19th Annual Meeting of the
Organization for Human Brain Mapping

# OHBM
## SEATTLE 2013

June 16-20

Washington State Convention and Trade Center

# Poster Listings

www.humanbrainmapping.org/OHBM2013

OHBM
SEATTLE 2013

# Poster Listings

## Monday and Tuesday Posters

### Poster Numbers #1000-2119 (MT)

- Display Days: Your poster should be displayed on your assigned poster board on Monday and Tuesday.
- Set-Up Time: Please set-up your poster from 8:00 – 9:00 am on Monday morning.
- Poster Stand-By Times:
  - Even numbered posters between #1000-2119 will stand-by and present their poster on Monday, June 17 from 13:30 – 15:30.
  - Odd numbered posters between #1000-2119 will stand-by and present their poster on Tuesday, June 18 from 13:30 – 15:30.
- Poster Reception: All Monday and Tuesday poster presenters will have a poster reception on Tuesday, June 18 from 18:00 – 19:30.
- Poster Teardown: Monday and Tuesday presenters should remove their posters by 20:30 on Tuesday night.

| CATEGORY/SUB-CATEGORY | POSTER NUMBERS |
|---|---|
| **Brain Stimulation Methods** | |
| Deep Brain Stimulation | 1000-1006 |
| Direct Electrical/Optogenetic Stimulation | 1007-1009 |
| TDCS | 1010-1026 |
| TMS | 1027-1049 |
| **Disorders of the Nervous System** | |
| Autism | 1050-1085 |
| Developmental Disorders | 1086-1121 |
| Obsessive-Compulsive Disorder and Tourette Syndrome | 1122-1126 |
| Other Disorders | 1127-1177 |
| Parkinson's Disease and Movement Disorders | 1178-1221 |
| Sleep Disorders | 1222-1224 |
| Stroke | 1225-1257 |
| **Genetics** | |
| Genetic Association Studies | 1258-1276 |
| Genetic Modeling and Analysis Methods | 1277-1289 |
| Neurogenetic Syndromes | 1290-1295 |
| **Higher Cognitive Functions** | |
| Decision Making | 1296-1335 |
| Executive Function | 1336-1386 |
| Imagery | 1387-1393 |
| Music | 1394-1404 |
| Reasoning and Problem Solving | 1405-1415 |
| Space, Time and Number Coding | 1416-1425 |
| **Informatics** | |
| Atlases | 1426-1435 |
| Databasing and Data Sharing | 1436-1453 |
| Pipelines | 1454-1466 |

| CATEGORY/SUB-CATEGORY | POSTER NUMBERS |
|---|---|
| **Language** | |
| Language Acquisition | 1467-1473 |
| Language Comprehension and Semantics | 1474-1500 |
| Reading and Writing | 1501-1517 |
| Speech Perception | 1518-1531 |
| Speech Production | 1532-1546 |
| **Learning and Memory** | |
| Long-Term Memory (Episodic and Semantic) | 1547-1567 |
| Neural Plasticity and Recovery of Function | 1568-1582 |
| Skill Learning | 1583-1597 |
| Working Memory | 1598-1620 |
| **Modeling and Analysis Methods** | |
| Bayesian Modeling | 1621-1628 |
| Classification and Predictive Modeling | 1629-1669 |
| Diffusion MRI Modeling and Analysis | 1670-1696 |
| EEG/MEG Modeling and Analysis | 1697-1733 |
| Exploratory Modeling and Artifact Removal | 1734-1753 |
| fMRI Connectivity and Network Modeling | 1754-1881 |
| Image Registration and Computational Anatomy | 1882-1899 |
| Motion Correction and Preprocessing | 1900-1914 |
| Multivariate modeling | 1915-1933 |
| Other Methods | 1934-1961 |
| PET Modeling and Analysis | 1962-1964 |
| Segmentation and Parcellation | 1965-1987 |
| Task-Independent and Resting-State Analysis | 1988-2044 |
| Univariate Modeling | 2045-2049 |
| **Motor Behavior** | |
| Brain Machine Interface | 2050-2059 |
| Mirror System | 2060-2062 |
| Motor Planning and Execution | 2063-2082 |
| Visuo-Motor Functions | 2083-2089 |
| **Physiology, Metabolism and Neurotransmission** | |
| Cerebral Metabolism and Hemodynamics | 2090-2101 |
| Neurophysiology of Imaging Signals | 2102-2115 |
| Pharmacology and Neurotransmission | 2116-2119 |

## Wednesday and Thursday Posters

**Poster Numbers #3000-4119 (WTh)**

- Display Days: Your poster should be displayed on your assigned poster board on Wednesday and Thursday.
- Set-Up Time: Please set-up your poster from 8:00 – 9:00 am on Wednesday morning. Do not set-up your poster Tuesday night – you must wait until Wednesday morning.
- Poster Stand-By Times:
  - Even numbered posters between #3000-4119 will stand-by and present their poster on Wednesday, June 19 from 13:30 – 15:30.
  - Odd numbered posters between #3000-4119 will stand-by and present their poster on Thursday, June 20 from 10:45 – 12:45.
- Poster Reception: All Wednesday and Thursday poster presenters will have a poster reception on Thursday, June 20 from 16:45 – 18:15.
- Poster Teardown: Wednesday and Thursday presenters should remove their poster by 19:15 on Thursday night.

| CATEGORY/SUB-CATEGORY | POSTER NUMBERS |
|---|---|
| **Disorders of the Nervous System** | |
| Addictions | 3000-3044 |
| Alzheimer's Disease and Other Dementias | 3045-3099 |
| Epilepsy | 3100-3135 |
| Mood and Anxiety Disorders | 3136-3210 |
| Schizophrenia and Psychotic Disorders | 3211-3270 |
| Traumatic Brain Injury | 3271-3301 |
| **Emotion and Motivation** | |
| Emotional Learning | 3302-3306 |
| Emotional Perception | 3307-3345 |
| Reward and Punishment | 3346-3367 |
| Sexual Behavior | 3368-3370 |
| **Imaging Methods** | |
| Anatomical MRI | 3371-3406 |
| BOLD fMRI | 3407-3500 |
| Diffusion MRI | 3501-3545 |
| EEG | 3546-3570 |
| MEG | 3571-3584 |
| MR Spectroscopy | 3585-3592 |
| Multi-Modal Imaging | 3593-3626 |
| Non-BOLD fMRI | 3627-3634 |
| Optical Imaging/NIRS | 3635-3657 |
| PET | 3658-3662 |
| **Lifespan Development** | |
| Aging | 3663-3706 |
| Normal Brain Development: Fetus to Adolescence | 3707-3743 |

| CATEGORY/SUB-CATEGORY | POSTER NUMBERS |
|---|---|
| **Neuroanatomy** | |
| Anatomy and Function | 3744-3777 |
| Brain Networks | 3778-3809 |
| Cortical Anatomy and Segregation | 3810-3822 |
| Subcortical Structures | 3823-3833 |
| White Matter Anatomy, Fiber Pathways and Connectivity | 3834-3870 |
| **Perception and Attention** | |
| Attention: Auditory/Tactile/Motor | 3871-3877 |
| Attention: Visual | 3878-3898 |
| Chemical Senses: Olfaction, Taste | 3899-3906 |
| Consciousness and Awareness | 3907-3924 |
| Perception: Auditory/ Vestibular | 3925-3946 |
| Perception: Multisensory and Crossmodal | 3947-3964 |
| Perception: Pain and Visceral | 3965-3998 |
| Perception: Tactile/Somatosensory | 3999-4013 |
| Perception: Visual | 4014-4052 |
| Sleep and Wakefulness | 4053-4059 |
| **Social Neuroscience** | |
| Self Processes | 4060-4069 |
| Social Cognition | 4070-4099 |
| Social Interaction | 4100-4119 |

# SCHEDULE OF POSTER PRESENTATIONS

## Monday, June 17, 2013 and Tuesday, June 18, 2013

** Indicates poster will also be presented during an Oral Session. The oral session number is indicated in parantheses after the poster title.*

*** Indicates poster will also be presented during an Interactive Poster (I-Poster) Session. Please check the Program Book for I-Poster Presentation times.*

Information listed, including author affiliations, appear as submitted.



## Brain Stimulation Methods

### Deep Brain Stimulation

**1000** **CM-Pf DBS induces differential functional inhibition of the motor, associative, and limbic circuits**
Paul Min[1], Joo Pyung Kim[1], Emily Knight[1], Osama Abulseoud[1], Michael Marsh[1], Katherine Kelsey[1], Penelope Duffy[1], Charles Blaha[2], Kevin Bennet[1], Frye Mark[1], Kendall Lee[1]
[1]Mayo Clinic, Rochester, United States, [2]University of Memphis, Memphis, United States

**1001** **Connectivity of subthalamic nucleus and globus pallidus in relation to the speech network**
Jordan Manes[1], Amy Parkinson[2], Jeremy Greenlee[3], Charles Larson[4], Simon Eickhoff[5], Donald Robin[1]
[1]University of Texas Health Science Center at San Antonio, San Antonio, United States, [2]University of Texas Health Science Center, San Antonio, United States, [3]University of Iowa, Iowa City, IA, [4]Department of communication sciences and disorders, Northwestern University, Evanston, IL, [5]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**1002** **Evaluation of DTI of the Corticospinal Tract in Predicting Thresholds for DBS in Parkinson's Disease**
Sarah Carr[1], Matthew Dean[1], Kelly Janis[2], Benjamin Walter[3,1]
[1]Neurological Institute, Case Western Reserve University, Cleveland, OH, [2]Neurology, UH Hospitals, Cleveland, OH, [3]Movement Disorders Center, UH Hospitals, Cleveland, OH

***1003** **Fornix Deep Brain Stimulation Induces Functional Activation in Hippocampal Circuitry, (O-M1)**
Erika Ross[1], Seongrok Han[2], Joo Kim[2], Paul Min[2], Kendall Lee[2]
[1]Mayo Clinic, Rochester, United States, [2]Mayo Clinic, Rochester, MN

**1004** **Power asymmetry and functional connectivity of patients with major depressive disorder after DBS**
Maher Quraan[1], Andrea Protzner[2], Peter Giacobbe[3], Sidney Kennedy[3], Andres Lozano[4], Mary Pat McAndrews[4]
[1]Krembil Neuroscience Centre and Toronto Western Research Institute, Toronto, Ontario, Canada, [2]Department of Psychology and Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada, [3]Department of Psychiatry, University Health Network and University of Toronto, Toronto, Ontario, Canada, [4]Krembil Neuroscience Centre, Toronto Western Research Institute and University of Toronto, Toronto, Ontario, Canada

**1005** **Structural and functional convergence in Medial Frontal 10 with DBS for treatment resistant MDD**
Callie McGrath[1], Ki Sueng Choi[1,2], Justin Rajendra[1], Patricio Riva-Posse[1], Paul Holtzheimer[3], Robert Gross[1], Helen Mayberg[1]
[1]Emory University, Atlanta, GA, [2]Georgia Tech, Atlanta, GA, [3]Dartmouth Medical School, Lebanon, NH

**1006** **Task related causal interaction in the STN across hemispheres**
Adam Hebb[1], Felix Darvas[2]
[1]Denver University, Denver, United States, [2]University of Washington, Seattle, United States

## Brain Stimulation Methods

### Direct Electrical/Optogenetic Stimulation

**1007** **Functional subdivisions of left inferior frontal cortex and their relation to gyrification**
Christian Alexander Kell[1], Elke Hattingen[2], Ines Kropff[2], Agi Oszvald[2], Volker Seifert[2], Andrea Szelenyi[3], Marlies Wagner[2], Mitchel Berger[4]
[1]Brain Imaging Center, Frankfurt, Germany, [2]Goethe University, Frankfurt, Germany, [3]Heinrich Heine University, Duesseldorf, Germany, [4]UCSF, San Francisco, CA

**1008** **Neural and hemodynamic responses elicited by photo-stimulation of ChR2 mice: Spatial spread insights**
Alberto Vazquez[1], Mitsuhiro Fukuda[2], Justin Crowley[3], Seong-Gi Kim[2]
[1]Departments of Radiology and Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States, [2]Neuroimaging Laboratory, Department of Radiology, University of Pittsburgh, Pittsburgh, PA, [3]Department of Biology, Carnegie Mellon University, Pittsburgh, PA

**1009** **Spatial probability of essential language sites: Cortical stimulation density map in a population**
Thomas Pieters[1], Christopher Conner[2], Yoshua Esquenazi Levy[1], Vatche Baboyan[3], Nitin Tandon[2]
[1]UTHSCH, Houston, TX, [2]UT Houston, Houston, United States, [3]UT Houston, Houston, TX

## Brain Stimulation Methods

### TDCS

**1010 Withdrawn**

**1011 Age-related effects of noninvasive inferior frontal cortex stimulation on resting-state connectivity**
Robert Lindenberg[1], Marcus Meinzer[1], Daria Antonenko[1], Agnes Flöel[1]
[1]Charite University Medicine, Berlin, Germany

**1012 Anodal tDCS during motor imagery training potentiates the learning of a sequential motor task**
Arnaud Saimpont[1,2], Catherine Mercier[1,3], Francine Malouin[1,3], Aymeric GUILLOT[4], Christian COLLET[4], Nady Hoyek[4], Julien Doyon[5], Philip Jackson[1,2,6]
[1]Centre interdisciplinaire de recherche en réadaptation et intégration sociale, Québec, Canada, [2]École de psychologie, Université Laval, Québec, Canada, [3]Département de réadaptation, Université Laval, Québec, Canada, [4]Université Claude Bernard Lyon 1 - EA 647 Mental processes and Motor Performance, Villeurbanne, France, [5]Functional Neuroimaging Unit, CRIUGM, University of Montreal, Montreal, PQ, [6]Centre de recherche de l'institut universitaire en santé mentale de Québec, Québec, Canada

**1013 Assessment of human neuromagnetic brain activity during transcranial oscillating current stimulation**
Surjo Soekadar[1,2], Matthias Witkowski[1,2], Eliana Garcia Cossio[1,2], Bankim Chander[1,2], Niels Birbaumer[2], Leonardo Cohen[3], Stephen Robinson[4]
[1]University Hospital of Tübingen, Applied Neurotechnology Lab, Tübingen, Germany, [2]University of Tübingen, Institute of Medical Psychology and Behavioral Neurobiology & MEG Centre, Tübingen, Germany, [3]NINDS, NIH, Bethesda, MD, USA, [4]NIMH, NIH, Bethesda, MD, USA

**1014 Cerebellar tDCS impairs verbal working memory and activity in associated cerebellar subregions**
Katja Macher[1], Andreas Boehringer[2], Arno Villringer[3,4,5], Burkhard Pleger[6,5]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Central Institute for Mental Health, Mannheim, Germany, [3]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]Berlin School of Mind and Brain, Mind and Brain Institute, Berlin, Germany, [5]Dept of Cognitive Neurology, University Hospital Leipzig, Leipzig, Germany, [6]Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1015 Dense Electrode Array Current Optimization for Targeting and Directionality of tDCS**
Seyhmus Guler[1,2], Moritz Dannhauer[2,3], Burak Erem[1,2], Rob MacLeod[2,3], Don Tucker[4], Sergei Turovets[4], Chelsea Mattson[4], Deniz Erdogmus[1], Dana Brooks[1,2]
[1]Electrical and Comp. Engineering Dept., Northeastern University, Boston, MA, [2]Center for Integrative Biomedical Computing,U. of Utah, Salt Lake City, UT, [3]Scientific Computing and Imaging Institute, U. of Utah, Salt Lake City, UT, [4]Electrical Geodesics, Inc. (EGI), Eugene, OR

**1016 Direct mapping of Transcranial Direct Current Stimulation effects in fMRI**
Ben Cassidy[1], Victor Solo[1], Caroline Rae[1]
[1]The University of New South Wales, Sydney, Australia

**1017 Effects of Brain Stimulation on Memory and Oscillatory Brain Activity in Patients with Depression**
Tjeerd Boonstra[1,2,3], Tamara Powell[1,2], Donel Martin[1,2], Colleen Loo[1,2,4], Michael Breakspear[1,2,5]
[1]School of Psychiatry, University of New South Wales, Sydney, Australia, [2]Black Dog Institute, Sydney, Australia, [3]VU University Amsterdam, Amsterdam, Netherlands, [4]St George Hospital, South Eastern Sydney Health, Sydney, Australia, [5]Queensland Institute of Medical Research, Brisbane, Australia

***1018 Establishing a causal link between oscillatory coupling of brain activity and cognitive performance, (O-M1)**
Rafael Polania[1,2], Michael Nitsche[2], Carolin Korman[2], Giorgi Batsikadze[2], Christian Ruff[1], Walter Paulus[2]
[1]Laboratory for Social and Neural Systems Research, Department of Economics, University of Zurich, Zurich, Switzerland, [2]Department of Clinical Neurophysiology, Georg-August-University, Göttingen, Germany

**1019 Evaluation of Patch and HD-Electrodes regarding Volume Conduction for tDCS in Realistic Head Models**
Moritz Dannhauer[1,2], Rob MacLeod[1,2], Seyhmus Guler[1,3], Don Tucker[4], Sergei Turovets[5], Chelsea Mattson[4], Dana Brooks[1,3]
[1]Center for Integrative Biomedical Computing, University of Utah, Salt Lake City, UT, [2]Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, UT, [3]Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, [4]Electrical Geodesics, Inc., Eugene, OR, [5]Neuroinformatics Center, Eugene, OR

**1020 Local and remote effects of tDCS on the electrical activity of the motor cortical network**
Filippo Zappasodi[1,2], Francesca Notturno[1], Laura Marzetti[1,2], Antonino Uncini[1], Vittorio Pizzella[1,2]
[1]Department of Neuroscience and Imaging, G. d'Annunzio University, Chieti, Italy, [2]Institute of Advanced Biomedical Technologies, G. d'Annunzio University Foundation, Chieti, Italy

**1021 Modulation of Cortical Activation by Dual tDCS**
Yun-Hee Kim[1], Ji-Young` Park[1], Ahee Lee[1], Chang-hyun Park[1], Yong-Il Shin[2], Won Hyuk Chang[1]
[1]Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [2]Department of Rehabilitation Medicine, Pusan National University School of Medicine, Pusan, Korea, Republic of


To view full abstract text and E-Posters, visit **ww4.aievolution.com/hbm1301**

**1022** **Prefrontal tDCS changes symptoms and fcMRI in a single case of treatment-resistant schizophrenia**
Daniel Keeser[1,2], Michael Kupka[1], Ulrich Palm[2], Janusch Blautzik[1], Oliver Pogarell[2], Birgit Ertl-Wagner[1], Kirsch Valerie[3], Heidi Reichard[2], Norbert Müller[4], Maximilian Reiser[1], Peter Falkai[5], Frank Padberg[2]
[1]Institute for Clinical Radiology, Ludwig-Maximilian University, Munich, Germany, [2]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany, [3]Department of Neurology, Ludwig-Maximilians University, Munich, Germany, [4]Department of Psychiatry and Psychotherapy, LMU Munich, Munich, Germany, [5]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University Munich, Munich, Germany

**1023** **Simultaneous transcranial direct current stimulation and high resolution electroencephalography**
Abhrajeet Roy[1], Bryan Baxter[1], Karl LaFleur[1], Kaitlin Cassady[1], Bin He[1]
[1]University of Minnesota, Minneapolis, United States

**1024** **The after-effects of tDCS on resting state regional cerebral blood flow, an ASL study**
Ye Wang[1], Ying Hao[1,2], Brad Manor[1,2], Xiaoying Wang[1,3], Jue Zhang[1,4], Jing Fang[1,4]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [2]Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, MA, [3]Peking University First Hospital, Beijing, China, [4]College of Engineering, Peking University, Beijing, China

**1025** **Transcranial direct current stimulation affects complexity of brain oscillatory activity**
Matthias Witkowski[1], Stephen Robinson[2], Eliana Garcia Cossio[1], Niels Birbaumer[3], Leonardo Cohen[4], Surjo Soekadar[1]
[1]University Hospital of Tübingen, Applied Neurotechnology Lab, Tübingen, Germany, [2]NIMH, NIH, Bethesda, MD, USA, [3]University of Tübingen, Institute of Medical Psychology and Behavioral Neurobiology, Tübingen, Germany, [4]NINDS, NIH, Bethesda, MD, USA

**1026** **Transfer of cognitive training across magnitude dimensions achieved with concurrent parietal tRNS**
marinella Cappelletti[1], daniele didino[2], Erica Gessaroli[3], Rosalyn Hithersay[1], Ryota Kanai[1], micaela mitolo[4], Roi Cohen Kadosh[5], Vincent Walsh[1]
[1]University College London, London, United Kingdom, [2]university of trento, trento, Italy, [3]University of Bologna, Bologna, Italy, [4]university of padua, padua, Italy, [5]University of Oxford

## Brain Stimulation Methods

TMS

**1027** **A new MR device for combined TMS/fMRI experiments**
Lucia Navarro de Lara[1,2], Christian Windischberger[3], Jürgen Sieg[4,5], Ewald Moser[6], Elmar Laistler[4]
[1]Center for medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [2]MR Centre of Excellence, medical University of Vienna, Vienna, Austria, [3]MR Center, Medical University of Vienna, Vienna, Austria, [4]Center for Medical Physics and Biomedical Engineering, Medical University Vienna, Vienna, Austria, [5]MR Center of Excellence, Medical University of Vienna, Vienna, Austria, [6]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

**1028** **Asymmetry in subregions of superior parietal lobule: a TMS study**
yun zhang[1], Jiaojian Wang[1], Jinping xu[1], Jin Li[2], Tianzi Jiang[1,2,3]
[1]University of Electronic Science and Technology of China, ChengDu, China, [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [3]The Queensland Brain Institute, Brisbane, Australia

**1029** **Changes in cortical excitability elicited by Pulsed Oscillatory Electromagnetic Stimulation (POEMS)**
Michael Weisend[1,2], Iliana Bray[3], Sean Hagberg[4,2]
[1]Mind Research Network, Albuquerque, NM, [2]University of New Mexico, Albuquerque, NM, [3]Albuquerque Academy, Albuquerque, NM, [4]Rio Grande Neurosciences, Albuquerque, NM

**1030** **Corticomotor Representation of Muscles in Neuropathic Pain: A TMS Study**
PAUL SACCO[1], Kate MacIver[1], Rebecca Bresnahan[1], Gary Thickbroom[2], Turo Nurmikko[1]
[1]Pain Research Institute, University of Liverpool, Liverpool, United Kingdom, [2]Australian Neuro-muscular Research Institute, Perth, Australia

**1031** **Data Quality of Concurrent EEG-TMS in a Faces-Scenes Discrimination Task**
Sara Assecondi[1], Nir Shalev[2,3], Stephen Mayhew[1], Carmel Mevorach[1], Andrew Bagshaw[1]
[1]School of Psychology, University of Birmingham, Birmingham, United Kingdom, [2]The School of Psychological Sciences, Tel Aviv University, Tel Aviv, Israel, [3]School of Education, Tel Aviv University, Tel Aviv, Israel

**1032** **Degree of Neuronal Anisotropy in Motor Cortex Evaluated by Navigated TMS**
Elisa Kallioniemi[1,2], Mervi Könönen[3,4], Petro Julkunen[1]
[1]Department of Clinical Neurophysiology, Kuopio University Hospital, Kuopio, Finland, [2]Department of Applied Physics, University of Eastern Finland, Kuopio, Finland, [3]Kuopio University Hospital, Kuopio, Finland, [4]Department of Clinical Radiology, Kuopio University Hospital, Kuopio, Finland

**1033** **Effect of Dual-mode Noninvasive Brain Stimulation over the Prefrontal Cortices on Verbal Working**
Yun-Hee Kim[1], Ahee Lee[1], Won Hyuk Chang[1], Tae-Gun Kwon[1], Eun-Hee Park[1], Min Ji Lee[1]
[1]Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of

**1034** **Effect of medial prefrontal rTMS on decision making and dopamine release**
sang soo cho[1], Yuko Koshimori[1], Kelly Aminian[1], Pablo Rusjan[1], Alan Wilson[1], Sylvain Houle[1], Antonio Strafella[1]
[1]University of Toronto, Toronto, Canada

**1035** **Effects of the residual electric field induced by sham coils should not be neglected in TMS studies**
Alexander Opitz[1,2], Wynn Legon[1], Jerel Mueller[1], Aron Barbour[1], Amanda Williams[1], Walter Paulus[2], William Tyler[1]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Department of Clinical Neurophysiology, Georg-August-University, Goettingen, Germany

**1036** **Identification of cortical TMS targets based on connectivity to effective DBS sites**
Michael Fox[1], Hesheng Liu[2], Randy Buckner[3], Alvaro Pascual-Leone[4]
[1]Department of Neurology, Massachusetts General Hospital, Brigham and Women's Hospital, Boston, MA, [2]Massachusetts General Hospital, Boston, MA, [3]Harvard University, Cambridge, MA, [4]Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA

***1037** **Impact of 5Hz rTMS is related to volume of white matter in the sensory cortex after stroke, (O-M1)**
Sonia Brodie[1], Michael Borich[1], Lara Boyd[2]
[1]University of British Columbia, Vancouver, Canada, [2]University of British Columbia, Vancouver, British Columbia

**1038** **Induction of late I-waves and functional connectivity within the cortical motor system**
Lukas Jan Volz[1,2], Masashi Hamada[3], John Rothwell[3], Christian Grefkes[1,2]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]Department of Neurology, University of Cologne, Cologne, Germany, [3]UCL Institute of Neurology, London, United Kingdom

**1039** **Interhemispheric inhibition in musicians and its relation to white-matter in the corpus callosum**
Christopher Steele[1], Henning Vollmann[2], Virginia Conde Ruiz[2], Arno Villringer[3], Patrick Ragert[3]
[1]Max Planck Instutute for Human and Brain Sciences, Leipzig, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1040** **Perturbed functional motor network during the wrist movement after TMS on motor cortices**
Jae-Chang Kim[1,2], Changwon Jang[1,2], Geongyong Kim[2,3], Jong Doo Lee[1,2,4], Hae-Jeong Park[1,2,4]
[1]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Nuclear Medicine and Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Myongji University, Seoul, Korea, Republic of, [4]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of

**1041** **Primary motor cortex function in Complex Regional Pain Syndrome: a systematic review & meta-analysis**
Flavia Di Pietro[1], Tasha Stanton[2], Luke Parkitny[1], James McAuley[3], martin lotze[4], Benedict Wand[5], G.L. Moseley[2]
[1]Neuroscience Research Australia; University of New South Wales, Sydney, Australia, [2]Neuroscience Research Australia; University of South Australia, Sydney, Australia, [3]Neuroscience Research Australia, Sydney, Australia, [4]University of Greifswald, Greifswald, Germany, [5]University of Notre Dame Australia, Perth, Australia

**1042** **Relationship between brain structure and cortical physiology in healthy older adults**
Jonathan List[1], Jan Kübke[2], Nadine Külzow[2], Robert Lindenberg[3], Lucia Kerti[4], Veronica Witte[5], Agnes Flöel[6]
[1]Charité - Universitätsmedizin Berlin, Berlin, Germany, [2]Charité, Berlin, Germany, [3]Charite University Medicine, Berlin, Germany, [4]Charité University Hospital, Berlin, Germany, [5]Charite University Berlin, Berlin, Germany, [6]Charite Universitätsmedizin Berlin, Berlin, Germany

**1043** **Subject Specific Modeling to Predict Neural Activation During Transcranial Magnetic Stimulation**
Brian Goodwin[1], Christopher Butson[2]
[1]Marquette University, Milwaukee, United States, [2]Medical College of Wisconsin, Milwaukee, WI

**1044** **Superior temporal sulcus, social perception and autism: an rTMS study**
Ana Saitovitch[1], Traian Popa[2], Herve Lemaitre[3], David Grévent[1], Raphael Calmon[1], Sabine Meunier[2], Nadia Chabane[4], Francis Brunelle[1], Yves Samson[5], Nathalie Boddaert[1], Monica Zilbovicius[1]
[1]INSERM Unity 1000, Hôpital Necker, Paris, France, [2]Centre de Recherche de l'Institut du Cerveau et de la Moelle épinière (CR-ICM), Paris, France, [3]INSERM Unity 1000 - CEA - Faculté de Médecine Paris Sud 11, Orsay, France, [4]INSERM Unity 1000, Hôpital Robert Debre, Paris, France, [5]AP-HP, Urgences Cérébro-Vasculaires, La pitié-Salpêtrière Hospital, Paris, France

