3</sup>, Atsuhito Toyomaki<sup>4</sup>, Hiroshige Takeichi<sup>2</sup>, Takashi Omori<sup>4</sup>, Sachiko Koyama<sup>4</sup>, Takashi Morotomi<sup>3</sup>, Michiteru Kitazaki<sup>1</sup>, <sup>1</sup>Toyohashi University of Technology, Toyohashi-shi, Japan, <sup>2</sup>RIKEN, Wako-shi, Japan, <sup>3</sup>Sakushin Gakuin University, Utsunomiya-shi, Japan, <sup>4</sup>Hokkaido University, Sapporo-shi, Japan 469 M-AM
- Profiling brain function for source imaging in EEG and MEG: A similarity ranking method for evaluating individual activation**, Yannick Marchand<sup>1,2,3,4</sup>, Ryan D'Arcy<sup>1,2,5</sup>, Vanessa Versteeg<sup>1,2</sup>, Erin Mazerolle<sup>1,2</sup>, <sup>1</sup>Institute for Biodiagnostics (Atlantic), National Research Council Canada, Halifax, Canada, <sup>2</sup>Department of Psychology, Dalhousie University, Halifax, Canada, <sup>3</sup>Faculty of Computer Science, Dalhousie University, Halifax, Canada, <sup>4</sup>School of Human Communication Disorders, Dalhousie University, Halifax, Canada, <sup>5</sup>Department of Radiology, Dalhousie University, Halifax, Canada 473 M-AM
- Neuroimaging Platform for Neuroinformatics: NIMG-PF**, Ryouji Suzuki<sup>1</sup>, Kazuhisa Niki<sup>2</sup>, Norio Fujimaki<sup>3</sup>, Shinobu Masaki<sup>4</sup>, Kazuhisa Ichikawa<sup>1</sup>, Shiro Usui<sup>5</sup>, <sup>1</sup>Kanazawa Institute of Technology, Kanazawa, Japan, <sup>2</sup>Neuroscience Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, <sup>3</sup>National Institute of Information and Communications Technology, Kobe, Japan, <sup>4</sup>Brain Activity Imaging Center, ATR-Promotions, Kyoto, Japan, <sup>5</sup>RIKEN Brain Science Institute, Wako, Japan 477 M-AM
- Classifying Cortical Surface Folding: An Adaptive Filter based on Spatial and Frequency Curvature Properties**, Rudolph Pienaar<sup>1,2</sup>, Bruce Fischl<sup>1,2</sup>, Nasser Al Dossary<sup>3</sup>, Nikos Makris<sup>1,2</sup>, P Ellen Grant<sup>1,2</sup>, <sup>1</sup>Harvard Medical School, Boston, USA, <sup>2</sup>Massachusetts General Hospital, Boston, USA, <sup>3</sup>King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia 481 M-AM
- Quantitative Multiscale Brain Modeling: Toward a Large-Scale "Working Brain" Model**, Peter Robinson, Andrew Phillips, Parry Chen, Anthony Krensell, Peter Drysdale, Christopher Rennie, University of Sydney, Sydney, Australia 485 M-AM
- Sex Differences in Short Brain Waves: Where and When.**, Akaysha Tang<sup>1,2</sup>, Peng Sun<sup>3</sup>, Zhen Yang<sup>1</sup>, Amy Korzekwa<sup>1</sup>, Matthew Sutherland<sup>1</sup>, <sup>1</sup>Department of Psychology, Albuquerque, USA, <sup>2</sup>Department of Neurosciences, Albuquerque, USA, <sup>3</sup>Department of Electrical and Computer Engineering, Albuquerque, USA 489 M-AM
- Decoding unconscious determinants of human decisions in real-time**, Martin Weygandt<sup>1</sup>, Chun Siong Soon<sup>1,2</sup>, John-Dylan Haynes<sup>1,2</sup>, <sup>1</sup>Bernstein Center for Computational Neurosciences Berlin, Berlin, Germany, <sup>2</sup>Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany 493 M-AM

## MODELING & ANALYSIS

### Motion Correction/Spatial Normalization, Atlas Construction

- FreeSurfer-Initiated Fully-Automated Subcortical Brain Segmentation in MRI Using Large Deformation Diffeomorphic Metric Mapping**, Ali Khan<sup>1</sup>, Lei Wang<sup>2</sup>, Mirza Faisal Beg<sup>1</sup>,  
<sup>1</sup>Medical Image Analysis Laboratory, Simon Fraser University, Burnaby, Canada, <sup>2</sup>Washington University, St. Louis, USA 497 M-AM
- False Sense of EPI-to-Structural Alignment with Common Cross-Modality Registration Methods**, Robert Cox<sup>1</sup>, Ziad Saad<sup>1</sup>, Daniel Glen<sup>1</sup>, Michael Beauchamp<sup>2</sup>, Rutvik Desai<sup>3</sup>, <sup>1</sup>NIMH, Bethesda, USA, <sup>2</sup>UT Health Science Center, Houston, USA, <sup>3</sup>Medical College of Wisconsin, Milwaukee, USA 501 M-AM
- Reducing Erroneous Influence from Neighboring Structures by Diffeomorphic Registration of fMRI Data**, Behrang Nosrat-Makouei<sup>1</sup>, Lei Wang<sup>2</sup>, Deanna M. Barch<sup>2</sup>, Mirza Faisal Beg<sup>1</sup>,  
<sup>1</sup>Medical Image Analysis Lab, Simon Fraser University, Burnaby, Canada, <sup>2</sup>Washington University, St Louis, USA 505 M-AM
- Employing the general linear model for creating customized pediatric templates**, Marko Wilke<sup>1,2</sup>, Scott Holland<sup>3,4</sup>, Mekibib Altaye<sup>4</sup>, Christian Gaser<sup>5</sup>, <sup>1</sup>Department of Pediatric Neurology and Developmental Medicine, University Children's Hospital, Tuebingen, Germany, <sup>2</sup>Section for Experimental MR of the CNS, Dept. of Neuroradiology, Tuebingen, Germany, <sup>3</sup>Department of Pediatrics, University of Cincinnati, Cincinnati, USA, <sup>4</sup>Imaging Research Center, Cincinnati Children's Hospital Medical Center, Cincinnati, USA, <sup>5</sup>Department of Psychiatry, Jena, Germany 509 M-AM

## MODELING & ANALYSIS

### Univariate Modeling, Linear, & Nonlinear

- Detection of single-trial events in BOLD fMRI without prior stimulus information**, Cesar Caballero<sup>1</sup>, Natalia Petridou<sup>2</sup>, Susan Francis<sup>2</sup>, Ian Dryden<sup>3</sup>, Li Bai<sup>1</sup>, Penny Gowland<sup>2</sup>, <sup>1</sup>School of Computer Science, University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>Sir Peter Mansfield Magnetic Resonance Centre, University of Nottingham, Nottingham, United Kingdom, <sup>3</sup>School of Mathematical Sciences, University of Nottingham, Nottingham, United Kingdom 513 M-AM
- Comparison of Spherical Deconvolution Methods Based on the Spherical Harmonic Basis**, Maxime Descoteaux<sup>1</sup>, Alfred Anwander<sup>2</sup>, Rachid Deriche<sup>1</sup>, <sup>1</sup>INRIA Sophia Antipolis - Mediterranee, Sophia Antipolis, France, <sup>2</sup>Max Planck Institute, Leipzig, Germany 517 M-AM
- Transient neuroenergetics: Towards dynamic calibrated fMRI**, Basavaraju G. Sanganahalli<sup>1</sup>, Peter Herman<sup>1</sup>, Fahmeed Hyder<sup>1,2</sup>, <sup>1</sup>Diagnostic Radiology, Yale University, New Haven, USA, <sup>2</sup>Biomedical Engineering, Yale University, New Haven, USA 521 M-AM
- Validation of resampling methods for fMRI data**, Mingwu Jin, Dietmar Cordes, University of Colorado Denver, Denver, USA 525 M-AM
- Bayesian Deconvolution of FMRI data using Bilinear Dynamical Systems**, Salima Makni<sup>1</sup>, Mark Woolrich<sup>1</sup>, Steve Smith<sup>1</sup>, Christian Beckmann<sup>1,2</sup>, <sup>1</sup>FMRI, Oxford, United Kingdom, <sup>2</sup>ICL, London, United Kingdom 529 M-AM
- Real-time EEG Mapping System**, Jan Muzik, Karel Hana, Czech Technical University, Prague, Czech Republic 533 M-AM
- MEG predicts stimulus-rate dependence of BOLD responses in human SI**, Cathy Nangini<sup>1</sup>, Yevhen Hlushchuk<sup>1,2</sup>, Riitta Hari<sup>1,2</sup>, <sup>1</sup>Brain Research Unit, Low Temperature Physics Laboratory, Helsinki University of Technology, Espoo, Finland, <sup>2</sup>Advanced Magnetic Imaging Centre, Helsinki University of Technology, Espoo, Finland 537 M-AM
- Disconnection's Renaissance takes shape: formal incorporation in group-level lesion studies**, David Rudrauf, Sonya Mehta, Thomas Grabowski, University of Iowa, Department of Neurology, Iowa City, USA 541 M-AM
- CamBA (CAMbridge Brain Analysis): multi-level nonparametric analysis of neuroimaging studies using permutation tests**, Alle Meije Wink<sup>1,2</sup>, Cinly Ooi<sup>2</sup>, Sanja Abbott<sup>2</sup>, Anna Barnes<sup>2</sup>, 545 M-AM

Manfred Kitzbichler<sup>2</sup>, Levent Sendur<sup>2</sup>, Ed Bullmore<sup>2</sup>, John Suckling<sup>2</sup>, <sup>1</sup>Imaging Sciences Department, Imperial College, MRC Clinical Sciences Centre, Hammersmith Campus, London, United Kingdom, <sup>2</sup>Brain Mapping Unit, Department of Psychiatry, Addenbrooke's Hospital, Hills Road, Cambridge, United Kingdom

**Genetic analysis of cortical thickness in 8-year-old twins**, Uicheul Yoon<sup>1</sup>, Cherine Fahim<sup>1,2</sup>, Daniel Perusse<sup>2</sup>, Alan Evans<sup>1</sup>, <sup>1</sup>McConnell Brain Imaging Centre, Montreal Neurological Institute, Montreal, Canada, <sup>2</sup>The Research Centre at the Sainte Justine Hospital, Montreal, Canada 549 M-AM\*

## MOTOR BEHAVIOR

### Hand Movements

**Time–frequency analysis of brain activity during polyrhythmic motor performance**, Tjeerd Boonstra<sup>1,2</sup>, Michael Breakspear<sup>1</sup>, Andreas Daffertshofer<sup>2</sup>, Peter Beek<sup>2</sup>, <sup>1</sup>University of New South Wales, Randwick, Australia, <sup>2</sup>VU University, Amsterdam, Netherlands 553 M-AM

**The execution and the observation of grasping movements elicit overlapping activations.**, Luca Turella<sup>1</sup>, Wolfgang Grodd<sup>2</sup>, Umberto Castiello<sup>1,3</sup>, <sup>1</sup>Departement of General Psychology, University of Padova, Italy, Padova, Italy, <sup>2</sup>Section on Experimental MR of the CNS, Department of Neuroradiology, University of Tuebingen, Germany, Tübingen, Germany, <sup>3</sup>Department of Psychology, Royal Holloway, University of London, United Kingdom, London, United Kingdom 557 M-AM

**How does my finger jointly act with yours?**, Idil Kokal, Valeria Gazzola, Christian Keysers, BCN Neuroimaging Center, University Medical Center, Groningen, Netherlands 561 M-AM

**Neural substrates involved in the recognition and imitation of a point-light biological motion representation of the human hand**, Aidan Roche<sup>1,2</sup>, Zarinah Agnew<sup>2,3</sup>, Anil Bharath<sup>1</sup>, Anthony Bull<sup>1</sup>, Basant Puri<sup>2</sup>, <sup>1</sup>Department of Bioengineering, Imperial College London, London, United Kingdom, <sup>2</sup>ISD, MRC CSC & Imperial College London, London, United Kingdom, <sup>3</sup>Cognitive Neuroscience Group, MRC CSC & Imperial College London, London, United Kingdom 565 M-AM

**Laterality of the Neural Mechanisms for Gesture Imitation**, Thomas Zeffiro<sup>1</sup>, Christos Vassios<sup>2</sup>, Fa-Hsuan Lin<sup>2</sup>, Gary Strangman<sup>1</sup>, Christina Supelana<sup>1</sup>, John Belliveau<sup>2</sup>, <sup>1</sup>Neural Systems Group, Massachusetts General Hospital, Charlestown, USA, <sup>2</sup>Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, USA 569 M-AM

## MOTOR BEHAVIOR

### Motor-Premotor Cortex/Motor Cortical Functions

**The organization of cognitive control within lateral prefrontal cortex in schizophrenia**, Guillaume Barbalat<sup>1,2</sup>, Valerian Chambon<sup>1</sup>, Nicolas Franck<sup>1,2</sup>, Etienne Koechlin<sup>3</sup>, Chloe Farrer<sup>1</sup>, <sup>1</sup>Institut des Sciences Cognitives, CNRS, Lyon, France, <sup>2</sup>Centre Hospitalier le Vinatier, Lyon, France, <sup>3</sup>Université Pierre et Marie Curie and INSERM, Paris, France 573 M-AM

**Modality differences in rhythmic sequence production**, Anke Karabanov, Örjan Blom, Lea Forsman, Fredrik Ullen, Karolinska Institutet, Stockholm, Sweden 577 M-AM

**Changes of the hemodynamic response after administration of ethanol in different cerebral regions**, Michael Luchtmann<sup>1</sup>, Tobias Moench<sup>1</sup>, Maurice Hollmann<sup>1</sup>, Katja Jachau<sup>2</sup>, Johannes Bernarding<sup>1</sup>, <sup>1</sup>Otto-von-Guericke University, Medical Faculty, Institute for Biometry and Medical Informatics, Magdeburg, Germany, <sup>2</sup>Otto-von-Guericke University, Medical Faculty, Institute for Forensic Medicine, Magdeburg, Germany 581 M-AM

**Local and Remote Changes in Resting Cerebral Blood Flow Following a Single Session of 5Hz rTMS Applied to the Primary Motor Cortex**, Shalini Narayana<sup>1</sup>, Wei Zhang<sup>1</sup>, Crystal Franklin<sup>1</sup>, Joseph Panzarella<sup>1</sup>, Peter Fox<sup>1,2</sup>, <sup>1</sup>Research Imaging Center, UT Health Science Center, San Antonio, USA, <sup>2</sup>South Texas Veterans Health Care Center, San Antonio, USA 585 M-AM

**Mechanisms underlying functional changes in the primary motor cortex ipsilateral to an active hand**, Monica A. Perez, Leonardo G. Cohen, Human Cortical Physiology Section NINDS, NIH, Bethesda, USA 589 M-AM

**fMRI of Violent Video Gaming and Fiber-Optic Joystick Evaluation**, Joseph Santos<sup>1</sup>, Javier Gonzalez-Castillo<sup>1</sup>, Jeffrey Jackson<sup>2,3</sup>, Olumide Olalude<sup>2</sup>, John Ulmer<sup>4</sup>, Thomas Talavage<sup>1,2</sup>,  
<sup>1</sup>Weldon School of Biomedical Engineering, West Lafayette, USA, <sup>2</sup>School of Electrical and Computer Engineering, West Lafayette, USA, <sup>3</sup>Red Leaf Designworks, LLC, Lafayette, USA, <sup>4</sup>Department of Radiology, Medical College of Wisconsin, Milwaukee, USA 593 M-AM

**Motor Cortex Somatotopy in Congenital Paraplegic Patients**, Christoph Stippich<sup>1</sup>, Michael Akbar<sup>2</sup>, Javier Leon Alonso<sup>1</sup>, Katharina Riffel<sup>1</sup>, Alfred Aschoff<sup>2</sup>, <sup>1</sup>Division of Neuroradiology, University of Heidelberg, Medical Center, Heidelberg, Germany, <sup>2</sup>Department of Orthopedic Surgery, University of Heidelberg, Heidelberg, Germany, <sup>3</sup>Department of Neurosurgery, University of Heidelberg, Medical Center, Heidelberg, Germany 597 M-AM

**Time course of corticospinal excitability and the direction of evoked movements during motor preparation**, Gijs van Elswijk<sup>1,2</sup>, Willemijn Schot<sup>3</sup>, Dick Stegeman<sup>2,3</sup>, Sebastiaan Overeem<sup>2</sup>, <sup>1</sup>F.C. Donders Centre for Cognitive Neuroimaging, Nijmegen, Netherlands, <sup>2</sup>Department of Clinical Neurophysiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>3</sup>Faculty of Human Movement Sciences, VU University, Amsterdam, Netherlands 601 M-AM

## NEUROANATOMY Anatomical Studies

**Relationships between age, neuropsychological scores and structural brain measures in 236 healthy aged adults of Chinese origin**, Michael Chee<sup>1,2</sup>, Hui Zheng<sup>1</sup>, Maria Schuchinsky<sup>1</sup>, Samuel Sim<sup>1</sup>, Karren Chen<sup>1</sup>, Karen Chan<sup>2</sup>, Lisa Chuah<sup>1</sup>, <sup>1</sup>Duke NUS Graduate Medical School, Singapore, Singapore, <sup>2</sup>Singapore Health Services, Singapore, Singapore 605 M-AM

**The postcentral sulcus: depth profiles in sulci grouped by cluster analysis**, Matthew Cykowski<sup>1</sup>, Olivier Coulon<sup>2</sup>, Peter Kochunov<sup>1</sup>, Jack Lancaster<sup>1</sup>, Peter Fox<sup>1,3</sup>, <sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>Laboratoire des Sciences de l'Information et des Systèmes, Marseille, France, <sup>3</sup>VA Medical Center, San Antonio, USA 609 M-AM

**Efferents of Area 25 in the non-human primate brain**, Stephen Frey, Veronika Zlatkina, Vladimir V. Rymar, Abbas F. Sadikot, Michael Petrides, Montreal Neurological Institute, Montreal, Canada 613 M-AM

**Fluid flow deformation analysis of postnatal rhesus macaque brain**, Julia Hamstra, Evan Fletcher, Charles DeCarli, David Amaral, Univ. of California, Davis, Davis, USA 617 M-AM

**Probabilistic Anatomic Mapping of Cerebral Blood Flow Distribution of the Middle Cerebral Artery**, Seong-Jang Kim<sup>1,2</sup>, In-Ju Kim<sup>1,2</sup>, Yong-Ki Kim<sup>1,2</sup>, Tae-Hong Lee<sup>2,3</sup>, Jung Sub Lee<sup>2,4</sup>, Sungmin Jun<sup>1</sup>, Hyun-Yeol Nam<sup>1</sup>, Jae Sung Lee<sup>5</sup>, Yu Kyeong Kim<sup>5</sup>, Dong Soo Lee<sup>5</sup>, <sup>1</sup>Nuclear Medicine, Pusan National University Hospital, Busan, Korea, <sup>2</sup>Nuclear Medicine, Pusan National University Hospital, Busan, Korea, <sup>3</sup>Nuclear Medicine, Pusan National University Hospital, Busan, Korea, <sup>4</sup>Radiology, Busan, Korea, <sup>5</sup>Orthopaedic Surgery, Busan, Korea, <sup>6</sup>Nuclear Medicine, Pusan National University Hospital, Busan, Korea, <sup>7</sup>Nuclear Medicine, Pusan National University Hospital, Busan, Korea, <sup>8</sup>Departement of Nuclear Medicine, Seoul National University, Seoul, Korea, <sup>9</sup>Departement of Nuclear Medicine, Seoul National University, Seoul, Korea, <sup>10</sup>Departement of Nuclear Medicine, Seoul National University, Seoul, Korea 621 M-AM

**Structure-Function Relationship of the Human Motor Thalamus**, Susan Kouloyan-Ilic<sup>1,2</sup>, Hamed Akhlaghi<sup>1</sup>, Gary Egan<sup>1</sup>, Peter Brothie<sup>3</sup>, <sup>1</sup>Howard Florey Institute, Melbourne, Australia, <sup>2</sup>The Alfred, Melbourne, Australia, <sup>3</sup>Barwon Health, Melbourne, Australia 625 M-AM

**Polymorphism in the Fibroblast Growth Factor-20 gene modulates grey matter volume in the medial temporal lobe**, Herve Lemaitre<sup>1</sup>, Vankata Mattay<sup>1</sup>, Fabio Sambataro<sup>1</sup>, Beth Verchinski<sup>1</sup>, Richard Straub<sup>1</sup>, Joseph Callicott<sup>1</sup>, Ronald McKay<sup>2</sup>, Daniel Weinberger<sup>1</sup>, <sup>1</sup>CBDB, NIMH, Bethesda, USA, <sup>2</sup>LMB, NINDS, Bethesda, USA 629 M-AM\*

**Superior temporal gyrus subvolumes in healthy individuals and in treatment resistant schizophrenia with auditory hallucinations**, Paul Fitzgerald<sup>1</sup>, Jerome Maller<sup>1</sup>, Justin Yuen<sup>1</sup>, Zafiris Daskalakis<sup>2</sup>, <sup>1</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, 633 M-AM



Australia, <sup>2</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>3</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>4</sup>Centre for Addiction and Mental Health, Toronto, Canada

**Accelerated aging in type 1 diabetes demonstrated with voxel-based analyses of volume and T2 images**, Gaby Pell<sup>1</sup>, Ashleigh Lin<sup>2</sup>, Mark Wellard<sup>3</sup>, Debbie Rankins<sup>2</sup>, George Werther<sup>4</sup>, Fergus Cameron<sup>4</sup>, Graeme Jackson<sup>1</sup>, Elisabeth Northam<sup>2</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>Murdoch Childrens Research Institute, Melbourne, Australia, <sup>3</sup>Queensland University of Technology, Brisbane, Australia, <sup>4</sup>Royal Children's Hospital, Melbourne, Australia 637 M-AM

**Age-related thinning of cortical grey matter**, Rolf Kötter<sup>1,2</sup>, Andrew Reid<sup>1,2</sup>, Anouk van Norden<sup>3</sup>, Karlijn de Laat<sup>3</sup>, Lucas van Oudheusden<sup>3</sup>, Alan Evans<sup>4</sup>, Frank-Erik de Leeuw<sup>3</sup>, <sup>1</sup>UMC Radboud Nijmegen Department of Cognitive Neuroscience, Nijmegen, Netherlands, <sup>2</sup>C & O Vogt Institute for Brain Research, University Clinics Düsseldorf, Düsseldorf, Germany, <sup>3</sup>UMC Radboud Nijmegen Department of Neurology, Nijmegen, Netherlands, <sup>4</sup>McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada 641 M-AM

**BrainVisa Plugin for Automated Measurements of Sulcal Length and Depth**, Bill Rogers<sup>1</sup>, Peter Kochunov<sup>1</sup>, David Glahn<sup>1</sup>, Jeff Rogers<sup>2</sup>, Peter Fox<sup>1</sup>, <sup>1</sup>University of Texas Health Science Center, San Antonio, USA, <sup>2</sup>Southwest Foundation for Biomedical Research, San Antonio, USA 645 M-AM

**Gender differences in the neuroanatomical correlates of the affective startle reflex**, Sarah Whittle<sup>1,3</sup>, Jonathan Kettle<sup>1,3</sup>, Laurie O'Brien-Simpson<sup>3</sup>, Murat Yucel<sup>1,2</sup>, Julian Simmons<sup>1</sup>, Nicholas Allen<sup>1,3</sup>, <sup>1</sup>ORGEN Research Centre, University of Melbourne, Melbourne, Australia, <sup>2</sup>Melbourne Neuropsychiatry Centre, University of Melbourne, Melbourne, Australia, <sup>3</sup>Department of Psychology, University of Melbourne, Melbourne, Australia 649 M-AM

#### PHYSIOLOGY, METABOLISM, & NEUROTRANSMISSION

**Effects of aging on blood flow, oxygen metabolism and blood oxygenation level dependent (BOLD) responses to visual stimulation**, Beau Ances, Christine Liang, Oleg Leontiev, Joanna Perthen, Adam Fleisher, Amy Lansing, Richard Buxton, University of California San Diego, La Jolla, USA 653 M-AM

**Effects of Levodopa on the neural mechanisms of meaning suppression: A 4T fMRI study**, David Copland<sup>1</sup>, Greig De Zubicaray<sup>2</sup>, Katie McMahon<sup>2</sup>, <sup>1</sup>School of Health and Rehabilitation Sciences, The University of Queensland, Brisbane, Australia, <sup>2</sup>Centre for Magnetic Resonance, The University of Queensland, Australia 657 M-AM

**Neural integration of baroreflex and cognitive/sensory processing shapes central regulation of beat-to-beat blood pressure**, Marcus Gray<sup>1</sup>, Karin Rylander<sup>2</sup>, Neil Harrison<sup>3</sup>, Mikael Elam<sup>2</sup>, B. Gunnar Wallin<sup>2</sup>, Hugo Critchley<sup>1,3</sup>, <sup>1</sup>CISC, Brighton Sussex Medical School, The University of Sussex, Brighton, United Kingdom, <sup>2</sup>Institute of Clinical Neurosciences, Unit of Clinical Neurophysiology Sahlgren University Hospital, Goteborg, Sweden, <sup>3</sup>Institute of Cognitive Neuroscience, Alexandra House, University College London, London, United Kingdom 661 M-AM

**Imaging of Glucose Metabolic Response in Human Brain Induced by Stimulation of Acupoint ST 36: A FDG PET Study**, Xianglan Jin<sup>1</sup>, Yilong Ma<sup>2</sup>, Jintao Zhang<sup>3</sup>, Yigen Wu<sup>4</sup>, Baoci Shan<sup>5</sup>, Dayi Yin<sup>3</sup>, Jinping Sun<sup>3</sup>, Xian Shi<sup>3</sup>, Jiahe Tian<sup>3</sup>, Shulin Yao<sup>3</sup>, Bo Yu<sup>1</sup>, Ling Yin<sup>3</sup>, <sup>1</sup>Neurology Department, 202nd Hospital of PLA, Shenyang, China, <sup>2</sup>Department of Neurology, New York University School of Medicine, New York, USA, <sup>3</sup>Neuroinformatics Center, PLA General Hospital, Beijing, China, <sup>4</sup>Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, China, <sup>5</sup>Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, China 665 M-AM

**Imaging oxygen consumption with Near-Infrared Spectroscopy and fMRI simultaneously**, Rickson Mesquita<sup>1,2</sup>, Harsha Radhakrishnan<sup>2</sup>, Joseph Mandeville<sup>2</sup>, Theodore Huppert<sup>3</sup>, Maria Franceschini<sup>2</sup>, Roberto Covolan<sup>1</sup>, David Boas<sup>2</sup>, <sup>1</sup>Universidade Estadual de Campinas, Campinas, Brazil, <sup>2</sup>Massachusetts General Hospital, Charlestown, USA, <sup>3</sup>University of Pittsburgh, Pittsburgh, USA 669 M-AM\*

**Understanding your inhibitions: neuropharmacological perturbations of GABAergic systems, metabolic outcomes and network correlations.**, Caroline Rae<sup>1,2</sup>, Fatima Nasrallah<sup>1,2</sup>, Julian Griffin<sup>3</sup>, Vladimir Balcar<sup>4</sup>, <sup>1</sup>Prince of Wales Medical Research Institute, Randwick, 673 M-AM

Australia, <sup>2</sup>The University of New South Wales, Sydney, Australia, <sup>3</sup>The University of Cambridge, Cambridge, United Kingdom, <sup>4</sup>The University of Sydney, Sydney, Australia

**Resting State Networks - Neither Low Frequency Nor Anticorrelated?**, Stephen Smith<sup>1</sup>, Rami Niazy<sup>2</sup>, Christian Beckmann<sup>3,1</sup>, Karla Miller<sup>1</sup>, <sup>1</sup>FMRIB, Oxford University, Oxford, United Kingdom, <sup>2</sup>CUBRIC, Cardiff University, Cardiff, United Kingdom, <sup>3</sup>Imperial College London, London, United Kingdom 677 M-AM

**Caffeine is not a universal BOLD contrast booster**, Lucie Yang, Merideth Addicott, Ann Peiffer, Robert Kraft, Joseph Maldjian, Jonathan Burdette, Luke Burnett, Michael Chen, Paul Laurienti, Wake Forest University School of Medicine, Winston-Salem, USA 681 M-AM

**Functional Connectivity within the Human Thalamocortical System**, Dongyang Zhang, Abraham Snyder, Michael Fox, Mark Sansbury, Joshua Shimony, Marcus Raichle, Washington University, Saint Louis, USA 685 M-AM

### SENSORY SYSTEMS Multisensory & Crossmodal

**Cross-modal temporal processing in dyslexia assessed with Biological Parametric Mapping**, W. David Hairston<sup>1</sup>, Ramon Casanova<sup>1</sup>, Jonathan Burdette<sup>1</sup>, Frank Wood<sup>2</sup>, Joseph Maldjian<sup>1</sup>, <sup>1</sup>ANSIR Lab, Dept of Radiology, Wake Forest University School of Medicine, Winston-salem, USA, <sup>2</sup>Section of Neuropsychology, Wake Forest University School of Medicine, Winston-salem, USA 689 M-AM

**Audiovisual interactions during access to speech meaning in cochlear implantees: A H<sub>2</sub><sup>15</sup>O-PET study**, Hyo-Jeong Lee<sup>1,2</sup>, Michael Gaebler<sup>1</sup>, Eric Truy<sup>3,4</sup>, Anne-Lise Giraud<sup>1</sup>, <sup>1</sup>Inserm U742, Laboratoire de Neurosciences Cognitives, Département d'Etudes Cognitives, ENS, Paris, France, <sup>2</sup>Department of Otolaryngology, Hallym University College of Medicine, Anyang, South Korea, <sup>3</sup>Département d'ORL, de Chirurgie Cervico-Maxillo-Faciale et d'Audiophonologie, Hôpital Edouard Herriot, Lyon, France, <sup>4</sup>CNRS UMR 5020, Université Claude Bernard Lyon1, Lyon, France 693 M-AM

### SENSORY SYSTEMS Pain & Autonomic Function

**Differentiating Pain Encoding in Neuropathic Pain Patients**, Lino Becerra<sup>1,2</sup>, Gautam Pendse<sup>1</sup>, David Borsook<sup>1,2</sup>, <sup>1</sup>P.A.I.N. Group McLean Hospital, Belmont, USA, <sup>2</sup>Harvard Medical School, Boston, USA 701 M-AM

**High-Resolution fMRI of heat pain perception at 7T in Humans**, Li Min Chen, Christopher Gatenby, Elizabeth Stringer, Robert Friedman, Feng Wang, John Gore, Vanderbilt University, Nashville, USA 705 M-AM

**Activation of the Trigeminal Principal Sensory Nucleus by Orofacial Muscle Pain**, Paul Nash<sup>1</sup>, Vaughan Macefield<sup>2</sup>, Iven Klineberg<sup>3</sup>, Greg Murray<sup>3</sup>, Luke Henderson<sup>1</sup>, <sup>1</sup>Dept Anatomy and Histology, University of Sydney, Sydney, Australia, <sup>2</sup>School of Medicine, University of Western Sydney, Sydney, Australia, <sup>3</sup>Jaw Function and Orofacial Pain Research Unit, Faculty of Dentistry, The University of Sydney, Sydney, Australia 709 M-AM

**No evidence for central hypersensitivity in post-operative pain: a serial fMRI study**, Ron Kupers<sup>1,2</sup>, Fabien Schneider<sup>3</sup>, Rune Christensen<sup>1</sup>, Henrik Kehlet<sup>2</sup>, <sup>1</sup>PET Unit, Copenhagen, Denmark, <sup>2</sup>Dept. Surgical Pathophysiology, Copenhagen, Denmark, <sup>3</sup>Dept. Radiology, Saint-Etienne, France 713 M-AM

**Supraspinal response of mechanically induced osteoarthritic knee pain**, Albert Leung<sup>1,3</sup>, Dan Muhtar<sup>1</sup>, Jeng-Ren Duann<sup>2</sup>, Artour Torossi<sup>4</sup>, Tony Yaksh<sup>1</sup>, <sup>1</sup>The University of California, San Diego, School of Medicine, La Jolla, USA, <sup>2</sup>The University of California, San Diego, Institute for Neurocomputation, La Jolla, USA, <sup>3</sup>VA San Diego Healthcare System, La Jolla, USA, <sup>4</sup>The University of California, San Diego, La Jolla, USA 717 M-AM

**Lateralization of Pain Matrix Areas related or unrelated to the side of stimulation**, Kai Lutz<sup>1</sup>, Michael Meier<sup>1</sup>, Mike Bruegger<sup>1</sup>, Thierry Keller<sup>2</sup>, Ashley Barlow<sup>3</sup>, Roger Luechinger<sup>4</sup>, Lutz Jancke<sup>1</sup>, Dominik Ettlin<sup>5</sup>, <sup>1</sup>Department of Neuropsychology, Institute for Psychology, University of 721 M-AM

Zürich, Zürich, Switzerland, <sup>2</sup>Automatic Control Laboratory, Swiss Federal Institute of Technology, Zürich, Switzerland, <sup>3</sup>GlaxoSmithKline, Consumer Healthcare, Weybridge, United Kingdom, <sup>4</sup>Institute of Biomedical Engineering, Swiss Federal Institute of Technology and the University of Zürich, Zürich, Switzerland, <sup>5</sup>Center for Dental and Oral Medicine and Cranio-maxillofacial Surgery, Clinic for Removable Prosthodontics, Masticatory Disorders and Special Care Dentistry, University of Zürich, Zürich, Switzerland

**Cerebral response to acute pain correlates with degree of diabetic neuropathy**, Iain Wilkinson, Rajiv Gandhi, Dinesh Selvarajah, Mike Hunter, Ceila Emery, Paul Griffiths, Solomon Tesfaye, University of Sheffield, Sheffield, United Kingdom 725 M-AM

13:45 – 14:45 You Yangs Hall (Level 3)

### COGNITION & ATTENTION Attention (auditory, tactile, motor)

**Keeping track of emerging rules: The neural circuitry of dynamic auditory change detection**, Alexandra Bendixen<sup>1</sup>, Ute Roeber<sup>1</sup>, Nelson J. Trujillo-Barreto<sup>2</sup>, Erich Schröger<sup>1</sup>, <sup>1</sup>University of Leipzig, Leipzig, Germany, <sup>2</sup>Cuban Neuroscience Center, Havana, Cuba 2 M-PM

**Simultaneous ERP and fMRI in an oddball paradigm with standard and deviant conceptual pairs**, Ilan Laufer, Michiro Negishi, Nallakkandi Rajeevan, Cheryl Lacadie, R. Todd Constable, Yale University School of Medicine, Department of Diagnostic Radiology, New Haven, USA 6 M-PM

**Characteristics and EEG spectral dynamics of behavioural microsleeps in a Mock-MRI scanner**, Govinda Poudel<sup>1,2</sup>, Richard Jones<sup>1,2,3,4</sup>, Carrie Innes<sup>1,3</sup>, Philip Bones<sup>1,4</sup>, <sup>1</sup>Van der Veer Institute for Parkinson's and Brain Research, Christchurch, New Zealand, <sup>2</sup>Medicine, University of Otago, Christchurch, New Zealand, <sup>3</sup>Medical Physics and Bioengineering, Christchurch Hospital, Christchurch, New Zealand, <sup>4</sup>Electrical and Computer Engineering, University of Canterbury, Christchurch, New Zealand 10 M-PM

**Prominent dysfunction of neural network associated with sustained attention in the patients with schizophrenia compared to the patients with major depression and the healthy controls**, Jeong-Ho Seok<sup>1</sup>, Jae-Jin Kim<sup>2</sup>, Jong-Doo Lee<sup>3</sup>, Jeonghun Ku<sup>4</sup>, Hae-Jeong Park<sup>3</sup>, Sang Joon Son<sup>2</sup>, Hyeonrae Lee<sup>4</sup>, Hye-Sun Kim<sup>2</sup>, Maeng-Keun Oh<sup>3</sup>, <sup>1</sup>Department of Psychiatry, Hallym University Sacred Heart Hospital, Anyang, Korea, <sup>2</sup>Department of Psychiatry, Yonsei University, College of Medicine, Seoul, Korea, <sup>3</sup>Department of Diagnostic Radiology, Yonsei University, College of Medicine, Seoul, Korea, <sup>4</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea 14 M-PM

**Neural substrates of warning effect: a functional MRI study**, Hisakazu T. Yanaka<sup>1,2,3</sup>, Daisuke N. Saito<sup>1</sup>, Norihiro Sadato<sup>1,2,3,4</sup>, <sup>1</sup>Division of Cerebral Integration, Department of Cerebral Research, National Institute for Physiological Sciences, Okazaki, Japan, <sup>2</sup>Department of Physiological Sciences, The Graduate University for Advanced Studies (Sokendai, Okazaki, Japan), <sup>3</sup>Research Institute of Science and Technology for Society (RISTEX), Japan Science and Technology Agency (JST), Tokyo, Japan, <sup>4</sup>Department of Functional Neuroimaging, Faculty of Medical Sciences, University of Fukui, Fukui, Japan 18 M-PM

### COGNITION & ATTENTION Attention (visual)

**Attentional effect on emotional Chinese word processing in the human brain: An event-related fMRI study**, Hsin-Mei Chen<sup>1</sup>, Su-Ling Yeh<sup>1</sup>, Kuan-Ming Chen<sup>1</sup>, Jyh-Horng Chen<sup>2</sup>, <sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Interdisciplinary MR lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan 22 M-PM

**Modulation of FFA activation by attention and processing demands**, Daniel Grupe<sup>2</sup>, Robert Schultz<sup>1</sup>, Elinora Hunyadi<sup>1</sup>, <sup>1</sup>Center for Autism Research, Children's Hospital of Philadelphia, Philadelphia, USA, <sup>2</sup>Yale University Child Study Center, New Haven, USA 26 M-PM

**The Different Roles of Posterior Parietal Cortex and Frontal Eye Field in Control of Visual Selection: Effects of Repetitive Transcranial Magnetic Stimulation on Partial Report Analyzed** 30 M-PM

- by Bundesen's Theory of Visual Attention**, James J. Hung<sup>1</sup>, Jon Driver<sup>2</sup>, Vincent Walsh<sup>2</sup>,  
<sup>1</sup>Department of Neurology, Chang Gung Memorial Hospital, Chang Gung University College of  
Medicine, Taipei, Taiwan, <sup>2</sup>Institute of Cognitive Neuroscience & Department of Psychology,  
University College London, London, United Kingdom
- Differences in activation latencies during an attention task as measured by rapid  
event-related fMRI**, Thilo Kellermann<sup>1</sup>, Martina Reske<sup>1</sup>, N. Jon Shah<sup>2,3,4</sup>, Frank Schneider<sup>1,3</sup>,  
Ute Habel<sup>1</sup>, <sup>1</sup>RWTH Aachen University, Aachen, Germany, <sup>2</sup>Research Centre Jülich, Jülich,  
Germany, <sup>3</sup>Brain Imaging Centre West, Jülich, Germany, <sup>4</sup>University of Dortmund, Dortmund,  
Germany 34 M-PM
- Competitive Interactions in Human Extrastriate Cortex are Modulated by Collinear  
Alignment**, Stephanie McMains<sup>1,2</sup>, Sabine Kastner<sup>1,2</sup>, <sup>1</sup>CSBMB, Princeton, USA, <sup>2</sup>Psychology  
Dept, Princeton, USA 38 M-PM
- Context-dependent influences of fronto-parietal areas on visual cortex: Direct confirmation  
with concurrent TMS-fMRI**, Christian Ruff<sup>1,2</sup>, Felix Blankenburg<sup>1,2</sup>, Sven Bestmann<sup>2</sup>, Otto  
Bjoertom<sup>1</sup>, Nikolaus Weiskopf<sup>1,2</sup>, Jon Driver<sup>1,2</sup>, <sup>1</sup>UCL Institute of Cognitive Neuroscience,  
London, United Kingdom, <sup>2</sup>Wellcome Trust Centre for Neuroimaging at UCL, London, United  
Kingdom 42 M-PM
- Content-Specific Top-Down Control from Prefrontal to Visual Cortex during Mental  
Imagery**, Mark Stokes<sup>1,2</sup>, Russell Thompson<sup>1</sup>, Rhodri Cusack<sup>1</sup>, John Duncan<sup>1</sup>, <sup>1</sup>MRC-CBU,  
Cambridge, United Kingdom, <sup>2</sup>Oxford University, Oxford, United Kingdom 46 M-PM\*
- Single pulse TMS on frontal eye fields and intraparietal sulcus enhances coupling of visuo-  
spatial attention and saccadic eye movements**, Helene Veenstra<sup>1,2</sup>, Bas Neggers<sup>1</sup>, <sup>1</sup>Department  
of psychiatrics, UMC, Utrecht, Netherlands, <sup>2</sup>Department of Experimental Psychology and  
Psychopharmacology, Utrecht University, Utrecht, Netherlands 50 M-PM

## COGNITION & ATTENTION

### Cognitive Aging

- Effects of age on EEG activity during driving**, Kui-Ming Chen<sup>1</sup>, Tong-Ping Su<sup>2</sup>, Chia-Min  
Huang<sup>2</sup>, Chin-Teng Lin<sup>3</sup>, Li-Wei Ko<sup>3</sup>, I-Fang Chung<sup>1</sup>, Tzzy-Ping Jung<sup>4</sup>, <sup>1</sup>Institute of Biomedical  
Informatics, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Psychiatry Department, Taipei  
Veterans General Hospital, Taipei, Taiwan, <sup>3</sup>Brain Research Center, National Chiao-Tung  
University, Hsinchu, Taiwan, <sup>4</sup>Swartz Center for Computational Neuroscience, Institute for Neural  
Computation, University of California, San Diego, USA 54 M-PM
- Nature of cognitive demands determines a distinct relationship between corpus callosum size  
and interhemispheric efficiency**, Jennyfer Ansado<sup>1,2</sup>, Sven Joubert<sup>1,3</sup>, Yves Joannette<sup>1,2</sup>, Sylvane  
Faure<sup>2</sup>, <sup>1</sup>Centre de Recherche, IUGM & Faculté de médecine, Université de Montréal, Montréal,  
Canada, <sup>2</sup>Département de psychologie et CERNEC, Montréal, Canada, <sup>3</sup>Laboratoire de  
Psychologie Expérimentale et Quantitative, Université Nice-Sophia Antipolis, Nice, France 58 M-PM
- Diffusion Tensor Imaging of Memory Decline**, Efrat Sasson<sup>1</sup>, Glen Doniger<sup>2</sup>, Ofer Pasternak<sup>3</sup>,  
Yaniv Assaf<sup>1,4</sup>, <sup>1</sup>Department of Neurobiochemistry, Tel Aviv University, Tel Aviv, Israel,  
<sup>2</sup>Department of Clinical Science, NeuroTrax Corporation, Newark, USA, <sup>3</sup>School of Computer  
Science, Tel Aviv University, Tel Aviv, Israel, <sup>4</sup>Functional brain imaging unit, Tel Aviv Sourasky  
Medical Center, Tel Aviv, Israel 62 M-PM

## COGNITION & ATTENTION

### Cognitive Development

- Developmental changes in inter-regional correlations in cortical thickness during  
adolescence: The influence of working memory ability and IQ**, Lucy Cragg<sup>1</sup>, Gabriel  
Leonard<sup>2</sup>, Michel Perron<sup>3,4</sup>, Bruce Pike<sup>2</sup>, Louis Richer<sup>5</sup>, Roberto Toro<sup>1</sup>, Suzanne Veillette<sup>3,4</sup>,  
Zdenka Pausova<sup>1,3</sup>, Tomas Paus<sup>1,2</sup>, <sup>1</sup>Brain and Body Centre, University of Nottingham,  
Nottingham, United Kingdom, <sup>2</sup>Montreal Neurological Institute, McGill University, Montreal,  
Canada, <sup>3</sup>Université de Montreal, Montreal, Canada, <sup>4</sup>Groupe ECOBES, CEJEP Jonquiere,  
Jonquiere, Canada, <sup>5</sup>Department of Psychology, University of Quebec in Chicoutimi, Chicoutimi,  
Canada 66 M-PM

**DTI parameters in the superior longitudinal fasciculus associated with spatial working memory performance in children**, Martin Vestergaard Hansen<sup>1</sup>, Kathrine Skak Madsen<sup>1,2</sup>, Lisser Rye Ejersbo<sup>4</sup>, Christian Gerlach<sup>4</sup>, Thomas Z. Ramsøy<sup>1</sup>, Olaf B. Paulson<sup>1,2</sup>, Terry L. Jernigan<sup>1,2,3</sup>, <sup>1</sup>Danish Research Centre for MR, Copenhagen University Hospital, Hvidovre, Denmark, <sup>2</sup>Center for Integrated Molecular Brain Imaging, Copenhagen, Denmark, <sup>3</sup>Laboratory of Cognitive Imaging, University of California, San Diego, USA, <sup>4</sup>Learning Lab Denmark, Danish School of Education, University of Aarhus, Copenhagen, Denmark 70 M-PM

**Age-related changes in face induced gamma oscillations**, Natasa Kovacevic<sup>1</sup>, Roxane Itier<sup>1</sup>, Anthony McIntosh<sup>1,2</sup>, <sup>1</sup>Rotman Research Institute, Toronto, Canada, <sup>2</sup>Department of Psychology, University of Toronto, Toronto, Canada 74 M-PM

**Effects of bilingualism on numerical neurocognition in a paediatric population. An fMRI investigation**, Katrien Mondt<sup>1</sup>, Esli Struys<sup>1</sup>, Danielle Balériaux<sup>2</sup>, Piet Van de Craen<sup>1</sup>, <sup>1</sup>Department of Linguistics, Vrije Universiteit Brussel, Brussels, Belgium, <sup>2</sup>MR Unit, Université Libre de Bruxelles, Brussels, Belgium 78 M-PM

**Music and the infant brain: a fMRI study in newborns**, Maria Cristina Saccuman<sup>1</sup>, Paola Scifo<sup>2,3</sup>, Guido Andreolli<sup>1</sup>, Danilo Spada<sup>5</sup>, Federica Navarra<sup>2,3</sup>, Cristina Baldoli<sup>3,4</sup>, Stefan Koelsch<sup>6</sup>, Daniela Perani<sup>1,2,3</sup>, <sup>1</sup>Vita-Salute San Raffaele University, Milan, Italy, <sup>2</sup>Department of Nuclear Medicine, Scientific Institute San Raffaele, Milan, Italy, <sup>3</sup>CERMAC San Raffaele Scientific Institute, Milan, Italy, <sup>4</sup>Department of Neuroradiology, Scientific Institute San Raffaele, Milan, Italy, <sup>5</sup>Psychology Institute, School of Medicine, Università degli Studi, Milan, Italy, <sup>6</sup>Max-Planck-Institute for Neuropsychology, Leipzig, Germany 82 M-PM

#### COGNITION & ATTENTION Executive Function

**Unconscious formation of free intentions: functional dissociation between regions in prefrontal cortex**, Chun Siong Soon<sup>1</sup>, Anna He<sup>1</sup>, John-Dylan Haynes<sup>1,2</sup>, <sup>1</sup>Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience Berlin, Berlin, Germany 86 M-PM

#### COGNITION & ATTENTION Perception, Imagery, Awareness

**Motor familiarity modulates mirror neurons system activity during auditory action recognition in sighted and congenitally blind individuals**, Daniela Bonino<sup>1,2</sup>, Emiliano Ricciardi<sup>1,3</sup>, Lorenzo Sani<sup>1</sup>, Tomaso Vecchi<sup>2</sup>, Mario Guazzelli<sup>4</sup>, James Haxby<sup>5</sup>, Luciano Fadiga<sup>6</sup>, Pietro Pietrini<sup>1</sup>, <sup>1</sup>Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, <sup>2</sup>Department of Psychology, University of Pavia, Pavia, Italy, <sup>3</sup>MRI Lab, Institute of Clinical Physiology, C.N.R. Research Area, Pisa, Italy, <sup>4</sup>Psychology Chair, University of Pisa, Pisa, Italy, <sup>5</sup>Department of Psychology, Princeton University, Princeton, USA, <sup>6</sup>Department of Biomedical Sciences and Advanced Therapy – Physiology Section, University of Ferrara, Ferrara, Italy 90 M-PM\*

**Specificity of neural responses to observed and executed actions revealed with fMR-adaptation**, Trevor Chong<sup>1,2</sup>, Ross Cunnington<sup>2</sup>, Mark Williams<sup>1</sup>, Nancy Kanwisher<sup>3</sup>, Jason Mattingley<sup>2</sup>, <sup>1</sup>Macquarie University, Sydney, Australia, <sup>2</sup>The University of Queensland, St Lucia, Australia, <sup>3</sup>Massachusetts Institute of Technology, Cambridge, USA 94 M-PM\*

**Hearing moves seeing: converging psychophysical and fMRI evidence of auditory-driven visual apparent motion**, Elliot Freeman<sup>1</sup>, Su Watkins<sup>2</sup>, Jon Driver<sup>2</sup>, Geraint Rees<sup>2</sup>, <sup>1</sup>Brunel University, Uxbridge, United Kingdom, <sup>2</sup>University College London, London, United Kingdom 98 M-PM

**Restless Minds – A relation between rest and the self in the brain - A deep-TMS study**, Michal Gruberger<sup>1,2,3</sup>, Talma Hendler<sup>1,3,4</sup>, Eran-Vadim Harel<sup>2,4</sup>, Hagai Harari<sup>2,4</sup>, Levkovitz Yechiel<sup>2,4</sup>, Abraham Zangen<sup>5</sup>, <sup>1</sup>Department of Psychology, Tel-Aviv University, Tel-Aviv, Israel, <sup>2</sup>The Emotion-Cognition Research Center, Shalvata Mental Health Center, Hod-Hasharon, Israel, <sup>3</sup>Functional Brain Center, Tel-Aviv Sourasky Medical Center, Tel-Aviv, Israel, <sup>4</sup>Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel, <sup>5</sup>Department of Neurobiology, The Weizmann Institute of Science, Rehovot, Israel 102 M-PM

**Consistency and functional specialization in the default mode brain network**, Ben Harrison<sup>1,2</sup>, Jesus Pujol<sup>1</sup>, Marina López-Solà<sup>1</sup>, Rosa Hernández-Ribas<sup>1</sup>, Joan Deus<sup>1</sup>, Hector Ortiz<sup>1</sup>, Carles Soriano-Mas<sup>1</sup>, Murat Yücel<sup>2</sup>, Christos Pantelis<sup>2</sup>, Narcís Cardoner<sup>1</sup>, <sup>1</sup>Institut d'Alta Tecnologia-PRBB, Barcelona, Spain, <sup>2</sup>Melbourne Neuropsychiatry Centre, Department of Psychiatry, The University of Melbourne, Melbourne, Australia 106 M-PM

**Modulations of induced gamma power and synchrony during gaze processing**, Roxane Itier<sup>1</sup>, Natasa Kovacevic<sup>1</sup>, Anthony McIntosh<sup>1,2</sup>, <sup>1</sup>Rotman Research Institute, Toronto, Canada, <sup>2</sup>University of Toronto, Toronto, Canada 110 M-PM

**High frequency gamma rhythm in parietal cortex during imagined hand movements**, Blake Johnson, Macquarie Centre for Cognitive Science, Sydney, Australia 114 M-PM

#### COGNITION & ATTENTION Reasoning & Problem Solving

**MEG-EEG correlates of mentalistic and mechanical reasoning in healthy subjects. An analysis of the effects of incongruity**, Eric Brunet-Gouet, Damien Vistoli, Emilie Bobin, Christine Passerieux, Inserm ERI15 / UVSQ EA 4047, Versailles, France 118 M-PM

**Creative Achievement and Cortical Thickness in a Large Healthy Cohort**, Rex E. Jung<sup>1,2,3</sup>, H. Jeremy Bockholt<sup>1</sup>, Judith Segall<sup>1</sup>, Arvind Caprihan<sup>1</sup>, Robert Chavez<sup>1</sup>, Shirley Smith<sup>1</sup>, M. Layne Kalbfleisch<sup>4</sup>, <sup>1</sup>MIND Research Network, Albuquerque, USA, <sup>2</sup>Department of Neurology, University of New Mexico, Albuquerque, USA, <sup>3</sup>Department of Psychology, University of New Mexico, Albuquerque, USA, <sup>4</sup>Krasnow Institute, George Mason University, Fairfax, USA 122 M-PM

**The neural basis of autistic performance on Raven's Progressive Matrices**, Isabelle Soulières<sup>1,2</sup>, Thomas Zeffiro<sup>1</sup>, Fabienne Samson<sup>2,3</sup>, Elise Barbeau<sup>2,3</sup>, Cherif Sahyoun<sup>4</sup>, Michelle Dawson<sup>2</sup>, Laurent Mottron<sup>2,3</sup>, <sup>1</sup>Neural Systems Group, Psychiatry Department, Massachusetts General Hospital, Boston, USA, <sup>2</sup>Clinique spécialisée de l'autisme, Hôpital Rivière-des-Prairies, Montreal, Canada, <sup>3</sup>Psychiatry Department, Université de Montréal, Montreal, Canada, <sup>4</sup>Harvard-MIT Division of Health Sciences and Technology, Boston, USA 126 M-PM

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**Brain indices of complexity in arithmetic expressions**, Naiyi Wang<sup>1</sup>, Burkhard Maess<sup>1</sup>, Yuejia Luo<sup>2</sup>, Angela D Friederici<sup>1</sup>, <sup>1</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing, China 134 M-PM

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**Reduced orbitofrontal-amygdala resting-state connectivity in anxiety disorder patients,** Christian Windischberger<sup>1,2</sup>, Andreas Weissenbacher<sup>1,2</sup>, Florian Gerstl<sup>1,2</sup>, Ewald Moser<sup>1,2</sup>, Rupert Lanzenberger<sup>3</sup>, <sup>1</sup>MR Center of Excellence, Medical University, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, Medical University, Vienna, Austria 186 M-PM

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**Functional imaging of emotional self concept in schizophrenia,** Ute Habel, Katharina Pauly, Frank Schneider, Tilo Kircher, Department of Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany 210 M-PM

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<sup>2</sup>University of Liverpool, Liverpool, United Kingdom, <sup>3</sup>St Georges Hospital Medical School, London, United Kingdom

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<sup>2</sup>ORYGEN Research Centre, Victoria, Australia, <sup>3</sup>Institut d'Alta Tecnologia-PRBB, CRC Corporació Sanitària, Barcelona, Spain, <sup>4</sup>Brain Research Institute, Austin Health, Victoria, Australia

## EMOTION & MOTIVATION

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**Brain responses to hunger and its satiation: an arterial spin labeling study**, Michael Farrell<sup>1,2</sup>, John Dixon<sup>3</sup>, Julie Playfair<sup>3</sup>, Maureen Dixon<sup>3</sup>, Maria Gavrilescu<sup>1</sup>, Michael McKinley<sup>1</sup>, Melissa Hayden<sup>3</sup>, Derek Denton<sup>4</sup>, Paul O'Brien<sup>3</sup>, Gary Egan<sup>1,2</sup>, <sup>1</sup>Howard Florey Institute, University of Melbourne, Parkville, Australia, 234 M-PM  
<sup>2</sup>Centre for Neuroscience, University of Melbourne, Parkville, Australia, <sup>3</sup>Centre for Obesity Research and Education, Monash University, Prahran, Australia, <sup>4</sup>Baker Heart Research Institute, Alfred Hospital, Prahran, Australia

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<sup>2</sup>Department of Psychosomatic Medicine, Kyushu University, Fukuoka, Japan, <sup>3</sup>Department of Cerebral Research, NIPS, Okazaki, Japan, <sup>4</sup>Graduate School of International Cultural Studies, Tohoku University, Sendai, Japan

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<sup>2</sup>University of Liverpool, Liverpool, United Kingdom, <sup>3</sup>Temple University, Philadelphia, USA

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<sup>2</sup>Department of Functional Brain Imaging, Institute of Development, Aging and Cancer (IDAC), Tohoku University, Sendai, Japan

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<sup>2</sup>Institute for Clinical, Biological and Differential Psychology, Faculty of Psychology, University of Vienna, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, University of Aachen RWTH, Aachen, Germany, <sup>4</sup>Centre for Biomedical Engineering and Physics, Medical University of Vienna, Vienna, Austria, <sup>5</sup>Center of Mind/Brain Studies, University of Trento, Matarello, Italy, <sup>6</sup>Department of Psychiatry, University of Pennsylvania, Philadelphia, USA

**Monoamines regulate emotional impact in inferomedial prefrontal cortex**, *Albert Gjedde<sup>1,2</sup>, Jacob Geday<sup>1,3</sup>, <sup>1</sup>PET Center, Aarhus University Hospitals, Aarhus, Denmark, <sup>2</sup>Center of Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark, <sup>3</sup>Dept of Neurology, Aarhus University Hospitals, Aarhus, Denmark* 262 M-PM

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## IMAGING TECHNIQUES & CONTRAST MECHANISM

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- Mapping current waveforms with Multiple Alternating Balanced Steady States**, *Giedrius Buracas<sup>1</sup>, Jongho Lee<sup>2</sup>, Richard Buxton<sup>1</sup>, Eric Wong<sup>1</sup>, Thomas Liu<sup>1</sup>, <sup>1</sup>UCSD, Dept. Radiology, La Jolla, USA, <sup>2</sup>Advanced MRI, LFMI, NINDS, NIH, Bethesda, USA* 306 M-PM
- EEG Default Mode Network: Fast vs. Slow Music of Movie Episodes**, *Weijia Feng, Andrew CN Chen\*, Center for Higher Brain Functions, Capital Medical University,, Beijing, China* 310 M-PM
- High Resolution Mapping of V5 at 7 Tesla**, *Robin Heidemann<sup>1</sup>, Robert Trampel<sup>1</sup>, Enrico Reimer<sup>1</sup>, Joeran Lepsien<sup>1</sup>, Markus Raabe<sup>2</sup>, Fabrizio Fasanò<sup>3</sup>, Robert Turner<sup>1</sup>, <sup>1</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Institute for Experimental Psychology, University of Regensburg, Regensburg, Germany, <sup>3</sup>Neuroimaging Laboratory, Fondazione Santa Lucia, Rome, Italy* 314 M-PM
- Transit Time and Cerebrovascular Reactivity**, *Michael Jurkiewicz, Julien Poublanc, Adrian Crawley, David Mikulis, Department of Medical Imaging, The Toronto Western Hospital of the University Health Network, Toronto, Canada* 318 M-PM
- SSFP fMRI at 7 Tesla**, *Jongho Lee, Masaki Fukunaga, Jeff Duyn, Advanced MRI, LFMI, NINDS, National Institute of Health, Bethesda, USA* 322 M-PM
- Volumetric Magnetic Resonance Inverse Imaging improves the sensitivity of fMRI by reducing physiological noise**, *Fa-Hsuan Lin<sup>1,2</sup>, Thomas Witzel<sup>3</sup>, Polly Dhondt<sup>1</sup>, Thomas Zeffiro<sup>4</sup>, Lawrence Wald<sup>1</sup>, Graham Wiggins<sup>1</sup>, John Belliveau<sup>1</sup>, <sup>1</sup>Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, USA, <sup>2</sup>Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, <sup>3</sup>Harvard-MIT Division of Health Sciences and Technology, Cambridge, USA, <sup>4</sup>Neural Systems Group, Massachusetts General Hospital, Charlestown, USA* 326 M-PM\*
- Computer-controlled hypercapnic vasodilation for accurate and reproducible BOLD calibration**, *C.I. Mark, G.B. Pike, McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada* 330 M-PM
- Upper Bound Estimation of Neuronal Current-Induced Magnetic Field Changes in Humans**, *Kevin Murphy<sup>1</sup>, Jerzy Bodurka<sup>2</sup>, Peter A. Bandettini<sup>1,2</sup>, <sup>1</sup>Section on Functional Imaging Methods, National Institute of Mental Health, Bethesda, USA, <sup>2</sup>Functional MRI Facility, National Institute of Mental Health, Bethesda, USA* 334 M-PM
- Superresolution Parallel Functional MRI**, *Ricardo Otazo<sup>1</sup>, Fa-Hsuan Lin<sup>2,3</sup>, Stefan Posse<sup>1,4,5</sup>, <sup>1</sup>Electrical and Computer Engineering Department, University of New Mexico, Albuquerque, USA, <sup>2</sup>MGH-HMS-MIT Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, USA, <sup>3</sup>Department of Radiology, Massachusetts General Hospital, Boston, USA, <sup>4</sup>Department of Psychiatry, University of New Mexico, Albuquerque, USA, <sup>5</sup>Department of Physics and Astronomy, University of New Mexico, Albuquerque, USA* 338 M-PM
- An easily used method to detect brain regions associated with individual differences using spontaneous functional connectivity**, *Ming Song, Tianzi Jiang, national key laboratory of pattern recognition, beijing, China* 342 M-PM
- Estimation of vascular contribution to DfMRI (Diffusion weighted fMRI) signal.**, *Shin-ichi Urayama<sup>1</sup>, Kenji Aso<sup>1</sup>, Toshihiko Aso<sup>2,1</sup>, Satoru Kohno<sup>1</sup>, Nobukatsu Sawamoto<sup>1</sup>, Hidenao Fukuyama<sup>1</sup>, Denis Le Bihan<sup>2,1</sup>, <sup>1</sup>Human Brain Research Center, Graduate School of Medicine, Kyoto University, Kyoto, Japan, <sup>2</sup>NeuroSpin, CEA, Saclay, France* 346 M-PM

**Inline Distortion Correction for Echo-Planar fMRI**, Markus Vogler<sup>1,2</sup>, Sheeba Arnold<sup>3</sup>, Oliver Hinds<sup>3</sup>, Susan Whitfield-Gabrieli<sup>4</sup>, Josef Pfeuffer<sup>1</sup>, Christina Triantafyllou<sup>3,5</sup>, <sup>1</sup>Siemens Medical Solutions, Applications Development, Erlangen, Germany, <sup>2</sup>University of Applied Sciences, Hof, Germany, <sup>3</sup>McGovern Institute for Brain Research, MIT, Cambridge, USA, <sup>4</sup>Department of Brain and Cognitive Sciences, MIT, Cambridge, USA, <sup>5</sup>Athinoula A. Martinos Center, Department of Radiology, MGH, Harvard Medical School, Cambridge, USA 350 M-PM

**Changes in Tissue Volume Fraction and T1 during Brain Activation**, Wanyong Shin, Hong Gu, Yihong Yang, Neouimaging Research Branch, National Insititute on Drug Abuse, NIH, Baltimore, USA 354 M-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM MEG

**EEG Default Mode Network: Gender Consistency and Difference**, Andrew CN Chen\*, Huixuan Zhao, Weijia Feng, Center for Higher Brain Functions, Capital Medical University, Beijing, China 358 M-PM

**Large-Scale Parameter Estimation and Dynamic Source Localization for the Magnetoencephalography (MEG) Inverse Problem.**, Camilo Lamus<sup>1,2</sup>, Simona Temereanca<sup>1,3</sup>, Chris J. Long<sup>1,3</sup>, Matti S. Hämäläinen<sup>3,4</sup>, Emery N. Brown<sup>1,2,4</sup>, Patrick L. Purdon<sup>1,2</sup>, <sup>1</sup>Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Department of Anaesthesia and Critical Care, Massachusetts General Hospital, Boston, USA, <sup>3</sup>MGH/MIT/HMS Martinos Center for Biomedical Imaging, Charlestown, USA, <sup>4</sup>Harvard-MIT Division of Health Science and Technology, Cambridge, USA 362 M-PM

## LANGUAGE Language Acquisition

**Phoneme categorization elicits reversed response in the left premotor cortex in control versus dyslexic readers: a support to the 'allophonic' hypothesis of dyslexia**, Olivier Dufor<sup>1</sup>, Willy Serniclaes<sup>2</sup>, Liliane Sprenger-Charolles<sup>2</sup>, Jean-Francois Démonet<sup>1</sup>, <sup>1</sup>Inserm UMR S825, Toulouse, France, <sup>2</sup>CNRS Laboratoire Psychologie de la Perception, Paris, France 366 M-PM

**The Bilingual Semantic System in the Late Korean-English Bilinguals : An fMRI Study**, Minjung Kim, Woorim Jeong, Seungbok Lee, Department of Psychology, Chungbuk National University, Cheongju, South Korea 370 M-PM

**Neural bases of word and non-word reading in trained children with developmental dyslexia.**, Rodolphe Nenert<sup>1,3</sup>, Christophe Levêque<sup>2</sup>, Marie-thérèse LeNormand<sup>4</sup>, Philippe Evrard<sup>4</sup>, Scania De Schonen<sup>3,4</sup>, <sup>1</sup>Inserm U825, Hopital Purpan, Toulouse, France, <sup>2</sup>Department of Radiology, Hôpital d'Instruction des Armées du Val-de-Grâce, Paris, France, <sup>3</sup>LPP, Université Descartes-CNRS, Paris, France, <sup>4</sup>Laboratory of Developmental Physiology Hopital Robert Debré, Paris, France 374 M-PM

**Signal processing for whole-head MEG data from awake infants**, Toshiaki Imada<sup>1</sup>, Alexis Bosseler<sup>1</sup>, Samu Taulu<sup>2</sup>, Elina Pihko<sup>3</sup>, Jyrki Mäkelä<sup>3</sup>, Antti Ahonen<sup>2</sup>, Patricia Kuhl<sup>1</sup>, <sup>1</sup>Institute for Learning and Brain Sciences, University of Washington, Seattle, USA, <sup>2</sup>Elekta Neuromag Oy, Helsinki, Finland, <sup>3</sup>BioMag Laboratory, Helsinki University Central Hospital, Helsinki, Finland 378 M-PM

## LANGUAGE Production

**Language Functioning after Lesions to the Arcuate Fasciculus**, Nina Dronkers<sup>1,2,3</sup>, And Turken<sup>1</sup>, Robert Knight<sup>4</sup>, Juliana Baldo<sup>1</sup>, <sup>1</sup>VA North. California Health Care System, Martinez, USA, <sup>2</sup>University of California, Davis, USA, <sup>3</sup>University of California, San Diego, USA, <sup>4</sup>University of California, Berkeley, USA 382 M-PM\*

**Substrates of Switching of Phonology between the First and Second Languages**, Chihiro Hosoda<sup>1,2</sup>, Takashi Hanakawa<sup>1</sup>, Tadashi Nariai<sup>2</sup>, Kikuo Ohno<sup>2</sup>, Manabu Honda<sup>1</sup>, <sup>1</sup>Department of Cortical Functional Disorders, National Center of Neurology and Psychiatry, Kodaira, Japan, <sup>2</sup>Department of Neurosurgery, Tokyo Medical and Dental University, Tokyo, Japan 386 M-PM

**Dynamic brain activation during language processing in temporal lobe epilepsy: longitudinal fMRI analysis,** Jae-Hun Kim<sup>1</sup>, Jong-Min Lee<sup>1</sup>, Hang Joon Jo<sup>1</sup>, June Sic Kim<sup>2</sup>, Chi Heon Kim<sup>3</sup>, Chun Kee Chung<sup>2</sup>, Eunjoo Kang<sup>3</sup>, Sun I. Kim<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea, <sup>2</sup>MEG Center, Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, <sup>3</sup>Department of Psychology, Kangwon National University, Kangwon, Korea 390 M-PM

**Generation of action verbs in Parkinson's disease: a fMRI study,** Patrice Péran<sup>1,2</sup>, Dominique Cardebat<sup>2</sup>, Andrea Cherubini<sup>1</sup>, Fabrizio Piras<sup>3,4</sup>, Giacomo Luccichenti<sup>1</sup>, Antonella Peppe<sup>5</sup>, Carlo Cartagirone<sup>5,6</sup>, Olivier Rascol<sup>2</sup>, Jean-François Démonet<sup>2</sup>, Umberto Sabatini<sup>1</sup>, <sup>1</sup>Department of Radiology, IRCCS. Foundation Santa Lucia, Rome, Italy, <sup>2</sup>INSERM U825, Toulouse, France, <sup>3</sup>Center for Research in Language, University of California, San Diego, USA, <sup>4</sup>Neuroimaging laboratory, Rome, Italy, <sup>5</sup>Laboratory of Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Rome, Italy, <sup>6</sup>Neurological Clinic, Department of Neurosciences, Tor Vergata University of Rome, Rome, Italy 394 M-PM

### MEMORY & LEARNING Plasticity (normal & following pathology)

**Task-induced changes in short-range and long-range synchronization during subsequent sleep,** Ysbrand Van Der Werf<sup>1,2</sup>, Cornelis Stam<sup>2</sup>, Eus Van Someren<sup>1,2</sup>, <sup>1</sup>Dept. Sleep and Cognition, Netherlands Institute for Neuroscience, an Institute of the Royal Netherlands Academy of Arts and Sciences, Amsterdam, Netherlands, <sup>2</sup>Dept. Clinical Neurophysiology, VU University medical center, Amsterdam, Netherlands 398 M-PM

**Striatal Contribution to Sleep-dependent Consolidation of Motor Sequence Learning,** Karen Debas<sup>1</sup>, Julie Carrier<sup>2,3</sup>, Pierre Orban<sup>1</sup>, Marc Barakat<sup>1</sup>, Gilles Vandewalle<sup>1</sup>, Abdallah Hadj Tahar<sup>1</sup>, Avi Karni<sup>4</sup>, Leslie Ungerleider<sup>5</sup>, Habib Benali<sup>2,6</sup>, Julien Doyon<sup>1,3,5,6</sup>, <sup>1</sup>Functional Neuroimaging Unit, Department of Psychology, University of Montreal, Montreal, Canada, <sup>2</sup>Centre d'étude du sommeil et des rythmes biologiques, Hôpital du Sacré-Cœur de Montréal, Montreal, Canada, <sup>3</sup>Centre de recherche en neuropsychologie et en cognition, Department of Psychology, University of Montreal, Montreal, Canada, <sup>4</sup>Laboratory for Functional Brain Imaging and Learning Research, The Brain-Behavior Center, Haifa, Israel, <sup>5</sup>Laboratory of Brain and Cognition, NIMH, NIH, Bethesda, USA, <sup>6</sup>Unité Mixte de Recherche-S 678, Institut National de la Santé et de la Recherche Médicale/University of Paris 6, Centre Hospitalier Universitaire Pitié-Salpêtrière, Paris, France 402 M-PM

**Localization of Cognitive Function in Rats- MRI Study,** Tamar Blumenfeld-Katzir, Ofer Pasternak, Yaniv Assaf, Tel Aviv University, Tel Aviv, Israel 406 M-PM

### MEMORY & LEARNING Working Memory

**Working memory in women: fMRI comparison of face processing vs. mental rotation in n-back format,** Bonnie Alexander<sup>1</sup>, Sheila Crewther<sup>1</sup>, David Crewther<sup>2</sup>, <sup>1</sup>La Trobe University, Bundoora, Australia, <sup>2</sup>Brain Sciences Institute, Swinburne University, Hawthorn, Australia 410 M-PM

**Variations in task difficulty dissociate activity in prefrontal cortex and medial temporal lobe during working memory encoding,** Wesley Clapp, Jonas Karlsson, Michael Rubens, Theodore Zanto, Adam Gazzaley, University of California San Francisco (UCSF), San Francisco, USA 414 M-PM

**Automatic Coding of Old-New Effect during Working Memory: Evidence from Multimodal Imaging,** Chunyan Guo<sup>1,2</sup>, Jessica Clark<sup>2,3</sup>, Adam Lawson<sup>2</sup>, Yang Jiang<sup>2</sup>, <sup>1</sup>Department of Psychology, Capital Normal University, Beijing, China, <sup>2</sup>Behavioral Science Department, University of Kentucky College of Medicine, Lexington, USA, <sup>3</sup>Psychology Department, University of Kentucky, Lexington, USA 418 M-PM

**Age-associated changes in the neural correlates of episodic and working memory,** Helen Macpherson<sup>1</sup>, Andrew Pipingas<sup>2</sup>, Richard Silberstein<sup>3</sup>, <sup>1</sup>Swinburne University, Melbourne, Australia, <sup>2</sup>Swinburne University, Melbourne, Australia, <sup>3</sup>Swinburne University, Melbourne, Australia 422 M-PM

**Frontal and Parietal Activation During Working Memory Differentiates Dyslexia from Controls as Revealed by Magnetoencephalography (MEG),** Nicholas Velissaris<sup>1</sup>, Lesley 426 M-PM

Pawluk<sup>1</sup>, Laszlo Erdodi<sup>1</sup>, Renee Lajiness-O'Neill<sup>1,2</sup>, Susan Bowyer<sup>2,3,4</sup>, <sup>1</sup>Eastern Michigan University, Ypsilanti, USA, <sup>2</sup>Henry Ford Hospital, Detroit, USA, <sup>3</sup>Oakland University, Rochester, USA, <sup>4</sup>Wayne State University, Detroit, USA

**Efficiency & trial-to-trial variance of spatial working memory performance is manifest across overlapping load-dependent networks**, Michael Valenzuela<sup>1,2</sup>, Nicole Kochan<sup>1,2</sup>, Melissa Slavin<sup>1</sup>, Julian Trollor<sup>1,2</sup>, Perminder Sachdev<sup>1,2</sup>, Anthony McIntosh<sup>3</sup>, Michael Breakspear<sup>1,4</sup>, <sup>1</sup>School of Psychiatry, University of NSW, Sydney, Australia, <sup>2</sup>Neuropsychiatric Institute, Prince of Wales Hospital, Sydney, Australia, <sup>3</sup>Rotman Research Institute, Baycrest Centre, Toronto, Canada, <sup>4</sup>Black Dog Institute, Sydney, Australia 430 M-PM

## MODELING & ANALYSIS

### Bayesian Modeling

**Bayesian Brain Source Imaging based on combined MEG/EEG and fMRI using MCMC**, Sung C. Jun<sup>1,2</sup>, John S. George<sup>1</sup>, Juliana Par'e-Blagoev<sup>3</sup>, Sergey Plis<sup>4</sup>, Doug M. Ranken<sup>1</sup>, David M. Schmidt<sup>1</sup>, <sup>1</sup>Applied Modern Physics Group, MS-D454, Los Alamos, USA, <sup>2</sup>Department of Information and Communications, Gwangju Institute of Science and, Gwangju, South Korea, <sup>3</sup>The MIND Institute, Albuquerque, USA, <sup>4</sup>Department of Computer Science, University of New Mexico, Albuquerque, USA 434 M-PM

**Graph partitioned spatial priors for imaging**, Lee Harrison, William Penny, Guillaume Flandin, Karl Friston, Wellcome Trust Centre for Neuroimaging, London, United Kingdom 438 M-PM

**Spatiotemporal Noise Covariance for Unified Analysis of MEG AND EEG DATA**, SUNG JUN<sup>1</sup>, SERGEY PLIS<sup>2</sup>, <sup>1</sup>Gwangju Inst. of Science & Technology, Gwangju, Korea, <sup>2</sup>University of New Mexico, Albuquerque, USA 442 M-PM

**Combining ICA and GLM for FMRI data analysis**, Salima Makni<sup>1</sup>, Christian Beckmann<sup>1,2</sup>, Steve Smith<sup>1</sup>, Mark Woolrich<sup>1</sup>, <sup>1</sup>FMRIB, Oxford, United Kingdom, <sup>2</sup>Department of Clinical Neurosciences, ICL, London, United Kingdom 446 M-PM

**Neuroimaging of human face processing by Bayesian MCMC method**, Gokcen Yildiz<sup>1,2</sup>, A. Deniz Duru<sup>3</sup>, Ahmet Ademoglu<sup>3</sup>, <sup>1</sup>Katholieke Universiteit Leuven, Leuven, Belgium, <sup>2</sup>Galatasaray University, Istanbul, Turkey, <sup>3</sup>Bogazici University, Istanbul, Turkey 450 M-PM

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## MODELING & ANALYSIS

### Classification & Predictive Modeling

**Phase effect of spontaneous alpha rhythm on the visual evoked potential**, Robert Becker<sup>1</sup>, Petra Ritter<sup>1</sup>, Robert Schmidt<sup>2</sup>, Richard Kempter<sup>2</sup>, Arno Villringer<sup>1,3</sup>, <sup>1</sup>Berlin Neuroimaging Center, Dept. of Neurology, Charité, Universitätsmedizin, Berlin, Germany, <sup>2</sup>Theoretical Neuroscience Lab, ITB, Humboldt-University, Berlin, Germany, <sup>3</sup>Max-Planck-Institute for Human Cognitive and Brain Science, Leipzig, Germany 454 M-PM

**Beyond Prediction: More Robust Sparse fMRI Models Reveal Distributed Clusters of Local Activity**, Melissa Carroll<sup>1</sup>, Guillermo Cecchi<sup>2</sup>, Irina Rish<sup>2</sup>, Rahul Garg<sup>2</sup>, Ravi Rao<sup>2</sup>, <sup>1</sup>Princeton University Computer Science Department, Princeton, USA, <sup>2</sup>IBM TJ Watson Research Center, Yorktown Heights, USA 458 M-PM

**Predicting EEG power oscillations using fMRI**, Federico De Martino, Giancarlo Valente, Rainer Goebel, Elia Formisano, Department of Neurocognition, University of Maastricht, Maastricht, Netherlands 462 M-PM\*

**Total variation approach for high temporal resolution event detection in fMRI**, Mostafa Ghannad Rezaie, Luis Hernandez-Garcia, University of Michigan, Ann Arbor, USA 466 M-PM

**An Informatics System for the Management of Distributed Neuroimaging Research Data**, Neil Killeen<sup>1</sup>, Jason Lohrey<sup>2</sup>, Wee Siong Soh<sup>3</sup>, Wilson Liu<sup>1,3</sup>, Steve Melnikoff<sup>4</sup>, Gary Egan<sup>1,3</sup>, <sup>1</sup>Centre for Neuroscience, the University of Melbourne, Melbourne, Australia, <sup>2</sup>Arcitectora, 470 M-PM

Melbourne, Australia, <sup>3</sup>Howard Florey Institute, the Florey Neuroscience Institutes, Melbourne, Australia, <sup>4</sup>Victorian E-Research Strategic Initiative, Melbourne, Australia

**Probabilistic classification models for Brain Computer Interfaces**, Jérémie Mattout<sup>1,2</sup>, Guillaume Gibert<sup>1,2</sup>, Virginie Attina<sup>1,2</sup>, Emmanuel Maby<sup>1,2</sup>, Olivier Bertrand<sup>1,2</sup>, <sup>1</sup>Brain Dynamics and Cognition, U821 INSERM, Lyon, France, <sup>2</sup>Lyon 1 - Université Claude Bernard, Lyon, France 474 M-PM

**Comparison of small clinical samples with Voxel-Based Morphometry: a quantitative approach to the analysis of outliers effects by means of virtual phantoms**, Federico Nocchi<sup>1,2</sup>, Tiziana Franchin<sup>1,3</sup>, Elisabetta Genovese<sup>4</sup>, Daniela Longo<sup>5</sup>, Giuseppe Fariello<sup>5</sup>, Vittorio Cannata<sup>4</sup>, <sup>1</sup>Clinical Engineering Service, Bambino Gesù Children's Hospital, Rome, Vatican City, <sup>2</sup>Philips Medical Systems, Monza, Italy, <sup>3</sup>Department of Bioengineering, Polytechnic of Milan, Milan, Italy, <sup>4</sup>Health Physics, Bambino Gesù Children's Hospital, Rome, Vatican City, <sup>5</sup>Department of Paediatric Radiology, Bambino Gesù Children's Hospital, Rome, Vatican City 478 M-PM

**Contribution of cortical thickness measurement to the prediction of fast conversion from Mild Cognitive Impairment to Alzheimer's Disease**, Olivier QUERBES<sup>1,2</sup>, Jean-Albert LOTTERIE<sup>1,2</sup>, Jérémie PARIENTE<sup>1,2</sup>, Isabelle BERRY<sup>1,2</sup>, Jean-Claude FORT<sup>2,3</sup>, Florent AUBRY<sup>1,2</sup>, Pierre CELSIS<sup>1,2</sup>, <sup>1</sup>INSERM U825, Toulouse, France, <sup>2</sup>University Toulouse III Paul Sabatier, Toulouse, France, <sup>3</sup>Laboratoire de Statistiques et probabilités, Toulouse, France 482 M-PM

**Automatic Classification of Human Brain Constituents including Crossing Fibres using HARDI and a Support Vector Machine**, Susanne Schnell<sup>1</sup>, Björn Kreher<sup>1</sup>, Jürgen Hennig<sup>1</sup>, Hans Burkhardt<sup>2</sup>, Valerij Kiselev<sup>1</sup>, <sup>1</sup>Medical Physics, Dept. of Diagn. Radiology, University Hospital Freiburg, Freiburg, Germany, <sup>2</sup>Chair in Pattern Recognition and Image Processing, Institute of Computer Science, University of Freiburg, Freiburg, Germany 486 M-PM

**A NEW TRIANGULATION METHOD TO LOCALIZE FUNCTIONAL ACTIVITY ON THE CORTICAL SURFACE**, Alan Tucholka<sup>1,2</sup>, Bertrand Thirion<sup>1,2</sup>, Philippe Pine<sup>3</sup>, Jean-Baptiste Poline<sup>1</sup>, Jean-François Mangin<sup>1</sup>, <sup>1</sup>CEA Saclay, Neurospin/LNAO, Bat 145, 91191, Gif-suf-Yvette, France, <sup>2</sup>INFIA Futurs, Parietal, Paris, France, <sup>3</sup>INSERM UNICOG, Neurospin, Paris, France 490 M-PM

**Estimating Structural Complexity Changes in Alzheimer's Disease and Frontotemporal Dementia**, Karl Young<sup>1,3</sup>, An-Tao Du<sup>3</sup>, Joel Kramer<sup>2</sup>, Howard Rosen<sup>2</sup>, Bruce Miller<sup>2</sup>, Michael Weiner<sup>1,3</sup>, Norbert Schuff<sup>1,3</sup>, <sup>1</sup>Department of Radiology, University of California San Francisco, San Francisco, USA, <sup>2</sup>Department of Neurology, University of California San Francisco, San Francisco, USA, <sup>3</sup>Center For Imaging of Neurodegenerative Diseases, Department of Veterans Affairs Medical Center, San Francisco, USA 494 M-PM\*

## MODELING & ANALYSIS

### Motion Correction/Spatial Normalization, Atlas Construction

**Affine and nonlinear spatial normalization techniques using derivatives of brain magnetic resonance images**, Jia-Xiu Liu<sup>1</sup>, Yong-Sheng Chen<sup>1</sup>, Li-Fen Chen<sup>2,3</sup>, <sup>1</sup>Department of Computer Science, National Chiao Tung University, Hsinchu, Taiwan, <sup>2</sup>Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Integrated Brain Research Laboratory, Taipei Veterans General Hospital, Taipei, Taiwan 498 M-PM

**SLICE TIMING CORRECTION IN BOLD FMRI DATA**, Rute Martins<sup>1</sup>, Alexandre Andrade<sup>2</sup>, Patricia Figueiredo<sup>1</sup>, <sup>1</sup>School of Engineering, Technical University of Lisbon, Lisbon, Portugal, <sup>2</sup>Institute of Biophysics and Biomedical Engineering University of Lisbon, Lisbon, Portugal 502 M-PM

**Structural differences can affect functional interpretation: Differences between modulated and unmodulated fMRI in healthy aging**, Jonathan Peelle, Murray Grossman, Department of Neurology, University of Pennsylvania, Philadelphia, USA 506 M-PM

**Comparison of Registration Techniques on Inter-subject Variation of Diffusion Tensor Imaging**, Xiujuan Geng<sup>1</sup>, Hong Gu<sup>1</sup>, Thomas Ross<sup>1</sup>, Gary Christensen<sup>2</sup>, Yihong Yang<sup>1</sup>, <sup>1</sup>Neuroimaging Research Branch, National Institute on Drug Abuse, NIH, Baltimore, USA, <sup>2</sup>University of Iowa, Iowa City, USA 510 M-PM

**MODELING & ANALYSIS**  
**Univariate Modeling, Linear, & Nonlinear**

- Increased Frontal Delta Synchronization of Bipolar Patients: a MEG Study**, Shyan-Shiou Chen<sup>1</sup>, Li-Fen Chen<sup>2,3</sup>, Pei-Chi Tu<sup>4</sup>, Tung-Ping Su<sup>5,6</sup>, Jen-Chuen Hsieh<sup>2,3</sup>, Ying-Chia Lin<sup>3</sup>,  
<sup>1</sup>Department of Mathematics, National Taiwan Normal University, Taipei, Taiwan, <sup>2</sup>Institute of Brain Science, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Integrated Brain Research Laboratory, Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan, <sup>4</sup>Division of Neuroscience, School of Life Sciences, National Yang-Ming University, Taipei, Taiwan, <sup>5</sup>Division of Psychiatry, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>6</sup>Psychiatric Department, Taipei Veterans General Hospital, Taipei, Taiwan 514 M-PM
- The Global Mean Should be Abandoned as Default Normalization Reference in PET Perfusion and Metabolism Studies**, Per Borghammer<sup>1,2</sup>, Albert Gjedde<sup>1,2</sup>, <sup>1</sup>PET Center, Aarhus University Hospitals, Aarhus, Denmark, <sup>2</sup>Center of Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark 518 M-PM
- The relationship between brain size and cortical structure in the adult human brain**, Kiho Im<sup>1</sup>, Jong-Min Lee<sup>1</sup>, Oliver Lyttelton<sup>2</sup>, Sun Hyung Kim<sup>1</sup>, Alan Evans<sup>2</sup>, Sun I. Kim<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Hanyang University, Seoul, South Korea, <sup>2</sup>McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Canada 522 M-PM\*
- Advances in False Discovery Rate control applied to neuroimaging analyses**, Glenn Lawyer<sup>1</sup>, Egil Ferkingstad<sup>2</sup>, Ragnar Nesvåg<sup>3</sup>, Katarina Varnäs<sup>4</sup>, Arnaldo Frigessi<sup>2</sup>, Erik G. Jönsson<sup>4</sup>, Ingrid Agartz<sup>1,3,4</sup>, <sup>1</sup>Department of Psychiatry, University of Oslo, Oslo, Norway, <sup>2</sup>Department of Biostatistics, University of Oslo, Oslo, Norway, <sup>3</sup>Department of Psychiatric Research, Diakonhjemmet Hospital, Oslo, Norway, <sup>4</sup>Department of Clinical Neuroscience, Psychiatry Section, Karolinska Institutet, Stockholm, Sweden 526 M-PM
- Spatio-temporal dynamics of P300-related neuronal activation: an EEG/fMRI study**, Dante Mantini<sup>1,2</sup>, Laura Marzetti<sup>1,2</sup>, Armando Tartaro<sup>1,2</sup>, Gian Luca Romani<sup>1,2</sup>, Cosimo Del Gratta<sup>1,2</sup>,  
<sup>1</sup>Institute for Advanced Biomedical Technologies, University Foundation “G. D’Annunzio”, Chieti, Italy, <sup>2</sup>Department of Clinical Sciences and Bio-imaging, University “G. D’Annunzio”, Chieti, Italy 530 M-PM
- An Application of Dynamic Analysis of t-Statistics to Clinical fMRI – Initial Evaluation of Brain Tumor Cases**, Toshiharu Nakai<sup>1</sup>, Epifanio Bagarinao<sup>2</sup>, Satoshi Nakao<sup>3</sup>, Tomohisa Okada<sup>4</sup>, Chikako Nakai<sup>5</sup>, Kayako Matsuo<sup>1</sup>, <sup>1</sup>Functional Brain Imaging Lab, National Center for Geriatrics and Gerontology, Ohbu, Japan, <sup>2</sup>Grid Technology Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, <sup>3</sup>Nakao Clinic, Kobe, Japan, <sup>4</sup>Institute of Biomedical Research and Innovation, Kobe, Japan, <sup>5</sup>Faculty of Business and Informatics, Toyohashi Sozo University, Toyohashi, Japan 534 M-PM
- GLM Permutation - Nonparametric Inference for Arbitrary General Linear Models**, Thomas Nichols<sup>1,3</sup>, Gerard Ridgway<sup>2</sup>, Matthew Webster<sup>3</sup>, Stephen Smith<sup>3</sup>, <sup>1</sup>GlaxoSmithKline Clinical Imaging Centre, London, United Kingdom, <sup>2</sup>Centre for Medical Image Computing, University College London, London, United Kingdom, <sup>3</sup>FMRIB Centre, Oxford University, Oxford, United Kingdom 538 M-PM
- Age-related nonlinear properties of EEG variation in post-photic stimulation: A multiscale entropy analysis**, Tetsuya Takahashi<sup>1</sup>, Tetsuhito Murata<sup>1</sup>, Tomoyuki Mizuno<sup>1</sup>, Mitsuru Kikuchi<sup>2</sup>, Kimiko Mizukami<sup>3</sup>, Kosuke Narita<sup>4</sup>, Hirotaka Kosaka<sup>1</sup>, Koichi Takahashi<sup>5</sup>, Yuji Wada<sup>1</sup>, <sup>1</sup>Department of Neuropsychiatry, Faculty of Medical Sciences, University of Fukui, Fukui, Japan, <sup>2</sup>Department of Psychiatry and Neurobiology, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan, <sup>3</sup>Department of Psychology, Faculty of Human studies, Jin-ai University, Fukui, Japan, <sup>4</sup>Department of Psychiatry and Human Behavior, Gunma University Graduate School of Medicine, Gunma, Japan, <sup>5</sup>Department of Informatics, Faculty of Science and Engineering, Kinki University, Osaka, Japan 542 M-PM
- On Non-normality, Non-parametric Tests and Pooling Permutations Over Space for Voxel Based Morphometry**, Anderson M. Winkler<sup>1</sup>, Thomas E. Nichols<sup>2,3</sup>, David C. Glahn<sup>1</sup>,  
<sup>1</sup>Department of Psychiatry, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>FMRIB Centre, Oxford University, United Kingdom, <sup>3</sup>GSK Clinical Imaging Centre, United Kingdom 546 M-PM



- Optimizing Kernel Size for the Smoothed Variance t-test**, Hui Zhang<sup>1</sup>, Timothy Johnson<sup>1</sup>, Jeffery Fessler<sup>1</sup>, Kent Kiehl<sup>4</sup>, Thomas Nichols<sup>2,3,1</sup>, <sup>1</sup>University of Michigan, Ann Arbor, USA, 550 M-PM  
<sup>2</sup>GlaxoSmithKline Clinical Imaging Centre, London, United Kingdom, <sup>3</sup>FMRIB Centre, Oxford, United Kingdom, <sup>4</sup>University of New Mexico, Logan, USA

## MOTOR BEHAVIOR

### Hand Movements

- Somatosensory areas 3a and 4p are activate during motor imagery in patients with hemiparetic stroke**, Andrew Butler<sup>1</sup>, Linda Confalonieri<sup>2</sup>, Giuseppe Pagnoni<sup>3</sup>, Lawrence Barsalou<sup>4</sup>, <sup>1</sup>Department of Rehabilitation Medicine, Emory University, Atlanta, USA, <sup>2</sup>CESCOM, University of Milan Bicocca, Milan, Italy, <sup>3</sup>Department of Psychiatry and Behavioral Sciences, Emory University, Atlanta, USA, <sup>4</sup>Department of Psychology, Emory University, Atlanta, USA 554 M-PM
- Gender and Handedness Effects on Corticospinal and Spinothalamic Tracts: A structural asymmetry study using diffusion spectrum imaging**, Su-Chun Huang<sup>1</sup>, Fang-Chen Yeh<sup>1</sup>, Hsiao-Lan Wang<sup>3</sup>, V. J. Wedeen<sup>4</sup>, Wen-Yih Isaac Tseng<sup>1,2</sup>, <sup>1</sup>Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan, <sup>2</sup>Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan, <sup>3</sup>Faculty of Education, Centre for Neuroscience in Education, University of Cambridge, Cambridge, United Kingdom, <sup>4</sup>MGH Martinos Center for Biomedical Imaging, Harvard Medical School, Charlestown, USA 558 M-PM
- Planning to grasp haptically experienced objects reactivates the lateral occipital complex**, Gregory Kroliczak<sup>1</sup>, Scott H. Frey<sup>1,2</sup>, <sup>1</sup>Department of Psychology, University of Oregon, Eugene, USA, <sup>2</sup>Lewis Center for Neuroimaging, University of Oregon, Eugene, USA 562 M-PM
- Touch typing performance correlates with white matter integrity in specific regions of the motor system**, Jan Scholz, Heidi Johansen-Berg, FMRIB Centre, Oxford, United Kingdom 566 M-PM\*

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### Locomotion

- Functional potential demonstrated by Diffusion Tensor Tractography in hemiplegic patients with cerebral palsy**, Su Min Son<sup>1</sup>, Sung Ho Jang<sup>2</sup>, Ho Lee<sup>1</sup>, In Kyu Yu<sup>3</sup>, Seung Yeon Kim<sup>4</sup>, Han Ku Moon<sup>5</sup>, <sup>1</sup>Dept of PM&R, college of medicine, Eulji university, Daejeon, Korea, <sup>2</sup>Dept of PM&R, college of Medicine, Yeungnam univeristy, Daegu, Korea, <sup>3</sup>Dept of diagnostic radiology, college of medicine, Eulji university, Daejeon, Korea, <sup>4</sup>Dept of Pediatrics, college of medicine, Eulji university, Daejeon, Korea, <sup>5</sup>Dept of Pediatrics, college of medicine, Yeungnam university, Daegu, Korea 570 M-PM

## MOTOR BEHAVIOR

### Motor-Premotor Cortex/Motor Cortical Functions

- Physiological Correlates of Motion Sickness Induced by Dynamic Virtual Reality Environment**, Chin-Teng Lin<sup>1,2</sup>, Yu-Chieh Chen<sup>1,2</sup>, Chun-Ling Lin<sup>1,2</sup>, Chih-Feng Chao<sup>1</sup>, Jeng-Ren Duann<sup>1,3</sup>, Tzyy-Ping Jung<sup>1,3</sup>, <sup>1</sup>Brain Research Center, University System of Taiwan, Hsinchu, Taiwan, <sup>2</sup>Department of Electrical and Control Engineering, National Chiao-Tung University, HsinChu, Taiwan, <sup>3</sup>Institute for Neural Computation, University of California, San Diego, USA 574 M-PM
- Resting-state connectivity of the motor network in acute stroke patients**, Woo-Kyoung Yoo<sup>1</sup>, Chang-hyun Park<sup>1,2</sup>, Suk Hoon Ohn<sup>1</sup>, Sung H. Yoo<sup>3</sup>, Myoung-Hwan Ko<sup>4</sup>, Sung Tae Kim<sup>5</sup>, Kwang Ho Lee<sup>6</sup>, Yun-Hee Kim<sup>1</sup>, <sup>1</sup>Department of Physical Medicine and Rehabilitation, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>2</sup>Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea, <sup>3</sup>Department of Physical Therapy, Yonsei University, Wonju, Korea, <sup>4</sup>Department of Physical Medicine and Rehabilitation, Chonbuk National University Medical School, Jeonju, Korea, <sup>5</sup>Department of Radiology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>6</sup>Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea 578 M-PM
- Central limitation of muscle force mediated by posterior insula in a fatiguing grip force task**, Kai Lutz<sup>1</sup>, Lea Hilty<sup>2</sup>, Mike Brügger<sup>1</sup>, Roger Luechinger<sup>3</sup>, Lutz Jancke<sup>1</sup>, <sup>1</sup>Department 582 M-PM

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**Local and Remote Changes in Cerebral Blood Flow During Motor Task Following a Single Session of 5Hz rTMS Applied to the Primary Motor Cortex**, Shalini Narayana<sup>1</sup>, Wei Zhang<sup>1</sup>, Crystal Franklin<sup>1</sup>, Joseph Panzarella<sup>1</sup>, Peter Fox<sup>1,2</sup>, <sup>1</sup>Research Imaging Center, UT Health Science Center, San Antonio, USA, <sup>2</sup>South Texas Veterans Health Care Center, San Antonio, USA 586 M-PM

**A gradient for neuroplastic capacity within the primary motor cortex: Indications from a case report post hemispherectomy**, Jakob Rath<sup>1</sup>, Robert Schmidhammer<sup>2</sup>, Thomas Steinkellner<sup>1</sup>, Nicolaus Klingner<sup>1</sup>, Alexander Geißler<sup>1</sup>, Roland Beisteiner<sup>1</sup>, <sup>1</sup>Study Group Clinical fMRI, MR Center of Excellence, Department of Neurology, Medical University of Vienna, A-1090 Vienna, Austria, <sup>2</sup>Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Research Center for Traumatology, A-1200 Vienna, Austria 590 M-PM

**Probing ipsilateral premotor-to-motor connectivity during movement selection**, Sergiu Groppa<sup>1</sup>, Boris Schlaag<sup>1</sup>, Oliver Granert<sup>1</sup>, Bart van Nuenen<sup>1,2</sup>, Gesa Hartwigsen<sup>1</sup>, Thomas Weyh<sup>3</sup>, Hartwig Siebner<sup>1</sup>, <sup>1</sup>Department of Neurology, Christian-Albrechts-University, Kiel, Germany, <sup>2</sup>Department of Neurology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>3</sup>Institute for Medical Electronics, University of Technology Munich, Munich, Germany 594 M-PM

**I did this! brain response to visually presented hand actions reveals recently performed acts**, Alon Talmor<sup>1</sup>, Hezy Yeshurun<sup>1</sup>, Talma Hendler<sup>2,3</sup>, <sup>1</sup>School of Computer Science, Sackler Faculty of Exact Sciences, Tel Aviv University, Israel, Tel Aviv, Israel, <sup>2</sup>Functional Brain Center, Wohl Institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Israel, Tel Aviv, Israel, <sup>3</sup>Psychology Department, Sackler Faculty of Medicine, Tel Aviv University, Israel, Tel Aviv, Israel 598 M-PM

**The changes of both gray matter density and white matter integrity in pianist's brain: a combined structural and diffusion MRI study**, Ying Han<sup>1</sup>, Hong Yang<sup>2</sup>, Ya-Ting Lv<sup>3</sup>, Chao-Zhe Zhu<sup>1</sup>, Yong He<sup>4</sup>, He-Han Tang<sup>2</sup>, Qi-Yong Gong<sup>2</sup>, Yue-Jia Luo<sup>1</sup>, Yu-Feng Zang<sup>1</sup>, Qi Dong<sup>1</sup>, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, Chengdu, China, <sup>3</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>4</sup>McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada 602 M-PM

## NEUROANATOMY Anatomical Studies

**Effects of hypertension on grey matter volumes over 4 years in healthy adults aged 60-64: a voxel based morphometry study**, Xiaohua Chen<sup>1,2</sup>, Wei Wen<sup>1,2</sup>, Perminder Sachdev<sup>1,2</sup>, Kaarin Anstey<sup>3</sup>, <sup>1</sup>School of Psychiatry, University of New South Wales, Sydney, Australia, <sup>2</sup>Neuropsychiatric Institute, Prince of Wales Hospital, Sydney, Australia, <sup>3</sup>Centre for Mental Health Research, Australian National University, Canberra, Australia 606 M-PM

**Optimized high-resolution mapping of magnetisation transfer at 3 Tesla reveals substructures in the human thalamus in clinically feasible measurement time**, Peter Dechent<sup>1</sup>, Tabea Gringel<sup>1,2</sup>, Erck Elolf<sup>2</sup>, Walter Schulz-Schaeffer<sup>3</sup>, Gunther Helms<sup>1</sup>, <sup>1</sup>MR-Research in Neurology and Psychiatry, University Medical Center, Göttingen, Germany, <sup>2</sup>Department of Neuroradiology, University Medical Center, Göttingen, Germany, <sup>3</sup>Department of Neuropathology, University Medical Center, Göttingen, Germany 610 M-PM

**Transmitter receptor mapping reveals hierarchy and input specificity in human primary somatosensory cortex**, Valentina Garibotto<sup>1,2</sup>, Simon B. Eickhoff<sup>1</sup>, Nicola Palomero-Gallagher<sup>1</sup>, Karl Zilles<sup>1,3</sup>, <sup>1</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Centre, Jülich, Germany, <sup>2</sup>San Raffaele Scientific Institute, Milan, Italy, <sup>3</sup>C.&O. Vogt-Institute of Brain Research, University, Düsseldorf, Germany 614 M-PM\*

**Observer-Independent Cytoarchitectonic Mapping of the Human Medial Orbitofrontal Cortex**, Anton Henssen<sup>1</sup>, Simon B. Eickhoff<sup>1,2,3</sup>, Karl Zilles<sup>1,2,3</sup>, Axel Schleicher<sup>1</sup>, Hartmut Mohlberg<sup>2,3</sup>, Katrin Amunts<sup>2,3,4</sup>, <sup>1</sup>C&O. Vogt Institut für Hirnforschung, Düsseldorf, Germany, <sup>2</sup>Institut für Medizin, Forschungszentrum Jülich, Jülich, Germany, <sup>3</sup>Brain Imaging Center West (BICW), Jülich, Germany, <sup>4</sup>Klinik für Psychiatrie und Psychotherapie, Universitätsklinikum Aachen, RWTH Aachen, Aachen, Germany 618 M-PM

**Gender and Age Associated Differences of Cerebral Glucose Metabolism in Normal Healthy Populations: Statistical Parametric Mapping Analysis of F-18 FDG Brain Positron Emission Tomography**, Seong-Jang Kim<sup>1</sup>, Sang Heon Song<sup>2</sup>, Tae-Hong Lee<sup>3</sup>, <sup>1</sup>Department of Nuclear Medicine, PNUH, Busan, Korea, <sup>2</sup>Department of Internal Medicine, PNUH, Busan, Korea, <sup>3</sup>Department of Radiology, PNUH, Busan, Korea 622 M-PM

**Functional differentiation of the human insula revealed by ALE meta-analysis**, Florian Kurth<sup>1</sup>, Simon B. Eickhoff<sup>1,2,3</sup>, Katrin Amunts<sup>2,3,4</sup>, Karl Zilles<sup>1,2,3</sup>, <sup>1</sup>C. & O. Vogt Institute of Brain Research, University Düsseldorf, Düsseldorf, Germany, <sup>2</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Centre Jülich, Jülich, Germany, <sup>3</sup>Brain Imaging Center West (BICW), Jülich, Germany, <sup>4</sup>Department of Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany 626 M-PM

**Common cortical fold variants explored using PALS and CIVET surface registration techniques**, Oliver Lyttelton<sup>1</sup>, Donna Dierker<sup>2</sup>, David Van Essen<sup>2</sup>, Alan Evans<sup>1</sup>, <sup>1</sup>McConnell Brain Imaging Center, McGill University, Montreal, Canada, <sup>2</sup>Department of Anatomy & Neurobiology, School of Medicine, Washington University, St Louis, USA 630 M-PM

**Reversed sexual dimorphism in hippocampal Grey Matter density in women and men with schizophrenia compared to matched healthy controls using 3 Tesla MRI**, Adham Mancini-Marie<sup>1,2</sup>, José Jimenez<sup>1,2</sup>, Cheryl Corcoran<sup>3</sup>, Emmanuel Stip<sup>1,2</sup>, Melissa Rinaldi<sup>1</sup>, Tania Pampoulova<sup>1,2</sup>, Adrianna Mendrek<sup>1,2</sup>, <sup>1</sup>Department of Psychiatry, Centre de Recherche Fernand Seguin, L-H Lafontaine Hospital, University of Montreal, Montreal, Canada, <sup>2</sup>Department of Psychiatry, Faculty of Medicine, University of Montreal, Montreal, Canada, <sup>3</sup>Center of Prevention and Evaluation, New York State Psychiatric Institute, Columbia University, New York, USA 634 M-PM

**Brain structure and the female menstrual cycle**, Jennifer Perrin, Pierre-Yves Herve, Alain Pitiot, John Totman, Tomas Paus, Brain & Body Centre, University of Nottingham, Nottingham, United Kingdom 638 M-PM

**Amygdala Structural Deficits in Psychopathy**, Yaling Yang Rofman<sup>1</sup>, Adrian Raine<sup>2</sup>, Katherine Narr<sup>2</sup>, Patrick Colletti<sup>4</sup>, Arthur Toga<sup>3</sup>, <sup>1</sup>Department of Psychology, University of Southern California, Los Angeles, USA, <sup>2</sup>Department of Criminology, Psychiatry, and Psychology, University of Pennsylvania, Pennsylvania, USA, <sup>3</sup>Laboratory of Neuro Imaging, Department of Neurology, David Geffen School of Medicine at UCLA, Los Angeles, USA, <sup>4</sup>Department of Radiology, U.S.C. School of Medicine, Los Angeles, USA 642 M-PM

**Relationship between body mass index and gray matter volumes in healthy individuals: Cross-sectional and longitudinal analyses**, Yasuyuki Taki<sup>1</sup>, Shigeo Kinomura<sup>1</sup>, Kazunori Sato<sup>1</sup>, Ryoji Goto<sup>1</sup>, Ryuta Kawashima<sup>2</sup>, Hiroshi Fukuda<sup>1</sup>, <sup>1</sup>Department of Nuclear Medicine & Radiology, Institute of Development, Aging and Cancer (IDAC), Tohoku University, Sendai, Japan, <sup>2</sup>Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan 646 M-PM

**Tissue Orientation - and thus Structure - Affects T2\* Contrast in Ultra High Field MRI**, Christopher Wiggins, Valdis Gudmundsdottir, Denis Le Bihan, Vincent Lebon, Myriam Chaumeil, CEA/NeuroSpin, Saclay, France 650 M-PM

## PHYSIOLOGY, METABOLISM, & NEUROTRANSMISSION

**Gender Differences in Age-related Decline of Regional Cerebral Glucose Metabolism**, Seong Ae Bang<sup>1,2</sup>, Sang Soo Cho<sup>1,2</sup>, Eun Jin Yoon<sup>1,2</sup>, Eun Ju Lee<sup>1,2</sup>, Yu Kyeong Kim<sup>1,2</sup>, Sang Eun Kim<sup>1,2</sup>, <sup>1</sup>Seoul National University College of Medicine, Seoul, South Korea, <sup>2</sup>Seoul National University Bundang Hospital, Seoul, South Korea 654 M-PM

**The post-stimulation undershoot in BOLD fMRI of human brain is not caused by elevated cerebral blood volume**, Peter Dechent<sup>1</sup>, Jürgen Baudewig<sup>1</sup>, Kai Kallenberg<sup>1,2</sup>, Andreas Kastrup<sup>3</sup>, 658 M-PM

K. Dietmar Merboldt<sup>4</sup>, Jens Frahm<sup>4</sup>, <sup>1</sup>MR-Research in Neurology and Psychiatry, University Medical Center, Göttingen, Germany, <sup>2</sup>Department of Neuroradiology, University Medical Center, Göttingen, Germany, <sup>3</sup>Department of Neurology, University Medical Center, Göttingen, Germany, <sup>4</sup>Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut für biophysikalische Chemie, Göttingen, Germany

**Electrophysiological correlates of the brain's intrinsic large-scale functional architecture,** Biyu He, Abraham Snyder, John Zempel, Matthew Smyth, Marcus Raichle, Washington University School of Medicine, St. Louis, USA 662 M-PM

**Deactivation of the Pregenual Anterior Cingulate Cortex May Predict Increased Hypothalamic Pituitary Adrenal Activation.,** Najmeh Khalili-Mahani, Jens C. Pruessner, McGill University, Montreal, Canada 666 M-PM

**Correlations between regional 5-HTT and 5-HT1A receptor availability in healthy subjects,** Allison Nugent<sup>1</sup>, Dara Cannon<sup>2</sup>, Paul Carlson<sup>1</sup>, Rebecca Davis<sup>1</sup>, Wayne Drevets<sup>1</sup>, <sup>1</sup>Section on Neuroimaging in Mood and Anxiety Disorders, NIMH, Bethesda, USA, <sup>2</sup>Department of Psychiatry, National University of Ireland, Galway, Ireland 670 M-PM

**Exogenous cortisol administration results in medial temporal hypoactivation in the human brain,** Jennifer Robinson<sup>1</sup>, William Lovallo<sup>2</sup>, Sibel Cakir<sup>3</sup>, Jennifer Barrett<sup>1</sup>, Peter Fox<sup>4</sup>, David Glahn<sup>1,4</sup>, <sup>1</sup>Department of Psychiatry, University of Texas Health Science Center, San Antonio, USA, <sup>2</sup>Behavioral Sciences Laboratories, Veterans Affairs Medical Center, Oklahoma City, USA, <sup>3</sup>Department of Psychiatry, Istanbul University, Istanbul, Turkey, <sup>4</sup>Research Imaging Center, University of Texas Health Science Center, San Antonio, USA 674 M-PM

**Pharmacological modulation during fMRI: muscarinic and nicotinic proportions of the attention network according to Posner,** Renate Thienel<sup>1,2</sup>, Bianca Voss<sup>2</sup>, Martina Reske<sup>2,3</sup>, Thilo Kellermann<sup>2</sup>, Sarah Halfter<sup>2</sup>, Abigail Sheldrick<sup>2</sup>, Katrin Radenbach<sup>4</sup>, Ute Habel<sup>2</sup>, Frank Schneider<sup>2</sup>, NJ Shah<sup>5</sup>, Tilo Kircher<sup>2</sup>, <sup>1</sup>Centre for Rural & Remote Mental Health, University of Newcastle, Orange, Australia, <sup>2</sup>Dept. of Psychiatry & Psychotherapy, University Clinics, Aachen, Germany, <sup>3</sup>Dept. of Psychiatry, University of California, San Diego, USA, <sup>4</sup>Dept. of Psychiatry, Georg-August-University, Goettingen, Germany, <sup>5</sup>Research Centre Juelich, Helmholtzgesellschaft, Juelich, Germany 678 M-PM

**Normative Blood Flow Values in Adults in the Posterior Fossa Using MR Perfusion,** Ali Shaibani<sup>1</sup>, Amir H. Yassari<sup>1</sup>, Jessy Mouannes<sup>2</sup>, Aaron Skolnik<sup>1</sup>, Shahram Rahimi<sup>1</sup>, Aghaei Anahita<sup>1</sup>, Timothy J Carrol<sup>2</sup>, Bernard R Bendok<sup>1</sup>, Matthew T Walker<sup>1</sup>, <sup>1</sup>Northwestern University, Feinberg School of Medicine, Chicago, USA, <sup>2</sup>Northwestern University, Evanston, USA 682 M-PM

#### SENSORY SYSTEMS Multisensory & Crossmodal

**A hierarchy of visual predictions on auditory speech processing,** Luc Arnal, Benjamin Morillon, Anne-Lise Giraud, Inserm U742. Université Pierre et Marie Curie-Paris 6, Paris, France 686 M-PM

**Flash VEP is reduced in children when preceded by an audio-visual stimulus.,** Hamish Innes-Brown, Ayla Barutchu, Mohit Shivdasani, Antonio Paolini, Auditory Clinical Neuroscience Unit, Bionic Ear Institute, Melbourne, Australia 690 M-PM

**Cortical processing of human vs. non-human categories of action sounds,** Lauren Engel, Aina Puce, James Lewis, Center for Advanced Imaging, West Virginia University, Morgantown, WV USA, Morgantown, USA 694 M-PM

#### SENSORY SYSTEMS Pain & Autonomic Function

**Perfusion based functional MRI study of thirst and satiation using an arterial spin labeling method,** Tharushini Bowala<sup>1</sup>, Michael Farrell<sup>1</sup>, Michael McKinley<sup>1</sup>, Michael Mathai<sup>1</sup>, Robin McAllen<sup>1</sup>, Paddy Phillips<sup>2</sup>, Derek Denton<sup>3,4</sup>, Gary Egan<sup>1</sup>, <sup>1</sup>Howard Florey Institute, Florey Neurosciences Institutes, University of Melbourne, Parkville, Australia, <sup>2</sup>Flinders University, Southern Adelaide Health Service and Repatriation General Hospital, Bedford Park, Australia, <sup>3</sup>Office of the Dean, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Parkville, Australia, <sup>4</sup>Baker Heart Research Institute, Alfred Hospital, Prahran, Australia 702 M-PM

**EVOKED MAGNETIC BRAIN RESPONSES IN TRAUMATIC PERIPHERAL NEUROPATHIC PAIN (before and after a local block)**, P.J. Theuvsen<sup>1</sup>, B.W. van Dijk<sup>1</sup>, Maria J. Peters<sup>1</sup>, F.L. Lopes da Silva<sup>1</sup>, J.M. van Ree<sup>1</sup>, Andrew C.N. Chen<sup>2</sup>, <sup>1</sup>Dept. of Anesthesiology, Alkmaar Medical Center., Alkmaar, Netherlands, <sup>2</sup>Center for Higher Brain Functions, Capital Medical University, Beijing, China 706 M-PM

**Cortical Activation during the Urge to Cough in Healthy Volunteers**, Lisan Ho<sup>1</sup>, Kevin McGuinness<sup>2</sup>, Douglas R Corfield<sup>3</sup>, Graham Kemp<sup>1</sup>, Sandy Jack<sup>4</sup>, John Earis<sup>4</sup>, Peter Calverley<sup>5</sup>, Neil Roberts<sup>1</sup>, Ashley Woodcock<sup>2</sup>, Jacky Smith<sup>2</sup>, <sup>1</sup>Magnetic Resonance & Image Analysis Research Centre (MARIARC), University of Liverpool, Pembroke Place, Liverpool, United Kingdom, <sup>2</sup>Respiratory Research Group, University of Manchester, Manchester, United Kingdom, <sup>3</sup>Institute of Science & Technology in Medicine, Keele University, Keele, United Kingdom, <sup>4</sup>University Hospital Aintree, Liverpool, United Kingdom, <sup>5</sup>School of Infection and Immunity, University of Liverpool, Liverpool, United Kingdom 710 M-PM

**Augmented cerebral activation by lumbar mechanical stimulus in chronic low back pain patients – an fMRI study**, Jiro Kurata<sup>1</sup>, Yoshitaka Kobayashi<sup>2</sup>, Mika Kokubun<sup>3</sup>, Takashi Akaishizawa<sup>3</sup>, Miho Sekiguchi<sup>2</sup>, Shin-ichi Konno<sup>2</sup>, Shin-ichi Kikuchi<sup>2</sup>, <sup>1</sup>Department of Anesthesia, Teikyo University School of Medicine, Itabashi, Japan, <sup>2</sup>Department of Orthopaedic Surgery, Fukushima Medical University School of Medicine, Fukushima, Japan, <sup>3</sup>Department of Radiology, Southern Tohoku General Hospital, Koriyama, Japan 714 M-PM

**Mapping brain response to pain in fibromyalgia patients using temporal analysis of fMRI**, Marina López-Solà<sup>1</sup>, Jesús Pujol<sup>1,2</sup>, Hector Ortiz<sup>1,3</sup>, Joan Carles Vilanova<sup>4</sup>, Benjamin Harrison<sup>1,5</sup>, Murat Yücel<sup>3</sup>, Carles Soriano-Mas<sup>1</sup>, Narcís Cardoner<sup>1,6</sup>, Carme Busquets<sup>7</sup>, Rosa Hernández-Ribas<sup>1,6</sup>, Joan Deus<sup>8</sup>, <sup>1</sup>Institut d'Alta Tecnologia-PRBB, CRC Corporació Sanitària, Barcelona, Spain, <sup>2</sup>Clinical Sciences Departament. Faculty of Medicine. University of Barcelona, Barcelona, Spain, <sup>3</sup>Department of Electronic Engineering, Technical University of Catalonia, Barcelona, Spain, <sup>4</sup>Magnetic Resonance, Girona Clinic, Girona, Spain, <sup>5</sup>Melbourne Neuropsychiatry Centre, Department of Psychiatry, Melbourne, Australia, <sup>6</sup>Department of Psychiatry, Bellvitge University Hospital, Barcelona, Spain, <sup>7</sup>Pain Unit, Girona University Hospital Doctor Josep Trueta, Girona, Spain, <sup>8</sup>Department of Clinical and Health Psychology, Autonomous University of Barcelona, Barcelona, Spain 718 M-PM

**Perceptual and activation differences between experimental muscle and cutaneous pain**, Heather Cameron<sup>1</sup>, Arshad Zaman<sup>1</sup>, Neil Roberts<sup>1</sup>, Turo Nurmikko<sup>1,2</sup>, <sup>1</sup>University of Liverpool, Liverpool, United Kingdom, <sup>2</sup>The Walton Centre for Neurology and Neurosurgery NHS Trust, Liverpool, United Kingdom 722 M-PM

## EMOTION & MOTIVATION

### Emotional Perception

**Regulation of Vagal Tone by Medial Prefrontal Cortex Varies By Emotional Valence**, Richard D. Lane<sup>1</sup>, Kateri McCrae<sup>1,2</sup>, Eric M. Reiman<sup>1,3,4</sup>, Carolyn L. Fort<sup>1</sup>, Julian F. Thayer<sup>5</sup>, <sup>1</sup>Department of Psychiatry, University of Arizona, Tucson, USA, <sup>2</sup>Department of Psychology, Stanford University, Palo Alto, USA, <sup>3</sup>Translational Genomics Research Institute, Phoenix, USA, <sup>4</sup>Banner Alzheimer Institute, Banner Positron Emission Tomography Center, Banner Good Samaritan Medical Center, Phoenix, USA, <sup>5</sup>Department of Psychology, Ohio State University, Columbus, USA 726 M-PM

11:30 – 12:30 You Yangs Hall (Level 3)

**COGNITION & ATTENTION**  
**Attention (auditory, tactile, motor)**

**Neural mechanisms underlying error correction and spatial realignment during adaptation to optical wedge prisms**, Heidi Chapman<sup>1</sup>, Rammalee Eramudugolla<sup>2</sup>, Mark Strudwick<sup>3</sup>, Andrea Loftus<sup>4</sup>, Ross Cunnington<sup>2</sup>, Jason Mattingley<sup>2</sup>, <sup>1</sup>Department of Psychology, University of Melbourne, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute, University of Queensland, Brisbane, Australia, <sup>3</sup>Centre for Magnetic Resonance, University of Queensland, Brisbane, Australia, <sup>4</sup>Department of Psychology, University of Western Australia, Perth, Australia 3 T-AM

**An exploration of the cortical sources of the P3a, P3b and Novelty P3 sub-components of the ERP.**, Jacqueline Rushby<sup>1,2</sup>, Robert Barry<sup>1</sup>, Thomas Weicker<sup>2</sup>, <sup>1</sup>Brain & Behaviour Research Institute and School of Psychology, University of Wollongong, Wollongong, Australia, <sup>2</sup>Prince of Wales Medical Research Institute and School of Psychiatry, University of NSW, Randwick, Australia 11 T-AM

**Dance floor in the brain**, Karsten Specht<sup>1,2</sup>, Berge Osnes<sup>1</sup>, Kenneth Hugdahl<sup>1,3</sup>, <sup>1</sup>Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway, <sup>2</sup>Clinical Engineering Department, Haukeland University Hospital, Bergen, Norway, <sup>3</sup>Division of Psychiatry and Bergen Mental Health Center, Haukeland University Hospital, Bergen, Norway 15 T-AM

**COGNITION & ATTENTION**  
**Attention (visual)**

**Effect of endogenous attention on the human brain response to illusory line motion**, Tomoaki Ayabe<sup>1,2,4</sup>, Tomohiro Ishizu<sup>3</sup>, Tomokazu Urakawa<sup>1</sup>, Yoshiki Kaneoke<sup>1</sup>, Ryusuke Kakigi<sup>1</sup>, <sup>1</sup>National Institute for Physiological Science, Okazaki, Japan, <sup>2</sup>The Graduate University for Advanced Studies, Okazaki, Japan, <sup>3</sup>Keio University, Tokyo, Japan, <sup>4</sup>Japan Society for Promotion of Science, Tokyo, Japan 19 T-AM

**The neurocognitive effects of donepezil on visual short-term memory capacity following 24 h of sleep deprivation**, Lisa Chuah<sup>1</sup>, Annette Chen<sup>1</sup>, Delise Chong<sup>1</sup>, Rekshan William<sup>1</sup>, Jiat-Chow Tan<sup>1</sup>, Martin Pan<sup>2</sup>, Robert Lai<sup>2</sup>, Vincenzo Libri<sup>2</sup>, Michael Chee<sup>1</sup>, <sup>1</sup>Cognitive Neuroscience Lab, Duke-NUS Graduate Medical School, Singapore, Singapore, <sup>2</sup>Neurology Centre of Excellence of Drug Discovery, GlaxoSmithKline, Harlow, United Kingdom 23 T-AM

**Neuroanatomical correlates of performance enhancement by nicotine under conditions of selective attention, divided attention and stimulus detection**, Britta Hahn<sup>1</sup>, Thomas J. Ross<sup>1</sup>, Frank A. Wolkenberg<sup>1</sup>, Diaa M. Shakleya<sup>2</sup>, Marilyn A. Huestis<sup>2</sup>, Elliot A. Stein<sup>1</sup>, <sup>1</sup>National Institute on Drug Abuse, Neuroimaging Research Branch, Baltimore, USA, <sup>2</sup>National Institute on Drug Abuse, Chemistry and Drug Metabolism Section, Baltimore, USA 27 T-AM

**Early attention: local modulations and network changes**, Andreas A. Ioannides<sup>1</sup>, Vahe Poghosyan<sup>2</sup>, Marotessa Voultzidou<sup>2</sup>, <sup>1</sup>RIKEN, Brain Science Institute (BSI), Laboratory for Human Brain Dynamics, Wako-shi, Japan, <sup>2</sup>AAI Scientific and Cultural Services Limited, Laboratory for Human Brain Dynamics, Nicosia, Cyprus 31 T-AM

**Change of ERP features with respect to the task difficulty of visual oddball task**, Kyung Hwan Kim, Ja Hyun Kim, Jin Yun, Department of Biomedical Engineering Yonsei University, Wonju, South Korea 35 T-AM

**Activation in V1 reflects the local saliency of pop-out stimuli**, Lucia Melloni<sup>1,2</sup>, Sara van Leeuwen<sup>1,2</sup>, Arjen Alink<sup>2,3</sup>, Notger Müller<sup>1,2</sup>, <sup>1</sup>Cognitive Neurology Unit, Johann Wolfgang Goethe-University, Frankfurt am Main, Germany, <sup>2</sup>) Brain Imaging Center, Frankfurt am Main, Germany, <sup>3</sup>) Department of Neurophysiology, Max Planck Institute for Brain Research, Frankfurt am Main, Germany 39 T-AM

**Conflict resolution in a focused visual attentional task. A MEG study**, Carmen Santisteban<sup>1,2</sup>, Jesus M. Alvarado<sup>1,2</sup>, Manuel Cortijo<sup>1,3</sup>, <sup>1</sup>Instituto de Estudios Biofuncionales, Madrid, Spain, <sup>2</sup>Facultad de Psicología, Madrid, Spain, <sup>3</sup>Facultad de Farmacia, Madrid, Spain 43 T-AM

- Selectivity of visual attention is relatively preserved following 24h of sleep deprivation,** *Jiat Chow Tan, Delise Chong, William Rekshan, Michele Veldsman, Annette Chen, Michael Chee,* 47 T-AM  
*Cognitive Neuroscience Laboratory, Duke-NUS Graduate Medical School, Singapore, Singapore*

**EMOTION & MOTIVATION**  
**Emotional Learning**

- The influence of contingency awareness on neural responses, valence ratings and skin conductance responses in a picture-picture conditioning paradigm,** *Tim Klucken, Rudolf Stark,* 51 T-AM  
*Dieter Vaitl, Bender Institute of Neuroimaging, Giessen, Germany*

**COGNITION & ATTENTION**  
**Cognitive Aging**

- Age-related slowing of task switching is associated with decreased integrity of frontoparietal white matter,** *Brian Gold<sup>1</sup>, David Powell<sup>2</sup>, Liang Xuan<sup>2</sup>, Greg Jicha<sup>3</sup>, Charles Smith<sup>2,3</sup>,* 55 T-AM  
*<sup>1</sup>Anatomy and Neurobiology, Lexington, USA, <sup>2</sup>Magnetic Resonance Imaging and Spectroscopy Center, Lexington, USA, <sup>3</sup>Neurology, Lexington, USA*

- Functional and structural changes in the ageing human brain: how EEG and (f)MRI measures complement each other to further our understanding of cognitive aging,** *M.M. Lorist<sup>1,2</sup>, N.M. Maurits<sup>2,3</sup>,* 59 T-AM  
*<sup>1</sup>Department of Experimental and Work Psychology, University of Groningen, Groningen, Netherlands, <sup>2</sup>BCN-NeuroImaging Center, University Medical Center Groningen, University of Groningen, Groningen, Netherlands*

- Normal Aging: an Executive Function fMRI Study,** *David Zhu<sup>1,2</sup>, Rose Zacks<sup>1</sup>, Jill Slade<sup>2</sup>,* 63 T-AM  
*<sup>1</sup>Department of Psychology, Michigan State University, East Lansing, USA, <sup>2</sup>Department of Radiology, Michigan State University, East Lansing, USA*

**COGNITION & ATTENTION**  
**Cognitive Development**

- DEVELOPMENTAL MATURATION OF NEURAL SYSTEMS SUBSERVING CALCULATION AND ITS ALTERATION IN A CASE OF MATH LEARNING DISABILITY,** *Paul Eslinger, Clancy Blair, David Baker, Jianli Wang, Jennifer Realmuto, Qing* 67 T-AM  
*Yang, Penn State University, Hershey, USA*

- Differences in Interhemispheric Communication Due to Handedness: a Structural and Functional Study,** *Sarina Iwabuchi, Ian Kirk, Research Centre for Cognitive Neuroscience,* 71 T-AM  
*Department of Psychology, University of Auckland, Auckland, New Zealand*

- Where in the brain is intelligence: a diffusion tensor imaging study on mental retardation subjects,** *Yonghui Li<sup>1</sup>, Jun Li<sup>1</sup>, Yuan Zhou<sup>1</sup>, Chunshui Yu<sup>2</sup>, Wen Qin<sup>2</sup>, Kuncheng Li<sup>2</sup>, Yong Liu<sup>1</sup>, Ni Shu<sup>1</sup>,* 75 T-AM  
*Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China*

- Developmental Changes in Verbal Working Memory Load-Dependency: An fMRI Investigation,** *Elizabeth O'Hare<sup>1,2</sup>, Lisa Lu<sup>1,4</sup>, Suzanne Houston<sup>1</sup>, Sarah McCourt<sup>1</sup>, Susan* 79 T-AM  
*Bookheimer<sup>2,3</sup>, Elizabeth Sowell<sup>1,2</sup>, <sup>1</sup>UCLA Laboratory of Neuro Imaging, Los Angeles, USA, <sup>2</sup>UCLA Interdepartmental Neuroscience Program, Los Angeles, USA, <sup>3</sup>UCLA Department of Psychiatry and Biobehavioral Sciences, Los Angeles, USA, <sup>4</sup>Roosevelt University, Dept. of Psychology, Chicago, USA*

**COGNITION & ATTENTION**  
**Perception, Imagery, Awareness**

- Neural correlates of human body perception,** *Rosanne Aleong<sup>1</sup>, Tomas Paus<sup>1,2</sup>,* 83 T-AM  
*<sup>1</sup>Cognitive Neurosciences Unit, Montreal Neurological Institute, Montreal, Canada, <sup>2</sup>Brain & Body Centre, University of Nottingham, Nottingham, United Kingdom*

- Fragmentation of fMRI resting state networks (RSN) in deep non Rapid Eye Movement (REM) sleep as compared to wakefulness as revealed by a group probabilistic ICA analysis in healthy volunteers,** *Melanie Boly<sup>1,2</sup>, Vincent Perlbarg<sup>3</sup>, Guillaume Marrelec<sup>3</sup>, Thanh Dang-Vu<sup>2,4</sup>,* 87 T-AM

Manuel Schabus<sup>5</sup>, Melanie Pelegrini<sup>3</sup>, Audrey Vanhauzenhuyse<sup>1</sup>, Genevieve Albouy<sup>4</sup>, Evelyne Balteau<sup>4</sup>, Christophe Phillips<sup>4</sup>, Virginie Sterpenich<sup>4</sup>, Gilles Vandewalle<sup>4</sup>, Andre Luxen<sup>4</sup>, Steven Laureys<sup>1,2</sup>, Habib Benali<sup>3</sup>, Pierre Maquet<sup>2,4</sup>, <sup>1</sup>Coma Science Group, Cyclotron Research Center, University of Liège, Liège, Belgium, <sup>2</sup>Neurology Department, CHU Sart Tilman Hospital, University of Liège, Liège, Belgium, <sup>3</sup>Inserm, U678 and Pierre et Marie Curie University, Faculty of medicine Pitie-Salpetriere, Paris, France, <sup>4</sup>Cyclotron Research Center, University of Liège, Liège, Belgium, <sup>5</sup>Department of Psychology, University of Salzburg, Salzburg, Austria

**Neuronal ensemble dynamics during a fast visual recognition task: application of Segmental analysis in an event-related design.** Sergey Borisov<sup>1,2,3</sup>, Sergey Shishkin<sup>2</sup>, Andrei Medvedev<sup>1</sup>, Alexander Kaplan<sup>2</sup>, John VanMeter<sup>1</sup>, <sup>1</sup>Center for Functional and Molecular Imaging, Georgetown University Medical Center, Washington, USA, <sup>2</sup>Dept. of human physiology, 91 T-AM Biological faculty, M.V.Lomonosov Moscow State University, Moscow, Russia, <sup>3</sup>Brain Image Center and Dept. of Neurology, Johann Wolfgang Goethe University Clinic, Frankfurt am Main, Germany

**The processing of different face dimensions depends on attention, but not only: an fMR-adaptation study.** Kathrin Cohen Kadosh<sup>1</sup>, Richard N. A. Henson<sup>2</sup>, Roi Cohen Kadosh<sup>3</sup>, Mark H. Johnson<sup>1</sup>, Frederic Dick<sup>1,4</sup>, <sup>1</sup>Centre for Brain and Cognitive Development, School of Psychology, Birkbeck College, London, United Kingdom, <sup>2</sup>MRC Cognition & Brain Sciences Unit, Cambridge University, Cambridge, United Kingdom, <sup>3</sup>Institute of Cognitive Neuroscience & Department of Psychology, University College London, London, United Kingdom, <sup>4</sup>Center for Research in Language, University of California, San Diego, USA 95 T-AM

**Social Modulation of Touch Representation - an fMRI study.** valeria gazzola<sup>1</sup>, michael spezio<sup>2</sup>, fulvia castelli<sup>2</sup>, ralph adolphs<sup>2</sup>, christian keyzers<sup>1,2</sup>, <sup>1</sup>Social Brain Lab, BCN-NeuroImaging Center, University Medical Center Groningen, University of Groningen, groningen, Netherlands, <sup>2</sup>Division of Humanities and Social Sciences, Caltech, Pasadena, USA 99 T-AM

**Neural correlates of bodily self-awareness.** Pär Halje, Bigna Lenggenhager, Olaf Blanke, Laboratory of Cognitive Neuroscience, Brain Mind Institute, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland 103 T-AM

**Local ongoing BOLD fluctuations in hMT+ bias the perception of visual motion.** Guido Hesselmann<sup>1</sup>, Christian Kell<sup>2</sup>, Evelyn Eger<sup>1</sup>, Andreas Kleinschmidt<sup>1</sup>, <sup>1</sup>CEA Neurospin, INSERM U562, Gif-sur-Yvette, France, <sup>2</sup>University of Frankfurt, Dep. of Neurology, Frankfurt, Germany 107 T-AM\*

**Dynamic neural responses during 3-D object structure perception from motion.** Sunao Iwaki<sup>1,2</sup>, Giorgio Bonmassar<sup>2</sup>, John W. Belliveau<sup>2</sup>, <sup>1</sup>Natl Inst Adv Indust Sci & Tech, Ikeda, Japan, <sup>2</sup>Mass General Hospital, Boston, USA 111 T-AM

## COGNITION & ATTENTION

### Reasoning & Problem Solving

**Voxel-based Lesion Symptom Mapping and White Matter Tractography: Analysis of Regions Mediating Non-verbal Reasoning.** Juliana Baldo<sup>1</sup>, Nina Dronkers<sup>1,2,3</sup>, And Turken<sup>1</sup>, <sup>1</sup>VA Northern California Health Care System, Martinez, USA, <sup>2</sup>University of California, Davis, USA, <sup>3</sup>University of California, San Diego, USA 115 T-AM

**The Effects of Choice on Discourse Processing: An fMRI Study.** Eunsoo Cho, Sun-Hee Back, Yoonkyung Chung, Sung-il Kim, Korea University, Seoul, Korea 119 T-AM

**General Intelligence (g) and Intelligence in General (FSIQ) as Manifested in the Brain.** Rex E. Jung<sup>1,2,3</sup>, H. Jeremy Bockholt<sup>1</sup>, Judith Segall<sup>1</sup>, Arvind Caprihan<sup>1</sup>, Shirley Smith<sup>1</sup>, Robert Chavez<sup>1</sup>, Ronald A. Yeo<sup>3</sup>, Richard J. Haier<sup>4</sup>, <sup>1</sup>MIND Research Network, Albuquerque, USA, <sup>2</sup>Department of Neurology, University of New Mexico, Albuquerque, USA, <sup>3</sup>Department of Psychology, Albuquerque, USA, <sup>4</sup>Department of Medicine, University of California, Irvine, USA 123 T-AM

**Integrating information in conditional reasoning: an EEG study.** Jean-Baptiste Van der Henst, Mathilde Bonnefond, CNRS, Laboratoire sur le Langage le Cerveau et la Cognition, Bron, France 127 T-AM



**COGNITION & ATTENTION**  
**Space, Time, & Number Coding**

**Navigation in a virtual office landscape;** effects of landmarks and obstacles, *Carl S Pintzka, Hallvard Evensmo, Jian Xu, Hanne Lehn, Asta Håberg, Department of Circulation and Medical Imaging, Norwegian University for Science and Technology (NTNU), Trondheim, Norway* 131 T-AM

**Parietal areas involved in format-independent representation of mathematical functions,** *Anna Wilson<sup>1</sup>, Mike Thomas<sup>2</sup>, Vanessa Lim<sup>1</sup>, Michael Corballis<sup>1</sup>, <sup>1</sup>Department of Psychology, The University of Auckland, Auckland, New Zealand, <sup>2</sup>Department of Mathematics, The University of Auckland, Auckland, New Zealand* 135 T-AM

**DISORDERS OF THE NERVOUS SYSTEM**  
**Alzheimer & Dementia**

**Patterns of Brain Activation in Persons at Genetic Risk for Alzheimer's disease: An fMRI Follow-Up,** *Alison Burggren<sup>1</sup>, Kenji Ogura<sup>1</sup>, Jesse Brown<sup>1,2</sup>, Gary Small<sup>1</sup>, Susan Bookheimer<sup>1</sup>, <sup>1</sup>UCLA Department of Psychiatry and Biobehavioral Sciences, Los Angeles, USA, <sup>2</sup>UCLA Neuroscience IDP, Los Angeles, USA* 139 T-AM

**The Substantia Innominata in Mild Cognitive Impairment: Implications as a Potential Biomarker,** *Terence Chua<sup>1,2</sup>, Wei Wen<sup>1,2</sup>, Xiaohua Chen<sup>1,2</sup>, Perminder Sachdev<sup>1,2</sup>, <sup>1</sup>Neuropsychiatric Institute, Euroa Centre, Prince of Wales Hospital, Randwick, NSW 2031, Sydney, Australia, <sup>2</sup>School of Psychiatry, University of New South Wales, NSW 2052, Sydney, Australia* 143 T-AM

**Reduced precuneus deactivation during object naming in dementia,** *Lars Frings<sup>1,2,6</sup>, Katharina Dressel<sup>1,5</sup>, Stefanie Abel<sup>1,5</sup>, Dorothee Saur<sup>1,3</sup>, Dorothee Kümmerer<sup>1,3</sup>, Hansjörg Mast<sup>1,4</sup>, Cornelius Weiller<sup>1,3</sup>, Michael Hüll<sup>2,6</sup>, <sup>1</sup>Freiburg Brain Imaging, University of Freiburg, Freiburg, Germany, <sup>2</sup>Gerontopsychiatry & Neuropsychology Section, Department of Psychiatry & Psychotherapy, University Medical Center, Freiburg, Freiburg, Germany, <sup>3</sup>Department of Neurology, University Medical Center, Freiburg, Freiburg, Germany, <sup>4</sup>Department of Neuroradiology, University Medical Center, Freiburg, Freiburg, Germany, <sup>5</sup>Neurolinguistics Section, RWTH Aachen University, Aachen, Germany, <sup>6</sup>Centre of Geriatrics and Gerontology, Freiburg, Germany* 147 T-AM

**Reverse association between corpus callosum size and interhemispheric efficiency in normal aging and Alzheimer's disease,** *Jennyfer Ansado<sup>1,2</sup>, Sven Joubert<sup>1,3</sup>, Sylvane Faure<sup>2</sup>, Yves Joannette<sup>1</sup>, <sup>1</sup>Centre de Recherche, IUGM & Faculté de médecine, Université de Montréal, Montréal, Canada, <sup>2</sup>Laboratoire de Psychologie Expérimentale et Quantitative, Université Nice-Sophia Antipolis, Nice, France, <sup>3</sup>Département de psychologie et CERNEC, Montréal, Canada* 151 T-AM

**Volumetric reduction of anterior medial temporal lobe structures precedes amnesic mild cognitive impairment,** *Sarah Martin<sup>1</sup>, Charles Smith<sup>2,4,5</sup>, Fred Schmitt<sup>2,3</sup>, Brian Gold<sup>1,5</sup>, <sup>1</sup>Department of Anatomy and Neurobiology, Lexington, USA, <sup>2</sup>Department of Neurology, Lexington, USA, <sup>3</sup>Department of Psychiatry, Lexington, USA, <sup>4</sup>Alzheimer's Disease Center and Sanders-Brown Center on Aging, Lexington, USA, <sup>5</sup>Magnetic Resonance Imaging and Spectroscopy Center, Lexington, USA* 155 T-AM

**Changes in serotonin transporter density in Alzheimer's disease,** *Yasuomi Ouchi<sup>1</sup>, Etsuji Yoshikawa<sup>2</sup>, Masami Futatsubashi<sup>2</sup>, Toshihiko Kanno<sup>3</sup>, Genichi Sugihara<sup>4</sup>, Kazuhiko Nakamura<sup>4</sup>, Yasuhiro Magata<sup>1</sup>, <sup>1</sup>Molecular Imaging Frontier Res Ctr, Hamamatsu University School of Medicine, Hamamatsu, Japan, <sup>2</sup>Hamamatsu Photonics KK, Hamamatsu, Japan, <sup>3</sup>Hamamatsu Medical Ctr, Hamamatsu, Japan, <sup>4</sup>Psychiatry, Hamamatsu University School of Medicine, Hamamatsu, Japan* 159 T-AM

**Cortical Thickness Mediates Relationships between Lesion Area and Verbal Working Memory Performance in Multiple Sclerosis,** *Lawrence Sweet<sup>1,2</sup>, Denise Cote<sup>2</sup>, Stephen Rao<sup>3</sup>, Emily Trittschuh<sup>4</sup>, Beth Jerskey<sup>1</sup>, Richard Mulligan<sup>2</sup>, James Paskavitz<sup>5</sup>, <sup>1</sup>Warren Alpert Medical School of Brown University, Providence, USA, <sup>2</sup>Butler Hospital, Providence, USA, <sup>3</sup>Cleveland Clinic, Cleveland, USA, <sup>4</sup>Northwestern University, Chicago, USA, <sup>5</sup>Perceptive Informatics, Waltham, USA* 163 T-AM

**DISORDERS OF THE NERVOUS SYSTEM**  
**Mood & Anxiety Disorders**

**Turboprop-DTI Reveals White Matter Abnormalities in Social Anxiety Disorder.**, Anton Orlichenko<sup>1</sup>, K. Luan Phan<sup>2</sup>, Huiling Peng<sup>3</sup>, Emil F. Coccaro<sup>4</sup>, Konstantinos Arfanakis<sup>3</sup>,  
<sup>1</sup>Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, USA, <sup>2</sup>Department of Psychiatry, University of Michigan, Ann Arbor, USA, <sup>3</sup>Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, USA, <sup>4</sup>Department of Psychiatry, University of Chicago, Chicago, USA 167 T-AM

**Magnetic resonance volumetric analysis of brain regions in body dysmorphic disorder**, Jamie Feusner<sup>1</sup>, Jennifer Townsend<sup>2</sup>, Alexander Bystritsky<sup>1</sup>, Malin McKinley<sup>1</sup>, Susan Bookheimer<sup>2</sup>,  
<sup>1</sup>UCLA Semel Institute for Neuroscience and Human Behavior, Los Angeles, USA, <sup>2</sup>UCLA Center for Cognitive Neuroscience, Los Angeles, USA 171 T-AM

**Evidence of dysfunctional pain inhibition in Fibromyalgia reflected in rACC during provoked pain**, Karin Jensen<sup>1</sup>, Eva Kosek<sup>1</sup>, Frank Petzke<sup>2</sup>, Peter Fransson<sup>1</sup>, Hanke Marcus<sup>2</sup>, Steven C R Williams<sup>3</sup>, Serena Carville<sup>3</sup>, Ernest Choy<sup>3</sup>, Yves Mainguy<sup>4</sup>, Richard Gracely<sup>5</sup>, Martin Ingvar<sup>1</sup>,  
<sup>1</sup>Karolinska Institute, Stockholm, Sweden, <sup>2</sup>University hospital of Cologne, Cologne, Germany, <sup>3</sup>Kings College, London, United Kingdom, <sup>4</sup>Pierre Fabre Médicament, Labège, France, <sup>5</sup>University of Michigan, Ann Arbor, USA 175 T-AM

**Response to task failure is modulated by past depression and rumination**, Emma Pegg, Shane McKie, Bill Deakin, Ian Anderson, Rebecca Elliott, Neuroscience and Psychiatry Unit, University of Manchester, Manchester, United Kingdom 179 T-AM

**Aberrant intrinsic functional organization in medication-naïve patients with first depressive episode revealed by resting-state fMRI**, Yuan Zhou<sup>1,2</sup>, Chuishui Yu<sup>1</sup>, Yong Liu<sup>2</sup>, Ming Song<sup>2</sup>, Kuncheng Li<sup>3</sup>, Tianzi Jiang<sup>5</sup>,  
<sup>1</sup>Center for Social and Economic Behavior, Institute of Psychology, Chinese Academy of Sciences, Beijing 100101, P. R. China, Beijing, China, <sup>2</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing 100080, P. R. China, Beijing, China, <sup>3</sup>Department of Radiology, Xuanwu Hospital of Capital University of Medical Science, Beijing 100053, P. R. China, Beijing, China 187 T-AM

**DISORDERS OF THE NERVOUS SYSTEM**  
**Parkinson's Disease & Other Basal Ganglia**

**SPM Analysis of F-18 FDG PET in Parkinson's Syndrome Patients with Urinary Dysfunction**, Kyung Hoon Hwang<sup>1</sup>, Nam-Bum Kim<sup>2</sup>, Min-Kyung Lee<sup>1</sup>, Wonsick Choe<sup>1</sup>,  
<sup>1</sup>Gachon Univ Gil Hospital, Incheon, South Korea, <sup>2</sup>Gachon Univ Neuroscience Research Institute, Incheon, South Korea 191 T-AM

**Effects of Subthalamic Nucleus Deep Brain Stimulation on Parkinsonian Resting Tremor : An MEG Study**, Hame Park<sup>1,4</sup>, June Sic Kim<sup>1,2</sup>, Sun Ha Paik<sup>2</sup>, Beom Seok Jeon<sup>3,4</sup>, Chun Kee Chung<sup>1,2,4</sup>, Jee-Young Lee<sup>3</sup>,  
<sup>1</sup>MEG Center, Seoul National University Hospital, Seoul, Korea, <sup>2</sup>Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, <sup>3</sup>Department of Neurology, Seoul National University College of Medicine, Seoul, Korea, <sup>4</sup>Interdisciplinary Program in Cognitive Science, Seoul National University, Seoul, Korea 195 T-AM

**Evidence for cortical and subcortical alterations in Restless Legs Syndrome: the pathoanatomy of RLS revisited**, Alexander Unrath<sup>1</sup>, Hans-Peter Mueller<sup>1</sup>, Freimuth Juengling<sup>2</sup>, Jan Kassubek<sup>1</sup>,  
<sup>1</sup>University of Ulm, Department of Neurology, Ulm, Germany, <sup>2</sup>St. Clara Spital, Department of Nuclear Medicine, Basel, Switzerland 199 T-AM

**DISORDERS OF THE NERVOUS SYSTEM**  
**Schizophrenia**

**GREY MATTER VOLUME INCREASE AFTER EARLY ANTIPSYCHOTIC TREATMENT IN DRUG NAÏVE, FIRST EPISODE SCHIZOPHRENIC COHORT**, Yi Deng<sup>1</sup>, Gráinne McAlonan<sup>1</sup>, Hasan Merali<sup>2</sup>, Charlton Cheung<sup>1</sup>, Vinci Cheung<sup>1</sup>, Eric Chen<sup>1</sup>, Siew Chua<sup>1</sup>,  
<sup>1</sup>Department of Psychiatry, The University of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>Harvard Medical School, Harvard University, Boston, USA 203 T-AM

**Trial-by-trial analysis of combined EEG and fMRI shows dynamic of cognitive function in healthy controls and patients with schizophrenia**, Ana Diukova, Pavan Malikarjun, Dorothee Auer, Peter Liddle, Institute of Neuroscience, University of Nottingham, Nottingham, United Kingdom 207 T-AM

**Multimodal neuroimaging of executive-emotional processing in adolescents at genetic risk for schizophrenia**, Sarah Hart<sup>1,3</sup>, Guido Gerig<sup>4</sup>, Diana Perkins<sup>2</sup>, Joseph Blocher<sup>2</sup>, Joshua Bizzell<sup>2,3</sup>, Justin Woodlief<sup>2</sup>, Hongbin Gu<sup>2</sup>, Aysenil Belger<sup>1,2,3</sup>, <sup>1</sup>Neurodevelopmental Disorders Research Center, University of North Carolina at Chapel Hill, Chapel Hill, USA, <sup>2</sup>Department of Psychiatry, University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, USA, <sup>3</sup>Duke-UNC Brain Imaging and Analysis Center, Duke University Medical Center, Durham, USA, <sup>4</sup>Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, USA 211 T-AM