**1045** **The effect of long-term HF rTMS on working memory in SZ and HC - a placebo controlled fMRI study**
Birgit Guse[1], Peter Falkai[2], Oliver Gruber[1], Heather Whalley[3], Alkomiet Hasan[2], Peter Dechent[4], Boris Suchan[5], Thomas Wobrock[1]
[1]University Medical Centre, Psychiatry, Goettingen, Germany, [2]University Medical Centre, Psychiatry, Munich, Germany, [3]Edinburgh Hospital, Psychiatry, Edinburgh, United Kingdom, [4]MR-Research in Neurology and Psychiatry, Department of Cognitive Neurology, University Medicine, Goettingen, Germany, [5]Centre for Cognitive Neuroscience, Bochum, Germany

**1046** **The impact of multiple doses of theta-burst rTMS on the cortical excitability and fMRI-connectivity**
Charlotte Nettekoven[1], Lukas Volz[2,1], Martha Kutscha[1], Eva-Maria Pool[1], Anne Rehme[1], Gereon Fink[2,3], Christian Grefkes[2,1]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]Department of Neurology, University of Cologne, Cologne, Germany, [3]Institute of Neuroscience and Medicine (INM-3), Juelich Research Center, Juelich, Germany

***1047** **Topological correlates of motor improvements after repetitive transcranial magnetic stimulation, (O-M1)**
Chang-hyun Park[1], Won Hyuk Chang[1], Ji-Young Park[1], Yong-Ihl Shin[2], Sung Tae Kim[1], Yun-Hee Kim[1]
[1]Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [2]Pusan National University School of Medicine, Yangsan, Korea, Republic of

**1048** **Transcallosal Inhibition a Marker of Callosal Dysfunction in Relapsing-Remitting Multiple Sclerosis**
Marjan Zakeri[1], Alex MacKay[2], Tony Traboulsee[3], Irene Vavasour[4], Lara Boyd[5]
[1]Brain Behaviour Lab, University of British Columbia, Vancouver, Canada, [2]Department of Physics and Astronomy, University of British Columbia, Vancouver, Canada, [3]Department of Neurology, Vancouver Hospital, Vancouver, Canada, [4]Department of Radiology, University of British Columbia, Vancouver, Canada, [5]University of British Columbia, Vancouver, British Columbia

**1049** **Transcranial ultrasound modulates human brain activity**
Wynn Legon[1], Aaron Barbour[1], William Tyler[1], Amanda Williams[1], Alexander Opitz[2]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Clicical Neurophysiology Göttingen, Göttingen, Germany

## Disorders of the Nervous System

### Autism

**1050** **A longitudinal structural MRI study of change in regional contrast in Autism Spectrum Disorder**
Avantika Vardhan[1], Joseph Piven[2], Marcel Prastawa[3], Guido Gerig[3]
[1]Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, United States, [2]Dept of Psychiatry, UNC School of Medicine, Chapel Hill, NC, [3]University of Utah, Salt Lake City, UT

**1051** **Age-related Differences in Gray Matter Volume in Autism Spectrum Disorder**
Charles Lynch[1], Kaustubh Supekar[2], Katherine Cheng[3], Sarah Yosief[3], Lucina Uddin[4], Vinod Menon[5]
[1]Stanford University, Palo Alto, CA, [2]Stanford University School of Medicine, Stanford, United States, [3]Stanford University, PALO ALTO, CA, [4]Stanford University, Stanford, United States, [5]Stanford school of medicine, Palo Alto, CA

**1052** **Altered Effective Connectivity Underlying Self-Other Representation in Autism**
Carl Stevens[1], Christopher Klein[2], Laura Klinger[3], Mark Klinger[4], Hrishikesh Deshpande[5], Rajesh Kana[6]
[1]University of Alabama Birmingham, Birmingham, United States, [2]Marietta College, Marietta, OH, [3]TEACCH, Chapel Hill, NC, [4]University of North Carolina - Chapel Hill, Chapel Hill, NC, [5]University of Alabama, Birmingham, AL, [6]Department of Psychology, University of Alabama, Birmingham, AL

**1053** **Anomalous Anatomical Connectivity Networks in Children With Autism Spectrum Disorder**
Daniel Peterson[1], Brian Caffo[2], Stewart Mostofsky[3]
[1]Kennedy Krieger Institute, Baltimore, United States, [2]Johns Hopkins University, Baltimore, United States, [3]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**1054** **ARE THE WHITE MATTER AND GREY MATTER ABNORMALITIES FOUND IN AUTISM SPECTRUM DISORDERS CONCORDANT?**
Franco Cauda[1], Tommaso Costa[2], Sara Palermo[3], Francesca Bianco[4], Diana Torta[2], Matteo Diano[2], Giuliano Geminiani[5], Sergio Duca[2], Roberto Keller[4]
[1]CCS fMRI-Brain Connectivity and Complex Systems Unit , Koelliker Hospital and Department of Psycholo, Turin, Italy, [2]CCS fMRI-Brain Connectivity and Complex Systems Unit , Koelliker Hospital and Department of Psycholo, Torino, Italy, [3]University of Turin, Department of Psychology, Turin, Italy, [4]ADULT AUTISM CENTER, ASL TO2, TURIN, ITALY, Turin, Italy, [5]CCS fMRI-Brain Connectivity and Complex Systems Unit , Koelliker Hospital and Department of Psyology, Torino, Italy

**1055** **Association between Anomalous Brain Development and Motor Control in Autism**
Benjamin Dirlikov[1], Deana Crocetti[2], Stewart Mostofsky[3]
[1]The Kennedy Krieger Institure, Baltimore, United States, [2]The Kennedy Krieger Institute, Baltimore, MD, [3]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**1056 Atypical neural response to spontaneous attention towards non-social stimuli in ASD**
Eric Murphy[1], Megan Norr[1], Jenni Sokoloff[2], William Gaillard[3], Lauren Kenworthy[2], Chandan Vaidya[1]
[1]Georgetown University, Washington, DC, [2]Children's National Medical Center, Washington, DC, [3]Children's National Medical Center, Washington, DC

**1057 Atypical resting-state functional connectivity dynamics for default mode network in ASD children**
Xiaozhen You[1], Megan Norr[1], Eric Murphy[1], Jennifer Sokoloff[2], William Gaillard[2], Lauren Kenworthy[2], Chandan Vaidya[1,2]
[1]Georgetown University, Washington, DC, [2]Children's National Medical Center, Washington, DC

**1058 Changes within the uncinate fasciculus in individuals with ASD:a VBM study based on DTI tractography**
Su-Chun Huang[1], Todd Richards[1], Gregory Pauley[1], Neva Corrigan[2], Dennis Shaw[2], Alan Artru[2], Annette Estes[2], Stephen Dager[2], Natalia Kleinhans[2]
[1]Integrated Brain Imaging Center, University of Washington, Seattle, WA, United States, [2]University of Washington, Seattle, WA, United States

**1059 Connectivity changes in the resting state network of children with autism spectrum disorders**
Krissy Doyle-Thomas[1], Wayne Lee[2], Nicholas Foster[3], Ana Tryfon[4], Tia Ouimet[5], Krista Hyde[6], Alan Evans[7], Lonnie Zwaigenbaum[8], Evdokia Anagnostou[9], NeuroDevNet ASD imaging group[10]
[1]Holland Bloorview Kids Rehabilitation Hospital, [2]Hospital for Sick Children, Toronto, Canada, [3]McGill University, Montreal, Canada, [4]Montreal Children's Hospital, Montreal Neurological Institute, Montreal, Canada, [5]Montreal Children's Hospital, Montreal, Canada, [6]Montreal Children's Hospital, McGill University, Montreal, Canada, [7]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [8]Glenrose Rehabilitation Hospital, Edmonton, Canada, [9]Holland Bloorview Kids Rehabilitation Hospital, Toronto, Canada, [10]http://www.neurodevnet.ca/research/asd, Vancouver, Canada

**1060 Cortical thickness and connectivity differences in childrenwith autism spectrum disorder**
Nicholas Foster[1,2,3], Krissy Doyle-Thomas[4], Ana Tryfon[5], Tia Ouimet[6], Evdokia Anagnostou[4], Alan Evans[7], Lonnie Zwaigenbaum[8], Krista Hyde[9], NeuroDevNet ASD imaging group[10]
[1]McGill University, Montreal, Canada, [2]Montreal Neurological Institute, Montreal, Canada, [3]Montreal Children's Hospital, Montreal, Canada, [4]Holland Bloorview Kids Rehabilitation Hospital, Toronto, Canada, [5]Montreal Children's Hospital, Montreal Neurological Institute, Montreal, Canada, [6]Montreal Children's Hospital, Montreal, Canada, [7]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [8]Glenrose Rehabilitation Hospital, Edmonton, Canada, [9]Montreal Children's Hospital, McGill University, Montreal, Canada, [10]http://www.neurodevnet.ca/research/asd, Vancouver, Canada

**1061 Deciding in a changing world: a study in Asperger syndrome**
Suzanne Robic[1,2], Sandrine Sonié[1,2,3], Mateus Joffily[4], Pierre Fonlupt[1,2], Marie-Anne Henaff[1,2], Giorgio Coricelli[5], Jérémie Mattout[1,2], Christina Schmitz[1,2]
[1]Lyon Neurosciences Research Center - DYCOG Team, INSERM U1028, CNRS UMR5292, Lyon, France, [2]University Lyon 1, Lyon, France, [3]Centre Hospitalier Le Vinatier, Bron, France, [4]Department of GATE-LSE, Lyon-St-Etienne, France, [5]Laboratoire de Neurosciences Cognitives, INSERM U960, Ecole Normale Supérieure, Paris, France

**1062 Decreased Cortical Gyrification in Adults with High Functioning Autism**
Alissa Winkler[1], Christian Gaser[1], Ralf Tepest[2], Kai Vogeley[3]
[1]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany, [2]Dept of Psychiatry and Psychotherapy, University Hospital of Cologne, Cologne, Germany, [3]Dept of Psychiatry and Psychotherapy, University Hospital of Cologne, Cologne, Germany, Cologne, Germany

**1063 Developmental differences in resting-state network connectivity in Autism Spectrum Disorder**
Dienke Bos[1], Tamar van Raalten[1], Anouk Smits[1], Janna van Belle[1], Serge Rombouts[2], Sarah Durston[1]
[1]UMC Utrecht, Utrecht, Netherlands, [2]Leiden Institute for Brain and Cognition, Leiden, Netherlands

***1064 Diagnostic classification of autism using particle swarm optimization for fMRI feature selection, (O-M2)**
Colleen Chen[1], Mike Datko[2], Christopher Keown[3], Ralph-Axel Müller[3]
[1]San Diego State University, San Diego, United States, [2]University of California San Diego, San Diego, CA, [3]San Diego State University, San Diego, CA

**1065 Disruption of socio-cognitive networks in autism and alexithymia: an MRI covariance analysis**
Boris Bernhardt[1], Sofie Valk[1], Giorgia Silani[2], Geoffrey Bird[3], Uta Frith[4], Tania Singer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Department of Social Neuroscience, Leipzig, Germany, [2]Cognitive Neuroscience Sector, International School for Advanced Studies SISSA-ISAS, Trieste, Italy, [3]Social, Genetic and Developmental Psychiatry Centre (MRC), Institute of Psychiatry, King's College, London, United Kingdom, [4]Institute of Cognitive Neuroscience, University College London, London, United Kingdom

**1066 Effect of fixation on the eyes on fMRI activation during neutral face processing in autism**
Natalia Kleinhans[1], Nathalie Martin[2], Jeff Munson[2], Annette Estes[2]
[1]University of Washington, Seattle, United States, [2]University of Washington, Seattle, WA

**1067 Electrophysiological investigation of Inhibitory Control in Autism Spectrum Disorders**
Yukari Takarae[1], Iman Mohammadrezazadeh[1], Fernanda Vieira[1], Clifford Saron[1]
[1]UC Davis, Davis, CA, United States

**1068 Emotional Mismatch Negativity as a Potential Neurophysiological Biomarker for Autism**
Yun-Ju Chen[1], Shin-Yi Lee[1], Yawei Cheng[1,2]
[1]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [2]Department of Education and Research, National Yang-Ming University Hospital, Yilan, Taiwan

**1069 Functional organization of the insula in typical development and children with autism**
Lucina Uddin[1], Srikanth Ryali[2], Kaustubh Supekar[3], Vinod Menon[4]
[1]Stanford University, Stanford, United States, [2]Stanford University School of Medicine, Palo Alto, United States, [3]Stanford University School of Medicine, Stanford, United States, [4]Stanford school of medicine, Palo Alto, CA

**1070 Gamma-Band Deficits During Language Processing in Autism: an MEG study**
Lisa Wilson[1], Erin Slason[1], Bryce Pasko[1], Susan Hepburn[1], Don Rojas[1]
[1]University of Colorado Anschutz Medical Center, Aurora, United States

**1071 Impact of methodological variables on local functional connectivity measures in autism**
Jose Maximo[1], Alan Lincoln[2], Christopher Keown[1], Ralph-Axel Müller[1]
[1]San Diego State University, San Diego, United States, [2]The Center for Autism Research, Evaluation and Service, San Diego, Unites States

**1072 Impaired community structure in autism: A graph theory analysis of network differentiation in fMRI**
Christopher Keown[1], Gregori Clarke[2], Aarti Nair[3], Jaime Pineda[3], Ralph-Axel Müller[2]
[1]San Diego State University, San Diego, United States, [2]San Diego State University, San Diego, CA, [3]University of California San Diego, San Diego, CA

**1073 Increased cortico-thalamo-cerebellar connectivity in Autism**
Joshua Balsters[1], Dante Mantini[1], Nicole Wenderoth[1]
[1]Neural control of movement lab, ETH Zurich, Zurich, Switzerland

**1074 Morphosyntax and White Matter Structure in Autism and Typical Development**
Brian Mills[1], Janie Lai[1], Timothy Brown[2], Matthew Erhart[2], Eric Halgren[2], Judy Reilly[1], Anders Dale[2], Pamela Moses[1]
[1]San Diego State University, San Diego, CA, [2]University of California, San Diego, San Diego, CA

**1075 Multisite Functional Connectivity MRI Classification of Autism: ABIDE Results**
Jared Nielsen[1], Brandon Zielinski[2], Michael Ferguson[1], Jeffrey Anderson[1]
[1]University of Utah, Salt Lake City, United States, [2]University of Utah, Salt Lake City, UT

**1076 Neural correlates of the self-name processing in Autism Spectrum Disorder**
Hanna Cygan[1], Pawel Tacikowski[1], Anna Nowicka[1]
[1]Nencki Institute of Experimental Biology, Warsaw, Poland

**1077 Neural networks related to dysfunctional face processing in autism spectrum disorder (ASD)**
Thomas Nickl-Jockschat[1], Johanna Thommes[2], Claudia Rottschy[3], Angela Laird[4], Peter Fox[5], Simon Eickhoff[6]
[1]RWTH Aachen University, [2]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [3]Department of Neurology, University Hospital Aachen, [4]Florida International University, Miami, FL, [5]Research Imaging Institute, San Antonio, TX, [6]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**1078 Neuroanatomical basis of autism in girls**
Kaustubh Supekar[1], Lucina Uddin[2], Vinod Menon[3]
[1]Stanford University School of Medicine, Stanford, United States, [2]Stanford University, Stanford, United States, [3]Stanford school of medicine, Palo Alto, CA

**1079 Reduced low-frequency power and long-range phase synchronization: An EEG study of Asperger syndrome**
Yi-Li Tseng[1], Han Hsuan Yang[2], Arthur C. Tsai[1], Alexander N. Savostyanov[3], Michelle Liou[1]
[1]Institute of Statistical Science, Academia Sinica, Taipei, Chinese Taipei, [2]Fo Guang University, Yilan County, Chinese Taipei, [3]Institute of Physiology, Siberian Branch of Russian Academy of Medical Sciences, Novosibirsk, Russian Federation

**1080 Relationship between Social Impairment and Neural Measures of Functional Connectivity in Autism**
Kaat Alaerts[1], Kritika Nayar[1], Jessica Raithel[1], R. Cameron Craddock[2], Michael Milham[2], F. Xavier Castellanos[1], Adriana Di Martino[1]
[1]New York University, Child Study Center, New York, United States, [2]Center for the Developing Brain, Child Mind Institute, New York, United States

***1081 Robust antero-posterior default mode hypoconnectivity in ASDs despite motion scrubbing, (O-M2)**
Tuomo Starck[1], Juha Nikkinen[1], Jukka Rahko[2], Jukka Remes[1], Tuula Hurtig[2], Helena Haapsamo[2], Katja Jussila[2], Sanna Kuusikko-Gauffin[2], Marja-Leena Mattila[2], Hanna Ebeling[2], Irma Moilanen[2], Osmo Tervonen[1], Vesa Kiviniemi[1]
[1]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland, [2]Department of Child Psychiatry, Institute of Clinical Medicine, University and University Hospital, Oulu, Finland

**1082 ScMRI Reveals Large-Scale Brain Network Abnormalities in Autism**
Brandon Zielinski[1], Jeffrey Anderson[1], Nicholas Lange[2], Erin Bigler[3], Andrew Alexander[4], Janet Lainhart[4]
[1]University of Utah, Salt Lake City, UT, [2]Harvard University, Boston, MA, [3]Brigham Young University, Provo, UT, [4]University of Wisconsin, Madison, WI

**1083** **Social Ability Interacts with Semantic Processing in Youths with Autism**
Tai-Li Chou[1], Yu-Hsuan Sun[1], Pin-Jane Chen[1], Susan Shur-Fen Gau[2]
[1]Department of Psychology, National Taiwan University, Taipei, Taiwan, [2]Department of Psychiatry, National Taiwan University Hospital and College of Medicine, Taipei, Taiwan

**1084** **Structural and functional underconnectivity of the language network in autism**
Marjolein Verly[1], Judith Verhoeven[2], Lieven Lagae[3], Inge Zink[1], Nathalie Rommel[1], Stefan Sunaert[4]
[1]ExpORL, Department of Neurosciences, KU Leuven, Leuven, Belgium, [2]Epilepsy Center Kempenhaeghe, Heeze, The Netherlands, [3]Department of Child Neurology, University Hospitals KU Leuven, Leuven, Belgium, [4]Department of Radiology, University Hospitals KU Leuven, Leuven, Belgium

**1085** **Sulcal Depth Differences in Children with Simplex Autism: Freesurfer vs Caret Registration**
Donna Dierker[1], Eric Feczko[2], John Pruett, Jr.[2], Steven Petersen[3], Bradley Schlaggar[3], John Constantino[2], David Van Essen[1]
[1]Washington University School of Medicine (Anatomy & Neurobiology), St. Louis, MO, [2]Washington University School of Medicine (Psychiatry), St. Louis, MO, [3]Washington University School of Medicine (Neurology), St. Louis, MO

## Disorders of the Nervous System

### Developmental Disorders

**1086** **A fMRI study of activity in attention network in Attention Deficit hyperactivity disorder children**
Nadia Gonzalez[1], Silvia Liendo[2], Pilar Dies[2], Antonio Rizzoli[3]
[1]Hospital infantil de México, México, Mexico, [2]Hospital Infantil de México, México, Mexico, [3]Hospital Infantil de México, Mexico, Mexico

**1087** **A Preliminary DTI-based Tractography Study of Young Infants with Prenatal Alcohol Exposure**
Paul Taylor[1,2], Joseph Jacobson[3], Andre van der Kouwe[4], Alkathafi Alhamud[5], Fleur Warton[6], Christopher Molteno[7], Pia Wintermark[8], Sandra Jacobson[3], Ernesta M. Meintjes[9]
[1]UMDNJ, Newark, United States, [2]African Institute for Mathematical Sciences, Muizenberg, Western Cape, South Africa, [3]Wayne State University School of Medicine, Detroit, MI, [4]MGH/MIT/HMS Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA, [5]MRC/UCT Medical Imaging Research Unit, University of Cape Town, Cape Town, South Africa, [6]Department of Human Biology, University of Cape Town, Cape Town, South Africa, [7]University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, [8]Montréal Children's Hospital, Montréal, Canada, [9]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa

**1088** **Abnormal White Matter Microstructure in Children with Sensory Processing Disorders**
Julia Owen[1], Elysa Marco[1], Emily Fourie[1], Shivani Desai[1], Susanna Hill[1], Julia Harris[1], Pratik Mukherjee[1]
[1]University of California, San Francisco, San Francisco, CA

**1089** **Age- and Reading Level-Matched VBM Comparison of Dyslexic Children and Typical Readers**
Anthony Krafnick[1], D Flowers[1], Megan Luetje[1], Eileen Napoliello[1], Guinevere Eden[1]
[1]Georgetown University, Washington, DC

**1090** **Altered network connectivity dynamics in preterm children during visual short-term memory processing**
Alexander Moiseev[1], Sam Doesburg[2], Anthony Herdman[3], Mirza Faisal Beg[4], Steven Miller[5], Ken Poskitt[6], Urs Ribary[7], Ruth Grunau[6]
[1]Down Syndrome Research Foundation, Vancouver, BC, Canada, [2]Department of Diagnostic Imaging and Neurosciences & Mental Health, Hospital for Sick Children, Toronto, ON, Canada, [3]Audiology and Speech Sciences, University of British Columbia, Vancouver, BC, Canada, [4]Dept of Engineering, Simon Fraser University, Vancouver, BC, Canada, [5]Neurosciences and Mental Health, Hospital for Sick Children Research Institute, Toronto, ON, Canada, [6]Pediatrics, University of British Columbia, Vancouver, BC, Canada, [7]Behavioral and Cognitive Neuroscience Institute, Simon Fraser University, Vancouver, BC, Canada

**1091** **Altered reward processing as intermediate phenotype of adolescents with ADHD**
Daniel von Rhein[1,2], Maarten Mennes[1], Marcel Zwiers[2], Barbara Franke[3], Catherina Hartman[4], Pieter Hoekstra[4], Jaap Oosterlaan[5], Roshan Cools[6], Jan Buitelaar[7]
[1]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [2]Donders Institute for Brain, Cognition and Behavior, Nijmegen, Netherlands, [3]Genetics, University Medical Center, Radboud University, Nijmegen, Netherlands, [4]Child Psychiatry, UMCG, Groningen, Netherlands, [5]Clinical Neuropsychology, VU, Amsterdam, Netherlands, [6]Donders Institute for Brain, Cognition and Behaviour, Centre for Cognitive Neuroimaging, Nijmegen, Netherlands, [7]University Medical Center, Nijmegen, Netherlands

**1092** **An examination of frontal lobe cortical thickness and ADHD symptom severity in girls**
Benjamin Dirlikov[1], Deana Crocetti[2], Martha Denckla[3], E Mahone[3], Stewart Mostofsky[4]
[1]The Kennedy Krieger Institute, Baltimore, United States, [2]The Kennedy Krieger Institute, Baltimore, MD, [3]The Kennedy Krieger Institute, Johns Hopkins, Baltimore, MD, [4]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**1093** **Anticipation and cognitive control in children with attention-deficit/ hyperactivity disorders**
Masumi Aoki[1], Shinji Okazaki[1]
[1]University of Tsukuba, Tsukuba, Japan

**1094 Atomoxetine Modulates Resting fMRI Connectivity in Adult Attention-Deficit/Hyperactivity Disorder**
Hsiang-Yuan Lin[1], Susan Shur-Fen Gau[2], Wen-Yih Isaac Tseng[3]
[1]Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan, [2]Department of Psychiatry, National Taiwan University Hospital and College of Medicine, Taipei, Taiwan, [3]Center for Optoelectronic Medicine, National Taiwan University College of Medicine, Taipei, Taiwan

**1095 Attentional demands and response to stimulant medication in children with ADHD**
Timothy Silk[1], Mark Bellgrove[2], Alasdair Vance[3]
[1]Murdoch Childrens Research Institute, Melbourne, Australia, [2]Monash University, Australia, [3]University of Melbourne, Melbourne, Australia

**1096 Brain volume reduction associated with dyscalculia and with comorbid dyslexia: a DARTEL study**
Josep M Serra Grabulosa[1], Ivan J Roijals-Miras[2,1], Ana Adán[1], Susana Andrés-Perpiñá[3], Carles Falcón[4], Montserrat Pérez-Pàmies[1], Ana Sanguinetti[5], Sara Siddi[1], Gina Tor[1], xavier caldú[1], J Castro-Fornieles[6], Roser Colomé Roura[7], Anna López-Sala[7], Cristina Boix[7], Anna Sans Fitó[7], Núria Bargalló[8]
[1]University of Barcelona, Barcelona, Spain, [2]University of Aberdeen, Aberdeen, United Kingdom, [3]Hospital Clínic de Barcelona, Barcelona, Spain, [4]3Institut d' Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS),, Barcelona, Spain, [5]Department of Neurology, Hospital Sant Joan de Déu, Barcelona, Spain, Barcelona, Spain, [6]Hospital Clinic, Barcelona, Spain, [7]Department of Neurology, Hospital Sant Joan de Déu, Barcelona, Spain, [8]Department. of Neuroradiology and Image Research Platform, Hospital Clínic de Barcelona, IDIBAPS, Barcelona, Spain

**1097 Cerebellar Activations during Rhythmic Finger Tapping in Children Prenatally Exposed to Alcohol**
Lindie Du Plessis[1], Sandra Jacobson[2], François De Guio[3], Christopher Molteno[4], Joseph Jacobson[2], Ernesta M. Meintjes[5]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, South Africa, [2]Wayne State University School of Medicine, Detroit, MI, [3]CEA, France, [4]University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, [5]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa

**1098 Correlation between white matter integrity and cognitive function in ADHD**
Youngmin Huh[1], Hyejin Kang[2], Bung-Nyun Kim[3], Dong Soo Lee[4]
[1]Seoul National University College of Medicine, Seoul, Korea, Republic of, [2]Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul, Korea, Republic of, [3]Seoul National University, Seoul, Korea, Republic of, [4]Seoul Natl University, Seoul

**1099 Cortical Thickness and Inattention/Hyperactivity Symptoms in Young Children — the Generation R Study**
Sabine Mous[1,2], Ryan Muetzel[1,2], Frank Verhulst[2], Henning Tiemeier[2,3], Danielle Posthuma[4,2,5], Tonya White[2,6]
[1]The Generation R Study Group, Erasmus MC, Rotterdam, Netherlands, [2]Department of Child and Adolescent Psychiatry/Psychology, Erasmus MC-Sophia, Rotterdam, Netherlands, [3]Department of Epidemiology, Erasmus MC, Rotterdam, Netherlands, [4]Center for Neurogenomics and Cognitive Research, VU, Amsterdam, Netherlands, [5]Department of Clinical Genetics, section Medical Genomics, VU MC, Amsterdam, Netherlands, [6]Department of Radiology, Erasmus MC, Rotterdam, Netherlands

**1100 Decay of ADHD symptoms associated with altered white matter integrity**
Winke Francx[1], Marcel Zwiers[2], Jaap Oosterlaan[3], Catherina Hartman[4], Pieter Hoekstra[4], Jan Buitelaar[1]
[1]Radboud University Medical Centre Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [3]Clinical Neuropsychology, VU, Amsterdam, Netherlands, [4]Child Psychiatry, UMCG, Groningen, Netherlands

**1101 Distinct communities of children with and without ADHD based on reward system connectivity patterns**
Taciana Costa Dias[1], Swathi Iyer[2], Samuel Carpenter[3], Joel Nigg[3], Damien Fair[3]
[1]Universidade de São Paulo, São Paulo, Brazil, [2]Harvard Medical School, Boston, MA, [3]Oregon Health & Science University, Portland, United States