**Dysfunctional modulation of emotional interference in the medial prefrontal cortex in schizophrenia**, Il Ho Park<sup>1,2</sup>, Hae-Jeong Park<sup>3</sup>, Ji-Won Chun<sup>2</sup>, Eung Yeop Kim<sup>3</sup>, Jae-Jin Kim<sup>1,2,3</sup>, <sup>1</sup>Department of Psychiatry, Yonsei University College of Medicine, Seoul, South Korea, <sup>2</sup>Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, South Korea, <sup>3</sup>Department of Diagnostic Radiology, Yonsei University College of Medicine, Seoul, South Korea 215 T-AM

**EFFECT OF EARLY ANTIPSYCHOTIC TREATMENT ON CAUDATE AND AMYGDALA VOLUME IN NEUROLEPTIC NAÏVE, NEWLY DIAGNOSED SCHIZOPHRENIA**, Meikei Leung<sup>1</sup>, Siew Chua<sup>1</sup>, Hasan Merali<sup>2</sup>, Yi Deng<sup>1</sup>, Charlton Cheung<sup>1</sup>, Vinci Cheung<sup>1</sup>, Eric Chen<sup>1</sup>, Grainne McAlonan<sup>1</sup>, <sup>1</sup>Department of Psychiatry, The University of Hong Kong, Hong Kong, Hong Kong, <sup>2</sup>Harvard Medical School, Harvard University, Boston, USA 219 T-AM

**Cortical and Subcortical Reward Prediction Error Learning in Psychosis**, Graham Murray<sup>1,2,3</sup>, Phil Corlett<sup>1,3</sup>, Luke Clark<sup>1,3</sup>, Mathias Pessiglione<sup>4</sup>, Ed Bullmore<sup>1,2,3</sup>, Peter Jones<sup>1,2,3</sup>, Garry Honey<sup>1</sup>, Andy Blackwell<sup>1</sup>, Trevor Robbins<sup>3</sup>, Paul Ffrench<sup>1,2,3</sup>, <sup>1</sup>Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>CAMEO Early Psychosis Service, Cambridge, United Kingdom, <sup>3</sup>Behavioural and Clinical Neuroscience Institute, Cambridge, United Kingdom, <sup>4</sup>Pitié-Salpêtrière Hospital, Paris, France 223 T-AM\*

**Cerebellar grey and white matter changes associated with cannabis use in schizophrenia and in healthy controls.**, Nadia Solowij<sup>1,2</sup>, Colleen Respondek<sup>1</sup>, Sarah Whittle<sup>3</sup>, Evelyn Lindsay<sup>3</sup>, Dan Lubman<sup>3,4</sup>, Murat Yücel<sup>3,4</sup>, <sup>1</sup>School of Psychology and Illawarra Institute for Mental Health, University of Wollongong, Wollongong, NSW, Australia, <sup>2</sup>Schizophrenia Research Institute, Sydney, NSW, Australia, <sup>3</sup>Melbourne Neuropsychiatry Centre, Department of Psychiatry, University of Melbourne and Melbourne Health, Melbourne, VIC, Australia, <sup>4</sup>ORYGEN Research Centre, Melbourne, VIC, Australia 227 T-AM

**T<sub>2</sub> relaxometry detects temporal lobe pathology in people at ultra-high risk for psychosis**, Damien Kennedy<sup>1,2</sup>, Lisa Phillips<sup>2</sup>, Pat McGorry<sup>3</sup>, Alison Yung<sup>3</sup>, Marc Seal<sup>1</sup>, Dennis Velakoulis<sup>1</sup>, Christos Pantelis<sup>1</sup>, Stephen Wood<sup>1</sup>, <sup>1</sup>Melbourne Neuropsychiatry Centre, University of Melbourne, Melbourne, Australia, <sup>2</sup>Department of Psychology, University of Melbourne, Melbourne, Australia, <sup>3</sup>ORYGEN Research Centre, University of Melbourne, Melbourne, Australia 231 T-AM

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**Cue reactivity in abstinent problem gamblers and nicotine dependent persons: an fMRI study**, Anna Goudriaan<sup>1</sup>, Michiel De Ruiter<sup>2,4</sup>, Dick Veltman<sup>1,2</sup>, Jaap Oosterlaan<sup>3</sup>, Wim van den Brink<sup>1</sup>, <sup>1</sup>University of Amsterdam, Department of Psychiatry, Academic Medical Center, Amsterdam, Netherlands, <sup>2</sup>Department of Psychiatry, VUmc, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, <sup>3</sup>Department of Clinical Neuropsychology, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, <sup>4</sup>Netherlands Cancer Institute, NKI, Amsterdam, Netherlands 235 T-AM

**Incentive-induced performance decrements in a reward pursuit task**, Dean Mobbs<sup>1,2</sup>, Demis Hassabis<sup>1</sup>, Ben Seymour<sup>1</sup>, Jennifer Marchant<sup>1</sup>, Nikolaus Weiskopf<sup>1</sup>, Ray Dolan<sup>1</sup>, Chris Frith<sup>1,3</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>2</sup>MRC-Cognition and Brain Sciences Unit, Cambridge, United Kingdom, <sup>3</sup>Niels Bohr project “Interacting Minds”, CFIN, University of Aarhus, Aarhus, Denmark 239 T-AM

**Modulation of the Orbitofrontal Cortex as a Function of Expertise**, Martin Skov<sup>1</sup>, Ulrich Kirk<sup>2</sup>, Mark S. Christensen<sup>1,3</sup>, Niels Nygaard<sup>4</sup>, <sup>1</sup>Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Copenhagen, Denmark, <sup>2</sup>Anatomy Department, Wellcome Department of Imaging Neuroscience, University, London, United Kingdom, <sup>3</sup>Institute for Physical Exercise and Sport Science, University of Copenhagen, Copenhagen, Denmark, <sup>4</sup>Institute for Architecture and Aesthetics, Aarhus School of Architecture, Aarhus, Denmark 243 T-AM

**Aberrant reward network connectivity in obese women in response to high- and low-calorie food images**, Luke Stoeckel<sup>1</sup>, Jieun Kim<sup>2</sup>, Rosalyn Weller<sup>1</sup>, James Cox<sup>1</sup>, Barry Horowitz<sup>2</sup>, <sup>1</sup>Department of Psychology, University of Alabama at Birmingham (UAB), Birmingham, USA, <sup>2</sup>Brain Imaging and Modeling Section, NIDCD, NIH, Bethesda, USA 247 T-AM

**Cue-reactivity and subjective craving in abstinent opiate-dependent males: an fMRI study.**, Fleur Zijlstra<sup>1,2,3</sup>, Dick Veltman<sup>2</sup>, Jan Booij<sup>3</sup>, Wim van den Brink<sup>2</sup>, Ingmar H.A. Franken<sup>4</sup>, <sup>1</sup>Amsterdam Institute for Addiction Research, Amsterdam, Netherlands, <sup>2</sup>Department of Psychiatry, Academic Medical Centre, Amsterdam, Netherlands, <sup>3</sup>Department of Nuclear Medicine, Academic Medical Centre, Amsterdam, Netherlands, <sup>4</sup>Institute of Psychology, Erasmus University Rotterdam, Rotterdam, Netherlands 251 T-AM

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**In the blink of an eye: Similar N170 but different late ERPs while viewing blinks vs. meaningful eye movements.**, Julie Borejczyński-Lewis, Michael Berrebi, Marie McNeely, Aina Puce, Center for Advanced Imaging, West Virginia University, Morgantown, USA 255 T-AM

**Gender differences in the neural correlates of empathic behavior**, Birgit Derntl, Andreas Finkelmeyer, Thilo Kellermann, Timur Toygar, Frank Schneider, Irina Falkenberg, Ute Habel, Department of Psychiatry and Psychotherapy, University Aachen RWTH, Aachen, Germany 259 T-AM

**Moral emotion to usual behaviors – a NIRS study**, Hirotooshi HIRAISHI, Primate Research Institute, Kyoto Univ, Inuyama, Aichi, Japan 263 T-AM

**Differences between physical and social cognition: An ERP study**, Yue-Jia Luo<sup>1,2</sup>, Junfeng Guo<sup>2</sup>, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>Key Laboratory of Mental Health, Institute of Psychology, The Chinese Academy of Sciences, Beijing, China 267 T-AM

**Effects of Gonadectomy on Social Behavior, Cognition, and Amygdala Volume in the Rhesus Macaque**, A. Brent Richards<sup>1</sup>, Sarah Ward<sup>1</sup>, Debora Rothmond<sup>2</sup>, Stephanie Schmitz<sup>3</sup>, Rhoshel Lenroot<sup>4</sup>, Jay Giedd<sup>4</sup>, Pam Noble<sup>3</sup>, Ruth Woodward<sup>5</sup>, James Winslow<sup>3</sup>, Cynthia Shannon Weicker<sup>2</sup>, <sup>1</sup>MiNDS Unit, National Institute of Mental Health, Bethesda, USA, <sup>2</sup>Neuroscience Institute of Schizophrenia and Allied Disorders, University of New South Wales, Randwick, Australia, <sup>3</sup>Nonhuman Primate Core Facility, National Institute of Mental Health, Poolesville, USA, <sup>4</sup>Child Psychiatry Branch, National Institute of Mental Health, Bethesda, USA, <sup>5</sup>Research Animal Management Branch, National Institute of Child Health and Human Development, Bethesda, USA 271 T-AM

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**VOLUMETRIC DIFFERENCES IN BRAIN STRUCTURE IN IDENTICAL AND FRATERNAL TWINS COMPUTED USING RIEMANNIAN TENSOR-BASED MORPHOMETRY**, Caroline Brun<sup>1</sup>, Natasha Lepore<sup>1</sup>, Xavier Penneç<sup>2</sup>, Yi-Yu Chou<sup>1</sup>, Agatha D. Lee<sup>1</sup>, Marina Barysheva<sup>1</sup>, Katie McMahon<sup>3</sup>, Greig de Zubicaray<sup>3</sup>, Margie Wright<sup>4</sup>, Arthur W. Toga<sup>1</sup>, Paul M. Thompson<sup>1</sup>, <sup>1</sup>Laboratory of Neuro Imaging, UCLA, Los Angeles, USA, <sup>2</sup>Asclepius Research Project, INRIA, Sophia-Antipolis, France, <sup>3</sup>Centre for Magnetic Resonance, University of Queensland, Brisbane, Australia, <sup>4</sup>Genetic Epidemiology Lab, Queensland Institute of Medical Research, Brisbane, Australia 275 T-AM

**BDNF impacts on brain structure of patients with schizophrenia**, Kempf Lucas<sup>1</sup>, Robyn Honea<sup>2</sup>, Bhaskar Kolachana<sup>1</sup>, Kolachana Mattay<sup>1</sup>, Andreas Meyer-Lindenberg<sup>3</sup>, Daniel Weinberger<sup>1</sup>, <sup>1</sup>GCAP/NIMH/NIH, Bethesda, USA, <sup>2</sup>KUMC, Kansas City, USA, <sup>3</sup>Central Institute of Mental Health, Mannheim, Germany 279 T-AM

**BDNF val66met polymorphism and short-term, experience-dependent plasticity in motor cortex of elderly human subjects**, Stephanie McHughen<sup>1</sup>, Kristin Pearson Fuhrhop<sup>1</sup>, Jeffrey Kleim<sup>4</sup>, Erin Kleim<sup>4</sup>, Vincent Procaccio<sup>3</sup>, Steven Cramer<sup>1,2</sup>, <sup>1</sup>Dept. of Anatomy & Neurobiology, University of California, Irvine, Irvine, USA, <sup>2</sup>Dept. of Neurology, University of California, Irvine, Irvine, USA, <sup>3</sup>Dept. of Pediatrics, Center for Molecular and Mitochondrial Medicine and Genetics, University of California, Irvine, Irvine, USA, <sup>4</sup>Dept. of Neuroscience, University of Florida, Gainesville, USA 283 T-AM

**Gene Expression Mapping in Adult Human Cortex: An Open Access Resource**, Elaine Shen<sup>1</sup>, Chinh Dang<sup>1</sup>, Ed Lein<sup>1</sup>, Michael Hawrylycz<sup>1</sup>, John Hohmann<sup>1</sup>, Thomas Hyde<sup>2</sup>, Andreas Jeromin<sup>1</sup>, Susan Sunkin<sup>1</sup>, Paul Wohnoutka<sup>1</sup>, Hongkui Zeng<sup>1</sup>, Joel Kleinman<sup>2</sup>, Allan Jones<sup>1</sup>, <sup>1</sup>Allen Institute for Brain Science, Seattle, USA, <sup>2</sup>Section on Neuropathology, Clinical Brain Disorders Branch (CBDB), Genes Cognition and Psychosis Program (GCAP), Intramural Research Program (IRP), NIMH, NIH, Bethesda, USA 287 T-AM

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**EEG Default Mode Network: Spectral Field Power Mapping**, Andrew CN Chen\*, Weijia Feng, Huixuan Zhao, Yanlin Yin, Peipei Wang, Center for Higher Brain Functions, Capital Medical University, Beijing, China 291 T-AM

**MACROSCOPIC STATE TRANSITIONS IN ELECTROENCEPHALOGRAPHIC DYNAMICS**, David Liley, Mathew Dafilis, Brett Foster, Peter Cadusch, Brain Dynamics Group, Brain Sciences Institute, Swinburne University of Technology, Hawthorn, Victoria 3122, Australia 295 T-AM

**Solving the EEG problems without the individual's MRI using a database of images**, Pedro Valdés-Hernández<sup>1</sup>, Nicolás von-Ellenrieder<sup>2</sup>, Alejandro Ojeda-Gonzalez<sup>1</sup>, Yasser Alemán-Gómez<sup>1</sup>, Silvia Kotchen<sup>3</sup>, Carlos Muravchik<sup>2</sup>, Pedro Valdés-Sosa<sup>1</sup>, <sup>1</sup>Cuban Neuroscience Center, Havana, Cuba, <sup>2</sup>University of La Plata, La Plata, Argentina, <sup>3</sup>University of Buenos Aires, Buenos Aires, Argentina 299 T-AM

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**Real Time Software for Monitoring MRI Scanner Operation.**, Jerzy Bodurka<sup>1</sup>, Peter Bandettini<sup>1,2</sup>, <sup>1</sup>Functional MRI Facility, National Institute of Mental Health, NIH, Bethesda, USA, <sup>2</sup>Section on Functional Imaging Method, National Institute of Mental Health, NIH, Bethesda, USA 303 T-AM

**Comparison of the phase encoded and the multifocal mapping of the primary visual cortex**, Bordier Cecile<sup>1</sup>, Dojat Michel<sup>2,3</sup>, Vasseur Flor<sup>2,3</sup>, James Andrew<sup>1</sup>, <sup>1</sup>ARC Centre of Excellence in Vision Science and Research School of Biological Sciences, Australian National University, Canberra, Australia, <sup>2</sup>INSERM, U836, Grenoble, F-38043, Grenoble, France, <sup>3</sup>Joseph Fourier University, Institute of Neurosciences, Grenoble, France 307 T-AM

**Optimizing the detection of fMRI activation in white matter using asymmetric spin echo spiral**, Jodie Gawryluk<sup>1,2</sup>, Kimberly Brewer<sup>1,2</sup>, Steven Beyer<sup>1,2</sup>, Ryan D'Arcy<sup>1,2</sup>, <sup>1</sup>National Research Council, Institute for Biodiagnostics, Halifax, Canada, <sup>2</sup>Dalhousie University, Halifax, Canada 311 T-AM

**Quantitative comparison of online and offline motion compensation methods**, Oliver Hinds<sup>1</sup>, Susan Gabrieli<sup>1,2</sup>, Julie Yoo<sup>1</sup>, John Gabrieli<sup>1,2</sup>, Christina Triantafyllou<sup>1,3</sup>, <sup>1</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA, <sup>3</sup>Athinoula A. Martinos Center, Department of Radiology, MGH, Harvard Medical School, Charlestown, USA 315 T-AM

**The Neuroimaging Informatics Tools and Resources Clearinghouse (NITRC)**, Robert Buccigrossi<sup>1</sup>, Mark Ellisman<sup>2</sup>, Jeff Grethe<sup>2</sup>, Christian Haselgrove<sup>3</sup>, David Kennedy<sup>4</sup>, Maryann Martone<sup>2</sup>, Nina Preuss<sup>1</sup>, Maureen Sullivan<sup>1</sup>, Keith Wagner<sup>1</sup>, <sup>1</sup>Turner Consulting Group, Inc, Washington, USA, <sup>2</sup>University of California, San Diego, USA, <sup>3</sup>Neuromorphometrics, Inc, Somerville, USA, <sup>4</sup>David N. Kennedy, Consulting, Belmont, USA 319 T-AM

- Distortion-Free High-Resolution Functional MRI for Neurosciences Using Passband Balanced-SSFP at 3T**, Jin Hyung Lee, Serge Dumoulin, Gary Glover, Brian Wandell, Dwight Nishimura, John Pauly, Stanford University, Stanford, USA 323 T-AM\*
- BOLD signal dropout in EPI: recovery**, Guoxiang Liu<sup>1,2</sup>, Seiji Ogawa<sup>2</sup>, <sup>1</sup>National Institute of Information and Communications Technology, Kobe, Japan, <sup>2</sup>Ogawa Laboratories for Brain Function Research, Tokyo, Japan 327 T-AM
- Detecting fMRI activation in white matter: Interhemispheric transfer of functionally lateralized stimuli across the corpus callosum**, Erin Mazerolle<sup>1,2</sup>, Ryan D'Arcy<sup>1,2,3</sup>, Xiaowei Song<sup>1,4</sup>, Steven Beyea<sup>1,3,5</sup>, <sup>1</sup>Institute for Biodiagnostics (Atlantic), National Research Council, Halifax, Canada, <sup>2</sup>Department of Psychology/Neuroscience, Dalhousie University, Halifax, Canada, <sup>3</sup>Department of Radiology, Dalhousie University, Halifax, Canada, <sup>4</sup>Department of Medicine, Dalhousie University, Halifax, Canada, <sup>5</sup>Department of Physics, Dalhousie University, Halifax, Canada 331 T-AM
- Fast whole brain fMRI acquisition above heart-rate nyquist frequency: applications of very fast imaging using PRESTO-2DSENSE**, Sebastiaan F.W. Neggers<sup>1</sup>, Martijn P. van den Heuvel<sup>1</sup>, René C.W. Mandl<sup>1</sup>, Erno J. Hermans<sup>2,3</sup>, Christian F. Beckmann<sup>4</sup>, Hilleke E. Hulshoff Pol<sup>1</sup>, <sup>1</sup>Dept. of Psychiatry, Rudolf Magnus Institute for Neuroscience, University Medical Center, Utrecht, Netherlands, <sup>2</sup>F.C. Donders Centre at the Radboud University Nijmegen, Nijmegen, Netherlands, <sup>3</sup>Department of Neurology at the Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>4</sup>Clinical Neuroscience Department, Division of Neuroscience and Mental Health, Imperial College London, London, United Kingdom 335 T-AM
- Optimized EPI for fMRI studies using a Common Gradient Template to compensate local Susceptibility-Induced Signal Loss: A pilot Study**, Jochen Rick<sup>1</sup>, Simon Maier<sup>2</sup>, Oliver Tüscher<sup>3</sup>, Maxim Zaitsev<sup>1</sup>, Oliver Speck<sup>4</sup>, <sup>1</sup>Dept. of Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany, <sup>2</sup>Dept. of Psychiatry and Psychotherapy, University Hospital Freiburg, Freiburg, Germany, <sup>3</sup>Dept. of Neurology, University Hospital Freiburg, Freiburg, Germany, <sup>4</sup>Dept. of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany 339 T-AM
- Improvements of prospective motion compensation using real-time shim correction**, Daniel Splithoff, Juergen Hennig, Maxim Zaitsev, Dept. of Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany 343 T-AM
- Feasibility of k-t BLAST for functional fMRI at (ultra-) high magnetic field strengths**, Jane Utting<sup>1,3</sup>, Sebastian Kozerke<sup>2</sup>, René Vohn<sup>1</sup>, Ralph Schnitker<sup>1</sup>, Roger Luechinger<sup>2</sup>, Thoralf Niendorf<sup>3</sup>, <sup>1</sup>IZKF-BIOMAT, Medical Faculty, RWTH-Aachen, Aachen, Germany, <sup>2</sup>Institute for Biomedical Engineering, University and ETH, Zuerich, Switzerland, <sup>3</sup>Experimental MRI, Radiology, Medical Faculty, RWTH-Aachen, Aachen, Germany 347 T-AM
- Integration of motion correction into the GLM for fMRI analysis of moving subjects**, Alle Meije Wink<sup>1,2</sup>, Shuzhou Jiang<sup>1,2</sup>, Jo Hajnal<sup>1,2</sup>, <sup>1</sup>Imaging Sciences Department, Imperial College, Robert Steiner MR Unit, Hammersmith Hospital, London, United Kingdom, <sup>2</sup>MRC Clinical Sciences Centre, Hammersmith Campus, London, United Kingdom 351 T-AM
- Nonlinear Registration across Subjects in Functional Connectivity Analysis at a Group Level**, Hong Gu, Xiujuan Geng, Elliot Stein, Yihong Yang, Neuroimaging Research Branch, National Institute on Drug Abuse, NIH, Baltimore, USA 355 T-AM

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### MEG

- Fast retinotopic mapping of visual fields using MEG**, Benoit Cottareau<sup>1,2</sup>, Alexandre Gramfort<sup>3</sup>, Jean Lorenceau<sup>1</sup>, Bertrand Thirion<sup>4</sup>, Maureen Clerc<sup>3</sup>, Sylvain Baillet<sup>1</sup>, <sup>1</sup>CNRS UPR 640, Paris, France, <sup>2</sup>ESME-Sudria, Ivry, France, <sup>3</sup>Odyssée Laboratory-ENPC/ENS/INRIA, Sophia-Antipolis, France, <sup>4</sup>INRIA Futur, Neurospin, Saclay, France 359 T-AM\*
- Comparing MEG source localization algorithms with fMRI statistical maps and neuroanatomy**, Johanna Zumer<sup>1,2</sup>, Elizabeth Disbrow<sup>2,3</sup>, Hagai Attias<sup>4</sup>, Matt Brookes<sup>1</sup>, Peter Morris<sup>1</sup>, Srikantan Nagarajan<sup>2</sup>, <sup>1</sup>University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>University of California, San Francisco, San Francisco, USA, <sup>3</sup>University of California, Davis, Davis, USA, <sup>4</sup>Golden Metallic, Inc, San Francisco, USA 363 T-AM

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### Language Acquisition

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- Dissociate Effects of Age-of-Acquisition from Word Frequency Effects in Picture Naming Using Functional MRI**, WEN-JUI KUO, DAISY HUNG, OVID TZENG, Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan 371 T-AM
- EEG signatures of the BOLD-defined language network in resting state**, Marcel CM Bastiaansen<sup>1,2</sup>, Tom Eichele<sup>3</sup>, René Scheeringa<sup>1</sup>, <sup>1</sup>F.C. Donders Centre for Cognitive Neuroimaging, Radboud University Nijmegen, Nijmegen, Netherlands, <sup>2</sup>Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, <sup>3</sup>Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway 375 T-AM

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- Correct and erroneous naming responses in healthy subjects**, Stefanie Abel<sup>1</sup>, Katharina Dressel<sup>1</sup>, Ralph Schnitker<sup>2</sup>, Dorothee Kümmerer<sup>3</sup>, Dorothee Saur<sup>3</sup>, Cornelius Weiller<sup>3</sup>, Walter Huber<sup>1</sup>, <sup>1</sup>Neurolinguistics at the Department of Neurology, RWTH Aachen University, Aachen, Germany, <sup>2</sup>Interdisciplinary Center for Clinical Research - Neurofunctional Imaging Lab, RWTH Aachen University, Aachen, Germany, <sup>3</sup>Department of Neurology, Neurocenter, University of Freiburg, Freiburg, Germany 379 T-AM
- The involvement of cytoarchitectonic BA 44 and BA 45 in different types of verbal fluency**, Stefan Heim<sup>1,2</sup>, Simon B. Eickhoff<sup>1,2</sup>, Katrin Amunts<sup>1,2,3</sup>, <sup>1</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Centre Jülich, Jülich, Germany, <sup>2</sup>Brain Imaging Center West (BICW), Jülich, Germany, <sup>3</sup>Dept. of Psychiatry and Psychotherapy, RWTH Aachen, Aachen, Germany 383 T-AM
- Regional cerebral blood flow intercorrelations during speech production by adults who stutter**, Roger Ingham<sup>1,2</sup>, Janis Ingham<sup>1,2</sup>, Frank Zamarripa<sup>2</sup>, Peter Fox<sup>2</sup>, <sup>1</sup>UC Santa Barbara, Santa Barbara, USA, <sup>2</sup>UT Health Science Center in San Antonio, San Antonio, USA 387 T-AM
- Neural correlates of lexical semantic recovery after treatment in aphasia**, Swathi Kiran<sup>1</sup>, Rajani Sebastian<sup>1</sup>, Padmadevan Chettiar<sup>1</sup>, Micheal Devous<sup>2</sup>, <sup>1</sup>University of Texas at Austin, Austin, USA, <sup>2</sup>UT Southwestern, Dallas, USA 391 T-AM
- White matter correlates of lexical retrieval in elderly adults**, Elena Rykhlevskaia<sup>1</sup>, Manuella Clark-Cotton<sup>2,3</sup>, Avron Spiro III<sup>4,5</sup>, Loraine Obler<sup>2,3,6</sup>, Martin Albert<sup>2,3</sup>, <sup>1</sup>Stanford Cognitive and Systems Neuroscience Laboratory, Stanford, CA, <sup>2</sup>Medical Research Service, VA Boston Healthcare System, Boston, MA, <sup>3</sup>Department of Neurology, Boston University School of Medicine, Boston, MA, <sup>4</sup>Normative Aging Study and MAVERIC, VA Boston Healthcare System, Boston, MA, <sup>5</sup>Department of Epidemiology, Boston University School of Public Health, <sup>6</sup>Program in Speech-Language-Hearing Sciences, CUNY Graduate Center, New York, NY, 395 T-AM

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- Cerebellum and Cognition: Plasticity during the automatization of rule-based information processing**, Joshua Balsters, Narender Ramnani, Dept Psychology, Royal Holloway University of London, LONDON, United Kingdom 399 T-AM
- Dependence of hemispheric dominance on fMRI normalization and region of interest procedures**, Alexander Geißler, Thomas Steinkellner, Jakob Rath, Nicolaus Klinger, Roland Beisteiner, Study Group Clinical fMRI, MR Center of excellence, Department of Neurology, Medical University of Vienna, Vienna, Austria 403 T-AM
- Learning rules changes connectivity between the prefrontal cortex and cerebellum**, Yuri Saalman<sup>1</sup>, Joshua Balsters<sup>1</sup>, Michael Wright<sup>2</sup>, Narender Ramnani<sup>1</sup>, <sup>1</sup>Department of Psychology, Royal Holloway, University of London, Egham, United Kingdom, <sup>2</sup>Department of Psychology, Brunel University, Uxbridge, United Kingdom 407 T-AM

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- Perceptual memory representations studied in delayed discrimination of spatial frequency - behavioral and fMRI evidence for high-fidelity visual stores in early visual cortex**, *Oliver Baumann<sup>1,2,3</sup>, Tor Endestad<sup>3</sup>, Svein Magnussen<sup>3</sup>, Mark Greenlee<sup>2</sup>, <sup>1</sup>University of Queensland, Brisbane, Australia, <sup>2</sup>University of Regensburg, Regensburg, Germany, <sup>3</sup>University of Oslo, Oslo, Norway* 411 T-AM
- Inefficient recruitment of working memory updating networks in post-traumatic stress disorder**, *Richard Clark<sup>1</sup>, Kathryn Moores<sup>1</sup>, Alexander McFarlane<sup>2</sup>, <sup>1</sup>Flinders University, Adelaide, Australia, <sup>2</sup>Adelaide University, Adelaide, Australia* 415 T-AM
- Increase of Alpha Coherence in a Working Memory Network: An MEG Study**, *Hyojin Park<sup>1,2</sup>, June Sic Kim<sup>4</sup>, Chun-Kee Chung<sup>1,4</sup>, Dong Soo Lee<sup>1,2</sup>, Eunjoo Kang<sup>3</sup>, <sup>1</sup>Interdisciplinary Program in Cognitive Science, Seoul National University, Seoul, South Korea, <sup>2</sup>Department of Nuclear Medicine, Seoul National University Hospital, Seoul, South Korea, <sup>3</sup>Department of Psychology, Kangwon National University, Chuncheon, South Korea, <sup>4</sup>MEG Center, Department of Neurosurgery, Seoul National University Hospital, Seoul, South Korea* 419 T-AM
- Prefrontal cortex and basal ganglia control access to working memory**, *Fiona McNab, Torkel Klingberg, Stockholm Brain Institute, Karolinska Institutet, Stockholm, Sweden* 423 T-AM
- A TMS “ping” during fMRI reveals physiological consequences of functional connectivity and dissociates multivariate from univariate maps of working memory storage**, *Bradley Postle<sup>1,2</sup>, Eva Feredoes<sup>1,3</sup>, Todd Woodward<sup>3</sup>, Giulio Tononi<sup>2</sup>, <sup>1</sup>Univ. of Wisconsin Psychology, Madison, USA, <sup>2</sup>Univ. of Wisconsin Psychiatry, Madison, USA, <sup>3</sup>Univ. of British Columbia Psychiatry, Vancouver, Canada* 427 T-AM

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- Observing the Observer : a nested Bayesian approach to studies of learning and decision making**, *Jean Daunizeau<sup>1</sup>, Mathias Pessiglione<sup>2</sup>, Klaas Stephan<sup>1</sup>, Hanneke Den Ouden<sup>1</sup>, Karl Friston<sup>1</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, London, United Kingdom, <sup>2</sup>INSERM U610, Paris, France* 431 T-AM
- Combined spatial and non-spatial Gaussian process prior for fMRI analysis**, *Adrian Groves, Mark Woolrich, FMRIB Centre, Oxford, United Kingdom* 435 T-AM
- The choice of forward model in MEG localisation**, *Richard Henson<sup>1</sup>, Jeremie Mattout<sup>2</sup>, Karl Friston<sup>3</sup>, <sup>1</sup>MRC CBU, Cambridge, United Kingdom, <sup>2</sup>Brain Dynamics and Cognition, U821 INSERM, Lyon, France, <sup>3</sup>FIL, London, United Kingdom* 439 T-AM
- How Should Anatomical Connectivity Be Defined?**, *Enrico Kaden, Alfred Anwander, Thomas R. Knösche, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany* 443 T-AM
- A Unified Bayesian Framework for MEG/EEG Source Imaging**, *David Wipf<sup>4</sup>, Hagai Attias<sup>2</sup>, Kensuke Sekhara<sup>3</sup>, Srikantan Nagarajan<sup>1</sup>, <sup>1</sup>UCSF, San Francisco, USA, <sup>2</sup>Golden Metallic, San Francisco, USA, <sup>3</sup>Tokyo Metropolitan University, Tokyo, Japan* 447 T-AM\*

11:30 – 12:30 Corryong Hall (Level 2)

## MODELING & ANALYSIS

### Classification & Predictive Modeling

- A multivariate approach to fMRI activation detection using pattern recognition and information entropy on tactile data**, *Malin C.B. Åberg, Line Löken, Johan Wessberg, Department of neuroscience and physiology, Göteborg University, Göteborg, Sweden* 451 T-AM
- Exploiting EEG inverse problem in an asynchronous BCI experiment**, *Michel Besserve, Jacques Martinerie, Line Garnero, Laboratoire de Neurosciences Cognitives et Imagerie Cérébrale, CNRS UPR 640 LENA & UPMC Univ Paris 06, Paris, France* 455 T-AM



- Classification of Brain Magnetic Resonance Images for Bipolar Disorders Based on Voxel-based Morphometry and Bayesian Theorem**, Yong-Sheng Chen<sup>1</sup>, Li-Fen Chen<sup>2,3</sup>, Ya-Ting Chang<sup>1</sup>, Yung-Tien Huang<sup>1</sup>, Jen-Chuen Hsieh<sup>2,3</sup>, Tzu-Chen Yeh<sup>3,2</sup>, <sup>1</sup>Department of Computer Science, National Chiao Tung University, Hsinchu, Taiwan, <sup>2</sup>Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Integrated Brain Research Laboratory, Taipei Veterans General Hospital, Taipei, Taiwan 459 T-AM
- A porous elastic BOLD hemodynamic model with spatiotemporal response**, Peter Drysdale<sup>1,2</sup>, Jacqueline Huber<sup>1,3</sup>, Peter Robinson<sup>1,2,3</sup>, <sup>1</sup>School of Physics, University of Sydney, Sydney, Australia, <sup>2</sup>Brain Dynamics Center, Westmead Millenium Institute, Westmead Hospital and Western Clinical School of University of Sydney, Westmead, Australia, <sup>3</sup>Faculty of Medicine, University of Sydney, Sydney, Australia 463 T-AM
- Classifying brain states based on regional homogeneity of fMRI data**, Bin Lv<sup>1</sup>, Huiguang He<sup>1</sup>, Zhiqiang Zhang<sup>2</sup>, Wei Huang<sup>2</sup>, Meng Li<sup>1</sup>, Guangming Lu<sup>2</sup>, <sup>1</sup>Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Department of Medical Imaging, Nanjing Jinling Hospital, Nanjing, China 467 T-AM
- Classification and control strategies of epileptic seizures via bifurcation analysis**, Jong Won Kim<sup>1,2</sup>, James Roberts<sup>1,2</sup>, Peter Robinson<sup>1,2,3</sup>, <sup>1</sup>School of Physics, The University of Sydney, Sydney, Australia, <sup>2</sup>Brain Dynamics Center, Westmead Hospital, Westmead, Australia, <sup>3</sup>Faculty of Medicine, The University of Sydney, Sydney, Australia 471 T-AM
- Mutual Information-Based Feature Selection enhances fMRI-based brain activity classification**, Vincent Michel<sup>1</sup>, Cécilia Damon<sup>1</sup>, Alan Tucholka<sup>2</sup>, Merlin Keller<sup>1</sup>, Bertrand Thirion<sup>1</sup>, <sup>1</sup>Inria Saclay, Saclay, France, <sup>2</sup>CEA-Neurospin, Gif sur Yvette, France 475 T-AM
- Mapping Neuronal Fibers Through Partial Volume Voxels**, Ofer Pasternak<sup>1</sup>, Nir Sochen<sup>1</sup>, Nathan Intrator<sup>1</sup>, Yaniv Assaf<sup>1,2</sup>, <sup>1</sup>Tel Aviv university, Tel Aviv, Israel, <sup>2</sup>Functional Brain Imaging Unit, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel 479 T-AM
- A model of realistic conducting volume including or excluding brain lesional area**, Pauletto Giada<sup>1</sup>, Valiante Gabriele<sup>1</sup>, Skrap Miran<sup>2</sup>, Budai Riccardo<sup>1</sup>, <sup>1</sup>Department of Neurology and DPMSC-Azienda Ospedaliero-Universitaria, S. Maria della Misericordia, Udine, Italy, <sup>2</sup>Department of Neurosurgery - Azienda Ospedaliero-Universitaria, S. Maria della Misericordia, Udine, Italy 483 T-AM
- Co-Clustering Approach to Neural Representation of Objects**, Svetlana Shinkareva, Julie Conder, University of South Carolina, Columbia, USA 487 T-AM
- A Comparison of Feature Selection Strategies for Classification of fMRI Activation Patterns**, Giancarlo Valente, Federico De Martino, Rainer Goebel, Elia Formisano, University of Maastricht, Department of Cognitive Neuroscience, Maastricht, Netherlands 491 T-AM\*

## MODELING & ANALYSIS

### Motion Correction/Spatial Normalization, Atlas Construction

- EVALUATION OF DTI IMAGE ANALYSIS USING NONLINEAR SPATIAL NORMALIZATION AND TISSUE-SPECIFIC, SMOOTHING-COMPENSATED VOXEL BASED ANALYSIS: APPLICATION IN AUTISM**, Andrew Alexander<sup>1</sup>, Jee Eun Lee<sup>1</sup>, Babak Ardekanian<sup>2</sup>, Moo Chung<sup>1</sup>, Erin Bigler<sup>3</sup>, Janet Lainhart<sup>4</sup>, <sup>1</sup>University of Wisconsin, Madison, USA, <sup>2</sup>Nathan Kline Institute, Orangeburg, USA, <sup>3</sup>Brigham Young University, Provo, USA, <sup>4</sup>University of Utah, Salt Lake City, USA 495 T-AM
- Improving voxel-based morphometry with diffeomorphic non-linear registration by DARTEL toolbox: conventional SPM normalization vs DARTEL Normalization**, Carlton CHU, Geoffrey Tan, John Ashburner, Wellcome Trust Centre for Neuroimaging(FIL), London, United Kingdom 499 T-AM
- The Structural-Functional Correspondence Project**, Martin Frost, Rainer Goebel, Dept. Cognitive Neuroscience, Maastricht University, Maastricht, Netherlands 503 T-AM
- Subcortical Structure Template Generation with its Applications in Shape Analysis**, Anqi Qiu<sup>1</sup>, Timothy Brown<sup>2</sup>, Bruce Fischl<sup>3,4</sup>, Anthony Kolosny<sup>2</sup>, Jun Ma<sup>2</sup>, Randy Buckner<sup>3,5</sup>, Michael Miller<sup>2</sup>, <sup>1</sup>Division of Bioengineering, National University of Singapore, Singapore, Singapore, <sup>2</sup>Center for Imaging Science, Johns Hopkins University, Baltimore, USA, <sup>3</sup>Athinoula A Martinos

Center for Biomedical Imaging at MGH, Boston, USA, <sup>4</sup>Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Boston, USA, <sup>5</sup>Department of Psychology, Center for Brain Science, Harvard University, Boston, USA

## MODELING & ANALYSIS

### Univariate Modeling, Linear, & Nonlinear

- An improved method for voxel-based T2-weighted MRI analysis**, David F Abbott<sup>1,2,3</sup>, Gaby S Pell<sup>1,2,3</sup>, Heath Pardoe<sup>1,2,3</sup>, Graeme Jackson<sup>1,2,3</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>The University of Melbourne, Melbourne, Australia, <sup>3</sup>Florey Neuroscience Institutes, Melbourne, Australia 511 T-AM
- Detection of Local Cortical Asymmetry via Discriminant Power Analysis**, Moo K. Chung, Daniel J. Kelley, Kim M. Dalton, Richard J. Davidson, Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin, Madison, USA 515 T-AM
- Phase Modeling in Arterial Spin Labeling fMRI**, Luis Hernandez-Garcia<sup>1</sup>, Daniel Rowe<sup>2</sup>, <sup>1</sup>University of Michigan, Ann Arbor, USA, <sup>2</sup>Medical College of Wisconsin, Milwaukee, USA 519 T-AM
- Stimulus interaction effects in parietal and limbic system in an executive task: practical use of a simple rapid event related fMRI method to measure main and interaction effects**, J. Martijn Jansma, Allison Nugent, Rebecca Davis, Wayne Drevets, NIH/NIMH/SNMAP, Bethesda, USA 523 T-AM
- Noninvasive Quantifying the Regional CBV Using FWE Model Based on VASO Functional MRI Technique**, Chia-Wei Li, Chang-Wei Wu, Jyh-Horng Chen, Interdisciplinary MRI/MRS Laboratory, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan 527 T-AM
- Advanced simulations of fMRI data sets**, Radek Marecek<sup>1</sup>, Michal Mikl<sup>1,2</sup>, Petr Hlustik<sup>3</sup>, <sup>1</sup>1st Department of Neurology, St. Anne's University Hospital and Masaryk University, Brno, Czech Republic, <sup>2</sup>Department of Biomedical Engineering, FEEC, Brno University of Technology, Brno, Czech Republic, <sup>3</sup>Department of Neurology and Radiology, School of Medicine, Palacky University and University Hospital, Olomouc, Czech Republic 531 T-AM
- The Effect of Task Switching on the t-Statistics Correlation to Explore the Neuronal Basis of Motor Execution – An Approach Using Dynamic fMRI**, Toshiharu Nakai<sup>1</sup>, Epifanio Bagarinao<sup>2</sup>, Yoshio Tanaka<sup>2</sup>, Chikako Nakai<sup>3</sup>, Kayako Matsuo<sup>1</sup>, <sup>1</sup>Functional Brain Imaging Lab, National Center for Geriatrics and Gerontology, Ohbu, Japan, <sup>2</sup>Grid Technology Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, <sup>3</sup>Faculty of Business and Informatics, Toyohashi Sozo University, Toyohashi, Japan 535 T-AM
- Predicting the BOLD time courses from simultaneously recorded LFPs**, Christopher Tyler<sup>1</sup>, Nikos Logothetis<sup>2</sup>, <sup>1</sup>Smith-Kettlewell Institute, San Francisco, USA, <sup>2</sup>MPI for Biological Cybernetics, Tuebingen, Germany 543 T-AM\*
- Robust Group Analysis Using Outlier Modelling**, Mark Woolrich, FMRIB Centre, Dept. of Clinical Neurology, University of Oxford, Oxford, United Kingdom 547 T-AM\*

## MOTOR BEHAVIOR

### Brain-machine Interface

- Reading the Mind: Identification and Prediction of the Intended Targets of Reaching Movements Using Magnetoencephalography. Applications for an Implicit Brain Computer Interface**, Claudia Bonin<sup>1</sup>, Kory Johnson<sup>2</sup>, Mark Hallett<sup>1</sup>, <sup>1</sup>Human Motor Control Section, National Institute of Neurological Disorders and Strokes, National Institutes of Health, Bethesda, USA, <sup>2</sup>Bioinformatics Neuroscience Group, Information Technology Program, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, USA 551 T-AM

## MOTOR BEHAVIOR

### Hand Movements

- Effects of timing and task uncertainty on the fronto-parietal motor circuits: An fMRI study**, Oliver Jakobs<sup>1</sup>, Ling Wang<sup>2,3</sup>, Christian Grefkes<sup>1,4</sup>, Anton Henssen<sup>1</sup>, Manuel Dafotakis<sup>2,3</sup>, Karl Zilles<sup>1,2,3</sup>, Simon B. Eickhoff<sup>2</sup>, <sup>1</sup>C&O. Vogt Institute of Brain Research, University of Düsseldorf, 555 T-AM

Düsseldorf, Germany, <sup>2</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Centre Jülich, Jülich, Germany, <sup>3</sup>Brain Imaging Center West (BICW), Jülich, Germany, <sup>4</sup>Max-Planck-Institut für Neurological Research, Cologne, Germany

**fMRI in patients with writer's cramp treated by repetitive transcranial magnetic stimulation (rTMS) of the primary somatosensory cortex**, Robert Jech<sup>1</sup>, Petra Havrankova<sup>1</sup>, Nolan Walker<sup>1</sup>, Jana Tauchmanova<sup>2</sup>, Josef Vymazal<sup>3</sup>, Evzen Ruzicka<sup>1</sup>, <sup>1</sup>Department of Neurology, 1st Medical Faculty, Charles University, Prague, Czech Republic, <sup>2</sup>Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University, Prague, Czech Republic, <sup>3</sup>Na Homolce Hospital, Prague, Czech Republic 559 T-AM

**Dissociating networks of delayed imitation by independent component analysis**, Mareike M. Menz, Kathrin Reetz, Adam McNamara, Ferdinand Binkofski, Department of Neurology and NeuroImage Nord, University of Luebeck, Luebeck, Germany 563 T-AM

**Neural correlates of improved visuomotor functions following stimulation of the noradrenergic system in humans**, Ling E. Wang<sup>1,2</sup>, Gereon R. Fink<sup>1,3</sup>, Manuel Dafotakis<sup>1</sup>, Christian Grefkes<sup>1,3,4</sup>, <sup>1</sup>Cognitive Neurology Section, Institute of Neuroscience and Biophysics – Medicine, Research Centre Juelich, Juelich, Germany, <sup>2</sup>International Graduate School of Neuroscience, Ruhr University Bochum, Bochum, Germany, <sup>3</sup>Department of Neurology, University of Cologne, Cologne, Germany, <sup>4</sup>Neuromodulation & Neurorehabilitation Section, Max-Planck-Institute of Neurological Research, Cologne, Germany 567 T-AM

## MOTOR BEHAVIOR

### Motor-Premotor Cortex/Motor Cortical Functions

**Neural correlates of action prediction in sports: How important is expertise?**, Ana Maria Abreu<sup>1,2</sup>, Emiliano Macaluso<sup>1</sup>, Paola Cesari<sup>3</sup>, Cosimo Urgesi<sup>4</sup>, Salvatore Maria Aglioti<sup>2</sup>, <sup>1</sup>Neuroimaging Laboratory, Santa Lucia Foundation, Rome, Italy, <sup>2</sup>Department of Psychology, University of Rome 'La Sapienza', Rome, Italy, <sup>3</sup>Department of Neurological and Visual Sciences, University of Verona, Verona, Italy, <sup>4</sup>Scientific Institute Eugenio Medea, San Vito al Tagliamento, Pordenone, Italy 571 T-AM

**Premotor mirror neuron activation in schizophrenia**, Peter Enticott<sup>1</sup>, Kate Hoy<sup>1</sup>, Sally Herring<sup>1</sup>, Patrick Johnston<sup>2</sup>, Paul Fitzgerald<sup>1</sup>, <sup>1</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>2</sup>Brain Sciences Institute, Swinburne University of Technology, Melbourne, Australia 575 T-AM

**The Enhancement of Cortical Excitability by Transcranial Direct Current Stimulation in Human Brain**, Yong Hyun Kwon<sup>1</sup>, Sung Ho Jang<sup>2</sup>, Sang Ho Ahn<sup>2</sup>, <sup>1</sup>Department of Physical Therapy, Yeungnam College of Science & Technology, Daegu, South Korea, <sup>2</sup>Department of Physical Medicine and Rehabilitation, School of Medicine, Yeungnam University, Daegu, South Korea 579 T-AM

**Making EMG recordings during fMRI work: experiences from fundamental and applied studies of the motor system**, N.M. Maurits<sup>1,2</sup>, R.J. Renken<sup>2</sup>, J.H. van der Hoeven<sup>1</sup>, A.F. van Rootselaar<sup>3</sup>, <sup>1</sup>Department of Neurology, University Medical Center Groningen, Groningen, Netherlands, <sup>2</sup>BCN-NeuroImaging Center, University Medical Center Groningen, University of Groningen, Groningen, Netherlands, <sup>3</sup>Department of Neurology and Clinical Neurophysiology, Academic Medical Center Amsterdam, Amsterdam, Netherlands 583 T-AM

**Normal variation in representation area of thenar and tibial muscles in healthy motor cortex: navigated transcranial magnetic stimulation study**, Eini Niskanen<sup>1,2</sup>, Laura Säisänen<sup>1</sup>, Petro Julkunen<sup>1</sup>, Ritva Vanninen<sup>3</sup>, Mervi Könönen<sup>1,3</sup>, <sup>1</sup>Department of Clinical Neurophysiology, Kuopio University Hospital, Kuopio, Finland, <sup>2</sup>Department of Physics, University of Kuopio, Kuopio, Finland, <sup>3</sup>Department of Radiology, Kuopio University Hospital, Kuopio, Finland 587 T-AM

**An Image-Guided, Robotic, Transcranial Magnetic Stimulation (irTMS) Virtual Lesion Study of Speech**, Donald Robin<sup>1,2</sup>, Frank Guenther<sup>3</sup>, Shalini Narayana<sup>1</sup>, Adam Jacks<sup>1</sup>, Jason Tourville<sup>3</sup>, Amy Ramage<sup>1</sup>, Jack Lancaster<sup>1</sup>, Crystal Franklin<sup>1</sup>, Peter Fox<sup>2</sup>, <sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>Honor's College, University of Texas, San Antonio, San Antonio, USA, <sup>3</sup>Center for Neurocomputation, Boston University, Boston, USA 591 T-AM

**Observing multiple people acting: Separability of cortical processing streams associated with each person's actions,** *Jeremy I. Skipper<sup>1</sup>, Ekaterina Dobryakova<sup>2</sup>, Natalie Sebanz<sup>3</sup>,* 595 T-AM  
<sup>1</sup>Sackler Institute for Developmental Psychobiology, Weill-Cornell Medical College, New York, USA, <sup>2</sup>Rutgers University, Newark, USA, <sup>3</sup>University of Birmingham, Birmingham, United Kingdom

**EEG spectrum power and EEG –EMG coherence mapping during voluntary movement in children aged 7 to 10 years with different attention and impulsivity,** *Alexander Trembach<sup>1</sup>, Yanina Bugaev<sup>2</sup>, Maxim Beljaev<sup>3</sup>, Katrin Vitko<sup>1</sup>, Eduard Moskalev<sup>1</sup>,* 599 T-AM  
<sup>1</sup>Department of Adaptive Training and Physical Rehabilitation, Kuban State University of Physical Education, Sport and Tourism, Krasnodar, Russia, <sup>2</sup>Department of Physiology, Kuban University of Physical Education, Sport and Tourism, Krasnodar, Russia, <sup>3</sup>Department of Biomechanics, Kuban State University of Physical Education, Sport and Tourism, Krasnodar, Russia, <sup>4</sup>Department of Adaptive Training and Physical Rehabilitation, Kuban State University of Physical Education, Sport and Tourism, Krasnodar, Russia, <sup>5</sup>Department of Adaptive Training and Physical Rehabilitation, Kuban State University of Physical Education, Sport and Tourism, Krasnodar, Russia

## NEUROANATOMY Anatomical Studies

**Nerve Fiber Mapping in Histological Sections of the Human Brain by Means of Polarized Light,** *Markus Axer<sup>1</sup>, Jürgen Dammers<sup>1</sup>, David Gräßel<sup>1</sup>, Katrin Amunts<sup>1,2</sup>, Uwe Pietrzyk<sup>1,3</sup>, Karl Zilles<sup>1,4</sup>,* 603 T-AM  
<sup>1</sup>Institute of Neurosciences and Biophysics 3 - Medicine, Research Center Jülich, Jülich, Germany, <sup>2</sup>Department for Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany, <sup>3</sup>Department of Physics, University of Wuppertal, Wuppertal, Germany, <sup>4</sup>C. and O. Vogt Institute of Brain Research, University of Düsseldorf, Düsseldorf, Germany

**A comparison of manual tracing and automated measure of hippocampal volume in a large community-based sample,** *Nicolas Cherbuin<sup>1</sup>, Kaarin J. Anstey<sup>1</sup>, Chantal Meslin<sup>1</sup>, Perminder S. Sachdev<sup>2</sup>,* 607 T-AM  
<sup>1</sup>Centre for Mental Health Research, Australian National University, Canberra, Australia, <sup>2</sup>School of Psychiatry, University of New South Wales, Sydney, Australia

**Delineation of the subthalamic nucleus (STN) on high-resolution maps of R2\*,** *Peter Dechent<sup>1</sup>, Erck Elolf<sup>2</sup>, Tabea Gringel<sup>1,2</sup>, Michael Knauth<sup>2</sup>, Gunther Helms<sup>1</sup>,* 611 T-AM  
<sup>1</sup>MR-Research in Neurology and Psychiatry, University Medical Center, Göttingen, Germany, <sup>2</sup>Department of Neuroradiology, University Medical Center, Göttingen, Germany

**Congestive heart failure is associated with changes in grey matter volume that cannot be entirely explained by cardiovascular disease,** *Griselda Garrido<sup>1</sup>, Leon Flicker<sup>2</sup>, Christopher Beer<sup>2</sup>, Nicola Lautenschlager<sup>2</sup>, Leonard Arnold<sup>3</sup>, Andrew Campbell<sup>4</sup>, Nat Lenzo<sup>5</sup>, Osvaldo Almeida<sup>2</sup>,* 615 T-AM  
<sup>1</sup>Serviço de Informática Médica, Instituto do Coração, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil, <sup>2</sup>Western Australia Centre for Health & Ageing, University of Western Australia, Perth, Australia, <sup>3</sup>School of Medicine and Pharmacology, University of Western Australia, Perth, Australia, <sup>4</sup>Department of Medical Engineering and Physics, Royal Perth Hospital, Perth, Australia, <sup>5</sup>Department of Nuclear Medicine, Royal Perth Hospital, Perth, Australia

**New structural brain findings in maltreated children with PTSD using deformation tensor morphometry: a preliminary report,** *Andrea Jackowski<sup>1,2</sup>, Colin Studholme<sup>3</sup>, Heather Douglas-Palumberi<sup>2</sup>, Joan Kaufman<sup>2,4</sup>,* 619 T-AM  
<sup>1</sup>LiNC, Universidade Federal de Sao Paulo, Sao Paulo, Brazil, <sup>2</sup>Child Study Center, Yale University, New Haven, USA, <sup>3</sup>Radiology, University of California, San Francisco, USA, <sup>4</sup>Psychiatry, Yale University, New Haven, USA

**Can regional structural MRI measurement of cerebral health explain age-related cognitive change?,** *Peter Kochunov<sup>1,2</sup>, Donald Robin<sup>1</sup>, Anita Schlosser<sup>1</sup>, Valeria Kochunov<sup>1</sup>, Jack Lancaster<sup>1,2</sup>, Peter Fox<sup>1,2</sup>,* 623 T-AM  
<sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>International Consortium for Brain Mapping (ICBM), USA

**Laterality Differences in Klinefelter's Syndrome: A voxel-based morphometry study,** *Francois Lalonde<sup>1</sup>, Gregory Ihrie<sup>2</sup>, Gregory Wallace<sup>3</sup>, Liv Clasen<sup>1</sup>, Jay Giedd<sup>1</sup>,* 627 T-AM  
<sup>1</sup>Child Psychiatry Branch, NIMH, NIH, Bethesda, USA, <sup>2</sup>University of Maryland, College Park, USA, <sup>3</sup>Laboratory of Brain and Cognition, NIMH, NIH, Bethesda, USA

**Characterization of cortical pathology heterogeneity in multiple sclerosis using 7T MRI,** Caterina Mainero<sup>1</sup>, Andre van der Kouwe<sup>1</sup>, Thomas Benner<sup>1</sup>, Graham Wiggins<sup>1</sup>, R Phillip Kinkel<sup>2</sup>, Bruce R Rosen<sup>1</sup>, <sup>1</sup>Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, USA, <sup>2</sup>Neurology, Beth Israel Deaconess Medical Center, Boston, USA 631 T-AM

**Patterns of cortical thickness in obsessive compulsive disorder (OCD),** Veena M. Narayan<sup>1</sup>, Owen R. Phillips<sup>1</sup>, Katherine L. Narr<sup>1</sup>, Paul M. Thompson<sup>1</sup>, Arthur W. Toga<sup>1</sup>, Philip R. Szeszko<sup>2</sup>, <sup>1</sup>Laboratory of Neuro Imaging, Dept. of Neurology, UCLA, Los Angeles, USA, <sup>2</sup>Department of Psychiatry Research, The Zucker Hillside Hospital, North-Shore Long Island Jewish Health Systems, Glen Oaks, USA 635 T-AM

**The APOE e4 allele is associated with greater hippocampal atrophy in the subicular and CA1 areas in Alzheimer's disease: an in vivo MR study,** Michela Pievani<sup>1</sup>, Francesca Sabattoli<sup>1</sup>, Cristina Testa<sup>1,2</sup>, Matteo Bonetti<sup>3</sup>, Rebecca Dutton<sup>4</sup>, Agatha Lee<sup>4</sup>, Paul Thompson<sup>4</sup>, Giovanni Frisoni<sup>1,5,6</sup>, <sup>1</sup>LENITEM Laboratory of Epidemiology, Neuroimaging and Telemedicine – IRCCS Centro S. Giovanni di Dio – FBF, Brescia, Italy, <sup>2</sup>Machine Vision Laboratory, Department of Mathematics and Computer Science, University of Udine, Udine, Italy, <sup>3</sup>Service of Neuroradiology, Istituto Clinico Città di Brescia, Brescia, Italy, <sup>4</sup>Laboratory of Neuroimaging, Department of Neurology, UCLA School of Medicine, Los Angeles, USA, <sup>5</sup>Psychogeriatric Ward – IRCCS Centro San Giovanni di Dio – FBF, Brescia, Italy, <sup>6</sup>A.Fa.R. Associazione Fatebenefratelli per la Ricerca, Rome, Italy 639 T-AM

**BrainVISA Plugin for Cortical Thickness Measurement Using Surface Normals with Curvature Thresholding,** Bill Rogers<sup>1</sup>, Peter Kochunov<sup>1</sup>, David Glahn<sup>1</sup>, Jeff Rogers<sup>2</sup>, Peter Fox<sup>1</sup>, <sup>1</sup>University of Texas Health Science Center, San Antonio, USA, <sup>2</sup>Southwest Foundation for Biomedical Research, San Antonio, USA 643 T-AM

**Unbiased High Resolution T1 Weighted Brain Images at High Field with a New Interleaved 3D-MPRAGE/Proton Density GE sequence,** Pierre-Francois Van de Moortele, Eddie Auerbach, Cheryl Olman, Essa Yacoub, Kamil Ugurbil, Steen Moeller, CMRR-University of Minnesota, Minneapolis, USA 647 T-AM

**A surface-based fractal information dimension method for cortical complexity analysis,** Yuanchao zhang<sup>1,3</sup>, Jiefeng Jiang<sup>1</sup>, Lei Lin<sup>1,3</sup>, Feng Shi<sup>1</sup>, Chunshui Yu<sup>2</sup>, Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, <sup>3</sup>Department of Mathematics, Zhejiang University, Hangzhou, China 651 T-AM

#### PHYSIOLOGY, METABOLISM, & NEUROTRANSMISSION

**Striatal dopamine release induced by repetitive transcranial magnetic stimulation over dorsolateral prefrontal cortex: Effect of aging,** Seong Ae Bang<sup>1,2</sup>, Sang Soo Cho<sup>1,2</sup>, Eun Jin Yoon<sup>1,2</sup>, Ji Sun Kim<sup>1,2</sup>, Byung Chul Lee<sup>1,2</sup>, Yu Kyeong Kim<sup>1,2</sup>, Sang Eun Kim<sup>1,2</sup>, <sup>1</sup>Seoul National University College of Medicine, Seoul, South Korea, <sup>2</sup>Seoul National University Bundang Hospital, Seoul, South Korea 655 T-AM

**Laminar distribution and co-distribution of neurotransmitter receptors in early human visual cortex,** Claudia Rottschy<sup>1,2,3</sup>, Simon B. Eickhoff<sup>2</sup>, Karl Zilles<sup>1,2,4</sup>, <sup>1</sup>C&O. Vogt Institute of Brain Research, University of Düsseldorf, Düsseldorf, Germany, <sup>2</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Centre Jülich, Jülich, Germany, <sup>3</sup>Dept. of Neurology, RWTH Aachen, Aachen, Germany, <sup>4</sup>Brain Imaging Center West (BICW), Jülich, Germany 659 T-AM

**fMRI correlates of EEG slow oscillations during sleep in humans,** Silvina Horovitz<sup>1</sup>, Masaki Fukunaga<sup>1</sup>, Dante Picchioni<sup>2</sup>, Walter Carr<sup>3</sup>, Jacco de Zwart<sup>1</sup>, Peter van Gelderen<sup>1</sup>, Thomas Balkin<sup>2</sup>, Allen Braun<sup>4</sup>, Jeff Duyn<sup>1</sup>, <sup>1</sup>NINDS - National Institutes of Health, Bethesda, USA, <sup>2</sup>Walter Reed Army Institute of Research, Silver Spring, USA, <sup>3</sup>Naval Medical Research Center, Silver Spring, USA, <sup>4</sup>NIDCD -National Institutes of Health, Bethesda, USA 663 T-AM

**Brain activation involved in appetite change in schizophrenia patients treated with atypical antipsychotic,** Emmanuel Stip<sup>1,2,3,4</sup>, Adham Mancini-Marie<sup>1,2</sup>, Karyne Anselmo<sup>1</sup>, Genevieve Létourneau<sup>1,2</sup>, Pascal Dellamillieure<sup>3,4</sup>, Adrianna Mendrek<sup>1,2</sup>, Lahcen Ait Bentaleb<sup>1,2</sup>, Olivier Lipp<sup>1,2</sup>, Marie-Claude Delisle<sup>1,2</sup>, Pierre Léouffre<sup>1,2</sup>, Tania Pampoulova<sup>1</sup>, Pierre Lalonde<sup>1,2</sup>, Sonia Dollfus<sup>3,4</sup>, <sup>1</sup>Department of Psychiatry, Centre de Recherche Fernand Seguin, L-H Lafontaine 667 T-AM

*Hospital, University of Montreal, Montreal, Canada, <sup>2</sup>Department of Psychiatry, Faculty of Medicine, University of Montreal, Montreal, Canada, <sup>3</sup>Centre Esquirol, Université de Basse Normandie, CHU Cote de Nacre, Caen, France, <sup>4</sup>Centre Cyceron, Caen, France*

**Use of FDG-PET to Evaluate the Limbic-Pituitary-Adrenal Axis During Estrogen**

**Challenge: A Preliminary Analysis,** *William Ottowitz<sup>1</sup>, Martin Lindquist<sup>2</sup>, Darin Dougherty<sup>3</sup>, Alan Fischman<sup>4</sup>, Janet Hall<sup>5</sup>, <sup>1</sup>GSAS, Columbia University, New York, USA, <sup>2</sup>Dept Statistics, Columbia University, New York, USA, <sup>3</sup>MGH Psychiatric Neuroscience Program, Boston, USA, <sup>4</sup>MGH Dept of Nuclear Medicine, Boston, USA, <sup>5</sup>Reproductive Endocrinology, Boston, USA*

671 T-AM

**Prospective Neurochemical Characterization of Child Offspring of Parents with Bipolar Disorder,** *Manpreet Singh<sup>1</sup>, Kiki Chang<sup>1</sup>, Daniel Spielman<sup>2</sup>, <sup>1</sup>Stanford University School of Medicine, Stanford, USA, <sup>2</sup>Richard Lucas Center for Magnetic Resonance Spectroscopy and Imaging, Stanford, USA*

675 T-AM

**Regional distribution of aerobic glycolysis in the resting human brain,** *S. Neil Vaishnavi, Andrei Vlassenko, Melissa Rundle, Abraham Snyder, Mark Mintun, Marcus Raichle, Dept. Radiology, Washington Univ. School of Medicine, St. Louis, USA*

679 T-AM\*

**BOLD Response in Lateral Geniculate Nucleus (LGN) at Very Short Stimulus Durations,** *Bariş Yeşilyurt<sup>1</sup>, Kamil Uğurbil<sup>1,2</sup>, Kamil Uludağ<sup>1</sup>, <sup>1</sup>Max-Planck-Institute for Biological Cybernetics, High-Field Magnetic Resonance Center, Tübingen, Germany, <sup>2</sup>Center for Magnetic Resonance Research, Department of Radiology, University of Minnesota Medical School, Minneapolis, USA*

683 T-AM

**SENSORY SYSTEMS**

**Multisensory & Crossmodal**

**An electrophysiological study of the development of multisensory facilitation in children.,** *Ayla Barutçu<sup>1</sup>, Hamish Innes-Brown<sup>1</sup>, Mohit N. Shivdasani<sup>1</sup>, Sheila Crewther<sup>2</sup>, Tony G. Paolini<sup>1&2</sup>, <sup>1</sup>Auditory Clinical Neuroscience Unit, The Bionicear Institute, Melbourne, Australia, <sup>2</sup>School of Psychological Sciences, Melbourne, Australia*

687 T-AM

**Sound-induced illusory flashes: issues for a psychophysiological investigation.,** *Hamish Innes-Brown<sup>1,2</sup>, David Crewther<sup>2</sup>, <sup>1</sup>Bionic Ear Institute, Melbourne, Australia, <sup>2</sup>Brain Sciences Institute, Swinburne University, Melbourne, Australia*

691 T-AM

**Neural correlates of sensory feedback loops in reaching,** *Alexandra Reichenbach<sup>1,2</sup>, Jean-Pierre Bresciani<sup>2</sup>, Angelika Peer<sup>3</sup>, Kamil Uludağ<sup>1</sup>, Heinrich Bühlhoff<sup>2</sup>, Axel Thielscher<sup>1</sup>, <sup>1</sup>Max-Planck Institute for Biological Cybernetics, High-Field Magnetic Resonance Center, Tübingen, Germany, <sup>2</sup>Max-Planck Institute for Biological Cybernetics, Dept. for Cognitive and Computational Psychophysics, Tübingen, Germany, <sup>3</sup>Technische Universität München, Institute of Automatic Control Engineering, Munich, Germany*

695 T-AM

**SEGREGATED VISUO-HAPTIC PROCESSING OF TEXTURE AND LOCATION,** *Gregory Gibson<sup>1,2</sup>, Randall Stilla<sup>2</sup>, Krish Sathian<sup>1,2</sup>, <sup>1</sup>Rehabilitation R&D Center of Excellence, Atlanta VAMC, Decatur, USA, <sup>2</sup>Department of Neurology, Emory University, Atlanta, USA*

699 T-AM

**SENSORY SYSTEMS**

**Pain & Autonomic Function**

**Cola-bottle Tonic Pain Test (C-TPT) on EEG Default Mode Spectral Field Power Mapping,** *Andrew CN Chen\*, Liping Song, Li Du, Yanling Luo, Center for Higher Brain Functions, Capital Medical University, Beijing, China*

703 T-AM

**Enhanced functional connectivity of the dorsolateral prefrontal cortex during intermittent pain in patients with Alzheimer's disease,** *Leonie Cole<sup>1,2,3</sup>, Maria Gavrilescu<sup>1</sup>, Stephen Gibson<sup>3,4,5</sup>, Michael Farrell<sup>1,2,3</sup>, Gary Egan<sup>1,2</sup>, <sup>1</sup>Howard Florey Institute, Florey Neurosciences Institute, Parkville, Australia, <sup>2</sup>Centre for Neuroscience, University of Melbourne, Parkville, Australia, <sup>3</sup>National Ageing Research Institute, Parkville, Australia, <sup>4</sup>Department of Medicine, University of Melbourne, Parkville, Australia, <sup>5</sup>Caulfield Pain Management and Research Centre, Caulfield, Australia*

707 T-AM

**Illness Behaviour in Chronic Low Back Pain Patients is Associated with Reduced Insular Cortex Volume**, Sioban Kelly<sup>1,2</sup>, Donna Lloyd<sup>3</sup>, Gordon Findlay<sup>4</sup>, John Downes<sup>2</sup>, Turo Nurmikko<sup>1</sup>, Neil Roberts<sup>5</sup>, <sup>1</sup>Pain Research Institute, Liverpool, United Kingdom, <sup>2</sup>School of Psychology, University of Liverpool, Liverpool, United Kingdom, <sup>3</sup>School of Psychology, University of Manchester, Manchester, United Kingdom, <sup>4</sup>The Walton Centre for Neurology and Neurosurgery, Liverpool, United Kingdom, <sup>5</sup>Magnetic Resonance Image Analysis Research Centre, University of Liverpool, Liverpool, United Kingdom

711 T-AM

**Brain responses to visceral pain – influence of central serotonin signaling**, Jennifer Labus<sup>1</sup>, Michiel van Nieuwenhoven<sup>3</sup>, Shin Fukudo<sup>2</sup>, Emeran Mayer<sup>1</sup>, <sup>1</sup>Center for Neurobiology of Stress, Brain Research Institute, Depts of Psychiatry and Biobehavioral Sciences and Medicine at the University of California, Los Angeles, Los Angeles, USA, <sup>2</sup>Behavioral Medicine, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan, Sendai, Miyagi, Japan, <sup>3</sup>Gastroenterology, University Hospital Maastricht, The Netherlands, Maastricht, Netherlands

715 T-AM\*

**NMDA-antagonist and morphine reduce pain and fMRI-activation of pain areas in CRPS**, Anja Schwarz<sup>2</sup>, Sylvia Gustin<sup>1</sup>, Niels Birbaumer<sup>1</sup>, Nektarius Sini<sup>2</sup>, Ralf Veit<sup>1</sup>, Wolfgang Larbig<sup>1</sup>, Herta Flor<sup>3</sup>, Martin Lotze<sup>4</sup>, <sup>1</sup>Institute of Medical Psychology and Behavioral Neurobiology, Tuebingen, Germany, <sup>2</sup>Traumatology Hospital of the University of Tuebingen, Tuebingen, Germany, <sup>3</sup>Department of Clinical and Cognitive Neuroscience at the University of Heidelberg, Central Institute of Mental Health, Mannheim, Germany, <sup>4</sup>Functional Imaging Institute for Diagnostic Radiology and Neuroradiology, University of Greifswald, Greifswald, Germany

719 T-AM

**Acupuncture Mediated Brain Activity Demonstrated with fMRI at 4 Tesla**, Mark Strudwick<sup>1</sup>, Katie McMahon<sup>1</sup>, Stephen Wilson<sup>2</sup>, Greig DeZubicaray<sup>1</sup>, <sup>1</sup>Centre for Magnetic Resonance, University of Queensland, Brisbane, Australia, <sup>2</sup>School of ITEE, University of Queensland, Brisbane, Australia

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13:45 – 14:45 You Yangs Hall (Level 3)

#### COGNITION & ATTENTION Attention (auditory, tactile, motor)

**The "VP1": an early voice-preferential electrophysiological response**, Ian Charest<sup>1</sup>, Cyril Pernet<sup>2</sup>, Guillaume Rousselet<sup>1</sup>, Sarah Fillion-Bilodeau<sup>3</sup>, Pascal Belin<sup>1,4</sup>, <sup>1</sup>Centre for Cognitive Neuroimaging, Department of Psychology, University of Glasgow, Glasgow, United Kingdom, <sup>2</sup>SFC Brain Imaging Research Center, Department of Clinical Neurosciences, University of Edinburgh, Edinburgh, United Kingdom, <sup>3</sup>Département de Psychologie, Université de Montréal, Montréal, Canada, <sup>4</sup>International Laboratory for Brain, Music and Sound Research, Université de Montréal and McGill University, Montréal, Canada

4 T-PM

**Examining the Pharmacology of Mismatch Negativity: Electrophysiological Investigations in Healthy Subjects**, Sumie Leung<sup>1</sup>, Rodney Croft<sup>1</sup>, Torsten Baldeweg<sup>2</sup>, Barry O'Neill<sup>1</sup>, Pradeep Nathan<sup>3</sup>, <sup>1</sup>Biological Psychiatry Research Unit, Brain Sciences Institute, Faculty of Life and Social Sciences, Swinburne University of Technology, Melbourne, Australia, <sup>2</sup>Institute of Child Health (University College London) and Great Ormond Street Hospital for Children NHS Trust, London, United Kingdom, <sup>3</sup>Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

8 T-PM

**Top-down and bottom-up control of auditory attention: A combined fMRI and probabilistic tractography study**, Juha Salmi<sup>1,2,3</sup>, Teemu Rinne<sup>1</sup>, Sonja Koistinen<sup>1,3</sup>, Tuomas Neuvonen<sup>2,3</sup>, Synnöve Carlson<sup>2,4,5</sup>, Oili Salonen<sup>6</sup>, Kimmo Alho<sup>1</sup>, <sup>1</sup>Department of Psychology, University of Helsinki, Finland, <sup>2</sup>Neuroscience Unit, Institute of Biomedicine/physiology, University of Helsinki, Finland, <sup>3</sup>Advanced Magnetic Imaging Centre, Helsinki University of Technology, Finland, <sup>4</sup>Medical School, University of Tampere, Finland, <sup>5</sup>Brain Research Unit, Helsinki University of Technology, Finland, <sup>6</sup>Helsinki Medical Imaging Center, Helsinki University Central Hospital, Finland

12 T-PM\*

**Schizophrenia-associated deficits of mismatch negativity reflect stimulus presentation and auditory feature with special focus on emotional prosody**, Heike Thoennessen<sup>1</sup>, Mikhail Zvyagintsev<sup>1</sup>, Frank Boers<sup>2</sup>, Juergen Dammers<sup>2</sup>, Christine Norra<sup>3</sup>, Klaus Mathiak<sup>1,4</sup>, <sup>1</sup>Dept. of Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany, <sup>2</sup>Institute of Medicine,

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Research Center Jülich, Juelich, Germany, <sup>3</sup>Max-Planck-Institute of Experimental Medicine, Goettingen, Germany, <sup>4</sup>Institute of Psychiatry King's College London, London, United Kingdom

## COGNITION & ATTENTION

### Attention (visual)

**Right Parietal Cortex and Top-Down Visuospatial Attention: Combined on-line rTMS and fMRI**, Felix Blankenburg<sup>1</sup>, Christian Ruff<sup>2,3</sup>, Sven Bestmann<sup>2</sup>, Oliver Josephs<sup>2</sup>, Ralf Deichmann<sup>4</sup>, Otto Bjoertom<sup>2,3</sup>, Jon Driver<sup>2,3</sup>, <sup>1</sup>Bernstein Center for Computational Neuroscience, Charite, Berlin, Germany, <sup>2</sup>Institute of Cognitive Neuroscience, University College London, London, United Kingdom, <sup>3</sup>Wellcome Trust Centre for Neuroimaging at UCL, Institute of Neurology, London, United Kingdom, <sup>4</sup>University Hospital, Brain Imaging Center, Frankfurt, Germany 20 T-PM\*

**Attentional Modulation of Multisensory Audiovisual Integration during Speech Perception**, Scott Fairhall, Emiliano Macaluso, Santa Lucia Foundation, Rome, Italy 24 T-PM