**1102 Effects of Biofeedback Training on the Brain Reward System of ADHD Patients**
Isabella Wolf[1,2], Sarah Hohmann[1], Sarah Baumeister[1], Nathalie Holz[1], Regina Boecker[1], Michael Plichta[3], Matthias Ruf[2], Martin Holtmann[4], Andreas Meyer-Lindenberg[3], Daniel Brandeis[1,5], Tobias Banaschewski[1]
[1]Department of Child and Adolescent Psychiatry and Psychotherapy, CIMH Medical Faculty MA/HD, Mannheim, Germany, [2]Department Neuroimaging, CIMH Medical Faculty Mannheim/ Heidelberg University, Mannheim, Germany, [3]Department of Psychiatry and Psychotherapy, CIMH Medical Faculty Mannheim/ Heidelberg University, Mannheim, Germany, [4]Ruhr-University, Bochum, Germany, [5]Department of Child and Adolescent Psychiatry, University of Zürich, Zürich, Switzerland

**1103 Evidence of a reading disability effect on attention in ADHD children: A task-based fMRI study**
Brianne Mohl[1], Richard White[2], Dalal Khatib[1], Usha Rajan[2], Joseph Casey[3], Vaibhav Diwadkar[2], Jeffrey Stanley[1]
[1]Wayne State University School of Medicine, Detroit, MI, [2]Wayne State University, Detroit, MI, [3]University of Windsor, Windsor, Ontario

**1104 Examining the comorbid brain: Neural correlates of developmental dyslexia and comorbid ADHD**
Nicolas Langer[1], Christopher Benjamin[2], Michael Figuccio[2], Jennifer Minas[2], Nadine Gaab[3]
[1]Harvard Medical School, Boston, United States, [2]Laboratories of Cognitive Neuroscience, Developmental Medicine Center, Boston Children's Hospital, Boston, MA, [3]Children's Hospital Boston, Boston, United States

**1105 Frontal White Matter Microstructure Predicts Response Control in Children With ADHD**
Daniel Peterson[1], Keri Rosch[2], Deana Crocetti[3], Stewart Mostofsky[4]
[1]Kennedy Krieger Institute, Baltimore, United States, [2]Kennedy Krieger Institute, Baltimore, MD, [3]The Kennedy Krieger Institute, Baltimore, MD, [4]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**1106 Functional Brain Connectivity Patterns Differentiate Novel Temperament-Based Subgroups in ADHD**
Sarah Karalunas[1], KAMARI AYKES[1], Swathi Iyer[2], Damien Fair[1], Joel Nigg[1]
[1]Oregon Health & Science University, Portland, United States, [2]Harvard Medical School, Boston, United States

**1107 Gestational age at birth determines delay in white matter development among infants born preterm**
Henrik Ullman[1], Megan Spencer-Smith[1], Peter Anderson[2], Torkel Klingberg[1]
[1]Neuroscience Department, Karolinska Institutet, Stockholm, Sweden, [2]Murdoch Childrens Research Institute, Melbourne, Sweden

**1108 Internalizing and externalizing symptom dimensions predict disordered fMRI connectivity in ADHD**
Tudor Puiu[1], Richard White[1], Dalal Khatib[1], Usha Rajan[1], Vaibhav Diwadkar[1], Jeffrey Stanley[1]
[1]Wayne State University School of Medicine, Detroit, MI

**1109 Language lateralization correlates with language impairment in former preterms and healthy controls**
Marko Wilke[1], Rangmar Goelz[2], Till-Karsten Hauser[3], Karen Lidzba[1]
[1]Department of Pediatric Neurology, University Children's Hospital, Tuebingen, Germany, [2]Department of Neonatology, University Children's Hospital, Tuebingen, Germany, [3]Department of Neuroradiology, University Hospital, Tuebingen, Germany

**1110 Longitudinal change in cognitive function is associated with white matter volume changes in children**
Prapti Gautam[1], S. Christopher Nuñez[2], Eric Kan[3], Ed Riley[4], Sarah Mattson[4], Elizabeth Sowell[2]
[1]USC/Children's Hospital Los Angeles, Los Angeles, United States, [2]Department of Pediatrics, Keck School of Medicine, USC/Children's Hospital Los Angeles, Los Angeles, CA, [3]Children's Hospital, Los Angeles, Los Angeles, CA, [4]San Diego State University, San Diego, CA

**1111 Neonatal MRI predicts cognitive and academic achievement in very preterm children at 7 years**
Megan Spencer-Smith[1], Henrik Ullman[2], Peter Anderson[3], Torkel Klingberg[1]
[1]Developmental Cognitive Neuroscience, Neuroscience Department, Karolinska Institutet, Stockholm, Sweden, [2]Developmental Cognitive Neuroscience, Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, [3]Victorian Infant Brain Studies, Critical Care and Neurosciences,Murdoch Childrens Research Institute, Melbourne, Australia

**1112 Poorer recruitment of intraparietal sulcus in number processing in fetal alcohol spectrum disorders**
Keri Woods[1], Joseph Jacobson[2], Christopher Molteno[3], John Gore[4], Sandra Jacobson[2], Ernesta M. Meintjes[5]
[1]University of Cape Town, Cape Town, South Africa, [2]Wayne State University School of Medicine, Detroit, MI, [3]University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, [4]Vanderbilt University, Nashville, TN, [5]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa

**1113 Reduced anisotropy in right hemisphere tracts of adults who stutter**
Vered Kronfeld-Duenias[1], Ofer Amir[2], Ruth Ezrati[2], Oren Civier[1], Jason Yeatman[3], Michal Ben-Shachar[1,4]
[1]The Gonda Multidisciplinary Brain Research Center, Bar Ilan University, Israel, [2]The Department of Communication Disorders, Sackler Faculty of Medicine, Tel Aviv University, Israel, [3]The Department of Psychology, Stanford University, United States, [4]The English Department, Linguistics Division, Bar Ilan University, Israel

**1114 Regional cortical thinning in children with increased prenatal alcohol exposure**
Frances Robertson[1], Katherine Narr[2], Christopher Molteno[1], Joseph Jacobson[3,1], Sandra Jacobson[3,1], Ernesta M. Meintjes[1]
[1]University of Cape Town, Cape Town, South Africa, [2]University of California at Los Angeles, Los Angeles, CA, [3]Wayne State University School of Medicine, Detroit, MI

**1115 Response inhibition: distinct neural response in ADHD patients and their unaffected siblings**
Daan van Rooij[1], Roshan Cools[1], Catharina Hartman[2], Pieter Hoekstra[2], Jan Buitelaar[3]
[1]Donders Institute for Brain, Cognition and Behaviour, Centre for Cognitive Neuroimaging, Nijmegen, Netherlands, [2]Department of Psychiatry, UMCG, Groningen, Netherlands, [3]University Medical Center, Nijmegen, Netherlands

**1116 Rich Club Organization Compared in ADHD and ASD Child Populations Using Structural Connectivity**
Siddharth Ray[1], Meghan Miller[1], David Grayson[2], Oscar Dominquez[1], Samuel Carpenter[1], Paul Cary[1], Corinne Stevens[1], Elizabeth Hawkey[1], Julia Painter[1], Daniel Kriz[1], Joel Nigg[1], Damien Fair[1]
[1]Oregon Health & Science University, Portland, United States, [2]University of California - Davis, Davis, United States

**1117** **Rich-Club Analyis of Adult ADHD: A Diffusion MRI Study**
Robert Cary[1], Siddharth Ray[2], David Grayson[3], Julia Painter[1], Samuel Carpenter[4], Joel Nigg[5], Damien Fair[1]
[1]Oregon Health & Science University, Portland, United States, [2]OHSU, Portland, United States, [3]University of California - Davis, Davis, United States, [4]Oregon Health and Science University, Portland, United States, [5]Oregon Health & Science University, Portland, OR

**1118** **Shape deformities of caudate in ADHD with tic disorder**
bum seok Jeong[1], Jeewook Choi[2]
[1]Clinical neuroscience and development Lab, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of, [2]Dept. of Psychiatry, Catholic University, Daejeon St. Mary's Hospital, Daejeon, Korea, Republic of

**1119** **Social brain activity in Down Syndrome during cartoon viewing**
Michael Ferguson[1], Scott Treiman[1], Jeffrey Anderson[1], Jared Nielsen[1], Melissa Burback[1], Elizabeth Cox[1], Li Dai[1], Guido Gerig[1], Julie Korenberg[1]
[1]University of Utah, Salt Lake City, UT

**1120** **Structural and functional deficits in ADHD: Voxel based morphometry and fMRI connectivity analyses**
Kyle Jurayj[1], Richard White[2], Dalal Khatib[3], Usha Rajan[2], Jeffrey Stanley[4], Vaibhav Diwadkar[2]
[1]Wayne State University, Detroit, United States, [2]Wayne State University, Detroit, MI, [3]Wayne State University School of Medicine, Detroit, MI, [4]Wayne State University School of Medicine, Detroit, United States

**1121** **Tractography in preterm infants with perinatal risk factors for hypoxic-ischemic encephalopathy**
Manuel Hinojosa-Rodríguez[1], Berta González-Frankenberger[1], Thalia Harmony-Baillet[1], Antonio Fernandez-Bouzas[1], Héctor Barragán-Campos[1]
[1]Instituto de Neurobiologia UNAM Juriquilla, Queretaro, Mexico

## Disorders of the Nervous System

### Obsessive-Compulsive Disorder and Tourette Syndrome

**1122** **Aberrant Modular Organization of Cortical Networks in Unaffected Siblings of Patients with OCD**
Ziwen Peng[1,2], Dinggang Shen[1], Feng Shi[1]
[1]Department of Radiology and BRIC, UNC-Chapel Hill, Chapel Hill, NC, USA, [2]Department of Psychology, South China Normal University, Guangzhou, China

**1123** **Abnormal activation of neuronal networks of executive control in children with Tourette syndrome**
Michael Siniatchkin[1], Wolf-Dieter Gerber[2], Hilke Koers[3], Elisabeth Steinmann[4], Ulrich Stephani[5]
[1]Clinic for Child and Adolescents Psychiatry, Frankfurt, Germany, [2]Institute of Medical Psychology, Kiel, Germany, [3]Neuropaediatric Department, Kiel, Germany, [4]Neuropediatric Department, Christian-Albrechts-University, Kiel, Germany, [5]University of Kiel, Kiel, Germany

**1124** **Different Network Activation Relates to Common Visual Phenomena in OCD and High-Functioning Autism**
Kristina Rewin Ciesielski[1,2], Julia Stephen[3], Lia-Marie Jasper[2], Elizabeth Van Orton[2], Timothy Goldsmith[2], Daniel Geller[4], Matti Hamalainen[1]
[1]MGH/MIT/HMS AA Martinos Ctr for Biomed. Imaging, Dept. Radiology, Massachusetts General Hospital/Harvard Medical School, Boston, MA, USA, [2]Pediatric Neuroscience Laboratory, Dept. Psychology, University of New Mexico, Albuquerque, NM, [3]The Mind Research Network, Albuquerque, NM, [4]Department of Psychiatry, Massachusetts General Hospital/Harvard Medical School, Boston, MA

**1125** **Hyperactive Salience Network in Tourette's Syndrome Patients**
Patrick Malone[1], Sule Tinaz[1], Beth Belluscio[1], Mark Hallett[1], Silvina Horovitz[1]
[1]Human Motor Control Section, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD

**1126** **Verbal Memory Encoding after Cognitive Training in Children with Obsessive Compulsive Disorder**
Marcelo Batistuzzo[1], Marcelo Hoexter[1], Maria da Graça Martin[1], Eliane Miotto[1], Cicero Nardini[1], Guilherme Polanczyk[1], Joana Balardin[2], Edson Amaro Junior[3]
[1]São Paulo University, São Paulo, Brazil, [2]University of São Paulo, [3]University of São Paulo, São Paulo, Brazil

## Disorders of the Nervous System

### Other Disorders

**1127 Adults with ADHD show reduced prefrontal cortex activation in a fMRI delay discounting task**

Nick Ortiz[1], Robert Whelan[2], Katie Brennan[2], Redmond O'Connell[3], Aisling Parsons[4], Jessica Bramham[4], Hugh Garavan[2]
[1]University of Vermont, Burlington, Vermont, United States, [2]University of Vermont, Burlington, VT, [3]Trinity College Dublin, Dublin, Ireland, [4]University College, Dublin, Ireland

**1128 Age-related changes in spontaneous neuronal activity in ADHD**

Ying Chen[1], Jinbo Zhou[1], Xinyu Hu[2], Lizhou Chen[2], Yi Liao[2], Yuanyuan Li[1], Ning He[1], Fei Li[2], Xiaoqi Huang[2], Qiyong Gong[2], Lanting Guo[1]
[1]Depaterment of Psychiatry, West China Hospital of Sichuan University, Chengdu, China, [2]Huaxi Magnetic Resonance Research Center, West China Hospital, Sichuan University, Chengdu, China

**1129 Alterations in regional volumetric brain network properties in persistent abdominal pain**

Jennifer Labus[1], Cody Ashe-McNalley[2], John Van Horn[3], Carinna Torgerson[4], Andrei Irimia[5], Micah Chambers[4], Kirsten Tillisch[6], Emeran Mayer[7]
[1]UCLA, LOS ANGELES, CA, [2]Oppenheimer Family Center for Neurobiology of Stress, UCLA, Los Angeles, CA, [3]University of California, Los Angeles, Los Angeles, CA, [4]University of California, Los Angeles, Los Angeles, United States, [5]University of California, Los Angeles, [6]UCLA, Los Angeles, United States, [7]UCLA, Los Angeles, CA

**1130 Altered anatomical correlation of auditory cortex in pre- and postlingual deaf by cortical thickness**

Eunkyung Kim[1], Hyejin Kang[2], Hyo-Jeong Lee[3], Seung-Ha Oh[4], Dong Soo Lee[5]
[1]Seoul National University, Seoul, Korea, Republic of, [2]Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul, Korea, Republic of, [3]Hallym University College of Medicine, Anyang-Si, Gyeonggido, [4]Department of Otorhinolaryngology, Seoul National University College of Medicine, Seoul, Korea, Republic of, [5]Seoul Natl University, Seoul

**1131 Altered cingulate-precuneus resting-state functional connectivity in anorexia nervosa**

Seojung Lee[1], Kyung Ran Kim[1], Jeonghun Ku[2], Jung-Hyun Lee[3], Young-Chul Jung[1]
[1]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Keimyung University, Daegu, Korea, Republic of, [3]Mind & Mind Eating Disorder Clinic, Seoul, Korea, Republic of

**1132 Altered Functional Connectivity in Chronic Pelvic Pain: Dual Regression Resting State fMRI Analysis**

Katherine Martucci[1], Kevin Johnson[2], Epifanio Bagarinao[2], William Shirer[2], Michael Greicius[2], Melissa Farmer[3], A. Vania Apkarian[3], Georg Deutsch[4], Richard Harris[5], Emeran Mayer[6], Jennifer Labus[7], Daniel Clauw[8], Sean Mackey[2]
[1]Stanford University, Palo Alto, United States, [2]Stanford University, Palo Alto, CA, [3]Northwestern University, Chicago, IL, [4]University of Alabama at Birmingham, Birmingham, United States, [5]University of Michigan, Ann Arbor, MI, [6]UCLA, Los Angeles, CA, [7]UCLA, LOS ANGELES, CA, [8]University of Michigan Ann Arbor, Ann Arbor, United States

**1133 Altered gray matter volume in the frontal pain modulation network in patients with cluster headache**

Kun-Hsien Chou[1], Fu-Chi Yang[2], Chu-Chung Huang[3], Yung-Yang Lin[2], Shuu-Jiun Wang[4], Ching-Po Lin[1]
[1]Institute of Neuroscience, National Yang Ming University, Taiwan- Republic Of China, [2]Institute of Brain Science, National Yang-Ming University, Taiwan- Republic Of China, [3]Institue Of Biomedical Imaging And Radiological Sciences, National Yang-Ming University, Taiwan- Republic Of China, [4]Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan, Taiwan- Republic Of China

**1134 Altered modular organization in patients with periventricular leukomalacia (PVL)**

MinHee Um[1], Bumhee Park[1,2], Jong Doo Lee[3,2], Hae-Jeong Park[1,2]
[1]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Nuclear Medicine and Radiology, and Severance Biomedical Science Institute, Seoul, Korea, Republic of, [3]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**1135 Brain degeneration in ALS patients as detected by VBM and DTI: similarities with FTLD**

Joe Senda[1], Michihito Masuda[1], Yuichi Riku[1], Kazuhiro Hara[1], Takashi Tsuboi[1], Ryoichi Nakamura[1], Hazuki Watanabe[1], Mizuki Ito[1], Naoki Atsuta[1], Hirohisa Watanabe[1], Shinji Naganawa[2], Gen Sobue[1]
[1]Department of Neurology, Nagoya University Graduate School of Medicine, Nagoya, Japan, [2]Department of Radiology, Nagoya University Graduate School of Medicine, Nagoya, Japan

**1136 Brain metabolite disruptions linked to structural deficits in HIV patients on stable treatment**

Xue Hua[1], Christina Boyle[2], Jaroslaw Harezlak[3], David Tate[4], Constantin Yiannoutsos[5], Ron Cohen[6], Giovanni Schifitto[7], Assawin Gongvatana[8], Jianhui Zhong[9], Tong Zhu[10], Michael Taylor[11], Thomas Campbell[12], Eric Daar[13], Jeffry Alger[14], Elyse Singer[15], Bradford Navia[16], Paul Thompson[17]
[1]Laboratory Of Neuro Imaging, Department Of Neurology, UCLA School Of Medicine, United States, [2]UCLA, Los Angeles, CA, [3]Indiana University Fairbanks School of Public Health, Indianapolis, IN, [4]Henry Jackson Foundation for the Advancement of Military Medicine, San Antonio, TX, [5]Fairbanks School of Public Health, Indiana University, Bloomington, IN, [6]Center for Cognitive Aging and Memory, University of Florida, Gainesville, FL, [7]Dept. Neurology and Imaging Sciences, University of Rochester, Rochester, NY, [8]Warren Alpert Medical School of Brown University, Providence, RI, [9]Dept. Imaging Sciences, University of Rochester, Rochester, NY, [10]University of Rochester, Rochester, United States, [11]VA San Diego Healthcare System, University of California, San Diego, San Diego, CA, [12]University of Colorado Medical Center, Denver, CO, [13]Biomedical Research Institute at Harbor-UCLA Medical Center, University of California, Los Angeles, Los Angeles, CA, [14]David Geffen School of Medicine at UCLA, Los Angeles, United States, [15]David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, [16]Tufts University School of Medicine, Neurology and Community Health, Boston, MA, [17]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA

**1137 Cerebral Perfusion and Cognition after Breast Cancer Chemotherapy: A Prospective PASL MRI Study**

Kelly Holohan[1], Yang Wang[1], Brenna McDonald[1], Susan Conroy[1], Dori Smith[1], John West[1], Andrew Saykin[1]
[1]Indiana University School of Medicine, Indianapolis, IN

**1138 Cognitive Function in Breast Cancer Patients before adjuvant treatment — fMRI results**

Sanne Menning[1], Michiel de Ruiter[1], Willem Boogerd[2], Dick Veltman[3], L. Reneman[4], Sanne Schagen[2]
[1]Netherlands Cancer Institute, Amsterdam, Netherlands, [2]The Netherlands Cancer Institute, Amsterdam, Netherlands, [3]Department of Psychiatry, VU University Medical Center Amsterdam, Amsterdam, Netherlands, [4]Academic Medical Center, Amsterdam, Netherlands

**1139 Deciphering the Neural Signature of Conversion Blindness**

Benjamin Becker[1], Dirk Scheele[1], Rainald Moessner[1], Wolfgang Maier[1,2], Rene Hurlemann[1]
[1]University of Bonn, Bonn, Germany, [2]German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany

**1140 Developmental changes of brain metabolic correlation in deaf subjects**

Hyejin Kang[1], Eunkyung Kim[1], Eunjoo Kang[2], Hyo-Jeong Lee[3], Seung-Ha Oh[4], Dong Soo Lee[5]
[1]Seoul National University, Seoul, Korea, Republic of, [2]Kangwon National University, Chuncheon, Korea, Republic of, [3]Hallym University College of Medicine, Anyang, Korea, Republic of, [4]Seoul Nationl University College of Medicine, Seoul, Korea, Republic of, [5]Seoul Natl University, Seoul, Korea, Republic of

**1141 Differences in Cortical Thickness in Body Dysmorphic Disorder Compared to Healthy Controls**

Sarah Madsen[1], Tara Pirnia[1], Alex Zai[1], Teena Moody[1], Liang Zhan[1], Jamie Feusner[1]
[1]University of California Los Angeles, Los Angeles, CA, United States

**1142 Dorsolateral prefrontal connectivity relates to episodic memory in Multiple Sclerosis**

Katherine Koenig[1], Ken Sakaie[2], Mark Lowe[2], Jian Lin[3], Lael Stone[4], Robert Bermel[4], Erik Beall[2], Stephen Rao[5], Bruce Trapp[4], Michael Phillips[5]
[1] Cleveland, United States, [2]Cleveland Clinic, Cleveland, United States, [3]Cleveland Clinic Foundation, Cleveland, OH, [4]Cleveland Clinic Foundation, Cleveland, United States, [5]Cleveland Clinic, Cleveland, OH

**1143 Effects of ART on neurometabolite and neurocognitive measures in HIV-infected children**

Kenneth Mbugua[1], Martha Holmes[1], Aaron Hess[1], Lindie Du Plessis[1], Francesca Little[1], Mark Cotton[2], Barabara Laughton[3], André Van der Kouwe[4], Ernesta Meintjes[1]
[1]University of Cape Town, Cape Town, South Africa, [2]Stellenbosch University, Cape Town, South Africa, [3]Department of Paediatrics and Child Health, Stellenbosch University, Stellenbosch, South Africa, [4]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**1144 Effects of HIV exposure and ethnicity on MRS metabolite levels in 5-year old children**

Martha Holmes[1], Kenneth Mbugua[1], Barabara Laughton[2], Mark Cotton[3], André Van der Kouwe[4], Ernesta Meintjes[1]
[1]University of Cape Town, Cape Town, South Africa, [2]Department of Paediatrics and Child Health, Stellenbosch University, Stellenbosch, South Africa, [3]Stellenbosch University, Cape Town, South Africa, [4]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**1145 Effects of Natalizumab on cognition and resting state networks in patients with active MS**

Daniela Pinter[1], Marisa Loitfelder[1], Nicola Filippini[2], Siegrid Fuchs[3], Franz Fazekas[3], Christian Enzinger[3]
[1]Medical University Graz, Graz, Austria, [2]University Department of Psychiatry and FMRIB Centre, University of Oxford, Oxford, United Kingdom, [3]Medical University of Graz, Graz, Austria

**1146 Evidence for deep GM perfusion abnormalities, prior to neuronal loss, in relapsing-remitting MS**
Laetitia Debernard[1,2], Tracy Melzer[1,2], Saskia Van Stockum[1], Jane Eagle[1], Charlotte Graham[1], John Dalrymple-Alford[1,3], David Miller[4,1,2], Deborah Mason[2,5,1]
[1]New Zealand Brain Research Institute, Christchurch, New Zealand, [2]University of Otago, Christchurch, New Zealand, [3]University of Canterbury, Christchurch, New Zealand, [4]Institute of Neurology, University College London, London, United Kingdom, [5]Christchurch Hospital, Christchurch, New Zealand

**1147 Extensive GM perfusion abnormalities but preserved GM volume in early relapsing-remitting MS**
Laetitia Debernard[1,2], Tracy Melzer[1,2], Saskia Van Stockum[1], Jane Eagle[1], Charlotte Graham[1], Daniel Myall[1], Claudia Wheeler-Kingshott[3], David Miller[3,1,2], Deborah Mason[2,4,1]
[1]New Zealand Brain Research Institute, Christchurch, New Zealand, [2]University of Otago, Christchurch, New Zealand, [3]Institute of Neurology, University College London, London, United Kingdom, [4]Christchurch Hospital, Christchurch, New Zealand

**1148 FMRI in Pediatric Survivors of Medulloblastoma with Reading Intervention during Tumor Treatment**
Ping Zou[1], Matthew Scoggins[2], Shawna Palmer[3], Heather Conklin[2], Amar Gajjar[3], Robert Ogg[4]
[1]St. Jude Children's Research Hospital, Memphis, TN, United States, [2]St. Jude Children's Research Hospital, Memphis, TN, United States, [3]St. Jude Children's Research Hospital, Memphis, TN, United States, [4]St. Jude Children's Research Hospotal, Memphis, TN, United States

**1149 Functional Connectivity Analysis in African-Americans with Multiple Sclerosis**
Roxana Teodorescu[1], David Carpenter[1], Jonathan Howard[2], Wafaa Zaaraoui[3], Jean-Philippe Ranjeva[4], Joseph Herbert[2], Matilde Inglese[1]
[1]Mount Sinai School of Medicine, New York, NY, [2]New York University, New York, NY, [3]Aix-Marseille université, Marseille, France, [4]Centre de Résonance Magnétique Biologique et Médicale, CNRS UMR 7339, Aix Marseille Université, Marseille, France

**1150 Functional Network Alterations in Patients with Brain Tumors in Preparation for Radiation Therapy**
Chandler Sours[1,2], Warren D'Souza[3], Young Kwok[3], Nilesh Mistry[3], William Regine[3], Rao Gullapalli[4,5]
[1]University of Maryland, Baltimore, MD, [2]Program in Neuroscience, Baltimore, MD, [3]University of Maryland School of Medicine, Department of Radiology Oncology, Baltimore, MD, [4]University of Maryland School of Medicine, Department of Diagnostic Radiology and Nuclear Medicine, Baltimore, MD, [5]Magnetic Resonance Research Center, Baltimore, MD

**1151 Functional Neural Correlates of Mediation: A Kirtan Kriya Study**
Pamela Douglas[1], Jennifer Bramen[2], Mark Cohen[2], Helen Lavretsky[2]
[1]UCLA, LOS ANGELES, United States, [2]UCLA, Los Angeles, CA

**1152 Fusion of DTI and fMRI wit Joint-ICA differentiates remitters versus non-remitters for ECT**
Shruti Gopal[1,2], Vince Calhoun[3], Arvind Caprihan[4], Andrew Michael[5], Jessica Turner[1], Stefi Baum[2], Chris Abbott[6]
[1]Mind Research Network, Albuquerque, United States, [2]Rochester Institute of Technology, Rochester, NY, [3]The Mind Research Network and UNM, ALBUQUERQUE, NM, [4]The Mind Research Network and LBERI, ALBUQUERQUE, NM, [5]The Mind Research Network, [6]University of New Mexico

**1153 GM and WM abnormalities are related to duration and AQP4+ serum status in Neuromyelitis optica**
clarissa yasuda[1], Felipe Glehn[2], Sven Jarius[3], Fadua Ribeiro[4], Guilherme Beltramini[2], Stella Maris[4], Briggitte Wildemann[3], Benito Damasceno[5], Fernando Cendes[1], Leonilda Santos[6]
[1]university of campinas, campinas, Brazil, [2]University of Campinas, Campinas, Brazil, [3]Division of Molecular Neuroimmunology, Department of Neurology, Heildelberg, Germany, [4]University of Campinas, campinas, Brazil, [5]Neuroimaging Laboratory, School of Medical Sciences, University of Campinas, Unicamp, Campinas, Brazil, [6]University of Campinas, campinas, sao paulo

**1154 Graph theory comparison of children with Attention Deficit Hyperactivity Disorder and their siblings**
Teena Moody[1], Jamie Feusner[1], Casey Armstrong[1], Jesse Brown[1], Ronald Ly[1], Donatello Arienzo[1], Sandra Loo[1], Joseph O'Neill[1], Jennifer Levitt[1]
[1]UCLA, Westwood, CA

**1155 Hippocampal MTR and verbal episodic memory in Multiple Sclerosis**
Katherine Koenig[1], Jian Lin[2], Ken Sakaie[3], Mark Lowe[3], Lael Stone[4], Robert Bermel[4], Erik Beall[3], Stephen Rao[5], Bruce Trapp[4], Michael Phillips[5]
[1] Cleveland, United States, [2]Cleveland Clinic Foundation, Cleveland, OH, [3]Cleveland Clinic, Cleveland, United States, [4]Cleveland Clinic Foundation, Cleveland, United States, [5]Cleveland Clinic, Cleveland, OH

**1156 Impaired functional coupling of resting magnetoencephalography in primary dysmenorrhea**
Pin-Shiuan Lee[1], Yong-Sheng Chen[2], Cheng-Hao Tu[3], Hsiang-Tai Chao[4], Jen-Chuen Hsieh[3,5], Li-Fen Chen[3,5]
[1]Institute of Biomedical Informatics, National Yang-Ming University, Taipei, Taiwan, [2]Department of Computer Science, National Chiao Tung University, Hsinchu, Taiwan, [3]Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, [4]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Taiwan, [5]Integrated Brain Research Laboratory, Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan

**1157** **Late effects of cancer treatment on cognition and gray and white matter in breast cancer survivors**
Myrle Stouten-Kemperman[1], Michiel de Ruiter[2], Willem Boogerd[3], L. Reneman[1], Sanne Schagen[3]
[1]Academic Medical Center, Amsterdam, Netherlands, [2]Netherlands Cancer Institute, Amsterdam, Netherlands, [3]The Netherlands Cancer Institute, Amsterdam, Netherlands

**1158** **Low thalamic volume is already present at the first attack of pediatric-onset multiple sclerosis**
Berengere Aubert-Broche[1], Vladimir Fonov[1], Sridar Narayanan[2], Douglas Arnold[2], Brenda Banwell[3], D. Louis Collins[4]
[1]Montreal Neurological Institute, Montreal, Canada, [2]Montreal Neurological Institute, Montreal, Quebec, [3]Hospital for Sick Children, Toronto, Canada, [4]McConnell Brain Imaging Centre, Montréal Neurological Institute, McGill University, Montréal, Québec

**1159** **Mental Rotation in Women with Complete Androgen Insensitivity Syndrome: an fMRI Study**
Judy van Hemmen[1,2], Dick Veltman[3], Arianne Dessens[4], Peggy Cohen-Kettenis[2], Julie Bakker[5,1]
[1]Neuroendocrinology Group, The Netherlands Institute for Neuroscience, Amsterdam, Netherlands, [2]Department of Medical Psychology, VU University Medical Center, Amsterdam, Netherlands, [3]Department of Psychiatry, VU University Medical Center, Amsterdam, Netherlands, [4]ErasmusMC-Sophia, Dept. of Pediatrics, Div. of Pediatric Endocrinology, Rotterdam, Netherlands, [5]Interdisciplinary Applied Genoproteomic Group - Neurosciences, University of Luik, Luik, Belgium

**1160** **Mirror neuron function and action understanding in amyotrophic lateral sclerosis: an fMRI study**
Laura Jelsone-Swain[1], David Burkard[1], Robert Welsh[1]
[1]University of Michigan, Department of Radiology, Ann Arbor, United States

**1161** **Motor impairment and sensorimotor resting state connectivity in multiple sclerosis**
Jessica Paxton[1,2], Victoria Leavitt[1,2], James Sumowski[1,2]
[1]Kessler Foundation Research Center, West Orange, NJ, [2]University of Medicine and Dentistry of New Jersey, Newark, NJ

***1162** **Motor rehabilitation impacts white matter microstructure in patients with Multiple Sclerosis, (O-Th3)**
Laura Bonzano[1], Giampaolo Brichetto[2], Paola Feraco[1], Giovanni Mancardi[1], Luca Roccatagliata[1], Andrea Tacchino[2], Marco Bove[1]
[1]University of Genoa, Genoa, Italy, [2]Multiple Sclerosis Italian Foundation, Genoa, Italy

**1163** **Optic Neuritis Alters Resting-State Functional Connectivity with Visual Cortex**
Filomeno Cortese[1,2,3,4], Nourhan Zayed[5], Jessie Trufyn[4], Bradley Goodyear[4,2,3], Fiona Costello[4,2]
[1]NeuroImaging Research Unit, Calgary, AB, Canada, [2]Hotchkiss Brain Institute, Calgary, AB, Canada, [3]Seaman Family MR Centre, Calgary, AB, Canada, [4]University of Calgary, Calgary, AB, Canada, [5]Electronics Research Institute, Cairo, Egypt

**1164** **Predicting visual cortex response in patients with retinoblastoma**
Carlos Parra[1], Benjamin King[2], Ibrahim Qaddoumi[1], Kathleen Helton[1], Matthew Wilson[2], Robert Ogg[1]
[1]St. Jude Children's Research Hospital, Memphis, TN, [2]University of Tennessee Health Sciences Center, Memphis, TN

**1165** **Preserved Cortical Asymmetry in the Thinned Cortex of Fetal Alcohol Spectrum Disorders**
Dongming Zhou[1], Carmen Rasmussen[2], Jacqueline Pei[3], Gail Andrew[4], James Reynolds[5], Christian Beaulieu[1]
[1]Biomedical Engineering, University of Alberta, Edmonton, Alberta, [2]Pediatrics, University of Alberta, Edmonton, Alberta, [3]Educational Psychology, University of Alberta, Edmonton, Alberta, [4]Glenrose Rehabilitation Hospital FASD Clinic, Edmonton, Alberta, [5]Biomedical and Molecular Sciences, Queens University, Kingston, Ontario

**1166** **Pseudobulbar Affect Is An Affective Dysmetria In Multiple Sclerosis Patients, A Connectivity Study**
Máximo León-Vázquez[1], Enrique Molina-Carrion[1], Fernando Barrios[2], Erick Pasaye[3]
[1]La Raza National Medical Center, IMSS, México, D.F., [2]Instituto de Neurobiología, Universidad Nacional Autónoma de México, Juriquilla, Querétaro, México, [3]Instituto de Neurobiologia Universidad Nacional Autónoma de México, Juriquilla, Querétaro, México

**1167** **Reduced Activation of the Working Memory Network in Cognitively Impaired Chemotherapy Patients**
Lei Wang[1], Matthew Schroeder[1], Anthony Ryals[1], Joel Voss[1], Darren Gitelman[1], Jerry Sweet[2], Zeeshan Butt[1], Lynne Wagner[1]
[1]Northwestern University Feinberg School of Medicine, Chicago, IL, [2]NorthShore University, Chicago, IL

**1168** **Regional analysis of Gray Matter damage in African-Americans with Multiple Sclerosis**
Maria Petracca[1,2], Roxana Teodorescu[1], Jonathan Howard[3], Lazar Fleysher[1], Niels Oesingmann[3], Ilana Katzsand[1], Joseph Herbert[1], Matilde Inglese[1]
[1]Mount Sinai School of Medicine, New York, NY, [2]University Federico II, Naples, Italy, [3]New York University, New York, NY

**1169** **Relationships between regional white matter hyperintensities and cognitive function**
Jun Sung Park[1], Uicheul Yoon[2], Sang Won Seo[3], Duk L. Na[3], Jong-Min Lee[4]
[1]Hanyang University, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of, [3]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [4]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of

**1170 Single-sided Saturation Amide Proton Transfer Imaging on Brain Tumor at 3T**
xuna zhao[1,2], Jiahong Gao[1,3,4], Zhibo Wen[5], Jinyuan Zhou[6,7]
[1]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [2]Philips Healthcare,IGIT, Beijing, China, [3]MRI Research Center, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [4]Brain Research Imaging Center and Department of Radiology, University of Chicago, Chicago, United States, [5]Zhujiang Hospital, Guangzhou, China, [6]Division of MR Research, Department of Radiology, Johns Hopkins University, Baltimore, United States, [7]F.M. Kirby Research Center for Functional Brain Imaging, Kennedy Krieger Institute,, Baltimore, United States

**1171 Somatosensory disinhibition in patients with Fibromyalgia: preliminary results**
Manyoel Lim[1], June Sic Kim[1], Meyke Roosink[1], Dajung Kim[1], Hye Won Kim[2], Eun Bong Lee[2], Hyun Ah Kim[3], Chun Kee Chung[1]
[1]MEG Center, Department of Neurosurgery, Seoul National University Hospital, Seoul, Korea, Republic of, [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Korea, Republic of, [3]Department of Internal Medicine, Hallym University College of Medicine, Anyang, Korea, Republic of

**1172 Structural Brain Networks in Amyotrophic Lateral Sclerosis**
Colin Buchanan[1], Lewis Pettit[1], Mark Bastin[1], Amos Storkey[1], Sharon Abrahams[1]
[1]University of Edinburgh, Edinburgh, United Kingdom

**1173 Technique development for whole brain white matter and lesion myelin water fraction analysis for MS**
Kyoko Fujimoto[1], Eve LoCastro[2], Sneha Pandya[2], Elizabeth Monohan[1], Ashish Raj[2], Xiaobo Shen[3], Thanh Nguyen[2], Susan Gauthier[1]
[1]Department of Neurology, Weil Cornel Medical College, New York, NY, [2]Department of Radiology, Weill Cornell Medical College, New York, NY, [3]Department of Computer Science, Cornell University, Ithaca, NY

**1174 The neural correlates of recall of life events in Conversion Disorder**
Selma Aybek[1,2], Timothy Nicholson[2], Fernando Zelaya[3], Owen O'Daly[2], Tom Craig[2], Anthony David[2], Richard Kanaan[2]
[1]Laboratoire Recherche Neurosciences (LREN), Lausanne, CH, [2]Institute of Psychiatry, London, United Kingdom, [3]Centre for Neuroimaging, Institute of Psychiatry, Kings College London, London, United Kingdom

**1175 The neural substrates of gender dysphoria in adolescents**
Elseline Hoekzema[1], Sebastian Schagen[2], Dick Veltman[3], Baudewijntje Kreukels[4], Peggy Cohen-Kettenis[5], Henriette Delemarre-van de Waal[6], Julie Bakker[7]
[1]Netherlands Institute for Neuroscience, Amsterdam, Netherlands, [2]Leiden University Medical Centre, Leiden, Netherlands, [3]VU University medical center, Amsterdam, Netherlands, [4]VU University Medical Centre, Amsterdam, Netherlands, [5]VU university medical center, Amsterdam, Netherlands, [6]Leiden University Medical Center, Leiden, Netherlands, [7]Centre Interdisciplinaire de Géneoprotéomique Appliquée, Université Liège, Liege, Belgium

**1176 Visualizing plasticity and altered neuronal signaling in the injured human spinal cord with fMRI**
David Cadotte[1], Rachael Bosma[2], Patrick Stroman[2], David Mikulis[3], Michael Fehlings[3]
[1]University of Toronto, Toronto, Canada, [2]Queens University, Kingston, Canada, [3]University of Toronto, Toronto, Ontario

**1177 White Matter Vulnerabilities of Late-life Depression and MCI Are Shared when these Syndromes Coexist**
Wenjun Li[1], L. Tugan Muftuler[1], Gang Chen[1], B. Douglas Ward[1], Jennifer Jones[1], Malgorzata Franczak[1], Piero Antuono[1], Shi-Jiang Li[1], Joseph Goveas[1]
[1]Medical College of Wisconsin, Milwaukee, United States

## Disorders of the Nervous System

### Parkinson's Disease and Movement Disorders

**1178 Aberrant beta oscillations during movement planning in Parkinson's using MEG**
Elizabeth Heinrichs-Graham[1,2], Tony W Wilson[1], Pamela Santamaria[3], Sheila Heithoff[1], Diego Torres-Russotto[1], Jessica Hutter-Saunders[1], Kathy Estes[1], Jane Meza[1], R. Mosley[1], Howard Gendelman[1]
[1]University of Nebraska Medical Center, Omaha, NE, [2]University of Nebraska - Omaha, Omaha, NE, [3]Neurological Consultants of Nebraska, Omaha, NE

**1179 Abnormal Functional Connectivity in the "Salience Network" in Parkinson's disease**
Sule Tinaz[1], Patrick Malone[1], Mark Hallett[1], Silvina Horovitz[1]
[1]Human Motor Control Section / NINDS / NIH, Bethesda, MD, United States

**1180 Action decision abnormalities in Parkinson's: evidence from modeling and diffusion tensor imaging**
Jiaxiang Zhang[1], Laura Hughes[2], Charlotte Rae[1], Rowe James[3]
[1]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [2]MRC cognition and brain science unit, Cambridge, United Kingdom, [3]Cambridge University Department of Clinical Neurosciences, Cambridge, United Kingdom


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**1181 Altered Amygdala Functional Connectivity in Parkinson's Disease Patients with Depressive Symptoms**
Peiyu Huang[1], Xinfeng Yu[1], Min Xuan[1], Quanquan Gu[1], Wei Luo[1], Minming Zhang[1]
[1]The 2nd Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China

**1182 Altered cortical and hippocampal connectivity patterns of striatum in Parkinson's disease**
Seong A Shin[1], Jae Sung Lee[1], Yu Kyeong Kim[1], Hee Jeong Kim[1], Jee Young Lee[1], In Chan Song[1], Beom Seok Jeon[1], Dong Soo Lee[1]
[1]Seoul National University, Seoul, Korea, Republic of

**1183 Altered resting hemodynamic activity in Parkinson's disease with visual hallucinations**
NAILIN YAO[1], Charlton Cheung[2], Richard Cheung[2], Siew-eng Chua[3], SL Ho[3], Gary Lau[3], Henry Mak[3], Grainne McAlonan[4], Shirley Pang[2], Kevin Yu[3]
[1]THE UNIVERSITY OF HONG KONG, HONG KONG, Hong Kong, [2]The University of Hong Kong, HONG KONG, Hong Kong, [3]The University of Hong Kong, Hong Kong, Hong Kong, [4]Institute of Psychiatry, King's College London, London, United Kingdom

**1184 Altered Sensorimotor Activations in Parkinson's Disease During a Kinesthetic Illusion Task**
Sarah Carr[1], Kristin Borreggine[1], Richard Graham[2], Jerrold Vitek[3], David Riley[4,1], Benjamin Walter[4,1]
[1]Neurological Institute, Case Western Reserve University, Cleveland, OH, [2]UH Case Medical School, Case Western Reserve University, Cleveland, OH, [3]Neurology, University of Minnesota, Minneapolis, MN, [4]Movement Disorders Center, UH Hospitals, Cleveland, OH

**1185 Altered striatal network-level structural covariance in Parkinson's disease**
Pei-Lin Lee[1], Kun-Hsien Chou[2], Wei-Che Lin[3], Chu-Chung Huang[4], Cheng-Hsien Lu[5], Ching-Po Lin[6]
[1]Institue Of Biomedical Imaging And Radiological Sciences, National Yang-Ming University, Taipei, Chinese Taipei, [2]National Yang Ming University, Taiwan- Republic Of China, [3]Department of Diagnostic Radiology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, Kaohsiung, Chinese Taipei, [4]Institue Of Biomedical Imaging And Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, Republic of China, [5]Department of Neurology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, Kaohsiung, Chinese Taipei, [6]National Yang-Ming University, Taipei, Chinese Taipei

**1186 An MRI source based morphometry study on cognitive impairment in Parkinson´s disease**
Irena Rektorova[1], Roberta Biundo[2], Radek Marecek[1], Dag Aarsland[3], Angelo Antonini[2]
[1]Central European Institute of Technology, CEITEC MU, First Department of Neurology, Masaryk Univ., Brno, Czech Republic, [2]Center for Parkinson's disease and Movement Disorder "Fondazione Ospedale San Camillo" - I.R.C.C.S., Venice, Italy, [3]Karolinska Institutet, Disease Research Center, Stockholm, Sweden

**1187 Asymmetric Pedunculopontine Network Connectivity in Freezing of Gait From Parkinson's Disease**
Brett Fling[1], Rajal Cohen[2], Fay Horak[1], John Nutt[1]
[1]Oregon Health & Science University, Portland, OR, [2]University of Idaho, Moscow, ID

**1188 Asymmetrical changes in cortical neuronal density with idiopathic Parkinson's syndrome**
Caroline Paquette[1,2], Thomas Funck[1,3], Michael Sidel[4], Calvin Melmed[4], Oury Monchi[5,6], Alexander Thiel[1,3,4]
[1]McGill University, Montreal, Canada, [2]Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR), Montreal, Canada, [3]Lady Davis Institute for Medical Research, Montreal, Canada, [4]SMBD Jewish General Hospital, Montreal, Canada, [5]University of Montreal, Montreal, Canada, [6]Institut Universitaire de Gériatrie de Montréal, Montreal, Canada

***1189 Atomoxetine and citalopram enhance action inhibition systems in Parkinson's disease, (O-Th3)**
Zheng Ye[1], Ellemarije Altena[1], Charlotte Housden[1], Helen Maxwell[1], Timothy Rittman[1], Cristina Nombela Otero[1], Trevor Robbins[1], Rowe James[1]
[1]University of Cambridge, Cambridge, United Kingdom

**1190 Brain networks in essential tremor: elucidating tremor pathophysiology using simultaneous EMG-fMRI**
Marja Broersma[1], Madelein Van der Stouwe[1], Arthur Buijink[2], Fleur Van Rootselaar[2], Natasha Maurits[1,3]
[1]Department of Neurology, University Medical Center Groningen, University of Groningen, Groningen, Netherlands, [2]Department of Neurology & Clinical Neurophysiology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands, [3]Neuroimaging Center, University of Groningen, Groningen, Netherlands

**1191 Changes in Substantia Nigra Functional and Structural Connectivity with Motor Integrity**
Timothy Ellmore[1], Katarina Cruz[1], Richard Castriotta[2], Mya Schiess[2]
[1]The City College of New York, New York, NY, [2]The University of Texas Medical School at Houston, Houston, TX

**1192 Connectivity changes in Parkinson's disease when switching from levodopa to deep brain stimulation**
Karsten Mueller[1], Štefan Holiga[1], Harald Möller[1], Matthias Schroeter[1,2], Josef Vymazal[3], Filip Ruzicka[4,5], Dusan Urgosik[4,5], Evzen Ruzicka[4], Robert Jech[4]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Clinic for Cognitive Neurology, University Clinic Leipzig, Leipzig, Germany, [3]Department of Radiology, Na Homolce Hospital, Prague, Czech Republic, [4]Department of Neurology and Center of Clinical Neuroscience, Charles University in Prague, Prague, Czech Republic, [5]Department of Stereotactic and Radiation Neurosurgery, Na Homolce Hospital, Prague, Czech Republic

**1193 Decreased caudate glutamate-glutamine 1H MRS signal in pre-manifest to early Huntington disease**
Jeannie Padowski[1,2], Kurt Weaver[2], Todd Richards[2], Elizabeth Aylward[2,3], Kevin Conley[2]
[1]Washington State University, Spokane, WA, [2]Integrated Brain Imaging Center, University of Washington, Seattle, WA, [3]Seattle Children's Research Institute, Seattle, WA

**1194 Dopaminergic Modulation of Working Memory in Parkinson's disease Patients**
Kathleen Poston[1], Sophie YorkWilliams[2], Fadi Tayim[3], Vinod Menon[4]
[1]Stanford University, Stanford, United States, [2]Stanford University, Stanford, CA, [3]Palo Alto University, Palo Alto, CA, [4]Stanford school of medicine, Palo Alto, CA

**1195 Effective connectivity in Parkinson's disease and the impact of dopaminergic medication**
Jochen Michely[1], Michael Barbe[2], Lars Timmermann[2], Felix Hoffstaedter[3], Simon Eickhoff[4], Gereon Fink[2,3], Christian Grefkes[1,2]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]Department of Neurology, University Hospital of Cologne, Cologne, Germany, [3]Research Center Juelich, Juelich, Germany, [4]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**1196 Efficiency and Cost of PCA-derived Parkinson's Disease-Related Metabolic Covariance Pattern**
Ji Hyun Ko[1], Phoebe Spetsieris[2], David Eidelberg[2]
[1]Feinstein Institute for Medical Research, Manhasset, United States, [2]Feinstein Institute for Medical Research, Manhasset, NY

**1197 Frontostriatal connectivity and route navigation in older adults and Parkinson's disease patients**
Deepti Putcha[1], Alice Cronin-Golomg[2], Robert Ross[3], David Somers[3], Chantal Stern[3]
[1]Boston University, MGH, Boston, United States, [2]Boston University, Boston, MA, [3]Boston University, MGH, Boston, MA

**1198 Functional Connectivity Analysis of Spinocerebellar Ataxia 7**
Carlos Roberto Hernandez Castillo[1,2], Sarael Alcauter[1], Victor Galvez[2], Wei Gao[1], Juan Fernandez[3,2]
[1]Department of Radiology and BRIC, University of North Carolina, Chapel Hill, United States, [2]Instituto de Neuroetologia, Universidad Veracruzana, Xalapa, Mexico, [3]Laboratorio de Neuropsicologia, Facultad de medicina, Universidad Nacional Autonoma de Mexico, Mexico D.F., Mexico

**1199 Functional connectivity explored with ICA in parkinsonian disorders**
Timothy Rittman[1], Boyd Ghosh[2], Rowe James[3]
[1]University of Cambridge, [2]Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom, [3]Cambridge University Department of Clinical Neurosciences, Cambridge, United Kingdom

**1200 Functional Connectivity in Parkinson's Disease**
Elliot Collins[1], Tara Madhyastha[1], Mary Askren[1], Peter Boord[1], James Leverenz[1], Thomas Grabowski[1]
[1]University of Washington, Seattle, WA

**1201 Functional connectivity in the inhibitory control network in Prodromal Huntington's Disease**
Katherine Koenig[1], Stephen Rao[2], Mark Lowe[1], Jian Lin[3], Deborah Harrington[4], Dawei Liu[5], Ken Sakaie[1], Jane Paulsen[5]
[1]Cleveland Clinic, Cleveland, United States, [2]Cleveland Clinic, Cleveland, OH, [3]Cleveland Clinic Foundation, Cleveland, OH, [4]University of California, San Diego, San Diego, United States, [5]The University of Iowa, Iowa City, United States

**1202 Functional connectivity within the DMN in Parkinson's disease is associated with saccadic accuracy**
Martin Gorges[1], Hans-Peter Müller[1], Albert Ludolph[1], Elmar Pinkhardt[1], Jan Kassubek[1]
[1]Dept. of Neurology, University of Ulm, Ulm, Germany

**1203 Graph analysis functional connectivity differences in PD, PSP and control subjects**
Timothy Rittman[1], Boyd Ghosh[2], Rowe James[3]
[1]University of Cambridge, [2]Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom, [3]Cambridge University Department of Clinical Neurosciences, Cambridge, United Kingdom

**1204 High Resolution Imaging of the Human Brainstem Oculomotor System at 7 Tesla**
Cecile Gallea[1], Julien Sein[2], Bertrand Gaymard[3], Jerome Yelnik[4], Romain Valabrègue[5], Daniel Garcia Lorenzo[6], Stephane Lehericy[7], Pierre-Francois Van de Moortele[8]
[1]INSERM, Paris, France, [2]Center for Magnetic Resonance Research, Medical School, University of Minnesota, Minneapolis, MN, [3]Laboratoire de Physiologie (UFR 65), Groupe Hospitalier La Pitie Salpetriere, Paris, France, [4]CRICM UPMC/Inserm UMR_S 975, CNRS UMR 7225, Paris, France, [5]Centre de Neuro-Imagerie de Recherche (CENIR), CR-ICM, Inserm, U975, CNRS, UMR 7225, Paris, France, [6]Centre de Neuroimagerie de Recherche (CENIR), CRICM UPMC/Inserm, CNRS, Paris, France, [7]Centre de NeuroImagerie de Recherche - CENIR, Paris, France, [8]CMRR - UNIVERSITY OF MINNESOTA, MINNEAPOLIS, United States

**1205 Intrinsic Functional Connectivity of Motor network and Laterality of Motor Symptoms in PD**
Kwangsun Yoo[1], Sun Ju Chung[2], Sooyeoun You[2], Mi-Jung Kim[2], William Sohn[1], Young-Beom Lee[1], Yong Jeong[1]
[1]KAIST, Daejeon, Korea, Republic of, [2]Asan Medical Center, University of Ulsan College of Medicine, Ulsan, Korea, Republic of

**1206 Investigation of Auditory Responses in Hemifacial Spasm Patients with Tinnitus: a MEG study**

Bong Soo Kim[1], Won Seok Chang[2], Hyun Ho Jung[3], Kiwoong Kim[4], Hyuk Chan Kwon[4], Yong Ho Lee[4], Jin Woo Chang[2]
[1]1Department of Neurosurgery, Yonsei University College of Medicin, Seoul, Korea, Republic of, [2]Department of Neurosurgery, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]1Department of Neurosurgery, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Korea Research Institute of Standards and Science (KRISS), Daejeon, Korea, Republic of

**1207 Investigation of cortical brain damage in patients with Machado-Joseph disease**

Thiago Rezende[1,2], Anelyssa D'Abreu[3], Rachel Guimarães[3], Iscia Lopes-Cendes[3], Gabriela Castellano[4], Marcondes França Junior[3]
[1]Neuroimaging Laboratory, Department of Neurology, University of Campinas-UNICAMP, Campinas, Brazil, [2]Medical Physics Laboratory, Department of Cosmic Rays and Chronologic, University of Campinas-UNICAMP, Campinas, Brazil, [3]University of Campinas (Unicamp), Campinas, Brazil, [4]Medical Physics Laboratory, Department of Cosmic Rays and Chronologic, University of Campinas-UNICAM, Campinas, Brazil

**1208 Levodopa-related increase in resting functional connectivity of cerebellum in Parkinson's disease**

Robert Jech[1], Karsten Mueller[2], Štefan Holiga[2], Filip Ruzicka[1], Josef Vymazal[3], Gabriele Lohmann[2], Harald Möller[2], Matthias Schroeter[2], Ruzicka, Evzen[1]
[1]Department of Neurology, First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Na Homolce hospital, Prague, Czech Republic

**1209 Longitudinal microstructural change is related to cognitive decline in Parkinson's disease**

Tracy Melzer[1], Richard Watts[2], Michael MacAskill[1], Toni Pitcher[1], Leslie Livingston[1], Ross Keenan[3], John Dalrymple-Alford[4], Tim Anderson[1]
[1]New Zealand Brain Research Institute/ University of Otago, Christchurch, New Zealand, [2]University of Vermont, Burlington , VT, [3]Christchurch Radiology Group, Christchurch, New Zealand, [4]New Zealand Brain Research Institute/University of Canterbury, Christchurch, New Zealand

**1210 Mild Cognitive Impairment is linked with faster rate of cortical thinning in Parkinson's disease**

Alexandru Hanganu[1], Christophe Bedetti[1,2], Clotilde Degroot[1], Beatriz Mejia-Constain[1], Anne-Louise Lafontaine[3], Chouinard Sylvain[4], Oury Monchi[5,1]
[1]Centre de Recherche de l'Institut Universitaire de Gériatrie de Montréal, Montreal, Canada, [2]Centre d'Études Avancées en Médicine du Sommeils, Hôpital du Sacré Coeur de Montréal, Montreal, Canada, [3]Movement Disorders Unit, McGill University Health Center, Montreal, Canada, [4]Centre Hospitalier de l'Université de Montréal, Unité des troubles du mouvement André Barbeu, Montreal, Canada, [5]University of Montreal, Department of Radiology, Montreal, Canada

**1211 MRI Differences in Iron Content in the Brain of Presymptomatic and Symptomatic Huntington Disease**

Cristina Sanchez-Castaneda[1,2], Margherita Di Paola[1,3], Francesca Elifani[4], Vittorio Maglione[4], Alba Di Pardo[4], Michael Dayan[1], Ferdinando Squitieri[4], Umberto Sabatini[1]
[1]IRCCS Santa Lucia Foundation, Rome, Italy, [2]Department of Psychiatry and Clinical Psychobiology, University of Barcelona, Barcelona, Spain, [3]Department of Internal Medicine and Public Health, University of L'Aquila, Coppito, Italy, [4]Neurogenetics and Rare Diseases Center, IRCCS Neuromed, Pozzilli, Italy