**Probing the link between sources and targets of attentional control: a concurrent TMS-fMRI study of visuospatial selection**, Klaartje Heinen<sup>1</sup>, Christian Ruff<sup>1</sup>, Sven Bestmann<sup>2</sup>, Bertram Schenkluhn<sup>1</sup>, Felix Blankenburg<sup>3</sup>, Otto Bjoertom<sup>1</sup>, Vincent Walsh<sup>1</sup>, Jon Driver<sup>1</sup>, Chris Chambers<sup>1</sup>, <sup>1</sup>Institute of Cognitive Neuroscience, UCL, London, United Kingdom, <sup>2</sup>Wellcome Trust Centre for Neuroimaging, London, United Kingdom, <sup>3</sup>Department of Neurology and Neuroscience Research Center, Charité, Berlin, Germany 28 T-PM

**Brain responses to direct gaze: An optical topography study**, Yuko Isogaya<sup>1</sup>, Akiko Obata<sup>2</sup>, Hiroki Sato<sup>2</sup>, Atsushi Maki<sup>2</sup>, Takao Sato<sup>1</sup>, Norito Kawakami<sup>1</sup>, <sup>1</sup>The University of Tokyo, Tokyo, Japan, <sup>2</sup>Advanced Research Laboratory, Hitachi, Ltd, Saitama, Japan 32 T-PM

**EFFECTS OF TRANSCRANIAL ANODAL DIRECT CURRENT STIMULATION OVER THE RIGHT PARIETAL CORTEX ON UNILATERAL NEGLECT IN STROKE PATIENTS**, Myoung-Hwan Ko<sup>1</sup>, Sang-Hyoung Han<sup>1</sup>, Jeong-Hwan Seo<sup>1</sup>, Yun-Hee Kim<sup>2</sup>, <sup>1</sup>Chonbuk National University Medical School & Hospital, Jeonju, South Korea, <sup>2</sup>Sungkyunkwan University School of Medicine, Samsung Medical Center, Seoul, South Korea 36 T-PM

**Selective guidance of attention by items in working memory: converging fMRI and ERP results**, Judith Peters<sup>1,2</sup>, Pieter Roelfsema<sup>3,4</sup>, Rainer Goebel<sup>1,2</sup>, <sup>1</sup>Cognitive Neuroscience Dept, Faculty of Psychology, Maastricht University, Maastricht, Netherlands, <sup>2</sup>Brain Imaging Center (M-BIC), Maastricht University, Maastricht, Netherlands, <sup>3</sup>Department of Vision and Cognition, Netherlands Institute for Neuroscience, an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW), Amsterdam, Netherlands, <sup>4</sup>Department of Experimental Neurophysiology, Center for Neurogenomics and Cognitive Research, Vrije Universiteit, Amsterdam, Netherlands 40 T-PM\*

**Working Memory Consolidation Delays Perceptual Processing in Visual Cortex: A Time-Resolved fMRI Study**, Paige Scalfl<sup>1</sup>, Paul Dux<sup>2</sup>, Rene' Marois<sup>2</sup>, <sup>1</sup>Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, USA, <sup>2</sup>Department of Psychology, Vanderbilt Vision Research Center, Center for Integrative and Cognitive Neuroscience, Vanderbilt University, Nashville, USA 44 T-PM

**Lapses in attention during sleep deprivation: more than meets the eye**, Michael WL Chee<sup>1</sup>, Jiat Chow Tan<sup>1</sup>, Hui Zheng<sup>1</sup>, Parimal Sarayu<sup>1</sup>, Weismann H Daniel<sup>2</sup>, Zagorodnov Vitali<sup>3</sup>, David F Dinges<sup>4</sup>, <sup>1</sup>Cognitive Neuroscience Laboratory, Duke-NUS Graduate Medical School, Singapore, Singapore, <sup>2</sup>Department of Psychology, University of Michigan, Michigan, USA, <sup>3</sup>School of Computer Engineering, Nanyang Technological University, Singapore, Singapore, <sup>4</sup>Unit for Experimental Psychiatry, niversity of Pennsylvania School of Medicine, Pennsylvania, USA 48 T-PM\*

## COGNITION & ATTENTION

### Cognitive Aging

**Structural consequences of chronic insomnia: a voxel-based morphometric study**, Ellemarije Altena<sup>1,2</sup>, Hugo Vrenken<sup>2</sup>, Ysbrand Van der Werf<sup>1,2</sup>, Eus Van Someren<sup>1,2</sup>, <sup>1</sup>Netherlands Institute for Neuroscience, Amsterdam, Netherlands, <sup>2</sup>VU University Medical Center, Amsterdam, Netherlands 52 T-PM

**Age-Related Neural Inefficiency and Compensation Across Multiple Cognitive Domains**, Cheryl Grady, Andrea Protzner, Magda Wojtowicz, Darryl Bannon, Randy McIntosh, Rotman Research Institute, Toronto, Canada 56 T-PM



- Cognitive training impacts functional brain activity and cerebral blood flow of healthy older adults in a randomized controlled trial,** *Jennifer Mozolic<sup>1,2</sup>, Ashley Morgan<sup>1</sup>, Paul Laurienti<sup>1</sup>,  
<sup>1</sup>Department of Radiology, Wake Forest University School of Medicine, Winston-Salem, USA, 60 T-PM  
<sup>2</sup>Graduate Program in Neuroscience, Wake Forest University School of Medicine, Winston-Salem, USA*

## COGNITION & ATTENTION

### Cognitive Development

- The development of white matter tracts and response inhibition examined using diffusion tensor imaging,** *Jessica Cohen<sup>1</sup>, Fred Sabb<sup>2</sup>, Robert Bilder<sup>1,2</sup>, Susan Bookheimer<sup>2,3,4,5</sup>, Barbara Knowlton<sup>1,3,4</sup>, Robert Asarnow<sup>2</sup>, Russell Poldrack<sup>1,3,4</sup>,  
<sup>1</sup>UCLA Department of Psychology, Los Angeles, USA, <sup>2</sup>UCLA Department of Psychiatry, Los Angeles, USA, <sup>3</sup>UCLA Brain Research Institute, Los Angeles, USA, <sup>4</sup>UCLA Interdepartmental Neuroscience Program, Los Angeles, USA, <sup>5</sup>UCLA Brain Mapping Center, Los Angeles, USA* 64 T-PM

- Early Development of Cortical Brain Responses to Rapidly Presented Auditory Stimulation: a Magnetoencephalographic Study,** *Carolin Sheridan<sup>1,2</sup>, Rossitza Draganova<sup>3</sup>, Hubert Preissl<sup>1,2</sup>, Eric Siegel<sup>1</sup>, Rathinaswamy Govindan<sup>1</sup>, Hari Eswaran<sup>1</sup>, Curtis Lowery<sup>1</sup>,  
<sup>1</sup>University of Arkansas for Medical Sciences, Little Rock, USA, <sup>2</sup>University of Tuebingen, Tuebingen, Germany, <sup>3</sup>University of Muenster, Muenster, Germany* 68 T-PM

- Development of Default Mode and Task Positive Network Integrity and Interactions from Childhood to Young Adulthood,** *AM Clare Kelly<sup>1</sup>, Lucina Uddin<sup>1</sup>, Zarrar Shezad<sup>1</sup>, Dylan Gee<sup>1</sup>, Daniel Margulies<sup>1,2</sup>, Adriana Di Martino<sup>1</sup>, F Xavier Castellanos<sup>1</sup>, Michael Milham<sup>1</sup>,  
<sup>1</sup>Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Child Study Center, New York, USA, <sup>2</sup>Berlin School of Mind and Brain, Humboldt-Universität zu Berlin, Berlin, Germany* 72 T-PM

- Basal Perfusion in Adolescents at Risk for Alcohol Use Disorders,** *Ai-Ling Lin<sup>1</sup>, David Glahn<sup>1</sup>, Rene Olvera<sup>2</sup>, Peter Fox<sup>1</sup>, Ahmad Hariri<sup>3</sup>, Douglas Williamson<sup>4</sup>,  
<sup>1</sup>Research Imaging Center, University of Texas Health Science Center, San Antonio, USA, <sup>2</sup>Department of Psychiatry, University of Texas Health Science Center, San Antonio, USA, <sup>3</sup>Department of Psychiatry, University of Pittsburgh, Pittsburgh, USA, <sup>4</sup>Department of Psychiatry, Epidemiology and Biostatistics, University of Texas Health Science Center, San Antonio, USA* 76 T-PM

- Emotion, cognition and its interaction in adolescent-onset schizophrenia: an fMRI study,** *Katharina Pauly<sup>1</sup>, Nina Seifert<sup>1</sup>, Thilo Kellermann<sup>1</sup>, Timo Vloet<sup>2,3,4</sup>, N. Jon Shah<sup>3,4,5</sup>, Frank Schneider<sup>1,3,4</sup>, Ute Habel<sup>1</sup>, Tilo Kircher<sup>1,3,4</sup>,  
<sup>1</sup>Department of Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany, <sup>2</sup>Department of Child and Adolescent Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany, <sup>3</sup>Brain Imaging Center West, Juelich, Germany, <sup>4</sup>Institute of Neuroscience and Biophysics – Medicine, Research Center Juelich, Juelich, Germany, <sup>5</sup>Institute of Physics, University of Dortmund, Dortmund, Germany* 80 T-PM

## COGNITION & ATTENTION

### Perception, Imagery, Awareness

- Components in Continuous Meditation. An fMRI Investigation,** *Klaus B. Børers<sup>1,2</sup>, Bo Sommerlund<sup>1</sup>, Johannes Damsgaard-Madsen<sup>1,2</sup>, Mark Fosnaes<sup>1</sup>, Pernille Bruhn<sup>1,2</sup>, Hans Stødkilde-Jørgensen<sup>2</sup>,  
<sup>1</sup>Department of Psychology, University of Aarhus, Aarhus, Denmark, <sup>2</sup>MR Research Center, Aarhus University Hospital, Aarhus, Denmark* 84 T-PM

- Resting state connectivity integrity in the default network reflects the level of consciousness impairment in brain-injured patients. An fMRI study in brain death, coma, vegetative state, minimally conscious state and locked-in syndrome,** *Melanie Boly<sup>1,2</sup>, Audrey Vanhauwenhuyse<sup>1</sup>, Luaba Tshibanda<sup>3</sup>, Marie-Aurelie Bruno<sup>1</sup>, Pierre Boveroux<sup>1,4</sup>, Quentin Noirhomme<sup>1</sup>, Caroline Schnakers<sup>1</sup>, Athena Demertzi<sup>1</sup>, Didier Ledoux<sup>1,4</sup>, Bernard Lambermont<sup>5</sup>, Gustave Moonen<sup>2</sup>, Robert-Ferninand Dondelinger<sup>3</sup>, Christophe Phillips<sup>1</sup>, Pierre Maquet<sup>1,2</sup>, Steven Laureys<sup>1,2</sup>,  
<sup>1</sup>Coma Science Group, Cyclotron Research Center, University of Liège, Liège, Belgium, <sup>2</sup>Neurology Department, CHU Sart Tilman Hospital, University of Liège, Liège, Belgium, <sup>3</sup>Radiology Department, CHU Sart Tilman Hospital, University of Liège, Liège, Belgium, <sup>4</sup>Anesthesiology Department, CHU Sart Tilman Hospital, University of Liège, Liège, Belgium, <sup>5</sup>Internal Medicine Department, CHU Sart Tilman Hospital, University of Liège, Liège,* 88 T-PM\*

- Segregating parietal areas related to number processing and response times**, *Marinella Cappelletti<sup>1</sup>, Hwee-Ling Lee<sup>2</sup>, Elliot Freeman<sup>1</sup>, Cathy Price<sup>2</sup>*, <sup>1</sup>*Institute of Cognitive Neuroscience, London, United Kingdom*, <sup>2</sup>*Wellcome Trust Centre for Neuroimaging, London, United Kingdom* 92 T-PM
- Neuromagnetic correlates of mental rotation of hands**, *Lincoln J. Colling, Blake Johnson*, *Macquarie Centre for Cognitive Science, Macquarie University, Sydney, Australia* 96 T-PM
- Different cues to the beat during auditory sequence perception modulate motor area activity: an fMRI investigation of musicians and non-musicians**, *Jessica Grahm, James Rowe*, *Medical Research Council, Cognition and Brain Sciences Unit, Cambridge, United Kingdom* 100 T-PM
- A Repetition Suppression Study of the Visual Processing of Gait and Configuration from Biological Motion**, *Ashley Hamlin, James Thompson*, *George Mason University, Fairfax, USA* 104 T-PM
- Simultaneous recording of fNIRS and SCR improves lie detection accuracy**, *Toyoharu Hosokawa<sup>1</sup>, Koji Kazai<sup>1</sup>, Akihiro Yagi<sup>2</sup>, Haruhiro Katayose<sup>1</sup>*, <sup>1</sup>*Kwansei Gakuin University, Sanda, Japan*, <sup>2</sup>*Kwansei Gakuin University, Nishinomiya, Japan* 108 T-PM
- Complexity-dependent changes of the spontaneous brain activities in the parietal cortices during mental arithmetic**, *Sunao Iwaki, Hiroko Kou-Shimazaki*, *Natl. Inst. Adv. Indust. Sci. & Tech (AIST), Ikeda, Japan* 112 T-PM

### COGNITION & ATTENTION Reasoning & Problem Solving

- REGIONAL DOPAMINE D2 RECEPTOR DENSITY AND INDIVIDUAL DIFFERENCES IN PSYCHOMETRIC CREATIVITY**, *Örjan Blom<sup>1,3</sup>, Simon Červenka<sup>2,3</sup>, Anke Karabanov<sup>1,3</sup>, Hans Forsberg<sup>1,3</sup>, Lars Farde<sup>2,3</sup>, Fredrik Ullén<sup>1,3</sup>*, <sup>1</sup>*Department of Woman and Child Health, Division for Neuropediatrics, Karolinska Institutet, Karolinska University Hospital, Stockholm, Sweden*, <sup>2</sup>*Department of Clinical Neuroscience, Psychiatry Section, Karolinska Institutet, Karolinska University Hospital, Stockholm, Sweden*, <sup>3</sup>*Stockholm Brain Institute, Stockholm, Sweden* 116 T-PM
- Dissociable contributions of ventrolateral prefrontal and frontopolar cortex sub-regions during analogical reasoning**, *Adam Hampshire, John Duncan, Adrian Owen*, *MRC Cognition & Brain Sciences Unit, Cambridge, United Kingdom* 120 T-PM
- Parietal deactivation in major depressive disorder during cognitive performance: a functional magnetic resonance imaging study**, *Adham Mancini-Marie<sup>1,2</sup>, Emmanuel Stip<sup>1,2</sup>, Stephane Potvin<sup>1,2</sup>, Boualem Mensour<sup>4</sup>, Jean-Maxime Leroux<sup>4</sup>, Gilles Beaudouin<sup>4</sup>, Cherine Fahim<sup>1,2,3</sup>, Mario Beauregard<sup>4,5</sup>*, <sup>1</sup>*Department of Psychiatry, Centre de Recherche Fernand Seguin, L-H Lafontaine Hospital, University of Montreal, Montreal, Canada*, <sup>2</sup>*Department of Psychiatry, Faculty of Medicine, University of Montreal, Montreal, Canada*, <sup>3</sup>*Department of Neurology and Neurosurgery, McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Canada*, <sup>4</sup>*Department of Radiology, Centre Hospitalier de l'Université de Montréal (CHUM), Notre Dame Hospital, University of Montreal, Montreal, Canada*, <sup>5</sup>*Department of Psychology, University of Montreal, Montreal, Canada* 124 T-PM

### COGNITION & ATTENTION Space, Time, & Number Coding

- Conceptual but not perceptual number processing is affected by TMS to the parietal lobe**, *Marinella Cappelletti, Neil Muggleton, Vincent Walsh*, *University college London, London, United Kingdom* 128 T-PM
- Orienting Attention to Numbers: Involvement of Frontal Lobes**, *Elena Rusconi<sup>1</sup>, Domenica Bueti<sup>2</sup>, Marianna Riello<sup>3</sup>, Vincent Walsh<sup>4</sup>, Brian Butterworth<sup>5</sup>*, <sup>1</sup>*CIMEC Center of Mind Brain Science, Italy*, <sup>2</sup>*ICN, United Kingdom*, <sup>3</sup>*CIMEC, Italy*, <sup>4</sup>*ICN, United Kingdom*, <sup>5</sup>*ICN, United Kingdom* 132 T-PM

### DISORDERS OF THE NERVOUS SYSTEM Alzheimer & Dementia

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- Cunnington<sup>4</sup>, Gary Egan<sup>1</sup>, <sup>1</sup>Howard Florey Institute, University of Melbourne, Melbourne, Australia, <sup>2</sup>Experimental Neuropsychology Research Unit, School of Psychology, Psychiatry and Psychological Medicine, Monash University, Melbourne, Australia, <sup>3</sup>Alzheimer's Australia, Melbourne, Australia, <sup>4</sup>Cognitive Neuroscience Laboratory, The Queensland Brain Institute, Brisbane, Australia
- Amyloid deposition related to cortical thinning**, J. Alex Becker<sup>1</sup>, Jeremy Carmasin<sup>1</sup>, Bruce Fischl<sup>1</sup>, Doug Greve<sup>1</sup>, Amy DeLuca<sup>1</sup>, Pete LaViolette<sup>1</sup>, Jacqueline O'Brien<sup>1</sup>, Kelly O'Keefe<sup>1</sup>, Alan Fischman<sup>1</sup>, Dorene Rentz<sup>2</sup>, Reisa Sperling<sup>1,2</sup>, Keith Johnson<sup>1,2</sup>, <sup>1</sup>Massachusetts General Hospital, Boston, USA, <sup>2</sup>Brigham and Women's Hospital, Boston, USA 140 T-PM
- Reduced resting state activity in dorsal visual-spatial attention system in Alzheimer's disease**, Jessica Damoiseaux<sup>1</sup>, Christian Beckmann<sup>2</sup>, Ernesto Sanz Arigita<sup>1</sup>, Cornelis Stam<sup>1</sup>, Frederik Barkhof<sup>1</sup>, Stephen Smith<sup>2</sup>, Philip Scheltens<sup>1</sup>, Serge Rombouts<sup>3</sup>, <sup>1</sup>VU University Medical Center, Amsterdam, Netherlands, <sup>2</sup>Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, United Kingdom, <sup>3</sup>Leiden Institute for Brain and Cognition (LIBC), Leiden University Medical Center, Institute for Psychological Research, Leiden University, Leiden, Netherlands 144 T-PM
- Cholinergic dysfunction in subcortical ischemic vascular dementia: a transcranial magnetic stimulation study**, Stefan Golaszewski<sup>1,3</sup>, Raffaele Nardone<sup>2</sup>, Juergen Bergmann<sup>1,7</sup>, Christian Siedentopf<sup>3,4</sup>, Florian Koppelstaetter<sup>3,4</sup>, Eugen Gallasch<sup>6</sup>, Anja Ischebeck<sup>5</sup>, Gunther Ladurner<sup>1</sup>, <sup>1</sup>Department of Neurology, Paracelsus Medical University Salzburg, Salzburg, Austria, <sup>2</sup>Department of Neurology, F. Tappeiner Hospital Meran, Meran, Italy, <sup>3</sup>fMRI Lab, Department of Psychiatry, Medical University Innsbruck, Innsbruck, Austria, <sup>4</sup>Department of Radiology, Medical University Innsbruck, Innsbruck, Austria, <sup>5</sup>Department of Neurology, Medical University Innsbruck, Innsbruck, Austria, <sup>6</sup>Institute of Physiology, Medical University Graz, Graz, Austria, <sup>7</sup>Institute of Psychology, University of Salzburg, Salzburg, Austria 148 T-PM
- Correlation between "Ala score" and CBF in Alzheimer's disease -A SPECT study**, Takashi Kawachi<sup>1</sup>, Hiroyasu Kusakabe<sup>3</sup>, Haruhiko Oda<sup>2</sup>, Yasuji Yamamoto<sup>2</sup>, Toshio Kawamata<sup>2</sup>, Kiyoshi Maeda<sup>2</sup>, <sup>1</sup>IBRI, Kobe, Japan, <sup>2</sup>Kobe university, Kobe, Japan, <sup>3</sup>Ohara Hospital, Kobe, Japan 152 T-PM
- Correlation between findings of rCBF and <sup>1</sup>H-MRS in posterior cingulate gyrus for the patients with memory impairment**, Takashi Nihashi<sup>1</sup>, Kazumasa Hayasaka<sup>2</sup>, Yutaka Arahata<sup>3</sup>, Katsushige Iwai<sup>3</sup>, Akinori Takeda<sup>3</sup>, Yoshiko Yamaoka<sup>3</sup>, Youko Konagaya<sup>3</sup>, Yukihiko Washimi<sup>3</sup>, Kenji Yoshiyama<sup>4</sup>, Hideyuki Hattori<sup>4</sup>, Shousuke Satake<sup>5</sup>, Hisayuki Miura<sup>5</sup>, Hidetoshi Endo<sup>5</sup>, Hiroshi Yatsuya<sup>6</sup>, Shinji Naganawa<sup>1</sup>, <sup>1</sup>Department of Radiology, Nagoya University Graduate School of Medicine, Nagoya, Japan, <sup>2</sup>Department of Radiology, National Hospital for Geriatric Medicine, Obu, Japan, <sup>3</sup>Department of Neurology, National Hospital for Geriatric Medicine, Obu, Japan, <sup>4</sup>Department of Psychiatry, National Hospital for Geriatric Medicine, Obu, Japan, <sup>5</sup>Department of General Outpatient services, National Hospital for Geriatric Medicine, Obu, Japan, <sup>6</sup>Department of Public Health, Nagoya University School of Medicine, Nagoya, Japan 156 T-PM
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- Regional thalamic degeneration in Alzheimer's disease characterised by structural vertex- and diffusion tractography-based analyses**, Brian Patenaude<sup>1</sup>, Mark Jenkinson<sup>1</sup>, Jeske Damoiseaux<sup>2</sup>, Steve Smith<sup>1</sup>, Paul Matthews<sup>1</sup>, Frederik Barkhof<sup>2</sup>, Serge Rombouts<sup>3</sup>, Ernesto Sanz-Arigita<sup>2</sup>, Mojtaba Zarei<sup>1</sup>, <sup>1</sup>Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Oxford, United Kingdom, <sup>2</sup>VU University Medical Center, Amsterdam, Netherlands, <sup>3</sup>Leiden Institute for Brain and Cognition, Leiden, Netherlands 164 T-PM\*

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- Correlation between fractional anisotropy and cerebral measurements of gray and white matter substances in late-life depression**, Diana M Bezerra<sup>1</sup>, Marco A A Moscoso<sup>1</sup>, Salma R I Ribeiz<sup>1</sup>, Renata Ávila<sup>1</sup>, Fábio L S Duran<sup>2</sup>, Geraldo F Busatto<sup>2</sup>, Rodrigo Batistelo<sup>3</sup>, Marcel P Jackowski<sup>3</sup>, Cássio M C Bottino<sup>1</sup>, <sup>1</sup>Old Age Research Group (PROTER), Department and Institute 168 T-PM

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**Effects of Cholinergic Inhibition in Major Depressive Disorder on Interactions between Attention and Emotional Processing in the Amygdala**, Maura Furey, Julie frost-Bellgowen, Ashish Khanna, Mark Opal, Wayne Drevets, Mood and Anxiety Disorders Program, NIMH, NIH, Bethesda, USA 172 T-PM

**Widely Spread Cortical Morphology Abnormalities in Major Depressive Disorder**, Lei Lin<sup>1,3</sup>, Chunshui Yu<sup>2</sup>, Yuan Zhou<sup>1</sup>, Feng Shi<sup>1</sup>, Kuncheng Li<sup>2</sup>, Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, <sup>3</sup>Department of Mathematics, Zhejiang University, Hangzhou, China 176 T-PM

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**Patterns of fractional anisotropy changes in white matter of cerebellar peduncles sensitive for distinguishing cerebellar diseases**, Neal Prakash<sup>1,2</sup>, Nathan Hageman<sup>2</sup>, Xue Hua<sup>2</sup>, Arthur Toga<sup>2</sup>, Susan Perlman<sup>2</sup>, Noriko Salamon<sup>3</sup>, <sup>1</sup>Kaiser Hawaii, Honolulu, USA, <sup>2</sup>UCLA, Neurology, Los Angeles, USA, <sup>3</sup>UCLA, Radiology, Los Angeles, USA 196 T-PM

**Mean-Field Modelling of Parkinsonian Tremor**, Sacha van Albada<sup>1,2</sup>, Peter Robinson<sup>1,2,3</sup>, <sup>1</sup>School of Physics, University of Sydney, Sydney, Australia, <sup>2</sup>The Brain Dynamics Centre, Westmead Millennium Institute, Westmead Hospital and Western Clinical School of the University of Sydney, Westmead, Australia, <sup>3</sup>Faculty of Medicine, University of Sydney, Sydney, Australia 200 T-PM

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**Mechanism of Nicotinic Enhancement of Visual Attention in Schizophrenia**, L. Elliot Hong<sup>1</sup>, Thomas Ross<sup>2</sup>, Betty Jo Salmeron<sup>2</sup>, Gunvant Thaker<sup>1</sup>, Elliot Stein<sup>2</sup>, <sup>1</sup>Maryland Psychiatric Research Center, Department of Psychiatry, University of Maryland School of Medicine, Baltimore, USA, <sup>2</sup>Neuroimaging Research Branch, National Institute on Drug Abuse, NIH, Baltimore, USA 212 T-PM

**Brain regions associated with presence in the virtual environment: Comparison between patients with schizophrenia and healthy controls**, Soo Hee Choi<sup>1</sup>, Jae-Jin Kim<sup>1,2</sup>, Jeonghun Ku<sup>2,3</sup>, So Young Kim<sup>2</sup>, Hyeong Rae Lee<sup>3</sup>, Il Ho Park<sup>1,2</sup>, Kang-Jun Yoon<sup>4</sup>, Sun I. Kim<sup>3</sup>, <sup>1</sup>Department of Psychiatry, Yonsei University College of Medicine, Seoul, South Korea, <sup>2</sup>Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Gwangju, South Korea, <sup>3</sup>Department of Biomedical Engineering, Hanyang University, Seoul, South Korea 216 T-PM

**Decreased Information Transmission Efficiency in Schizophrenia**, Yong Liu<sup>1</sup>, Yuan Zhou<sup>1</sup>, Ming Song<sup>1</sup>, Yihui Hao<sup>2</sup>, Haihong Liu<sup>2</sup>, Zhening Liu<sup>2</sup>, Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Institute of Mental Health, Second Xiangya Hospital, Central South University, Changsha, China 220 T-PM\*

**Dysbindin is Associated with Imaging Phenotypes in Schizophrenia**, Katherine L Narr<sup>1</sup>, Philip R Szeszko<sup>2</sup>, Todd Lencz<sup>2</sup>, Roger P Woods<sup>1</sup>, Liberty S Hamilton<sup>1</sup>, Owen Phillips<sup>1</sup>, Delbert G Robinson<sup>2</sup>, Katherine E Burdick<sup>2</sup>, Pamela DeRosse<sup>2</sup>, Raju Kucherlapati<sup>3</sup>, Paul M Thompson<sup>1</sup>, Arthur W Toga<sup>2</sup>, Anil K Malhotra<sup>2</sup>, Robert M Bilder<sup>1</sup>, <sup>1</sup>Departments of Neurology and Psychiatry, David Geffen School of Medicine, University of California at Los Angeles, USA, <sup>2</sup>Division of Psychiatry Research, The Zucker Hillside Hospital, North Shore-Long Island Jewish Health System, USA, <sup>3</sup>Harvard Medical School-Partners Healthcare Center for Genetics and Genomics, Cambridge, USA 224 T-PM

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**Comparison of Cerebral Activation during Verbal and Monetary Reward: Individual Differences in Achievement Goal**, Eunsoo Cho, Yoonkyung Chung, Eun Mo Yeon, Hun Jeon, Soonkoo Kwon, Sung-il Kim, Korea University, Seoul, Korea 232 T-PM

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**Smoking or eating? Neuronal mechanisms underlying nicotine's effect on eating behavior**, Michael N. Smolka<sup>1</sup>, Lena Krebs<sup>2</sup>, Oliver Grimm<sup>2</sup>, Andrea Kobiella<sup>2</sup>, Sabine Klein<sup>2</sup>, <sup>1</sup>Section of Systems Neuroscience, Department of Psychiatry and Psychotherapy, Technische Universität Dresden, Dresden, Germany, <sup>2</sup>Department of Addictive Behavior and Addiction Medicine, Central Institute of Mental Health, Mannheim, Germany 244 T-PM

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- Genetic influences over cortical gyrification. An across species comparison of heritability of gyrification index in extended pedigrees of baboons and humans**, Peter Kochunov<sup>1</sup>, David Glahn<sup>1</sup>, Peter Fox<sup>1</sup>, Karl Zilles<sup>2</sup>, Wendy Shelledy<sup>3</sup>, Jack Lancaster<sup>1</sup>, John Blangero<sup>3</sup>, Jeff Rogers<sup>3</sup>, <sup>1</sup>The University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>Institut für Medizin (IME), Jülich, USA, <sup>3</sup>Southwest Foundation for Biological Research and Education (SFBR), San Antonio, TX, San Antonio, Germany 280 T-PM\*
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- Multiple influences of the androgen receptor polyglutamine polymorphism on the healthy human brain**, Geoffrey CY Tan<sup>1,2</sup>, Weiguang Christopher Ho<sup>3</sup>, Ese E Mudanohwo<sup>4</sup>, Chia-Yeh Carlton Chu<sup>1</sup>, John Ashburner<sup>1</sup>, Nina Somal<sup>5</sup>, Henrietta Gordon<sup>6</sup>, Mary Davis<sup>4</sup>, Nicholas W Wood<sup>2,4</sup>, Richard SJ Frackowiak<sup>1,7</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom, <sup>2</sup>Dept of Molecular Neuroscience, Institute of Neurology, UCL, London, United Kingdom, <sup>3</sup>Imperial College Medical School, London, United Kingdom, <sup>4</sup>Neurogenetic Laboratory, Institute of Neurology, UCL, London, United Kingdom, <sup>5</sup>Psychology Department, Goldsmiths College, London, United Kingdom, <sup>6</sup>Dept of Anatomy, London, United Kingdom, <sup>7</sup>Ecole Normale Supérieure, Paris, United Kingdom 288 T-PM

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**Temporal Response and Spatial Specificity in Passband SSFP fMRI**, Taek S. Kim<sup>1</sup>, Jongho Lee<sup>2</sup>, Gary H. Glover<sup>3</sup>, John M. Pauly<sup>1</sup>, <sup>1</sup>Electrical Engineering, Stanford University, Stanford, USA, <sup>2</sup>Advanced MRI/LFMI/NINDS, National Institute of Health, Bethesda, USA, <sup>3</sup>Radiology, Stanford University, Stanford, USA 320 T-PM

**Imaging of autonomic activity in forebrain white matter**, C. Leith<sup>1</sup>, J. Rosengarten<sup>2,3</sup>, M. Rosengarten<sup>2</sup>, S. Ouyang<sup>4</sup>, H. Sun<sup>1</sup>, <sup>1</sup>Neurodynamics Research Institute, Chicago, USA, <sup>2</sup>Global Medical Imaging, Libertyville, USA, <sup>3</sup>Rosalind Franklin University School of Medicine, North Chicago, USA, <sup>4</sup>University of California, Los Angeles, USA 324 T-PM

**Task-Free Pre-Surgical Mapping Using fMRI Intrinsic Activity**, Hesheng Liu<sup>1</sup>, Randy Buckner<sup>1,2,3</sup>, Tanveer Talukdar<sup>1</sup>, Naoro Tanaka<sup>1</sup>, Joseph Madsen<sup>4</sup>, Steven Stufflebeam<sup>1</sup>, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, USA, <sup>2</sup>Harvard University Department of Psychology, Center for Brain Science, Boston, USA, <sup>3</sup>Howard Hughes Medical Institute, Chevy Chase, USA, <sup>4</sup>Children's Hospital Boston, Boston, USA 328 T-PM

**Pharmacological fMRI study in Over Active Bladder (OAB) patients**, Feroze Mohamed, Shweta Moonat, Steve Lebovitch, Brett Lebed, Scott Faro, Michael Pontari, Temple University, Philadelphia, USA 332 T-PM

**fMRI results differ between display devices in visual oddball task**, Eini Niskanen<sup>1,2,3</sup>, Perttu Ranta-aho<sup>1</sup>, Mika Tarvainen<sup>1</sup>, Mervi Könönen<sup>2,4</sup>, Pasi Karjalainen<sup>1</sup>, <sup>1</sup>Department of Physics, University of Kuopio, Kuopio, Finland, <sup>2</sup>Department of Clinical Neurophysiology, Kuopio University Hospital, Kuopio, Finland, <sup>3</sup>Department of Neurology, Kuopio University Hospital, Kuopio, Finland, <sup>4</sup>Department of Radiology, Kuopio University Hospital, Kuopio, Finland 336 T-PM

**fMRI in Patients with Lumbar Radiculopathy**, Harish Sharma<sup>1</sup>, Raj Gupta<sup>2</sup>, Bill Olivero<sup>3</sup>, <sup>1</sup>University of Illinois at Urbana-Champaign, Urbana, USA, <sup>2</sup>University of Illinois college of Medicine, Urbana, USA, <sup>3</sup>Carle foundation Hospital, Urbana, USA 340 T-PM

**Reducing variability due to subject positioning in longitudinal structural and functional MRI studies**, Adam Thomas<sup>1</sup>, Sandeep Gupta<sup>2</sup>, Peter Bandettini<sup>1</sup>, Sean Marrett<sup>1</sup>, <sup>1</sup>Function MRI Facility, Bethesda, USA, <sup>2</sup>GE Global Research Center, Niskayuna, USA 344 T-PM

**Improved Event-Related Experimental Design when Stimuli have Undefined Event Types**, Andrew Vahabzadeh-Hagh<sup>1</sup>, Julie Yoo<sup>2</sup>, Oliver Hinds<sup>2</sup>, John Gabrieli<sup>1,2,3</sup>, <sup>1</sup>Harvard-MIT Division of Health Sciences and Technology, Cambridge, USA, <sup>2</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA, <sup>3</sup>Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA 348 T-PM

**Direct measurement of neuronal magnetic field changes evoked by median nerve stimulation using MRI: Magnitude or Phase?**, Yiqun Xue<sup>1,2</sup>, Thomas Grabowski<sup>3</sup>, Jinhu Xiong<sup>2</sup>, <sup>1</sup>Biomedical Engineering, University of Iowa, Iowa city, USA, <sup>2</sup>Radiology, University of Iowa, Iowa city, USA, <sup>3</sup>Neurology, University of Iowa, Iowa city, USA 352 T-PM

**Gender Difference in Default Networks Detected by BOLD-based fMRI at 3T**, Tzu-Chen Yeh<sup>1,2</sup>, Sue-Jin Lin<sup>2</sup>, Wen-Jui Kuo<sup>1,2</sup>, Chou-Ming Cheng<sup>1</sup>, Jen-Chuen Hsieh<sup>1,3</sup>, Low-Ton Ho<sup>1</sup>, <sup>1</sup>Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan, <sup>2</sup>Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Center for Neuroscience, National Yang-Ming University, Taipei, Taiwan 356 T-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### MEG

**Experimental calculation of magnetic lead fields using MEG simultaneously acquired with intracranial EEG**, Sarang Dalal<sup>1</sup>, Karim Jerbi<sup>1,2</sup>, Olivier Bertrand<sup>1</sup>, Line Garnero<sup>2</sup>, Sylvain Baillet<sup>2</sup>, Jacques Martinerie<sup>2</sup>, Jean-Philippe Lachaux<sup>1</sup>, <sup>1</sup>INSERM U821, Lyon, France, <sup>2</sup>CNRS UPR640-LENA, Paris, France 360 T-PM

## LANGUAGE

### Language Acquisition

**Functional Development and Structural Maturation of Language Areas in the Human Brain**, Jens Brauer, Alfred Anwander, Angela Friederici, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany 364 T-PM

**FRONTOSTRIATAL CIRCUITRY IN ARTIFICIAL SYNTACTIC CLASSIFICATION: AN FMRI INVESTIGATION IN HUNTINGTON'S DISEASE**, Christian Forkstam<sup>1,2</sup>, Marieke Dekkers<sup>2,3</sup>, Nicol Voermans<sup>2,3</sup>, Berry Kremer<sup>3</sup>, Guillen Fernández<sup>2,3</sup>, Karl Magnus Petersson<sup>1,2,4</sup>, <sup>1</sup>Cognitive Neurophysiology Research Group, Stockholm Brain Institute, Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden, <sup>2</sup>F. C. Donders Centre for Cognitive Neuroimaging, Radboud University Nijmegen, Nijmegen, Netherlands, <sup>3</sup>Department of Neurology, University Medical Center Nijmegen, Nijmegen, Netherlands, <sup>4</sup>Centre for Intelligent Systems, University of Algarve, Faro, Portugal 368 T-PM\*

**Extensive metabolic connectivity predicts the ability of speech language acquisition after cochlear implantation in prelingual deaf children**, Hyejin Kang<sup>1,2</sup>, Heejung Kim<sup>2</sup>, Eunjoo Kang<sup>4</sup>, Jae Sung Lee<sup>2</sup>, Hyo-Jeong Lee<sup>3</sup>, Seung-Ha Oh<sup>3</sup>, Dong Soo Lee<sup>2</sup>, <sup>1</sup>Brain and Neuroscience Major, Seoul, Korea, <sup>2</sup>Department of Nuclear Medicine, Seoul, Korea, <sup>3</sup>Department of Otolaryngology, Seoul, Korea, <sup>4</sup>Department of Psychology, Chuncheon, Korea 372 T-PM

**Using fMRI to study lateralization of cortical language areas in patients with medically intractable temporal lobe epilepsy**, Tamu Sharma, Salah Baz, Seyed Mirsattari, Frank Bihari, Andrea Dencev, Brent Hayman-Abello, London Health Sciences Center, London, Canada 376 T-PM



## LANGUAGE Production

**Phonological processing in reading Japanese kanji: Does reading heterophonic-homographic characters make any difference?**, Chiao-Yi Wu<sup>1</sup>, Kayako Matsuo<sup>2</sup>, Epifanio Bagarinao<sup>3</sup>, Wen-Yih Issac Tseng<sup>4</sup>, Toshiharu Nakai<sup>2</sup>, S.H. Annabel Chen<sup>1</sup>, <sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Functional Brain Imaging Laboratory, Department of Gerontechnology, National Center for Geriatrics and Gerontology, Aichi, Japan, <sup>3</sup>Grid Technology Research Center, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan, <sup>4</sup>Center for Optoelectronic Biomedicine, National Taiwan University College of Medicine, Taipei, Taiwan 380 T-PM

**Language Laterality Determined from High Anisotropy Arcuate Fasciculus Tracts**, Timothy Ellmore<sup>1</sup>, Michael Beauchamp<sup>2</sup>, Jeremy Slater<sup>3</sup>, Joshua Breier<sup>4</sup>, Thomas O'Neill<sup>1</sup>, Nitin Tandon<sup>1</sup>, <sup>1</sup>Dept of Neurosurgery, UT Medical School at Houston, Houston, USA, <sup>2</sup>Dept of Neurobiology & Anatomy, UT Medical School at Houston, Houston, USA, <sup>3</sup>Dept of Neurology, UT Medical School at Houston, Houston, USA, <sup>4</sup>Dept of Pediatrics, UT Medical School at Houston, Houston, USA 384 T-PM\*

**Neuroanatomical correlates of age-related change in verbal abilities**, Adam Jacks<sup>1</sup>, Peter Kochunov<sup>1</sup>, Valeria Kochunov<sup>1</sup>, Donald Robin<sup>1</sup>, Anita Schlosser<sup>2</sup>, Peter Fox<sup>1</sup>, <sup>1</sup>The University of Texas Health Science Center, Research Imaging Center, San Antonio, USA, <sup>2</sup>Department of Neurology, Sykehuset Østfold Fredrikstad, Fredrikstad, Norway 388 T-PM

**The neural correlates of Semantic Feature Analysis in a Primary Progressive Aphasia patient: an event-related fMRI study**, Karine Marcotte<sup>1,2</sup>, Ana Inés Ansaldo<sup>1,3</sup>, <sup>1</sup>CRIUGM-UNF, Montreal, Canada, <sup>2</sup>Faculty of Medicine, University of Montreal, Montreal, Canada, <sup>3</sup>Speech-Communication Sciences Department, University of Montreal, Montreal, Canada 392 T-PM

**Sex differences in handedness, asymmetry of the Planum Temporale and functional language lateralization**, Iris Sommer<sup>1</sup>, Andre Aleman<sup>2</sup>, Marco Boks<sup>1</sup>, Metten Somers<sup>1</sup>, Rene Kahn<sup>1</sup>, <sup>1</sup>Universitary Medical Center Utrecht, Utrecht, Netherlands, <sup>2</sup>BCN Neuroimaging Centre, University Medical Centre Groningen, Groningen, Netherlands 396 T-PM

## MEMORY & LEARNING Plasticity (normal & following pathology)

**Hippocampal correlates of memory dysfunction 10 years after childhood TBI**, Miriam Beauchamp<sup>1,2,4</sup>, Jerome Maller<sup>4,5</sup>, Cathy Catroppa<sup>1,2,4</sup>, Celia Godfrey<sup>1,4</sup>, Michael Ditchfield<sup>1,3</sup>, Vicki Anderson<sup>1,2,3,4</sup>, <sup>1</sup>Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>University of Melbourne, Melbourne, Australia, <sup>3</sup>Royal Children's Hospital, Melbourne, Australia, <sup>4</sup>Australian Center for Child Neuropsychological Studies, Melbourne, Australia, <sup>5</sup>Alfred Psychiatry Research Centre, Melbourne, Australia 400 T-PM

**Non-monotonic changes in the cerebellar cortex during the acquisition of skilled cognitive operations**, A. L. Hayter, D. W. Langdon, N. Ramnani, Royal Holloway, University of London, London, United Kingdom 404 T-PM

**Neurophysiological Correlates of Strategic Verbal Learning in Traumatic Brain Injury**, Gary Strangman<sup>1,2</sup>, Therese O'Neil-Pirozzi<sup>2,3</sup>, Richard Goldstein<sup>2</sup>, Christina Supelana<sup>1</sup>, Kalika Kelkar<sup>2</sup>, David Burke<sup>4</sup>, Douglas Katz<sup>5</sup>, Scott Rauch<sup>6</sup>, Cary Savage<sup>7</sup>, Mel Glenn<sup>2</sup>, <sup>1</sup>Massachusetts General Hospital, Harvard Medical School, Boston, USA, <sup>2</sup>Spaulding Rehabilitation Hospital, Harvard Medical School, Boston, USA, <sup>3</sup>Northeastern University, Boston, USA, <sup>4</sup>Emory University, Atlanta, USA, <sup>5</sup>Boston University, Boston, USA, <sup>6</sup>McLean Hospital, Belmont, USA, <sup>7</sup>Kansas University Medical Center, Kansas City, USA 408 T-PM

## MEMORY & LEARNING Working Memory

**Gender differences in functional activity for working memory**, Suz-Chieh Sung<sup>1</sup>, Jing-Syun Yu<sup>1</sup>, Wen-Yih Isaac Tseng<sup>2</sup>, S.H. Annabel Chen<sup>1</sup>, <sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Department of Radiology, National Taiwan University College of Medicine, Taipei, Taiwan 412 T-PM

**Effect of sex and menstrual cycle phase on brain activation for verbal working memory**, Jane Joseph, Christine Corbly, Linah Al-Alem, Garretson Epperly, Xun Liu, Thomas Curry, Thomas Kelly, University of Kentucky, Lexington, USA 416 T-PM

**Effects of transcranial direct current stimulation on verbal working memory in patients with stroke**, Yun-Hee Kim<sup>1</sup>, Jung Mi Jo<sup>1</sup>, Suk Hoon Ohn<sup>1</sup>, Myoung-Hwan Ko<sup>2</sup>, Gyoung Moon Kim<sup>3</sup>, Woo-Kyoung Yoo<sup>1</sup>, Peter K.W. Lee<sup>1</sup>, <sup>1</sup>Department of Physical Medicine and Rehabilitation, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>2</sup>Department of Physical Medicine and Rehabilitation, Chonbuk National University Medical School, Jeonju, Korea, <sup>3</sup>Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea 420 T-PM

**Examining Working Memory Component Processes**, Michael Motes<sup>1,2,3</sup>, Bart Rypma<sup>1,2,3</sup>, <sup>1</sup>Center for BrainHealth, Dallas, USA, <sup>2</sup>School of Behavioral & Brain Sciences, Dallas, USA, <sup>3</sup>University of Texas Southwestern Medical Center, Dallas, USA 424 T-PM

**Functional connectivity of updating in working memory and refreshing information**, Jennifer Roth<sup>1</sup>, Marcia Johnson<sup>2</sup>, R. Todd Constable<sup>1</sup>, <sup>1</sup>Department of Diagnostic Radiology, Magnetic Resonance Research Center, Yale University, New Haven, USA, <sup>2</sup>Department of Psychology, Yale University, New Haven, USA 428 T-PM

## MODELING & ANALYSIS

### Bayesian Modeling

**Empirical Markov Chain Monte Carlo Bayesian analysis of fMRI data**, Francesco de Pasquale<sup>1</sup>, Cosimo Del Gratta<sup>1,2</sup>, Gian Luca Romani<sup>1,2</sup>, <sup>1</sup>ITAB, Institute for Advanced Biomedical Technologies, University G. D'Annunzio, Chieti, Chieti, Italy, <sup>2</sup>Department of Clinical Sciences and Biomedical Imaging, University of Chieti, Chieti, Italy 432 T-PM

**Fast Bayesian nonlinear model fitting for analysis of simultaneous BOLD & ASL data**, Adrian Groves, Mark Woolrich, FMRI Centre, Oxford, United Kingdom 436 T-PM

**Multiple-subjects connectivity-based parcellation using hierarchical infinite mixture models**, Saad Jbabdi<sup>1</sup>, Mark Woolrich<sup>1</sup>, Timothy Behrens<sup>1,2</sup>, <sup>1</sup>FMRI Centre, Oxford, United Kingdom, <sup>2</sup>Department of Experimental Psychology, Oxford, United Kingdom 440 T-PM

**MEG SOURCE CHARACTERIZATION THROUGH CURRENT MULTIPOLE MOMENTS**, Sheraz Khan<sup>1,2,6</sup>, Benoît Cottareau<sup>1,3</sup>, Richard M. Leahy<sup>4</sup>, John C. Mosher<sup>5</sup>, Habib Ammari<sup>6</sup>, Sylvain Baillet<sup>1,2</sup>, <sup>1</sup>Cognitive Neuroscience & Brain Imaging Laboratory, CNRS Hopital de la Salpêtrière, Paris, France, <sup>2</sup>University Pierre & Marie CURIE, Paris 6, Paris, France, <sup>3</sup>ESME-Sudria College of Engineering, Ivry, France, <sup>4</sup>University of Southern California, Los Angeles, USA, <sup>5</sup>Los Alamos National Laboratory, Los Alamos, USA, <sup>6</sup>Laboratoire Ondes et Acoustique, CNRS & ESPCI, Paris, France 444 T-PM

**MEG source modeling by Bayesian tracking: Validation of the particle filter approach**, Lauri Parkkonen<sup>1,5</sup>, Alberto Sorrentino<sup>2</sup>, Cristina Campi<sup>3</sup>, Annalisa Pascarella<sup>4</sup>, Michele Piana<sup>2,4</sup>, <sup>1</sup>Brain Research Unit, Low Temperature Lab, Helsinki Univ. of Technology, Espoo, Finland, <sup>2</sup>INFN - CNR Lamia, Genova, Italy, <sup>3</sup>Dipartimento di Matematica, Università di Genova, Genova, Italy, <sup>4</sup>Dipartimento di Informatica, Università di Verona, Verona, Italy, <sup>5</sup>Elekta Neuromag Oy, Helsinki, Finland 448 T-PM

13:45 – 14:45 Corryong Hall (Level 2)

## MODELING & ANALYSIS

### Classification & Predictive Modeling

**Assessment of placebo-controlled benzodiazepine sedation by means of indices derived from fMRI auditory responses**, Charilaos Alexakis<sup>1</sup>, Ana Diukova<sup>1,3</sup>, Quazi Siddiqui<sup>2</sup>, Carolyn Steward<sup>1</sup>, Jaroslav Hlinka<sup>1</sup>, Paul Morgan<sup>1</sup>, Jonathan Hardman<sup>2</sup>, Dorothee Auer<sup>1</sup>, <sup>1</sup>Division of Academic Radiology, University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>Division of Anaesthesia, University of Nottingham, Nottingham, United Kingdom, <sup>3</sup>Division of Psychiatry, University of Nottingham, Nottingham, United Kingdom 452 T-PM

- A Neural Predictor of Schizophrenia Based on Striatal [18F] Fluorodopa Uptake Measured with PET**, Subrata Bose<sup>1</sup>, Federico Turkheimer<sup>1,2</sup>, Oliver Howes<sup>3</sup>, Mitul Mehta<sup>3</sup>, Rhian Cunliffe<sup>1</sup>, Paul Stokes<sup>1</sup>, Paul Grasby<sup>1,2</sup>, <sup>1</sup>MRC-Clinical Sciences Centre, Imperial College London, London, United Kingdom, <sup>2</sup>Division of Neuroscience & Mental Health, Imperial College London, London, United Kingdom, <sup>3</sup>Institute of Psychiatry, King's College London, London, United Kingdom 456 T-PM
- Multiclass classification of fMRI pattern by relevance vector regression**, Carlton CHU<sup>1</sup>, Janainan Mourão-Miranda<sup>2</sup>, John Ashburner<sup>1</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom, <sup>2</sup>Brain Image Analysis Unit, Biostatistics Department, Centre for Neuroimaging Sciences (PO 89), Institute of Psychiatry, London, United Kingdom 460 T-PM\*
- Combining top-down and bottom-up methods for ERP pattern classification**, Gwen Frishkoff<sup>1,2</sup>, Robert Frank<sup>2</sup>, Jiawei Rong<sup>2</sup>, Dejing Dou<sup>2</sup>, <sup>1</sup>University of Pittsburgh, Pittsburgh, USA, <sup>2</sup>University of Oregon, Eugene, USA 464 T-PM\*
- Towards shorter scan times using subject-dependent processing pipelines for clinical tasks in fMRI**, Wayne Lee<sup>1,2</sup>, Richard Mraz<sup>3</sup>, Fred Tam<sup>1</sup>, Simon Graham<sup>1,2</sup>, Stephen Strother<sup>1,2</sup>, <sup>1</sup>Rotman Research Institute, Toronto, Canada, <sup>2</sup>University of Toronto, Toronto, Canada, <sup>3</sup>Sunnybrook Health Sciences Centre, Toronto, Canada 472 T-PM
- Innovation approach to detect the respiratory related neuronal activity in the brainstem based on optical imaging data**, Fumikazu Miwakeichi<sup>1</sup>, Yoshitaka Oku<sup>2</sup>, Yasumasa Okada<sup>3</sup>, Shigeharu Kawai<sup>4</sup>, Yoshiyasu Tamura<sup>5</sup>, Makio Ishiguro<sup>6</sup>, <sup>1</sup>Medical System Course, Graduate School of Engineering, Chiba University, Chiba, Japan, <sup>2</sup>Department of Physiology, Hyogo College of Medicine, Hyogo, Japan, <sup>3</sup>Department of Medicine, Tsukigase Rehabilitation Center, Keio University, Shizuoka, Japan, <sup>4</sup>Department of Statistical Science, The Graduate University for Advanced Studies, Tokyo, Japan, <sup>5</sup>Department of Data Science, The Institute of Statistical Mathematics, Tokyo, Japan, <sup>6</sup>Department of Statistical Modeling, The Institute of Statistical Mathematics, Tokyo, Japan 476 T-PM
- Multivariate Bayes regression of CRS-R score from FDG-PET images**, Christophe Phillips<sup>1</sup>, Mélanie Boly<sup>1,2</sup>, Pierre Maquet<sup>1,2</sup>, Caroline Schnakers<sup>1</sup>, Marie-Aurélien Bruno<sup>1</sup>, Audrey Vanhauwenhuysse<sup>1</sup>, Roland Hustinx<sup>3</sup>, Gustave Moonen<sup>2</sup>, Steven Laureys<sup>1,2</sup>, <sup>1</sup>Cyclotron Research Centre, University of Liège, Liège, Belgium, <sup>2</sup>Neurology Department, CHU Hospital, University of Liège, Liège, Belgium, <sup>3</sup>Nuclear Medicine Department, CHU Hospital, University of Liège, Liège, Belgium 480 T-PM
- Classification analysis of rapid event-related fMRI studies**, Angela Rizk-Jackson, Jeanette Mumford, Russell Poldrack, UCLA Dept. of Psychology, Los Angeles, USA 484 T-PM\*
- Threshold-Free Cluster Enhancement – Practical Examples**, Stephen Smith<sup>1</sup>, Gwenaëlle Douaud<sup>1</sup>, Thomas Nichols<sup>2,1</sup>, <sup>1</sup>FMRIB, Oxford University, Oxford, United Kingdom, <sup>2</sup>GSK CIC, London, United Kingdom 488 T-PM
- Image Intensity Correction for Detecting White Matter Hyperintensity (WMH) Progression in Longitudinal Fluid Attenuation Inversion Recovery (FLAIR) Whole Brain Scans**, Wanlin Zhu<sup>1</sup>, Wei Wen<sup>1</sup>, Aihua Xia<sup>2</sup>, Perminder Sachdev<sup>1</sup>, <sup>1</sup>School of Psychiatry, University of NSW, Sydney, Australia, <sup>2</sup>Department of Mathematics and Statistics, Melbourne University, Melbourne, Australia 492 T-PM
- MODELING & ANALYSIS**  
**Motion Correction/Spatial Normalization, Atlas Construction**
- FNIRT - FMRIB's Non-linear Image Registration Tool**, Jesper Andersson, Steve Smith, Mark Jenkinson, FMRIB-Centre, Oxford, United Kingdom 496 T-PM
- Inter-subject Functional Connectivity Alignment**, Bryan Conroy<sup>1</sup>, Benjamin Singer<sup>2</sup>, Peter Ramadge<sup>1</sup>, James Haxby<sup>3</sup>, <sup>1</sup>Department of Electrical Engineering, Princeton University, Princeton, USA, <sup>2</sup>Center for the Study of Brain, Mind, and Behavior, Princeton University, Princeton, USA, <sup>3</sup>Department of Psychology, Princeton University, Princeton, USA 500 T-PM
- Agreement of independent structural and functional methods for locating the human VI boundary**, Oliver Hinds<sup>1</sup>, Jonathan Polimeni<sup>2</sup>, Mukund Balasubramanian<sup>3</sup>, Bruce Fischl<sup>2,4</sup>, Eric Schwartz<sup>3,5,6</sup>, Christina Triantafyllou<sup>1,2</sup>, <sup>1</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Athinoula A. Martinos Center, Massachusetts General

Hospital, Harvard Medical School, Charlestown, USA, <sup>3</sup>Department of Cognitive and Neural Systems, Boston University, Boston, USA, <sup>4</sup>Computer Science and Artificial Intelligence Lab, Massachusetts Institute of Technology, Cambridge, USA, <sup>5</sup>Department of Electrical and Computer Engineering, Boston University, Boston, USA, <sup>6</sup>Department of Anatomy and Neurobiology, Boston University Medical School, Boston, USA

**Comparison of Talairach and MNI coordinates in functional neuroimaging data: Validation of the icbm2tal transform**, Jennifer Robinson<sup>1</sup>, Angela Laird<sup>2</sup>, Kathryn McMillan<sup>3</sup>, Diana Tordesillas-Gutiérrez<sup>1</sup>, Sarah Thelen<sup>2</sup>, Kimberly Ray<sup>4</sup>, David Glahn<sup>1,2</sup>, Peter Fox<sup>2</sup>, Jack Lancaster<sup>2</sup>, <sup>1</sup>Department of Psychiatry, University of Texas Health Science Center, San Antonio, USA, 508 T-PM  
<sup>2</sup>Research Imaging Center, University of Texas Health Science Center, San Antonio, USA,  
 Department of Radiology, Vanderbilt University, Nashville, USA, <sup>4</sup>Department of Physics, Texas Lutheran University, Seguin, USA

## MODELING & ANALYSIS

### Univariate Modeling, Linear, & Nonlinear

**Novel suppression method of spatially correlated noise improves detection of fMRI responses to ultra-short stimuli at 7T**, Marta Bianciardi, Masaki Fukunaga, Jeff H. Duyn, Peter van Gelderen, Jacco A. de Zwart, Advanced MRI Section, LFMI, NINDS, NIH, Bethesda, USA 512 T-PM

**New Validation Technique for Cortical Data Smoothing**, Moo K. Chung, Department of Biostatistics and Medical Informatics, University of Wisconsin, Madison, USA 516 T-PM

**Single volume estimates of neural activation computed in real-time**, Oliver Hinds<sup>1</sup>, Todd Thompson<sup>2</sup>, Susan Gabrieli<sup>1,2</sup>, John Gabrieli<sup>1,2</sup>, Christina Triantafyllou<sup>2,3</sup>, <sup>1</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA, <sup>3</sup>Athinoula A. Martinos Center, Department of Radiology, MGH, Harvard Medical School, Charlestown, USA 520 T-PM

**Exploring the effectiveness of spatial smoothing in fMRI**, Mingwu Jin, Dietmar Cordes, University of Colorado Denver, Denver, USA 524 T-PM

**Estimating distributions of onset times and durations from multi-subject fMRI studies**, Lucy Robinson, Tor Wager, Martin Lindquist, Columbia University, New York, USA 528 T-PM\*

**Sample Size Recalculation Using Internal Pilot Studies For Group fMRI**, Jeanette Mumford, Department of Psychology, University of California, Los Angeles, Los Angeles, USA 532 T-PM

**A Bayesian approach to fMRI data analysis using Stochastic Search Variable Selection**, Rajesh Nandy, Brad Mcevoy, University of California, Los Angeles, USA 536 T-PM

**The Mann-Whitney-Wilcoxon random field, with applications to brain mapping**, Farzan Rohani<sup>1</sup>, Masoud Asgharian<sup>1</sup>, Keith Worsley<sup>1,2</sup>, <sup>1</sup>Department of Mathematics and Statistics, McGill University, Montreal, Canada, <sup>2</sup>Montreal Neurological Institute, McGill University, Montreal, Canada 540 T-PM

**Change in fractal properties of resting fMRI time series after different tasks**, Alle Meije Wink<sup>1,2</sup>, Anna Barnes<sup>2</sup>, Ulrich Müller<sup>2</sup>, Ed Bullmore<sup>2</sup>, John Suckling<sup>2</sup>, <sup>1</sup>Imaging Sciences Department, Imperial College, MRC Clinical Sciences Centre, Hammersmith Campus, London, United Kingdom, <sup>2</sup>Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Addenbrookes Hospital, Hills Road, Cambridge, United Kingdom 544 T-PM

**Non-negative least-squares random field theory**, Keith Worsley<sup>1</sup>, Jonathan Taylor<sup>2</sup>, <sup>1</sup>McGill University, Montreal, Canada, <sup>2</sup>Stanford University, Palo Alto, USA 548 T-PM

## MOTOR BEHAVIOR

### Brain-machine Interface

**Improved Gazed-Dependent Brain Computer Interface by using Onset and Offset Flash Visual Evoked Potential**, Chi-Hsun Wu<sup>1</sup>, Po-Lei Lee<sup>1,2,3</sup>, <sup>1</sup>Department of Electrical Engineering, National Central University, Taoyuan, Taiwan, <sup>2</sup>Department of Medical Research and Education, Taipei General Veterans Hospital, Taipei, Taiwan, <sup>3</sup>Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan 552 T-PM

## MOTOR BEHAVIOR

### Hand Movements

**Can low frequency repetitive transcranial magnetic stimulation to the non-lesioned hemisphere improve paretic arm reach-to-grasp performance after stroke?**, Beth Fisher<sup>1</sup>, Jool Tretriluxana<sup>2</sup>, Shailesh Kantak<sup>1</sup>, Allan Wu<sup>3</sup>, <sup>1</sup>Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, USA, <sup>2</sup>Physical Therapy and Applied Movement Science, Mahidol University, Bangkok, Thailand, <sup>3</sup>Department of Neurology, University of California Los Angeles, Los Angeles, USA 556 T-PM

**Speed-dependent change of intercerebellar coupling during finger movement**, Chang-hyun Park<sup>1,2</sup>, Woo-Kyoung Yoo<sup>1</sup>, Suk Hoon Ohn<sup>1</sup>, Sung H. You<sup>3</sup>, Bo Hyun Lee<sup>1</sup>, Sung Tae Kim<sup>4</sup>, Yun-Hee Kim<sup>1</sup>, <sup>1</sup>Department of Physical Medicine and Rehabilitation, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, <sup>2</sup>Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea, <sup>3</sup>Department of Physical Therapy, Yonsei University, Wonju, Korea, <sup>4</sup>Department of Radiology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea 560 T-PM

**Brain activity during voluntary movement and exercise imagery using Near-infrared spectroscopy (NIRS)**, Noriyuki Oka<sup>1</sup>, Kayoko Yoshino<sup>2</sup>, Syun Ishizaki<sup>3</sup>, Toshinori Kato<sup>4</sup>, <sup>1</sup>Fujita Health University Health Department Rehabilitation Science Major occupational therapy The 4th grade, Toyoake, Japan, <sup>2</sup>Graduate school of Media and Governance, Keio University, Kanagawa, Japan, <sup>3</sup>Department of Media and Governance, Keio University, Kanagawa, Japan, <sup>4</sup>Department of Brain Environmental Research, KATOBRAIN Co, Ltd., Tokyo, Japan 564 T-PM

**Longitudinal Evaluation of fMRI Motor Activation Pattern in Multiple Sclerosis using Surface-based Analysis – a 6-month follow-up case study**, Jun Wang<sup>1</sup>, Daniel Hier<sup>2</sup>, <sup>1</sup>State Key lab of Cognitive and Learning, Beijing Normal University, P.R.China, 100875, Beijing, China, <sup>2</sup>Department of Neurology and Rehabilitation, University of Illinois at Chicago, Chicago, IL 60612, USA, Chicago, USA 568 T-PM

## MOTOR BEHAVIOR

### Motor-Premotor Cortex/Motor Cortical Functions

**Effects of timing and sequencing on pre-movement brain activity**, Marta Bortoletto<sup>1</sup>, Ross Cunnington<sup>2</sup>, <sup>1</sup>Cognitive Neuroscience Unit, IRCCS Centro S. Giovanni di Dio Fatebenefratelli, Brescia, Italy, <sup>2</sup>Queensland Brain Institute and School of Psychology, University of Queensland, Brisbane, Australia 572 T-PM

**Changes in MRS Response Following Activation of Motor Cortex**, Mick Hunter<sup>1,2</sup>, Neva Bull<sup>1,3</sup>, Peter Stanwell<sup>4</sup>, <sup>1</sup>Hunter Medical Research Institute, Newcastle, Australia, <sup>2</sup>University of Newcastle, Newcastle, Australia, <sup>3</sup>John Hunter Hospital, Newcastle, Australia, <sup>4</sup>Brigham and Women's Hospital, Boston, USA 576 T-PM

**The enhancement of cortical activation of the hand motor representation induced by a briefly sound**, Mi Young Lee<sup>1</sup>, Yong Hyun Kwon<sup>2</sup>, Ji Won Park<sup>3</sup>, Sang Ho Ahn<sup>4</sup>, Sung Ho Jang<sup>4</sup>, <sup>1</sup>Department of Rehabilitation Science, Graduate School, Daegu University, Daegu, South Korea, <sup>2</sup>Department of Physical Therapy, Yeungnam College of Science & Technology, Daegu, South Korea, <sup>3</sup>Dept. of Physical Therapy, College of Health and Medical Science, Catholic University of Daegu, Daegu, South Korea, <sup>4</sup>Department of Physical Medicine & Rehabilitation, Yeungnam University College of Medicine, Daegu, South Korea 580 T-PM

**Direct recording of mirror neurons in human frontal and temporal lobes**, Roy Mukamel<sup>1,2</sup>, Arne Ekstrom<sup>2,3</sup>, Jonas Kaplan<sup>1,2</sup>, Marco Iacoboni<sup>1,2,6</sup>, Itzhak Fried<sup>4,5,6</sup>, <sup>1</sup>UCLA Ahmanson-Lovelace Brain Mapping Center, David Geffen School of Medicine, Los Angeles, USA, <sup>2</sup>UCLA Department of Psychiatry and Biobehavioral Sciences, Semel Institute for Neuroscience and Human Behavior, David Geffen School of Medicine, Los Angeles, USA, <sup>3</sup>UCLA Center for Cognitive Neuroscience, Semel Institute for Neuroscience and Human Behavior, David Geffen School of Medicine, Los Angeles, USA, <sup>4</sup>UCLA Division of Neurosurgery, David Geffen School of Medicine, Los Angeles, USA, <sup>5</sup>Functional Neurosurgery Unit, Tel Aviv Medical Center and Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>6</sup>UCLA Brain Research Institute, David Geffen School of Medicine, Los Angeles, USA 584 T-PM\*

**Cortical Adaptations in Patients with Clinically Isolated Syndrome; perspectives for predicting MS**, Mohammad Ali Oghabian<sup>1</sup>, Mohammad Hosain Harirchian<sup>2</sup>, Ali Reza Rezvanizade<sup>1</sup>, Mohammad Fakhri<sup>1</sup>, <sup>1</sup>Research Center for Sciences and Technology in Medicine, Tehran University/Medical Sciences, Tehran, Iran, <sup>2</sup>Neurology Research Center, Emam Hospital, Tehran University /Medical Sciences, Tehran, Iran 588 T-PM

**The Neural Representation of Praxis: The Slicing Gesture**, Donald Robin<sup>1,2</sup>, Howard Poizner<sup>3</sup>, Shalini Narayana<sup>1</sup>, Jack Lancaster<sup>1</sup>, Crystal Franklin<sup>1</sup>, Wayne Hening<sup>4</sup>, Peter Fox<sup>1,2</sup>, <sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>Honor's College, University of Texas, San Antonio, San Antonio, USA, <sup>3</sup>Institute for Neural Computation, University of California, San Diego, USA, <sup>4</sup>Robert Wood Johnson Medical School, Piscataway, USA 592 T-PM

**Neural Correlates of Motor Sequence Learning**, Christopher J. Steele, Virginia B. Penhune, Concordia University, Montreal, Canada 596 T-PM

**Neural Abnormalities of Synchronized Tapping in Adult ADHD**, Eve Valera<sup>1</sup>, Joseph Biederman<sup>2</sup>, Thomas Zeffiro<sup>3</sup>, Ainat Rogel<sup>3</sup>, Megha Patel<sup>4</sup>, Rebecca Spencer<sup>5</sup>, Nikos Makris<sup>6</sup>, Thomas Spencer<sup>2</sup>, Stephen Faraone<sup>7</sup>, Larry Seidman<sup>8</sup>, <sup>1</sup>Neuroimaging Program, Clinical and Research Programs in Pediatric Psychopharmacology and Adult ADHD, Psychiatry, Harvard Medical School/Massachusetts General Hospital, Charlestown, USA, <sup>2</sup>Clinical and Research Programs in Pediatric Psychopharmacology and Adult ADHD, Psychiatry, Harvard Medical School/Massachusetts General Hospital, Boston, USA, <sup>3</sup>Psychiatry, Massachusetts General Hospital, Charlestown, USA, <sup>4</sup>Psychology, Brandeis University, Waltham, USA, <sup>5</sup>Psychology, University of California at Berkeley, Berkeley, USA, <sup>6</sup>Neurology and Radiology, Harvard Medical School/Massachusetts General Hospital, Boston, USA, <sup>7</sup>Psychiatry and Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, USA, <sup>8</sup>Neuroimaging Program, Clinical and Research Programs in Pediatric Psychopharmacology and Adult ADHD, Psychiatry, Harvard Medical School/Beth Israel Deaconess Medical Center, Boston, USA 600 T-PM

## NEUROANATOMY

### Anatomical Studies

**Evolution of the Cerebellar Cortex: Selective expansion of prefrontal-projecting lobules**, Joshua Balsters<sup>1</sup>, Emma Cussans<sup>1</sup>, Joern Diedrichsen<sup>2</sup>, Kimberley Phillips<sup>3</sup>, Todd Preuss<sup>4</sup>, James Rilling<sup>5</sup>, Narendra Ramnani<sup>1</sup>, <sup>1</sup>Dept Psychology, Royal Holloway University of London, London, United Kingdom, <sup>2</sup>Wolfson Centre for Cognitive Neuroscience, School of Psychology, Bangor University, United Kingdom, <sup>3</sup>Dept Psychology Hiram College, Hiram, USA, <sup>4</sup>Div Neuroscience, Yerkes Natl. Primate Research Ctr, Emory University, Atlanta, USA, <sup>5</sup>Dept Anthropology and Dept of Psychiatry and Behavioral Sciences, Emory University, Atlanta, USA 604 T-PM

**Insular volume Reduction in Williams Syndrome Using Real-Space Morphometry**, Jeremy Cohen<sup>1</sup>, Ursula Bellugi<sup>2</sup>, Asya Karchemskiy<sup>1</sup>, Brian Haas<sup>1</sup>, Allan Reiss<sup>1</sup>, <sup>1</sup>Neuroimaging Laboratory, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, USA, <sup>2</sup>The Salk Institute for Biological Studies, Laboratory for Cognitive Neuroscience, La Jolla, USA 608 T-PM

**Cerebral change in patients with amnesic Mild Cognitive Impairment single domain and amnesic Mild Cognitive Impairment multiple-domain**, Margherita Di Paola<sup>1,2</sup>, Serena Mosti<sup>3</sup>, Augusto Carlesimo<sup>3,4</sup>, Lucia Fadda<sup>3,4</sup>, Monica Ferraccioli<sup>5</sup>, Guido Gainotti<sup>5</sup>, Camillo Marra<sup>5</sup>, Roberta Perri<sup>3</sup>, Carlo Caltagirone<sup>3,4</sup>, <sup>1</sup>Neuroimaging Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy, <sup>2</sup>Department of Internal Medicine and Public Health, University of L'Aquila, L'Aquila, Italy, <sup>3</sup>Clinical and Behavioural Neurology Laboratory, IRCCS Santa Lucia Foundation, Rome, Italy, <sup>4</sup>Department of Neurological Sciences, University of Rome "Tor Vergata", Rome, Italy, <sup>5</sup>Neuropsychology Service - Department of Neurology, Catholic University of Rome, Rome, Italy 612 T-PM

**Structural brain abnormalities in nonhuman primates exposed to early-life stressors**, Andrea Jackowski<sup>1,2</sup>, Griselda Garrido<sup>3</sup>, Andrew Dwork<sup>4</sup>, Tarique Perera<sup>5</sup>, Jeremy Coplan<sup>6</sup>, Joan Kaufman<sup>2,7</sup>, <sup>1</sup>LiNC, Universidade Federal de Sao Paulo, São Paulo, Brazil, <sup>2</sup>Child Study, Yale University, New Haven, USA, <sup>3</sup>Serviço de Informática, Instituto do Coração, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil, <sup>4</sup>Department of Neuroscience, New York State Psychiatric Institute, New York, USA, <sup>5</sup>Department of Biological Psychiatry, New York State Psychiatric Institute, New York, USA, <sup>6</sup>Psychiatry, SUNY-Downstate Medical Center, Brooklin, USA, <sup>7</sup>Psychiatry, Yale University, New Haven, USA 616 T-PM

**Left hemisphere language activation depends on the size of the anterior and posterior corpus callosum.**, Goulven Josse, Ferath Kherif, Mohamed Seghier, Cathy Price, Wellcome Trust Center for Neuroimaging, UCL, London, United Kingdom 620 T-PM

**Does smoking affect brain volume change in schizophrenia and healthy controls?**, Cédric Koolschijn, Neeltje van Haren, Wiepke Cahn, Hugo Schnack, Hilleke Hulshoff Pol, René Kahn, Rudolf Magnus Institute of Neuroscience, Utrecht, Netherlands 624 T-PM

**Automated cortical projection of EEG sensors : Anatomical correlation via the international 10-10 system**, Laurent KOESSLER<sup>1,2</sup>, Louis MAILLARD<sup>2</sup>, Adnane BENHADID<sup>1</sup>, Jean-Pierre VIGNAL<sup>2</sup>, Hervé VESPIGNANI<sup>2</sup>, Marc BRAUN<sup>1,3</sup>, <sup>1</sup>INSERM ERI13, Nancy University, NANCY, France, <sup>2</sup>Neurology Department, University Hospital, NANCY, France, <sup>3</sup>Neuroradiology Department, University Hospital, NANCY, France 628 T-PM

**Hippocampal volumetrics in treatment-resistant schizophrenia and depression: the importance of the tail**, Jerome Maller<sup>1</sup>, Zafiris Daskalakis<sup>2</sup>, Paul Fitzgerald<sup>1</sup>, <sup>1</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>2</sup>University of Toronto, Toronto, Canada 632 T-PM