**1212 Receptor fingerprints in Progressive Supranuclear Palsy with frontal presentation**

Nicola Palomero-Gallagher[1], Wan Chiu[2], Laura Kaat[2], Karl Zilles[3], John van Swieten[2]
[1]1Institute of Neurosciences and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [2]Erasmus MC - University Medical Center Rotterdam, Rotterdam, Netherlands, [3]Institute of Neurosciences and Medicine (INM-1), Research Centre Jülich, Jülich, Germany

**1213 Reduced Iron content in Hungtinton Disease corpus callosum**

Margherita Di Paola[1,2], Owen Phillips[1], Cristina Sanchez-Castaneda[3], Alba Di Pardo[4], Vittorio Maglione[4], Carlo Caltagirone[1,5], Umberto Sabatini[6], Ferdinando Squitieri[4]
[1]Dept. of Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Rome, Italy, [2]Department of Internal Medicine and Public Health, University of L'Aquila, Italy, [3]Radiology Department, IRCCS Santa Lucia Foundation, Rome, Italy, [4]Neurogenetics and Rare Diseases Center, IRCCS Neuromed, Pozzilli, Italy, [5]Neuroscience Department, University of Rome "Tor Vergata," Italy, [6]Radiology Department, IRCCS Fondazione Santa Lucia, Rome, Italy

**1214 Reduced recruitment of medial premotor areas during narrowing wide optic flow in Parkinson patients**

Anouk van der Hoorn[1,2], Bauke de Jong[1,2]
[1]Department of Neurology, University Medical Centre Groningen, University of Groningen, Groningen, Netherlands, [2]Neuroimaging centre, University Medical Centre Groningen, University of Groningen, Groningen, Netherlands

**1215** **Sensorimotor network changes during botulinum toxin treatment of cervical dystonia**
Petr Hlustik[1], Pavel Hok[1], Petr Kanovsky[1], Robert Opavsky[1], Pavel Otruba[1], Zbynek Tudos[1], Martin Nevrly[1]
[1]Palacky University and University Hospital Olomouc, Olomouc, Czech Republic

**1216** **Striatal dopamine and working memory-related dorsolateral prefrontal cortex activation in PD**
Joseph Masdeu[1], Daniel Eisenberg[1], Catherine Hegarty[1], Brett Cropp[1], Philip Kohn[1], Karen Berman[1]
[1]Section on Integrative Neuroimaging, Clinical Brain Disorders Branch, National Institutes of Health, Bethesda, MD, USA

**1217** **Studying hemispheric differences in patients with left- and right-beginning corticobasal syndrome**
Kerstin Juetten[1], Peter Pieperhoff[1], Martin Suedmeyer[2,3], Stefano Ferrea[2,3], Alfons Schnitzler[2,3], Katrin Amunts[1,4,5], Silke Lux[1]
[1]Institute of Neuroscience and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [2]Department of Neurology, Center for Movement Disorders and Neuromodulation, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany, [4]C. & O. Vogt Institute for Brain Research, Heinrich Heine University, Düsseldorf, Germany, [5]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany

**1218** **Tractography of the Corpus Callosum in Hungtinton's Disease**
Owen Phillips[1], Cristina Sanchez-Castaneda[2], Francesca Elifani[3], Alba Di Pardo[3], Vittorio Maglione[3], Carlo Caltagirone[1,4], Umberto Sabatini[2], Ferdinando Squitieri[3], Margherita Di Paola[1,5]
[1]Dept. of Clinical and Behavioural Neurology, IRCCS Santa Lucia Foundation, Rome, Italy, [2]Radiology Department, IRCCS Santa Lucia Foundation, Rome, Italy, [3]Neurogenetics and Rare Diseases Center, IRCCS Neuromed, Pozzilli, Italy, [4]Neuroscience Dept, University of Rome "Tor Vergata", Italy, [5]Department of Internal Medicine and Public Health, University of L'Aquila, Italy

**1219** **Transverse Relaxation Mapping and DTI of Nigrostriatal Damage in Early Stage Parkinson's Disease**
Jianli Wang[1], Xiaoyu Sun[1], Zachary Mosher[1], Jeffrey Vesek[1], Sarah Ryan[1], Qing X Yang[1], Jonathan Chu[1], Sangam Kanekar[1], Thyagarajan Subramanian[1]
[1]Penn State College of Medicine, Hershey, United States

**1220** **Voxelwise and Region of Interest Analysis of Parkinson's Disease with or without Depression**
Wu Li[1], Jiangtao Liu[2], Kuncheng Li[2], Yijun Liu[3], Jie Tian[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, [3]Department of Psychiatry & McKnight Brain Institute, University of Florida, Gainesville, FL

**1221** **White matter abnormalities in Parkinson's disease illuminated via Track Density Imaging**
Erik Ziegler[1], Tim Coolen[2], Gaëtan Garraux[2], Christophe Phillips[3]
[1]Université de Liège, Liège, Belgium, [2]University of Liège, Liège, Belgium, [3]Cyclotron Research Centre, University of Liege, Sart Tilman, Liege, Belgium

## Disorders of the Nervous System

### Sleep Disorders

**1222** **Correlation of Cerebral Structural Changes and Apnea-Hypopnea Index of Obstructive Sleep Apnea**
Namkug Kim[1], soonwook kwon[2], Chol Shin[3], Hyung Suk Seo[4], Chang-Ho Yun[5], Hyun Kim[3]
[1]Radiology, University of Ulsan College of Medicine, Asan Medical Center, seoul, Korea, Republic of, [2]Department of Anatomy, Korea University College of Medicine, seoul, Korea, Republic of, [3]Institute of Human Genomic Study, Korea University Ansan Hospital, Republic of Korea, Ansan, Korea, Republic of, [4]Department of Radiology, Korea University Ansan Hospital, Asan, Republic of Korea, Ansan, Korea, Republic of, [5]Department of Neurology, Seoul National University Bundang Hospital, Bundang, Republic of Korea, Bundang, Korea, Republic of

**1223** **Differential brain structural correlates of insomnia in depression vs. anxiety**
Diederick Stoffers[1], Sarah Moens[2], Jeroen Benjamins[2], Marie-José van Tol[3], Brenda Penninx[4], Dick Veltman[5], Nic van der Wee[6], Eus Van Someren[2]
[1]Netherlands Institite for Neuroscience, Amsterdam, Netherlands, [2]Netherlands Institute for Neuroscience, Amsterdam, Netherlands, [3]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany, [4]Department of Psychiatry, VU University Medical Center, Amsterdam, Netherlands, [5]Department of Psychiatry, VU University medical center, Amsterdam, Netherlands, [6]Department of Psychiatry, Leiden University Medical Center, Leiden, Netherlands

**1224** **Impact of REM sleep deprivation on social pain**
Stefan Westermann[1], Konrad Whittaker[1], Tareq Naji[1], Frieder Paulus[2], Andreas Jansen[3], Laura Müller-Pinzler[4], Jens Sommer[3], Ulrich Koehler[1], Felix Rosenow[5], Soeren Krach[3]
[1]Philipps-University Marburg, Marburg, Germany, [2]Department of Psychiatry, Philipps University Marburg, Germany, Marburg, Germany, [3]Philipps-University, Marburg, Germany, [4]Psychiatry, University of Marburg, Marburg, Germany, [5]Department of Neurology, Epilepsy Center Hessen, Philipps-University Marburg, Marburg, Germany

## Disorders of the Nervous System

### Stroke

**1225 Age of LMCA stroke occurrence affects language lateralization and cortical activation**
Jane Allendorfer[1], Anna Byars[2], Aimee Dietz[3], Jennifer Vannest[4], Scott Holland[5], Jerzy Szaflarski[1]
[1]University of Alabama at Birmingham, Birmingham, United States, [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [3]University of Cincinnati, Cincinnati, OH, [4]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [5]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**1226 Alteration in Intrinsic Neuronal Activity During Spontaneous Visual Function Recovery after Stroke**
Yong-Hwan Kim[1], Hye-Jin Kim[2], Jee-Hyun Lee[2], Dong-Wha Kang[2]
[1]Asan Medical Center, Seoul, Korea, Republic of, [2]Vision, Image and Learning Laboratory, Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea, Republic of

**1227 Altered Affective Network Connectivity in Stroke Patients with and without Dysphagia**
Shasha Li[1], Chengqi He[1], Dong Zhou[2]
[1]Department of Rehabilitation Medicine, West China Hospital, Sichuan University, Chengdu, China, [2]Department of Neurology, West China Hospital, Sichuan University, China, Chengdu, Sichuan

**1228 An analysis of MEG mapping of a stroke patient who rapidly improved physical function**
HIROKAZU KAWANO[1], Nanae Noji[2], Nagase Yasunori[3], Kazuhiro Yagi[4], Naoko Torihara[4], Kazuhito Tsuruta[4]
[1]JUNWAKAI MEMORIAL HOSPITAL, MIYAZAKI, Japan, [2]Junwakai memorial hospital, Miyazaki, Japan, [3]Junwakai Memorial Hospital, miyazaki city, Japan, [4]Junwakai Memorial Hospital, Miyazaki, Japan

**1229 An fMRI study of speech perception in stroke patients with sensory aphasia using mismatch negativity**
Larisa Majorova[1], Oxana Fedina[2], Alexey Petrushevsky[2], Olga Martynova[1]
[1]Institute of Higher Nervous Activity and Neurophysiology, Moscow, Russian Federation, [2]Centre of Speech Pathology and Neurorehabilitation, Moscow, Russian Federation

**1230 Assessing metabolic and anatomic changes in the motor cortex after stroke**
Paul Jones[1], Michael Borich[1], Irene Vavasour[1], Alex MacKay[1], Lara Boyd[2]
[1]University of British Columbia, Vancouver, Canada, [2]University of British Columbia, Vancouver, British Columbia

**1231 Automated Differentiation between Infarct and Artifact in Diffusion Weighted Imaging**
Syu-Jyun Peng[1], Jang-Zern Tsai[2], Yu-Wei Chen[3], Kuo-Wei Wang[4]
[1]Department of Electrical Engineering, National Central University, Jung-Li , Taiwan, [2]Department of Electrical Engineering, National Central University, Jung-Li, Taiwan, [3]Department of Neurology, Landseed Hospital, Ping-Jen, Taiwan, [4]Department of Medical Imaging, LandSeed Hospital, Ping-Jen , Taiwan

**1232 Botulinum toxin A related changes of cortical activity following ischemic stroke**
Tomáš Veverka[1], Petr Hlustik[1], Zuzana Tomášová[1], Pavel Hok[1], Pavel Otruba[1], Michal Král[1], Zbynek Tudos[1], Jana Zapletalová[1], Alois Krobot[1], Petr Kanovsky[1]
[1]Palacky University and University Hospital, Olomouc, Czech Republic

**1233 Change of the anterior corticospinal tract in the unaffected hemisphere in chronic stroke patients**
Yong Hyun Kwon[1], Mi Young Lee[2], Hyeok Gyu Kwon[3], Sung Ho Jang[3]
[1]Department of Physical Therapy, Yeungnam College of Science & Technology, Daegu, Korea, Republic of, [2]Department of Physical Therapy, College of Health and Therapy, Daegu Haany University, Daegu, Korea, Republic of, [3]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**1234 Comparing diffusion tensor versus non-tensor approaches to white matter fiber tractography in stroke**
Angela Auriat[1], Katie Wadden[1], Michael Borich[1], Sonia Brodie[1], Cameron Mang[1], Lara Boyd[1]
[1]University of British Columbia, Vancouver, Canada

**1235 Withdrawn**

**1236 DTI correlates of motor function and cognition in acute stroke patients - an exploratory study**
Daniela Pinter[1], Marisa Loitfelder[1], Thomas Gattringer[1], Christian Langkammer[2], Gudrun Reiter[1], Franz Fazekas[3], Christian Enzinger[3]
[1]Medical University Graz, Graz, Austria, [2]Medical Universtity of Graz, Graz, Austria, [3]Medical University of Graz, Graz, Austria

**1237 FMRI-activation and resting-state connectivity predict early motor recovery in acute stroke**
Lukas Jan Volz[1,2], Lizbeth Cárdenas-Morales[1,2], Anne Rehme[1], Eva-Maria Pool[1], Charlotte Nettekoven[1], Simon Eickhoff[3,4], Gereon Fink[2,4], Christian Grefkes[1,2]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]Department of Neurology, University of Cologne, Cologne, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [4]Institute of Neuroscience and Medicine (INM-1, INM-3), Juelich Research Centre, Juelich, Germany

**1238 Functional connectivity enhancement correlates with motor recovery after rehabilitation**
Reza Khosrowabadi[1,2], Effie Chew[3], Ling Zhao[3], Wei Peng Teo[3], Irvin Teh[4], Kai Keng Ang[5], Kok Soon Phua[5], Xin Hong[6], Fatima Ali Nasrallah[6], Kai Hsiang Chuang[4,6], Cuntai Guan[5], Juan Zhou[1,2]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, [2]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, [3]Division of Neurology, University Medicine Cluster, National University Health System, Singapore, [4]Clinical Imaging Research Center, A*STAR, National University of Singapore, Singapore, [5]Neural & Biomedical Technology, Institute for Infocomm Research, A*STAR, Singapore, [6]Magnetic resonance imaging group, Singapore Bioimaging Consortium, A*STAR, Singapore

**1239 Functional connectivity of the action observation network after stroke**
Sook-Lei Liew[1,2], Kathleen Garrison[3], Leonardo Cohen[4], Carolee Winstein[5], Lisa Aziz-Zadeh[2]
[1]National Institute of Neurological Disorders and Stroke (NINDS), NIH, Bethesda, United States, [2]University of Southern California, Los Angeles, CA, [3]Yale University, New Haven, United States, [4]National Institute of Neurological Disorders and Stroke (NINDS), NIH, Bethesda, MD, [5]Division of Biokinesiology and Physical Therapy, University of Southern California, CA

**1240 Improved touch sensation poststroke is associated with intrinsic functional connectivity changes**
Leeanne Carey[1,2], Louise Bannister[1,2], Sheila Crewther[2]
[1]Florey Institute of Neuroscience and Mental Health, Melbourne, Australia, [2]LaTrobe University, Melbourne, Victoria, Australia

**1241 Interhemispheric interactions in chronic stroke: structure, physiology and function**
Cameron Mang[1], Angela Auriat[1], Michael Borich[1], Sonia Brodie[1], Lara Boyd[1]
[1]University of British Columbia, Vancouver, Canada

**1242 Ipsilesional Striatal And Thalamic Plasticity Correlates With Motor Recovery After Cortical Stroke**
Eugenio Abela[1], Andrea Seiler[2], John Missimer[3], Andrea Federpsiel[4], Christian Hess[1], Matthias Sturzenegger[1], Roland Wiest[2], Bruno Weder[5]
[1]Department of Neurology, University Hospital Inselspital, Bern, Switzerland, [2]Institute for Diagnostic and Interventional Neuroradiology, University of Bern, Bern, Switzerland, [3]Biomolecular Imaging, Paul Scherrer Institute, Villigen, Switzerland, [4]Department of Psychiatric Neurophysiology, University Hospital of Psychiatry, Bern, Switzerland, [5]Department of Neurology, Kantonsspital St. Gallen, St. Gallen, Switzerland

**1243 Lesion correlates of poststroke tactile agnosia: a voxel-based lesion-symptom study**
Eugenio Abela[1], Franziska Stauffacher[2], John Missimer[3], Andrea Federpsiel[4], Christian Hess[5], Matthias Sturzenegger[6], Roland Wiest[7], Bruno Weder[8]
[1]University Departement of Neurology, Bern, Switzerland, [2]Institute for Diagnostic and Interventional Neuroradiology, University Hospital Inselspital, Bern, Switzerland, [3]Paul Scherrer Institute, Villigen, Switzerland, [4]Department of Psychiatric Neurophysiology, University Hospital of Psychiatry, Bern, Switzerland, [5]Department of Neurology, University Hospital Inselspital, Bern, Switzerland, [6]1. Department of Neurology, University Hospital Inselspital, Bern, Switzerland, [7]Institute for Diagnostic and Interventional Neuroradiology, University of Bern, Bern, Switzerland, [8]Department of Neurology, Kantonsspital St. Gallen, St. Gallen, Switzerland

**1244 Longitudinal effects of lesions on functional networks after stroke**
Smadar A Ovadia-Caro[1,2,3], Kersten Villringer[4], Jochen Fiebach[4], Gerhard Jungehulsing[4,5], Elke van der Meer[1,3], Daniel Margulies[2,1], Arno Villringer[1,2,4]
[1]Berlin School of Mind and Brain, The Mind-Brain Institute, Humboldt University, Berlin, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Institute of Psychology, Humboldt University, Berlin, Germany, [4]Center for Stroke Research, Charité University, Berlin, Germany, [5]Department of Neurology, Charité University, Berlin, Germany

**1245 Multicomponent T2 relaxation and diffusion imaging to evaluate white matter status in chronic stroke**
Michael Borich[1], Alex MacKay[1], Irene Vavasour[1], Alexander Rauscher[1], Lara Boyd[2]
[1]University of British Columbia, Vancouver, Canada, [2]University of British Columbia, Vancouver, British Columbia

**1246 Neural Correlates of Motor Action Selection after Stroke**
Jill Campbell Stewart[1], Umar Shariff[1], Pritha Dewanjee[1], Steven C. Cramer[1]
[1]Departments of Neurology and Anatomy & Neurobiology, University of California, Irvine, Irvine, CA


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**1247 Predicting Language Recovery using Performance Variability and Complexity of Functional Connectivity**
Tanya Schmah[1], Susan Duncan[2], Grigori Yourganov[3], Richard Zemel[1], Steven Small[2], Stephen Strother[3]
[1]University of Toronto, Toronto, Canada, [2]University of California Irvine, Irvine, CA, [3]Rotman Research Institute, Baycrest, Toronto, Canada

**1248 Predicting therapeutic gains in patients with stroke**
Erin Burke[1], Lucy Dodakian[2], Vu Le[2], Alison McKenzie[3], Jill See[2], Jeff Riley[2], Steven C. Cramer[4]
[1]Department of Anatomy & Neurobiology, University of California, Irvine, Irvine, CA, [2]Department of Neurology, University of California, Irvine, Irvine, CA, [3]Department of Physical Therapy, Chapman University, Orange, CA, [4]Departments of Neurology and Anatomy & Neurobiology, University of California, Irvine, Irvine, CA

**1249 Secondary Cortical Degeneration in Chronic Striatal-Capsular Stroke**
elham zareh[1], Hooshang Izadi[2], Todd Parrish[3], Helen Dawes[4], Mojtaba Zarei[5]
[1]Oxford brookes university, Oxford, United Kingdom, [2]Oxford Brooks University, Oxford, United Kingdom, [3]Northwestern University, Chicago, IL, [4]Oxford Brookes University, Oxford, United Kingdom, [5]Imperial College, London, United Kingdom

**1250 Slice Accelerated Dynamic-Susceptibility Contrast Enhanced (DSC) MRI**
Dingxin Wang[1,2], Charles Cantrell[3], Bruce Spottiswoode[4], Vibhas Deshpande[5], Timothy Carroll[3], Keith Heberlein[6]
[1]Siemens Healthcare, Minneapolis, MN, [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, [3]Northwestern University, Chicago, IL, [4]Siemens Healthcare, Chicago, IL, [5]Siemens Healthcare, Austin, TX, [6]Siemens Healthcare, Charlestown, United States

**1251 Spatial EEG maps for healthy user and stroke patients while controlling a Motor Imagery based BCI**
Rupert Ortner[1], Guenter Edlinger[2], Joanna Wojtowicz[3], Robert Prueckl[2], Christoph Guger[2]
[1]g.tec Guger Technologies OG, Schiedlberg, Austria, [2]g.tec Guger Technologies OG, Graz, Austria, [3]Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie, Krakowie, Poland

**1252 Spherical Deconvolution-Based Tractography is Associated with Motor Function in Stroke**
Katie Wadden[1], Angela Auriat[1], Michael Borich[1], Cameron Mang[1], Sonia Brodie[1], Lara Boyd[1]
[1]University of British Columbia, Vancouver, Canada

**1253 Spontaneous activity as a neural signature of different syndromes: visuo-spatial neglect and aphasia**
Antonello Baldassarre[1,2], Lenny Ramsey[3], Carl Hacker[4], Jennifer Rengachary[3], Kristi Zinn[3], Abraham Snyder[5], Alexandre Carter[3], Gordon Shulman[6], Maurizio Corbetta[7]
[1]Washington University in St. Louis, Dept. Neurology, St. Louis, MO, [2]University of Chieti, Dept. of Neuroscience and Imaging, Chieti, Italy, [3]Washington University in St. Louis, Dept. of Neurology, St. Louis, MO, [4]Washington University School of Medicine, St. Louis, MO, [5]Washington University, Saint Louis, MO, [6]Washington University in St. Louis, St. Louis, MO, [7]Dept. Neurology, Radiology, and Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO

**1254 Structural Plasticity Demonstrated on Diffusion-Tensor Imaging After Stroke on Visual Cortex**
Hye-Jin Kim[1], Yong-Hwan Kim[1], Jee-Hyun Lee[1], Dong-Wha Kang[1]
[1]Vision, Image and Learning Laboratory, Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea, Republic of

***1255 Support vector machine classification of motor impairment after stroke based on resting-state fMRI, (O-Th3)**
Anne Rehme[1], Lukas Volz[2], Delia-Lisa Feis[3], Thomas Liebig[4], Gereon Fink[5], Christian Grefkes[1]
[1]Max-Planck-Institute for Neurological Research, Cologne, Germany, [2]University of Cologne, Department of Neurology, Cologne, Germany, [3]Max Planck Institute for Neurological Research, Cologne, Germany, [4]University of Cologne, Department of Neuroradiology, Cologne, Germany, [5]Department of Neurology, University of Cologne, Cologne, Germany

**1256 White Matter Hyperintensities in Patients Presenting with Transient Stroke-Like Symptoms**
Ourania Varsou[1], Nichola Crouch[1], Michael Stringer[1], Alison Murray[1], Mary Joan Macleod[2], Christian Schwarzbauer[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, United Kingdom, [2]Department of Medicine and Therapeutics, University of Aberdeen, Aberdeen, United Kingdom

**1257 White matter networks of hemispatial neglect components**
Maarten Vaessen[1,2], Arnaud Saj[1], Markus Gschwind[3], Karl-Olof Lovblad[4], Patrik Vuilleumier[1]
[1]Laboratory for Neurology & Imaging of Cognition, University of Geneva, Geneva, Switzerland, [2]Swiss Center for Affective Sciences, University of Geneva, Geneva, Switzerland, [3]University Hospital Lausanne (CHUV), Lausanne, Switzerland, [4]Department of Radiology, University Hospital of Geneva, Geneva, Switzerland

## Genetics

### Genetic Association Studies

**1258 Altered white matter microstructure in young adult carriers of folate gene variant, MTHFR C677T**

*Emily Dennis[1], Neda Jahanshad[1], Priya Rajagopalan[2], Arthur Toga[2], Katie McMahon[3], Greig Zubicaray[4], Grant Montgomery[5], Nicholas Martin[6], Margaret Wright[5], Paul Thompson[1]*

*[1]Imaging Genetics Center, LONI, UCLA School of Medicine, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [3]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia, [4]School of Psychology, The University of Queensland, Brisbane, Australia, [5]Queensland Institute of Medical Research, Brisbane, Australia, [6]Genetic Epidemiology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia*

**1259 BDNF Polymorphism Impacts Insula Surface Area and Its Resting State Functional Network**

*Chao Wang[1], Zhang Yuanchao[1], Liu Bing[2], Haixia Long[2], Tianzi Jiang[1,2,3]*

*[1]Key Laboratory for NeuroInformation of the Ministry of Education, School of Life Science and Technol, Chengdu, China, [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [3]The Queensland Brain Institute, The University of Queensland, Brisbane, Australia*

**1260 DISC1 Ser704Cys Impacts Thalamic-Prefrontal Functional and Anatomical Connectivity**

*Bing Liu[1], Lingzhong Fan[2], Haixia Long[1], Yue Cui[1], Dawei Wang[3], Wen Qin[3], Chunshui Yu[4], Tianzi Jiang[5]*

*[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Institution of Automation,Chinese Academy of Sciences, Beijing, China, [3]Tianjin Medical University General Hospital, Tianjin, China, [4]Department of Radiology, Tianjin Medical University General Hospital, Tianjin, China, [5]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China*

**1261 Effect of Bcl-2 rs956572 Polymorphism on Age-Related Gray Matter Volume Changes**

*Yu-Chieh Wu[1], Chu-Chung Huang[2], Kun-Hsien Chou[3], Mu-En Liu[4], Albert C. Yang[5], Shih-Jen Tsai[6], Ching-Po Lin[3]*

*[1]Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, [2]Institue Of Biomedical Imaging And Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, [3]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [4]Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan, [5]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Taiwan, [6]Taipei Veterans General Hospital, Taipei, Taiwan*

**1262 Effect of BDNF on Regional White Matter Hyperintensities and Cognitive Function in Normal Elderly**

*YI-CHIA KUNG[1], Chu-Chung Huang[2], Kun-Hsien Chou[3], Mu-En Liu[4], Albert Yang[5], Shih-Jen Tsai[6], Ching-Po Lin[7]*

*[1]National Yang-Ming University, Taipei City, Chinese Taipei, [2]Institue Of Biomedical Imaging And Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, Republic of China, [3]National Yang Ming University, Taiwan- Republic Of China, [4]Department of Psychiatry, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan, [5]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Taiwan, [6]Taipei Veterans General Hospital, Taipei, Chinese Taipei, [7]National Yang-Ming University, Taipei, Chinese Taipei*

**1263 ENIGMA2: Genome-wide scans of subcortical brain volumes in 16,125 subjects from 28 cohorts worldwide**

*Derrek Hibar[1]*

*[1]University of California, Los Angeles, Los Angeles, CA*

**1264 Frequency-specific differences of amplitude of RS-fMRI fluctuation between 5-HTTLPR genotypes**

*Jue Wang[1], Su-Fang Li[2], Jin-Hui Wang[1], Wei Liao[1], Yu-Feng Zang[1]*

*[1]Center for Cognition and Brain Disorders, Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [2]Neuroimaging Research Branch, National Institute on Drug Abuse, National Institutes of Health, Baltimore, USA*

**1265 Gene-environment interaction and the reward system: fMRI results from a longitudinal study**

*Regina Boecker[1], Nathalie Holz[1], Arlette Buchmann[1], Dorothea Blomeyer[1], Sarah Baumeister[1], Isabella Wolf[1], Stephanie Witt[2], Marcella Rietschel[2], Michael Plichta[3], Andreas Meyer-Lindenberg[3], Tobias Banaschewski[1], Daniel Brandeis[1,4,5,6], Manfred Laucht[1,7]*

*[1]Department of Child and Adolescent Psychiatry and Psychotherapy, CIMH Medical Faculty Mannheim/ Heidelberg University, Germany, [2]Department of Genetic Epidemiology in Psychiatry, CIMH Medical Faculty Mannheim/Heidelberg University, Germany, [3]Department of Psychiatry and Psychotherapy, CIMH Medical Faculty Mannheim/Heidelberg University, Germany, [4]Department of Child and Adolescent Psychiatry, University of Zurich, Switzerland, [5]Center for Integrative Human Physiology, University of Zurich, Switzerland, [6]Neuroscience Center Zurich, University of Zurich and ETH Zurich, Switzerland, [7]Department of Psychology, University of Potsdam, Germany*

**1266 Genome-wide search shows association between 10p15.2 and the volume of left Heschl's Gyrus**
Danchao Cai[1,2,3], Hubert Fonteijn[2,3], Tulio Guadalupe[2], Marcel Zwiers[3,4], Martine Hoogman[2,3,4], Alejandro Arias-Vásquez[3,4], Yufang Yang[1], Jan Buitelaar[3,4], Guillén Fernández[3,4], Han Brunner[3,4], Hans van Bokhoven[3,4], Barbara Franke[3,4], Simon Fisher[2,3], Clyde Francks[2,3], Peter Hagoort[2,3]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [3]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [4]Radboud University Nijmegen Medical Centre, Departments of Human Genetics, Psychiatry and Cognitive Neuroscience, Nijmegen, Netherlands

**1267 HPA Genes Show Sex-Specific Interactions with Early Life Trauma Influencing Hippocampal Volume**
Lisa Kilpatrick[1], Annie Gupta[2], Katy Henry[2], Heendeniya Nuwanthi Heendeniya[2], Jenny Papp[2], Eric Sobel[2], Jennifer Labus[3], Emeran Mayer[2]
[1]UCLA Center for Neurobiology of Stress, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]UCLA, LOS ANGELES, CA

**1268 Impact of the COMT Val158Met genotype on working memory and prefrontal function in women with HIV**
Erin Sundermann[1], Bradley Aouizerat[2], Jeffrey Bishop[3], Eileen Martin[4], Leah Rubin[3], Kathleen Weber[5], Mardge Cohen[5], Pauline Maki[6]
[1]University of Illinois at Chicago, Chicago , IL, [2]University of California at San Francisco, Department of Physiological Nursing, San Francisco, Afghanistan, [3]University of Illinois at Chicago, Chicago, United States, [4]Rush University Medical Center, Chicago, United States, [5]CORE Center/Cook County Health and Hospital System, Chicago, IL, [6]University of Illinois at Chicago, Chicago, IL

**1269 Interaction between MAOA genotype and early life stress on affective processing: A prospective study**
Nathalie Holz[1], Regina Boecker[1], Arlette Buchmann[1], Dorothea Blomeyer[1], Sarah Baumeister[1], Isabella Wolf[1], Stephanie Witt[1], Marcella Rietschel[1], Michael Plichta[1], Andreas Meyer-Lindenberg[1], Tobias Banaschewski[1], Daniel Brandeis[1,2], Manfred Laucht[1,3]
[1]Central Institute of Mental Health Medical Faculty Mannheim/Heidelberg University, Mannheim, Germany, [2]University of Zurich, Zurich, Switzerland, [3]University of Potsdam, Potsdam, Germany

**1270 Interaction of DRD1 and DRD2 affects striatal activity and connectivity during motor processing**
Leonardo Fazio[1], Laura Ferranti[1,2], Aldo Tomasicchio[1], Pierluigi Selvaggi[1], Paolo Taurisano[1], Linda Antonucci[1], Tiziana Quarto[1,3], Barbara Gelao[1], Marina Mancini[1], Porcelli Annamaria[1], Raffaella Romano[1], Annabella Di Giorgio[1,4], Antonio Rampino[1], Gianluca Ursini[1], Grazia Caforio[1], Teresa Popolizio[4], Giuseppe Blasi[1], Alessandro Bertolino[1]
[1]University of Bari 'Aldo Moro', Bari, Italy, [2]University of Perugia, Perugia, Italy, [3]University of Helsinki, Helsinki, Finland, [4]IRCSS 'Casa sollievo Della Sofferenza', San Giovanni Rotondo (FG), Italy

**1271 Isolating ApoE- 4 Related White Matter Damage using Diffusion MR and Clinical Scores**
Sinchai Tsao[1], Darryl Hwang[2], Niharika Gajawelli*[2], Stephen Kriger[3], Natasha Lepore[4], Meng Law[5], Helena Chui[4], Michael Weiner[6]
[1]University of Southern California, Los Angeles, United States, [2]Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, [3]University of California San Francisco / San Francisco VA Medical Center, San Francisco, CA, [4]University of Southern California, Los Angeles, CA, [5]Keck School of Medicine, USC, Los Angeles, CA, [6]University of California at San Francisco, San Francisco, CA

**1272 Long allele of 5-HTTLPR predisposes Han Chinese to anxiety and reduced prefrontal-amygdala coupling**
Haixia Long[1], Bing Liu[1], Bing Hou[1], Chao Wang[2], Jin Li[1], Wen Qin[3], Dawei Wang[3], Yuan Zhou[4], Keith Kendrick[5], Chunshui Yu[3], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]University of Electronic Science and Technology of China, Chengdu, China, [3]Tianjin Medical University General Hospital, Tianjin, China, [4]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [5]University of Electronic Science and Technology of China, chengdu, China

**1273 Measurement and genetics of subcortical brain asymmetries**
Tulio Guadalupe[1], Alejandro Arias-Vásquez[2], Han Brunner[2], Simon Fisher[1], Clyde Francks[1], Hans van Bokhoven[2], Marcel Zwiers[3], Martine Hoogman[4], Peter Hagoort[1], Jan Buitelaar[4], Guillén Fernández[5], Barbara Franke[6]
[1]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [2]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [3]Donders Institute for Brain, Cognition and Behavior, Nijmegen, Netherlands, [4]University Medical Center, Nijmegen, Netherlands, [5]Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [6]Genetics, University Medical Center, Radboud University, Nijmegen, Netherlands

**1274 PBRM1 polymorphism and neuroanatomical structures**

Herve Lemaitre[1], Marie-Laure Paillère Martinot[2], Helene VULSER[2], Eric Artiges[2], Ruben MIRANDA[2], Tobias Banaschewski[3], Gareth Barker[4], Arun Bokde[5], Christian Büchel[6], Patricia Conrod[7], Herta Flor[3], Jürgen Gallinat[8], Hugh Garavan[9], Penny Gowland[10], Andreas Heinz[8], Bernd Ittermann[11], Eva Loth[7], Karl Mann[3], Frauke Nees[3], Tomas Paus[12], Zdenka Pausova[13], Marcella Rietschel[3], Trevor Robbins[14], Michael Smolka[15], Gunter Schumann[4], Jean-Luc Martinot[2], Consortium IMAGEN[16]
[1]INSERM - CEA - Faculté de Médecine Paris Sud 11, Orsay, France, [2]UMR INSERM-CEA U1000, ORSAY, France, [3]Central Institute of Mental Health, Mannheim, Germany, [4]King's College London, London, United Kingdom, [5]Trinity College Dublin, Dublin, Ireland, [6]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [7]King's College London, London, United Kingdom, [8]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [9]University of Vermont, Burlington, VT, [10]University of Nottingham, Nottingham, United Kingdom, [11]Physikalisch-Technische Bundesanstalt, Berlin, Germany, [12]Rotman Research Institute - Baycrest Centre, Toronto, ON, [13]The Hospital for Sick Children, Toronto, Canada, [14]University of Cambridge, Cambridge, United Kingdom, [15]Technische Universität Dresden, Dresden, Germany, [16]France

**1275 Randomized Brain Parcellations boost the Sensitivity of Neuroimaging-Genetic Studies**

Benoit Da Mota[1,2,3], Virgile Fritsch[1,2], Gaël Varoquaux[1,2], Vincent Frouin[2], Jean-Baptiste Poline[4,2,1], Bertrand Thirion[1,2]
[1]Parietal Team, INRIA Saclay - Île-de-France, Saclay, France, [2]CEA, Neurospin, Gif-sur-Yvette, France, [3]Microsoft Research - INRIA joint centre, Saclay, France, [4]Henry H. Wheeler Jr. Brain Imaging Center, University of California at Berkeley, Berkeley, CA

**1276 Sexual Dimorphisms of the Human Brain Associated with Estrogen Receptor α Polymorphisms**

Tuong-Vi Nguyen[1], Peter Schmidt[1], Jonathan Kippenhan[1], Beth Verchinski[1], Bhaskar Kolachana[1], Venkata Mattay[2], Daniel R Weinberger[2], Karen Berman[1]
[1]National Institutes of Mental Health, Bethesda, MD, [2]Lieber Institute for Brain Development, Baltimore, MD

## Genetics

### Genetic Modeling and Analysis Methods

**1277 Age related changes in heritability of white matter: Imaging results from the TWIN-E Study**

Kaushik Ram[1], Justine M Gatt[1], Leanne M Williams[1], Peter Schofield[2], Stuart M Grieve[1], Mayuresh S Korgaonkar[1]
[1]The Brain Dynamics Center, Sydney Medical School and Westmead Millennium Institute, Sydney, Australia, [2]Neuroscience Research Australia and School of Medical Sciences, University of New South, Sydney, Australia

**1278 Automated Labeling of White Matter Tracts in HARDI: Tract Heritability in Twins**

Yan Jin[1], Yonggang Shi[2], Liang Zhan[1], Greig de Zubicaray[3], Katie McMahon[3], Nicholas Martin[4], Margaret Wright[4], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, UCLA School of Medicine, Los Angeles, CA, United States, [2]Laboratory of Neuro Imaging, UCLA School of Medicine, Los Angeles, CA, United States, [3]Centre for Advanced Imaging, University of Queensland, Brisbane St. Lucia, Queensland, Australia, [4]Queensland Institute of Medical Research, Herston, Queensland, Australia

****1279 Estimating heritability of the fMRI response to faces using Whole-Genome Complex-Trait Analysis**

Erin Dickie[1], Amir Tahmasebi[2], Tobias Banaschewski[3], Gareth Barker[4], Arun Bokde[5], Christian Büchel[6], Patricia Conrod[7], Herta Flor[3], Andreas Heinz[8], Hugh Garavan[9], Penny Gowland[10], Bernd Ittermann[11], Claire Lawrence[10], Karl Mann[3], Jean-Luc Martinot[12], Frauke Nees[13], Eva Loth[7], Zdenka Pausova[14], Marcella Rietschel[3], Michael Smolka[15], Andreas Ströhle[16], Jürgen Gallinat[8], Roberto Toro[17], Gunter Schumann[4], Tomas Paus[18]
[1]Rotman Research Institute at Baycrest, Toronto, Canada, [2]Philips Research North America, Briarcliff Manor, United States, [3]Central Institute of Mental Health, Mannheim, Germany, [4]King's College London, London, United Kingdom, [5]Trinity College Dublin, Dublin, Ireland, [6]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [7]King's College London, Institute of Psychiatry, London, United Kingdom, [8]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [9]University of Vermont, Burlington, VT, [10]University of Nottingham, Nottingham, United Kingdom, [11]Physikalisch-Technische Bundesanstalt, Berlin, Germany, [12]UMR INSERM-CEA U1000, ORSAY, France, [13]CIMH, Department of Cognitive and Clinical Neuroscience, [14]The Hospital for Sick Children, Toronto, Canada, [15]Technische Universität Dresden, Dresden, Germany, [16]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, Berlin, Germany, [17]CNRS URA 2182 'Genes, synapses and cognition', Paris, France, [18]Rotman Research Institute - Baycrest Centre, Toronto, ON

**1280 Functional Mixed Effects Model for Imaging Genetic Data**

Ja-An Lin[1], Joseph Ibrahim[1], Wei Sun[1], Jiaping Wang[1], Hongtu Zhu[1]
[1]Department of Biostatistics, The University of North Carolina at Chapel Hill, Chapel Hill, NC

**1281 Genetic clustering reveals thalamic regions with common genetic determination in 640 twins**

Christopher Ching[1], Derrek Hibar[1], Katie McMahon[2], Greig de Zubicaray[3], Nicholas Martin[4], Margaret Wright[4], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States, [2]Centre for Advanced Imaging, University of Queensland, Brisbane, Australia, [3]Functional Magnetic Resonance Imaging Laboratory, School of Psychology University of Queensland, Brisbane, Australia, [4]Queensland Institute of Medical Research, Brisbane, Australia

***1282 Genetic control of resting state default mode network derived from task fMRI using a TWINs dataset., (O-T3)**

Mayuresh Korgaonkar[1], Kaushik Ram[1], Justine M Gatt[1], Leanne M Williams[1,2], Stuart M Grieve[1]
[1]Brain Dynamics Center, Sydney Medical School and Westmead Millennium Institute, University of Sydney, Sydney, Australia, [2]Department of Psychiatry and Behavioral Sciences, Standford University, Palo Alto, CA

**1283 Imaging Genetics of 5-HTTLPR genotype in the human amygdala**

Roland Boubela[1,2], Klaudius Kalcher[1,2], Wolfgang Huf[1,2], Ewald Moser[1,2]
[1]Centre for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria

***1284 Multi-Site Genetic Analysis of 1151 Diffusion MRI Scans from the ENIGMA-DTI Working Group, (O-T3)**

Neda Jahanshad[1], Peter Kochunov[2], Emma Sprooten[3], René Mandl[4], Thomas Nichols[5], Laura Almasy[6], John Blangero[7], Rachel Brouwer[8], Joanna Curran[9], Greig de Zubicaray[10], Ravi Duggirala[7], Peter Fox[11], Elliot Hong[12], Bennett Landman[13], Nicholas Martin[14], Katie McMahon[15], S Medland[16], Braxton Mitchell[17], Rene Olvera[18], Charles Peterson[19], John Starr[3], Jessika Sussmann[3], Arthur Toga[20], Joanna Wardlaw[21], Margaret Wright[14], Hilleke Hulshoff Pol[22], Mark Bastin[3], Andrew MCINTOSH[3], Ian Deary[3], Paul Thompson[23], David Glahn[24]
[1]UCLA, Los Angeles, United States, [2]Maryland Psychiatric Research Center, Baltimore, United States, [3]University of Edinburgh, Edinburgh, United Kingdom, [4]UMC Utrecht, Utrecht, Netherlands, [5]University of Warwick, Dept. of Statistics, Coventry, United Kingdom, [6]Texas Biomedical Research Institute, San Antonio, TX, [7]Texas Biomedical Foundation, San Antonio, United States, [8]University Medical Center Utrecht, Utrecht, Netherlands, [9]Texas Biomedical Foundation, San Antonio, TX, [10]University of Queensland, Brisbane, Australia, [11]UTHSCSA, San Antonio, TX, [12]Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD, [13]Vanderbuit University, Nashville, United States, [14]Queensland Institute of Medical Research, Herston, Queensland, [15]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, [16]Genetic Epidemiology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia, [17]University of Maryland School of Medicine, Baltimore, MD, [18]UTHSCSA, San Antonio, United States, [19]TX Biomedical Foundation, San Antonio, United States, [20]University of California - Los Angeles, Los Angeles, CA, [21]The University of Edinburgh, Edinburgh, United Kingdom, [22]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Department of Psychiatry, Utrecht, Netherlands, [23]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [24]Yale University, Hartford, United States

***1285 SOLAR-Eclipse computational tools for imaging genetic and mega-genetic analysis, (O-T3)**

Peter Kochunov[1], Neda Jahanshad[2], Charles Peterson[3], Bennett Landman[4], Thomas Nichols[5], Paul Thompson[6], Greig Zubicaray[7], Nicholas Martin[8], Margaret Wright[8], David Glahn[9], John Blangero[10]
[1]Maryland Psychiatric Research Center, Baltimore, United States, [2]University of California Los Angeles, Los Angeles, CA, [3]TX Biomedical Foundation, San Antonio, United States, [4]Vanderbuit University, Nashville, United States, [5]University of Warwick, Dept. of Statistics, Coventry, United Kingdom, [6]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [7]School of Psychology, The University of Queensland, Brisbane, Australia, [8]Genetic Epidemiology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia, [9]Yale University, Hartford, United States, [10]Texas Biomedical Foundation, San Antonio, United States

**1286 The heritability of brain white matter lesions: data from the Older Australian Twins Study (OATS)**
Seyed Amir Hosein Batouli[1], Perminder Sachdev[2], Wei Wen[3], Julian Trollor[4]
[1]University of New South Wales, [2]University of New South Wales, Sydney, NSW, [3]the University of Newcastle, Sydney, Australia, [4]Department of Developmental Disability Neuropsychiatry, School of Psychiatry, University of New Sout, Sydney, Australia

**1287 Tract-wise Genetic Correlation of MRI Intracranial Volume and DTI Anisotropy**
Neda Jahanshad[1], Derrek Hibar[2], Greig de Zubicaray[3], Katie McMahon[4], Nicholas Martin[5], Margaret Wright[5], Paul Thompson[6]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]University of Queensland, Brisbane St. Lucia, Queensland, [4]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, [5]Queensland Institute of Medical Research, Herston, Queensland, [6]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA

***1288 VGWAS revisited: A novel and powerful approach to voxelwise genome-wide association studies, (O-T3)**
Jonathan Rosenblatt[1], Yoav Benjamini[1], Marina Bogomolov[2], Jason Stein[3], Paul Thompson[3]
[1]Tel Aviv University, Tel Aviv, Israel, [2]Technion, Haifa, Israel, [3]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

***1289 Voxel-wise and Cluster-based Heritability Inferences of fMRI Data, (O-T3)**
Xu Chen[1], Gabriella Blokland[2,3], Thomas Nichols[1]
[1]Department of Statistics, University of Warwick, Coventry, United Kingdom, [2]Genetic Epidemiology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia, [3]Centre for Advanced Imaging, University of Queensland, Brisbane, Australia

## Genetics

### Neurogenetic Syndromes

**1290 A new approach for cerebello-thalamic motor network evaluation in asymptomatic premutation carriers**
Giovanni Battistella[1], Naghmeh Ghazaleh[1], Eleonora Fornari[1], Elena Najdenovska[2], Meritxell Bach Cuadra[3], Sébastien Jacquemont[4], Philippe Maeder[5]
[1]Department of Radiology, Centre Hospitalier Universitaire Vaudois (CHUV), and University of Lausanne, Lausanne, Switzerland, [2]Signal Processing Laboratory, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [3]Dept. of Radiology, CHUV Lausanne; Signal Processing Laboratory, École Polytechnique Fédérale, Lausanne, Switzerland, [4]Department of Genetics, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland, [5]Department of Radiology, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland

**1291 Effects of Supernumerary Chromosome Dosage on Corpus Callosum Morphometry**
Benjamin Wade[1], Shantanu Joshi[1], Arthur Toga[2], Paul Thompson[3], Jay Giedd[4]
[1]University of California, Los Angeles, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Department of Neurology, University of California School of Medicine, Los Angeles, United States, [3]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [4]National Institutes of Mental Health, Bethesda, MD

**1292 Opposite Effects on White Matter Microstructure of Deletions and Duplications at the 16p11.2 Locus**
Julia Owen[1], Polina Bukshpun[1], Nicholas Pojman[1], Elliott Sherr[1], Pratik Mukherjee[1]
[1]University of California, San Francisco, San Francisco, CA

**1293 Posterior Intraparietal Sulcus Functional Connectivity is Affected by Williams Syndrome Gene LIMK1**
Michael Gregory[1,2], Ena Xiao[2], Jonathan Kippenhan[1,2], Yunxia Tong[2], Bhaskar Kolachana[2], Daniel Weinberger[2], Venkata Mattay[2], Karen Berman[1,2]
[1]Section on Integrative Neuroimaging, National Institute of Mental Health, NIH, Bethesda, MD, [2]Clinical Brain Disorders Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, MD

**1294 Structural brain network topology in fragile X syndrome**
Jennifer Bruno[1], SM Hadi Hosseini[1], Manish Saggar[1], Eve-Marie Quintin[1], Mira Raman[1], Shelli Kesler[1], Allan Reiss[1]
[1]Stanford University, Stanford, CA

**1295 White matter microstructure in 22q11.2 deletion syndrome revealed by tensor distribution function**
Julio Villalon Reina[1], Liang Zhan[1], Talia Nir[1], Kenia Martínez[2], Kristian Eschenburg[1], Maria Jalbrzikowski[3], Carolyn Chow[4], Carrie Bearden[3], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, UCLA School of Medicine, Los Angeles, CA, [2]UAM, Madrid, Spain, [3]Department of Psychology, UCLA, Los Angeles, CA, [4]UCLA, Los Angeles, CA

## Higher Congnitive Functions

### Decision Making

**1296 A novel go-signal task induces preference change between food items and modulates vmPFC activity**
Tom Schonberg[1], Akram Bakkour[1], Ashleigh Hover[1], Lakshya Nagar[1], Jeanette Mumford[1], Russell Poldrack[1]
[1]University of Texas at Austin, Austin, TX, United States

***1297 A within-attribute comparison strategy in multi-attribute choice, (O-T1)**
Laurence Hunt[1,2], Raymond Dolan[1], Timothy Behrens[1,2]
[1]University College London, London, United Kingdom, [2]University of Oxford, Oxford, United Kingdom

**1298 Activity in reward-related brain areas tracks optimistic belief updates**
Bojana Kuzmanovic[1,2,3], Anneli Jefferson[1], Kai Vogeley[2,3]
[1]Research Center Juelich, INM-8, Juelich, Germany, [2]University Hospital of Cologne, Department of Psychiatry and Psychotherapy, Cologne, Germany, [3]Research Center Juelich, INM-3, Juelich, Germany

**1299 Aggression in Social Contests in Veterans with Post-Traumatic Stress Disorder**
Lusha Zhu[1,2], Cari Rosoff[1,2], Robert McNamara[1,2], Katherine McCurry[1,2,3], Pearl Chiu[1,2,3,4], BROOKS KING-CASAS[1,2,3,4,5]
[1]Research Service Line, Salem Veterans Affairs Medical Center, Salem, VA, [2]Virginia Tech Carilion Research Institute, Roanoke, VA, [3]Department of Psychology, Virginia Tech, Blacksburg, VA, [4]Department of Psychiatry, Virginia Tech Carilion School of Medicine, Roanoke, VA, [5]VT-WFU School of Biomedical Engineering and Sciences, Roanoke, VA

**1300 An efficient delay discounting protocol for functional imaging**
Robert Whelan[1], Katie Brennan[1], Nick Ortiz[2], Jessica Bramham[3], Redmond O'Connell[4], Aisling Parsons[3], Katriona O'Sullivan[5], Adam Stone[6], Hugh Garavan[1]
[1]University of Vermont, Burlington, VT, [2]University of Vermont, Burlington, Vermont, United States, [3]University College, Dublin, Ireland, [4]Trinity College Dublin, Dublin, Ireland, [5]Trinity College, Dublin, Ireland, [6]Trinity College Institute of Neuroscience (TCIN), Dublin, Ireland

**1301 An fMRI Study on Changing Price Relations Effects**
Fabian Simmank[1], Kai Fehse[2]
[1]Ludwig-Maximilians-University Munich, Munich, Germany, [2]Ludwig-Maximilians-University, Human Science Center, Munich, Germany

**1302 Automatic activation spread during heuristic inference from memory - an fMRI study**
Lilian Weber[1], Thorsten Pachur[2], Kerstin Jost[3], Patrick Khader[4,5]
[1]Philipps University Marburg, Marburg, Germany, [2]University of Basel, Basel, Switzerland, [3]RWTH Aachen University, Aachen, Germany, [4]Philipps-University Marburg, Marburg, Germany, [5]Ludwig-Maximilians-University Munich, Munich, Germany

**1303 Brain networks of decision making**
Prasanna Karunanayaka[1], Sarah Molitoris[1], Jian-Li Wang[1], Andrew Smith[2], Emily Grun[2], Quin Yang[1]
[1]Pennsylvania State College of Medicine, Hershey, PA, [2]The Hershey Company, Hershey, PA

**1304 Classification analysis predicts outcomes of subsequent risky choices**
Sarah Helfinstein[1], Eliza Congdon[2], Katherine Karlsgodt[3], Angelica Bato[3], Fred Sabb[2], Tyrone Cannon[4], Edythe London[2], Robert Bilder[2], Russell Poldrack[1]
[1]The University of Texas at Austin, Austin, United States, [2]University of California Los Angeles, Los Angeles, United States, [3]Zucker Hillside Hospital, Glen Oaks, United States, [4]Yale University, New Haven, United States

**1305 Classification of safe and erroneous surgery using visual gaze behaviour and cortical brain function**
Konrad Leibrandt[1], Piyamate Wasuntapichaikul[1], Jianyu Lin[1], Ahmet Cakir[1], Kunal Shetty[1], Kumuthan Sriskandarajah[1], Daniel Leff[1], Mikael Sodergren[1], Professor Ara Darzi[1], Professor Guang-Zhong Yang[1]
[1]Hamlyn Centre for Robotic Surgery, Imperial College London, London, United Kingdom

**1306 Cognitive strategies regulate fictive, but not experienced error signals in an investment task**
Xiaosi Gu[1,2], Terry Lohrenz[2], Ulrich Kirk[2], Read Montague[1,2,3]
[1]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, [2]Virginia Tech Carilion Research Institute, Roanoke, VA, [3]Department of Physics, Virginia Tech, Blacksburg, VA

**1307 Common and distinct neural mechanisms of perceptual and value-based choice in the human brain**
Marcus Grueschow[1], Rafael Polania[1], Todd Hare[1], Christian Ruff[2]
[1]Laboratory for Social and Neural Systems Research, Department of Economics, University of Zurich, Zurich, Switzerland, [2]University of Zurich, Zurich, Switzerland

**1308 Context strongly modulates the global and local networks for computing subjective value**
Kevin Hill[1], Terry Lohrenz[1], Read Montague[1]
[1]Virginia Tech Carillion Research Institute, Roanoke, VA, United States

**1309 Cue-induced changes of neural reward representations during delay discounting in problem gamblers**
Stephan Miedl[1], Jan Peters[2], Christian Büchel[3]
[1]Institute for Systems Neuroscience, University-Medical Center Hamburg-Eppendorf, Germany, [2]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, [3]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany

**1310 Dissociating the contributions of frontal and intraparietal cortices to risky decisions using TMS**
Christopher Coutlee[1], Tobias Egner[1], Scott Huettel[1], Anastasia Kiyonaga[1], Franziska Korb[1]
[1]Duke University, Durham, United States

**1311 Distinct Functional Connectivity Patterns Predict Feedback-Based Behavioral Adaptations**
David Smith[1], Kamila Sip[1], Mauricio Delgado[1]
[1]Rutgers University, Newark, NJ

**1312 Dual action of acetylcholine on volatility and uncertainty during associative learning**
Sandra Iglesias[1,2], Christoph Mathys[1,3], Kay H. Brodersen[1,2], Lars Kasper[1,2], Klaas Enno Stephan[1,2,3]
[1]Translational Neuromodeling Unit, Inst. for Biomedical Engineering, Univ. of Zurich & ETH Zurich, Zurich, Switzerland, [2]Laboratory for Social and Neural Systems Research (SNS), University of Zurich, Zurich, Switzerland, [3]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, London, United Kingdom

**1313 Early temporospatial dissociation and late common pathway of learning from real and fictive feedback**
Adrian Fischer[1], Markus Ullsperger[1]
[1]Otto von Guericke University Magdeburg, Magdeburg, Germany

**1314 Episodic memory encoding interacts with reward learning and prediction error signaling**
G. Elliott Wimmer[1,2], Erin Kendall Braun[2], Nathaniel Daw[3], Daphna Shohamy[2]
[1]University Medical Clinic Hamburg-Eppendorf, Hamburg, Germany, [2]Columbia University, New York, NY, [3]New York University, New York, NY

**1315 Hippocampus influences fronto-striatal functional interactions during context-based decision-making**
Katja Brodmann[1], Raffaela Walden[1], Esther Diekhof[2,1], Peter Dechent[3], Oliver Gruber[1]
[1]Centre for Translational Research in Systems Neuroscience and Psychiatry, Georg August University, Goettingen, Germany, [2]Biozentrum Grindel, Institut für Humanbiologie, University Hamburg, Hamburg, Germany, [3]MR-Research in Neurology and Psychiatry, Department of Cognitive Neurology, University Medicine, Goettingen, Germany

**1316 Increased Risk Aversion and Loss Aversion in Depressed Patients**
JaeHyung Kwon[1], Kwangyeol Baek[1], Jeong-Ho Chae[2], Po-Song Yang[3], Jung-a Min[2], Kyung-mook Choi[2], Ga-yeong Kim[2], Gook-in Jang[2], Hee-young Ahn[2], Sun-young Kim[2], Jaeseung Jeong[1]
[1]Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of, [2]Department of Psychiatry, College of Medicine, Catholic University of Korea, Seoul, Korea, Republic of, [3]Department of Diagnostic Radiology, Daejeon St. Mary's Hospital, Daejeon, Korea, Republic of

***1317 Informatic Parcellation of the Network Involved in the Neural Computation of Value, (O-T1)**
John Clithero[1], Antonio Rangel[1]
[1]California Institute of Technology, Pasadena, CA, United States