**Brodmann Areas defined in MNI space using a new Tracing Tool in BioImage Suite**, Cheryl M. Lacadie<sup>1</sup>, Robert K. Fulbright<sup>1</sup>, Jagriti Arora<sup>1</sup>, R. Todd Constable<sup>1,2,3</sup>, Xenophon Papademetris<sup>1,3</sup>, <sup>1</sup>Dept of Diagnostic Radiology, Yale School of Medicine, New Haven, USA, <sup>2</sup>Dept of Neurosurgery, Yale School of Medicine, New Haven, USA, <sup>3</sup>Dept. of Biomedical Engineering, New Haven, USA 636 T-PM

**Differences in Corpus Callosum Area and Shape in Advanced Aging and Alzheimer's Disease**, Jidan Zhong<sup>1</sup>, Randy Buckner<sup>3,5</sup>, Bruce Fischl<sup>3,4</sup>, Michael Miller<sup>2</sup>, Anqi Qiu<sup>1</sup>, <sup>1</sup>Division of Bioengineering, National University of Singapore, Singapore, Singapore, <sup>2</sup>Center for Imaging Science, Johns Hopkins University, Baltimore, USA, <sup>3</sup>Athinoula A Martinos Center for Biomedical Imaging at MGH, Boston, USA, <sup>4</sup>Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Boston, USA, <sup>5</sup>Department of Psychology, Center for Brain Science, Harvard University, Boston, USA 640 T-PM

**Automated Method to Measure Cortical 3D Gyrfication Index Implemented as a BrainVISA Plugin**, Bill Rogers<sup>1</sup>, Peter Kochunov<sup>1</sup>, Jeff Rogers<sup>2</sup>, David Glahn<sup>1</sup>, Peter Fox<sup>1</sup>, <sup>1</sup>University of Texas Health Science Center, San Antonio, USA, <sup>2</sup>Southwest Foundation for Biomedical Research, San Antonio, USA 644 T-PM

**Characterizing Regional Gray Matter Thickness Trends in Normal Aging**, Jing Wan<sup>1</sup>, Aaron Carass<sup>1</sup>, Susan Resnick<sup>2</sup>, Jerry Prince<sup>1</sup>, <sup>1</sup>Image Analysis and Communications Laboratory, Electrical and Computer Engineering, the Johns Hopkins University, Baltimore, USA, <sup>2</sup>National Institute on Aging, National Institutes of Health, Baltimore, USA 648 T-PM

## PHYSIOLOGY, METABOLISM, & NEUROTRANSMISSION

**The effects of chronic caffeine use on the temporal dynamics of the BOLD signal**, Merideth Addicott, Yang Lucie, Casanova Ramon, Peiffer Ann, Maldjian Joseph, Burdette Jonathan, Burnett Luke, Laurienti Paul, Department of Radiology, Wake Forest University School of Medicine, Winston Salem, USA 652 T-PM

**Measuring Hemodynamic Contributions to the BOLD Post-Stimulus Undershoot**, J. Jean Chen, G. Bruce Pike, McConnell Brain Imaging Centre, Montreal Neurological Institute, Montreal, Canada 656 T-PM

**Mismatched cerebral blood flow and metabolic rate of oxygen in healthy aging: A PET study**, Joel Aanerud<sup>1,2</sup>, Per Borghammer<sup>1,2</sup>, Manoucher Vafae<sup>2</sup>, Peter Iversen<sup>1</sup>, Peter Johannsen<sup>3</sup>, Mahmoud Askanian<sup>2</sup>, Albert Gjedde<sup>1,2</sup>, <sup>1</sup>PET Center, Aarhus University Hospitals, Aarhus, Denmark, <sup>2</sup>Center of Functionally Integrative Neuroscience, Aarhus University, Aarhus, Denmark, <sup>3</sup>Dept of Neurology, Rigshospitalet, Copenhagen, Denmark 660 T-PM

**Are gamma band power increases in the human brain systematically associated with alpha and beta power suppressions ?**, Karim Jerbi<sup>1,2</sup>, Sarang Dalal<sup>2</sup>, Nathan Weisz<sup>2</sup>, Aurélie Bidet-Cauler<sup>2</sup>, Julien Jung<sup>2</sup>, Lorella Minotti<sup>3</sup>, Philippe Kahane<sup>3</sup>, Alain Berthoz<sup>1</sup>, Olivier Bertrand<sup>2</sup>, Jean-Philippe Lachaux<sup>2</sup>, <sup>1</sup>Physiology of Perception and Action Lab, CNRS, Collège de France, Paris, France, <sup>2</sup>INSERM, U821, Brain Dynamics and Cognition and University Lyon 1, Lyon, France, <sup>3</sup>Department of Neurology and INSERM U704, Grenoble Hospital, Grenoble, France 664 T-PM

**Changes in functional connectivity induced by sevoflurane in the human brain**, Roberto Martuzzi<sup>1</sup>, Maolin Qiu<sup>1</sup>, Nallakkandi Rajeevan<sup>1</sup>, Ramachandran Ramani<sup>2</sup>, R. Todd Constable<sup>1,3,4</sup>,  
<sup>1</sup>Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, USA, 668 T-PM  
<sup>2</sup>Department of Anesthesiology, Yale University School of Medicine, New Haven, USA,  
<sup>3</sup>Department of Biomedical Engineering, Yale University School of Medicine, New Haven, USA,  
<sup>4</sup>Department of Neurosurgery, Yale University School of Medicine, New Haven, USA

**Gender differences of interregional metabolic connectivity in the resting brain explained by less inter-hemispheric transfer in males**, Hyojin Park<sup>1,2</sup>, Hyejin Kang<sup>1,3</sup>, Eunjoo Kang<sup>4</sup>, Jungsu S. Oh<sup>1,5</sup>, Jae Sung Lee<sup>1</sup>, Dong Soo Lee<sup>1,2</sup>,  
<sup>1</sup>Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul, South Korea, 672 T-PM  
<sup>2</sup>Interdisciplinary Program in Cognitive Science, Seoul National University, Seoul, South Korea, <sup>3</sup>Programs in Brain and Neuroscience, Seoul National University, Seoul, South Korea, <sup>4</sup>Department of Psychology, Kangwon National University, Chuncheon, South Korea, <sup>5</sup>Psychiatry Neuroimaging Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, USA

**Changes of neuronal activity after transcranial direct current and photic stimulation are associated with glutamatergic neurotransmission as revealed by functional <sup>1</sup>H-MR-spectroscopy**, Michael Siniatchkin<sup>1</sup>, Friederike Moeller<sup>1</sup>, Mascha Sendacki<sup>1</sup>, Stephan Wolff<sup>2</sup>, Ulrich Stephani<sup>1</sup>,  
<sup>1</sup>Pediatric Neurology, Kiel, Germany, 676 T-PM  
<sup>2</sup>Neuroradiology, Kiel, Germany

**Opioids modulate the brain activity associated with breath-holding: an fMRI study**, K.T. Pattinson<sup>1</sup>, R.J. Governò<sup>2</sup>, E.C. Russell<sup>1</sup>, B.J. Macintosh<sup>2</sup>, I. Ahmad<sup>1</sup>, S.D. Mayhew<sup>1</sup>, D.R. Corfield<sup>3</sup>, I. Tracey<sup>2</sup>, R. G. Wise<sup>4</sup>,  
<sup>1</sup>Nuffield Department of Anaesthetics, Oxford University, Oxford, United Kingdom, 680 T-PM  
<sup>2</sup>Oxford Centre for Functional Magnetic Resonance Imaging of the Brain (fMRI), Department of Clinical Neurology, Oxford University, Oxford, United Kingdom,  
<sup>3</sup>Institute of Science and Technology in Medicine, Keele University, Keele, United Kingdom,  
<sup>4</sup>Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, Cardiff, United Kingdom

**Midbrain dopamine autoreceptor availability is inversely associated with novelty seeking traits in humans**, David Zald, Ronald Cowan, Patrizia Riccardi, Ronald Baldwin, Ansari M Sib, Rui Li, Evan Shelby, Clarence Smith, Robert Kessler, Vanderbilt University, Nashville, USA 684 T-PM

## SENSORY SYSTEMS Multisensory & Crossmodal

**Cross-modal plastic changes of effective connectivity in blind subjects: An fMRI study**, Takeshi Fujii<sup>1,2</sup>, Hiroki Tanabe<sup>1,2</sup>, Norihiro Sadato<sup>1,2,3,4</sup>,  
<sup>1</sup>Division of Cerebral Integration, Department of Cerebral Research, National Institute for Physiological Sciences, Okazaki, Japan, 688 T-PM  
<sup>2</sup>Department of Physiological Sciences, The Graduate University for Advanced Studies (Sokendai), Kanagawa, Japan, <sup>3</sup>Research Institute of Science and Technology for Society (RISTEX), Japan Science and Technology Agency (JST), Tokyo, Japan, <sup>4</sup>Department of Functional Neuroimaging, Faculty of Medical Sciences, University of Fukui, Fukui, Japan

**One sound, two percepts: Predicting future speech perception from brain activation during audiovisual exposure**, Niclas Kilian-Hütten<sup>1</sup>, Jean Vroomen<sup>2</sup>, Elia Formisano<sup>1</sup>,  
<sup>1</sup>Dept of Cognitive Neuroscience, Faculty of Psychology, Maastricht University, Maastricht, Netherlands, 692 T-PM  
<sup>2</sup>Dept of Psychology, Tilburg, Netherlands

**Functional development of the mirror neuron system does not require visual experience: an fMRI study in sighted and congenitally blind individuals**, Emiliano Ricciardi<sup>1,2</sup>, Daniela Bonino<sup>1,3</sup>, Lorenzo Sani<sup>1,2</sup>, Tomaso E. Vecchi<sup>3</sup>, Mario Guazzelli<sup>4</sup>, James V. Haxby<sup>5</sup>, Luciano Fadiga<sup>6</sup>,  
<sup>1</sup>Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, 696 T-PM  
<sup>2</sup>MRI Lab, Institute of Clinical Physiology, C.N.R. Research Area, Pisa, Italy, <sup>3</sup>Department of Psychology, University of Pavia, Pavia, Italy, <sup>4</sup>Psychology Chair, University of Pisa, Pisa, Italy, <sup>5</sup>Department of Psychology, Princeton University, Princeton, USA, <sup>6</sup>Department of Biomedical Sciences and Advanced Therapy – Physiology Section, University of Ferrara, Ferrara, Italy

**Brain activity in colored-hearing synesthetes when listening to music: An fMRI study**, Riuma Takahashi<sup>1</sup>, Mayuka Nishimoto<sup>1</sup>, Takashi X. Fujisawa<sup>1</sup>, Noriko Nagata<sup>1</sup>, Takeshi Sugio<sup>2</sup>, Seiji Inokuchi<sup>3</sup>,  
<sup>1</sup>Graduate School of Science and Technology, Kansai Gakuin University, Hyogo, 700 T-PM



Japan, <sup>2</sup>Faculty of Culture and Information Science, Doshisha University, Kyoto, Japan, <sup>3</sup>Faculty of Media Contents, Takarazuka University of Art and Design, Hyogo, Japan

**SENSORY SYSTEMS**  
**Pain & Autonomic Function**

- 3D TOPOGRAPHIC MAPPING OF MAGNETIC BRAIN RESPONSES IN TRAUMATIC PERIPHERAL NEUROPATHIC PAIN**, P.J. Theuvsen<sup>1</sup>, B.W. van Dijk<sup>1</sup>, Maria J. Peters<sup>1</sup>, F.L. Lopes da Silva<sup>1</sup>, J.M. van Ree<sup>1</sup>, Andrew C.N. Chen<sup>2</sup>, <sup>1</sup>Dept. of Anesthesiology, Alkmaar Medical Center, Alkmaar, Netherlands, <sup>2</sup>Center for Higher Brain Functions, Capital Medical University, Beijing, China 704 T-PM
- Chronic Pain Remodels the Brain's Salience Network: A Resting-State fMRI Study**, Michael Greicius<sup>1</sup>, Meredith Barad<sup>1</sup>, Takefumi Ueno<sup>2</sup>, Sean Mackey<sup>1</sup>, <sup>1</sup>Stanford University Medical Center, Stanford, USA, <sup>2</sup>Kyushu University, Fukuoka, Japan 708 T-PM
- A PET study of wind-up pain in patients with postherniotomy pain**, Rune Christensen<sup>1</sup>, Eske Aasvang<sup>2</sup>, Henrik Kehlet<sup>2</sup>, Ron Kupers<sup>1,2</sup>, <sup>1</sup>PET Unit, Copenhagen, Denmark, <sup>2</sup>Dept. Surgical Pathophysiology, Copenhagen, Denmark 712 T-PM
- Partial least squares analysis of brain responses to experimentally induced rectal discomfort: Greater engagement of an insula-related network in female Irritable Bowel Syndrome (IBS) patients**, Jennifer Labus<sup>1</sup>, Lisa Kilpatrick<sup>1</sup>, Bruce Naliboff<sup>1,2</sup>, Steve Berman<sup>1</sup>, Brandall Suyenobu<sup>1</sup>, Emeran Mayer<sup>1</sup>, <sup>1</sup>Center for Neurobiology of Stress, Brain Research Institute, Depts of Psychiatry and Biobehavioral Science, University of California, Los Angeles, USA, <sup>2</sup>VA Greater Los Angeles Healthcare System, Los Angeles, USA 716 T-PM
- Brain correlates of conditioned placebo analgesia**, Luana Colloca<sup>1</sup>, Fausta Lui<sup>2</sup>, Davide Duzzi<sup>2</sup>, Luca Nocetti<sup>3</sup>, Davide Anchisi<sup>2</sup>, Francesca Benuzzi<sup>4</sup>, Patrizia Baraldi<sup>2</sup>, Fabrizio Benedetti<sup>2</sup>, Carlo Adolfo Porro<sup>1</sup>, <sup>1</sup>Dip. Neuroscienze, Univ. Torino, Torino, Italy, <sup>2</sup>Dip. Scienze Biomediche, Univ. Modena e Reggio Emilia, Modena, Italy, <sup>3</sup>Fisica Sanitaria, Policlinico, Modena, Italy, <sup>4</sup>Dip. Neuroscienze, Univ. Modena e Reggio Emilia, Modena, Italy 720 T-PM\*
- Central Representation of Menstrual Cramping Pain in Primary Dysmenorrhea: a PET Study**, Cheng-Hao Tu<sup>1,4</sup>, David Niddam<sup>2,3,4</sup>, Ren-Shyan Liu<sup>5</sup>, Hsiang-Tai Cho<sup>6</sup>, Ren-Jen Hwang<sup>1,4</sup>, Jen-Chuen Hsieh<sup>1,2,3,4</sup>, <sup>1</sup>Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Institute of Brain of Brain Science, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Brain Research Center, National Yang-Ming University, Taipei, Taiwan, <sup>4</sup>Laboratory of Integrated Brain Research, Taipei Veteran General Hospital, Taipei, Taiwan, <sup>5</sup>Department of Nuclear Medicine, Taipei Veteran General Hospital, Taipei, Taiwan, <sup>6</sup>Department of Obstetrics and Gynecology, Taipei Veteran General Hospital, Taipei, Taiwan 724 T-PM

11:30 – 12:30 You Yangs Hall (Level 3)

**COGNITION & ATTENTION****Executive Function**

- MEG analysis of inhibitory process during Go/NoGo task in normal children**, Eun Young Kim<sup>1</sup>, Yeni Kim<sup>2</sup>, June Sic Kim<sup>1</sup>, Jae-Won Kim<sup>2</sup>, Jun Won Hwang<sup>2</sup>, Boong-Nyun Kim<sup>2</sup>, Soo Churl Cho<sup>2</sup>, Chun Kee Chung<sup>1</sup>, <sup>1</sup>Department of Neurosurgery, Seoul National University College of Medicine, MEG Center, Seoul National University Hospital, Seoul, South Korea, <sup>2</sup>Department of Neuropsychiatry, Seoul National University College of Medicine, Seoul, South Korea 1 W-AM
- Functional MRI Deactivations During Working Memory Distinguishes Multiple Sclerosis Patients from Controls**, James Paskavitz<sup>1</sup>, Lawrence Sweet<sup>2</sup>, Jesse Samuel<sup>1</sup>, <sup>1</sup>Perceptive Informatics, Waltham, USA, <sup>2</sup>Brown University, Providence, USA 5 W-AM
- Errors and the violation of intention: The functional role of the left ventrolateral prefrontal cortex within a neural system for error processing**, Zrinka Sosic<sup>1</sup>, Martin Ruchsow<sup>2</sup>, Georg Grön<sup>1</sup>, <sup>1</sup>Department of Psychiatry and Psychotherapy III, University of Ulm, Ulm, Germany, <sup>2</sup>Clinic for Psychiatry and Psychotherapy, Christophsbad, Göppingen, Germany 9 W-AM
- Neural basis of MPH-induced improvement in working memory differs by DAT genotype in childhood ADHD**, Chandan Vaidya<sup>1</sup>, Devon Shook<sup>1</sup>, Jennifer Foss-Feig<sup>1</sup>, Laura Kenealy<sup>2</sup>, Edwin Cook<sup>3</sup>, Mark Stein<sup>3</sup>, <sup>1</sup>Georgetown University, Washington, USA, <sup>2</sup>Childrens National Medical Center, Washington, USA, <sup>3</sup>University of Illinois, Chicago, USA 13 W-AM\*
- Paired pulse transcranial magnetic stimulation to investigate cortical inhibition.**, Paul Fitzgerald<sup>1</sup>, Jerome Maller<sup>1</sup>, Kate Hoy<sup>1</sup>, Faranak Farzan<sup>2</sup>, Zafiris Daskalakis<sup>2</sup>, <sup>1</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>2</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>3</sup>Alfred Psychiatry Research Centre, Monash University, Melbourne, Australia, <sup>4</sup>Centre for Addiction and Mental Health, Toronto, Canada, <sup>5</sup>Centre for Addiction and Mental Health, Toronto, Canada 17 W-AM
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**The inferior fronto-occipital fasciculus mediates recognition of the facial expression of emotions.** *Carissa Philippi<sup>1</sup>, Sonya Mehta<sup>1</sup>, Thomas Grabowski<sup>1,3</sup>, Ralph Adolphs<sup>2</sup>, David Rudrauf<sup>1</sup>, <sup>1</sup>Laboratory of Computational Neuroimaging, Department of Neurology, Division of Behavioral Neurology and Cognitive Neuroscience, University of Iowa College of Medicine, 200 Hawkins Drive, Iowa City, USA, <sup>2</sup>Divisions of Humanities and Social Sciences and Biology, California Institute of Technology, Pasadena, USA, <sup>3</sup>Department of Radiology, University of Iowa College of Medicine, 200 Hawkins Drive, Iowa City, USA* 213 W-AM\*

**The cerebral blood flow correlates of Emotional Facial Processing in Mild Alzheimer's disease.** *Roger T. Staff<sup>1</sup>, Trevor S. Ahearn<sup>2</sup>, Louise H. Phillips<sup>2</sup>, Clare Scott<sup>2</sup>, Donald Mowat<sup>2</sup>, Lawrence J. Whalley<sup>2</sup>, Claude M. Wischik<sup>2</sup>, Alison D. Murray<sup>2</sup>, <sup>1</sup>Aberdeen Royal infirmary, Aberdeen, Scotland, <sup>2</sup>University of Aberdeen, Aberdeen, Scotland* 217 W-AM

**Spatial representation of non-verbal emotional perception along the superior temporal sulcus – fMRI reveals audiovisual integration area between voice- and face-sensitive regions.** *Benjamin Kreifelts<sup>1</sup>, Thomas Ethofer<sup>1,2</sup>, Wolfgang Grodd<sup>2</sup>, Thomas Shiozawa<sup>3</sup>, Dirk Wildgruber<sup>1</sup>, <sup>1</sup>Department of Psychiatry, University of Tuebingen, Tuebingen, Germany, <sup>2</sup>Section of Experimental MR of the CNS, Department of Neuroradiology, University of Tuebingen, Tuebingen, Germany, <sup>3</sup>Institute of Anatomy, University of Tuebingen, Tuebingen, Germany* 221 W-AM\*

**Increased amygdala activation during automatic processing of facial emotion in schizophrenia.** *Astrid Veronika Rauch<sup>1,3</sup>, Maraike Reker<sup>1</sup>, Patricia Ohrmann<sup>1</sup>, Anya Pedersen<sup>1</sup>, Jochen Bauer<sup>1</sup>, Udo Dannlowski<sup>1</sup>, Liv Harding<sup>1</sup>, Katja Kölsch<sup>1</sup>, Carsten Konrad<sup>1,3</sup>, Harald Kugel<sup>2</sup>, Volker Arolt<sup>1</sup>, Walter Heindel<sup>2</sup>, Thomas Suslow<sup>1</sup>, <sup>1</sup>Department of Psychiatry, Muenster, Germany, <sup>2</sup>Department of Clinical Radiology, Muenster, Germany, <sup>3</sup>IZKF-Research Group 4, Muenster, Germany* 229 W-AM

**Human brain represents valence of another's facial expression.** *Mikko Viinikainen<sup>1</sup>, Iiro Jääskeläinen<sup>1</sup>, Marja Balk<sup>1</sup>, Taina Autti<sup>2</sup>, Mikko Sams<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering and Computational Science, Espoo, Finland, <sup>2</sup>Helsinki University Central Hospital, Helsinki, Finland* 233 W-AM

**Localization Accuracy of Current Functional Neuroimaging of the Human Amygdala: A Meta-Analysis.** *Tonio Ball<sup>1,2,7</sup>, Johanna Derix<sup>1,7</sup>, Simon Eickhoff<sup>2,4</sup>, Andreas Schulze-Bonhage<sup>1,2,7</sup>, Isabella Mutschler<sup>1,3,6,7</sup>, <sup>1</sup>Epilepsy Center, University Clinics, Freiburg, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience, University Freiburg, Freiburg, Germany, <sup>3</sup>Institute for Medicine, Research Center Jülich, Jülich, Germany, <sup>4</sup>C & O Institute for Brain Research, University of Düsseldorf, Düsseldorf, Germany, <sup>5</sup>Department of Psychiatry, University of Basel, Basel, Switzerland, <sup>6</sup>Department of Psychology, University of Basel, Basel, Switzerland, <sup>7</sup>Freiburg Brain Imaging, University Clinics Freiburg, Freiburg, Germany* 237 W-AM\*

**Decreased frontal gamma oscillations for different facial expressions of patients with bipolar disorder and major depression disorder: a MEG study.** *Tai-Ying Liu<sup>1</sup>, Li-Fen Chen<sup>2,3</sup>, Jen-Chuen Hsieh<sup>2,3</sup>, Tung-Ping Su<sup>4,5</sup>, <sup>1</sup>Institute of Biomedical Informatics, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Institute of Brain Science, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>3</sup>Integrated Brain Research Laboratory, Department of Medical Research* 241 W-AM

and Education, Taipei Veterans General Hospital, Taipei, Taiwan, <sup>4</sup>Division of Psychiatry, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>5</sup>Psychiatric Department, Taipei Veterans General Hospital, Taipei, Taiwan

**Relationships between grey-matter volume and functional brain activity to fearful faces in medial prefrontal and limbic regions in Posttraumatic Stress Disorder.**, Kim Felmingham<sup>1,2</sup>, Erin Falconer<sup>1,3</sup>, Leanne Williams<sup>1,2</sup>, Thomas Whitford<sup>1,2</sup>, Anthony Peduto<sup>1,4</sup>, Richard Bryant<sup>1,3</sup>, <sup>1</sup>Brain Dynamics Centre, Westmead Millenium Institute, Westmead Hospital, Sydney, Australia, <sup>2</sup>Department of Psychological Medicine, University of Sydney, Sydney, Australia, <sup>3</sup>School of Psychology, University of New South Wales, Sydney, Australia, <sup>4</sup>MRI Unit, Department of Radiology, Westmead Hospital, Sydney, Australia 245 W-AM

**Impact of Arousal on Non-conscious Fear Perception in Posttraumatic Stress Disorder: Enhanced Brainstem – Amygdala – Cortical ‘Alarm’ System in PTSD Patients with Hyperarousal.**, Andrew Kemp<sup>1</sup>, Kim Felmingham<sup>1</sup>, Belinda Liddell<sup>1</sup>, Erin Falconer<sup>2</sup>, Richard Bryant<sup>2</sup>, Leanne Williams<sup>1</sup>, <sup>1</sup>Brain Dynamics Centre, Westmead Hospital and Western Clinical School University of Sydney, Sydney, Australia, <sup>2</sup>School of Psychology, University of New South Wales, Sydney, Australia 249 W-AM

**Neurocognitive basis in experiencing compassion: A gender approach.** Roberto E. Mercadillo<sup>1</sup>, José Luis Díaz<sup>2</sup>, Erick H. Pasaye<sup>1,3</sup>, Perla M. Salgado<sup>3</sup>, Fernando A. Barrios<sup>1</sup>, <sup>1</sup>Universidad Nacional Autónoma de México, Instituto de Neurobiología, Querétaro, Mexico, <sup>2</sup>Universidad Nacional Autónoma de México, Facultad de Medicina, México DF, Mexico, <sup>3</sup>Instituto Nacional de Neurología y Neurocirugía, MVS, México DF, Mexico 253 W-AM

**EEG Default Mode Network: Olympic Hymn.** Andrew CN Chen\*, Huixuan Zhao, Peipei Wang, Center for Higher Brain Functions, Capital Medical University, Beijing, China 257 W-AM

**Amygdala involved in response to unexpected musical chords.** Thomas Fritz<sup>1</sup>, Gottfried Schlaug<sup>2</sup>, Robert Turner<sup>1</sup>, Stefan Koelsch<sup>1</sup>, <sup>1</sup>Max Planck Institute for Cognitive and Brain Science, Leipzig, Germany, <sup>2</sup>Harvard Medical School, Boston, USA 261 W-AM

**Attentional disengagement in response to threatening smoking pictures: An event-related brain potential study.** Loes Kessels, Sara Moors, Kelly Pauwels, Rob Ruiter, Maastricht University, Maastricht, Netherlands 265 W-AM

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**Whole-Brain Myelin Imaging Through Multi-Component Analysis of Steady-State Imaging Data.** Sean Deoni<sup>1</sup>, Brian Rutl<sup>2</sup>, Tarunya Arun<sup>1</sup>, Carlo Pierpaoli<sup>3</sup>, Derek Jones<sup>4</sup>, <sup>1</sup>FMRIB, Oxford, United Kingdom, <sup>2</sup>Robarts Research Institute, University of Western Ontario, London, Canada, <sup>3</sup>Section of Tissue Biophysics and Biometrics, National Institutes of Health, Bethesda, USA, <sup>4</sup>Cardiff University Brain Research Imaging Centre (CUBRIC), Cardiff, Wales 269 W-AM\*

**3D image reconstruction of depth electrode recording sites in the human Heschl’s gyrus.** Paul Poon<sup>1,2</sup>, LS Chen<sup>2</sup>, Hiroyuki Oya<sup>3</sup>, Hiroto Kawasaki<sup>3</sup>, Richard Reale<sup>3</sup>, Kirill Nourski<sup>3</sup>, John Brugge<sup>3</sup>, Matthew Howard III<sup>3</sup>, <sup>1</sup>Dept Physiology, NCKU, Tainan, Taiwan, <sup>2</sup>Dept Electrical Engineering, NCKU, Tainan, Taiwan, <sup>3</sup>Dept Neurosurgery, Univ of Iowa, Iowa City, USA 273 W-AM

**USING ADNI CALIBRATION FOR NON-ADNI STUDIES: How to do it.** Berkay Kanberoglu<sup>1</sup>, Lina Karam<sup>1</sup>, Josef Debbins<sup>2</sup>, <sup>1</sup>Arizona State University, Tempe, USA, <sup>2</sup>St. Joseph’s Hospital and Medical Center, Phoenix, USA 277 W-AM

**A JPEG 2000 Image Compression Tool for the MIPAV Software Package.** Dzung Nguyen<sup>1</sup>, Nam Nguyen<sup>1</sup>, Pierre-Louis Bazin<sup>2</sup>, Trac Tran<sup>1</sup>, Dzung Pham<sup>2</sup>, <sup>1</sup>Department of Electrical and Computer Engineering, Johns Hopkins University, Baltimore, USA, <sup>2</sup>Department of Radiology and Radiological Science, Johns Hopkins University, Baltimore, USA 281 W-AM

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**Reducing distortions in DW-EPI with a dual-echo blip-reversed sequence.** Daniel Gallichan<sup>1</sup>, Jesper L Andersson<sup>1</sup>, Mark Jenkinson<sup>1</sup>, Matthew D Robson<sup>2</sup>, Karla L Miller<sup>1</sup>, <sup>1</sup>FMRIB Centre, University of Oxford, Oxford, United Kingdom, <sup>2</sup>OCMR, University of Oxford, Oxford, United Kingdom 285 W-AM



**Probabilistic Tractography Using Steady-State Diffusion Imaging: A Promising Option For Achieving Higher Spatial and Angular Resolution**, Jennifer McNab<sup>1</sup>, Saad Jbabdi<sup>1</sup>, Sean Deoni<sup>1,2</sup>, Gwenaelle Douaud<sup>1</sup>, Tim Behrens<sup>1,3</sup>, Karla Miller<sup>1</sup>, <sup>1</sup>Department of Clinical Neurology, Oxford University, Oxford, United Kingdom, <sup>2</sup>Centre for Neuroimaging Sciences, Institute of Psychiatry, King's College, University of London, London, United Kingdom, <sup>3</sup>Department of Experimental Psychology, Oxford University, Oxford, United Kingdom 289 W-AM

**How Many Gradients are Sufficient in High-Angular Resolution Diffusion Imaging (HARDI)?**, Liang Zhan<sup>1</sup>, Ming-Chang Chiang<sup>1</sup>, Marina Barysheva<sup>1</sup>, Arthur W. Toga<sup>1</sup>, Katie McMahon<sup>2</sup>, Greig de Zubicaray<sup>2</sup>, Matthew Meredith<sup>2</sup>, Margaret Wright<sup>3</sup>, Paul Thompson<sup>1</sup>, <sup>1</sup>Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, USA, <sup>2</sup>Functional MRI Laboratory, Centre for Magnetic Resonance, University of Queensland, Brisbane, Australia, <sup>3</sup>Queensland Institute of Medical Research, Brisbane, Australia 293 W-AM

**In Vivo Study of White Matter Microvasculature Anisotropy Using the IVIM Technique**, Dimitrios C. Karampinos<sup>1,3</sup>, Bradley P. Sutton<sup>2,3</sup>, John G. Georgiadis<sup>1,3</sup>, <sup>1</sup>Mechanical Science and Engineering Department, University of Illinois at Urbana-Champaign, Urbana, USA, <sup>2</sup>Bioengineering Department, University of Illinois at Urbana-Champaign, Urbana, USA, <sup>3</sup>Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, USA 297 W-AM

**Performance of Spatial Normalization in Diffusion Tensor Imaging**, Huiling Peng, Konstantinos Arfanakis, Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, USA 301 W-AM

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**Real-time Web-scale Image Annotation for Semantic-based Retrieval of Neuropsychiatric Research Images**, H Jeremy Bockholt<sup>1</sup>, Josef Ling<sup>1</sup>, Mark Scully<sup>1</sup>, Adam Scott<sup>1</sup>, Susan Lane<sup>1</sup>, Vincent Magnotta<sup>2</sup>, Tonya White<sup>3</sup>, Kelvin Lim<sup>3</sup>, Randy Gollub<sup>4</sup>, Vince Calhoun<sup>1,5</sup>, <sup>1</sup>The MIND Institute, Albuquerque, USA, <sup>2</sup>The University of Iowa, Iowa City, USA, <sup>3</sup>The University of Minnesota, Minneapolis, USA, <sup>4</sup>Massachusetts General Hospital, Charlestown, USA, <sup>5</sup>The University of New Mexico, Albuquerque, USA 305 W-AM

**DataViewer3D - An open-source, cross-platform multi-modal imaging data visualisation tool**, Andre' Gouws, William Woods, Mark Hymers, Gary Green, York Neuroimaging Centre, The Biocentre, York Science Park, University of York, York, United Kingdom 309 W-AM

**Imaging artefact removal using moving window PCA in simultaneous EEG/fMRI**, Perttu Ranta-aho<sup>1</sup>, Stefanos Georgiadis<sup>1</sup>, Eini Niskanen<sup>1,2,3</sup>, Mika Tarvainen<sup>1</sup>, Pasi Karjalainen<sup>1</sup>, <sup>1</sup>Department of Physics, University of Kuopio, Kuopio, Finland, <sup>2</sup>Department of clinical neurophysiology, Kuopio University Hospital, Kuopio, Finland, <sup>3</sup>Department of Neurology, Kuopio University Hospital, Kuopio, Finland 313 W-AM

**Simultaneous intracranial EEG-fMRI: A preliminary investigation of RF induced heating.**, David Carmichael<sup>1,2</sup>, John Thornton<sup>3</sup>, Roman Rodionov<sup>1,2</sup>, Rachel Thornton<sup>1,2</sup>, Andrew McEvoy<sup>4</sup>, Philip Allen<sup>5</sup>, Louis Lemieux<sup>1,2</sup>, <sup>1</sup>Department of Clinical and Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom, <sup>2</sup>MRI Unit, National society for epilepsy, Chalfont St Peter, United Kingdom, <sup>3</sup>Lysholm Department of Neuroradiology, National Hospital for Neurology and Neurosurgery, London, United Kingdom, <sup>4</sup>Victor Horsley Department of Neurosurgery, National Hospital for Neurology and Neurosurgery, London, United Kingdom, <sup>5</sup>Department of Clinical Neurophysiology, National Hospital for Neurology and Neurosurgery, London, United Kingdom 317 W-AM\*

**Analysis on micro-structural integrity of the white matter underlying cortical surface**, Bang-Bon Koo<sup>1</sup>, Hua Ning<sup>2</sup>, Dae-Shik Kim<sup>2,3</sup>, Jong-Min Lee<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea, <sup>2</sup>Center for Biomedical Imaging (CBI), Boston University school of Medicine, Boston, USA, <sup>3</sup>Department of Anatomy and Neurobiology, Boston University school of Medicine, Boston, USA 321 W-AM

**Simultaneous measurement of fMRI, TMS and EMG with stepping stone sampling method**, Hitoshi Shitara<sup>1,2</sup>, Takashi Hanakawa<sup>1</sup>, Tetsuya Shinozaki<sup>2</sup>, Kenji Takagishi<sup>2</sup>, Manabu Honda<sup>1</sup>, <sup>1</sup>Department of Cortical Function Disorders, National Institute of Neuroscience, National Center of Neurology and Psychiatry, Tokyo, Japan, <sup>2</sup>Department of Orthopedic Surgery, Gunma Graduate University School of Medicine, Gunma, Japan 325 W-AM

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**Event-related hemodynamic optical signal during target detection in a Go-NoGo task.** *Andrei V. Medvedev<sup>1</sup>, Jana Kainerstorfer<sup>2</sup>, Sergey V. Borisov<sup>1</sup>, John VanMeter<sup>1</sup>, <sup>1</sup>Center for Functional and Molecular Imaging, Georgetown University Medical Center, Washington, USA, <sup>2</sup>Dept. of Physics, University of Vienna, Vienna, Austria* 333 W-AM

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**Tracking blood oxygenation within the cerebral vasculature with pulsed ASL using single-shot 3D GRASE.** *Carol Docherty<sup>1</sup>, Robert Trampel<sup>1</sup>, Matthias Guenther<sup>2</sup>, Marcel Weiss<sup>1</sup>, Enrico Reimer<sup>1</sup>, David Feinberg<sup>3</sup>, Robert Turner<sup>1</sup>, <sup>1</sup>Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>mediri GmbH, Heidelberg, Germany, <sup>3</sup>Advanced MRI Technologies, Sebastopol, USA* 337 W-AM

**Dynamic Pseudo Continuous Arterial Spin Labeling.** *Wen-Ming Luh<sup>1</sup>, Afonso Silva<sup>2</sup>, Peter Bandettini<sup>1</sup>, <sup>1</sup>FMRI/NIMH, National Institutes of Health, Bethesda, USA, <sup>2</sup>CMU/NINDS, National Institutes of Health, Bethesda, USA* 341 W-AM

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**Determining the Cortical Area Targeted by Transcranial Magnetic Stimulation (TMS).** *Axel Thielscher, Kamil Uludağ, MPI for biological Cybernetics, Tuebingen, Germany* 349 W-AM

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**Tracing the recovery of aphasia with a joint ICA of functional and structural data.** *Karsten Specht<sup>1</sup>, Roland Zahn<sup>2</sup>, Klaus Willmes<sup>3</sup>, Bernd J. Krause<sup>4</sup>, Hans Herzog<sup>5</sup>, Walter Huber<sup>6</sup>, <sup>1</sup>Department of biological and medical Psychology, University of Bergen & Department of Medical Engineering, Haukeland University Hospital, Bergen, Norway, <sup>2</sup>Neuroscience& Aphasia Research Unit (NARU), University of Manchester, Manchester, United Kingdom, <sup>3</sup>Section Neuropsychology at the Neurological Clinic, University Hospital Aachen, RWTH Aachen University, Aachen, Germany, <sup>4</sup>Department of Nuclear Medicine, Technische Universität München, Munich, Germany, <sup>5</sup>Institute of Medicine, Research Center Jülich, Jülich, Germany, <sup>6</sup>Section Neurolinguistics at the Neurological Clinic, University Hospital Aachen, RWTH Aachen University, Aachen, Germany* 357 W-AM\*

**Neural Efficiency for Sentence Comprehension and Working Memory.** *Satoru Yokoyama<sup>1</sup>, Kei Takahashi<sup>1,2,3</sup>, Toshimune Kambara<sup>1,2</sup>, Tadao Miyamoto<sup>2</sup>, Jorge Riera<sup>1</sup>, Kei Yoshimoto<sup>2</sup>, Ryuta Kawashima<sup>1</sup>, <sup>1</sup>IDAC, Tohoku University, Sendai, Japan, <sup>2</sup>GSICS, Tohoku University, Sendai, Japan, <sup>3</sup>JSPS, Tokyo, Japan* 361 W-AM

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- Transitions of task-related brain activation during acquisition of a novel perceptual-motor mapping**, Oliver Hinds<sup>1</sup>, Susan Gabrieli<sup>1,2</sup>, Noa Ofen<sup>2</sup>, Julie Yoo<sup>1</sup>, Satrajit Ghosh<sup>3</sup>, Nupur Lala<sup>1</sup>, Daniel Willingham<sup>4</sup>, Christina Triantafyllou<sup>1,5</sup>, John Gabrieli<sup>1,2</sup>, <sup>1</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, USA, <sup>3</sup>Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, USA, <sup>4</sup>Department of Psychology, University of Virginia, Charlottesville, USA, <sup>5</sup>Athinoula A. Martinos Center, Department of Radiology, MGH, Harvard Medical School, Charlestown, USA 421 W-AM
- The bright side of Val - An advantage for the COMT Val genotype in reward-based decision making**, Lea Krugel<sup>1,2</sup>, Guido Biele<sup>1,2</sup>, Peter Mohr<sup>1,2</sup>, Shu-Chen Li<sup>1,2</sup>, Hauke Heekeren<sup>1,2</sup>, <sup>1</sup>Max Planck Institute for Human Development, Berlin, Germany, <sup>2</sup>Berlin NeuroImaging Center, Berlin, Germany 425 W-AM\*
- Consolidation of Motor Memories Encoded by Different Practice Schedules**, Satoshi Tanaka<sup>1</sup>, Manabu Honda<sup>2</sup>, Takashi Hanakawa<sup>2</sup>, Leonardo G Cohen<sup>1</sup>, <sup>1</sup>Human Cortical Physiology Section, NINDS, NIH, Bethesda, USA, <sup>2</sup>Department of Cortical Function Disorders, National Institute of Neuroscience, Kodaira, Japan 429 W-AM
- Visuospatial Working Memory in Adolescents with Dysthymic Disorder: A Functional Magnetic Resonance Imaging (fMRI) Study**, Jacqueline Yamada<sup>1</sup>, Melissa Casey<sup>1</sup>, Tim Silk<sup>2</sup>, Ross Cunnington<sup>2</sup>, Mark Bellgrove<sup>2</sup>, Alasdair Vance<sup>1</sup>, <sup>1</sup>Academic Child Psychiatry Unit, Royal Children's Hospital, Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute, Brisbane, Australia 433 W-AM
- Learning with emotional context affects brain activation during retrieval: an fMRI study**, Wenting Jia<sup>1</sup>, Satoru Yokoyama<sup>2</sup>, Motoaki Sugiura<sup>2,3</sup>, Atsushi Sekiguchi<sup>2</sup>, Ai Fukushima<sup>2</sup>, Ryuta Kawashima<sup>2</sup>, <sup>1</sup>Tohoku University School of Medicine, Sendai, Japan, <sup>2</sup>Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan, <sup>3</sup>National Institute for Physiological Sciences, Okazaki, Japan 437 W-AM
- Hippocampal activation during a paired associative learning of faces and names**, Kayako Matsuo<sup>1</sup>, Tetsuya Iidaka<sup>2</sup>, Epifanio Bagarinao<sup>3</sup>, Chikako Kato<sup>4</sup>, Akinori Takeda<sup>5</sup>, Toshiharu Nakai<sup>1</sup>, <sup>1</sup>Dept. Gerontechnology, National Center for Geriatrics and Gerontology, Obu, Japan, <sup>2</sup>Department of Psychiatry, Nagoya University, Nagoya, Japan, <sup>3</sup>Grid Technology Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, <sup>4</sup>Department of Life and Career Design, Toyohashi Sozo University, Toyohashi, Japan, <sup>5</sup>Department of Advanced Medicine, National Center for Geriatrics and Gerontology, Obu, Japan 441 W-AM

11:30 – 12:30 Corryong Hall (Level 2)

**MEMORY & LEARNING**  
**Long-term Memory (episodic, semantic, autobiographical)**

- Episodic Simulation of Specific and Generic Future Events**, Donna Rose Addis<sup>1,2</sup>, Theresa Cheng<sup>1</sup>, Daniel L. Schacter<sup>1,2</sup>, <sup>1</sup>Dept. of Psychology, Harvard University, Cambridge, USA, <sup>2</sup>Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, USA 451 W-AM
- Neural correlates of transmission from lexical-semantic to lexical-phonological stages during name recall: An event-related fMRI study**, Sho Yagishita<sup>1,2</sup>, Takamitsu Watanabe<sup>1,2</sup>, Hiroshi Ito<sup>1</sup>, Hiroo Ikehira<sup>1</sup>, Motoichiro Kato<sup>3</sup>, Iwao Kanno<sup>1</sup>, Tetsuya Suhara<sup>1</sup>, Hideyuki Kikyo<sup>1</sup>, <sup>1</sup>National Institute of Radiological Sciences, Chiba, Japan, <sup>2</sup>The University of Tokyo, Tokyo, Japan, <sup>3</sup>Keio University, Tokyo, Japan 455 W-AM
- Dissociated networks mediate retrieval operations via free-recall or recognition**, Irit Shapira-Lichter<sup>1,2</sup>, Tali Siman-Tov<sup>1</sup>, Daphna Paran<sup>3,4</sup>, Dan Caspi<sup>3,4</sup>, Eli Vakil<sup>3</sup>, Talma Hendler<sup>1,4</sup>, <sup>1</sup>Functional Brain Imaging Unit, Wohl Institute for Advanced Imaging, Tel Aviv Sourasky Medical 459 W-AM

Center, Tel-Aviv, Israel, <sup>2</sup>Department of Psychology, Tel Aviv University, Tel-Aviv, Israel, <sup>3</sup>Department of Rheumatology, Tel-Aviv Sourasky Medical Centre, Tel-Aviv, Israel, <sup>4</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel-Aviv, Israel, <sup>5</sup>Department of Psychology and Leslie and Susan Gonda (Goldschmied) Multidisciplinary Brain Research Center, Bar-Ilan University, Ramat-Gan, Israel

**Hippocampal activation is associated with encoding distinctiveness of study items**, Valerie Carr<sup>1</sup>, Stephen Engel<sup>2,3</sup>, Barbara Knowlton<sup>1,2</sup>, <sup>1</sup>Interdepartmental Program in Neuroscience, UCLA, Los Angeles, USA, <sup>2</sup>Department of Psychology, UCLA, Los Angeles, USA, <sup>3</sup>Department of Psychology, University of Minnesota, Minneapolis, USA 463 W-AM

**Long-term Motor Training Affected Resting State Brain**, Liangsuo Ma<sup>1</sup>, Binqun Wang<sup>2</sup>, Jinhu Xiong<sup>1</sup>, <sup>1</sup>Department of Radiology, University of Iowa, Iowa City, USA, <sup>2</sup>Research Imaging Center, University of Texas Health Science Center, San Antonio, USA 467 W-AM

**A Neural Mechanism Underlying Memory Failure in Older Adults**, W. Dale Stevens<sup>1</sup>, Lynn Hasher<sup>2,4</sup>, Kimberly S. Chiew<sup>2</sup>, Cheryl L. Grady<sup>2,3,4</sup>, <sup>1</sup>Department of Psychology, Harvard University, Cambridge, USA, <sup>2</sup>Rotman Research Institute at Baycrest, University of Toronto, Toronto, Canada, <sup>3</sup>Department of Psychiatry, University of Toronto, Toronto, Canada, <sup>4</sup>Department of Psychology, University of Toronto, Toronto, Canada 471 W-AM

### MODELING & ANALYSIS Exploratory Methods, Artifact Removal

**Asynchrony of BOLD signal across brain regions**, Xu Cui, Allan Reiss, Center for Interdisciplinary Brain Sciences Research, Department of Psychiatry, Stanford University, Stanford, USA 479 W-AM

**Artificial shifting of fMRI activation detected by surface-based analyses**, Hang Joon Jo<sup>1</sup>, Jong-Min Lee<sup>1</sup>, Jae-Hun Kim<sup>1</sup>, Chi-Hoon Choi<sup>2</sup>, Bon-Mi Gu<sup>3</sup>, Do-Hyung Kang<sup>4</sup>, Jun Soo Kwon<sup>4</sup>, Sun I. Kim<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea, <sup>2</sup>Department of Diagnostic Radiology, National Medical Center, Seoul, Korea, <sup>3</sup>Interdisciplinary Program in Brain Science, Seoul National University, Seoul, Korea, <sup>4</sup>Department of Psychiatry, Seoul National University College of Medicine, Seoul, Korea 483 W-AM

**Tradeoffs between signal detection accuracy and filter kernel size in high resolution cortical imaging**, Benjamin Ramsden, Department of Neurobiology and Anatomy, and Sensory Neuroscience Research Center, School of Medicine, West Virginia University, Morgantown, USA 487 W-AM

**Characterization of physiological and neural fluctuations in sensory-evoked fMRI of the primary visual cortex.**, Kevin Aquino<sup>1,2,3</sup>, Peter Robinson<sup>1,5,6</sup>, Mark Schira<sup>2,4</sup>, Peter Drysdale<sup>1,5</sup>, Michael Breakspear<sup>2,3</sup>, <sup>1</sup>School of Physics, University of Sydney, Sydney, Australia, <sup>2</sup>School of Psychiatry, University of New South Wales, Sydney, Australia, <sup>3</sup>The Blackdog Institute, Prince of Wales Hospital, Sydney, Australia, <sup>4</sup>School of Psychology, University of New South Wales, Sydney, Australia, <sup>5</sup>Brain Dynamics Center, Westmead Millennium Institute, Westmead Hospital and the University of Sydney, Westmead, Sydney, Australia, <sup>6</sup>Faculty of Medicine, the University of Sydney, Sydney, Australia 491 W-AM

**Evaluation of Parameters Used for Retrospective Corrections of the Physiological Noise in fMRI**, Arsène Ella, Jochen Rick, Jürgen Hennig, Dept. of Diagnostic Radiology, Medical Physics, University Hospital Freiburg, Freiburg, Germany 495 W-AM

**MRI Compatible Sleeping-Eye Gaze Tracking System Using Infrared Video Analyzed by ANN based Image Processing**, Syoji Kobashi<sup>1</sup>, Yuji Yahata<sup>1</sup>, Shigeyuki Kan<sup>2</sup>, Masaya Misaki<sup>2</sup>, Takahiko Koike<sup>2</sup>, Satoru Miyauchi<sup>2</sup>, Yutaka Hata<sup>1</sup>, <sup>1</sup>Graduate School of Engineering, University of Hyogo, Himeji, Japan, <sup>2</sup>CREST – Brain Function Imaging Team, Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology, Kobe, Japan 499 W-AM

**Removal of speech-related artifacts in MEG**, Mordehay Medvedovsky<sup>1</sup>, Samu Tauhi<sup>2</sup>, Rozaliya Bikmullina<sup>1</sup>, Ritva Paetau<sup>1,3,4</sup>, Antti Ahonen<sup>2</sup>, <sup>1</sup>BioMag Laboratory, Helsinki University Central Hospital, Helsinki, Finland, <sup>2</sup>Elekta Neuromag Oy, Helsinki, Finland, <sup>3</sup>Hospital for Children and Adolescents, Department of Child Neurology, Helsinki University Central Hospital, Helsinki, Finland, <sup>4</sup>Department of Clinical Neurophysiology, Helsinki University Central Hospital, Helsinki, Finland 503 W-AM

## MODELING & ANALYSIS

### Flattening, Segmentation

**Cortical thickness estimation of Alzheimer's disease patients: Application to the Australian Imaging Biomarkers and Lifestyle (AIBL) study.**, Pierrick Bourgeat<sup>1</sup>, Oscar Acosta<sup>1</sup>, Jurgen Fripp<sup>1</sup>, Colin Masters<sup>2</sup>, Christopher Rowe<sup>3</sup>, Victor Villemagne<sup>3</sup>, Olivier Slavado<sup>1</sup>, Sebastien Ourselin<sup>4</sup>,  
<sup>1</sup>BioMedIA Lab, eHealth Research Centre, CSIRO ICT Centre, Brisbane, Australia, <sup>2</sup>Centre for Neurosciences, University of Melbourne, Melbourne, Australia, <sup>3</sup>Department of Nuclear Medicine, Centre for PET, Austin Health, Heidelberg, Australia, <sup>4</sup>Centre for Medical Image Computing, University College London, London, United Kingdom 507 W-AM

**Anisotropic Diffusion Properties Near The Cortical Surface of The Human Brain**, Xiaojian Kang<sup>1,2</sup>, Timothy Herron<sup>1</sup>, And Turken<sup>1</sup>, David Woods<sup>1,2,3</sup>, <sup>1</sup>Human Cognitive Neurophysiology Lab, VA Research Service, VA-NCHCS, 150 Muir Road, Martinez, USA, <sup>2</sup>Department of Neurology and Center for Neuroscience, University of California at Davis, 4860 Y St., Suite 3700, Sacramento, USA, <sup>3</sup>UC Davis Center for Mind and Brain, 267 Cousteau Place, Davis, USA 511 W-AM

**Multispectral imaging improves performance of BET skull stripping.** Vitali Zagorodnov<sup>1</sup>, Suresh A. Sadananthan<sup>1</sup>, Bradley P. Sutton<sup>2,3</sup>, Michael W.L. Chee<sup>4</sup>, <sup>1</sup>School of Computer Engineering, Nanyang Technological University, Singapore, Singapore, <sup>2</sup>Bioengineering, University of Illinois at Urbana-Champaign, Urbana, USA, <sup>3</sup>Beckman Institute, University of Illinois at Urbana-Champaign, Urbana, USA, <sup>4</sup>Cognitive Neuroscience Laboratory, Duke-NUS Graduate, Singapore, Singapore 515 W-AM

**Improved Surface Models for FIRST**, Brian Patenaude<sup>1</sup>, Stephen Smith<sup>1</sup>, David Kennedy<sup>2</sup>, Mark Jenkinson<sup>1</sup>, <sup>1</sup>FMRI Centre, University of Oxford, Oxford, United Kingdom, <sup>2</sup>Center for Morphometric Analysis, MGH, Boston, USA 519 W-AM

**Brain Surface Conformal Slit Mapping**, Yalin Wang<sup>1,2</sup>, Xianfeng Gu<sup>3</sup>, Tony Chan<sup>2</sup>, Paul Thompson<sup>1</sup>, <sup>1</sup>Lab. of Neuro Imaging and Brain Research Institute, UCLA School of Medicine, Los Angeles, USA, <sup>2</sup>Mathematics Department, UCLA, Los Angeles, USA, <sup>3</sup>Computer Science Department, Stony Brook University, Stony Brook, USA 523 W-AM

## MODELING & ANALYSIS

### Functional Connectivity and Structural Equation Modeling

**Modular small-world networks and age-related attenuation of a dominant frontal module in human endogenous fMRI**, David Meunier<sup>1</sup>, Sophie Achard<sup>1,2</sup>, Edward Bullmore<sup>1</sup>, <sup>1</sup>Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>GIPSA-lab, UMR CNRS 5216, Grenoble, France 527 W-AM

**Subcortical Network Shape Analysis via Segmentation Denoising and Random Surface Momentum Maps**, Anqi Qiu<sup>1</sup>, Michael Miller<sup>2</sup>, <sup>1</sup>Division of Bioengineering, National University of Singapore, Singapore, Singapore, <sup>2</sup>Center for Imaging Science, Johns Hopkins University, Baltimore, USA 531 W-AM

**A Stimulus-Locked VAR Connectivity Model for Slow Event-Related fMRI Designs**, Wesley Thompson, Greg Seigle, University of Pittsburgh Department of Psychiatry, Pittsburgh, USA 535 W-AM

**Variations in Interhemispheric Correlation Across Development: A Resting-State fMRI Approach**, Daniel S Margulies<sup>1,2</sup>, AM Clare Kelly<sup>1</sup>, Lucina Q Uddin<sup>1</sup>, Zarrar Shezhad<sup>1</sup>, Phil Reiss<sup>1</sup>, F Xavier Castellanos<sup>1</sup>, Michael P Milham<sup>1</sup>, <sup>1</sup>NYU Child Study Center, New York, USA, <sup>2</sup>Berlin School of Mind and Brain, Berlin, Germany 539 W-AM

**The Impact of Global Signal Regression on Anti-Correlated Networks in Resting State Connectivity Analyses**, Kevin Murphy<sup>1</sup>, Rasmus M. Birn<sup>1</sup>, Peter A. Bandettini<sup>1,2</sup>, <sup>1</sup>Section on Functional Imaging Methods, National Institute of Mental Health, Bethesda, USA, <sup>2</sup>Functional MRI Facility, National Institute of Mental Health, Bethesda, USA 543 W-AM

**Identifying Stimulus-Induced Functional Connectivity using Partial Directed Coherence**, Joao Sato<sup>1,2</sup>, Edson Amaro Jr<sup>1</sup>, Daniel Takahashi<sup>1,2</sup>, Silvia Arcuri<sup>3</sup>, Koichi Sameshima<sup>1</sup>, Pedro Moretting<sup>2</sup>, Luiz Baccala<sup>4</sup>, <sup>1</sup>NIF-LIM44, Institute of Radiology - University of Sao Paulo, Sao Paulo, Brazil, <sup>2</sup>Institute of Mathematics and Statistics - University of Sao Paulo, Sao Paulo, Brazil, <sup>3</sup>Institute of Psychiatry - Kings College London, London, United Kingdom, <sup>4</sup>Department of Eletric Engineering, Escola Politécnica, University of Sao Paulo, Sao Paulo, Brazil 547 W-AM

**The Effect of Atlas-based Parcellation on Small-World Brain Functional Networks**, Jinhui Wang<sup>1</sup>, Liang Wang<sup>1,2</sup>, Chaozhe Zhu<sup>1</sup>, Yufeng Zang<sup>1</sup>, Hong Yang<sup>3</sup>, Qiyong Gong<sup>3</sup>, Yong He<sup>4</sup>, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>School of Information Science and Technology, Beijing Institute of Technology, Beijing, China, <sup>3</sup>Huaxi MR Research Center, Department of Radiology, West China Hospital of, Chengdu, China, <sup>4</sup>McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Canada 551 W-AM

**A Bayesian Hierarchical Framework for Spatial Modeling of fMRI Data**, Brian Caffo<sup>1</sup>, DuBois Bowman<sup>2</sup>, Susan Bassett<sup>1</sup>, Clinton Kilts<sup>2</sup>, <sup>1</sup>Johns Hopkins University, Baltimore, USA, <sup>2</sup>Emory University, Atlanta, USA 555 W-AM\*

**Motor task performance produces reductions in the amplitude of low frequency oscillations across the brain, driving reductions in functional connectivity within brain networks.**, Eugene Duff<sup>1,2</sup>, Leigh Johnston<sup>1,3</sup>, Jinhu Xiong<sup>4</sup>, Peter T. Fox<sup>5</sup>, Iven Mareels<sup>3</sup>, Gary F. Egan<sup>1</sup>, <sup>1</sup>Howard Florey Institute, Centre for Neuroscience, University of Melbourne, Melbourne, Australia, <sup>2</sup>Department of Mathematics and Statistics, University of Melbourne, Melbourne, Australia, <sup>3</sup>Department of Electrical and Electronic Engineering, University of Melbourne, Melbourne, Australia, <sup>4</sup>Department of Radiology, University of Iowa, Iowa City, USA, <sup>5</sup>Research Imaging Centre, University of Texas Health Sciences Centre, San Antonio, USA 559 W-AM

**Mutual information based approach for nonlinear functional connectivity**, Seung-Hyun Jin, Peter Lin, Mark Hallett, Human Motor Control Section, Medical Neurological Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, USA 563 W-AM

**Phase Synchrony Analysis of Network Dynamics during Visual Task Performance links EEG and BOLD**, Nathan Dees<sup>1</sup>, Linda Larson-Prior<sup>2</sup>, Tracy Nolan<sup>2</sup>, David Polite<sup>2</sup>, Fred Prior<sup>2</sup>, Bahar Sonya<sup>1</sup>, <sup>1</sup>Center for Neurodynamics, University of Missouri, St. Louis, USA, <sup>2</sup>Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, USA 567 W-AM

**Schizophrenia as a Disruption of Functional Connectivity Patterns**, B. Thyreau<sup>1</sup>, R. Garg<sup>2</sup>, G.A. Cecchi<sup>2</sup>, M. Plaze<sup>3</sup>, A.R. Rao<sup>2</sup>, I. Rish<sup>2</sup>, M.L. Paillère<sup>4</sup>, A. Galinowski<sup>5</sup>, F. Bellivier<sup>6</sup>, R. De Beaurepaire<sup>7</sup>, D. Januel<sup>8</sup>, C. Martinelli<sup>9</sup>, J-L. Martinot<sup>3</sup>, J-B. Poline<sup>1</sup>, <sup>1</sup>Neurospin, CEA, Gif-sur-Yvette, France, <sup>2</sup>IBM Research, Yorktown Heights, USA, <sup>3</sup>Unité Inserm-CEA, Neuroimaging and Psychiatry, Orsay, France, <sup>4</sup>AP-HP Adolescent Medicine Department, Cochin Hospital, Paris, France, <sup>5</sup>Sainte Anne Hospital, Paris, France, <sup>6</sup>Henri Mondor Hospital, Créteil, France, <sup>7</sup>Paul Guiraud Hospital, Villejuif, France, <sup>8</sup>with CHS Ville-Evrard, Saint-Denis, France, <sup>9</sup>P. Brousse Hospital, Villejuif, France 571 W-AM

**Global Signal Regression and Anticorrelations in Resting State fMRI Data**, Michael Fox, Abraham Snyder, Marcus Raichle, Washington University in St. Louis, St. Louis, USA 575 W-AM

**Noise during rest explores the brain's dynamic repertoire**, Viktor Jirsa<sup>1,3</sup>, Anandamohan Ghosh<sup>1</sup>, Rolf Köster<sup>2</sup>, Randy McIntosh<sup>4</sup>, Young-Ah Rho<sup>3</sup>, <sup>1</sup>Theoretical Neuroscience Group, UMR6152 Institut de Science du Mouvement CNRS, Marseille, France, <sup>2</sup>University Medical Centre St. Radboud, Nijmegen, Netherlands, <sup>3</sup>Center for Complex Systems & Brain Sciences, FAU, Boca Raton, USA, <sup>4</sup>Rotman Research Institute - Baycrest Centre, Toronto, Canada 579 W-AM

**The patterns of functional connectivity in pediatric brain at rest: FDG-PET study**, Heejung Kim<sup>1,2</sup>, Hyejin Kang<sup>1,3</sup>, Yoon-Kyoung Yim<sup>1,2</sup>, Jae Sung Lee<sup>1</sup>, Dong Soo Lee<sup>1</sup>, <sup>1</sup>Dept. of Nuclear Medicine, Seoul National University, College of medicine, Seoul, South Korea, <sup>2</sup>Interdisciplinary program in cognitive science, Seoul National University, Seoul, South Korea, <sup>3</sup>Brain and neuroscience major, Seoul National University, College of Medicine, Seoul, South Africa 583 W-AM

#### MODELING & ANALYSIS Multivariate Modeling, PCA, & ICA

**Modeling the spatial and temporal dependence in fMRI data: An application to a study of inhibitory control in cocaine addiction**, F. DuBois Bowman, Gordana Derado, Emory University, Atlanta, USA 587 W-AM

**Analysis of ictal EEG-fMRI data in focal epilepsy patients using independent component analysis**, Pierre LeVan, Louise Tyvaert, Jean Gotman, Montreal Neurological Institute, McGill University, Montreal, Canada 591 W-AM

**Further Development of the Complex General Linear Model to fMRI - Multiple Input and Output Evoked Response on Single Subject**, Daniel Rio<sup>1</sup>, Robert Rawlings<sup>1</sup>, Lawrence Woltz<sup>2</sup>, Jodi Gilman<sup>1</sup>, 595 W-AM

Megan Davis<sup>1</sup>, Daniel Hommer<sup>1</sup>, <sup>1</sup>Section of Brain Electrophysiology and Imaging, Laboratory of Clinical Studies, NIH, Bethesda, USA, <sup>2</sup>Synergy Research Inc., Monrovia, USA

**Modulation of the fractal properties of low frequency endogenous brain oscillations in functional MRI by a working memory task.**, Anna Barnes<sup>1</sup>, Christian Habeck<sup>2</sup>, Garry Honey<sup>1</sup>, Alle-Meije Wink<sup>3</sup>, Edward Bullmore<sup>1</sup>, John Suckling<sup>1</sup>, <sup>1</sup>Cambridge University, Cambridge, United Kingdom, <sup>2</sup>Columbia University, New York, USA, <sup>3</sup>Cambridge University, Cambridge, United Kingdom, <sup>4</sup>Imperial College, London, United Kingdom, <sup>5</sup>Cambridge University, Cambridge, United Kingdom, <sup>6</sup>Cambridge University, Cambridge, United Kingdom 599 W-AM

**Reliability of multivariate causality measures for neural data**, Esther Florin<sup>1,2</sup>, Joachim Gross<sup>3</sup>, Gereon R. Fink<sup>1,2</sup>, Lars Timmermann<sup>2</sup>, <sup>1</sup>Institute of Neuroscience and Biophysics - Medicine, Cognitive Neurology, Research Centre Jülich, Juelich, Germany, <sup>2</sup>b Department of Neurology, University Hospital Cologne, Cologne, Germany, <sup>3</sup>Centre for Cognitive Neuroimaging (CCNi), Department of Psychology, University of Glasgow, Glasgow, United Kingdom 603 W-AM

**A frequency domain approach for understanding brain connectivity from EEG data**, Laura Marzetti<sup>1,2</sup>, Cosimo Del Gratta<sup>1,2</sup>, Guido Nolte<sup>3</sup>, <sup>1</sup>Department of Clinical Sciences and Bioimaging, Gabriele D'Annunzio University, Chieti, Italy, <sup>2</sup>Institute for Advanced Biomedical Technologies, Gabriele D'Annunzio University Foundation, Chieti, Italy, <sup>3</sup>Fraunhofer FIRST.IDA, Berlin, Germany 607 W-AM

**Exploring changes in phase of EEG oscillations with tests on complex valued time–frequency representations**, Eduardo Martínez-Montes, Pedro A. Valdés-Sosa, Cuban Neuroscience Center, Havana, Cuba 611 W-AM

## MOTOR BEHAVIOR

### Basal Ganglia/Brainstem/Spinal Cord

**'REAL-TIME' IMAGING OF CARDIOVASCULAR CONTROL IN HUMAN SUBJECTS: CONCURRENT RECORDING OF SPONTANEOUS MUSCLE SYMPATHETIC NERVE ACTIVITY AND SPONTANEOUS FLUCTUATIONS IN BRAINSTEM fMRI SIGNAL INTENSITY**, Vaughan Macefield<sup>1,2</sup>, Luke Henderson<sup>3</sup>, <sup>1</sup>School of Medicine, University of Western Sydney, Sydney, Australia, <sup>2</sup>Prince of Wales Medical Research Institute, Sydney, Australia, <sup>3</sup>Department of Anatomy & Histology, University of Sydney, Sydney, Australia 615 W-AM

## MOTOR BEHAVIOR

### Eye Movements/Visuomotor Processing

**Cerebral Representations of Space and Time**, Martijn Beudel<sup>1,2</sup>, Remko Renken<sup>2</sup>, Klaus Leenders<sup>1</sup>, Bauke de Jong<sup>1,2</sup>, <sup>1</sup>dept. Neurology, University Medical Center Groningen, Groningen, Netherlands, <sup>2</sup>2. BCN Neuroimaging Center, University of Groningen, Groningen, Netherlands 619 W-AM

**Modulation of BOLD activations of the Smooth Pursuit Eye Movement network as a function of the amount of background dots**, Sabine Ohlendorf<sup>1,3</sup>, Andreas Sprenger<sup>2</sup>, Oliver Speck<sup>4</sup>, Volkmar Glauche<sup>1</sup>, Sven Haller<sup>5</sup>, Hubert Kimmig<sup>2</sup>, <sup>1</sup>Neurologische Universitätsklinik Freiburg, Freiburg, Germany, <sup>2</sup>Klinik für Neurologie, Universitätsklinikum Schleswig Holstein, Campus Lübeck, Lübeck, Germany, <sup>3</sup>Abteilung Röntgendiagnostik, Medizin Physik, Universitätsklinikum Freiburg, Freiburg, Germany, <sup>4</sup>Abteilung Biomedizinische Magnetresonanz, Institut für Experimentelle Physik, Universität Magdeburg, Magdeburg, Germany, <sup>5</sup>Abteilung für Neuroradiologie, Universitätsspital Basel, Basel, Switzerland 623 W-AM

**Differential Frontal Controls during Eye Tracking of Visible and Occluded Moving Targets: Simultaneous fMRI and Eye-Movement Recording**, Jinhong Ding<sup>1,2</sup>, David Powell<sup>3</sup>, Yang Jiang<sup>2</sup>, <sup>1</sup>Psychology Dept., Capital Normal University, Beijing, China, <sup>2</sup>Behavioral Science Dept., University of Kentucky, Lexington, USA, <sup>3</sup>Magnetic Resonance Imaging and Spectroscopy Center, University of Kentucky, Lexington, USA 627 W-AM

## NEUROANATOMY

### DTI Studies, Application

**Using multimodal imaging to investigate the structure-function relationship of a sensorimotor cortical U-fiber**, Kristi Clark<sup>1,2</sup>, Kenichi Oishi<sup>2</sup>, Roger Woods<sup>3</sup>, Susumu Mori<sup>2</sup>, Arthur Toga<sup>1</sup>, <sup>1</sup>Laboratory of Neuro Imaging, UCLA, Los Angeles, USA, <sup>2</sup>Laboratory of Brain Anatomical 631 W-AM



MRI, Johns Hopkins University, Baltimore, USA, <sup>3</sup>Brain Mapping Center, UCLA, Los Angeles, USA

**Remediation-related neuroplasticity of left hemisphere white matter among poor readers: A longitudinal diffusion tensor imaging study**, Timothy A. Keller, Ann Meyler, Vladimir L. Cherkassky, Marcel Adam Just, Center for Cognitive Brain Imaging, Department of Psychology, Carnegie Mellon University, Pittsburgh, USA 635 W-AM

**Frontal-Limbic White Matter Pathway Differences Associated with Genetic Risk for Major Depressive Disorder**, Jennifer Pacheco<sup>1,2</sup>, Christopher Beevers<sup>1</sup>, Cristina Benavides<sup>1</sup>, John McGeary<sup>3,4</sup>, Mithra Sathishkumar<sup>2</sup>, David M. Schnyer<sup>1,2</sup>, <sup>1</sup>Department of Psychology, The University of Texas at Austin, Austin, USA, <sup>2</sup>Imaging Research Center, The University of Texas at Austin, Austin, USA, <sup>3</sup>Research Service, Providence VA Medical Center, Providence, USA, <sup>4</sup>Center for Alcohol and Addiction Studies, Brown University, Providence, USA 639 W-AM

**Relating connectional architecture to grey matter function in the human lateral premotor cortex using functional and diffusion imaging**, Valentina Tomassini<sup>1</sup>, Saad Jbabdi<sup>1</sup>, Jan Scholz<sup>1</sup>, Tim Behrens<sup>1,2</sup>, Paul M Matthews<sup>1</sup>, Matthew Rushworth<sup>1,2</sup>, Heidi Johansen-Berg<sup>1</sup>, <sup>1</sup>FMRIB Centre, University of Oxford, Oxford, United Kingdom, <sup>2</sup>Dept of Experimental Psychology, University of Oxford, Oxford, United Kingdom 643 W-AM\*

**Correlation of White Matter Integrity measured by DTI with Intelligence, Personality, and Creativity in Healthy Subjects.**, Arvind Caprihan, Raneer Barrow, Robert Chavez, H. Jeremy Bockholt, Rex E. Jung, MIND Research Network, Albuquerque, USA 647 W-AM

**Cortical Connections of Human Inferior Parietal Area PF: Probabilistic Cytoarchitectonic Mapping and Diffusion Tensor Tractography Show a Similar Structural Organization as Compared to Macaques**, Stefan Geyer<sup>1,3</sup>, Simon B. Eickhoff<sup>2</sup>, Karl Zilles<sup>1,2</sup>, <sup>1</sup>C. and O. Vogt Brain Research Institute, Univ. Duesseldorf, Duesseldorf, Germany, <sup>2</sup>Institute of Neurosciences and Biophysics – Medicine, Research Center, Juelich, Germany, <sup>3</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany 651 W-AM

**Whole-Brain Analysis of Fractional Anisotropy in Fetal Alcohol Syndrome Using Tract-based Spatial Statistics**, Longchuan Li<sup>1</sup>, Claire Coles<sup>2</sup>, Mary Ellen<sup>2</sup>, Zhihao Li<sup>1</sup>, Mingguo Qiu<sup>1</sup>, Xiaoping Hu<sup>1</sup>, <sup>1</sup>Biomedical Imaging Technology Center, Emory University/Georgia Institute of Technology, Atlanta, USA, <sup>2</sup>Department of Psychiatry and Behavioral Sciences, Emory University, Atlanta, USA 655 W-AM

**Mapping the Structural Core of Human Cerebral Cortex**, Olaf Sporns<sup>1</sup>, Leila Cammoun<sup>2</sup>, Xavier Gigandet<sup>2</sup>, Reto Meuli<sup>3</sup>, Christopher Honey<sup>1</sup>, Patric Hagmann<sup>3</sup>, <sup>1</sup>Department of Psychological and Brain Sciences, Indiana University, Bloomington, USA, <sup>2</sup>Signal Processing Institute, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland, <sup>3</sup>Department of Radiology, University Hospital Center and University of Lausanne, Lausanne, Switzerland 659 W-AM

**Age Related Changes of Human Brains using Magnetic Resonance Hybrid Diffusion Imaging**, Yu-Chien Wu<sup>1,2</sup>, Frances B. Haerberli<sup>2</sup>, Yi-Min Huang<sup>6</sup>, Aaron S. Field<sup>1,3</sup>, Andrew L. Alexander<sup>2,4,5</sup>, <sup>1</sup>Department of Radiology, University of Wisconsin-Madison, Madison, USA, <sup>2</sup>Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin-Madison, Madison, USA, <sup>3</sup>Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, USA, <sup>4</sup>Department of Medical Physics, University of Wisconsin-Madison, Madison, USA, <sup>5</sup>Department of Psychiatry, University of Wisconsin-Madison, Madison, USA, <sup>6</sup>Department of Physics, Madison, USA 663 W-AM

## SENSORY SYSTEMS

### Auditory/Vestibular

**Patterns of local gamma activity over the human superior temporal gyrus suggested the presence of FM-selective processing areas**, Paul Poon<sup>1,2</sup>, John Brugge<sup>2</sup>, Hiroyuki Oya<sup>2</sup>, Richard Reale<sup>2</sup>, Hiroto Kawasaki<sup>2</sup>, Kirill Nourski<sup>2</sup>, Matthew Howard III<sup>2</sup>, <sup>1</sup>Dept Physiology, NCKU, Tainan, Taiwan, <sup>2</sup>Dept Neurosurgery, Univ of Iowa, Iowa City, USA 667 W-AM

**Sound-induced activation of vestibular cortex: Electrical neuroimaging during vestibular evoked myogenic potentials**, Pär Halje, Christophe Lopez, Olaf Blanke, Laboratory of Cognitive Neuroscience, Brain Mind Institute, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland 671 W-AM