**1318 MEG study of social conformity**
Ivan Zubarev[1], Anna Shestakova[1,2], Alexey Ossadtchi[1], Vasily Klucharev[3]
[1]Saint-Petersburg State University, Saint-Petersburg, Russian Federation, [2]Moscow State University of Psychology and Education, Moscow, Russian Federation, [3]University of Basel, Basel, Switzerland

**1319 Microstructural Correlates of Gender-Related Differences in Loss Aversion**
Chiara Crespi[1], Nicola Canessa[1], Gabriel Baud-Bovy[1], Alessandra Dodich[1], Stefano Cappa[1]
[1]San Raffaele University, Milan, Italy

**1320 Neural Correlates of Landing Decisions Made by Civilian Pilots**
Maheen Adamson[1], Anna-Clare Milazzo[2], Keith Main[3], Michael Greicius[4], Joy Taylor[5], Jerome Yesavage[5]
[1]Stanford University/VA Palo Alto, Palo Alto, United States, [2]Stanford Univsersity, Palo Alto, CA, [3]Stanford University, Stanford, CA, [4]Functional Imaging in Neuropsychiatric Disorders Laboratory, Stanford University, Stanford, CA, [5]Stanford University/VA Palo Alto, Palo Alto, CA

**1321 Neural mechanism of the undermining effect in adolescents**
Savio Wong[1], Rebecca Wing-yi Cheng[1], Winnie Chiu-wing Chu[2], Kerry Kennedy[1], Defeng Wang[3], Sheung-Tak Cheng[1]
[1]The Hong Kong Institute of Education, Hong Kong, Hong Kong, [2]The Chinese University of Hong Kong, Hong Kong, Hong Kong, [3]Chinese University of Hong Kong, Hong Kong, Hong Kong

**1322 Organic or Conventional Brands - Food Perception Engages Distinct Neural Networks. An fMRI Study**
Kai Fehse[1], Fabian Simmank[1]
[1]Ludwig-Maximilians-University Munich, Munich, Germany

**1323 Parallel mechanism for reward-guided learning in humans**
Gerhard Jocham[1], Martin Kahn[2], Angela Ianni[3], Timothy Behrens[3]
[1]FMRIB Centre, Nuffield Dept of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom, [2]Graduate Programme in Neuroscience, University of Oxford, Oxford, United Kingdom, [3]University of Oxford, Oxford, United Kingdom

**1324 Preference for Go over NoGo learning relates to menstrual cycle phase and feedback-related activity**
Luise Reimers[1], Melanie Ratnayake[1], Marian Langbehn[1], Inga Hölge[1], Esther Diekhof[1]
[1]University of Hamburg, Institute of Human Biology, Neuroendocrinology Unit, Hamburg, Germany


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**1325 Recreational drug use is predicted by structural correlates of dysfunctional impulsivity**
Andries Van der Leij[1], K. Richard Ridderinkhof[2], H. Steven Scholte[1]
[1]Cognitive Science Center Amsterdam, University of Amsterdam, Amsterdam, Netherlands, [2]Dep. of Psychology, University of Amsterdam, Amsterdam, Netherlands

**1326 Self-control circuitry engagement decreases during overtraining to induce behavioral change**
Akram Bakkour[1], Tom Schonberg[1], Ashleigh Hover[1], Jeanette Mumford[1], Russell Poldrack[1]
[1]University of Texas at Austin, Austin, TX

**1327 Subcortical Dopamine Kinetics Impacts Relative Risk Aversion in Financial Decisions**
Ingo Vernaleken[1], Gerhard Gründer[1], Oliver Holtemöller[2], Siamak Mohammadkhani Shali[1], Felix Mottaghy[3], Susanne Prinz[1], Jörn Schmaljohann[1], Steven Tsantilis[1], Oliver Winz[1]
[1]RWTH Aachen University, Aachen, Germany, [2]Institute for Economic Research, Halle, Germany, [3]RWTH Aachen University, aachen, Germany

**1328 The behavioral and neural mechanisms underlying the tracking of expertise**
Erie Boorman[1], Ralph Adolphs[2], John O'Doherty[2], Antonio Rangel[3]
[1]University of Oxford, Oxford, United Kingdom, [2]California Institute of Technology, Pasadena, CA, [3]Caltech, Pasadena, CA

**1329 The Effects of Daily Stress on Adolescent Risk-taking and Impulse Control: An fMRI Study**
Adriana Galvan[1], Kristine McGlennen[2], Elica Rahdar[2]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA

**1330 The functional and structural neural basis of individual differences in loss aversion**
Nicola Canessa[1], Chiara Crespi[1], Matteo Motterlini[1], Gabriel Baud-Bovy[1], Gabriele Chierchia[1], Giuseppe Pantaleo[1], Marco Tettamanti[2], Stefano Cappa[1]
[1]San Raffaele university, Milan, Italy, [2]San Raffaele Scientific Institute, Milan, Italy

**1331 Withdrawn**

**1332 The Neural Pathways Responsible for One's Loss of Ability to Self-Control when Faced Attempting Food**
Qinghua He[1], Gui Xue[2], Lin Xiao[1], Gilly Koritzky[1], Antoine Bechara[1]
[1]University of Southern California, Los Angeles, CA, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing, China

**1333 The Neural Substrates of Reward and Punishment Learning in Major Depression**
Vanessa Brown[1,2,3], John Wang[1,2,3], Lusha Zhu[1,3], Robert McNamara[1,3], Cari Rosoff[1,3], Katherine McCurry[1,2,3], BROOKS KING-CASAS[1,2,3,4,5], Pearl Chiu[1,2,3,4]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Department of Psychology, Virginia Tech, Blacksburg, VA, [3]Research Service Line, Salem VA Medical Center, Salem, VA, [4]Department of Psychiatry, Virginia Tech Carilion School of Medicine, Roanoke, VA, [5]Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, Blacksburg, VA

**1334 The valuation system: A coordinate-based meta-analysis examining BOLD correlates of subjective value**
Joseph McGuire[1], Oscar Bartra[1], Joseph Kable[1]
[1]University of Pennsylvania, Philadelphia, United States

**1335 Trial-by-trial temporal dynamics of evidence accumulation in value-based decision-making**
Athina Tzovara[1], Ricardo Chavarriaga[2], Marzia De Lucia[1]
[1]Center for Biomedical Imaging, University Hospital of Lausanne, Lausanne, Switzerland, [2]Chair in Non-Invasive Brain-Computer Interface, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

## Higher Cognitive Functions

### Executive Function

****1336 A Fundamental Causal Mechanism in Cognitive Control within the Fronto-Cingulo-Parietal Network**
Weidong Cai[1], Tianwen Chen[2], Srikanth Ryali[1], Vinod Menon[3]
[1]Stanford University School of Medicine, Palo Alto, United States, [2]Stanford University, Palo Alto, United States, [3]Stanford school of medicine, Palo Alto, CA

**1337 A medial frontal-lateral prefrontal network for the awareness of voluntary action**
Noham Wolpe[1,2], James Moore[3], Charlotte Rae[2], Timothy Rittman[1], Ellemarije Altena[1], Patrick Haggard[4], james rowe[1,2]
[1]University of Cambridge, Cambridge, United Kingdom, [2]Medical Research Council Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [3]Goldsmiths University of London, London, United Kingdom, [4]University College London, London, United Kingdom

**1338 Age-related changes in functional network connectivity during performance of set-shifting task**
Suzanne Witt[1], Keith Hawkins[2], Vince Calhoun[3], Godfrey Pearlson[4], Michael Stevens[5,2]
[1]Olin Neuropsychiatry Research Center, Hartford, United States, [2]Department of Psychiatry, Yale University School of Medicine, New Haven, CT, [3]The Mind Research Network and UNM, ALBUQUERQUE, NM, [4]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT, [5]Olin Research Center IOL/Hartford Hospital, Hartford, CT

**1339 An ALE Meta-analysis of Functional Neuroimaging Studies of Deception**
Bingjiang Lv[1,2], Tatia MC Lee[3], Jia-Hong Gao[1,2,4]
[1]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [2]MRI Research Center, Academy for Advanced Interdisciplinary Studies, Peking University, Beijng, China, [3]Laboratory of Cognitive Affective Neuroscience, The University of Hong Kong, Hong Kong, China, [4]Brain Research Imaging Center and Department of Radiology, Chicago, IL

**1340 An integrative role of the posterior temporo-parietal junction in explicit goal-directed behavior**
Katharina Zwosta[1], Hannes Ruge[1], Uta Wolfensteller[1]
[1]Technische Universität Dresden, Dresden, Germany

**1341 Cognitive Control brain activity in schizophrenia: Activation Likelihood Estimation Meta-Analysis**
Ansam Elshaikh[1], Angus MacDonald[2]
[1]University of Minnesota, Minneapolis, United States, [2]University of Minnesota, Minneapolis, MN

**1342 Decoding errors from patterns of event-related potentials before response execution**
Stefan Bode[1], Jutta Stahl[2]
[1]Melbourne School of Psychological Sciences, The University of Melbourne, Melbourne, Australia, [2]University of Cologne, Cologne, Germany

**1343 Default mode netwerk laterality pattern is dependent on task content**
Martijn Jansma[1], Gert Kristo[1], Tamar van Raalten[2], Nick Ramsey[1]
[1]UMC Utrecht, Rudolf Magnus Institute of Neuroscience, Utrecht, Netherlands, [2]UMC Utrecht, Utrecht, Netherlands

**1344 Developmental Changes in Incentive Processing During Inhibitory Control: A Longitudinal fMRI Study**
David Paulsen[1], Charles Geier[2], Beatriz Luna[3]
[1]University of Pittsburgh, Pittsburgh, United States, [2]Pennsylvania State University, University Park, PA, [3]University of Pittsburgh, Pittsburgh, PA

**1345 Direct electrical stimulation of the right inferior frontal gyrus induces motor slowing**
Jan R Wessel[1], Christopher Conner[2], Adam Aron[3], Nitin Tandon[2]
[1]University of California, San Diego, La Jolla, United States, [2]UT Houston, Houston, United States, [3]UC San Diego, La Jolla, CA

**1346 Dissociating pre-SMA role in response inhibition and switching: a TMS study**
Ignacio Obeso[1,2], Noemi Robles[2], Elena Muñoz[2], Diego Redolar-Ripoll[2]
[1]Institute of cognitive neuroscience, Lyon, France, [2]IN3-Universitat Oberta de Catalunya (UOC), Barcelona, Spain

**1347 Distractor Related Modulation of Brain Functional Networks at Different Cognitive Loads**
Jiansong Xu[1], Marc Potenza[2]
[1]Yale University, [2]Yale University, New Haven, CT

**1348 Effect anticipation and the online control of actions — an fMRI study**
Steffi Frimmel[1], Uta Wolfensteller[1], Hannes Ruge[1]
[1]Technische Universität Dresden, Dresden, Germany

**1349 Empirical support for basal ganglia gating in working memory and selective attention**
Fiona McNab[1], Raymond Dolan[1]
[1]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom

**1350 Error processing in adolescents with ADHD inattentive and combined subtypes**
Catherine Fassbender[1,2,3], Ali Mazaheri[4], Sharon Coffey-Corina[3], J Faye Dixon[1], Tadeus Hartanto[1], Julie Schweitzer[1], George Mangun[3]
[1]MIND Institute, UC Davis Medical Center, Sacramento, CA, [2]Imaging Research Center, UC Davis Medical Center, Sacramento, CA, [3]Center for Mind and Brain, UC Davis, Davis, CA, [4]Academic Medical Center, Department of Psychiatry, University of Amsterdam, Utrecht, Netherlands


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**1351 Examining Conflict Monitoring and Executive Control Modules with Conflict Adaptation Effect**
Kai Wang[1], Weizhi Nan[1], Ya Zheng[1], Xun Liu[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China

***1352 Functional Maturation of the Executive System in Adolescence, (O-T1)**
Theodore Satterthwaite[1], Daniel Wolf[1], Kosha Ruparel[1], Guray Erus[1], Mark Elliott[1], Stathis Gennatas[1], Ryan Hopson[1], Chad Jackson[1], Karthik Prabhakaran[1], David Roalf[1], Alex Smith[1], Monica Calkins[1], Warren Bilker[1], James Loughead[1], Ragini Verma[1], Hakon Hakonarson[2], Christos Davatzikos[1], Ruben Gur[1], Raquel Gur[1]
[1]University of Pennsylvania, Phialdelphia, United States, [2]Children's Hospital of Philadelphia, Phialdelphia, United States

**1353 High Impulsivity in Binge Eating Disorder is related to increased Insula Activity in Go-nogo Task**
Maike Hege[1,2], Krunoslav Stingl[1], Stephanie Kullmann[1,3], Kathrin Schag[4], Katrin Giel[4], Stephan Zipfel[4], Hubert Preissl[1,3]
[1]Institute for Medical Psychology and Behavioural Neurosciences, University Tuebingen, Germany, [2]Graduate School of Neural and Behavioural Sciences, International Max Planck Research School, Tuebingen, Germany, [3]Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Center, Tuebingen, Germany, [4]Department of Psychosomatic Medicine and Psychotherapy, Medical University Hospital Tuebingen, Germany

**1354 How can we solve task with tempting information: preliminary result from an fMRI study in homosexual**
Feng Xue[1], Vita Droutman[2], Stephen Read[2], Gui Xue[3], Zhong-lin Lu[4], Antoine Bechara[3]
[1]Psychology Dept., University of Southern California, Los Angles, CA, [2]Psychology Dept., University of Southern California, Los Angeles, CA, [3]University of Southern California, Los Angeles, CA, [4]Centre for Cognitive Science, Ohio State University, Columbus, OH

**1355 Impulsivity Affects Frontal Activity in a Group of 235 Juvenile Offenders During a Go/No-Go Task**
Benjamin Shannon[1], Katherine Tremba[2], Gina Vincent[3], Jason Wan[4], Abraham Snyder[5], Marcus Raichle[4]
[1]Washington University, Saint Louis, United States, [2]MIND Research Network, Albuquerque, NM, [3]University of Massachusetts Medical School, Worcester, MA, [4]Washington University, Saint Louis, MO, [5]Department of Neurology, Washington University in St. Louis, St. Louis, MO

**1356 In response inhibition, the inferior frontal gyrus influences preSMA-to-STN connectivity**
Charlotte Rae[1], Laura Hughes[1,2], Chelan Weaver[1], Michael Anderson[1,3], james rowe[1,2,3]
[1]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [2]Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom, [3]Behavioural and Clinical Neuroscience Institute, University of Cambridge, Cambridge, United Kingdom

**1357 Individual differences in the Stop-signal task: Relating decision processes with inhibitory control**
Corey White[1], Eliza Congdon[2], Jeanette Mumford[3], Katherine Karlsgodt[4], Fred Sabb[2], Nelson Freimer[2], Edythe London[5], Tyrone Cannon[6], Robert Bilder[2], Angelica Bato[2], Russell Poldrack[7]
[1]University of Texas at Austin, Austin, United States, [2]University of California Los Angeles, Los Angeles, CA, [3]University of Texas at Austin, Austin, TX, [4]Zucker Hillside Hospital, Glen Oaks, United States, [5]University of California, Los Angeles, CA, [6]University of California, Los Angeles, LOS ANGELES, CA, [7]UT Austin, Austin, United States

**1358 Interacting brain networks during rest and task predicts Spatial Working Memory Performance**
Jia-Hou Poh[1,2], Yvonne Y. Chia[1,3], Zhaoping Hong[1,3], Reza Khosrowabadi[1,3], Shih-Jen Weng[4], Daniel Fung[4], Juan Zhou[1,3]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, Singapore, [2]NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore, [3]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, Singapore, Singapore, [4]Institute of Mental Health, Singapore, Singapore

**1359 Interregional Cortical Neural Synchrony Underlying Context Processing**
Seung Suk Kang[1], Vina Goghari[2], Jessica Jones[3], Edward Patzelt[3], Angus MacDonald[3], Scott Sponheim[4]
[1]University of Minnesota, Minneapolis, USA, [2]University of Calgary, Calgary, Canada, [3]University of Minnesota, Minneapolis, MN, [4]Minneapolis VA Health Care System and Dept. of Psychiatry, University of Minnesota, Minneapolis, MN

**1360 Lateralization of cerebrocerebellar networks during visual and verbal working memory tasks**
Tommy Hock Beng Ng[1], Kai-Ling Kao[1], Yee Cheun Chan[2], Effie Chew[3], Kai Hsiang Chuang[4], Annabel Chen[1]
[1]Division of Psychology, Nanyang Technological University, Singapore, Singapore, [2]National University Health System, Singapore, Singapore, [3]Division of Neurology, University Medicine Cluster, National University Health System, Singapore, Singapore, [4]Clinical Imaging Research Center, A*STAR, National University of Singapore, Singapore, Singapore

**1361 Lingering Effect of Error-related Emotions in rostral Anterior Cingulate Cortex**
Elena Patsenko[1], Patrik Vuilleumier[1]
[1]University of Geneva, Geneva, Switzerland

**1362 MEG Responses Over Right Inferior Frontal Gyrus During Stop-signal Task Performance: A Case Study**
Matthew Hughes[1], Patricia Michie[2], Susan Rossell[1], Neil Thomas[1], William Woods[1]
[1]Swinburne University of Technology, Melbourne, Australia, [2]University of Newcastle, Newcastle, Australia

**1363 "Missed it!" What does the MSIT truly measure?**
Jennifer Gess[1], Jennifer Fausett[1], Tonisha Kearney-Ramos[1], Clinton Kilts[1], George Andrew James[1]
[1]University of Arkansas for Medical Sciences, Little Rock, AR

**1364 Neural and behavioral correlates of the voluntary investment of mental effort**
Giuseppe Pagnoni[1], Omar Khachouf[1], Gang Chen[2]
[1]University of Modena and Reggio Emilia, Modena, Italy, [2]SSCC/DIRP/NIMH, National Institutes of Health, USA

**1365 Neural Correlates of Modulating Appetite During Alimentary Alliesthesia**
Jodi Gilman[1], Sang Lee[1], Paul Wighton[2], Myung Joo Lee[1], Byoung Woo Kim[1], Anne Blood[3], André Van der Kouwe[2], Hans Breiter[1,4]
[1]Laboratory of Neuroimaging and Genetics, Dept. of Psychiatry, Massachusetts General Hospital, Boston, MA, [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, [3]Mood and Motor Control Laboratory, Massachusetts General Hospital, Boston, MA, [4]Dept. of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, Chicago, IL

**1366 Performing two mental multiplications at the same time: Differential network timing in dual-tasking**
Augusto Buchweitz[1], Timothy Keller[2], Marcel Just[3]
[1]Brain Institute of Rio Grande do Sul; PUCRS - Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil, [2]Carnegie Mellon University, Pittsburgh, United States, [3]Carnegie Mellon University, Pittsburgh, PA

***1367 Post-error adjustments are modulated by acetylcholine, (O-T1)**
Claudia Danielmeier[1], Gerhard Jocham[2], Elena Allen[3], Özgür Onur[4], Tom Eichele[5], Markus Ullsperger[6]
[1]Radboud University, Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, Netherlands, [2]FMRIB Centre, Nuffield Dept of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom, [3]Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway, [4]University Hospital of Cologne, Cologne, Germany, [5]University of Bergen, Bergen, Norway, [6]Otto-von-Guericke University Magdeburg, Magdeburg, Germany

**1368 Predicting Planning Performance from Structural Connectivity between Dorsolateral Prefrontal Cortex**
Lena Koestering[1,2], Marco Reisert[3,2], Michael Katzev[4,2], Roza Umarova[1,2], Jürgen Hennig[3,2], Cornelius Weiller[1,2], Christoph Kaller[1,2]
[1]Dept. of Neurology, University Medical Center, University of Freiburg, Freiburg, Germany, [2]Freiburg Brain Imaging Center, University of Freiburg, Freiburg, Germany, [3]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany, [4]Dept. of Neurology, University Medical Center, Freiburg, Germany

**1369 Prefrontal Circuit for Appetite Control and Diminished Insular Responses in Obesity: An fMRI Study**
Jetro Tuulari[1], Henry Karlsson[1], Jussi Hirvonen[1], Pirjo Nuutila[1], Lauri Nummenmaa[2]
[1]Turku PET Centre, University of Turku and Turku University Hospital, Turku, Finland, [2]AMI Centre and Brain Research Unit, Low Temperature Laboratory, Aalto University School of Science, Espoo, Finland

**1370 Preparatory modulation in posterior stimulus-specific brain regions**
Yiquan Shi[1], Thomas Meindl[2], Andre´ Szameitat[3], Hermann Müller[3,4], Torsten Schubert[5,3]
[1]Institute of General Psychology, Dresden University of Technology, Dresden, Germany, [2]Institute of Clinical Radiology, Ludwig Maximilians University, Munich, Munich, Germany, [3]Department of Psychology, Ludwig-Maximilians-University, Munich, Munich, Germany, [4]Department of Psychological Sciences, Birkbeck College, University of London, London, United Kingdom, [5]Department of Psychology, Humboldt-University, Berlin, Germany

**1371 Quality of visual information influences fronto-basal ganglia networks during action control**
Sara Jahfari[1], Lourens Waldorp[2], K. Richard Ridderinkhof[3], H. Steven Scholte[2]
[1]Cognitive Science Center Amsterdam, University of Amsterdam, Netherlands, [2]University of Amsterdam, Amsterdam, Netherlands, [3]Dep. of Psychology, University of Amsterdam, Amsterdam, Netherlands

**1372 Response inhibition in high and low impulsive individuals**
Tilmann Wilbertz[1], Carsten Boehler[2], Lorenz Deserno[3,1], Annette Horstmann[1], Jane Neumann[1], Arno Villringer[1,4,5], Hans-Jochen Heinze[6,7], Schlagenhauf Florian[3,1]
[1]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Department of Experimental Psychology, Ghent University, Ghent, Belgium, [3]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [4]Clinic for Cognitive Neurology, University Hospital Leipzig, Leipzig, Germany, [5]Berlin School of Mind & Brain and Mind & Brain Institute, Humboldt-University Berlin, Berlin, Germany, [6]Department of Neurology, Otto-von-Guericke University, Magdeburg, Germany, Magdeburg, Germany, [7]Leibniz Institute for Neurobiology, Otto-von-Guericke University, Magdeburg, Germany

**1373 Task-dependent dynamic interactions of default mode, dorsal attention and frontal-parietal networks**
Amanda Elton[1], Wei Gao[2]
[1]University of North Carolina at Chapel Hill, Chapel Hill, United States, [2]University of North Carolina at Chapel Hill

**1374 The Adolescent Anterior Cingulate Cortex Exerts Top-Down Motor Control**
Avisa Asemi[1], Vaibhav Diwadkar[2], Steven Bressler[3]
[1]Florida Atlantic University, Boca Raton, FL, [2]Wayne State University School of Medicine, Detroit, United States, [3]Florida Atlantic University, Boca Raton, United States


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**1375 The developing brain: White matter evidence on sustained attention and working memory**
Riccardo Cafiero[1], Jens Brauer[1], Sonja Kotz[1], Angela Friederici[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1376 The Functional Neuroanatomy of Spontaneous Retrieval and Strategic Monitoring of Delayed Intentions**
Stefanie Beck[1], Hannes Ruge[1], Moritz Walser[1], Thomas Goschke[1]
[1]Technische Universität Dresden, Dresden, Germany

**1377 The influence of drug consumption on cognitive control development - A longitudinal fMRI study**
Eva Mennigen[1], Sarah Rodehacke[1], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany

**1378 The influence of sex steroids on the neuronal correlates of working memory in women with PolyCystic**
Remi Soleman[1], Baudewijntje Kreukels[2], Dick Veltman[3], Peggy Cohen-Kettenis[4], Peter Hompes[1], Madeleine Drent[1], Cornelis Lambalk[1]
[1]VU University Medical Center, Amsterdam, Netherlands, [2]Department of Medical Psychology, VU University Medical Centre, Amsterdam, Netherlands, [3]Department of Psychiatry, VU University Medical Center Amsterdam, Amsterdam, Netherlands, [4]VU university medical center, Amsterdam, Netherlands

**1379 The influence of subliminal threat cues on response inhibition**
Catherine Orr[1,2], Robert Hester[1], Karen Weierstall[3], Alexandra Potter[4], Sarah Jane Dube[2], Justin Kim[5], Paul Whalen[5], Hugh Garavan[2]
[1]University of Melbourne, Melbourne, Australia, [2]University of Vermont, Burlington, VT, [3]University of Vermont, Burlington , United States, [4]University of Vermont, [5]Dartmouth, Hanover, NH

**1380 The Influence of Visuospatial Attention on Unattended Auditory Cortical Responses**
Cullen Roth[1,2], David Bridwell[1], Sergei Plis[1], Cota Gupta[1], Eswar Damaraju[1], Siddharth Khullar[1], Vince Calhoun[1,2]
[1]The Mind Research Network, Albuquerque, NM, United States, [2]University of New Mexico, Albuquqerque, NM, United States

**1381 The neural basis of task-reward associations**
David Wisniewski[1,2,3], Carlo Reverberi[4], Ida Momennejad[1,2,3], Thorsten Kahnt[5], John-Dylan Haynes[1,2,3,6,7,8]
[1]Bernstein Center for Computational Neuroscience Berlin, Charité Universitätsmedizin Berlin, Germany, [2]Berlin Center for Advanced Neuroimaging, Charité Universitätsmedizin Berlin, Germany, [3]Berlin School of Mind and Brain, Humboldt-Universität zu Berlin, Germany, [4]Psychology Department, Università Milano - Bicocca, Italy, [5]Laboratory for Social and Neural Systems Research, Department of Economics, University of Zurich, Switzerland, [6]Cluster of Excellence NeuroCure, Charité Universitätsmedizin Berlin, Germany, [7]Department of Neurology, Charité - Universitätsmedizin Berlin, Germany, [8]Department of Psychology, Humboldt Universität zu Berlin, Germany

**1382 The Neural Correlates of Self-Regulatory Fatigue During Inhibitory Control of Eye Blinking**
Elia Abi-Jaoude[1], Barbara Segura[2], sang soo cho[3], Antonio Strafella[1], Paul Sandor[1]
[1]University of Toronto, Toronto, Canada, [2]University of Barcelona, Barcelona, Spain, [3]University of Toronto, Tornoto, Canada

**1383 The Role of Temporoparietal Junction in Top-down and Bottom-up Attentional Control**
Qiong Wu[1], Sisi Xi[1], Zuxiang Liu[2], Jin Fan[3,4,5,6], Yanhong Wu[1,7]
[1]Department of Psychology, Peking University, Beijing, China, [2]Beijing MRI Center for Brain Research, Beijing, China, [3]Department of Psychology, Queens College, City University of New York, Flushing, NY, [4]Department of Psychiatry, Mount Sinai School of Medicine, New York, United States, [5]Fishberg Department of Neuroscience, Mount Sinai School of Medicine, New York, United States, [6]Friedman Brain Institute, Mount Sinai School of Medicine, New York, United States, [7]Learning and Cognition Lab, Capital Normal University, Beijing, China

**1384 The Time Course of Cortical Networks Involved in Working Memory**
Phan Luu[1], Daniel Caggiano[2], Alexandra Geyer[2], Colin Davey[3], Jenn Lewis[3], Joseph Cohn[4], Don Tucker[3]
[1]Electrical Geodesics, Inc., Eugene, United States, [2]Aptima Inc., Woburn, MA, [3]Electrical Geodesics, Inc., Eugene, OR, [4]Office of Naval Research, Arlington, VA

**1385 Two Independent Theta Oscillations in Human Frontal Cortex**
Yijun Wang[1], Thomas Töllner[2], Tzyy-Ping Jung[1]
[1]University of California, San Diego, San Diego, United States, [2]Ludwig-Maximilians-University Munich, Munich, Germany

**1386 Viewing Emotional Images Alters Functional Connectivity in a Subsequent Response Inhibition Task**
Tara Patterson[1], Agatha Lenartowicz[1], Elliot Berkman[2], Russell Poldrack[3], Barbara Knowlton[1]
[1]UCLA, Los Angeles, CA, [2]University of Oregon, Eugene, OR, [3]UT Austin, Austin, TX