**Multimodal Functional Imaging of Loss of Consciousness Under Propofol Anesthesia with Simultaneous EEG, fMRI, and 40-Hz ASSR**, Patrick Purdon<sup>1,2,6</sup>, Eric Pierce<sup>1</sup>, Giorgio Bonmassar<sup>2,3</sup>, John Walsh<sup>1</sup>, Grace Harrell<sup>1</sup>, Jean Kwo<sup>1</sup>, Daniel Deschler<sup>8</sup>, Catherine Mullaly<sup>1</sup>, Margaret Barlow<sup>4</sup>, Rebecca Merhar<sup>1</sup>, Camilo Lamus<sup>6</sup>, Sharon Maginnis<sup>5</sup>, Debra Skoniecki<sup>5</sup>, Mary Sullivan<sup>5</sup>, Helen-Anne Higgins<sup>5</sup>, Emery Brown<sup>1,6,7</sup>, <sup>1</sup>Mass Gen Hospital Dept Anesthesia & Critical Care, Boston, USA, 675 W-AM  
<sup>2</sup>Martinos Ctr. Biomed. Imaging, Charlestown, USA, <sup>3</sup>Mass Gen Hospital Dept Radiology, Boston, USA, <sup>4</sup>Mass Gen Hospital Dept Neurology, Boston, USA, <sup>5</sup>Mass Gen Hospital GCRC, Boston, USA, <sup>6</sup>MIT Dept Brain Cog Sci, Cambridge, USA, <sup>7</sup>Harvard/MIT Division Health Sci & Technology, Cambridge, USA, <sup>8</sup>Mass Eye Ear Infirmary, Boston, USA

## SENSORY SYSTEMS

### Tactile/Somatosensory

**Brain white matter differences in lower limb amputees, a Diffusion Tensor Imaging study**, Sarael Alcauter<sup>1,2</sup>, Erick H Pasaye<sup>2,3</sup>, Perla M Salgado<sup>3</sup>, Maria del Refugio Pacheco<sup>4</sup>, Maria De Iturbe<sup>3</sup>, Fernando A Barrios<sup>5</sup>, <sup>1</sup>Instituto Nacional de Psiquiatria INPRF, Mexico DF, Mexico, <sup>2</sup>Posgrado en Ciencias Biomedicas, UNAM, Mexico DF, Mexico, <sup>3</sup>Instituto Nacional de Neurologia y Neurocirugia MVS, Mexico DF, Mexico, <sup>4</sup>Instituto Nacional de Rehabilitacion, Mexico DF, Mexico, <sup>5</sup>Instituto de Neurobiologia, Universidad Nacional Autónoma de México, Queretaro, Mexico 679 W-AM

**An fMRI Study of Head Massage Reveals Activity in the Brain's Reward Centres**, Lisan Ho<sup>1</sup>, Laura M Parkes<sup>1</sup>, Richard L Evans<sup>2</sup>, Neil Roberts<sup>1</sup>, Francis McGlone<sup>2</sup>, <sup>1</sup>The Magnetic Resonance and Image Analysis Research Centre (MARIARC), University of Liverpool, Liverpool, United Kingdom, <sup>2</sup>Unilever Research Ltd, Wirral, United Kingdom 683 W-AM

**A somatotopical relationship between cortical activity and reflexological stimulation: an fMRI study**, Tomomi Nakamaru<sup>1,2</sup>, Naoki Miura<sup>3,2</sup>, Ai Fukushima<sup>2</sup>, Ryuta Kawashima<sup>2</sup>, <sup>1</sup>Tohoku University School of Medicine, 4-1 Seiry-cho, Aoba-ku, Sendai, Miyagi, Japan, <sup>2</sup>Department of Functional Brain Imaging, Institute of Development, Aging and Cancer (IDAC), Tohoku University, 4-1 Seiry-cho, Aoba-ku, Sendai, Miyagi, Japan, <sup>3</sup>Department of Intelligence Mechanical Systems Engineering, Kochi University of Technology, 185 Miyanokuchi, Kami, Kochi, Japan 687 W-AM

**Behavioral correlates of negative BOLD signal changes in the primary somatosensory cortex**, Jürgen Baudewig<sup>1</sup>, Andreas Kastrup<sup>2</sup>, Sonja Schnaudigel<sup>2</sup>, Lars Becker<sup>2</sup>, Jan Martin Sohns<sup>2</sup>, Peter Dechent<sup>1</sup>, <sup>1</sup>MR-Research in Neurology and Psychiatry, University Medical Center, Göttingen, Germany, <sup>2</sup>Department of Neurology, University Medical Center, Göttingen, Germany 691 W-AM\*

**Multimodal neuroimaging of somatosensory cortex during somatotopic air-puff stimulation**, Ruey-Song Huang<sup>1,2</sup>, Tzyy-Ping Jung<sup>1</sup>, Rey Ramirez<sup>1</sup>, Zeynep Akalin-Acar<sup>1</sup>, Martin Sereno<sup>2</sup>, Scott Makeig<sup>1</sup>, <sup>1</sup>Swartz Center for Computational Neuroscience, Institute for Neural Computation, University of California, San Diego, La Jolla, USA, <sup>2</sup>Department of Cognitive Science, University of California, San Diego, La Jolla, USA 695 W-AM

**Finger representations in areas 3b and 1 of human primary somatosensory cortex as revealed by functional MRI of tactile stimulation**, Renate Schweizer, Jens Frahm, Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut für biophysikalische Chemie, Goettingen, Germany 699 W-AM

## SENSORY SYSTEMS

### Vision

**Evidence of two alpha rhythm systems in the human brain: a combined EEG/fMRI study**, Eti Ben Simon<sup>1,2</sup>, Ilana Podlipsky<sup>1</sup>, Andrey Zhdanov<sup>1</sup>, Talma Hendler<sup>1,2,3</sup>, <sup>1</sup>Functional Brain Center, Wohl Institute for Advanced Imaging, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, <sup>2</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, <sup>3</sup>Psychology department, Tel Aviv University, Tel Aviv, Israel 703 W-AM

**fMRI of chromatic and achromatic responses in human visual areas: Specializations for spatial & temporal frequency**, Dany V. D'Souza<sup>1</sup>, Barry B. Lee<sup>2</sup>, Jens Frahm<sup>1</sup>, <sup>1</sup>Biomedizinische NMR Forschungs GmbH am Max-Planck-Institut für biophysikalische Chemie, Goettingen, Germany, <sup>2</sup>State University of New York, School of Optometry, New York, USA 707 W-AM

**Cortical Network for Coherent Stereomotion in the Human Brain**, Lora Likova, The Smith-Kettlewell Eye Research Institute, San Francisco, USA 711 W-AM

- Coincident Visual Retinotopy in simultaneous Slow cortical potentials and fMRI recordings,** Hugo Sandoval<sup>1,2</sup>, Stephen Sands<sup>1,2</sup>, J. Andrew Sands<sup>1</sup>, George R. Mangun<sup>3</sup>, Cameron Carter<sup>3</sup>, Joy Geng<sup>3</sup>, 715 W-AM  
<sup>1</sup>Sands Research, El Paso, USA, <sup>2</sup>University of Texas, El Paso, USA, <sup>3</sup>UC Davis, Davis, USA
- Volumetric Analysis of the Optic Chiasm in Early-blind Patients.,** Flemming Andersen<sup>1</sup>, Ron Kupers<sup>1</sup>, Fabien Schneider<sup>2</sup>, Maurice Ptito<sup>3</sup>, <sup>1</sup>PET Unit, Copenhagen University Hospital, Copenhagen, 719 W-AM  
<sup>2</sup>University of Saint-Etienne, Saint-Etienne, France, <sup>3</sup>University of Montreal, Montreal, Canada
- ORIENTATION-SPECIFIC CONTEXTUAL MODULATION IN HUMAN VISUAL CORTEX,** J. Scott McDonald<sup>1</sup>, Kiley Seymour<sup>1</sup>, Mark Schira<sup>2</sup>, Branka Spehar<sup>2</sup>, Colin Clifford<sup>1</sup>, <sup>1</sup>University of Sydney, 723 W-AM  
 Sydney, Australia, <sup>2</sup>UNSW, Sydney, Australia
- Neural correlates of detection and identification of human bodies,** Amra Hodzic<sup>1,2</sup>, Amanda Kaas<sup>1,3</sup>, Wolf Singer<sup>1</sup>, Aglaja Stirn<sup>4</sup>, <sup>1</sup>Max Planck Institut for Brain Research, Frankfurt am Main, Germany, 727 W-AM  
<sup>2</sup>Graduate School of Neural and Behavioural Sciences IMPRS, Tübingen, Germany, <sup>3</sup>Department of Cognitive Neuroscience, University of Maastricht, Maastricht, Netherlands, <sup>4</sup>Johann Wolfgang Goethe University Clinic, Frankfurt am Main, Germany
- Functional decoupling of BOLD and gamma band amplitudes in human visual cortex,** Suresh Muthukumaraswamy, Krish Singh, CUBRIC, Cardiff University, Cardiff, United Kingdom 731 W-AM
- MEG and fMRI studies on the neural basis of global form perception in Glass pattern stimuli.,** Jennifer B. Swettenham<sup>1</sup>, Stephen J. Anderson<sup>2</sup>, Ngoc J. Thai<sup>2</sup>, <sup>1</sup>CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom, 735 W-AM  
<sup>2</sup>The Wellcome Trust Laboratory for MEG Studies, School of Life and Health Sciences, Aston University, Birmingham, United Kingdom

## MEMORY & LEARNING

### Long-term Memory (episodic, semantic, autobiographical)

- Dissociating Regional Changes in Prefrontal Cortex Structure and Function that Impact Memory Performance during Normal Aging,** Luc Valiquette<sup>1</sup>, Rafael Languay<sup>1</sup>, Sidney Pinto<sup>1</sup>, Cheryl Grady<sup>2</sup>, 739 W-AM  
 Jens Pruessner<sup>1</sup>, Maria N. Rajah<sup>1</sup>, <sup>1</sup>McGill University and Douglas Mental Health Univ. Inst., Montreal, QC, Canada<sup>2</sup>U. of Toronto & Rotman Research Inst., Toronto, ON, Canada

13:45 – 14:45 You Yangs Hall (Level 3)

## COGNITION & ATTENTION

### Executive Function

- Transiently disrupting right prefrontal cortex interferes with updating of working memory,** Neir Eshel, Joseph Luka, Agatha Lenartowicz, Leigh E. Nystrom, Jonathan D. Cohen, Princeton University, Princeton, USA 2 W-PM
- How positive and negative smells influence cognitive interference processes,** Martina Reske<sup>1,2</sup>, Thilo Kellermann<sup>2</sup>, Andreas Finkelmeyer<sup>2</sup>, Thomas Niessen<sup>2</sup>, Michael Schwenzer<sup>2</sup>, Klaus Mathiak<sup>2,3</sup>, 6 W-PM  
<sup>1</sup>University of California San Diego, Laboratory of Biological Dynamics and Theoretical Medicine, La Jolla, USA, <sup>2</sup>RWTH Aachen University, Department of Psychiatry, Aachen, Germany, <sup>3</sup>King's College, Institute of Psychiatry, London, United Kingdom
- Modafinil modulates activity in brain regions underlying attentional control in healthy subjects,** Beth Stankevich, Roberta Rasetti, Fabio Sambataro, Giuseppe Blasi, Kelsey Skjei, Guilna Alce, Jose Apud, Daniel Weinberger, Venkata Mattay, Clinical Brain Disorders Branch: Genes, Cognition, and Psychosis Program, NIMH, NIH, Bethesda, USA 10 W-PM
- Comparison of putative default networks in macaque and human cerebral cortex,** David Van Essen<sup>1</sup>, Justin Vincent<sup>2</sup>, Avi Snyder<sup>1</sup>, Marcus Raichle<sup>1</sup>, <sup>1</sup>Washington University, St. Louis, USA, 14 W-PM  
<sup>2</sup>Harvard University, Cambridge, USA
- Activation of self-knowledge reduces conflict during occupational choice: An ERP study.,** Takashi Nakao, Makoto Miyatani, Akane Okamoto, Kaori Katayama, Mayo Mitsumoto, Yu Watanabe, Hiroshima University, Higashi-Hiroshima, Japan 18 W-PM

- CNV resolution does not cause the N2 and P3 Go/NoGo effects**, Janette Smith<sup>1,2</sup>, Robert Barry<sup>2</sup>, Stuart Johnstone<sup>2</sup>, <sup>1</sup>University of Newcastle, Newcastle, Australia, <sup>2</sup>University of Wollongong, Wollongong, Australia 22 W-PM
- Brain network dynamics during working memory task events in relation to COMT Val(158)Met**, Hao-Yang Tan, Qiang Chen, Rachel Higier, Laura Libby, Morgan Prust, Venkata Mattay, Daniel Weinberger, Joseph Callicott, Clinical Brain Disorders Branch, NIMH, NIH, Bethesda, USA 26 W-PM
- Multi-voxel coding of stimulus-response mapping rules in human frontal and parietal cortex**, Alexandra Woolgar, John Duncan, Medical Research Council - Cognition and Brain Sciences Unit, Cambridge, United Kingdom 30 W-PM
- Transient modulation of intrinsic network connectivity during working memory**, Catie Chang<sup>1</sup>, Gary H. Glover<sup>1,2,3</sup>, Moriah E. Thomason<sup>3</sup>, Michael D. Greicius<sup>4</sup>, Vinod Menon<sup>5,6</sup>, <sup>1</sup>Dept. of Electrical Engineering, Stanford University, Stanford, USA, <sup>2</sup>Dept. of Radiology, Stanford University, Stanford, USA, <sup>3</sup>Dept. of Psychology, Stanford University, Stanford, USA, <sup>4</sup>Dept. of Neurology, Stanford University School of Medicine, Stanford, USA, <sup>5</sup>Dept. of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, USA, <sup>6</sup>Program in Neuroscience, Stanford, USA 34 W-PM
- A Longitudinal Investigation of Developmental Changes in Response Inhibition in Early Adolescence**, Frances Haebler<sup>1,2</sup>, John Ollinger<sup>1,2</sup>, Dan Kelley<sup>1,2</sup>, Tom Johnstone<sup>3</sup>, Andrew Alexander<sup>1,2</sup>, <sup>1</sup>University of Wisconsin - Madison, Madison, USA, <sup>2</sup>Waisman Center: Lab for Brain Imaging and Behavior, Madison, USA, <sup>3</sup>Bristol University, Bristol, United Kingdom 38 W-PM
- Tracing the neural correlates of the N200 in a tactile stop-signal task: predominance of the dACC?**, Rene Huster<sup>1,2,3</sup>, Rene Westerhausen<sup>4</sup>, Arne Wittling<sup>1</sup>, Werner Wittling<sup>1</sup>, Elisabeth Schweiger<sup>1</sup>, Christo Pantev<sup>2</sup>, <sup>1</sup>Center for Neuropsychological Research, Trier, Germany, <sup>2</sup>Institute for Biomagnetism and Biosignalanalysis, Münster, Germany, <sup>3</sup>Department of Psychiatry and Psychotherapy and Interdisciplinary Center for Clinical Research (IZKF), Münster, Germany, <sup>4</sup>Cognitive Neuroscience Group, Department of Biological and Medical Psychology, Bergen, Norway 42 W-PM
- Freely Generating Task Goals and Delayed Intention**, Sara L Bengtsson<sup>1</sup>, John-Dylan Haynes<sup>2</sup>, Katsuyuki Sakai<sup>3</sup>, Richard E Passingham<sup>4</sup>, <sup>1</sup>Wellcome Centre for NeuroImaging, London, United Kingdom, <sup>2</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>3</sup>Department of Cognitive Neuroscience, Univ of Tokyo, Tokyo, Japan, <sup>4</sup>Department of Experimental Psychology, Oxford, United Kingdom 46 W-PM\*
- Changes of EEG Spectra from Alertness to Drowsiness in a Driving Simulator**, Sheng-Fu Liang<sup>1</sup>, Chin-Teng Lin<sup>2,3</sup>, Jong-Liang Jeng<sup>2</sup>, Tzai-Wen Chiu<sup>2</sup>, Li-Wei Ko<sup>2</sup>, Ruey-Song Huang<sup>2,4</sup>, Tzyy-Ping Jung<sup>2,4</sup>, Jeng-Ren Duann<sup>2,4</sup>, <sup>1</sup>Department of Computer Science and Information Engineering, National Cheng-Kung University, Tainan, Taiwan, <sup>2</sup>Brain Research Center, University System of Taiwan, Hsinchu, Taiwan, <sup>3</sup>Department of Electrical and Control Engineering, National Chiao-Tung University, Hsinchu, Taiwan, <sup>4</sup>Institute for Neural Computation, University of California, San Diego, USA 50 W-PM\*
- Performance monitoring dysfunction in cannabis users: evidence of anterior cingulate and prefrontal hypoactivity associated with reduced error awareness**, Robert Hester<sup>1</sup>, Liam Nestor<sup>2</sup>, Hugh Garavan<sup>2</sup>, <sup>1</sup>Queensland Brain Institute and School of Psychology, University of Queensland, St Lucia, Australia, <sup>2</sup>School of Psychology and Trinity College Institute for Neuroscience, Trinity College Dublin, Dublin, Ireland 54 W-PM
- Identifying components of task-set reconfiguration using ERP and BESA.**, Elise Mansfield<sup>1</sup>, Frini Karayanidis<sup>1,2,3</sup>, Kasey Galloway<sup>1</sup>, Janette Smith<sup>1,3</sup>, <sup>1</sup>Functional Neuroimaging Laboratory, Newcastle, Australia, <sup>2</sup>Schizophrenia Research Institute, Sydney, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia 58 W-PM

## COGNITION & ATTENTION

### Perception, Imagery, Awareness

- Dopaminergic neurotransmission plays a causal role in conscious awareness**, Joshua Skewes<sup>1</sup>, Hans Lou<sup>1</sup>, Pedro Rosa<sup>1</sup>, Hakwan Lau<sup>2</sup>, Troels Kjaer<sup>3</sup>, Svend Jensen<sup>1</sup>, Kim Mouridsen<sup>1</sup>, Andreas Roepstorff<sup>1</sup>, Albert Gjedde<sup>1</sup>, <sup>1</sup>Center for Functionally Integrative Neuroscience, Aarhus University Hospitals, Aarhus, Denmark, <sup>2</sup>Department of Psychology, Columbia University, Manhattan, USA, <sup>3</sup>Department of Clinical Neurophysiology, Copenhagen University Hospital, Copenhagen, Denmark 62 W-PM

- Neural correlates of change detection: how do we tell when a face is different?**, *Eva Loth<sup>1</sup>, Rik Henson<sup>2</sup>, Andy Calder<sup>2</sup>, Jason Taylor<sup>2</sup>, Sonia Bishop<sup>1,2</sup>*, <sup>1</sup>University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>MRC CBU, Cambridge, United Kingdom 66 W-PM
- Local activity patterns in high-level visual cortex reliably encode the category of invisible objects**, *Philipp Sterzer<sup>1,2</sup>, John-Dylan Haynes<sup>3</sup>, Geraint Rees<sup>2</sup>*, <sup>1</sup>Charité, Dept. of Psychiatry, Berlin, Germany, <sup>2</sup>University College London, London, United Kingdom, <sup>3</sup>Bernstein Center for Computational Neuroscience, Berlin, Germany 70 W-PM
- Location-Invariant Object Information in Foveal Retinotopic Cortex**, *Mark Williams<sup>1,2</sup>, Chris Baker<sup>3</sup>, Hans Op de Beeck<sup>4</sup>, Sabin Dang<sup>1</sup>, Christina Triantafyllou<sup>1</sup>, Nancy Kanwisher<sup>1</sup>*, <sup>1</sup>MIT, Cambridge, USA, <sup>2</sup>Macquarie University, Sydney, Australia, <sup>3</sup>National Institute of Mental Health, Bethesda, USA, <sup>4</sup>University of Leuven, Leuven, Belgium 74 W-PM\*
- Input-specific potentiation in sensory-induced cortical plasticity**, *Nicolas McNair<sup>1</sup>, Wes Clapp<sup>2</sup>, Jeff Hamm<sup>1</sup>, Tim Teyler<sup>3,4</sup>, Michael Corballis<sup>1</sup>, Ian Kirk<sup>1</sup>*, <sup>1</sup>University of Auckland, Auckland, New Zealand, <sup>2</sup>University of California, San Francisco, San Francisco, USA, <sup>3</sup>University of Idaho, Moscow, USA, <sup>4</sup>Washington State University, Pullman, USA 78 W-PM
- EEG activity relating to expertise; rapid, knowledge-guided perception of shogi (a Japanese version of chess) piece positions**, *Hironori Nakatani, Yoko Yamaguchi*, Laboratory for Dynamics of Emergent Intelligence, RIKEN Brain Science Institute, Wako, Japan 82 W-PM
- Different brain activation during perceptual transitions in ambiguous figure associates with perception of binocular rivalry**, *Chia-Li Liu*, National Taiwan University, Taipei, Taiwan 86 W-PM
- 'Brain Reading' with Real-Time fMRI: Communication via detection of brain states in the absence of motor response**, *Martin Monti<sup>1</sup>, Martin Coleman<sup>2</sup>, Adrian Owen<sup>1</sup>*, <sup>1</sup>MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, <sup>2</sup>Wolfson Brain Imaging Center, Addenbrookes Hospital, Cambridge, United Kingdom 90 W-PM\*

## DISORDERS OF THE NERVOUS SYSTEM

### Addiction

- Investigating white matter microstructure in opiate addiction, obsessive compulsive disorder and healthy controls**, *Murat Yücel<sup>1,2</sup>, Emre Bora<sup>1</sup>, Alex Fornito<sup>1</sup>, Ben Harrison<sup>1,3</sup>, Marc Seal<sup>1</sup>, Christos Pantelis<sup>1</sup>, Dan Lubman<sup>2</sup>*, <sup>1</sup>Melbourne Neuropsychiatry Centre, Department of Psychiatry, University of Melbourne, Melbourne, Australia, <sup>2</sup>ORYGEN Research Centre, Department of Psychiatry, University of Melbourne, Melbourne, Australia, <sup>3</sup>Institut d'Alta Tecnologia-PRBB, CRC Corporació Sanitària, Barcelona, Spain 98 W-PM

## DISORDERS OF THE NERVOUS SYSTEM

### Autism

- Power Spectral Changes of Resting-State BOLD Signal in Children with Autism Spectrum Disorder**, *Jukka Remes<sup>1,2</sup>, Tuomo Starck<sup>1</sup>, Jyri-Johan Paakki<sup>1</sup>, Juha Nikkinen<sup>1</sup>, Sanna Kuusikko<sup>3</sup>, Hanna Ebeling<sup>3</sup>, Jukka Rahko<sup>3</sup>, Katja Jussila<sup>3</sup>, Marja-Leena Mattila<sup>3</sup>, Marianne Haaped<sup>1,5</sup>, Koen van Leemput<sup>4,5</sup>, Irma Moilanen<sup>3</sup>, Osmo Tervonen<sup>1</sup>, Olli Silven<sup>2</sup>, Vesa Kiviniemi<sup>1</sup>*, <sup>1</sup>Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland, <sup>2</sup>Department of Electrical and Information Engineering, University of Oulu, Oulu, Finland, <sup>3</sup>Department of Child Psychiatry, Oulu University Hospital, Oulu, Finland, <sup>4</sup>Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Charlestown, USA, <sup>5</sup>Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, USA 102 W-PM

## DISORDERS OF THE NERVOUS SYSTEM

### Brain & Spinal Cord Trauma

- The role of resting state fMRI in Persistent Vegetative State treated with cerebral cortical stimulation**, *Barbara Massa Micon<sup>1,3</sup>, Franco Cauda<sup>2,4</sup>, Katiuscia Sacco<sup>2,4</sup>, Elisa Montanaro<sup>2</sup>, Federico D'Agata<sup>2,4</sup>, Sergio Duca<sup>4</sup>, Giuliano Geminiani<sup>2,4</sup>, Antonio Melcarne<sup>3</sup>, Sergio Canavero<sup>1</sup>*, <sup>1</sup>Turin Advanced Neuromodulation Group, Torino, Italy, <sup>2</sup>Department of Psychology, University of Turin, Torino, Italy, <sup>3</sup>Department of Neurosurgery, CTO Hospital, Torino, Italy, <sup>4</sup>CCS fMRI, Koelliker Hospital, Torino, Italy 106 W-PM
- Diffuse Axonal Injury due to Traumatic Brain Injury Alters Inhibition of Imitative Response Tendencies**, *Barbara Ettrich<sup>1</sup>, Rainer Scheid<sup>1,2</sup>, D. Yves von Cramon<sup>1,2</sup>, Matthias Schroeter<sup>1,2</sup>*, 110 W-PM

<sup>1</sup>Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Day Clinic of Cognitive Neurology, University of Leipzig, Leipzig, Germany

**Impaired Functional Connectivity in Traumatic Brain Injury: An MEG Study**, Pratik Mukherjee<sup>1</sup>, Anne Findlay<sup>1</sup>, Hana Lee<sup>2</sup>, Adrian Guggisberg<sup>1</sup>, Susanne Honma<sup>1</sup>, Michele Meeker<sup>2</sup>, Geoffrey Manley<sup>2</sup>, Srikantan Nagarajan<sup>1</sup>, <sup>1</sup>Radiology, UCSF, San Francisco, USA, <sup>2</sup>Neurosurgery, UCSF, San Francisco, USA 114 W-PM

## DISORDERS OF THE NERVOUS SYSTEM

### Developmental Disorders

**Connectivity analysis of brain function in control children and children with fetal alcohol spectrum disorder (FASD) during number processing**, Robyn Herron<sup>1</sup>, Ernesta Meintjes<sup>1</sup>, Sandra Jacobson<sup>2</sup>, Christopher Molteno<sup>3</sup>, Eric Murphy<sup>2</sup>, Vaibhav Diwadkar<sup>2</sup>, John Gore<sup>4</sup>, Joseph Jacobson<sup>2</sup>, Baxter Rogers<sup>4</sup>, <sup>1</sup>Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, <sup>2</sup>Department of Psychiatry and Behavioural Neurosciences, Wayne State University School of Medicine, Detroit, USA, <sup>3</sup>Department of Psychiatry, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, <sup>4</sup>Vanderbilt University Institute of Imaging Science, Vanderbilt University, Nashville, USA 118 W-PM

**Right Inferior Prefrontal Cortex is activated during Response Inhibition in Healthy Controls but not in Children with Fetal Alcohol Spectrum Disorder (FASD)**, Ernesta Meintjes<sup>1</sup>, Sandra Jacobson<sup>2</sup>, Christopher Molteno<sup>1</sup>, J Christopher Gatenby<sup>3</sup>, Christopher Warton<sup>1</sup>, Christopher Cannistraci<sup>3</sup>, John Gore<sup>3</sup>, Joseph Jacobson<sup>2</sup>, <sup>1</sup>University of Cape Town, Cape Town, South Africa, <sup>2</sup>Wayne State University, Detroit, USA, <sup>3</sup>Vanderbilt University, Nashville, USA 122 W-PM

**Volumetric reduction of normal appearing cortex in patients with polymicrogyria detected by cortical surface analysis**, Pedro P M Oliveira, Claudia C Leite, Edson Amaro, NIF - LIM-44 - InRad - Faculdade de Medicina - Universidade de São Paulo, Sao Paulo, Brazil 126 W-PM

**Functional integrity of malformed cortex: an fMRI study**, Florian Koppelstaetter<sup>1,2</sup>, Giorgi Kuchukhidze<sup>3</sup>, Iris Unterberger<sup>3</sup>, Judith Dobesberger<sup>3</sup>, Norbert Embacher<sup>3</sup>, Gerald Walser<sup>3</sup>, Thaddaeus Gotwald<sup>1</sup>, Christian Siedentopf<sup>1,2</sup>, Stephan Felber<sup>4</sup>, Anja Ischebeck<sup>2,3</sup>, Werner Jaschke<sup>1</sup>, Eugen Trinka<sup>3</sup>, <sup>1</sup>Department of Radiology, Medical University Innsbruck, Innsbruck, Austria, <sup>2</sup>fMRI-Lab, Department of Psychiatry, Medical University Innsbruck, Innsbruck, Austria, <sup>3</sup>Department of Neurology, Medical University Innsbruck, Innsbruck, Austria, <sup>4</sup>Stiftungsklinikum Mittelrhein St. Martin, Koblenz, Germany 130 W-PM

**Disruption of right-lateralized fronto-striatal functional circuitry in Fragile X syndrome**, Elizabeth Walter, Fumiko Hoeft, Allan Reiss, Department of Psychiatry, Stanford, USA 134 W-PM

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### Epilepsy

**How different brain pathologies influence language plasticity in the brain: fMRI study.**, Massimo Caulo, Carlo Sestieri, Chiara Briganti, Francesco De Pasquale, Armando Tartaro, Gian Luca Romani, University of Chieti-Pescara, Chieti, Italy 138 W-PM

**Spatiotemporal propagation pattern of ictal scalp EEG in mesial temporal lobe epilepsy associated with hippocampal sclerosis**, Ki-Young Jung<sup>1</sup>, Soyoun Kwon<sup>1</sup>, Joong-Koo Kang<sup>2</sup>, Ji Hyun Kim<sup>1</sup>, <sup>1</sup>Department of Neurology, Korea University Medical Center, Korea University College of Medicine, Seoul, South Korea, <sup>2</sup>Department of Neurology, Asan Medical Center, Ulsan University College of Medicine, Seoul, South Korea 142 W-PM

**The Neurodynamics of seizure propagation in focal epilepsy**, Andre Peterson<sup>1,2,3</sup>, Anthony Burkitt<sup>1,2</sup>, Iven Mareels<sup>1</sup>, David Grayden<sup>1,2</sup>, Mark Cook<sup>3</sup>, Levin Kuhlmann<sup>1</sup>, <sup>1</sup>Department of Electrical & Electronic Engineering, Melbourne University, Melbourne, Australia, <sup>2</sup>Bionic Ear Institute, Melbourne, Australia, <sup>3</sup>St. Vincents Hospital, Melbourne, Australia 146 W-PM

**Low Frequency Fluctuation Inhibition in BOLD Deactivation Regions Caused by Ictal Epileptic Discharges**, Zhiqiang Zhang<sup>1</sup>, Guangming Lu<sup>1</sup>, Lei Tian<sup>2</sup>, Yijun Liu<sup>3</sup>, <sup>1</sup>Department of Medical Imaging, Clinical School of Nanjing University, Nanjing, China, <sup>2</sup>Department of Neurosurgery, Clinical School of Nanjing University, Nanjing, China, <sup>3</sup>Department of Psychiatry and Neuroscience, University of Florida, Gainesville, USA 150 W-PM

**Reorganization of semantic noun processing in right temporal lobe epilepsy**, Elizabeth Jensen<sup>1,2</sup>, Daniel Pittman<sup>1</sup>, Kamal Sahi<sup>1</sup>, Bradley Goodyear<sup>1,2,3</sup>, Paolo Federico<sup>1,2,3</sup>, <sup>1</sup>Hotchkiss Brain Institute, Calgary, Canada, <sup>2</sup>Department of Clinical Neurosciences, Calgary, Canada, <sup>3</sup>Department of Radiology, Calgary, Canada 154 W-PM

**Ictal SPECT using Attachable Automatic Injector: Prediction of Ictal Onset Zone**, Sang Kun Lee<sup>1</sup>, Jung Ju Lee<sup>1</sup>, Jang-Wuk Choi<sup>1</sup>, Kon Chu<sup>1</sup>, Chun-Kee Chung<sup>2</sup>, Dong Soo Lee<sup>3</sup>, <sup>1</sup>Neurology, Seoul, Korea, <sup>2</sup>Neurosurgery, Seoul, Korea, <sup>3</sup>Nuclear Medicine, Seoul, Korea 158 W-PM

**Simultaneous EEG-fMRI and Functional Connectivity Analysis for Epilepsy Research and Surgical Planning**, Nallakkandi Rajeevan<sup>1</sup>, Michira Negishi<sup>1</sup>, E. Fertig<sup>2</sup>, L. Huh<sup>2</sup>, E. Novotney<sup>2</sup>, H. Blumenfeld<sup>2</sup>, Dennis Spencer<sup>2</sup>, Susan Spencer<sup>3</sup>, Todd Constable<sup>1,2</sup>, <sup>1</sup>Diagnostic Radiology, Yale University, New Haven, USA, <sup>2</sup>Neurosurgery, Yale University, New Haven, USA, <sup>3</sup>Neurology, Yale University, New Haven, USA 162 W-PM

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### Stroke & Recovery of Function

**Post-stroke somatosensory impairment inversely correlates with touch discrimination related BOLD signal in contralesional thalamus.**, Leanne Carey<sup>1,2</sup>, David Abbott<sup>3</sup>, Matt Harvey<sup>1,3</sup>, Aina Puce<sup>1,4</sup>, Rudiger Seitz<sup>1,5</sup>, <sup>1</sup>National Stroke Research Institute, Melbourne, Australia, <sup>2</sup>LaTrobe University, Melbourne, Australia, <sup>3</sup>Brain Research Institute, Melbourne, Australia, <sup>4</sup>Center for Advanced Imaging, Morgantown, USA, <sup>5</sup>University Hospital, Duesseldorf, Germany 166 W-PM\*

**Proprioceptive perception in stroke participants with proprioceptive deficits: an fMRI study**, Ettie Ben-Shabat<sup>1,2</sup>, Amy Brodtmann<sup>2</sup>, Thomas A Matyas<sup>1,2</sup>, Leanne M Carey<sup>1,2</sup>, <sup>1</sup>La Trobe University, Melbourne, Australia, <sup>2</sup>National Stroke Research Institute, Melbourne, Australia 174 W-PM

**Functional MRI in comatose survivors of cardiac arrest demonstrates decreased BOLD signal in patients with unfavourable outcome**, Teneille Gofton, Bryan Young, Philippe Choiunard, Andrea Dencev, Frank Bihari, Michael Nicolle, Donald Lee, Michael Sharpe, Seyed Mirsattari, University of Western Ontario, London, Canada 178 W-PM

**Effects of Blood Pressure, Cholesterol and Glucose Levels on White Matter Tissue Structure: Diffusion Tensor Imaging Tract Based Spatial Statistics (TBSS)**, David Salat<sup>1,4</sup>, Elizabeth Leritz<sup>1,2,3,4</sup>, Regina McGlinchey<sup>2,3,4</sup>, Caroline Chapman<sup>1,2</sup>, James Rudolph<sup>2,3,4</sup>, William Milberg<sup>2,3,4</sup>, <sup>1</sup>MGH/MIT/HMS Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Boston, USA, <sup>2</sup>Geriatric Research, Education and Clinical Center (GRECC), Boston VA Healthcare System, Boston, USA, <sup>3</sup>Division of Aging, Brigham & Women's Hospital, Boston, USA, <sup>4</sup>Harvard Medical School, Boston, USA 182 W-PM

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### Decision Making

**Neural Substrates underlying Decision-Making in Adolescents**, Uma Rao<sup>1</sup>, Anup Bidesi<sup>1</sup>, Monique Ernst<sup>2</sup>, <sup>1</sup>UT Southwestern Medical Center, Dallas, USA, <sup>2</sup>National Institute of Mental Health, Bethesda, USA 186 W-PM

**Tracking the unchosen option during stochastic choice in a dynamic world**, Erie Boorman<sup>1,2</sup>, Timothy Behrens<sup>1,2</sup>, Mark Woolrich<sup>2</sup>, Matthew Rushworth<sup>1,2</sup>, <sup>1</sup>Department of Experimental Psychology, University of Oxford, Oxford, United Kingdom, <sup>2</sup>Centre for Functional MRI of the Brain, University of Oxford, Oxford, United Kingdom 190 W-PM\*

**Neural Mechanism of Intertemporal Choice: From Discounting Future Gains to Future Losses**, Lijuan Xu<sup>1</sup>, Zhu-Yuan Liang<sup>2</sup>, Kun Wang<sup>1</sup>, Shu Li<sup>2</sup>, Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Center for Social and Economic Behavior, Institute of Psychology, Chinese Academy of Sciences, Beijing, China 194 W-PM

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### Emotional Learning

**Recruitment of Frontolimbic Circuitry in Reversal and Extinction Learning**, Fatima Soliman<sup>1</sup>, Liat Levita<sup>1</sup>, Alex Millner<sup>1</sup>, Dima Amso<sup>1</sup>, Henning Voss<sup>2</sup>, Gary Glover<sup>3</sup>, BJ Casey<sup>1</sup>, <sup>1</sup>Sackler Institute for Developmental Psychobiology, Weill Cornell Medical College, New York, USA, <sup>2</sup>Citigroup Biomedical Imaging Center, Weill Cornell Medical College, New York, USA, <sup>3</sup>Lucas Magnetic Resonance Image Center, Stanford University, Palo Alto, USA 198 W-PM

- UCS expectancies modulate the diminution of unconditioned fMRI signal responses during Pavlovian fear conditioning**, David Knight, Najah Waters, Peter Bandettini, NIMH, Bethesda, USA 202 W-PM

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### Emotional Perception

- Association of trait emotional intelligence and individual fMRI-activation patterns during emotional perception**, Benjamin Kreifelts<sup>1</sup>, Thomas Ethofer<sup>1,2</sup>, Wolfgang Grodd<sup>2</sup>, Elisabeth Huberle<sup>3</sup>, Dirk Wildgruber<sup>1</sup>, <sup>1</sup>Department of Psychiatry, University of Tuebingen, Tuebingen, Germany, <sup>2</sup>Section of Experimental MR of the CNS, Department of Neuroradiology, University of Tuebingen, Tuebingen, Germany, <sup>3</sup>Department of Cognitive Neurology, Hertie Institute for Clinical Brain Research, University of Tuebingen, Tuebingen, Germany 206 W-PM

- The effect of body structure of humanoid robot for emotional empathy: an fMRI study**, Naoki Miura<sup>1,2</sup>, Motoaki Sugiura<sup>3,2</sup>, Makoto Takahashi<sup>4</sup>, Tomohisa Moridaira<sup>5</sup>, Atsushi Miyamoto<sup>5</sup>, Yoshihiro Kuroki<sup>5</sup>, Ryuta Kawashima<sup>2</sup>, <sup>1</sup>Department of Intelligence Mechanical Systems Engineering, Kochi University of Technology, Kami, Japan, <sup>2</sup>Department of Functional Brain Imaging, Institute of Development, Aging and Cancer (IDAC), Tohoku University, Sendai, Japan, <sup>3</sup>Department of Cerebral Research, National Institute for Physiological Sciences, Okazaki, Japan, <sup>4</sup>Graduate School of Engineering, Tohoku University, Sendai, Japan, <sup>5</sup>Information Technologies Laboratories, Sony Corporation, Shinagawa, Japan 210 W-PM

- Neural correlates of volitional facilitation**, Sina Radke<sup>1,2</sup>, Corinna Nüsser<sup>1</sup>, Susanne Erk<sup>1</sup>, Julius Kuhl<sup>2</sup>, Henrik Walter<sup>1</sup>, <sup>1</sup>Dept. of Psychiatry, Div. of Medical Psychology, University of Bonn, Bonn, Germany, <sup>2</sup>Dept. of Differential Psychology and Personality Research, University of Osnabrueck, Osnabrueck, Germany 214 W-PM

- Neural mechanisms underlying cognition-affect interaction and psychological well-being**, Carien M. van Reekum<sup>1,2</sup>, Tom Johnstone<sup>1,2</sup>, Catherine J. Norris<sup>1</sup>, Stacey M. Schaefer<sup>1</sup>, Regina C. Lapate<sup>1</sup>, David Bachhuber<sup>1</sup>, Nicole M. Rute<sup>1</sup>, Richard J. Davidson<sup>1</sup>, <sup>1</sup>University of Wisconsin-Madison, Madison, USA, <sup>2</sup>University of Reading, Reading, United Kingdom 218 W-PM

- Is there a relationship between 5HT1a receptor binding and fMRI activation during emotion processing?**, Scott Langenecker<sup>1,2</sup>, Susan Kennedy<sup>2</sup>, David Scott<sup>2</sup>, Douglas Noll<sup>3</sup>, Jon-Kar Zubieta<sup>1,2</sup>, <sup>1</sup>University of Michigan Medical School, Psychiatry Department, Ann Arbor, USA, <sup>2</sup>University of Michigan, Molecular and Behavioral Neuroscience Institute, Ann Arbor, USA, <sup>3</sup>University of Michigan, Department of Engineering, Ann Arbor, USA 222 W-PM

- Skin temperature change in response to threatening stimuli in monkeys**, Katsuki Nakamura<sup>1,2</sup>, Koji Kuraoka<sup>1,2</sup>, <sup>1</sup>National Institute of Neuroscience, NCNP, Kodaira, Japan, <sup>2</sup>CREST, JST, Kawaguchi, Japan 226 W-PM

- Do fearful eyes capture attention?**, Pia Rothstein<sup>1</sup>, Joy Geng<sup>2</sup>, Glyn Humphreys<sup>1</sup>, <sup>1</sup>School of Psychology, University of Birmingham, Birmingham, United Kingdom, <sup>2</sup>Center for Mind and Brain, University California Davis, Davis, USA 230 W-PM

- The Amygdalar Resting State Network**, Christian Windischberger<sup>1,2</sup>, Andreas Weissenbacher<sup>1,2</sup>, Florian Gerstl<sup>1,2</sup>, Rupert Lanzenberger<sup>3</sup>, Ewald Moser<sup>1,2</sup>, <sup>1</sup>MR Center of Excellence, Medical University, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, Medical University, Vienna, Austria 234 W-PM

- Covert visual brand recognition results in a distinct modulation of emotional neuronal networks according to the individual preference: a fMRI study**, Silvia Casarotto<sup>1,2</sup>, Emiliano Ricciardi<sup>1,2</sup>, Matteo Corciolani<sup>3</sup>, Simona Romani<sup>4</sup>, Daniele Dalli<sup>3</sup>, Pietro Pietrini<sup>1,2</sup>, <sup>1</sup>Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, <sup>2</sup>Department of Laboratory Medicine and Molecular Diagnostics, AUO Pisa, Pisa, Italy, <sup>3</sup>Department of Business Administration, University of Pisa, Pisa, Italy, <sup>4</sup>Department of Economics, Business, and Regulation, University of Sassari, Sassari, Italy 238 W-PM

- EEG source localization analysis for empathy of Iconic and Realistic Cartoon Characters**, Yeojeong Choi<sup>1</sup>, Takhwan Kim<sup>1</sup>, Jaeseung Jeong<sup>2</sup>, <sup>1</sup>Graduate School of Culture Technology, Korea Advanced Institute of Science and Technology(KAIST), Daejeon, South Korea, <sup>2</sup>Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea 242 W-PM

- Valence - dependent modulation of hypothalamic activity**, Martin Fürsätz<sup>1,2</sup>, Christian Windischberger<sup>1,2</sup>, Karl Ågér Karlsson<sup>3</sup>, Winfried Mayr<sup>2</sup>, Ewald Moser<sup>1,2</sup>, <sup>1</sup>MR Centre of Excellence, 246 W-PM



Medical University of Vienna, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University of Vienna, Vienna, Austria, <sup>3</sup>Department of Biomedical Engineering, School of Science and Engineering, Reykjavik University, Reykjavik, Iceland

**Inhibiting responses to faces and complex objects: Concurrent empathy, developmental aggression, and neural response**, Jessica Kirkland<sup>1</sup>, Marilyn Essex<sup>2</sup>, Jeffrey Armstrong<sup>2</sup>, Richard Davidson<sup>1</sup>, <sup>1</sup>University of Wisconsin Madison, Psychology Department, Madison, USA, <sup>2</sup>University of Wisconsin Madison, Department of Psychiatry, Madison, USA 250 W-PM

**Conscious but not nonconscious perception of social emotions alters the “default mode” brain activity**, Franco Cauda<sup>2,6</sup>, Katiuscia Sacco<sup>2,6</sup>, Sergio Duca<sup>6</sup>, Federico D'Agata<sup>2,3,6</sup>, Barbara Massa Micon<sup>1,5</sup>, Giuliano Geminiani<sup>2,6</sup>, Marco Tamietto<sup>2,4</sup>, <sup>1</sup>Turin Advanced Neuromodulation Group, Torino, Italy, <sup>2</sup>Department of Psychology, University of Turin, Tj Psychology, University of Turinorino, Italy, <sup>3</sup>Department of Neuroscience, Molinette Hospital, Torino, Italy, <sup>4</sup>Cognitive and Affective Neuroscience Laboratory, Tilburg University, Tilburg, Netherlands, <sup>5</sup>Department of Neurosurgery, CTO hospital, Torino, Italy, <sup>6</sup>CCS fMRI, Koelliker Hospital, Torino, Italy 254 W-PM

**Brain connectivity changes during cognitive-emotional processing in alexithymia**, Branislava Ćurčić-B, Marte Swart, André Aleman, Neuroimaging Centrum, University Medical Centre Groningen, Groningen, Netherlands 258 W-PM

**Fright and Screams: Supra-additive neural responses to perceptually incongruous audio-visual cues of fear**, Cindy C. Hagan<sup>1</sup>, Sam Johnson<sup>1</sup>, Will Woods<sup>1</sup>, Andrew J. Calder<sup>2</sup>, Gary R. Green<sup>1</sup>, Andrew W. Young<sup>1</sup>, <sup>1</sup>Department of Psychology and York Neuroimaging Centre, University of York, York, United Kingdom, <sup>2</sup>MRC Cognition and Brain Sciences Unit, Cambridge University, Cambridge, United Kingdom 262 W-PM

**Nicotine negatively influences the neural processing of visual emotional stimuli in non-smokers**, Andrea Kobiella<sup>1</sup>, Dorothea E. Ulshöfer<sup>1</sup>, Christian Vollmert<sup>1</sup>, Sabine Klein<sup>1</sup>, Derik Hermann<sup>1</sup>, Karl Mann<sup>1</sup>, Michael N. Smolka<sup>2</sup>, <sup>1</sup>Department of Addictive Behavior and Addiction Medicine, Central Institute of Mental Health, Mannheim, Germany, <sup>2</sup>Section of Systems Neuroscience, Department of Psychiatry and Psychotherapy, Technische Universität Dresden, Dresden, Germany 266 W-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Anatomical MRI

**Voxel-Guided Morphometry in MS: individual assessment of chronic structural brain tissue changes in MRI – the role of focal lesions for brain atrophy development**, Matthias Kraemer<sup>1</sup>, Thorsten Schormann<sup>2</sup>, Andreas Dabringhaus<sup>1</sup>, Jochen Hirsch<sup>3</sup>, Klaus-Martin Stephan<sup>1</sup>, Volker Hoemberg<sup>1</sup>, Achim Gass<sup>3</sup>, <sup>1</sup>St. Mauritius Therapieklinik, Meerbusch, Germany, <sup>2</sup>Institut für Anatomie 1, Heinrich-Heine Universität, Düsseldorf, Germany, <sup>3</sup>Universitätsspital Basel, Neuroradiologie, Basel, Switzerland 270 W-PM

**A Comparison of Three Different Tractography Software Tools and Their Ease of Application**, Brian Snyder<sup>1</sup>, Jerry Chen<sup>2</sup>, Mojgan Hodaie<sup>1</sup>, <sup>1</sup>Department of Surgery, Division of Neurosurgery, Toronto Western Hospital, University of Toronto, Toronto, Canada, <sup>2</sup>University of Toronto, Toronto, Canada 274 W-PM

**High resolution R<sub>2</sub>\* maps reveal laminar structure of human visual cortex *in vivo*.**, Masaki Fukunaga, Marta Bianciardi, Peter van Gelderen, Jacco de Zwart, Jeff Duyn, Advanced MRI, LFMI, NINDS, National Institutes of Health, Bethesda, USA 278 W-PM

**MRI Phase-based Magnetic Susceptibility Mapping of the Human Brain at High Resolution**, Karin Shmueli, Peter van Gelderen, Tie-Qiang Li, Jeff Duyn, Advanced MRI Section, Laboratory of Functional and Molecular Imaging, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, USA 282 W-PM\*

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### Diffusion MRI

**Can residual bootstrap reliably estimate uncertainty in fiber orientation obtained by spherical deconvolution from diffusion-weighted MRI?**, Ben Jeurissen<sup>1</sup>, Alexander Leemans<sup>2</sup>, Jacques-Donald Tournier<sup>3,4</sup>, Jan Sijbers<sup>1</sup>, <sup>1</sup>Visionlab, Dept. of Physics, University of Antwerp, Antwerp, Belgium, <sup>2</sup>CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom, <sup>3</sup>Brain Research Institute, Melbourne, Australia, <sup>4</sup>Dept. of Medicine, University of Melbourne, Melbourne, Australia 286 W-PM

**Employing Bootstrapping Methods to Examine the Need for Pulse Triggering In Diffusion-Weighted Imaging**, Zoltan Nagy<sup>1</sup>, Chloe Hutton<sup>1</sup>, Daniel Alexander<sup>2</sup>, Ralf Deichmann<sup>1,3</sup>, Nikolaus Weiskopf<sup>1</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>2</sup>Centre for Medical Image Computing, Department of Computer Science, University College London, London, United Kingdom, <sup>3</sup>University Hospital Brain Imaging Centre, University of Frankfurt, Frankfurt, Germany 290 W-PM

**Structural and Functional Correlations in Subjects with Long-Term Occupational Solvent Exposure: A Combined DTI-fMRI Study**, David Carpenter<sup>1</sup>, Cheuk Tang<sup>1</sup>, Gudrun Lang<sup>2</sup>, Eric Leung<sup>1</sup>, Emily Eaves<sup>1</sup>, Nancy Fiedler<sup>2</sup>, <sup>1</sup>Mount Sinai School of Medicine, New York, USA, <sup>2</sup>UMDNJ-Robert Wood Johnson Medical School, New Jersey, 294 W-PM

**Automated localization of White Matter Hyperintensities (WMH) on DTI white matter tract atlas.**, Nayoung Lee<sup>1</sup>, Susumu Mori<sup>3</sup>, Kenichi Oishi<sup>3</sup>, Andreia Faria<sup>3</sup>, J. Tilak Ratnanather<sup>3</sup>, Wei Wen<sup>2</sup>, Trolor Julian<sup>2</sup>, Perminder Sachdev<sup>2</sup>, <sup>1</sup>Center for Imaging Science, Johns Hopkins University, Baltimore, USA, <sup>2</sup>School of Psychiatry, University of New South Wales, Sydney, Australia, <sup>3</sup>Department of Radiology, Johns Hopkins University, Baltimore, USA 298 W-PM

**Sub-millimeter Voxel Diffusion Tensor Imaging of the Optic Chiasm**, Joelle Sarlls, Carlo Pierpaoli, National Institutes of Health, Bethesda, USA 302 W-PM\*

### IMAGING TECHNIQUES & CONTRAST MECHANISM Multi-modal Integration

**Registration of a NIRS Functional Time Series Dataset in fMRI Space**, Paul Champion<sup>1,3</sup>, Sean Marrett<sup>2</sup>, Eric Wassermann<sup>1</sup>, <sup>1</sup>Brain Stimulation Section, National Institute of Neurological Disease and Stroke, National Institutes of Health, Bethesda, USA, <sup>2</sup>Functional MRI Facility, National Institute of Mental Health, National Institutes of Health, Bethesda, USA, <sup>3</sup>NYU School of Medicine, New York, USA 306 W-PM

**Development of an fMRI-MEG integrative neuroimaging technique: Improvements of its accuracy by suppression of fMRI-invisible coherent activities**, Tetsuo Kobayashi, Yusuke Okada, Kyoto University, Kyoto, Japan 310 W-PM

**Electrophysiological and hemodynamic correspondence of neuroelectric detection in fMRI data in focal epilepsy**, Roman Rodionov<sup>1,2</sup>, Michael Siniatchkin<sup>3</sup>, Christoph Michel<sup>4</sup>, David Carmichael<sup>1,2</sup>, Rachel Thornton<sup>1,2</sup>, Adam Liston<sup>1</sup>, Louis Lemieux<sup>1,2</sup>, <sup>1</sup>Department of Clinical and Experimental Epilepsy, Institute of Neurology, London, United Kingdom, <sup>2</sup>MRI Unit, The National Society for Epilepsy, Chalfont St Peter, Buckinghamshire, United Kingdom, <sup>3</sup>Christian-Albrechts-University, University Hospital of Pediatric Neurology, Kiel, Germany, <sup>4</sup>Neurology Clinic, University Hospital, Geneva, Switzerland 314 W-PM

**Assessing fMRI noise in EEG under simultaneous fMRI-EEG recording: a phantom study**, Makoto Miyakoshi<sup>1,4</sup>, Kayako Matsuo<sup>2</sup>, Shigeyuki Kan<sup>3</sup>, Takahiko Koike<sup>3</sup>, Satoru Miyauchi<sup>3</sup>, Toshiharu Nakai<sup>2</sup>, <sup>1</sup>Graduate School of Environmental Studies, Nagoya University, Nagoya, Japan, <sup>2</sup>Functional Brain Imaging Laboratory, Department of Gerontechnology, National Center for Geriatrics and Gerontology, Obu, Japan, <sup>3</sup>Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology, Kobe, Japan, <sup>4</sup>Japan Society for the Promotion of Science, Tokyo, Japan 322 W-PM

### IMAGING TECHNIQUES & CONTRAST MECHANISM Optical Imaging/NIRS/MRS (magnetic resonance spectroscopy)

**Simultaneous measurement of prefrontal hemodynamic changes in multiple subjects by wearable optical topography**, Hirokazu Atsumori, Masashi Kiguchi, Akiko Obata, Takusige Katura, Hiroki Sato, Tsukasa Funane, Atsushi Maki, Advanced Research Laboratory, Hitachi, Ltd., Hatoyama, Japan 326 W-PM

**Blind ICA discrimination of evoked cortical responses in humans with DOT**, Joanne Markham<sup>1</sup>, Brian White<sup>2</sup>, Benjamin Zeff<sup>1</sup>, Joseph Culver<sup>1</sup>, <sup>1</sup>Department of Radiology, Washington University School of Medicine, St. Louis, USA, <sup>2</sup>Department of Physics and School of Medicine, Washington University, St. Louis, USA 330 W-PM

**Single Trial Analysis of EROS Data with Linear Discriminant Function**, Chun-Yu Tse, Monica Fabiani, Gabriele Gratton, Beckman Institute & Department of Psychology, University of Illinois at Urbana-Champaign, Urbana, USA 334 W-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Perfusion MRI

**Comparison of Pulsed Arterial Spin Labeling (PASL) With and Without Parallel Imaging at 3T,** Yang Wang, Chen Lin, Andrew Kalnin, Kristine Mosier, John West, Andrew Saykin, IU Center for Neuroimaging, Dept. of Radiology, Indiana University School of Medicine, Indianapolis, USA 338 W-PM

**Venous outflow effect in arterial spin labeling magnetic resonance imaging: A demonstration in healthy children and children with sickle cell disease,** Wen-Chau Wu<sup>1</sup>, Hengyi Rao<sup>2</sup>, Mikolaj Pawlak<sup>1</sup>, Kim Cecil<sup>3</sup>, John VanMeter<sup>4</sup>, Thomas Zeffiro<sup>5</sup>, John Detre<sup>2</sup>, Elias Melhem<sup>1</sup>, Jiongjiang Wang<sup>1</sup>, <sup>1</sup>Department of Radiology, University of Pennsylvania, Philadelphia, USA, <sup>2</sup>Department of Neurology, University of Pennsylvania, Philadelphia, USA, <sup>3</sup>Department of Radiology, Cincinnati Children's Hospital, Cincinnati, USA, <sup>4</sup>Department of Neurology, Georgetown University Medical Center, Washington, USA, <sup>5</sup>Neural system group, Massachusetts General Hospital, Boston, USA 342 W-PM\*

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### PET/SPECT

**Functional compensation in incipient Alzheimer's disease,** Anna Caroli<sup>1</sup>, Cristina Geroldi<sup>1,2</sup>, Flavio Nobili<sup>3</sup>, Leighton R Barnden<sup>4</sup>, Ugo P Guerra<sup>5</sup>, Matteo Bonetti<sup>6</sup>, Giovanni B Frisoni<sup>1,2,7</sup>, <sup>1</sup>LENITEM Laboratory of Epidemiology, Neuroimaging, & Telemedicine - IRCCS S. Giovanni di Dio-FBF, Brescia, Italy, <sup>2</sup>Psychogeriatrics Unit - IRCCS S. Giovanni di Dio-FBF, Brescia, Italy, <sup>3</sup>Division of Clinical Neurophysiology, Department of Endocrinological and Metabolic Sciences, University of Genoa, Genoa, Italy, <sup>4</sup>Department of Nuclear Medicine, The Queen Elizabeth Hospital, Adelaide, Australia, <sup>5</sup>Department of Nuclear Medicine, Ospedali Riuniti, Bergamo, Italy, <sup>6</sup>Neuroradiology Service, Clinical Institute Città di Brescia, Brescia, Italy, <sup>7</sup>AFaR Associazione Fatebenefratelli per la Ricerca, Rome, Italy 346 W-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### TMS

**Investigation of the role of S1 and PFC in tactile working memory: a navigated TMS, tractography and EEG study.,** Tuomas Neuvonen<sup>1,2,6</sup>, Henri Hannula<sup>1,2,6</sup>, Petri Savolainen<sup>1</sup>, Jaana Hiltunen<sup>3</sup>, Oili Salonen<sup>4</sup>, Synnöve Carlson<sup>1,5</sup>, Antti Pertovaara<sup>1</sup>, <sup>1</sup>Neuroscience Unit, Institute of Biomedicine/Physiology, University of Helsinki, Helsinki, Finland, <sup>2</sup>Nexstim Ltd, Helsinki, Finland, <sup>3</sup>Advanced Magnetic Imaging Centre, Helsinki University of Technology, Espoo, Finland, <sup>4</sup>HUS Helsinki Medical Imaging Centre, Helsinki University of Technology, Helsinki, Finland, <sup>5</sup>Medical School, University of Tampere, Tampere, Finland, <sup>6</sup>these authors had an equal contribution to the study 350 W-PM\*

## LANGUAGE

### Comprehension

**The cortical dynamics of intelligible speech,** Thomas Schofield, Alex Leff, Klaas Stephan, Jenny Crinion, Karl Friston, Cathy Price, Wellcome Trust Centre for Neuroimaging, 12 Queen Square, University College London, London, United Kingdom 354 W-PM\*

**The Stages of Syntactic Processing measured with ERP: Effects of Word Frequency,** Laurie A. Stowe, Hanneke Loerts, John C.J. Hoeks, NeuroimagingCenter, University of Groningen, Groningen, Netherlands 358 W-PM

**Functional networks for semantic and phonological processing assessed with directed partial correlation analysis,** Wolfgang Mader<sup>1,3</sup>, David Feess<sup>1,3</sup>, Rüdiger Lange<sup>3</sup>, Cornelius Weiller<sup>2,3</sup>, Jens Timmer<sup>1,2</sup>, Björn Schelter<sup>1,2</sup>, Dorothee Saur<sup>3</sup>, <sup>1</sup>FDM, Center for Data Analysis and Modeling, University of Freiburg, Freiburg, Germany, <sup>2</sup>BCCN, Bernstein Center for Computational Neuroscience, University of Freiburg, Freiburg, Germany, <sup>3</sup>Department of Neurology, University Hospital Freiburg, Freiburg, Germany 362 W-PM

**Meta-analysis of Neural Representation of First Language and Second Language,** Rajani Sebastian<sup>1</sup>, Swathi Kiran<sup>1,2</sup>, <sup>1</sup>Department of Communication Sciences and Disorders, University of Texas at Austin, Austin, USA, <sup>2</sup>Institute of Neuroscience, University of Texas at Austin, Austin, USA 366 W-PM

- Neural mechanism of information retrieval unique to sentence processing**, Kei Takahashi<sup>1,2,3</sup>, Satoru Yokoyama<sup>2</sup>, Toshimune Kambara<sup>2,3</sup>, Kei Yoshimoto<sup>3</sup>, Ryuta Kawashima<sup>2</sup>, <sup>1</sup>JSPS, Tokyo, Japan, <sup>2</sup>IDAC, Tohoku U., Sendai, Japan, <sup>3</sup>GSICS, Tohoku U., Sendai, Japan 370 W-PM
- Spatio-temporal patterns of metaphor comprehension: The effect of context**, Valentina Bambini<sup>1</sup>, Chiara Bertini<sup>1</sup>, Alessandra Stella<sup>2</sup>, Francesco Di Russo<sup>2,3</sup>, <sup>1</sup>Laboratory of Linguistics, Scuola Normale Superiore, Pisa, Italy, <sup>2</sup>Department of Education for Motor Activity and Sport, University Institute of Motor Sciences, Rome, Italy, <sup>3</sup>Foundation Santa Lucia, Rome, Italy 374 W-PM\*
- Dynamic ERP Mapping in Perception of Chinese Pin-Yin Vowels**, Andrew CN Chen\*, Yanling Yin, Peipei Wang, Weijia Feng, Center for Higher Brain Functions, Capital Medical University, Beijing, China 378 W-PM
- Language reorganization of patients with auditory deficiencies observed by functional magnetic resonance imaging**, Mara Rita Pereira-Jorge<sup>1</sup>, Marcio Sturzbecher<sup>2</sup>, Antonio Carlos Santos<sup>3</sup>, Draulio Barros de Araujo<sup>1,2</sup>, <sup>1</sup>Universidade de São Paulo, Ribeirão Preto, Brazil, <sup>2</sup>Universidade de São Paulo, Ribeirão Preto, Brazil, <sup>3</sup>Universidade de São Paulo, Ribeirão Preto, Brazil, <sup>4</sup>Universidade de São Paulo, Ribeirão Preto, Brazil 382 W-PM
- Language dual-tasking: listening to two people makes your brain work twice as hard?**, Augusto Buchweitz, Ann Meyler, Marcel Just, Center for Cognitive Brain Imaging, Carnegie Mellon University, Pittsburgh, USA 386 W-PM
- Sentence Processing and Grammatical Complexity.**, Anne-Dominique Devauchelle<sup>1,2,3</sup>, Y-Lan Boureau<sup>1,2,3</sup>, Stanislas Dehaene<sup>1,2,3,4</sup>, Christophe Pallier<sup>1,2,3</sup>, <sup>1</sup>INSERM, U562, Cognitive Neuroimaging unit, Gif sur Yvette, France, <sup>2</sup>CEA, DSV/I2BM, NeuroSpin center, Gif sur Yvette, France, <sup>3</sup>Univ Paris-sud, IFR49, Gif sur Yvette, France, <sup>4</sup>Collège de France, Paris, France 390 W-PM
- Cortical networks underlying benefits of audio-visual speech integration**, Sungeun Kim<sup>1</sup>, Thomas M. Talavage<sup>1,2,3</sup>, Rachel Lenhart<sup>4</sup>, Angela Hoffa<sup>2</sup>, Donald Wong<sup>5</sup>, David B. Pisoni<sup>6</sup>, <sup>1</sup>School of Electrical and Computer Engineering, Purdue University, West Lafayette, USA, <sup>2</sup>Weldon School of Biomedical Engineering, Purdue University, West Lafayette, USA, <sup>3</sup>Department of Radiology, Indiana University School of Medicine, Indianapolis, USA, <sup>4</sup>Department of Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee, Knoxville, USA, <sup>5</sup>Department of Neuroscience and Clinical Neurology, Indiana University School of Medicine, Indianapolis, USA, <sup>6</sup>Department of Psychological and Brain Sciences, Indiana University, Bloomington, USA 394 W-PM

## LANGUAGE

### Reading/Writing

- Left Posterior Parietal Cortex is Involved in the Spatial Processing of Chinese Character Recognition**, Yanlin Luo<sup>1</sup>, Andrew CN Chen<sup>1</sup>, xiujun Li<sup>2</sup>, Danlin Pen<sup>2</sup>, <sup>1</sup>Capital Medical University, Beijing, China, <sup>2</sup>Beijing normal University, Beijing, China 398 W-PM
- Unbiased classification of developmental dyslexic subtypes using fMRI activation during reading.**, Ferath kherif, Caroline Ellis, Clare Shakeshaft, Hwee-Ling Lee, Mohamed Seghier, Cathy Price, Wellcome Trust Centre for Neuroimaging, UCL, London, United Kingdom 402 W-PM\*
- The Influence of Phonological Transparency on Reading**, Atira Bick<sup>1</sup>, Ram Frost<sup>2</sup>, Gadi Goelman<sup>3</sup>, <sup>1</sup>ICNC, Hebrew University, Jerusalem, Israel, <sup>2</sup>Psychology Department, Hebrew University, Jerusalem, Israel, <sup>3</sup>Medical Biophysics, Hadassah Hebrew University Hospital, Jerusalem, Israel 406 W-PM
- Early Neural Response to Expectancy In Reading Sentences: Convergent ERP and fMRI Findings**, Joseph Dien, Aminda O'Hare, University of Kansas, Lawrence, USA 410 W-PM

## MEMORY & LEARNING

### Learning (explicit & implicit)

- Visuospatial Working Memory in Children with Dysthymic Disorder: A Functional Magnetic Resonance Imaging (fMRI) Study.**, Karissa Searle<sup>1</sup>, Melissa Casey<sup>1</sup>, Ross Cunnington<sup>2</sup>, Alasdair Vance<sup>1</sup>, <sup>1</sup>Academic Child Psychiatry Unit, Royal Children's Hospital, Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute, Brisbane, Australia 418 W-PM
- Transfer effects from multiplication to division: An fMRI study on training arithmetic**, Anja Ischebeck<sup>1</sup>, Laura Zamarian<sup>1,2</sup>, Michael Schocke<sup>3</sup>, Margarete Delazer<sup>1</sup>, <sup>1</sup>Medical University Innsbruck, 422 W-PM

Dept. of Neurology, Innsbruck, Austria, <sup>2</sup>University of Trieste, Dept. of Psychology, Trieste, Italy,  
<sup>3</sup>Medical University Innsbruck, Dept. of Radiology I, Innsbruck, Austria

**An Investigation of Motor Plasticity using Resting State fMRI and Structural Equation Modeling,**  
 Liangsuo Ma<sup>1</sup>, Binqun Wang<sup>2</sup>, Donald Robin<sup>2</sup>, Peter Fox<sup>2</sup>, Jinhu Xiong<sup>1</sup>, <sup>1</sup>Department of Radiology,  
 University of Iowa, Iowa City, USA, <sup>2</sup>Research Imaging Center, University of Texas Health Science  
 Center, San Antonio, USA 426 W-PM

**Visuospatial Memory (VSM) in Children with Attention Deficit Hyperactivity Disorder, Combined  
 Type (ADHD-CT): A Functional Magnetic Resonance Imaging (fMRI) Study.,** Melissa Casey<sup>1</sup>,  
 Maree Farrow<sup>3</sup>, Ross Cunnington<sup>2</sup>, Alasdair Vance<sup>1</sup>, <sup>1</sup>Academic Child Psychiatry Unit, Royal Children's  
 Hospital, Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute,  
 Brisbane, Australia, <sup>3</sup>Howard Florey Institute, Melbourne, Australia 434 W-PM

**Repetition enhancement in perceptual priming: influence of word processing on cortical sharpening,**  
 Lebreton Karine<sup>1</sup>, Villain Nicolas<sup>1</sup>, Chételat Gaël<sup>1</sup>, Landeau Brigitte<sup>1</sup>, Seghier Mohammed L<sup>2,3</sup>,  
 Lazeyras François<sup>3</sup>, Eustache Francis<sup>1</sup>, Ibanez Vincent<sup>4</sup>, <sup>1</sup>Inserm - EPHE - Université de Caen  
 Basse-Normandie, Unité U923, GIP Cyceron, CHU Côte de Nacre, Caen, France, <sup>2</sup>Department of  
 Radiology, University Hospitals of Geneva, Geneva, Switzerland, <sup>3</sup>Wellcome Trust Centre for  
 Neuroimaging, Institute of Neurology, UCL, London, United Kingdom, <sup>4</sup>Psychiatric Neuroimaging  
 Unit, Division of Neuropsychiatry, Department of Psychiatry, University Hospitals of Geneva,  
 Geneva, Switzerland 438 W-PM

**Functional association of brain and somatic activities accompanying reverse learning,** Hideki  
 Ohira<sup>1</sup>, Michio Nomura<sup>2</sup>, Masahiro Matsunaga<sup>1,3</sup>, Tokiko Isowa<sup>4</sup>, Kenta Kimura<sup>1</sup>, Noriaki Kanayama<sup>1</sup>,  
 Hiroki Murakami<sup>1</sup>, Takahiro Osumi<sup>1</sup>, <sup>1</sup>Nagoya University, Nagoya, Japan, <sup>2</sup>Tokai Gakuin University,  
 Kakamigahara, Japan, <sup>3</sup>Aichi Medical University, Nagakute, Japan, <sup>4</sup>Mie Prefectural College of  
 Nursing, Tsu, Japan 442 W-PM

11:30 – 12:30 Corryong Hall (Level 2)

## MEMORY & LEARNING

### Long-term Memory (episodic, semantic, autobiographical)

**The neurocognitive benefits of donepezil on episodic memory in young, healthy individuals  
 following 24 h of sleep deprivation,** Lisa Chuah<sup>1</sup>, Chong Delise<sup>1</sup>, Jiat-Chow Tan<sup>1</sup>, William Rekshan<sup>1</sup>,  
 Annette Chen<sup>1</sup>, Martin Pan<sup>2</sup>, Robert Lai<sup>2</sup>, Vincenzo Libri<sup>2</sup>, Michael Chee<sup>1</sup>, <sup>1</sup>Cognitive Neuroscience Lab,  
 Duke-NUS Graduate Medical School, Singapore, Singapore, <sup>2</sup>Neurology Centre of Excellence of Drug  
 Discovery, GlaxoSmithKline, Harlow, United Kingdom 452 W-PM

**Autobiographical Retrieval Evokes and Induces Medial Temporal Lobe Theta Oscillatory  
 Activity,** Taufik A. Valiante<sup>1,2</sup>, Mary Pat McAndrews<sup>1,2</sup>, <sup>1</sup>University Health Network, Toronto, Canada,  
<sup>2</sup>University of Toronto, Toronto, Canada 456 W-PM

**Cortical Representations of Famous and Personally-Familiar Places,** Motoaki Sugiura<sup>1,2</sup>, Yoko  
 Mano<sup>2,1</sup>, Akihiro Sasaki<sup>2,1</sup>, Norihiro Sadato<sup>1,2</sup>, <sup>1</sup>Department of Cerebral Research, National Institute for  
 Physiological Sciences, Okazaki, Japan, <sup>2</sup>Division of Physiological Sciences, Graduate University for  
 Advanced Investigations (SOKENDAI), Okazaki, Japan 460 W-PM

**Memory performance related to hippocampal activation in non-demented older adults,** Amy  
 DeLuca<sup>1</sup>, Peter LaViolette<sup>2</sup>, Kelly O'Keefe<sup>1</sup>, Jacqueline O'Brien<sup>1</sup>, Reisa A. Sperling<sup>1</sup>, <sup>1</sup>Brigham and  
 Women's Hospital, Boston, USA, <sup>2</sup>Massachusetts General Hospital, Boston, USA 464 W-PM

**EEG theta-gamma coupling during explicit memory retention,** Hiroaki Mizuhara<sup>1,2</sup>, Yoko  
 Yamaguchi<sup>2</sup>, <sup>1</sup>Graduate School of Informatics, Kyoto University, Kyoto, Japan, <sup>2</sup>Lab. For Dynamics of  
 Emergent Intelligence, RIKEN Brain Science Institute, Wako, Japan 468 W-PM

**Memory consolidation leads to decreased posterior hippocampal activity during retrieval of  
 face-location associations while anterior hippocampal activity is increased,** Atsuko Takashima<sup>1</sup>,  
 Ingrid Nieuwenhuis<sup>1</sup>, Ole Jensen<sup>1</sup>, Lucia Talamini<sup>2</sup>, Mark Rijpkema<sup>1</sup>, Guillen Fernandez<sup>1,3</sup>, <sup>1</sup>FC Donders  
 Centre, Radboud University Nijmegen, Nijmegen, Netherlands, <sup>2</sup>Dept. of Psychology, University of  
 Amsterdam, Amsterdam, Netherlands, <sup>3</sup>Dept. of Neurology, Radboud University Nijmegen, Nijmegen,  
 Netherlands 472 W-PM

**MODELING & ANALYSIS**  
**Exploratory Methods, Artifact Removal**

**Enabling the Sharing of Functional MRI Datasets with BAXSQL**, Epifanio Bagarinao<sup>1</sup>, Yoshio Tanaka<sup>1</sup>, Kayako Matsuo<sup>2</sup>, Toshiharu Nakai<sup>2</sup>, <sup>1</sup>Grid Technology Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba City, Japan, <sup>2</sup>Department of Gerontechnology, National Center for Geriatrics and Gerontology, Ohbu City, Japan 476 W-PM

**Effect of regressing blink and saccade artefacts out of MEG signals**, Pierre Fonlupt<sup>1,2</sup>, Dimitri Bayle<sup>1,2</sup>, Marie-Anne Henaff<sup>1,2</sup>, <sup>1</sup>INSERM U821, LYON, France, <sup>2</sup>Université Lyon1, LYON, France 480 W-PM

**Intersubjects correlation wavelet analysis: a time-scale data driven analysis.**, Patricia Lessa<sup>1,2</sup>, João Sato<sup>2,3</sup>, Carlos Griese Neto<sup>2,3</sup>, Elisson Cardoso<sup>2</sup>, Edson Amaro Jr<sup>2</sup>, <sup>1</sup>IIEP - Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil, <sup>2</sup>NIF - Instituto de Radiologia do Hospital das Clínicas – Universidade de São Paulo, São Paulo, Brazil, <sup>3</sup>Instituto de Matemática e Estatística – Universidade de São Paulo, São Paulo, Brazil 484 W-PM

**Evaluating Latent Functional Cortical Regions Interactions with Structural Equation Modeling**, Chih-Chien Yang, Liang-Ting Tsai, Graduate School of Educational Measurement & Statistics, National Taichung University, Taichung, Taiwan 488 W-PM

**Unsupervised Clustering Identifies Structured Variability in Single Trial EEG Responses**, Andrew Bagshaw<sup>1,2</sup>, Tracy Warbrick<sup>1,2</sup>, <sup>1</sup>School of Psychology, University of Birmingham, Birmingham, United Kingdom, <sup>2</sup>Birmingham University Imaging Centre, University of Birmingham, Birmingham, United Kingdom 492 W-PM

**fMRI noise properties as a function of structure and tissue type: a multi-site study**, Douglas Greve<sup>1</sup>, Bryon Mueller<sup>2</sup>, Thomas Liu<sup>3</sup>, Gary Glover<sup>4</sup>, F. BIRN<sup>5</sup>, <sup>1</sup>MGH Athinoula A. Martinos Center for Biomedical Imaging, Boston, USA, <sup>2</sup>Center for Magnetic Resonance Research, Minneapolis, USA, <sup>3</sup>UCSD Center for Functional MRI, San Diego, USA, <sup>4</sup>Stanford Radiological Sciences Lab, Stanford, USA, <sup>5</sup>www.nbirn.net, Irvine, USA 496 W-PM

**Splines on the Sphere Q-Ball Imaging with Generalized Cross Validated smoothing (GCV-S<sup>2</sup>QBI)**, Nader Metwalli<sup>1,2</sup>, Xiaoping Hu<sup>1</sup>, John Carew<sup>3,4</sup>, <sup>1</sup>Biomedical Engineering, Georgia Institute of Technology / Emory University, Atlanta, USA, <sup>2</sup>Biomedical Engineering, Cairo University, Cairo, Egypt, <sup>3</sup>Radiology and Biostatistics, Emory University, Atlanta, USA, <sup>4</sup>Bioengineering, Georgia Institute of Technology, Atlanta, USA 500 W-PM

**HEEG virtual electrodes for synchrony measures**, Francois-B. Vialatte<sup>1</sup>, Monique Maurice<sup>1</sup>, Dauwels Justin<sup>2,3</sup>, Andrzej Cichocki<sup>1</sup>, <sup>1</sup>Riken BSI, Lab. ABSP, Wako-Shi, Japan, <sup>2</sup>MIT, Boston, USA, <sup>3</sup>Riken BSI, Amari Research Unit, Wako-Shi, Japan 504 W-PM

**MODELING & ANALYSIS**  
**Flattening, Segmentation**

**Unsupervised Hippocampus Segmentation: Tools, Validation and Clinical Perspectives.**, Andrea Chincarini<sup>1</sup>, Gianluca Gemme<sup>1</sup>, Piero Calvini<sup>1,2</sup>, Sandro Squarcia<sup>1,2</sup>, Stefania Donadio<sup>1,2</sup>, Luca Re<sup>2</sup>, Elisabetta Molinaro<sup>2</sup>, Giovanni Frisoni<sup>4</sup>, Flavio Mariano Nobili<sup>3</sup>, Guido Rodriguez<sup>3</sup>, <sup>1</sup>INFN, sezione di Genova, Genova, Italy, <sup>2</sup>Laboratorio di Fisica e Statistica Medica, Università di Genova, Genova, Italy, <sup>3</sup>Neurofisiologia Clinica - DTC e DISEM, Azienda Ospedaliera San Martino, Genova, Italy, <sup>4</sup>IRCCS San Giovanni di Dio, Brescia, Italy 508 W-PM

**MAPS: A Free Medical Image Processing Pipeline**, Blake Lucas<sup>1</sup>, Bennett Landman<sup>1</sup>, Jerry Prince<sup>1</sup>, Dzung Pham<sup>2</sup>, <sup>1</sup>Image Analysis and Communications Laboratory (IACL), The Johns Hopkins University, Baltimore, USA, <sup>2</sup>Laboratory of Medical Image Computing (MedIC), The Johns Hopkins University, Baltimore, USA 512 W-PM

**Comparison of FSL-FIRST with Manual Segmentation of Subcortical Brain Volumes.**, Janis Breeze<sup>1,2</sup>, Brian Patenaude<sup>3</sup>, Jean Frazier<sup>1,2</sup>, Mark Jenkinson<sup>3</sup>, Stephen Smith<sup>3</sup>, David Kennedy<sup>1,2,4</sup>, <sup>1</sup>Cambridge Health Alliance, Cambridge, USA, <sup>2</sup>Harvard Medical School, Boston, USA, <sup>3</sup>Oxford University, Oxford, United Kingdom, <sup>4</sup>Massachusetts General Hospital, Boston, USA 516 W-PM

**Cerebral Surface Extraction with Sub-voxel accuracy from Neonatal MR Images using Thick Rubber Model**, Takuma Oshiba<sup>1</sup>, Syoji Kobashi<sup>1</sup>, Kumiko Ando<sup>2</sup>, Masayo Ogawa<sup>2</sup>, Reiichi Ishikura<sup>2</sup>, 520 W-PM

Shozo Hirota<sup>2</sup>, Yutaka Hata<sup>1</sup>, <sup>1</sup>Graduate School of Engineering, University of Hyogo, Himeji, Japan,  
<sup>2</sup>Hyogo College of Medicine, Nishinomiya, Japan

## MODELING & ANALYSIS

### Functional Connectivity and Structural Equation Modeling

**Characterizing the Specific Behavior of Dynamic Causal Modeling Applied to fMRI Signals**, Björn Schelter<sup>1,2</sup>, David Feess<sup>1,3</sup>, Wolfgang Mader<sup>1,3</sup>, Rüdiger Lange<sup>3</sup>, Dorothee Saur<sup>3</sup>, Volkmar Glauche<sup>3</sup>, Cornelius Weiller<sup>2,3</sup>, Jens Timmer<sup>1,2</sup>, <sup>1</sup>FDM, Center for Data Analysis and Modeling, University of Freiburg, Freiburg, Germany, <sup>2</sup>BCCN, Bernstein Center for Computational Neuroscience, University of Freiburg, Freiburg, Germany, <sup>3</sup>Department of Neurology, University Hospital Freiburg, Freiburg, Germany 524 W-PM

**Impact of missing responses on fMRI DCM analysis**, Michal Mikl<sup>1,2</sup>, Petr Hluštík<sup>3</sup>, Radek Mareček<sup>1</sup>, Martin Havlíček<sup>2</sup>, Milan Brázdil<sup>1</sup>, <sup>1</sup>Department of Neurology, St. Anne's University Hospital and Masaryk Unive, Brno, Czech Republic, <sup>2</sup>Department of Biomedical Engineering, FEEC, Brno University of Technology, Brno, Czech Republic, <sup>3</sup>Departments of Neurology and Radiology, School of Medicine, Palacký University and University Hospital, Olomouc, Czech Republic 528 W-PM

**Modeling the symbiotic relationship between neuronal structure and dynamics.**, Mika Rubinov<sup>1</sup>, Kelton Temby<sup>1</sup>, Olaf Sporns<sup>2</sup>, Cees van Leeuwen<sup>3</sup>, Michael Breakspear<sup>1</sup>, <sup>1</sup>University of New South Wales, Sydney, Australia, <sup>2</sup>Indiana University, Bloomington, USA, <sup>3</sup>RIKEN Brain Science Institute, Saitama, Japan 532 W-PM

**Functional pathway discovery using mediation analysis: Approach and application to pain**, Tor Wager, Lauren Atlas, Martin Lindquist, Kate Hard, Matthew Davidson, Columbia University, New York, USA 536 W-PM

**Mutual Information Analysis with Optimized Gaussian Kernel Can Detect Weak Functional Connectivity from MEG Tomographic Estimates**, Masaki Maruyama, Andreas Ioannides, RIKEN Brain Science Institute, Wako, Japan 540 W-PM

**Independent components of EEG signals are associated with widespread networks of simultaneously-measured FMRI activity in the resting state**, Rami Niazy, John Evans, Richard Wise, Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, Cardiff, United Kingdom 544 W-PM

**Spurious Causality in fMRI**, Victor Solo<sup>1,2</sup>, Fa-Hsuan Lin<sup>1</sup>, Mark Vangel<sup>1</sup>, Matti Hamalainen<sup>1</sup>, <sup>1</sup>MGH/MIT/HMS Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School, Charlestown, USA, <sup>2</sup>School of Electrical Engineering, University of New South Wales, Sydney, Australia 548 W-PM

**Each Brain region is organized into both positive and negative connectivity as revealed by resting-state fMRI**, Xiang-Yu Long<sup>1</sup>, Xi-Nian Zuo<sup>2</sup>, Qi-Hong Zou<sup>1</sup>, Chao-Zhe Zhu<sup>1</sup>, Liang Wang<sup>1</sup>, Vesa Kiviniemi<sup>3</sup>, Yong He<sup>4</sup>, Yu-Feng Zang<sup>1</sup>, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>3</sup>Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland, <sup>4</sup>McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada 552 W-PM

**Resting state functional connectivity estimation in ASL data**, Maria Gavrilescu<sup>1</sup>, Michael Farrell<sup>1,2</sup>, Linda Verhoeven<sup>3</sup>, Derek Denton<sup>4,5</sup>, Gary Egan<sup>1,2</sup>, <sup>1</sup>Howard Florey Institute, Florey Neuroscience Institutes, Melbourne, Australia, <sup>2</sup>Centre for Neuroscience, University of Melbourne, Melbourne, Australia, <sup>3</sup>Biomedical Engineering, Technische Universiteit Eindhoven, Eindhoven, Netherlands, <sup>4</sup>Office of the Dean, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Australia, <sup>5</sup>Baker Heart Research Institute, Alfred Hospital, Melbourne, Australia 560 W-PM

**On the applicability of autoregressive models and Granger causality theory in fMRI analyses**, Catherine Davey<sup>1</sup>, David Grayden<sup>1</sup>, Maria Gavrilescu<sup>2</sup>, Michael Farrell<sup>2,3</sup>, Gary Egan<sup>2,3</sup>, Leigh Johnston<sup>1,2</sup>, <sup>1</sup>Department of Electrical and Electronic Engineering, University of Melbourne & NICTA Victorian Research Laboratory, Melbourne, Australia, <sup>2</sup>Howard Florey Institute, Florey Neuroscience Institutes, Melbourne, Australia, <sup>3</sup>Centre for Neuroscience, University of Melbourne, Melbourne, Australia 564 W-PM

- BrainSPANs: An Open Toolbox for Analyzing Brain Spontaneous Activity and Networks**, Tianzi Jiang, Yong Liu, Kun Wang, Ming Song, Yuan Zhou, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China 568 W-PM
- A neural code of motor programmes during hand gripping tasks**, CC Chen, James Kilner, Nick Ward, Karl Friston, Wellcome Trust Centre for Neuroimaging, London, United Kingdom 572 W-PM
- Online Resting Connectivity with Inline Image Reconstruction**, Christopher Glielmi<sup>1</sup>, Keith Heberlein<sup>2</sup>, Xiaoping Hu<sup>1</sup>, <sup>1</sup>Georgia Institute of Technology / Emory University, Atlanta, USA, <sup>2</sup>Siemens Medical Solutions, Erlangen, Germany 576 W-PM
- Possible sources of functional connectivity and under-connectivity in adolescents with autism spectrum disorders.**, Tyler Jones<sup>1</sup>, Lauren Kenworthy<sup>1,2</sup>, Laura Case<sup>1</sup>, Shawn Milleville<sup>1</sup>, Peter Bandettini<sup>1</sup>, Alex Martin<sup>1</sup>, Rasmus Birn<sup>1</sup>, <sup>1</sup>Laboratory of Brain and Cognition, Bethesda, USA, <sup>2</sup>Center for Autism Spectrum Disorders Children's National Medical Center, Washington, USA 580 W-PM

### MODELING & ANALYSIS Multivariate Modeling, PCA, & ICA

- Improving results from polarized light imaging by means of independent component analysis**, Jürgen Dammers<sup>1</sup>, Markus Axer<sup>1</sup>, David Gräßel<sup>1</sup>, Karl Zilles<sup>1,2</sup>, Katrin Amunts<sup>1,3</sup>, Uwe Pietrzyk<sup>1,4</sup>, <sup>1</sup>Institute of Neuroscience and Biophysics, INB-3 Medicine, Research Center Jülich, Jülich, Germany, <sup>2</sup>C. and O. Vogt Institute for Brain Research, University of Düsseldorf, Düsseldorf, Germany, <sup>3</sup>Department of Psychiatry and Psychotherapy, Aachen University Hospital, Aachen, Germany, <sup>4</sup>Department of Physics, University of Wuppertal, Wuppertal, Germany 584 W-PM
- Cross-Modal Classification in Human Right Premotor Cortex**, Joset Etzel, Valeria Gazzola, Christian Keysers, University Medical Center Groningen/University of Groningen, Groningen, Netherlands 588 W-PM
- Modulation of ongoing cerebral activity during finger-tapping: A new MEG method for capturing spatio-temporal dynamics**, Dante Mantini<sup>1,2</sup>, Stefania Della Penna<sup>1,2</sup>, Laura Marzetti<sup>1,2</sup>, Francesco De Pasquale<sup>1,2</sup>, Paolo Belardinelli<sup>1,2</sup>, Luca Ciancetta<sup>1,2</sup>, Christofer Lewis<sup>1,2,3,4</sup>, Abraham Z. Snyder<sup>3,4</sup>, Vittorio Pizzella<sup>1,2</sup>, Gian Luca Romani<sup>1,2</sup>, Maurizio Corbetta<sup>1,2,3,4</sup>, <sup>1</sup>Institute for Advanced Biomedical Technologies, University Foundation "G. D'Annunzio", Chieti, Italy, <sup>2</sup>Department of Clinical Sciences and Bio-imaging, University "G. D'Annunzio", Chieti, Italy, <sup>3</sup>Department of Neurology, Washington University, St. Louis, USA, <sup>4</sup>Department of Radiology, Washington University, St. Louis, USA 592 W-PM
- Multifractal refraction of resting state fMRI time series by age and drug**, John Suckling<sup>1</sup>, Alle-Meije Wink<sup>2</sup>, Frederic Bernard<sup>3</sup>, Anna Barnes<sup>1</sup>, Ed Bullmore<sup>1</sup>, <sup>1</sup>Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, <sup>2</sup>Imaging Sciences Division, Imperial College, Hammersmith Hospital, London, United Kingdom, <sup>3</sup>Département d'Etudes Cognitives, Ecole Normale Supérieure, Paris, France 596 W-PM
- Multivariate Deformation-Based Morphometry Statistics of Cortical Surfaces Reveals Changes in Folding Frequency Correlated with Alzheimer's Disease**, Maxime Boucher<sup>1,2</sup>, Oliver Lyttelton<sup>1</sup>, Sue Whitesides<sup>2</sup>, Alan Evans<sup>1</sup>, <sup>1</sup>Montreal Neurological Institute, Montreal, Canada, <sup>2</sup>School of Computer Science, McGill University, Montreal, Canada 600 W-PM
- Event-related Functional Near-infrared Spectroscopy (fNIRS) Analysis by Independent Component Analysis**, Yun Jiao<sup>1,2</sup>, Zhenyu Zhou<sup>1,2,4</sup>, Hongyu Yang<sup>1</sup>, Zongcai Ruan<sup>1</sup>, Hui Gong<sup>3</sup>, Zuhong Lu<sup>1,2</sup>, <sup>1</sup>Key Laboratory of Child Development and Learning Science (Southeast University), Ministry of Education, Nanjing, China, <sup>2</sup>School of Biological Science and Medical Engineering, Southeast University, Nanjing, China, <sup>3</sup>Key Laboratory of Biomedical Photonics of Ministry of Education, Huazhong University of Science and Technology, Wuhan, China, <sup>4</sup>Dept. of Psychiatry, University of Florida, Gainesville, USA 604 W-PM
- Voxel selection for fMRI data based on sparse representation**, Yuanqing Li<sup>1</sup>, Praneeth Namburi<sup>1,2</sup>, Cuntai Guan<sup>1</sup>, Jianfeng Feng<sup>3</sup>, <sup>1</sup>Institute for Infocomm Research, Singapore, <sup>2</sup>Nanyang Technological University, Singapore, <sup>3</sup>Warwick University, United Kingdom 608 W-PM
- Source Based Morphometry: Using Independent Component Analysis to Identify Gray and White Matter Differences with Application to Schizophrenia**, Lai Xu<sup>1,2</sup>, Godfrey Pearlson<sup>1,2</sup>, Vince Calhoun<sup>3,4</sup>, <sup>1</sup>The MIND Institute, Albuquerque, USA, <sup>2</sup>Dept. of ECE, University of New Mexico, Albuquerque, USA, <sup>3</sup>Olin Neuropsychiatry Research Center, Institute of Living, Hartford, USA, <sup>4</sup>Dept. of Psychiatry, Yale University School of Medicine, New Haven, USA 612 W-PM



**MOTOR BEHAVIOR**  
**Basal Ganglia/Brainstem/Spinal Cord**

**Neural synchronization of distributed spinal activity as a sign of motor binding**, Tjeerd Boonstra<sup>1,2</sup>, Andreas Daffertshofer<sup>2</sup>, Peter Beek<sup>2</sup>, <sup>1</sup>University of New South Wales, Randwick, Australia, <sup>2</sup>VU University, Amsterdam, Netherlands 616 W-PM

**MOTOR BEHAVIOR**  
**Eye Movements/Visuomotor Processing**

**Pure observational vs. imitation practice of hand actions: Correlation between behavioural outcome and neural activations.**, Satomi Higuchi<sup>1,2</sup>, Neil Roberts<sup>2</sup>, Simon B. Eickhoff<sup>3</sup>, Stefan Vogt<sup>1,2</sup>, <sup>1</sup>Department of Psychology, University of Lancaster, Lancaster, United Kingdom, <sup>2</sup>Magnetic Resonance and Image Analysis Research Centre, University of Liverpool, Liverpool, United Kingdom, <sup>3</sup>Institut for Medicine, Research Center, Jülich, Germany 620 W-PM\*

**Secondary sensory area SII is crucially involved in the preparation of familiar movements compared to movements never made before.**, Martijn Beudel<sup>1,4</sup>, Sjouke Zijlstra<sup>2,4</sup>, Theo Mulder<sup>2</sup>, Inge Zijdewind<sup>3,4</sup>, Bauke de Jong<sup>1,4</sup>, <sup>1</sup>dept. Neurology, University Medical Center Groningen, Groningen, Netherlands, <sup>2</sup>dept. Human Movement Sciences, University of Groningen, Groningen, Netherlands, <sup>3</sup>dept. Medical Physiology, University of Groningen, Groningen, Netherlands, <sup>4</sup>BCN Neuroimaging Center, University of Groningen, Groningen, Netherlands 624 W-PM

**Influence of sensory and motor properties on the Parietal Cortex**, Karin Nadig<sup>1</sup>, Lutz Jäncke<sup>1</sup>, Roger Lüchinger<sup>2</sup>, Kai Lutz<sup>1</sup>, <sup>1</sup>Department of Neuropsychology, University of Zurich, Zurich, Switzerland, <sup>2</sup>Institute for Biomedical Engineering, Swiss Federal Institute of Technology (ETH) Zurich, Zurich, Switzerland 628 W-PM

**NEUROANATOMY**  
**DTI Studies, Application**

**Effects of regular alcohol use during adolescence on white matter integrity**, Francesca Filbey, Arvind Caprihan, Kent Hutchison, The MIND Research Network, Albuquerque, USA 632 W-PM

**Asymmetry of the arcuate fasciculus of the human brain studied by in- and ex-vivo DTI, as well as post-mortem microdissection**, Kovacs Silvia<sup>1</sup>, Sage Caroline<sup>1</sup>, De Jong Lars<sup>2</sup>, Van Loon Johannes<sup>2</sup>, Sunaert Stefan<sup>1</sup>, <sup>1</sup>University Hospitals of the Catholic University Leuven, department of Radiology, Herestraat 49, Leuven, Belgium, <sup>2</sup>University Hospitals of the Catholic University Leuven, Department of Neurosurgery, Herestraat 49, Leuven, Belgium 636 W-PM

**Probabilistic maps and reproducibility of the pyramidal tract by diffusion tensor imaging**, mingguo qiu<sup>1</sup>, Qiyu Li<sup>1</sup>, Guangjiu Liu<sup>1</sup>, Bing Xie<sup>2</sup>, Jian Wang<sup>2</sup>, Shaoxiang Zhang<sup>1</sup>, <sup>1</sup>Department of Anatomy, Third Military Medical University, Chongqing, China, <sup>2</sup>Department of Anatomy, Third Military Medical University, Chongqing, China, <sup>3</sup>Department of Anatomy, Third Military Medical University, Chongqing, China, <sup>4</sup>Department of Radiology, Southwest Hospital, Third Military Medical University, Chongqing, China, <sup>5</sup>Department of Radiology, Southwest Hospital, Third Military Medical University, Chongqing, China, <sup>6</sup>Department of Anatomy, Third Military Medical University, Chongqing, China 640 W-PM

**DTI Spatial Unbiased Infratentorial Template based on MPRAGE SUIT**, Goran Vucurevic<sup>1</sup>, Paulo Dellani<sup>2</sup>, Andrea Kronfeld<sup>1</sup>, Andreas Konrad<sup>3</sup>, Peter Stoeter<sup>1</sup>, <sup>1</sup>Institute of Neuroradiology, Mainz, Germany, <sup>2</sup>University Clinic, Department of Neurology, Mainz, Germany, <sup>3</sup>University Clinic, Department of Psychiatry, Mainz, Germany 644 W-PM

**Evaluation of DTI fiber tracking strategy for clinical use**, Perrine Clarisse<sup>1,2,3</sup>, Jean-Albert Loterie<sup>1,2,3</sup>, Matthieu Delion<sup>1</sup>, Kader Boulanouar<sup>1,2,3</sup>, Florent Aubry<sup>1,2,3</sup>, Pierre Celsis<sup>1,2,3</sup>, Isabelle Berry<sup>1,2,3</sup>, <sup>1</sup>INSERM U825, Toulouse, France, <sup>2</sup>Université Toulouse III Paul Sabatier, Toulouse, France, <sup>3</sup>CHU de Toulouse, Toulouse, France 648 W-PM

**Kernohan's Notch Phenomenon demonstrated by Diffusion Tensor Imaging and Transcranial Magnetic Stimulation**, Ji heon Hong<sup>1</sup>, Sung Ho Jang<sup>2</sup>, Sang Ho Ahn<sup>2</sup>, Dong Seok Yang<sup>2</sup>, <sup>1</sup>Department of Physical Therapy, Graduate School of Rehabilitation Science Daegu University, Daegu, South Korea, <sup>2</sup>Department of Physical Medicine and Rehabilitation, School of Medicine, Yeungnam University, Daegu, South Korea 652 W-PM

**In vivo tract tracing of cortico-cortical connections in humans: a combined study of CCEP and Probabilistic Diffusion Tractography**, Riki Matsumoto<sup>1</sup>, Nobukatsu Sawamoto<sup>2</sup>, Shin-ichi Urayama<sup>2</sup>, Nobuhiro Mikuni<sup>3</sup>, Takashi Hanakawa<sup>4</sup>, Timothy Behrens<sup>5</sup>, Akio Ikeda<sup>1</sup>, Ryosuke Takahashi<sup>1</sup>, Hidenao Fukuyama<sup>2</sup>, <sup>1</sup>Department of Neurology, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>2</sup>Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>3</sup>Department of Neurosurgery, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>4</sup>Dept. Cortical Functional Disorder, National Institute of Neuroscience, National Center of Neurology, Kodaira, Japan, <sup>5</sup>FMRI, Oxford University, Oxford, United Kingdom 656 W-PM

**Connectivity characteristics of eloquent cortical language sites**, Stephen Dreyer<sup>1</sup>, Timothy Ellmore<sup>1</sup>, Thomas O'Neill<sup>1</sup>, Giridhar Kalamangalam<sup>2</sup>, Nitin Tandon<sup>1</sup>, <sup>1</sup>Department of Neurosurgery, The University of Texas Medical School, Houston, USA, <sup>2</sup>Department of Neurology, The University of Texas Medical School, Houston, USA 660 W-PM

## SENSORY SYSTEMS

### Auditory/Vestibular

**The ability of absolute pitch and the cortical structure.**, Nobuko Hara<sup>1</sup>, Kimihiro Nakamura<sup>1</sup>, Chihiro Kuroki<sup>2</sup>, Yoshihiro Takayama<sup>1</sup>, Seiji Ogawa<sup>2</sup>, <sup>1</sup>Department of Speech Physiology, The University of Tokyo, Tokyo, Japan, <sup>2</sup>Ogawa Laboratories for Brain Function Research, Tokyo, Japan 664 W-PM

**Regional specialization for processing auditory complexity: ALE meta-analysis and fMRI validation**, Fabienne Samson<sup>1</sup>, Pascal Belin<sup>2</sup>, Alain Toussaint<sup>1</sup>, Laurent Mottron<sup>1</sup>, Thomas A. Zeffiro<sup>3</sup>, <sup>1</sup>Hôpital Rivière-des-Prairies, University of Montréal, Montréal, Canada, <sup>2</sup>Centre for Cognitive Neuroimaging & Department of Psychology, University of Glasgow, Glasgow, United Kingdom, <sup>3</sup>Neural Systems Group, Massachusetts General Hospital, Boston, USA 668 W-PM

**Involvement of Limbic Brain Centers in Sound Perception in Humans**, Dave Langers<sup>1,2</sup>, Jennifer Melcher<sup>1,3</sup>, <sup>1</sup>Eaton-Peabody Laboratory, Massachusetts Eye and Ear Infirmary, Boston, USA, <sup>2</sup>University Medical Center Groningen, Groningen, Netherlands, <sup>3</sup>Tinnitus Research Initiative, Regensburg, Germany 672 W-PM

**Absolute pitch perception depends on morphology of the right Heschl's gyrus**, Peter Schneider<sup>1,2</sup>, Martina Wengenroth<sup>2</sup>, Maria Blatow<sup>2</sup>, Konstantin Bodamer<sup>3</sup>, Christoph Stippich<sup>1</sup>, Doris Geller<sup>3</sup>, Andre Rupp<sup>2</sup>, <sup>1</sup>Dept. of Neurology, University Hospital Heidelberg, Heidelberg, Germany, <sup>2</sup>Div. of Neuroradiology, University Hospital Heidelberg, Heidelberg, Germany, <sup>3</sup>University of Music and Performing Arts, Mannheim, Germany 676 W-PM

## SENSORY SYSTEMS

### Tactile/Somatosensory

**Neurophysiological basis of localization and delocalization of fMRI activation patterns**, Natasja J.G. Maandag<sup>1,2</sup>, Daniel Coman<sup>1</sup>, Basavaraju G. Sangannahalli<sup>1</sup>, Peter Herman<sup>1</sup>, Arien J. Smith<sup>1,3</sup>, Hal Blumenfeld<sup>4</sup>, Robert G. Shulman<sup>1</sup>, Fahmeed Hyder<sup>1,5</sup>, <sup>1</sup>Diagnostic Radiology, Yale University, New Haven, USA, <sup>2</sup>Anesthesiology, University Medical Centre, Nijmegen, Netherlands, <sup>3</sup>Neurosurgery, Mount Sinai Hospital, New York, USA, <sup>4</sup>Neurology, Yale University, New Haven, USA, <sup>5</sup>Biomedical Engineering, Yale University, New Haven, USA 684 W-PM

**Neural correlates of phantom limb perception in lower limb amputee patients during a sensation task.**, Erick H Pasaye<sup>1,5</sup>, Sarael Alcauter<sup>4,5</sup>, Maria del Refugio Pacheco<sup>3</sup>, Jorge Paz<sup>1</sup>, Roberto Mercadillo<sup>2</sup>, Erika Aguilar<sup>1</sup>, Maria De Iturbe<sup>1</sup>, Perla M. Salgado<sup>1</sup>, Fernando A. Barrios<sup>2</sup>, <sup>1</sup>Instituto Nacional de Neurología y Neurocirugía MVS, Mexico DF, Mexico, <sup>2</sup>Instituto de Neurobiología, Universidad Nacional Autónoma de México, Queretaro, Mexico, <sup>3</sup>Instituto Nacional de la Rehabilitación, Mexico DF, Mexico, <sup>4</sup>Instituto Nacional de Psiquiatría Ramón de la Fuente, Mexico DF, Mexico, <sup>5</sup>Posgrado en Ciencias Biomedicas UNAM, Mexico DF, Mexico 688 W-PM

**Dynamic texture perception for dominant and non-dominant hands within individuals: an fMRI study in adult healthy volunteers.**, Leeanne Carey<sup>1,2</sup>, David Abbott<sup>3</sup>, Matt Harvey<sup>1,3</sup>, Aina Puce<sup>1,4</sup>, Rudiger Seitz<sup>1,5</sup>, <sup>1</sup>National Stroke Research Institute, Melbourne, Australia, <sup>2</sup>LaTrobe University, Melbourne, Australia, <sup>3</sup>Brain Research Institute, Melbourne, Australia, <sup>4</sup>Center for Advanced Imaging, Morgantown, USA, <sup>5</sup>University Hospital, Duesseldorf, Germany 692 W-PM

**Variability of somatosensory cortex localization over different fMRI centers – a multicenter patient study**, Roland Beisteiner<sup>1</sup>, Nicolaus Klingner<sup>1</sup>, Markus Aichhorn<sup>2</sup>, Thomas Foki<sup>1</sup>, Alexander Geißler<sup>1</sup>, Martin Kronbichler<sup>2</sup>, Janpeter Nickel<sup>4</sup>, Jakob Rath<sup>1</sup>, Christian Siedentopf<sup>3</sup>, Wolfgang Staffen<sup>2</sup>, 696 W-PM

Thomas Steinkellner<sup>1</sup>, Michael Verius<sup>3</sup>, Stephan Felber<sup>5</sup>, Stefan Golaszewski<sup>2</sup>, Florian Koppelstaetter<sup>3</sup>, Rüdiger Seitz<sup>4</sup>, <sup>1</sup>Study Group Clinical fMRI, MR Center of Excellence, Department of Neurology, Medical University of Vienna, Vienna, Austria, <sup>2</sup>Department of Neurology, Christian Doppler Clinic and Center for Neurocognitive Research, Paracelsus Private Medical University, Salzburg, Austria, <sup>3</sup>Department of Radiology, Subdivision Neuroradiology, Medical University of Innsbruck, Innsbruck, Austria, <sup>4</sup>Department of Neurology, University Hospital Düsseldorf, Düsseldorf, Germany, <sup>5</sup>Institute for Diagnostic Radiology, Stiftungsklinikum Mittelrhein, Koblenz, Koblenz, Germany

**EEG source imaging and single-trial statistical analysis of distributed inverse solutions reveals late activation of insular cortex during light mechanical stimulation of the human hairy skin.**, Johan Wessberg, Goteborg University, Dept. of Physiology, Goteborg, Sweden 700 W-PM

## SENSORY SYSTEMS

### Vision

**Functional MRI and DTI tractography in visual pathology**, Christine Boucard<sup>1</sup>, Masahiro Ida<sup>2</sup>, Masaki Yoshida<sup>1</sup>, Takehiko Nagao<sup>3</sup>, Takaaki Hara<sup>1</sup>, Thien Huong Nguyen<sup>4</sup>, Jean Louis Stievenart<sup>4</sup>, Christophe Habas<sup>4</sup>, Takuya Shiba<sup>1</sup>, Kenji Kitahara<sup>1</sup>, Marie Therese Iba-Zizen<sup>4</sup>, Emmanuel Alain Cabanis<sup>4</sup>, Tohru Noda<sup>5</sup>, Hiroshi Tsuneoka<sup>1</sup>, <sup>1</sup>Department of Ophthalmology, The Jikei University School of Medicine, Tokyo, Japan, <sup>2</sup>Department of Radiology, Tokyo Metropolitan Health and Medical Treatment Corporation Ebara Hospital, Tokyo, Japan, <sup>3</sup>Department of Neurology, Tokyo Metropolitan Health and Medical Treatment Corporation Ebara Hospital, Tokyo, Japan, <sup>4</sup>Service de Neuro-Imagerie, Centre Hospitalier National d'Ophthalmologie des XV-XX, Paris, France, <sup>5</sup>Department of Ophthalmology, National Tokyo Medical Center, Tokyo, Japan 704 W-PM

**Topography of responses to colour and luminance in human subcortical visual pathways as revealed by high-resolution fMRI at 7T**, Marcus Grueschow<sup>1,2,3</sup>, Jörg Stadler<sup>4</sup>, Claus Tempelmann<sup>3</sup>, Hans-Jochen Heinze<sup>3</sup>, Jochem Rieger<sup>3</sup>, Oliver Speck<sup>5</sup>, John-Dylan Haynes<sup>2</sup>, <sup>1</sup>Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience, Berlin, Germany, <sup>3</sup>3 Dept. of Neurology II, Otto-von-Guericke University, Magdeburg, Germany, <sup>4</sup>Non-Invasive Imaging Lab, Leibniz-Institut für Neurobiologie, Magdeburg, Germany, <sup>5</sup>Dept. of Biomedical Magnetic Resonance, Institute for Experimental Physics, Magdeburg, Germany 708 W-PM

**Fixation Based Event Related (FIBER) fMRI; Using individual fixations as events to reveal cortical processing**, Jan Bernard C. Marsman<sup>1,2</sup>, Remco Renken<sup>2</sup>, Frans W. Cornelissen<sup>1,2</sup>, <sup>1</sup>Laboratory of Experimental Ophthalmology, University Medical Center Groningen/ University of Groningen, Groningen, Netherlands, <sup>2</sup>BCN NeuroImaging Center, School of Behavioural and Cognitive Neurosciences, University Medical Center Groningen/ University of Groningen, Groningen, Netherlands 712 W-PM

**The coding of colour, motion and their conjunction: revisited using pattern classifier analysis.**, Kiley Seymour<sup>1</sup>, Colin Clifford<sup>1</sup>, Nikos Logothetis<sup>2</sup>, Andreas Bartels<sup>2</sup>, <sup>1</sup>University of Sydney, Sydney, Australia, <sup>2</sup>MPI for Biological Cybernetics, Tuebingen, Germany 716 W-PM

**Electrical Stimulation, Recording and BOLD fMRI of the Human Anterior Color Center**, Michael Beauchamp<sup>1</sup>, Dona Murphey<sup>2</sup>, Daniel Yoshor<sup>2</sup>, <sup>1</sup>Univ of Texas Med School at Houston, Houston, USA, <sup>2</sup>Baylor College of Medicine, Houston, USA 720 W-PM\*

**Positive and negative changes in motion coherence from adapted state always elicit positive BOLD responses in hV4.**, Mauro Costagli<sup>1,2</sup>, Kenichi Ueno<sup>1</sup>, Pei Sun<sup>1</sup>, Xiaohong Wan<sup>1</sup>, Emiliano Ricciardi<sup>2</sup>, Pietro Pietrini<sup>2</sup>, Keiji Tanaka<sup>1</sup>, Kang Cheng<sup>1</sup>, <sup>1</sup>RIKEN Brain Science Institute, Wako-shi, Japan, <sup>2</sup>University of Pisa, Pisa, Italy 724 W-PM

**Inhibition of single word identification with TMS over dorsal area V5/MT+**, Robin Laycock<sup>1</sup>, Sheila Crewther<sup>1</sup>, Paul Fitzgerald<sup>2</sup>, David Crewther<sup>3</sup>, <sup>1</sup>La Trobe University, Melbourne, Australia, <sup>2</sup>Monash University and The Alfred Hospital, Melbourne, Australia, <sup>3</sup>Swinburne University, Melbourne, Australia 728 W-PM\*

**Resonance properties of human occipital, parietal and frontal cortical areas studied by Transcranial Magnetic Stimulation (TMS) combined with high density EEG (hd-EEG).**, Mario Rosanova<sup>1</sup>, Adenauer Casali<sup>1</sup>, Valentina Bellina<sup>1</sup>, Federico Resta<sup>2</sup>, Maurizio Mariotti<sup>1</sup>, Marcello Massimini<sup>1</sup>, <sup>1</sup>Department of Clinical Science, University of Milan, Ospedale Luigi Sacco, Milan, Italy, <sup>2</sup>Division of Radiology, Ospedale Luigi Sacco, Milan, Italy 732 W-PM

**Invariance of P250m to visual stimulation categories**, Omi Terasaki<sup>1,2</sup>, <sup>1</sup>Faculty of Medicine, Tokyo Medical and Dental University, Tokyo, Japan, <sup>2</sup>Kurita Hospital, Kanagawa, Japan 736 W-PM

11:30 – 12:30 You Yangs Hall (Level 3)

**COGNITION & ATTENTION****Executive Function**

- Neural correlates of response inhibition deficits in schizophrenia – an fMRI and ERP study.**, Matthew Hughes<sup>1,2</sup>, William Fulham<sup>1,2</sup>, Janette Smith<sup>1</sup>, Johanna Badcock<sup>2,3,4</sup>, Patricia Michie<sup>1,2</sup>, <sup>1</sup>University of Newcastle, Callaghan, Australia, <sup>2</sup>Schizophrenia Research Institute, Sydney, Australia, <sup>3</sup>Centre for Clinical Research in Neuropsychiatry, Perth, Australia, <sup>4</sup>University of Western Australia, Perth, Australia 3 TH-AM
- Differential Prefrontal and Parietal Function in Spatial Working Memory**, Tim Silk<sup>1,2,3</sup>, Cattram Nguyen<sup>3</sup>, Maree Farrow<sup>3</sup>, Alasdair Vance<sup>2</sup>, Ross Cunnington<sup>1,3</sup>, <sup>1</sup>School of Psychology and Queensland Brain Institute, University of Queensland, Brisbane, Australia, <sup>2</sup>Academic Child Psychiatry Unit, Department of Paediatrics, University of Melbourne, Royal Children's Hospital, Murdoch Children's Research Institute, Melbourne, Australia, <sup>3</sup>Howard Florey Institute, University of Melbourne, Melbourne, Australia, Australia 7 TH-AM
- cTBS impairs dorsolateral prefrontal cortex function during sorting task and affects striatal dopamine: a TMS-PET study**, Ji Hyun Ko<sup>1</sup>, Oury Monchi<sup>2</sup>, Alain Ptito<sup>1</sup>, Antonio P. Strafella<sup>3,4</sup>, <sup>1</sup>Montreal Neurological Institute, McGill University, Montréal, Canada., Montreal, <sup>2</sup>Functional Neuroimaging Unit, Geriatric's Institute, University of Montréal, Canada., Montreal, <sup>3</sup>Toronto Western Research Institute and Hospital, University of Toronto, Canada., Toronto, <sup>4</sup>PET Imaging Centre, Centre for Addiction and Mental Health, University of Toronto, Canada, Toronto, 11 TH-AM
- Activity in anterior cingulate and parietal cortex predicts activity in prefrontal cortex**, Justin Vincent<sup>1,2</sup>, Abraham Snyder<sup>2</sup>, Lawrence Cabusora<sup>2</sup>, Michael Fox<sup>2</sup>, Randy Buckner<sup>1,3</sup>, Marcus Raichle<sup>2</sup>, <sup>1</sup>Harvard University, Cambridge, USA, <sup>2</sup>Washington University, St. Louis, USA, <sup>3</sup>Howard Hughes Medical Institute, Cambridge, USA 15 TH-AM
- Extracting Consistent Activated Patterns of Eyes Open and Eyes Closed Resting State fMRI Data by Independent Component Analysis**, Mohammad Ali Oghabian<sup>1</sup>, Ameneh Boroumand<sup>1</sup>, Hajir Sikaroodi<sup>2</sup>, Ali Reza Ahmadian<sup>1</sup>, <sup>1</sup>Research Center for Sciences and Technology in Medicine, Tehran University/Medical Sciences, Tehran, Iran, <sup>2</sup>Neurology Group, Shariaty Hospital, Tehran University /Medical Sciences, Tehran, Iran 19 TH-AM

**COGNITION & ATTENTION****Cognitive Development**

- Neural encoding of perceptual decision making without awareness: Challenges for signal detection models of perception**, Stefan Bode<sup>1</sup>, John-Dylan Haynes<sup>1,2</sup>, <sup>1</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience Berlin, Charité – Universitätsmedizin, Berlin, Germany 23 TH-AM\*

**COGNITION & ATTENTION****Executive Function**

- Post-error performance optimization by modulation of goal-relevant sensory processing**, Joseph A. King<sup>2</sup>, D. Yves von Cramon<sup>1,2</sup>, Markus Ullsperger<sup>1,2</sup>, <sup>1</sup>MPI for neurological research, Cologne, Germany, <sup>2</sup>MPI for Human Cognitive and Brain Sciences, Leipzig, Germany 27 TH-AM
- Effective Connectivity during Task Set Reconfiguration**, Rei Akaishi, Yosuke Morishima, Vivian Rajeswaren, Katsuyuki Sakai, Grad. Sch. of Medicine, Univ. of Tokyo, Tokyo, Japan 31 TH-AM\*
- Segregation of Posterior Inferior Frontal Gyrus and Inferior Frontal Junction Revealed by Modified Go/No-Go Task**, Junichi Chikazoe, Koji Jimura, Tomoki Asari, Ken-ichiro Yamashita, Hiroki Morimoto, Satoshi Hirose, Yasushi Miyashita, Seiki Konishi, The Univ of Tokyo Sch of Med, Tokyo, Japan 35 TH-AM

- A functional magnetic resonance imaging study in the patients with obsessive-compulsive disorder during task-switching paradigm before and after 4-month treatment.** Ji Yeon Han<sup>1</sup>, Do-Hyung Kang<sup>2</sup>, Bon-Mi Gu<sup>1</sup>, Wi Hoon Jung<sup>1</sup>, Ji-Young Park<sup>1</sup>, Jung-Seok Choi<sup>2</sup>, Chi-Hoon Choi<sup>3</sup>, Jong-Min Lee<sup>3</sup>, Jun Soo Kwon<sup>1,2</sup>, <sup>1</sup>Interdisciplinary Program in Brain Science and in Cognitive Science, Seoul National University, Seoul, South Korea, <sup>2</sup>Department of Psychiatry, Seoul National University College of Medicine, Seoul, South Korea, <sup>3</sup>Department of Biomedical Engineering, Hanyang University, Seoul, South Korea 39 TH-AM
- Optimizing anticipatory task-set reconfiguration.** Frini Karayanidis<sup>1,2,3</sup>, Dearne Sanday<sup>1</sup>, Sharna Jamadar<sup>1,2</sup>, Robyn Loder<sup>1</sup>, <sup>1</sup>Functional Neuroimaging Laboratory, Newcastle, Australia, <sup>2</sup>Schizophrenia Research Institute, Sydney, Australia, <sup>3</sup>Hunter Medical Research Institute, Newcastle, Australia 43 TH-AM
- Context determines neural correlates of deviant detection.** Andreja Bubic<sup>1,3</sup>, D. Yves von Cramon<sup>1,4</sup>, Thomas Jacobsen<sup>2</sup>, Erich Schröger<sup>2</sup>, Ricarda I. Schubotz<sup>1,4</sup>, <sup>1</sup>Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>BioCog-Cognitive and Biological Psychology, Institute of Psychology I, University of Leipzig, Leipzig, Germany, <sup>3</sup>University of Leipzig, Leipzig, Germany, <sup>4</sup>Max Planck Institute for Neurological Research, Cologne, Germany 47 TH-AM
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<sup>3</sup>Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, <sup>4</sup>Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

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- Emotion processing in adolescent anorexia nervosa: An Event Related Potential Study**, *Ainslie Hatch<sup>1,2</sup>, Sloane Madden<sup>5</sup>, Michael Kohn<sup>3,5</sup>, Simon Clarke<sup>3</sup>, Touyz Stephen<sup>2</sup>, Lea Williams<sup>1</sup>*, <sup>1</sup>The Brain Dynamics Centre, Westmead Millennium Institute, Westmead Hospital, Sydney, Australia, <sup>2</sup>School of Psychology, University of Sydney, Camperdown, Sydney, Australia, <sup>3</sup>Centre for Research into Adolescent's Health (CRASH), Adolescent Medicine, Children's Hospital at Westmead & Westmead Hospital, Sydney, Australia, <sup>4</sup>Psychological Medicine, University of Sydney, Westmead 247 TH-AM

Hospital, Sydney, Australia, <sup>5</sup>Psychological Medicine, Children's Hospital at Westmead, Westmead, Sydney, Australia

**Using fMRI to differentiate neural activity in depressed adolescents in response to personally-relevant emotional phrases**, Nancy Adleman<sup>1,2</sup>, Kiki Chang<sup>1,3</sup>, Amy Garrett<sup>1</sup>, Naama Barnea-Goraly<sup>1</sup>, Meghan Howe<sup>3</sup>, Allan Reiss<sup>1</sup>, <sup>1</sup>Center for Interdisciplinary Brain Sciences Research, Stanford University School of Medicine, Stanford, USA, <sup>2</sup>Interdisciplinary Program in Neurosciences, Stanford University School of Medicine, Stanford, USA, <sup>3</sup>Pediatric Bipolar Disorders Program, Stanford University School of Medicine, Stanford, USA 251 TH-AM

**EEG Default Mode Network: Gamma Activity enhanced from Reversed Perception**, Weijia Feng, Andrew CN Chen\*, Center for Higher Brain Functions, Capital Medical University, Beijing, China 255 TH-AM

**Does valence of emotional pictures affect cortico-limbic functional connectivity in healthy subjects? A feasibility feMRI study at 3T**, Naranjargal Dashdorj, Dorothee Auer, Academic Radiology, School of Medical and Surgical Sciences, University of Nottingham, Nottingham, United Kingdom 259 TH-AM

**Dissociable Neural Responses to Tasting and Swallowing of Pleasant and Disgusting Beverages during fMRI.**, Mbemba Jabbi<sup>1</sup>, Christian Keysers<sup>2</sup>, <sup>1</sup>Section on integrative Neuroimaging, Cognitive Brain Disorders Branch, Genes Cognition and Psychosis Lab, National Institutes of Mental Health, 9000 Rockville Pike, Bethesda, 20892 MD, USA, <sup>2</sup>Social Brain Lab, BCN Neuroimaging Center, University Medical Center Groningen, Antonius Deusinglaan 2, 9713 AW, Groningen, Netherlands 263 TH-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Anatomical MRI

**Optimization of Accuracy and Efficiency in Measuring T1 in the brain using Simulated Inversion Recovery MRI**, Maryam Abaei<sup>1</sup>, Paul Morgan<sup>1</sup>, Dorothee Auer<sup>1</sup>, Christopher Tensch<sup>2</sup>, <sup>1</sup>Division of Academic Radiology, School of Medical and Surgical Sciences, University of Nottingham, Nottingham, United Kingdom, <sup>2</sup>Division of Clinical Neurology, School of Medical and Surgical Sciences, University of Nottingham, Nottingham, United Kingdom 267 TH-AM

**Optimal image contrast to noise ratio and SPM5 parameters for Voxel-Based Morphometry**, Herve Lemaitre, Alan Barnett, Fabio Sambataro, Heike Tost, Beth Verchinski, Vankata Mattay, CBDB/NIMH, Bethesda, USA 271 TH-AM

**Multi-parameter mapping of the human brain at 1mm resolution in less than 20 minutes**, Nikolaus Weiskopf<sup>1</sup>, Gunther Helms<sup>2</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>2</sup>MR-Research in Neurology and Psychiatry, Goettingen University, Goettingen, Germany 275 TH-AM

**A phantom based method for the outer cortical surface reconstruction of pediatric brain**, Junki Lee, Alan C. Evans, McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Canada 279 TH-AM

**Combined Brain Morphometry and Skull Imaging with FLUSTER**, André van der Kouwe, Thomas Benner, Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Charlestown, USA 283 TH-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Diffusion MRI

**A Comparative Study Between Constrained Spherical Deconvolution and Deconvolution Sharpening Transformation on High Angular-Resolution Diffusion Imaging**, Shiou-Ping Lee<sup>1</sup>, Jacques-Donald Tournier<sup>2</sup>, Christopher P Hess<sup>3</sup>, Li-Wei Kuo<sup>4</sup>, Chung-Ming Chen<sup>1</sup>, Wen-Yih Tseng<sup>5</sup>, <sup>1</sup>Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Brain Research Institute, Melbourne, Austria, <sup>3</sup>Department of Radiology, University of California-San Francisco, San Francisco, USA, <sup>4</sup>Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, <sup>5</sup>Center for Optoelectronic Biomedicine, National Taiwan University Medical College, Taipei, Taiwan 287 TH-AM

**Simulated diffusion dataset for multi-tensor fiber tractography**, Arish Qazi<sup>1,2</sup>, Gordon Kindlmann<sup>2</sup>, Carl-Fredrik Westin<sup>2</sup>, <sup>1</sup>University of Copenhagen, Copenhagen, Denmark, <sup>2</sup>Laboratory of Mathematics in Imaging, Harvard Medical School, Boston, USA 291 TH-AM

**DIFFUSION KURTOSIS IMAGING USING TURBOPROP DWI**, *Chu-Yu Lee<sup>1</sup>, Donglai Hou<sup>2</sup>, Lina Karam<sup>1</sup>, Josef Debbins<sup>2</sup>, <sup>1</sup>Arizona State University, Tempe, USA, <sup>2</sup>St. Joseph's Hospital and Medical Center, Phoenix, USA* 295 TH-AM

**High Resolution DTI in Whole, Fixed, Human Brain Reveals Cortical Fibre Patterns That Correspond Well with Histological Stains**, *Jennifer McNab<sup>1</sup>, Natalie Voets<sup>1</sup>, Steven Chance<sup>1</sup>, Gwenaelle Douaud<sup>1</sup>, Ned Jenkinson<sup>2</sup>, Tipu Aziz<sup>2,3</sup>, Karla Miller<sup>1</sup>, <sup>1</sup>Department of Clinical Neurology, Oxford University, Oxford, United Kingdom, <sup>2</sup>Department of Physiology Anatomy and Genetics, Oxford University, Oxford, United Kingdom, <sup>3</sup>Department of Neurosurgery, Oxford University, Oxford, United Kingdom* 299 TH-AM\*

**In vivo localisation of fibre tracts: Optimisation of fibre tracking to reduce voxel misclassification**, *Jacques-Donald Tournier<sup>1,2</sup>, Fernando Calamante<sup>1,2</sup>, Alan Connelly<sup>1,2</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>Department of Medicine, University of Melbourne, Melbourne, Australia* 303 TH-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Multi-modal Integration

**Transient and Steady-State Components of fMRI BOLD and MEG Signals from Somatosensory Cortex**, *Michael Marxen<sup>1,2</sup>, Tara L. Dawson<sup>1</sup>, Tim Bardouille<sup>1,3</sup>, Bernhard Ross<sup>1,3</sup>, Fred Tam<sup>1</sup>, Simon J. Graham<sup>1,2,3,4</sup>, <sup>1</sup>Rotman Research Institute, Baycrest Centre for Geriatric Care, Toronto, Canada, <sup>2</sup>Heart & Stroke Foundation Centre for Stroke Recovery, Toronto, Canada, <sup>3</sup>Department of Medical Biophysics, University of Toronto, Toronto, Canada, <sup>4</sup>Sunnybrook Health Sciences Centre, Toronto, Canada* 311 TH-AM

**Low-frequency artifacts in concurrent transcranial magnetic stimulation (TMS) and fMRI caused by leakage currents**, *Nikolaus Weiskopf<sup>1</sup>, Oliver Josephs<sup>1</sup>, Christian Ruff<sup>1,2</sup>, Felix Blankenburg<sup>1</sup>, Eric Featherstone<sup>1</sup>, Anthony Thomas<sup>3</sup>, Sven Bestmann<sup>1</sup>, Jon Driver<sup>1,2</sup>, Ralf Deichmann<sup>1,4</sup>, <sup>1</sup>Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, <sup>2</sup>Institute of Cognitive Neuroscience, University College London, London, United Kingdom, <sup>3</sup>The Magstim Company Limited, Whitland, United Kingdom, <sup>4</sup>University Hospital, Brain Imaging Center, Frankfurt, Germany* 315 TH-AM

**Validation of calibrated MRI using continuous-wave and time-domain near-infrared spectroscopic imaging**, *Claudine Gauthier<sup>1,2</sup>, Louis Gagnon<sup>2,3</sup>, Juliette Selb<sup>4</sup>, David Boas<sup>4</sup>, Frédéric Lesage<sup>2,3</sup>, Richard Hoge<sup>1,2</sup>, <sup>1</sup>Université de Montréal, Montreal, Canada, <sup>2</sup>Institut de gériatrie de Montréal, Montreal, Canada, <sup>3</sup>École Polytechnique de Montréal, Montreal, Canada, <sup>4</sup>Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, USA* 319 TH-AM

**Realignment parameter informed artifact correction for simultaneous EEG-fMRI recordings**, *Matthias Moosmann<sup>1</sup>, Vinzenz Schönfelder<sup>1</sup>, Tom Eichele<sup>1</sup>, Helge Nordby<sup>1</sup>, Kenneth Hugdahl<sup>1,2</sup>, <sup>1</sup>Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway, <sup>2</sup>Division of Psychiatry, Haukeland University Hospital, Bergen, Norway* 323 TH-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Optical Imaging/NIRS/MRS (magnetic resonance spectroscopy)

**Measurement of brain activation using near-infrared spectroscopy: comparison of principal components for signal changes between short and long source-detector spacings**, *Makoto Kato<sup>1,3</sup>, Sachiko Takahama<sup>2,3</sup>, <sup>1</sup>Biol. ICT Grp., Kobe Adv. ICT Res. Ctr., NICT, Kobe, Japan, <sup>2</sup>Sch. of Frontier Biosci., Osaka Univ., Osaka, Japan, <sup>3</sup>CREST, JST, Kawaguchi, Japan* 327 TH-AM

**Functional connectivity in adult humans revealed with diffuse optical tomography of oxy-, deoxy-, and total hemoglobin**, *Brian White<sup>1</sup>, Joseph Culver<sup>2</sup>, <sup>1</sup>Department of Physics and School of Medicine, Washington University, St. Louis, USA, <sup>2</sup>Department of Radiology, Washington University School of Medicine, St. Louis, USA* 335 TH-AM\*

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Perfusion MRI

**Simulation of Adaptive Sequential Design for Optimal Scheduling of Continuous ASL Samples**, *Jingyi Xie<sup>1</sup>, Daniel Gallichan<sup>1</sup>, Roger Gunn<sup>2</sup>, Peter Jezzard<sup>1</sup>, <sup>1</sup>FMRIB Centre, University of Oxford, Oxford, United Kingdom, <sup>2</sup>Clinical Imaging Centre, GlaxoSmithKline, London, United Kingdom* 339 TH-AM

## IMAGING TECHNIQUES & CONTRAST MECHANISM PET/SPECT

**Assessment of <sup>18</sup>F-FET PET uptake kinetics using Independent Component Analysis and SVM (Support Vector Machine) signal approximation.**, Kader BOULANOUAR<sup>1,2</sup>, Pierre PAYOUX<sup>1,2,3</sup>, Alexandra BENOUAICH-AMIEL<sup>4</sup>, Mathieu TAFANI<sup>2,3</sup>, Emmanuel GRAS<sup>2,3</sup>, Jean-Paul ESQUERRE<sup>2,3</sup>, Pierre CELSIS<sup>1,2</sup>, <sup>1</sup>INSERM Unit825, Toulouse, France, <sup>2</sup>University of Toulouse, Toulouse, France, <sup>3</sup>Nuclear Medecine Dept, CHU Purpan, Toulouse, France, <sup>4</sup>Neurology Dept, CHU Pitie-Salpetriere, Paris, France 343 TH-AM

**A Comparison of Visual Assessment and NeuroStat analysis of PiB and FDG in the Differential Diagnosis of Alzheimeris disease.**, Gareth Jones<sup>1</sup>, Victor L Villemagne<sup>1,2</sup>, Graeme O'Keefe<sup>1</sup>, Sze-Ting Lee<sup>1</sup>, Colin Masters<sup>3</sup>, Chris Rowe<sup>1</sup>, <sup>1</sup>Dept of Nuclear Medicine and Centre for PET, Austin Health, Melbourne, Australia, <sup>2</sup>Dept of Medicine and Pathology, Melbourne, Australia, <sup>3</sup>The Mental Health Research Institute of Victoria, Melbourne, Australia 347 TH-AM

## LANGUAGE Comprehension

**The components of a Theory-of-Mind cortical network during narrative comprehension**, Robert Mason, Chantel Prat, Marcel Just, Carnegie Mellon University, Pittsburgh, USA 351 TH-AM

**Semantic processing in Hindi-English bilinguals using functional neuroimaging**, Rajani Sebastian<sup>1</sup>, Swathi Kiran<sup>1,2</sup>, <sup>1</sup>Department of Communication Sciences and Disorders, University of Texas at Austin, Austin, USA, <sup>2</sup>Institute of Neuroscience, University of Texas at Austin, Austin, USA 355 TH-AM

**Processing negative polarity items in the absence of directed attention: Evidence from Magnetoencephalography**, Graciela Tesan, Stephen Crain, Macquarie University, Sydney, Australia 359 TH-AM

**Differential Brain Activation during Language Processing in Children Prenatally Exposed to Methamphetamine**, S. Christopher Nuñez<sup>1</sup>, Mirella Dapretto<sup>2,5</sup>, Elizabeth O'Hare<sup>1,2</sup>, Lisa H. Lu<sup>3</sup>, Lorna Quandt<sup>1</sup>, Lynne Smith<sup>4</sup>, Mary O'Connor<sup>5</sup>, Susan Bookheimer<sup>5</sup>, Elizabeth Sowell<sup>1,2</sup>, <sup>1</sup>UCLA Laboratory of Neuro Imaging, Department of Neurology, Los Angeles, USA, <sup>2</sup>UCLA Interdepartmental Program for Neuroscience, Los Angeles, USA, <sup>3</sup>Roosevelt University, Department of Psychology, Chicago, USA, <sup>4</sup>Harbor-UCLA Medical Center, Department of Pediatrics, Torrance, USA, <sup>5</sup>UCLA Department of Psychiatry and Biobehavioral Sciences, Los Angeles, USA 363 TH-AM

**Embedding at the sentence and verb levels: An fMRI study**, Einat Shetreet<sup>1</sup>, Naama Friedmann<sup>2</sup>, Uri Hadar<sup>1</sup>, <sup>1</sup>Department of Psychology, Tel Aviv University, Tel Aviv, Israel, <sup>2</sup>Language and Brain Lab, School of Education, Tel Aviv University, Tel Aviv, Israel 367 TH-AM

**How priming enables us to understand speech in an impoverished context**, Johannes Tuennerhoff, Uta Noppeney, Cognitive Neuroimaging Group, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany 371 TH-AM\*

**An Investigation of the Effects of Syntactic Complexity, Task Demand, and Rate of Speech Input on the Neural Correlates of Sentence Comprehension**, Kathleen Brumm<sup>1</sup>, David Swinney<sup>2</sup>, Frank Haist<sup>2</sup>, Tracy Love<sup>1,2,3</sup>, <sup>1</sup>SDSU/UCSD Joint Doctoral Program in Language and Communicative Disorders, San Diego, USA, <sup>2</sup>University of California, San Diego, La Jolla, USA, <sup>3</sup>San Diego State University, San Diego, USA 375 TH-AM

**The influence of colour and shape modifiers on the semantic processing of noun phrase in the congenital blind**, Ji-Won Chun<sup>1,2,3</sup>, Jae-Jin Kim<sup>1,2,3,4</sup>, Joongil Kim<sup>2,3</sup>, ByungSik Seo<sup>2,3</sup>, Hae-Jeong Park<sup>1,2,3</sup>, <sup>1</sup>Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, South Korea, <sup>2</sup>Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Yonsei University College of Medicine, Seoul, South Korea, <sup>3</sup>Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, South Korea, <sup>4</sup>Department of Psychiatry, Yonsei University College of Medicine, Seoul, South Korea 379 TH-AM

**An fMRI Study of Word Category on Word Recognition**, Toshimune Kambara<sup>1</sup>, Satoru Yokoyama<sup>1</sup>, Kei Takahashi<sup>1,2</sup>, Naoki Miura<sup>1,3</sup>, Tadao Miyamoto<sup>2</sup>, Daiko Takahashi<sup>2</sup>, Shigeru Sato<sup>2</sup>, Ryuta Kawashima<sup>1</sup>, <sup>1</sup>Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan, <sup>2</sup>Graduate School of International Cultural Studies, Tohoku University, Sendai, Japan, <sup>3</sup>Department of Intelligent Mechanical Systems Engineering, Kochi University of Technology, Kami, Japan 383 TH-AM

**Dynamic ERP Mapping Denoting Percept to Concept: Chinese Olympic Sport Symbols**, Andrew CN Chen\*, Peipei Wang, Center for Higher Brain Functions, Capital Medical University, Beijing, China 387 TH-AM

**The role of the posterior superior temporal sulci in understanding linguistic and extralinguistic communicative intentions**, Ivan Enrici<sup>1</sup>, Mauro Adenzato<sup>1,2</sup>, Bruno G. Bara<sup>1,2</sup>, Stefano Cappa<sup>3,4</sup>, Marco Tettamanti<sup>4,5</sup>, <sup>1</sup>Center for Cognitive Science, University of Torino, Torino, Italy, <sup>2</sup>Neuroscience Institute of Turin, Torino, Italy, <sup>3</sup>Vita-Salute San Raffaele University, Milano, Italy, <sup>4</sup>CERMAC-HSR, Milano, Italy, <sup>5</sup>Department of Nuclear Medicine, Scientific Institute HSR, Milano, Italy 391 TH-AM

#### LANGUAGE Reading/Writing

**Implicit and Explicit Morphologically Related Activation**, Atira Bick<sup>1,2</sup>, Gadi Goelman<sup>2</sup>, Ram Frost<sup>3</sup>, <sup>1</sup>ICNC, Hebrew University, Jerusalem, Israel, <sup>2</sup>Medical Biophysics, Hadassah Hebrew University Hospital, Jerusalem, Israel, <sup>3</sup>Psychology Department, Hebrew University, Jerusalem, Israel 395 TH-AM

**The Different Function of the Dorsal and Ventral Pathways in the Spatial Processing of Chinese Characters: A fMRI Study**, Yanlin Luo<sup>1</sup>, Andrew CN Chen<sup>1</sup>, xijun Li<sup>2</sup>, Danlin Pen<sup>2</sup>, <sup>1</sup>Center for Higher Brain Functions, Capital Medical University, Beijing, China, <sup>2</sup>Beijing normal University, Beijing, China 399 TH-AM

**Using fMRI to Explore the Neural Underpinnings of Individual Differences in Reading Skill**, Chantel Prat, Robert Mason, Marcel Just, Carnegie Mellon University, Pittsburgh, USA 403 TH-AM

**Differential Associations with Socioeconomic Status and Brain Activation in Dyslexic versus Typical Adolescent Readers**, Jessica M. Black<sup>1,2</sup>, Candy S. Ho<sup>1</sup>, Joshua Heitzmann<sup>1</sup>, Nahal Zakerani<sup>1</sup>, Allan L. Reiss<sup>1</sup>, Fumiko Hoeft<sup>1</sup>, <sup>1</sup>Center for Interdisciplinary Brain Sciences Research, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, USA, <sup>2</sup>School of Education, Stanford University, Stanford, USA 407 TH-AM

**Neuronal processes in Kanji and Kana reading by Dyslexic children: An MEG study**, Ryusaku Hashimoto<sup>1</sup>, Sunao Iwaki<sup>2</sup>, Mitsuru Kashiwagi<sup>1</sup>, Shuhei Suzuki<sup>1</sup>, <sup>1</sup>Osaka Medical College, Takatsuki, Japan, <sup>2</sup>National Institutes of Advanced Industrial Science and Technology, Ikeda, Japan 411 TH-AM

**Changes in neural microstructure associated with spelling and reading impairment in adolescents and young adults**, Nenad Vasic<sup>1</sup>, Christian Robert Wolf<sup>1</sup>, Christina Lohr<sup>2</sup>, Claudia Steinbrink<sup>2</sup>, Manfred Spitzer<sup>1,2</sup>, Bärbel Herrnberger<sup>1</sup>, <sup>1</sup>University CLinic of Ulm, Deptment of Psychiatry III, Ulm, Germany, <sup>2</sup>Transfer Center for Neuroscience and Learning, University of Ulm, Ulm, Germany 415 TH-AM

#### MEMORY & LEARNING Learning (explicit & implicit)

**Visuospatial Working Memory in Children with Attention Deficit Hyperactivity Disorder, Combined Type (ADHD-CT): A Functional Magnetic Resonance Imaging (fMRI) Study.**, Melissa Casey<sup>1</sup>, Maree Farrow<sup>3</sup>, Ross Cunnington<sup>2</sup>, Alasdair Vance<sup>1</sup>, <sup>1</sup>Academic Child Psychiatry Unit, Royal Children's Hospital, Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute, Brisbane, Australia, <sup>3</sup>Howard Florey Institute, Melbourne, Australia 419 TH-AM

**Boredom Susceptibility and Experience Seeking Predict Brain Responses to Repeated Visual Experience**, Yang Jiang<sup>1</sup>, Joann Lianekhammy<sup>1</sup>, Adam Lawson<sup>1</sup>, Chunyan Guo<sup>1,2</sup>, Donald Lynam<sup>3</sup>, Jane Joseph<sup>4</sup>, Brain Gold<sup>4</sup>, Thomas Kelly<sup>1</sup>, <sup>1</sup>Department of Behavioral Science, Lexington, USA, <sup>2</sup>Department of Psychology, Beijing, China, <sup>3</sup>Department of Psychological Sciences, Purdue University, West Lafayette, USA, <sup>4</sup>Department of Anatomy & Neurobiology, Lexington, USA 423 TH-AM

**Comparable and dissociable neural correlates of spontaneous sensory-specific imagery versus perception of cue-unique sensory-perceptual outcome events**, Leh Woon Mok<sup>1</sup>, Kathleen Thomas<sup>2</sup>, Ovidiu Lungu<sup>3</sup>, <sup>1</sup>Nanyang Technological University, Singapore, Singapore, <sup>2</sup>University of Minnesota, Minneapolis, USA, <sup>3</sup>Université de Montréal, Montreal, Canada 427 TH-AM

**AVERSIVE UNCONDITIONED STIMULI CAN INHIBIT THE DEFENSIVE SYSTEM.**, Marta Andreatta, Andreas Muehlberger, Paul Pauli, University of Wuerzburg, Wuerzburg, Germany 431 TH-AM

**Effects of implicit learning on repetitive recognition performance**, Teruo Hashimoto<sup>1</sup>, Nobuo Usui<sup>2</sup>, Masato Taira<sup>2</sup>, Shozo Kojima<sup>1</sup>, <sup>1</sup>Dept of Psychology Keio Univ., Tokyo, Japan, <sup>2</sup>Nihon University Advanced Research Institute for the Sciences and Humanities, Tokyo, Japan 435 TH-AM

**Guidance and Learning of Circular Eye Movements**, Raimund Kleiser<sup>1</sup>, Thomas Matyas<sup>2</sup>, Hans-Jörg Wittsack<sup>3</sup>, Rüdiger Seitz<sup>1,4</sup>, <sup>1</sup>Department of Neurology, University Hospital, Duesseldorf, Germany, <sup>2</sup>School of Psychology, LaTrobe University, Bundoora, Victoria, Australia, <sup>3</sup>Department of Diagnostic Radiology, University Hospital, Duesseldorf, Germany, <sup>4</sup>Brain Imaging Centre West, Juehlich, Germany 439 TH-AM

**Hippocampal Subregional Involvement in Encoding and Retrieval of Spatial Information**, Nanthia Suthana<sup>1,2</sup>, Arne Ekstrom<sup>1,2</sup>, Saba Moshirvaziri<sup>1,2</sup>, Barbara Knowlton<sup>3</sup>, Susan Bookheimer<sup>1,2,3</sup>, <sup>1</sup>Center for Cognitive Neurosciences, Semel Institute, UCLA, Los Angeles, USA, <sup>2</sup>Dept. of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, USA, <sup>3</sup>Department of Psychology, UCLA, Los Angeles, USA 443 TH-AM\*

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## MEMORY & LEARNING

### Long-term Memory (episodic, semantic, autobiographical)

**KIBRA alleles modulate medial temporal lobe activity during episodic memory**, M. R. Emery, V. S. Mattay, F. Sambataro, V. P. Murty, J. Reed, H. Y. Tan, B. Kolachana, J. H. Callicott, D. R. Weinberger, Clinical Brain Disorders Branch, National Institute of Mental Health, NIH, Bethesda, USA 453 TH-AM

**Semantic Knowledge Alters Functional Connectivity Recorded with MEG During Transverse Patterning Performance**, Sandra Moses, Natasa Kovacevic, Christina Villate, Timothy Bardouille, Anthony Randal McIntosh, Jennifer Ryan, Rotman Research Institute, Baycrest Centre, Toronto, Canada 457 TH-AM

**Functional connectivity of the hippocampi in healthy subjects**, Kathrin Wagner<sup>1</sup>, Lars Frings<sup>1,2</sup>, Anne Buller<sup>1</sup>, Joachim Spreer<sup>3</sup>, Andreas Schulze-Bonhage<sup>1</sup>, <sup>1</sup>Epilepsy Center, University Hospital Freiburg, Freiburg, Germany, <sup>2</sup>Gerontopsychiatry and Neuropsychology Section, Department of Psychiatry and Psychotherapy, University Hospital Freiburg, Freiburg, Germany, <sup>3</sup>Department of Neuroradiology, University Hospital Freiburg, Freiburg, Germany 461 TH-AM

**Stressed memories: effects of acute stress on medial temporal lobe activation during memory formation**, Erno Hermans<sup>1,2</sup>, Marloes Henckens<sup>1</sup>, Zhenwei Pu<sup>3,1</sup>, Marian Joëls<sup>3</sup>, Guillen Fernández<sup>1,2</sup>, <sup>1</sup>F.C. Donders Centre at the Radboud University Nijmegen, Nijmegen, Netherlands, <sup>2</sup>Department of Neurology at the Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, <sup>3</sup>SILS-CNS, University of Amsterdam, Amsterdam, Netherlands 465 TH-AM\*

**Activity in the medial temporal lobes predicts realization of intentions for future actions**, Jiro Okuda<sup>1</sup>, Nobuhito Abe<sup>2</sup>, Maki Suzuki<sup>3,4</sup>, Toshikatsu Fujii<sup>2</sup>, <sup>1</sup>Tamagawa University Brain Science Institute, Machida, Tokyo, Japan, <sup>2</sup>Department of Behavioral Neurology and Cognitive Neuroscience, Tohoku University Graduate School of Medicine, Sendai, Japan, <sup>3</sup>Division of Cyclotron Nuclear Medicine, Cyclotron and Radioisotope Center, Tohoku University, Sendai, Japan, <sup>4</sup>The Japan Society for the Promotion of Science, Tokyo, Japan 469 TH-AM

**Retrieval of associations between color and achromatic features activates two distinct areas in the ventral occipitotemporal cortex**, Yan Wang<sup>1,2</sup>, JinHui Zhao<sup>2</sup>, FuCang Jia<sup>2</sup>, Sheng He<sup>3</sup>, Lin Ma<sup>4</sup>, DeJun Li<sup>4</sup>, XuChu Weng<sup>2</sup>, <sup>1</sup>Department of Psychology, Laboratory for Cognition and Learning, Capital Normal University, BeiJing, China, <sup>2</sup>Institute of Psychology, the Chinese Academy of Sciences, BeiJing, China, <sup>3</sup>Department of Psychology, University of Minnesota, Minneapolis, USA, <sup>4</sup>Department of Radiology, PLA General Hospital, BeiJing, China 473 TH-AM

## MODELING & ANALYSIS

### Exploratory Methods, Artifact Removal

**Measurement of gamma band effects in MEG and concurrent EEG/fMRI at 7T**, Matthew Brookes, Karen Mullinger, Claire Stevenson, Gerda Geirsdottir, Peter Morris, Richard Bowtell, University of Nottingham, Nottingham, United Kingdom 477 TH-AM

**A Framework for Analyzing and Visualizing Multi-Modality Cross-Correlation**, Satoru Hayasaka<sup>1,2</sup>, Paul Laurienti<sup>2</sup>, Joseph Maldjian<sup>2</sup>, <sup>1</sup>Biostatistical Sciences, Wake Forest University, Winston-Salem, USA, <sup>2</sup>Radiology, Wake Forest University, Winston-Salem, USA 481 TH-AM

**Average Gradient Artefact Subtraction: the effect on neuronal signals**, Karen J. Mullinger, Matthew J. Brookes, Gerda B. Geirsdottir, Richard W. Bowtell, University of Nottingham, Nottingham, United Kingdom 485 TH-AM

**Why sparse bump models?**, Francois-B. Vialatte, Monique Maurice, Andrzej Cichocki, Riken BSI, Lab. ABSP, Wako-Shi, Japan 489 TH-AM

**Hemodynamic response latency correction for improved fMRI functional connectivity**, Catie Chang<sup>1</sup>, Moriah E. Thomason<sup>2</sup>, Gary H. Glover<sup>1,2,3</sup>, <sup>1</sup>Dept. of Electrical Engineering, Stanford University, Stanford, USA, <sup>2</sup>Dept. of Psychology, Stanford University, Stanford, USA, <sup>3</sup>Dept. of Radiology, Stanford, USA 493 TH-AM

**Conquer and Divide: A novel approach to spatiotemporal significance testing that accounts for alpha error inflation**, Sven P. Heinrich, Michael Bach, Jürgen Kornmeier, University of Freiburg, Freiburg, Germany 497 TH-AM

**Assessing fiber similarity in probabilistic diffusion tractography**, Luca Nanetti, Leonardo Cerliani, Valeria Gazzola, Christian Keyzers, University Medical Center Groningen, Groningen, Netherlands 501 TH-AM

**Regional Distribution of Outliers Across a Population of Diffusion MRI in Human Brain**, Lindsay Walker<sup>1</sup>, Jinzhong Yang<sup>2</sup>, Xiaoying Wu<sup>2</sup>, Kristina Simonyan<sup>3</sup>, Ragini Verma<sup>2</sup>, Carlo Pierpaoli<sup>1</sup>, <sup>1</sup>NICHD, NIH, Bethesda, USA, <sup>2</sup>Dept. of Radiology, University of Pennsylvania, Philadelphia, USA, <sup>3</sup>NINDS, NIH, Bethesda, USA 505 TH-AM

## MODELING & ANALYSIS

### Flattening, Segmentation

**Age and gender effect on Cerebral Spinal Fluid thickness**, Anna Custo<sup>1</sup>, William M. Wells III<sup>1,2</sup>, W. Eric L. Grimson<sup>1</sup>, <sup>1</sup>Massachusetts Institute of Technology, CSAIL, Cambridge, USA, <sup>2</sup>Brigham and Women's Hospital, HMS, Boston, USA 509 TH-AM

**Semi-automated delineation of the tentorium cerebelli from MRI scans**, Neeraja Penumetcha<sup>1</sup>, Suraj Kabadi<sup>1</sup>, Bruno Jedynak<sup>1</sup>, Charles Walcutt<sup>2</sup>, Mokhtar H. Gado<sup>3</sup>, Lei Wang<sup>2</sup>, J. Tilak Ratnanather<sup>1</sup>, <sup>1</sup>Center for Imaging Science, Johns Hopkins University, Baltimore, USA, <sup>2</sup>Dept of Psychiatry, Washington University School of Medicine, St. Louis, USA, <sup>3</sup>Dept. of Radiology, Washington University School of Medicine, St. Louis, USA 513 TH-AM

**MAPPING NEURODEGENERATION USING MULTI-ATLAS FLUID IMAGE ALIGNMENT**, Yi-Yu Chou, Natasha Lepore, Xue Hua, Arthur Toga, Paul Thomposn, Laboratory of Neuro Imaging, Department of Neurology, UCLA, Los Angeles, USA 517 TH-AM

**Mapping Hippocampal Degeneration in 400 Subjects with a Novel Automated Segmentation Approach**, Jonathan Morra<sup>1</sup>, Zhuowen Tu<sup>1</sup>, Liana Apostolova<sup>1,2</sup>, Amity Green<sup>1,2</sup>, Christina Avedissian<sup>1</sup>, Sarah Madsen<sup>1</sup>, Neelroop Parikshak<sup>1</sup>, Xue Hua<sup>1</sup>, Arthur Toga<sup>1</sup>, Clifford Jack<sup>3</sup>, Norbert Schuff<sup>4</sup>, Michael Weiner<sup>4,5</sup>, Paul Thompson<sup>1</sup>, <sup>1</sup>Laboratory of Neuro Imaging, UCLA, Los Angeles, USA, <sup>2</sup>Dept. of Neurology, UCLA, Los Angeles, USA, <sup>3</sup>Mayo Clinic College of Medicine, Rochester, USA, <sup>4</sup>Dept. of Radiology, UCSF, San Francisco, USA, <sup>5</sup>Dept. of Medicine and Psychiatry, UCSF, San Francisco, USA 521 TH-AM

## MODELING & ANALYSIS

### Functional Connectivity and Structural Equation Modeling

**Population dynamics under the Laplace assumption**, Andre Marreiros, Jean Daunizeau, Stefan Kiebel, Lee Harrison, Karl Friston, Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom 525 TH-AM

**Principal Frequency of Resting State Networks**, Rami Niazy<sup>1,2,3</sup>, Stephen Smith<sup>2</sup>, Christian Beckmann<sup>4</sup>, <sup>1</sup>Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, Cardiff, United Kingdom, <sup>2</sup>Centre for Functional MRI of the Brain (FMRIB), Department of Clinical Neurology, University of Oxford, Oxford, United Kingdom, <sup>3</sup>Department of Engineering Science, University of Oxford, Oxford, United Kingdom, <sup>4</sup>Clinical Neuroscience Department, Division of Neuroscience and Mental Health, Imperial College London, London, United Kingdom 529 TH-AM

**Effect of alcohol on the resting state correlations.**, Pawel Skudlarski<sup>1,2</sup>, Sashwath Meda<sup>1</sup>, Vince Calhoun<sup>3</sup>, Godfrey Pearlson<sup>1,2</sup>, <sup>1</sup>Olin Neuropsychiatry Research Center, Hartford, USA, <sup>2</sup>Department of Psychiatry Yale University School of Medicine, New Haven, USA, <sup>3</sup>The Mind Institute, Albuquerque, NM, University of New Mexico, Albuquerque, USA 533 TH-AM

- Increasing specificity of resting-state fMRI-data using multiple regression analysis**, *Andreas Weissenbacher<sup>1,2</sup>, Rupert Lanzenberger<sup>3</sup>, Ewald Moser<sup>1,2</sup>, Christian Windischberger<sup>1,2</sup>*, <sup>1</sup>MR Center of Excellence, Medical University, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, Medical University, Vienna, Austria 537 TH-AM
- A Method for Improved Sensitivity and Flexibility of Psychophysiological Interactions in Event-Related FMRI Experiments**, *Donald McLaren<sup>1,2</sup>, Michele Ries<sup>1,2</sup>, Guofan Xu<sup>1,2</sup>, Michele Fitzgerald<sup>1,2</sup>, Erik Kastman<sup>1,2</sup>, Gemma Gliori<sup>1,2</sup>, Britta Jabbar<sup>1,2</sup>, Sterling Johnson<sup>1,2</sup>*, <sup>1</sup>William S. Middleton Memorial Veterans Hospital, Madison, USA, <sup>2</sup>University of Wisconsin, Madison, USA 541 TH-AM
- Discovering brain's functional connectivity through joint analysis of MEG and fMRI data by Dynamic Bayesian Network**, *Sergey Plis<sup>1</sup>, Michael P Weisend<sup>2</sup>, Mark Scully<sup>2</sup>, Vincent P Clark<sup>2</sup>, Terran Lane<sup>1</sup>*, <sup>1</sup>Department of Computer Science, University of New Mexico, Albuquerque, USA, <sup>2</sup>The Mind Research Network, Albuquerque, USA 545 TH-AM
- Dynamical Consequences of Lesions in Cortical Networks**, *Christopher Honey, Olaf Sporns*, Department of Psychological and Brain Sciences, Indiana University, Bloomington, USA 549 TH-AM
- Asymmetry analysis of anterior cingulate cortex: functional connectivity using resting state fMRI**, *Xi-Nian ZUO<sup>1,2</sup>, Chao-Zhe ZHU<sup>1</sup>, Qi-Hong ZOU<sup>1</sup>, Yu-Feng ZANG<sup>1,\*</sup>*, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China 553 TH-AM
- Modular Architecture of Weighted Human Brain Structural Network Revealed by Cortical Thickness from MRI**, *Zhang Chen, Yong He, Alan Evans, McConnell Brain Imaging Centre, Montréal Neurological Institute (MNI), McGill University, Montreal, Canada* 557 TH-AM
- Investigating reproducibility of effective connectivity using Dynamic Causal Modelling in a working memory task**, *Nia Goulden, Shane McKie, John Francis William Deakin, Rebecca Elliott*, University of Manchester, Manchester, United Kingdom 561 TH-AM
- Visual cues from mouth movements change the effective connectivity between V5/MT and Broca's area in the right hemisphere**, *Heejung Kim<sup>1,2</sup>, Yoon-Kyoung Yim<sup>1,2</sup>, Hyejin Kang<sup>1,3</sup>, Dong Soo Lee<sup>1</sup>, Eunjoo Kang<sup>4</sup>*, <sup>1</sup>Dept. of Nuclear Medicine, Seoul National University School of medicine, Seoul, South Korea, <sup>2</sup>Interdisciplinary program in cognitive science, Seoul National University, Seoul, South Korea, <sup>3</sup>Programs in Brain and Neuroscience, Seoul National University, Seoul, South Korea, <sup>4</sup>Department of Psychology, Kangwon National University, Chuncheon, South Korea 565 TH-AM
- Inferring neural signals' processing time: beyond the balloon model**, *Claudinei Eduardo Biazoli Jr, João Ricardo Sato, Edson Amaro Jr, NIF/LIM-44 Instituto de Radiologia do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil* 569 TH-AM
- Dynamic causal modelling of distributed electromagnetic responses**, *Jean Daunizeau, Stefan Kiebel, Karl Friston*, Wellcome Trust Centre for Neuroimaging, London, United Kingdom 573 TH-AM
- Reliability of Functional Connectivity in the Motor Cortex**, *Rao Gullapalli<sup>1</sup>, Neha Shah<sup>2</sup>, Steve Roys<sup>1</sup>, Jiachen Zhuo<sup>1</sup>*, <sup>1</sup>Department of Radiology, University of Maryland School of Medicine, Baltimore, USA, <sup>2</sup>Department of Computer Science and Electrical Engineering, University of Maryland Baltimore County, Baltimore, USA 577 TH-AM
- Feedback Connections within Low-Level Emotion Processing Network Revealed by Dynamic Causal Modeling**, *Christian Kasess<sup>1,2</sup>, Rupert Lanzenberger<sup>3</sup>, Lukas Pezawas<sup>3</sup>, Ewald Moser<sup>1,2</sup>, Christian Windischberger<sup>1,2</sup>*, <sup>1</sup>MR Center of Excellence, Medical University Vienna, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University Vienna, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, Medical University Vienna, Vienna, Austria 581 TH-AM
- MODELING & ANALYSIS**  
**Multivariate Modeling, PCA, & ICA**
- The effect of respiration variations on independent component analysis of resting state functional connectivity**, *Rasmus Birn, Kevin Murphy, Peter Bandettini*, Laboratory of Brain and Cognition, National Institute of Mental Health, Bethesda, USA 585 TH-AM



- Multivariate functional connectivity between fine-grained cortical activation patterns**, Jakob Heinzle<sup>1</sup>, John-Dylan Haynes<sup>1,2</sup>, <sup>1</sup>Bernstein Center for Computational Neuroscience, Charité - Universitätsmedizin, Berlin, Germany, <sup>2</sup>Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany 589 TH-AM
- ICA of Brain Imaging Data - Validation by Resampling and Hierarchical Clustering**, Radu Mutihac, University of Bucharest, Bucharest, Rumania 593 TH-AM
- Frequency-wise inverse solutions to EEG recordings by state space modeling decomposition and dynamical LORETA, and its application to changes in slow delta activity during induction of anesthesia**, Kin Foon Kevin Wong<sup>1,2</sup>, Andreas Galka<sup>2,3,4</sup>, Tohru Ozaki<sup>1,2,5</sup>, <sup>1</sup>JST RISTEX, Tokyo, Japan, <sup>2</sup>Institute of Statistical Mathematics, Tokyo, Japan, <sup>3</sup>Department of Neurology, University of Kiel, Kiel, Germany, <sup>4</sup>Institute of Applied Physics, University of Kiel, Kiel, Germany, <sup>5</sup>Graduate University for Advanced Studies, Kanagawa, Japan 597 TH-AM
- A New Data-driven Analysis Method Based on the Temporal Structure of BOLD Response**, Carlos Estombelo-Montesco<sup>1</sup>, Marcio Sturzbecher<sup>1</sup>, Oswaldo Baffa<sup>1</sup>, Allan Kardec<sup>2</sup>, Draulio de Araujo<sup>1</sup>, <sup>1</sup>Department of Physics and Mathematics, FFCLRP, University of Sao Paulo, Ribeirao Preto, SP, Brazil, <sup>2</sup>Department of Electrical Engineering, Federal University of Maranhao, Sao Luis, MA, Brazil 601 TH-AM
- Independent Component Analysis of fMRI Wavelet Coefficients**, Robert Johnson<sup>1,2</sup>, Jonathan Marchini<sup>1</sup>, Stephen Smith<sup>2</sup>, Christian Beckmann<sup>2,3</sup>, <sup>1</sup>Department of Statistics, University of Oxford, Oxford, United Kingdom, <sup>2</sup>fMRIB, University of Oxford, Oxford, United Kingdom, <sup>3</sup>Imperial College, London, United Kingdom 605 TH-AM
- Longitudinal Multivariate Tensor- and Searchlight-Based Morphometry Using Permutation Testing**, Gerard Ridgway<sup>1</sup>, Brandon Whitcher<sup>2</sup>, Derek Hill<sup>1</sup>, Nick Fox<sup>3</sup>, <sup>1</sup>Centre for Medical Image Computing, UCL, London, United Kingdom, <sup>2</sup>GSK Clinical Imaging Centre, London, United Kingdom, <sup>3</sup>Dementia Research Centre, UCL, London, United Kingdom 609 TH-AM
- The Impact of Dimensionality Estimation On Spatial Signal Detection In Multivariate Gaussian Image Data**, Grigori Yourganov<sup>1,2</sup>, Stephen Strother<sup>2,3</sup>, <sup>1</sup>Institute of Medical Science, University of Toronto, Toronto, Canada, <sup>2</sup>Rotman Research Institute of Baycrest Centre, University of Toronto, Toronto, Canada, <sup>3</sup>Department of Medical Biophysics, University of Toronto, Toronto, Canada 613 TH-AM
- MOTOR BEHAVIOR**  
**Basal Ganglia/Brainstem/Spinal Cord**
- Putamen functional connectivity demonstrates a mechanism for the integration of motor and cognitive symptoms as well as cerebellar-basal ganglia communication**, William Marchand<sup>1,2</sup>, James Lee<sup>1</sup>, John Thatcher<sup>1</sup>, Edward Hsu<sup>1</sup>, Esther Rashkin<sup>1</sup>, Yana Suchy<sup>1</sup>, Gordon Chelune<sup>1</sup>, Jennifer Starr<sup>1</sup>, Sharon Barbera<sup>1</sup>, <sup>1</sup>University of Utah, Salt Lake City, USA, <sup>2</sup>Department of Veterans Affairs VISN 19 MIRECC, Salt Lake City, USA 617 TH-AM
- MOTOR BEHAVIOR**  
**Eye Movements/Visuomotor Processing**
- Modulations of gamma and beta band activity during decision and preparation of saccades revealed by simultaneous intracranial recordings in human parietal and prefrontal cortex**, Karim Jerbi<sup>1,2</sup>, Samson Freyermuth<sup>1</sup>, Olivier Bertrand<sup>2</sup>, Lorella Minotti<sup>3</sup>, Philippe Kahane<sup>3</sup>, Jean-Philippe Lachaux<sup>2</sup>, Alain Berthoz<sup>1</sup>, <sup>1</sup>Physiology of Perception and Action Lab, CNRS, Collège de France, Paris, France, <sup>2</sup>INSERM, U821, Brain Dynamics and Cognition & University Lyon 1, Lyon, France, <sup>3</sup>Department of Neurology and INSERM U704, Grenoble Hospital, Grenoble, France 621 TH-AM\*
- Neurons in the frontal eye fields projecting to the superior colliculus are crucial in making anti-saccades: an fMRI-DTI study**, AD de Weijer, RCW Mandl, IEC Sommer, SFW Neggers, Rudolf Magnus Institute of Neuroscience, Department of Psychiatry, University Medical Centre Utrecht, Utrecht, Netherlands 625 TH-AM\*
- NEUROANATOMY**  
**DTI Studies, Application**
- Exploring the Large-Scale Connectivity of the Human Visual System using Diffusion Tensor Tractography**, Michael Capalbo, Alard Roebroek, Rainer Goebel, University of Maastricht, Department of Cognitive Neuroscience, Maastricht, Netherlands 629 TH-AM

- Investigating the Biomechanisms of Cerebral Cortical Folding**, Guangqiang Geng<sup>1,2</sup>, Leigh Johnston<sup>1,3</sup>, Edwin Yan<sup>4</sup>, David Walker<sup>5</sup>, Gary Egan<sup>1,6</sup>, <sup>1</sup>Howard Florey Institute, Florey Neuroscience Institutes, Melbourne, Australia, <sup>2</sup>Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia, <sup>3</sup>Dept. of Electrical & Electronic Engineering, University of Melbourne, Melbourne, Australia, <sup>4</sup>National Trauma Research Institute, Alfred Hospital, Melbourne, Australia, <sup>5</sup>Dept. of Physiology, Monash University, Melbourne, Australia, <sup>6</sup>Centre for Neuroscience, University of Melbourne, Melbourne, Australia 633 TH-AM\*
- The nigro-striatal pathway in the monkey brain using diffusion tensor imaging fiber tracking at 7T**, Stephane Lehericy<sup>1,2</sup>, Essa Yacoub<sup>3</sup>, Eric Bardin<sup>1,4</sup>, Romain Valabregue<sup>1,2</sup>, Chantal Francois<sup>2</sup>, Geoff Ghose<sup>3</sup>, Noam Harel<sup>3</sup>, <sup>1</sup>University Pierre and Marie Curie, Paris, France, <sup>2</sup>INSERM, Paris, France, <sup>3</sup>University of Minnesota, Minneapolis, USA, <sup>4</sup>CNRS, Paris, France 637 TH-AM
- Diffusion tensor MRI can anatomically segment human amygdaloid subregions *in vivo***, Eugenia Solano-Castiella, Alfred Anwander, Carol Docherty, Enrico Reimer, Marcel Weiss, Angela Friederici, Robert Turner, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany 641 TH-AM
- A DTI tractography study on the functional relevance of inter-individual differences in callosal connectivity**, René Westerhausen<sup>1</sup>, Renate Grüner<sup>2</sup>, Karsten Specht<sup>1,3</sup>, Kenneth Hugdahl<sup>1,4</sup>, <sup>1</sup>Dept of Biological and Medical Psychology, University of Bergen, Bergen, Norway, <sup>2</sup>Dept of Radiology, Haukeland University Hospital, Bergen, Norway, <sup>3</sup>Clinical Engineering Department, Haukeland University Hospital, Bergen, Norway, <sup>4</sup>Division of Psychiatry, Haukeland University Hospital, Bergen, Norway 645 TH-AM
- An omnibus test for case-control studies utilizing Tract-Based Spatial Statistics (TBSS)**, Matthew Cykowski<sup>1</sup>, Jack Lancaster<sup>1</sup>, Roger Ingham<sup>1,2</sup>, Janis Ingham<sup>1,2</sup>, Anderson Winkler<sup>1</sup>, Peter Kochunov<sup>1</sup>, Peter Fox<sup>1,3</sup>, <sup>1</sup>Research Imaging Center, University of Texas Health Science Center at San Antonio, San Antonio, USA, <sup>2</sup>University of California, Santa Barbara, Santa Barbara, USA, <sup>3</sup>VA Medical Center, San Antonio, USA 649 TH-AM
- Connectivity-Based Parcellations of the Human Lateral Premotor Cortex and its Relationship to Functional Activation Patterns**, Thomas R. Knösche<sup>1</sup>, Alfred Anwander<sup>1</sup>, Ricarda I. Schubotz<sup>2</sup>, Marc Tittgemeyer<sup>2</sup>, <sup>1</sup>Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, <sup>2</sup>Max-Planck-Institute for Neurological Research, Cologne, Germany 653 TH-AM
- Quantitative analysis of the registration errors in the combining voxel-based morphometry and diffusion tensor imaging (DTI-VBM)**, Jun-Sung Park, Bang-Bon Koo, Chi-Hoon Choi, Jong-Min Lee, Department of Biomedical Engineering, Hanyang University, Seoul, South Korea 657 TH-AM
- Non-Invasive Mapping of Human Trigeminal Brainstem Pathways**, Jaymin Upadhyay<sup>1</sup>, Jamie Knudsen<sup>1</sup>, Julie Anderson<sup>1</sup>, Lino Becerra<sup>1</sup>, David Borsook<sup>1,2</sup>, <sup>1</sup>P.A.I.N. Group, Brain Imaging Center, McLean Hospital, Belmont, USA, <sup>2</sup>Athinoula A. Martinos Center for Biomedical Imaging Massachusetts General Hospital Harvard Medical School, Charlestown, USA 661 TH-AM\*
- SENSORY SYSTEMS**  
**Auditory/Vestibular**
- Cortical representation of auditory objects**, Amber Leaver, Josef Rauschecker, Georgetown University, Washington, USA 665 TH-AM\*
- Neural correlates of auditory categorical perception revealed by magnetoencephalography**, Hanna Renvall<sup>1</sup>, Noël Staeren<sup>1</sup>, Nicolette Siep<sup>1</sup>, Ole Jensen<sup>2</sup>, Elia Formisano<sup>1</sup>, <sup>1</sup>Department of Cognitive Neuroscience, Faculty of Psychology, Maastricht, Netherlands, <sup>2</sup>F.C. Donders Centre for Cognitive Neuroimaging, Nijmegen, Netherlands 669 TH-AM
- 3D pattern of brain changes in deaf subjects mapped using Tensor-Based Morphometry**, Natasha Lepore<sup>1</sup>, Patrick Vachon<sup>2</sup>, Franco Lepore<sup>2</sup>, Yi-Yu Chou<sup>1</sup>, Patrice Voss<sup>2</sup>, Caroline Brun<sup>1</sup>, Agatha D. Lee<sup>1</sup>, Arthur W. Toga<sup>1</sup>, Paul M. Thompson<sup>1</sup>, <sup>1</sup>Laboratory of Neuro Imaging, David Geffen School of Medicine at UCLA, Los Angeles, USA, <sup>2</sup>Centre de Recherche en Neuropsychologie et Cognition, Université de Montreal, Montreal, Canada 673 TH-AM
- Post-lingual deaf potentiate the pre-existing normal speechreading network, but a different form of speechreading network is created in pre-lingual deaf: a Magnetoencephalographic Study**, Myung-Whan Suh<sup>1</sup>, Hyo-Jeong Lee<sup>2</sup>, Chun Kee Jung<sup>3</sup>, June Sic Kim<sup>3</sup>, Min Hyun Park<sup>4</sup>, Ja Hyun Kim<sup>5</sup>, Seung Ha Oh<sup>1</sup>, <sup>1</sup>Department of Otorhinolaryngology, College of Medicine and Research Center for

Sensory Organs, Medical Research Center, Seoul National University, Seoul, Korea, <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Hallym University Sacred Heart Hospital, Seoul, Korea, <sup>3</sup>Department of Neurosurgery, Seoul National University College of Medicine, MEG Center, Seoul, Korea, <sup>4</sup>Department of Otorhinolaryngology, Seoul Municipal Boramae Hospital, Seoul, Korea, <sup>5</sup>Department of Biomedical Engineering, College of Health Science, Yonsei University, Seoul, Korea

## SENSORY SYSTEMS

### Tactile/Somatosensory

**High Resolution fMRI Mapping of the Primary Somatosensory Cortex and Thalamus in Humans at 7T**, Feng Wang, Li Min Chen, Robert Friedman, Elizabeth Stringer, John Gore, Malcolm Avison, Christopher Gatenby, Vanderbilt University, Nashville, USA 681 TH-AM

**Responsiveness of the sensorimotor cortex in fMRI to variable foot vibration using a controllable vibrating probe**, Christian Siedentopf<sup>1,2</sup>, Karsten Heubach<sup>2,3</sup>, Anja Ischebeck<sup>2,4</sup>, Florian Koppelstaetter<sup>1,2</sup>, Eugen Gallasch<sup>5</sup>, Martin Fend<sup>5</sup>, Ilka Haala<sup>1,2</sup>, Stephan Felber<sup>1,6</sup>, Franz Gerstenbrand<sup>7</sup>, Stefan Golaszewski<sup>1,2,8</sup>, <sup>1</sup>Department of Radiology, Medical University Innsbruck, Innsbruck, Austria, <sup>2</sup>fMRI-Lab, Department of Psychiatry, Medical University Innsbruck, Innsbruck, Austria, <sup>3</sup>Department of Surgery, St. Nepomuk Hospital, Erfurt, Germany, <sup>4</sup>Department of Neurology, Medical University Innsbruck, Innsbruck, Austria, <sup>5</sup>Department of Physiology, Medical University Graz, Graz, Austria, <sup>6</sup>Stiftungsklinikum Mittelrhein St. Martin, Koblenz, Germany, <sup>7</sup>Ludwig Boltzmann Institute for Restorative Neurology and Neuromodulation, Vienna, Austria, <sup>8</sup>Department of Neurology, Paracelsus Medical University, Salzburg, Austria 685 TH-AM

**Distinct Presentations of Heat pain and Touch in SI, SII and Insula in Humans Revealed by High Resolution fMRI at 7T**, E.A. Stringer, R.M. Friedman, J.C. Gatenby, F. Wang, M.J. Avison, J.C. Gore, L.M. Chen, Department of Radiology and Radiological Science and Institute of Imaging Sciences, Vanderbilt University, Nashville, USA 689 TH-AM

**Acupuncture Modulates Resting State Connectivity in Default and Sensorimotor Brain Networks**, Polly Dhond<sup>1,2</sup>, Calvin Yeh<sup>1</sup>, Kyungmo Park<sup>1,3</sup>, Norman Ketner<sup>2</sup>, Vitaly Napadow<sup>1,2</sup>, <sup>1</sup>Martinos Center for Biomedical Imaging, Charlestown, USA, <sup>2</sup>Logan College of Chiropractic, Chesterfield, USA, <sup>3</sup>Kyunghee University, Yongin, South Korea 693 TH-AM

**Transient phase-locking in somatosensory cortex during vibrotactile stimuli**, Angela Langdon<sup>1,2</sup>, Tjeerd Boonstra<sup>1,2</sup>, Stuart Knock<sup>1,2</sup>, Michael Breakspear<sup>1,2</sup>, <sup>1</sup>The School of Psychiatry, University of New South Wales, Sydney, Australia, <sup>2</sup>The Black Dog Institute, Sydney, Australia 697 TH-AM

## SENSORY SYSTEMS

### Vision

**When apparent motion and real stimuli meet in primary visual cortex**, Arjen Alink<sup>1,3</sup>, Caspar Schwiedrzik<sup>1,3</sup>, Axel Kohler<sup>1,3</sup>, Wolf Singer<sup>1</sup>, Lars Muckli<sup>2</sup>, <sup>1</sup>MPI for Brain Research, Neurophysiology, Frankfurt, Germany, <sup>2</sup>University of Glasgow, dep. of Psychology, Glasgow, Scotland, <sup>3</sup>Brain Imaging Centre, Frankfurt, Germany 701 TH-AM

**MEG and EEG correlates of visual awareness and suppression of a face.**, Olivia Carter<sup>1,2,3</sup>, Ken Nakayama<sup>1</sup>, Dahlia Sharon<sup>3</sup>, Matti Hämäläinen<sup>3</sup>, Seppo Ahlfors<sup>3</sup>, <sup>1</sup>Vision Sciences Lab, Harvard University, Cambridge, USA, <sup>2</sup>Brain Research Institute, Heidelberg West, Australia, <sup>3</sup>Martinos Center, Massachusetts General Hospital, Charlestown, USA 705 TH-AM

**Spatial scale tuning maps in human visual cortex**, Jonathan Polimeni<sup>1</sup>, Oliver Hinds<sup>2</sup>, Christina Triantafyllou<sup>1,2</sup>, <sup>1</sup>Athinoula A. Martinos Center, Massachusetts General Hospital, Harvard Medical School, Chalestown, USA, <sup>2</sup>McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, USA 709 TH-AM

**Spatiotemporal frequency tuning of BOLD and Gamma band MEG responses compared in primary visual cortex**, Suresh Muthukumaraswamy, Krish Singh, CUBRIC, Cardiff University, Cardiff, United Kingdom 713 TH-AM

**Neural basis of modal and amodal completion: an fMRI investigation**, Branka Spehar<sup>1</sup>, Scott McDonald<sup>2</sup>, Kiley Seymour<sup>2</sup>, Mark Schira<sup>1</sup>, Zoe Kourtzi<sup>3</sup>, Colin Clifford<sup>2</sup>, <sup>1</sup>The University of New South Wales, Sydney, Australia, <sup>2</sup>University of Sydney, Sydney, Australia, <sup>3</sup>University of Birmingham, Birmingham, United Kingdom 717 TH-AM

- Superposition of evoked and spontaneous activity in the visual cortex: a 7T study**, *Marta Bianciardi, Masaki Fukunaga, Peter van Gelderen, Silvina G. Horowitz, Jacco A. de Zwart, Jeff H. Duyn, Advanced MRI Section, LFMI, NINDS, NIH, Bethesda, USA* 721 TH-AM
- Multimodal Imaging combining fMRI and PET for the definition of early visual areas in humans**, *Florian Gerstl<sup>1,2</sup>, Christian Windischberger<sup>1,2</sup>, Rupert Lanzenberger<sup>3</sup>, Ewald Moser<sup>1,2</sup>, Kurt Kletter<sup>4</sup>, Siegfried Kasper<sup>3</sup>, <sup>1</sup>MRCE, Medical University of Vienna, Vienna, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University of Vienna, Vienna, Austria, <sup>3</sup>Department of Psychiatry and Psychotherapy, Clinical Division of Biological Psychiatry, Medical University of Vienna, Vienna, Austria, <sup>4</sup>Department of Nuclear Medicine, PET Centre, Medical University of Vienna, Austria, Vienna, Austria* 725 TH-AM\*
- Visual and auditory development: the use of entropy.**, *Sarah Lippe<sup>1,2</sup>, Maryse Lassonde<sup>1,2</sup>, Natasa Kovacev<sup>3</sup>, Randy McIntosh<sup>3</sup>, <sup>1</sup>Hôpital Ste-Justine, Montreal, Canada, <sup>2</sup>University of Montreal, Montreal, Canada, <sup>3</sup>Rotman-Baycrest Center, Toronto, Canada* 729 TH-AM
- High resolution fMRI protocols are feasible for standard fMRI procedures demonstrated using retinotopy.**, *Mark Schira<sup>1</sup>, Branka Spehar<sup>1</sup>, Michael Breakspear<sup>1</sup>, Christopher Tyler<sup>2</sup>, <sup>1</sup>University of New South Wales, Sydney, Australia, <sup>2</sup>Smith Kettlewell Eye Research Institute, San Francisco, USA* 733 TH-AM
- Spontaneous activity associated with primary visual cortex in early blind**, *Kun Wang<sup>1</sup>, Chunshui Yu<sup>2</sup>, Lijuan Xu<sup>1</sup>, Wen Qin<sup>2</sup>, Kuncheng Li<sup>2</sup>, Tianzi Jiang<sup>1</sup>, <sup>1</sup>National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, <sup>2</sup>Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China* 737 TH-AM

13:45 – 14:45 You Yangs Hall (Level 3)

## COGNITION & ATTENTION

### Executive Function

- The activation of prefrontal area, basal ganglia, and paralimbic system involved in maintaining of goal-directed action without rewards**, *Masahiko Nishimura<sup>1,2</sup>, Jobu Watanabe<sup>3</sup>, Yoshihiko Yoshii<sup>1</sup>, <sup>1</sup>Department of Clinical Neuroscience Faculty of Medicine, University of the Ryukyus, Okinawa, Japan, <sup>2</sup>Department of Occupational Therapy, Okinawa College of Rehabilitation and Welfare, Okinawa, Japan, <sup>3</sup>Waseda Institute for Advanced Study Waseda University, Tokyo, Japan* 4 TH-PM
- Brain Substrates Associated with Strategic Mode in Executive Function: Comparison between the Tower of London Task and 2-Back Task Using fMRI**, *Ji-Eun Park<sup>1</sup>, Jin-Sup Eom<sup>1</sup>, Ik-Hyun Kim<sup>2</sup>, Myung-Ae Chung<sup>2</sup>, Hajime Nagai<sup>3</sup>, Jin-Hun Sohn<sup>1</sup>, <sup>1</sup>Dept. of Psychology, Institute for Brain Research, Chungnam Nat'l University, Daejeon, South Korea, <sup>2</sup>Medical Information Convergence Service Research Team, ETRI, Daejeon, South Korea, <sup>3</sup>BRAND'S Health Science Center, Cerebos Pacific Limited, China square central, Singapore* 8 TH-PM
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**Dynamics of inter-ictal brain activity using correlation matrices from MEG signals**, Maribel Pulgarin, Will Woods, Aziz Asghar, Gary Green, University of York, York, United Kingdom 164 TH-PM

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- AMYGDALA VOLUME PREDICTS REACTIVITY TO POSITIVE BUT RECOVERY FROM NEGATIVE STIMULI AS INDEXED BY CORRUGATOR FACIAL EMG**, Stacey Schaefer<sup>1</sup>, Matthew Sutterer<sup>1</sup>, Carien van Reekum<sup>1,2</sup>, Brendon Nacewicz<sup>1</sup>, Catherine Norris<sup>1,3</sup>, Regina Lapate<sup>1</sup>, David Bachhuber<sup>1</sup>, Nicole Rute<sup>1</sup>, Richard Davidson<sup>1</sup>, <sup>1</sup>Waisman Laboratory for Brain Imaging & Behavior, University of Wisconsin-Madison, Madison, USA, <sup>2</sup>School of Psychology and CLS, University of Reading, Reading, United Kingdom, <sup>3</sup>Psychological and Brain Sciences, Dartmouth College, Hanover, USA 216 TH-PM

- Inhibition-related activity in subgenual anterior cingulate is associated with harm avoidance and self directedness in adolescents**, Tony Yang<sup>1</sup>, Scott Matthews<sup>1</sup>, Alan Simmons<sup>1</sup>, Susan Tapert<sup>1</sup>, Guido Frank<sup>2</sup>, Martin Paulus<sup>1</sup>, <sup>1</sup>UC San Diego, San Diego, USA, <sup>2</sup>University of Colorado at Denver and Health Sciences Center, Aurora, USA 220 TH-PM

- Reading of facial expression with complex emotions: An fMRI study**, Hyosun Jung<sup>1</sup>, Minjung Kim<sup>1</sup>, Woorim Jeong<sup>1</sup>, Min Park<sup>1</sup>, Seungbok Lee<sup>1</sup>, Hyo-Woon Yoon<sup>2</sup>, Hei-Rhee Ghim<sup>1</sup>, <sup>1</sup>Department of Psychology, Chungbuk National University, Cheongju, South Korea, <sup>2</sup>Neuroscience Research Institute, Gachon University of Medicine and Science, Incheon, South Korea 224 TH-PM

- TMS disrupts the perception and embodiment of facial expressions**, David Pitcher, Lucia Garrido, Vincent Walsh, Brad Duchaine, University College London, London, United Kingdom 228 TH-PM

- Neural Circuits for Regulating Pleasant and Unpleasant Emotion: Beyond Reappraisal**, Heather L. Urry<sup>1</sup>, Robert W. Roeser<sup>1</sup>, Sara W. Lazar<sup>2</sup>, Alan P. Poey<sup>1</sup>, Erin Phelps<sup>1</sup>, Richard M. Lerner<sup>1</sup>, <sup>1</sup>Tufts University, Medford, USA, <sup>2</sup>Massachusetts General Hospital, Charlestown, USA 232 TH-PM

- Decoding affective states from sustained large-scale patterns of brain activity**, Silke Anders<sup>1,2</sup>, Thomas Ethofer<sup>3</sup>, John-Dylan Haynes<sup>2</sup>, <sup>1</sup>Neuroimage Nord, University of Luebeck, Department of Neurology, Luebeck, Germany, <sup>2</sup>Bernstein Center for Computational Neuroscience, Berlin, Germany, <sup>3</sup>Laboratory for Behavioral Neurology & Imaging of Cognition, Geneva, Switzerland 236 TH-PM

- EEG Default Mode Network: Mood Modulation (Happy-Sad) in Chinese Music (Butterfly Lovers, violin concerto)**, Huixuan Zhao, Andrew CN Chen\*, Center for Higher Brain Functions, Capital Medical University, Beijing, China 240 TH-PM

**Emotion regulation in patients with major depression**, Susanne Erk<sup>1</sup>, Alexandra Mikschl<sup>2</sup>, Sabine Stier<sup>2</sup>, Angela Ciaramidaro<sup>3</sup>, Volker Gapp<sup>2</sup>, Bernhard Weber<sup>2</sup>, Henrik Walter<sup>1</sup>, <sup>1</sup>Dept. of Psychiatry, Div. of Medical Psychology, University of Bonn, Bonn, Germany, <sup>2</sup>Dept. of Psychiatry, Joh.-Wolfgang-Goethe University, Frankfurt/Main, Germany, <sup>3</sup>Dept. of Cognitive Science, University of Turin, Turin, Italy 244 TH-PM

**Prefrontal regulation of the emotional brain: Findings in depressed and healthy subjects from neuroimaging and psychophysiology**, Tom Johnstone<sup>1,2</sup>, Gregory Kolden<sup>1</sup>, Sara Polis<sup>1</sup>, Michael Peterson<sup>1</sup>, Sandy Tierney<sup>1</sup>, Ned Kalin<sup>1</sup>, Richard Davidson<sup>1</sup>, <sup>1</sup>University of Wisconsin-Madison, Madison, USA, <sup>2</sup>University of Reading, Reading, United Kingdom 248 TH-PM

**Brain response to emotional anticipation is related to respiratory rate**, Jennifer L. Aron<sup>1</sup>, Scott C. Matthews<sup>1,2</sup>, Alan N. Simmons<sup>1,2,3</sup>, Irina A. Strigo<sup>1</sup>, Martin P. Paulus<sup>1,2,3</sup>, <sup>1</sup>University of California, San Diego, La Jolla, USA, <sup>2</sup>San Diego Veterans Administration, La Jolla, USA, <sup>3</sup>Center of Excellence in Stress and Mental Health (CESAMH), San Diego, USA 252 TH-PM

**Magnetoencephalographic evidence of right frontal impairment of negative emotion processing in bipolar disorder**, Li-Fen Chen<sup>1,2</sup>, Ying-Chia Lin<sup>2</sup>, Yong-Sheng Chen<sup>3</sup>, Jen-Chuen Hsieh<sup>1,2</sup>, Tung-Ping Su<sup>4,5</sup>, <sup>1</sup>Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Integrated Brain Research Laboratory, Taipei Veterans General Hospital, Taipei, Taiwan, <sup>3</sup>Department of Computer Science, Hsinchu, Taiwan, <sup>4</sup>Division of Psychiatry, School of Medicine, National Yang-Ming University, Taipei, Taiwan, <sup>5</sup>Psychiatric Department, Taipei Veterans General Hospital, Taipei, Taiwan 256 TH-PM

**Repetition suppression in orbitofrontal cortex is modulated by anger in the voice**, Thomas Ethofer<sup>1,2,3</sup>, Benjamin Kreifelts<sup>1</sup>, Sarah Wiethoff<sup>2</sup>, Jonathan Wolf<sup>4</sup>, Wolfgang Grodd<sup>2</sup>, Patrik Vuilleumier<sup>3</sup>, Dirk Wildgruber<sup>1,2</sup>, <sup>1</sup>Department of General Psychiatry, University of Tuebingen, Tuebingen, Germany, <sup>2</sup>Section on Experimental MR of the CNS, University of Tuebingen, Tuebingen, Germany, <sup>3</sup>Laboratory for Behavioral Neurology & Imaging of Cognition, Department of Neurosciences & Clinic of Neurology, University Medical Center of Geneva, Geneva, Switzerland, <sup>4</sup>Department of Child Psychiatry, University of Tuebingen, Tuebingen, Germany 260 TH-PM

**Automatic and Controlled Emotion Processing: Preliminary Data**, Nicole Joshua<sup>1,2</sup>, Susan Rossell<sup>1,3</sup>, <sup>1</sup>MHRI, Melbourne, Australia, <sup>2</sup>University of Melbourne, Melbourne, Australia, <sup>3</sup>Monash University, Melbourne, Australia 264 TH-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Anatomical MRI

**MRI of Postmortem Human Brain Hemispheres: Changes in T<sub>2</sub> Relaxation during Formaldehyde Fixation**, Robert Dawe<sup>1</sup>, David Bennett<sup>2</sup>, Julie Schneider<sup>2</sup>, Sunil Vasireddi<sup>1</sup>, Konstantinos Arfanakis<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, USA, <sup>2</sup>Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, USA 268 TH-PM

**Evaluating Faster Structural MRI Acquisitions based on Automated Measures of Classified Local Brain Volumes**, Michael Marxen<sup>1,2</sup>, Tara L. Dawson<sup>1</sup>, M. Kate Hanratty<sup>3</sup>, Gwenn S. Smith<sup>1,3</sup>, Simon J. Graham<sup>1,2,4,5</sup>, <sup>1</sup>Rotman Research Institute, Baycrest Centre for Geriatric Care, Toronto, Canada, <sup>2</sup>Heart & Stroke Foundation Centre for Stroke Recovery, Toronto, Canada, <sup>3</sup>Centre for Addiction and Mental Health, Toronto, Canada, <sup>4</sup>Department of Medical Biophysics, University of Toronto, Toronto, Canada, <sup>5</sup>Sunnybrook Health Sciences Centre, Toronto, Canada 272 TH-PM

**Comparison of MMSE Scores with Postmortem Hippocampal Volumes**, Robert Dawe<sup>1</sup>, David Bennett<sup>2</sup>, Julie Schneider<sup>2</sup>, Sunil Vasireddi<sup>1</sup>, Konstantinos Arfanakis<sup>1</sup>, <sup>1</sup>Department of Biomedical Engineering, Illinois Institute of Technology, Chicago, USA, <sup>2</sup>Rush Alzheimer's Disease Center, Rush University Medical Center, Chicago, USA 276 TH-PM

**Automatic Segmentation of White Matter Hyperintensities in FLAIR images at 3T**, Erin Gibson<sup>1</sup>, Fuqiang Gao<sup>1</sup>, Sandra E. Black<sup>1,2</sup>, Nancy J. Lobaugh<sup>1,2</sup>, <sup>1</sup>Sunnybrook Health Sciences Centre, Toronto, Canada, <sup>2</sup>University of Toronto, Toronto, Canada 280 TH-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Diffusion MRI

**Simulated Framework for Fibre Tracking Validation**, Thomas Close<sup>1,2,3</sup>, Jacques-Donald Tournier<sup>1,4</sup>, Leigh Johnston<sup>2,3,5</sup>, Fernando Calamante<sup>1,4</sup>, Iven Mareels<sup>2,3</sup>, Alan Connelly<sup>1,4</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>National ICT Australia, Melbourne, Australia, <sup>3</sup>Department of Electrical 284 TH-PM

Engineering, University of Melbourne, Melbourne, Australia, <sup>4</sup>Department of Medicine, University of Melbourne, Melbourne, Australia, <sup>5</sup>Howard Florey Institute, Melbourne, Australia

**Diffusion Tensor Imaging (DTI) at 3T and 7 T**, Ralf Luetzkendorf, Tobias Moench, Maurice Hollmann, Sebastian Baecke, Johannes Bernarding, Institute for Biometry and Medical Informatics, Medical Faculty, University of Magdeburg, Magdeburg, Germany 288 TH-PM

**Resolving crossing fibres: validation studies using DWI phantom data**, Jacques-Donald Tournier<sup>1,2</sup>, Chun-Hung Yeh<sup>3</sup>, Fernando Calamante<sup>1,2</sup>, Kuan-Hung Cho<sup>1</sup>, Alan Connelly<sup>1,2</sup>, Ching-Po Lin<sup>3,5</sup>, <sup>1</sup>Brain Research Institute, Melbourne, Australia, <sup>2</sup>Department of Medicine, University of Melbourne, Melbourne, Australia, <sup>3</sup>Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, <sup>4</sup>Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, <sup>5</sup>Lab for Brain Connectivity, Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan 292 TH-PM

**Prediction of Motor Outcome using Diffusion Tensor Tractography in Pontine Infarct**, min cheol Jang, sung ho Jang, sang ho Ahn, dong kyu Kim, Department of Physical Medicine & Rehabilitation, Yeungnam University College of Medicine, Taegu, Korea 296 TH-PM

**Measuring and correcting errors that occur in diffusion weighted images due to non-linear gradients**, Zoltan Nagy, Chloe Hutton, Nikolaus Weiskopf, Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom 300 TH-PM

**Combining DTI with Partial-brain Q-Ball Imaging to Improve the Efficiency of Fiber Detection**, Jiancheng Zhuang<sup>1</sup>, Nicolas Lori<sup>1,2</sup>, <sup>1</sup>University of Southern California, Los Angeles, USA, <sup>2</sup>Coimbra University, Coimbra, Portugal 304 TH-PM

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### Multi-modal Integration

**Evaluating quality of ultrafast EEG signatures in a synchronized EEG-fMRI approach**, Frank Freyer<sup>1</sup>, Petra Ritter<sup>1</sup>, Robert Becker<sup>1</sup>, Kimitaka Anami<sup>3</sup>, Gabriel Curio<sup>1</sup>, Arno Villringer<sup>1,2</sup>, <sup>1</sup>Berlin Neuroimaging Center, Charité Universitätsmedizin, Berlin, Germany, <sup>2</sup>Max Planck Institute for Brain and Cognitive Sciences, Leipzig, Germany, <sup>3</sup>National Center Hospital for Mental, Nervous, and Muscular Disorders, Tokyo, Japan 308 TH-PM

**Integration of MEG and EEG data in minimum L2 norm estimation**, Antonio Molins<sup>3,2</sup>, Steven Stufflebeam<sup>2,4,3,5</sup>, Emery Brown<sup>3,2,6,1</sup>, Matti Hämäläinen<sup>2,5,3</sup>, <sup>1</sup>Brain and Cognitive Sciences, MIT, Cambridge, USA, <sup>2</sup>MGH-MIT-HMS Athinoula A. Martinos Ctr. for Biomed. Imaging, Charlestown, USA, <sup>3</sup>Harvard-MIT division for Hlth. Sci. and Technology, Cambridge, USA, <sup>4</sup>Harvard Medical School, Cambridge, USA, <sup>5</sup>Radiology, MGH, Boston, USA, <sup>6</sup>Anesthesiology, MGH, Boston, USA 312 TH-PM

**The MIND Clinical Imaging Consortium as an application for novel comprehensive quality assurance procedures in a multi-site heterogeneous clinical research study**, H Jeremy Bockholt<sup>1</sup>, Sumner Williams<sup>1</sup>, Mark Scully<sup>1</sup>, Vincent Magnotta<sup>2</sup>, Randy Gollub<sup>3</sup>, John Lauriello<sup>4</sup>, Kelvin Lim<sup>5</sup>, Tonya White<sup>5</sup>, Rex Jung<sup>1</sup>, Charles Schulz<sup>5</sup>, Nancy Andreasen<sup>2</sup>, Vince Calhoun<sup>1,4</sup>, <sup>1</sup>The MIND Institute, Albuquerque, USA, <sup>2</sup>The University of Iowa, Iowa City, USA, <sup>3</sup>Massachusetts, Charlestown, USA, <sup>4</sup>The University of New Mexico, Albuquerque, USA, <sup>5</sup>The University of Minnesota, Minneapolis, USA 316 TH-PM

**Comparison of CBV changes with MRI and laser-Doppler: Implications on CMRO<sub>2</sub> calculation**, Peter Herman<sup>1</sup>, Basavaraju G. Sanganahalli<sup>1</sup>, Fahmeed Hyder<sup>1,2</sup>, <sup>1</sup>Diagnostic Radiology, Yale University, New Haven, USA, <sup>2</sup>Biomedical Engineering, Yale University, New Haven, USA 320 TH-PM

**Relation between spatially and spectrally confined EEG rhythms and fMRI resting state networks**, Petra Ritter<sup>1</sup>, Michael D. Greicius<sup>2</sup>, Robert Becker<sup>1</sup>, Arno Villringer<sup>1,3</sup>, <sup>1</sup>Berlin Neuroimaging Center and Dept. Neurology, Charité, Universitätsmedizin Berlin, Berlin, Germany, <sup>2</sup>Departments of Neurology and Psychiatry, Stanford University School of Medicine, Stanford, USA, <sup>3</sup>Max Planck Institute for Brain and Cognitive Sciences, Leipzig, Germany 324 TH-PM

## IMAGING TECHNIQUES & CONTRAST MECHANISM

### Optical Imaging/NIRS/MRS (magnetic resonance spectroscopy)

**Removal of skin blood flow artifact in fNIRS signal induced by an excessive finger tapping task though ICA**, Satoru Kohno<sup>1,2</sup>, Akihiro Ishikawa<sup>1</sup>, Shin-ichi Shiomi<sup>3</sup>, Shoichi Tsuneishi<sup>1</sup>, Haruhide 328 TH-PM

Udagawa<sup>1</sup>, Takashi Amita<sup>1</sup>, Yoshihiro Mukuta<sup>1</sup>, <sup>1</sup>R&D Department Medical Systems Division, Shimadzu Corporation, Kyoto, Japan, <sup>2</sup>Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, <sup>3</sup>R&D Department, Shimadzu System Development Corporation, Kyoto, Japan

**Phase Imaging System of Oxygen Transport using Oxyhemoglobin and Deoxyhemoglobin - new index and phenomenon of brain function-**, TOSHINORI KATO, Department of Brain Environmental Research, KATOBRAIN Co., Ltd. (<http://www.nonogakko.com>), Tokyo, Japan 332 TH-PM

#### IMAGING TECHNIQUES & CONTRAST MECHANISM Perfusion MRI

**A Bayesian Approach to Perfusion Quantification of Arterial Spin Labelling Data by Deconvolution**, Michael Chappell, Salima Makni, Saad Jbabdi, Mark Woolrich, FMRIB Centre, University of Oxford, Oxford, United Kingdom 336 TH-PM

**Using CASL Versus BOLD fMRI Techniques to Study Linguistic and Visuospatial Tasks: a comparison of findings**, Georg Deutsch<sup>1</sup>, Amol Pednekar<sup>2</sup>, Omur Sen<sup>1</sup>, Beverly Corbitt<sup>1</sup>, William Evanochko<sup>1</sup>, Jan den Hollander<sup>1</sup>, Donald Twieg<sup>1</sup>, <sup>1</sup>University of Alabama Medical Center, Birmingham, USA, <sup>2</sup>Philips Medical Systems NA, Bothell, USA 340 TH-PM

#### IMAGING TECHNIQUES & CONTRAST MECHANISM PET/SPECT

**Effect of transmission protocol on statistical analysis of brain <sup>18</sup>F-FDG PET; Comparison between pre- and post-injection transmission scans**, Masato Kobayashi, Takashi Kudo, Tetsuya Tsujikawa, Yasushi Kiyono, Yasuhisa Fujibayashi, Hidehiko Okazawa, Biomedical Imaging Research Center, University of Fukui, Fukui, Japan 344 TH-PM

**Ictal SPECT Perfusion patterns in pathologically verified Mesial Temporal Sclerosis. Correlation with Surgical outcome**, Pushpalatha Sudhakar Lakkunta<sup>1</sup>, Sita Jayalakshmi S<sup>2</sup>, Prabhakar Rao V.V.S<sup>3</sup>, Manas Panigrahi<sup>4</sup>, Sundaram Challa<sup>5</sup>, Bhushan S. Murari<sup>6</sup>, <sup>1</sup>Department of Nuclear Medicine, Nizam's Institute of Medical Sciences, Hyderabad, India, <sup>2</sup>Department of Neurology, Nizam's Institute of Medical Sciences, Hyderabad, India, <sup>3</sup>Department of Nuclear Medicine, Nizam's Institute of Medical Sciences, Hyderabad, India, <sup>4</sup>Department of Neuro Surgery, Nizam's Institute of Medical Sciences, Hyderabad, India, <sup>5</sup>Department of Pathology, Nizam's Institute of Medical Sciences, Hyderabad, India, <sup>6</sup>Department of Nuclear Medicine, Nizam's Institute of Medical Sciences, Hyderabad, India 348 TH-PM

#### LANGUAGE Comprehension

**Auditory-visual integration in speech perception: A pattern-analytic fMRI study of the McGurk effect**, Kachina Allen<sup>1,2</sup>, Francisco Pereira<sup>1,2</sup>, Matthew Botvinick<sup>1,2</sup>, <sup>1</sup>Princeton Neuroscience Institute, Princeton, USA, <sup>2</sup>Psychology Department, Princeton University, Princeton, USA 352 TH-PM

**fMRI in the service of linguistic theory: The case of optional complements**, Einat Shetreet<sup>1</sup>, Naama Friedmann<sup>2</sup>, Uri Hadar<sup>1</sup>, <sup>1</sup>Department of Psychology, Tel Aviv University, Tel Aviv, Israel, <sup>2</sup>Language and Brain Lab, School of Education, Tel Aviv University, Tel Aviv, Israel 356 TH-PM

**Sex Hormones Affect Interhemispheric Connectivity during the Menstrual Cycle: an fMRI study**, Susanne Weis<sup>1</sup>, Barbara Stoffers<sup>1</sup>, Markus Hausmann<sup>2</sup>, Walter Sturm<sup>1</sup>, <sup>1</sup>Clinical Neuropsychology, Department of Neurology, Aachen, Germany, <sup>2</sup>Department of Psychology, Durham University, Durham, United Kingdom 360 TH-PM

**The relation between auditory processing and prosodic perception in speech and music: An ERP study**, Varghese Peter, Genevieve McArthur, Macquarie Centre for Cognitive Sciences, Macquarie University, Sydney, Australia 364 TH-PM

**Neural correlates of metaphor comprehension: the role of the right hemisphere**, Midori Shibata<sup>1</sup>, Atsushi Terao<sup>3</sup>, Tamaki Miyamoto<sup>2</sup>, Jun-ichi Abe<sup>1</sup>, <sup>1</sup>Department of Psychology, Hokkaido University Graduate School of Letters, Sapporo, Japan, <sup>2</sup>Brain Function Research Laboratory, Hokkaido University Graduate School of Medicine, Sapporo, Japan, <sup>3</sup>Information Science Research Center, Aoyama Gakuin University, Tokyo, Japan 368 TH-PM

- Neural substrate for integrating semantic and orthographic processing in Chinese children,** Mei-Yao Wu, Tai-Li Chou, Chih-Wei Chen, Shu-Hui Lee, Li-Ying Fan, Mei-En Hsieh, Department of Psychology, National Taiwan University, Taipei, Taiwan 372 TH-PM
- Auditory Language Processing in Chinese: a functional MRI Study,** Mea-Yuan Lin<sup>1</sup>, Chiao-Yi Wu<sup>1</sup>, Shuo-En Huang<sup>1</sup>, Wen-Yih Isaac Tseng<sup>2</sup>, S.H. Annabel Chen<sup>1</sup>, <sup>1</sup>Department of Psychology, National Taiwan University, Taipei, Taiwan, <sup>2</sup>Department of Radiology, National Taiwan University College of Medicine, Taipei, Taiwan 376 TH-PM
- When logical connectives modulate priming: An electrophysiological study of coordinate structures,** Magda Dumitru, MACCS, Macquarie University, Sydney, Australia 380 TH-PM
- Does the processing of words and pictures involving body parts recruit the motor cortex?** Analia Arevalo<sup>1</sup>, Nina Dronkers<sup>1,2,3</sup>, <sup>1</sup>Center for Aphasia and Related Disorders, VA Northern California Health Care System, Martinez, USA, <sup>2</sup>University of California, Davis, Davis, USA, <sup>3</sup>University of California, San Diego, La Jolla, USA 384 TH-PM
- Dynamic ERP Mapping in Perception of International Phonetic Vowels,** Andrew CN Chen\*, Peipei Wang, Yanling Yin, Weijia Feng, Center for Higher Brain Functions, Capital Medical University, Beijing, China 388 TH-PM
- Integration of speech and coverbal iconic gestures: Meaning matters,** Antonia Green<sup>1</sup>, Benjamin Straube<sup>1</sup>, Susanne Weis<sup>2</sup>, Klaus Willmes<sup>2</sup>, Kerstin Konrad<sup>3</sup>, Tilo Kircher<sup>1</sup>, <sup>1</sup>Department of Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany, <sup>2</sup>Department of Neurology, RWTH Aachen University, Aachen, Germany, <sup>3</sup>Department of Child and Adolescent Psychiatry and Psychotherapy, RWTH Aachen University, Aachen, Germany 392 TH-PM

#### LANGUAGE Reading/Writing

- Girls show more top-down influence on Fusiform during reading: an effective connectivity, fMRI study,** Tali Bitan<sup>1</sup>, Jimmy Cheon<sup>2</sup>, Dong Lu<sup>2</sup>, Douglas Burman<sup>2,3</sup>, James Booth<sup>2,3</sup>, <sup>1</sup>Department of Communication Disorders, Haifa University, Haifa, Israel, <sup>2</sup>Department of Communication Sciences and Disorders, Northwestern University, Evanston, USA, <sup>3</sup>Department of Radiology, Evanston Northwestern Healthcare, Evanston, USA 396 TH-PM
- Common and Unique Mechanisms for Phonological Decoding Real-words and Non-words,** Richard Frye<sup>1</sup>, Jacqueline Liederman<sup>2</sup>, Benjamin Malmberg<sup>1</sup>, David Strickland<sup>1</sup>, Andrew Papanicolaou<sup>1</sup>, <sup>1</sup>University of Texas, Houston, USA, <sup>2</sup>Boston University, Boston, USA 400 TH-PM
- Hemodynamic response observation during typing tasks using NIRS-imaging,** Nao Tatsumi<sup>1</sup>, Kayoko Yoshino<sup>1</sup>, Shun Ishizaki<sup>2</sup>, <sup>1</sup>Graduate School of Media and Governance, Keio University, Fujisawa, Japan, <sup>2</sup>Faculty of Environmental Information, Keio University, Fujisawa, Japan 404 TH-PM
- Investigation of the orthographic/phonological interaction and the L2 factor in the ERP rhyming effect**, Yuchun Chen<sup>1,3</sup>, Jun-Ren Lee<sup>2,3</sup>, Shih-Kuen Cheng<sup>3,4</sup>, Daisy Hung<sup>3,4</sup>, Ovid Tseng<sup>3,4</sup>, <sup>1</sup>Dept. of Special Education, National Taiwan Normal University, Taipei, Taiwan, <sup>2</sup>Dept. of Educational Psychology and Counseling, National Taiwan Normal University, Taipei, Taiwan, <sup>3</sup>Laboratory for Cognitive Neuroscience, National Yang-Ming University, Taipei, Taiwan, <sup>4</sup>Institute of Cognitive Neuroscience, National Central University, Chung-Li, Taiwan 408 TH-PM
- Neuroanatomical Correlates of Reading Development in Adolescents with Dyslexia: A Longitudinal Study,** Candy Ho, Alexander Gantman, Black Jessica, Heitzmann Joshua, Zakerani Nahal, Reiss Allan, Hoeft Fumiko, Stanford University, Palo Alto, USA 412 TH-PM\*

#### MEMORY & LEARNING Learning (explicit & implicit)

- The neural organization of individual voice categories,** Attila Andics<sup>1,2</sup>, James M. McQueen<sup>2</sup>, Karl Magnus Petersson<sup>1,2</sup>, <sup>1</sup>FC Donders Centre for Cognitive Neuroimaging, Nijmegen, Netherlands, <sup>2</sup>Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands 416 TH-PM
- Investigating cortical mechanisms related to enhancing memory by intellectual excitement.,** Ai Fukushima<sup>1</sup>, Motoaki Sugiura<sup>2,1</sup>, Yuko Sassa<sup>1,3</sup>, Ryuta Kawashima<sup>1,3</sup>, <sup>1</sup>Department of functional brain 420 TH-PM

imaging of IDAC, Tohoku University, Sendai, Japan, <sup>2</sup>Department of Cortical research, National Institute for Physiological Sciences, Okazaki, Japan, <sup>3</sup>RISTEX, JST, Kawaguchi, Japan

**A MEG study of recognition memory, Sun-Kyoung Kim<sup>1</sup>, Myung-Sun Kim<sup>1</sup>, June Sic Kim<sup>2</sup>, Chun Kee Chung<sup>2</sup>,** <sup>1</sup>Sungshin Women's University, Department of Psychology, Seoul, South Korea, <sup>2</sup>Seoul National University Hospital, Department of Neurosurgery, Seoul, South Korea 424 TH-PM

**SPOKEN WORD MEMORY TRACES WITHIN THE HUMAN AUDITORY CORTEX,** Pierre Gagnepain, Gael Chételat, Brigitte Landeau, Jacques Dayan, Francis Eustache, Karine Lebreton, Inserm - EPHE - Université de Caen Basse/Normandie, Unité U923, GIP Cyceron, CHU Côte de Nacre, Caen, France 428 TH-PM

**Visuospatial Memory (VSM) in Children and Adolescents with Obsessive Compulsive Disorder (OCD): A Functional Magnetic Resonance Imaging (fMRI) Study,** Eve Gu<sup>1</sup>, Hannah Shoemaker<sup>3</sup>, Melissa Casey<sup>1</sup>, Tim Silk<sup>2</sup>, Michael Farrell<sup>3</sup>, Alasdair Vance<sup>1</sup>, <sup>1</sup>Academic Child Psychiatry Unit, Royal Children's Hospital, Murdoch Childrens Research Institute, Melbourne, Australia, <sup>2</sup>Queensland Brain Institute, Brisbane, Australia, <sup>3</sup>Howard Florey Institute, Melbourne, Australia 432 TH-PM

**"Does Size Matter? The relationship between hippocampal volume and memory ability in patients with treatment resistant MDD"**, Kate Hoy, Alfred Psychiatry Research Centre, Prahran, Australia 436 TH-PM

**The effects of prenatal methamphetamine exposure on brain activation during verbal learning,** Lisa H Lu<sup>1,2</sup>, Lynne M Smith<sup>3</sup>, Mary J O'Connor<sup>4</sup>, Arianne Johnson<sup>1</sup>, Elizabeth D O'Hare<sup>1,5</sup>, Suzanne Houston<sup>1</sup>, Susan Y Bookheimer<sup>4,5</sup>, Elizabeth R Sowell<sup>1,5</sup>, <sup>1</sup>UCLA Laboratory of Neuro Imaging, David Geffen School of Medicine, Los Angeles, USA, <sup>2</sup>Roosevelt University Dept of Psychology, Chicago, USA, <sup>3</sup>Harbor-UCLA Medica Center Dept of Pediatrics, Torrance, USA, <sup>4</sup>UCLA Dept of Psychiatry & Biobehavioral Sciences, Los Angeles, USA, <sup>5</sup>UCLA Interdepartmental PhD Program for Neuroscience, Los Angeles, USA 440 TH-PM

**The neural substrate of Shogi pattern recognition shaped by long-term training in professional players,** Xiaohong Wan, Hironori Nakatani, Kenichi Ueno, Takeshi Asamizuya, Kang Cheng, Keiji Tanaka, RIKEN Brain Science Institute, Wako\_shi, Japan 444 TH-PM

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## MEMORY & LEARNING

### Long-term Memory (episodic, semantic, autobiographical)

**Effective connectivity during recollection- and familiarity-based memory decisions,** Thomas Lemmin, Alunit Ishai, Institute of Neuroradiology, University of Zurich, Zurich, Switzerland 454 TH-PM

**Impact of Valence and Concreteness on Word List Learning in Young Adults: Differential Effects on Performance and Brain Activation,** Olivier Piguet<sup>1,2</sup>, Paymon Varnamkhasi<sup>1</sup>, Keyma Prince<sup>1</sup>, Emily Connally<sup>1</sup>, Suzanne Corkin<sup>1,3</sup>, <sup>1</sup>Massachusetts Institute of Technology, Cambridge, USA, <sup>2</sup>Prince of Wales Medical Research Institute, Sydney, Australia, <sup>3</sup>MGH/MIT/HMS Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, USA 458 TH-PM

**An fMRI Study of Episodic Memory Retrieval at 7T,** Bing Yao<sup>1</sup>, Tie-Qiang Li<sup>1</sup>, James Kroger<sup>2</sup>, Peter van Gelderen<sup>1</sup>, Jacco de Zwart<sup>1</sup>, Jeff Duyn<sup>1</sup>, <sup>1</sup>NINDS, National Institutes of Health, Bethesda, USA, <sup>2</sup>Department of Psychology, University of New Mexico, Albuquerque, USA 462 TH-PM

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**rTMS over medial posterior parietal cortex impairs fine auditory spatial discrimination**, Santani Teng, David Whitney, Center for Mind and Brain/Dept. of Psychology, UC Davis, Davis, USA 670 TH-PM

**Electrophysiological mapping of the human auditory cortex using click-train stimulation**, Kirill Nourski<sup>1</sup>, Hiroyuki Oya<sup>1</sup>, Hiroto Kawasaki<sup>1</sup>, Richard Reale<sup>1,2</sup>, Albert Fenoy<sup>1</sup>, Paul Poon<sup>3</sup>, Matthew Howard<sup>1</sup>, John Brugge<sup>1,2</sup>, <sup>1</sup>The University of Iowa, Iowa City, USA, <sup>2</sup>University of Wisconsin-Madison, Madison, USA, <sup>3</sup>National Cheng Kung University, Tainan, Taiwan 674 TH-PM

**Plastic Functional Connectivity in Musicians' Brain: a Resting State fMRI Study**, Han Zhang<sup>1</sup>, Ying Han<sup>1</sup>, Hong Yang<sup>2</sup>, He-Han Tang<sup>2</sup>, Qi-Yong Gong<sup>2</sup>, Yu-Feng Zang<sup>1</sup>, Chao-Zhe Zhu<sup>1,\*</sup>, <sup>1</sup>State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, <sup>2</sup>Huaxi MR Research Center (HMRR), Department of Radiology, West China Hospital of Sichuan University, Chengdu, China 678 TH-PM

## SENSORY SYSTEMS

### Tactile/Somatosensory

**MEG Event-Related Desynchronization and Synchronization Differences During Basic Somatosensory Processing in Individuals with ADHD**, Colleen Dockstader<sup>1</sup>, William Gaetz<sup>1,2</sup>, Douglas Cheyne<sup>1,2</sup>, Christina M. Popovich<sup>1,3</sup>, Frank Wang<sup>1,3</sup>, F. Xavier Castellanos<sup>4</sup>, Rosemary Tannock<sup>1,5</sup>, <sup>1</sup>Neurosciences and Mental Health Program, The Hospital for Sick Children, Toronto, Canada, <sup>2</sup>Department of Diagnostic Imaging, The Hospital for Sick Children, Toronto, Canada, <sup>3</sup>Institute of Medical Science, University of Toronto, Toronto, Canada, <sup>4</sup>Child Study Center, New York University, New York, USA, <sup>5</sup>Human Development & Applied Psychology, Ontario Institute for Studies in Education, Toronto, Canada 682 TH-PM

**Perceptive limits linked to differential 600 Hz activity in the somatosensory system**, Ulrike Jaros<sup>1</sup>, Bernd Hilgenfeld<sup>1</sup>, Stephan Lau<sup>1,2</sup>, Gabriel Curio<sup>3</sup>, Jens Haueisen<sup>1,2</sup>, <sup>1</sup>Biomagnetic Center, Department of Neurology, University Hospital Jena, Jena, Germany, <sup>2</sup>Institute of Biomedical Engineering and Informatics, Technical University Ilmenau, Ilmenau, Germany, <sup>3</sup>Neurophysics Group, Department of Neurology, Charité - University Medicine Berlin, Berlin, Germany 686 TH-PM

**Top-down control of cortical ongoing mu rhythm (7-13 Hz) in sensory awareness of a weak stimulus,** Yan Zhang, Mingzhou Ding, J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, USA 690 TH-PM

**Cuff-type pneumatic stimulator for somatosensory mapping of finger afferences with fMRI,** Eugen Gallasch<sup>1</sup>, Martin Fend<sup>1</sup>, Dietmar Rafolt<sup>2</sup>, Christian Siedentopf<sup>5,6</sup>, Stefan Golaszewski<sup>3,5</sup>, Roland Beisteiner<sup>4</sup>, <sup>1</sup>Dept. of Physiology, Medical University of Graz, Graz, Austria, <sup>2</sup>Center for Biomedical Engineering and Physics, Medical University of Vienna, Vienna, Austria, <sup>3</sup>Dept. of Neurology, Paracelsus Medical University Salzburg, Salzburg, Austria, <sup>4</sup>Dept. of Neurology, Medical University of Vienna, Vienna, Austria, <sup>5</sup>fMRI Lab, Dept. of Psychiatry, Medical University Innsbruck, Innsbruck, Austria, <sup>6</sup>Dept. of Radiology, Medical University Innsbruck, Innsbruck, Austria 694 TH-PM

**A fMRI Study of Acupuncture: Human Brain Activity in the Manipulation of Needle Rotation.,** Hiroaki Mano<sup>1</sup>, Masahiro Umeda<sup>2</sup>, Masaki Fukunaga<sup>2</sup>, Toshihiro Higuchi<sup>1</sup>, Chuzo Tanaka<sup>1</sup>, <sup>1</sup>Department of Brain Surgery, Meiji University of Integrated Medicine, Nantan, Japan, <sup>2</sup>Department of Medical Informatics, Meiji University of Integrated Medicine, Nantan, Japan 698 TH-PM

## SENSORY SYSTEMS

### Vision

**Multivoxel fMRI analysis reveals the representation of spatial frequency information in the human primary visual cortex,** Bahador Bahrami<sup>1,2</sup>, Geraint Rees<sup>1,2</sup>, <sup>1</sup>Institute of Cognitive Neuroscience, London, United Kingdom, <sup>2</sup>Wellcome Department of Imaging Neuroscience, London, United Kingdom 702 TH-PM

**Brain Mechanisms of Vision in Human Amblyopia: A Magnetoencephalography (MEG) Study.,** Filomeno Cortese<sup>1</sup>, Herbert C. Goltz<sup>1</sup>, Zahra Hirji<sup>1</sup>, Douglas O. Cheyne<sup>2</sup>, Agnes F.M. Wong<sup>1</sup>, <sup>1</sup>Department of Ophthalmology & Vision Sciences, The Hospital for Sick Children, Toronto, Canada, <sup>2</sup>Diagnostic Imaging, The Hospital for Sick Children, Toronto, Canada 706 TH-PM

**The transformation of representational similarity along human ventral-stream stages of visual-object processing,** Nikolaus Kriegeskorte, Marieke Mur, Jerzy Bodurka, Peter Bandettini, NIMH, Bethesda, USA 710 TH-PM\*

**N170 amplitude reflects the seen number of faces irrespective of low-level stimulus variables,** Aina Puce<sup>1</sup>, Marie McNeely<sup>1</sup>, Olivia Carrick<sup>1</sup>, Michael Berrebi<sup>1</sup>, James Epling<sup>1</sup>, James Thompson<sup>1,2</sup>, Jillian Hardee<sup>1</sup>, Leor Zellner<sup>1</sup>, Julie Brefcynski-Lewis<sup>1</sup>, <sup>1</sup>Center for Advanced Imaging, West Virginia University, Morgantown, USA, <sup>2</sup>Psychology Department, George Mason University, Fairfax, USA 714 TH-PM

**MEG demonstrates a shift to higher gamma frequencies in primary visual cortex for moving versus stationary stimuli.,** Jennifer B. Swettenham, Krish D. Singh, CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom 718 TH-PM

**Increasing the measured BOLD signal in human lateral geniculate nucleus and superior colliculus using cardiac gating,** Martin Hebart<sup>1</sup>, Ignacio Vallines<sup>1,2</sup>, <sup>1</sup>Department of Experimental Psychology, Ludwig Maximilian University, Munich, Germany, <sup>2</sup>Department of Experimental Psychology, University of Regensburg, Regensburg, Germany 726 TH-PM

**Exploring the relationship between natural fluctuations in electrical measures of brain activity and the BOLD response, during visual stimulation.,** Karen J. Mullinger, Gerda B. Geirsdottir, Matthew J. Brookes, Peter F. Liddle, Richard W. Bowtell, University of Nottingham, Nottingham, United Kingdom 730 TH-PM

**Using inter-session repeatability to improve the results of phase-encoded retinotopic mapping,** Krish D. Singh<sup>1</sup>, Simon K. Rushton<sup>1</sup>, Tom C.A. Freeman<sup>1</sup>, Petroc Sumner<sup>1</sup>, Paul A. Warren<sup>1</sup>, Andy T. Smith<sup>2</sup>, <sup>1</sup>CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom, <sup>2</sup>Dept. of Psychology, Royal Holloway, University of London, Egham, United Kingdom 734 TH-PM

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### Tactile/Somatosensory

**Proprioceptive perception, an fMRI study of brain lateralization and its relationship with behavioral measures,** Etti Ben-Shabat<sup>1,2</sup>, Gaby S Pell<sup>3</sup>, Amy Brodtmann<sup>2</sup>, Thomas A Matyas<sup>1,2</sup>, Leeanne M Carey<sup>1,2</sup>, <sup>1</sup>La Trobe University, Melbourne, Australia, <sup>2</sup>National Stroke Research Institute, Melbourne, Australia, <sup>3</sup>Brain Research Institute, Melbourne, Australia 738 TH-PM