## Higher Cognitive Functions

### Imagery

**1387 Brain Activities during Motor Imagery: EEG Study**
Min Ji Lee[1], Won Hyuk Chang[1], Ji-Young Park[1], Ahee Lee[1], Yun-Hee Kim[1], Gyu-Hyun Kwon[2]
[1]Department of Physical and Rehabilitation Medicine, Stroke and Cerebrovascular Center, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [2]Center for Bionics, Korea Institute of Science and Technology, Seoul, Korea, Republic of

**1388 Decodability of short-term and long-term visual memory categories using fMRI**
Hyerin Lim[1], Misun Kim[1], Sun Mi Park[1], Jung Hwa Lee[2], Dae-Shik Kim[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of, [2]University of Sydney, Sydney, Australia

**1389 EEG alpha spectral power changes during figurative and verbal creative thinking**
Zhanna Nagornova[1], Natalia Shemyakina[1]
[1]IHB RAS, St. Petersburg, Russian Federation

**1390 Event-related changes in the gamma-band activity reflect individual performance in mental rotation**
Sunao Iwaki[1]
[1]Natl Inst Adv Indust Sci & Tech (AIST), Tsukuba, Japan

**1391 Increase in Alpha and Beta Top-Down Connectivity during Visual Imagery as compared to Perception**
Daniela Dentico[1], Bing Leung Cheung[2], Jui-Yang Chang[2], Jeffrey Guokas[1], Melanie Boly[1,3], Giulio Tononi[1], Barry Van Veen[2]
[1]Department of Psychiatry, University of Wisconsin - Madison, Madison, WI, [2]Department of Electrical and Computer Engineering, University of Wisconsin - Madison, Madison, WI, [3]Coma Science Group, Cyclotron Research Center and Neurology Department, University of Liège, Liège, Belgium

**1392 Multi-voxel fMRI patterns underlying auditory and visual imagery of movie clips**
Aline de Borst[1,2,3], Giancarlo Valente[4], Iiro Jääskeläinen[5], Pia Tikka[2,3]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory, School of Science, Aalto University, FI-00076, Espoo, Finland, [2]AMI Centre, AALTO NEUROIMAGING, Aalto University, FI-00076, Espoo, Finland, [3]Department of Film, Television and Scenography, School of ARTS, Aalto University, FI-00076, Helsinki, Finland, [4]Maastricht University, Department of Cognitive Neuroscience, Maastricht, Netherlands, [5]Brain and Mind Laboratory, BECS, Aalto University, School of science, Espoo, Finland

**1393 Neural Correlates of Motor Imagery: An Event-related fMRI Study**
Min Ji Lee[1], Won Hyuk Chang[1], Ji-Young Park[1], Ahee Lee[1], Yun-Hee Kim[1], Gyu-Hyun Kwon[2]
[1]Department of Physical and Rehabilitation Medicine, Stroke and Cerebrovascular Center, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [2]Center for Bionics, Korea Institute of Science and Technology, Seoul, Korea, Republic of

## Higher Cognitive Functions

### Music

****1394 A cross-sectional and longitudinal analysis of functional asymmetries mediated by musical training**
Robert Ellis[1], Bente Bruijn[2], Andrea Norton[1], Ellen Winner[3], Gottfried Schlaug[1]
[1]Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, [2]University of Amsterdam, Amsterdam, Netherlands, [3]Boston College, Chestnut Hill, MA

**1395 Altered encoding and retrieval of melodies in congenital amusia: Dynamic Causal Modeling of MEG data**
Philippe Albouy[1,2], Jérémie Mattout[1,2], Gaëtan Sanchez[1,2], Barbara Tillmann[1,2], Anne Caclin[1,2]
[1]CRNL, Lyon Neuroscience Research Center, INSERM U1028-CNRS UMR 5292, Lyon, France, [2]Université Lyon 1, Lyon, France

**1396 Changes in EEG complexity following music and French language training in children**
Sarah Carpentier[1], Ellen Bialystok[2], Sylvain Moreno[1], Anthony McIntosh[1]
[1]Rotman Research Institute at Baycrest, Toronto, Canada, [2]York University, Toronto, Canada

**1397 Connectivity difference in the left IFG between musicians and non-musicians in cadence processing**
Chan Hee Kim[1,2], June Sic Kim[2,3], Jeong-Sug Kyong[4], Chun Kee Chung[1,2]
[1]Interdisciplinary Program in Neuroscience, College of Natural Science, Seoul National University, Seoul, Korea, Republic of, [2]MEG Center, Department of Neurosurgery, Seoul National University Hospital, Seoul, Korea, Republic of, [3]Research Center for Sensory Organs, Seoul National University Medical Research Center, Seoul, Korea, Republic of, [4]Medical Research Center, College of Medicine, Seoul National University, Seoul, Korea, Republic of

**1398 Cortical thickness associated with musical training**
Erik Lopez[1], Arafat Angulo-Perkins[1], Fernando Barrios[1], Luis Concha[1,2]
[1]Universidad Nacional Autonoma de Mexico, Queretaro, Mexico, [2]International Laboratory for Brain, Music and Sound Research, Montreal, Canada



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**1399** **Enhanced Resting-state Functional Connectivity in Professional Drummers**
Shinya Fujii[1], Catherine Wan[1], Gottfried Schlaug[1]
[1]Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, United States

***1400** **Interactions between nucleus accumbens and sensory cortices predict music reward value, (O-T1)**
Valorie N. Salimpoor[1], Iris van den Bosch[2], Natasa Kovacevic[3], Alain Dagher[4], Randy McIntosh[3], Robert Zatorre[5]
[1]McGill University, Montreal, Canada, [2]Utrecht University, Utrecht, Netherlands, [3]Rotman Research Institute, Baycrest Centre, Toronto, Ontario, [4]McGill University, Montreal, Quebec, [5]Montreal Neurological Institute, Montreal, Quebec

**1401** **Neural responses to emotional music and vocalizations as revealed by MEG**
Ulysse Fortier-Gauthier[1], Simon Rigoulot[2,3,4], Stephan Grimault[1,5], Pierre Jolicoeur[1,2], Jorge Armony[2,3,4]
[1]CERNEC, Université de Montréal, Montreal, QC, Canada, [2]International Laboratory for Brain, Music and Sound Research (BRAMS), Montreal, QC, Canada, [3]Dept. of Psychiatry, McGill University, Montreal, QC, Canada, [4]Douglas Mental Health University Institute, Montreal, QC, Canada, [5]CNRS, Marseille, France

**1402** **Withdrawn**

**1403** **The neural substrates underlying explicit and implicit processing of emotions in music**
Brigitte Bogert[1], Elvira Brattico[2,3]
[1]University of Helsinki, Helsinki, Finland, [2]Brain & Mind Laboratory, Aalto University, Espoo, Finland, [3]Cogntive Brain Research Unit, University of Helsinki, Helsinki, Finland

**1404** **Tract-Based Spatial Statistics of Absolute Pitch: White Matter Differences in Association Fibers**
Eduardo Garza-Villarreal[1], Anders Dohn[2], Mads Hansen[2], Mallar Chakravarty[3], Jason Lerch[4], Peter Vuust[2]
[1]Universidad Autonoma de Nuevo Leon, Monterrey, NL, [2]University of Aarhus, Aarhus, Denmark, [3]Centre for Addiction and Mental Health, Toronto, Canada, [4]Hospital for Sick Children, Toronto, Ontario

## Higher Cognitive Functions

### Reasoning and Problem Solving

**1405** **A longitudinal fMRI study on relationship between Tetris game and performance on rotation tests**
Courtney Guo[1], Zhongyuan Bi[2], Kui Ying[2]
[1]International School of Beijing, Beijing, China, [2]Tsinghua University, Beijing, China

**1406** **Brain Activation Difference between Science-Gifted and General High School Student**
Jung-Ho Byeon[1], Yong-Ju Kwon[1], Il-Sun Lee[1]
[1]Korea National University of Education, Chungwon, Korea, Republic of

**1407** **Changes in white matter pathways predict behavioral improvement after intensive math tutoring**
Dietsje Jolles[1], Ritika Chokhani[1], Demian Wassermann[2], Jennifer Richardson[1], Caitlin Tenison[1], Kaustubh Supekar[1], Vinod Menon[1]
[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Brigham and Women's Hospital & Harvard Medical School, Boston, MA, United States

**1408** **Decoding Subjective "Yes/No" Thoughts using fMRI**
Zhi Yang[1], Javier Gonzalez-Castillo[2], Zirui Huang[1], Rui Dai[3], Georg Northoff[4], Peter Bandettini[5]
[1]Key Laboratory of Behavioral Sciences, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]National Institute of Mental Health, Bethesda, United States, [3]Institute of Life Science, South China Normal University, Guangzhou, China, [4]Institute of Mental Health Research, Ottawa, Canada, [5]National Institutes of Health, Bethesda, United States

**1409** **Detecting math problem solving strategies using retrospective self-reports, latency and fMRI data**
Caitlin Tenison[1], John Anderson[1]
[1]Carnegie Mellon University, Pittsburgh, United States

**1410** **EEG Spectra Are Correlated with Mathematical Problem-Solving Times**
Chun-Ling Lin[1,2], Melody Jung[3], Hsiao-Ching She[4], Chin-Teng Lin[1,2], Tzyy-Ping Jung[5,1]
[1]National Chiao-Tung University, Hsinchu, Taiwan, [2]University of California San Diego, La Jolla, CA, United States, [3]Canyon Crest Academy, San Diego, CA, United States, [4]Institute of Education, National Chiao-Tung University, Hsinchu, Taiwan, [5]University of California, San Diego, La Jolla, CA, United States

**1411** **ERD/ERS differences for remote (creative) versus trivial verbal findings**
Natalia Shemyakina[1], Zhanna Nagornova[1]
[1]IHB RAS, St. Petersburg, Russian Federation

**1412** **Neural mechanism for solving different types of insight problems: an fMRI study**
Yukako Sasaki[1], Takayuki Nozawa[1], Ryoichi Yokoyama[1,2], Sugiko Hanawa[1], Motoaki Sugiura[1], Ryuta Kawashima[1]
[1]IDAC, Tohoku University, Sendai, Japan, [2]Japan Society for the Promotion of Science, Tokyo, Japan

**1413** **Neuronal networks of human strategic reasoning: A preliminary functional MRI study**
Jong-Hwan Lee[1], Jun Zhang[2], Soo-Young Lee[3]
[1]Korea University, Seoul, Korea, Republic of, [2]Department of Psychology, University of Michigan, Ann Arbor, MI, [3]KAIST, Daejeon, Korea, Republic of

**1414** **The spatio-temporal brain dynamics of arithmetic problem-solving as revealed by combined EEG/MEG**
Nadja Tschentscher[1], Olaf Hauk[1]
[1]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom

**1415** **Training-induced Behavioral and Brain Plasticity in Children with Developmental Dyscalculia**
Teresa Iuculano[1], Miriam Rosenberg-Lee[1], Jennifer Richardson[1], Caitlin Tenison[1], Lynn Fuchs[2], Vinod Menon[1]
[1]Stanford University School of Medicine, Stanford, United States, [2]Vanderbilt University, Nashville, TN

## Higher Cognitive Functions

### Space, Time and Number Coding

**1416** **An fMRI Study of Encoding and Retrieval Differences between Egocentric and Allocentric Navigators**
James Thompson[1], Elisabeth Ploran[2], Wendy Baccus[1], Jacob Bevitt[1], Elizabeth Hussey[1], Raja Parasuraman[1]
[1]George Mason University, Fairfax, VA, [2]Hofstra University, Hempstead, NY

***1417** **Analogue coding of nonsymbolic numbers and digital coding of symbolic numbers in the human brain, (O-T1)**
Ian Lyons[1], Sian Beilock[2], Daniel Ansari[1]
[1]University of Western Ontario, London, Canada, [2]University of Chicago, Chicago, IL

**1418** **Frontoparietal white matter correlates with Children's arithmetical competence: a tractography study**
Leen Van Beek[1], Pol Ghesquière[1], Lieven Lagae[2], Bert De Smedt[1]
[1]Parenting and Special Education, University of Leuven, Leuven, Belgium, [2]Department of Development and Regeneration, University of Leuven, Leuven, Belgium

**1419** **How the human brain discriminates numerosities: A steady-state visual-evoked potentials study**
Sandrine Mejias[1], Christine Schiltz[1]
[1]University of Luxembourg, Walferdange, Luxembourg

**1420** **Linking ordinality and cardinality — fMRI evidence for a right hemispheric network**
Andre Knops[1], Klaus Willmes[2]
[1]Department of Psychology, Humboldt University, Berlin, Germany, [2]Section Neuropsychology, Neurological Clinic, University Hospital Aachen, Aachen, Germany

**1421** **Mulitivariate pattern analysis reveals notation-dependent number processing in the right IPS and PFC**
Lisa Sprute[1], Donna Coch[1]
[1]Dartmouth College, Hanover, NH

**1422** **Neural correlates of mathematics competence in children: a functional MRI study**
John Y.S. Cheng[1,2], Ho-Ling Liu[3], Chun-Yen Chang[2]
[1]Division of Neurosurgery, Department of Surgery, Taipei Medical University Hospital, TMU, Taipei , Taiwan, [2]Graduate Institue of Science Education, National Taiwan Normal University, Taipei, Taiwan, [3]Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan

**1423** **Neural correlates of number processing in Hindu-Arabic bi-numerates**
Atesh Koul[1], Vaibhav Tyagi[2], Nandini Singh[2]
[1]National Brain Research Centre, MAnesar, India, [2]National Brain Research Centre, Manesar, India

**1424** **The Use of Partial Least Squares and Graph Theory to Assess Variability in Spatial Memory Networks**
Aiden Arnold[1,2,3], Andrea Protzner[2,3], Signe Bray[2,3,4], Richard Levy[2], Giuseppe Iaria[1,2,3,4]
[1]NeuroLab, Calgary, Alberta, Canada, [2]University of Calgary, Calgary, Alberta, Canada, [3]Hotchkiss Brain Institute, Calgary, Alberta, Canada, [4]Alberta Children's Hospital Research Institute, Calgary, Alberta, Canada

**1425** **Time dilation may depend on a neural mechanism triggered by sustained activation in anterior insula**
Issidoros Sarinopoulos[1], Chelsea Reynolds[1], Jie Huang[1]
[1]Michigan State University, East Lansing, MI

## Informatics

### Atlases

**1426 A high-resolution cyto- and chemo-architecture-based digital atlas for entire adult human brain**
Song-Lin Ding[1], Josh Royall[1], Benjamin Facer[1], Susan Sunkin[1], Phil Lesnar[1], Bergen McMurray[1], Lydia Ng[1], Allan Jones[1], Michael Hawrylycz[1], Ed Lein[1], John Hohmann[1]
[1]Allen Institute for Brain Science, Seattle, United States

**1427 A Neurovascular Template for Quantitative MRI Assessment**
Fabricio Lima[1], Alexandre Franco[2], Brunno Campos[1], Li Min[1]
[1]UNICAMP, Campinas, Brazil, [2]Brain Institute, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil

**1428 AGES314 — Template and Tissue Probability Atlases for Ageing Studies**
Lars Forsberg[1,2], Sigurdur Sigurdsson[1], Lenore Launer[3], Vilmundur Gudnason[1,4], Alex Zijdenbos[5]
[1]Icelandic Heart Association, Reykjavik, Iceland, [2]Karolinska Institutet, Stockholm, Sweden, [3]National Institute on Aging, Bethesda, MD, [4]The University of Iceland, Reykjavik, Iceland, [5]Biospective Inc., Montreal, Quebec

**1429 Augmented Reality on the Talairach brain: Visual Connections for Independent Components**
Carlo Rondinoni[1], Carlos Salmon[2], Antonio Carlos dos Santos[3]
[1]University of Sao Paulo, Ribeirao Preto, Brazil, [2]Dept. of Physics and Mathematics, University of São Paulo at Ribeirão Preto - USP-RP, Ribeirão Preto, SP, [3]University of Sao Paulo, Ribeirao Preto, Sao Palo

**1430 Clusters in the human intraparietal sulcus as revealed by connectivity patterns**
Yaqin Zhang[1], Lingzhong Fan[2], Yu Zhang[2], Chunshui Yu[3], Tianzi Jiang[2]
[1]School of Life Science and Technology, University of Electronic Science and Technology of China, Chengdu, China, [2]National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, [3]Department of Radiology, Tianjin Medical University General Hospital, Tianjin, China

**1431 Flexible Atlas Framework in AFNI**
Daniel Glen[1], Ziad Saad[2], Robert Cox[1]
[1]National Institute of Mental Health, Bethesda, MD, [2]National Institutes of Health, Bethesda, MD

**1432 Hierarchical functional brain atlas derived from resting-state fMRI**
Vincent Perlbarg[1], Salma Mesmoudi[1], Basile Pinsard[1], Yves Burnod[1], Habib Benali[1]
[1]INSERM / UPMC Univ. Paris 06, UMR_S678, LIF, Paris, France

**1433 How normal is this brain? Development and testing of a new MR template for voxel-based brain ranking**
David Alexander Dickie[1], Dominic Job[1], David Rodriguez Gonzalez[1], Susan Shenkin[1], Joanna Wardlaw[1]
[1]The University of Edinburgh, SINAPSE Collaboration, Edinburgh, United Kingdom

**1434 Robust semi-automatic method to construct a high-resolution 3T MRI template of the spinal cord**
mohamed-mounir EL MENDILI[1,2], Raphaël Chen[1], Stéphane Sockeel[1], Mélanie Pélégrini-Issac[1], Stéphane Lehéricy[3,4], Pierre-François Pradat[1,5], Habib Benali[1]
[1]UMR-678, INSERM-UPMC, Groupe Hospitalier Pitié-Salpêtrière, Paris, France, [2]IHU-A-ICM, Groupe Hospitalier Pitié-Salpêtrière, Paris, France, [3]Centre de Neuroimagerie de Recherche - CENIR, Paris, France, [4]Inserm U975, CNRS UMR 7225, ICM - Institut du Cerveau et de la Moelle Epiniere, Paris, France, [5]Département des Maladies du Système Nerveux, AP-HP, Groupe Hospitalier Pitié- Salpêtrière, Paris, France

****1435 The Second Generation of Dense Individualized and Common Connectivity-based Cortical Landmarks**
Xi Jiang[1], Tuo Zhang[2,1], dajiang zhu[1], Kaiming Li[3], hanbo chen[1], Jinglei Lv[2,1], Changfeng Jin[4], Yixuan Yuan[2], Xintao Hu[2], Junwei Han[2], Dinggang Shen[5], L. Stephen Miller[6], Lingjiang Li[4], lei guo[2], tianming liu[1]
[1]Department of Computer Science and Bioimaging Research Center, The University of Georgia, Athens, United States, [2]Northwestern Polytechnical University, Xi'an, China, [3]Emory University, Atlanta, United States, [4]The Second Xiangya Hospital, Central South University, Changsha, China, [5]Department of Radiology and BRIC, UNC-Chapel Hill, Chapel Hill, NC, [6]Department of Psychology and Bioimaging Research Center, University of Georgia, Athens, United States

## Informatics

### Databasing and Data Sharing

**1436 Automated annotation of fMRI abstracts: Comparison of text mining methods**
Matthew Turner[1,2], Jiawei Xu[1], Thomas Jones[1], Chayan Chakrabarti[1], Angela Laird[3], George Luger[1], Jessica Turner[2]
[1]University of New Mexico, Albuquerque, NM, [2]Mind Research Network, Albuquerque, NM, [3]Florida International University, Miami, FL

**1437 Brainomics: A management system for exploring and merging heterogeneous brain mapping data**
Vincent Michel[1], Yannick Schwartz[2], Philippe Pinel[3], Olivier Cayrol[1], Antonio Moreno[3], Jean-Baptiste Poline[4], Vincent Frouin[4], Dimitri Papadopoulos Orfanos[5]
[1]Logilab, Paris, France, [2]CEA, France, [3]Unicog, INSERM-CEA, Neurospin, Gif-sur-Yvette, France, [4]CEA, Neurospin, Gif-sur-Yvette, France, [5]CEA, Neurospin, Paris, France

**1438 Child Psychiatry NeuroImaging Portal**
Pallavi Rane[1], Christian Haselgrove[2], Steven Hodge[2], David Kennedy[3]
[1]UMass Medical School, Worcester, United States, [2]UMass Medical School, Worcester, MA, [3]University of Massachusetts Medical School, Worcester, MA

**1439 Data-driven refinement of cognitive paradigm classifications: A face discrimination meta-analysis**
Zachery Hernandez[1], Kimberly Ray[2], Michael Riedel[3], Mickle Fox[2], Simon Eickhoff[4,5], Peter Fox[2], Jessica Turner[6], Angela Laird[1]
[1]Florida International University, Miami, FL, [2]UTHSCSA, San Antonio, TX, [3]Research Imaging Institute, UTHSCSA, San Antonio, TX, [4]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [5]Institute of Neuroscience and Medicine, Research Centre Julich, Julich, Germany, [6]MIND Research Network, Albuquerque, United States

**1440 DelD — A tool for De-identifying Neuroimaging Datasets**
Anlin Wang[1], Loretta Morris[2], Christian Prescott[1], Zijun Wang[1], Mark Eckert[2]
[1]Clemson University, Clemson, SC, [2]Medical University of South Carolina, Charleston, SC

**1441 Efficient Neuroinformatic Data Collection and Sharing in Multi-site Research Environments with COINS**
Dylan Wood[1], Margaret King[1], William Courtney[1], Runtang Wang[1], Drew Landis[1], Jessica Turner[1,2], Vince Calhoun[1,2]
[1]The Mind Research Network, Albuquerque, NM, [2]The University of New Mexico, Albuquerque, NM

**1442 ModelGUI: an open-sourced platform for the neuroscience community**
Andrew Reid[1], Alan Evans[2]
[1]Montreal Neurological Institute, Montreal, Canada, [2]Montreal Neurological Institute, Montreal, QC

**1443 Modeling ontology-based annotation processes for neuroimaging abstracts using a stochastic framework**
Thomas Jones[1], Chayan Chakrabarti[1], Jiawei Xu[1], Matthew Turner[1,2], George Luger[1], Angela Laird[3], Jessica Turner[2,1]
[1]University of New Mexico, Albuquerque, NM, [2]Mind Research Network, Albuquerque, NM, [3]Florida International University, Miami, FL

**1444 NeuroPub Visualizer for iPad and iPhone - Current Status and Development**
Lars Forsberg[1,2]
[1]Icelandic Heart Association, Reykjavik, Iceland, [2]Karolinska Institutet, Stockholm, Sweden

**1445 NeuroVault: a web database for sharing statistical parametric maps**
Krzysztof Gorgolewski[1], Satrajit Ghosh[2], Russell Poldrack[3], Jean-Baptiste Poline[4], Yannick Schwartz[4], Tal Yarkoni[5], Daniel Margulies[6]
[1]Max Planck Institute for Human Brain and Cognitive Sciences, Leipzig, Germany, [2]MIT, Cambridge, USA, [3]University of Texas, Austin, United States, [4]CEA, Neurospin, Gif-sur-Yvette, France, [5]University of Colorado, Boulder, United States, [6]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1446 Shared repository of multi-modal, multi-site brain image data from a clinical study of schizophrenia**
Randy Gollub[1,2], Jody Shoemaker[3], Margaret King[3], Tonya White[4], Stefan Ehrlich[5], Scott Sponheim[6], Vincent Clark[7,3], Jessica Turner[3], Vince Calhoun[8,3]
[1]Psychiatric Neuroimaging, Massachusetts General Hospital, Charlestown, MA, [2]A.A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, [3]Mind Research Network, Albuquerque, NM, [4]Department of Child and Adolescent Psychiatry/Psychology, Erasmus MC-Sophia, Rotterdam, Netherlands, [5]Dresden University of Technology, Department of Child and Adolescent Psychiatry, Dresden, Germany, [6]Minneapolis VA Health Care System and Dept. of Psychiatry, University of Minnesota, Minneapolis, MN, [7]The University of New Mexico, Department of Psychology, Clinical Neuroscience Center, Albuquerque, NM, [8]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM

**1447 Sharing Framework, Pipeline, and Module Extensions to Neuroinformatics Database (NiDB)**
Gregory Book[1], Michael Stevens[2], Godfrey Pearlson[2]
[1]Olin Neuropsychiatry Research Center, Hartford Hospital, Hartford, United States, [2]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT


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**1448 Synthesizing the task-based fMRI literature with the CARMA Matrix**
Salma Mesmoudi[1,2], Claudia Cioli[3], Mathieu Rodic[4], Arnaud Messe[3], Andrei Mogoutov[5], Jean Philippe Cointet[6], Habib Benali[7], David Rudrauf[3], Tal Yarkoni[8], Yves Burnod[9]
[1]INSERM/UPMC, Paris, France, [2]Paris1/MATRICE program, Paris, France, [3]Inserm/UMRS-678, Paris, France, [4]Sympactis, Paris, France, [5]UPMC Univ., Paris, France, [6]INRA, Paris, France, [7]INSERM, Paris, France, [8]University of Colorado, Boulder, CO, [9]INSERM / UPMC Univ. Paris 06, UMR_S678, LIF, Paris, France

**1449 Systematic analysis of task-based fMRI database: comparison between lexical and topographic maps**
Claudia Cioli[1], Jean Philippe Cointet[2], Andrei Mogoutov[3], Romain Reuillon[4], Arnaud Messe[5], Habib Benali[6], David Rudrauf[5], Tal Yarkoni[7], Yves Burnod[8], Salma Mesmoudi[9]
[1]UPMC/UMRS-678, Paris, France, [2]INRA, Paris, France, [3]UPMC Univ., Paris, France, [4]ISCPIF/UMR 7656, Paris, France, [5]Inserm/UMRS-678, Paris, France, [6]INSERM, Paris, France, [7]University of Colorado, Boulder, CO, [8]INSERM / UPMC Univ. Paris 06, UMR_S678, LIF, Paris, France, [9]INSERM/UPMC, Paris, France

**1450 The dual organization of functional integration in cortical networks**
Salma Mesmoudi[1], Vincent Perlbarg[2], David Rudrauf[3], Arnaud Messe[3], Basile Pinsard[2], Dominique Hasboun[4], Claudia Cioli[3], Guillaume Marrelec[5], Roberto Toro[6], Habib Benali[7], Yves Burnod[2]
[1]Paris1/MATRICE program, Paris, France, [2]INSERM / UPMC Univ. Paris 06, UMR_S678, LIF, Paris, France, [3]Inserm/UMRS-678, Paris, France, [4]Inserm/UMR-S 975, CNRS/UMR 7225, Univ. UPMC, Paris, France, [5]LIF, Inserm U 678, Paris, France, [6]CNRS URA 2182 'Genes, synapses and cognition', Paris, France, [7]INSERM, Paris, France

**1451 The Neuro Bureau Preprocessing Initiative: open sharing of preprocessed neuroimaging data and deriva**
Cameron Craddock[1,2], Yassine Benhajali[3], Carlton Chiu[4], Francois Chouinard[5], András Jakab[6], Qingyang Li[7], Alan Evans[8], Budhachandra Khundrakpam[9], John Lewis[10], Michael Milham[1,2], Chao-Gan YAN[11], Pierre Bellec[12]
[1]Center for the Developing Brain, Child Mind Institute, New York, NY, [2]Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, [3]Université de Montréal, Montreal, Canada, [4]Secton on Functional Imaging Methods, Laboratory of Brain and Cognition, NIMH, NIH, Bethesda, MD, [5]Centre de recherche de l'institut de gériatrie de Montréal, Montreal, Canada, [6]University of Debrecen Medical and Health Sciences Centre, Drebecen, Hungary, [7]Child Mind Institute, New York, NY, [8]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [9]Montreal Neurological Institute, Montreal, Canada, [10]Montreal Neurological Institute, Montreal, Quebec, [11]The Nathan Kline Institute for Psychiatric Research, New York, United States, [12]CRIUGM, Montreal , Canada

**1452 The Three NITRC's: Software, Data and Cloud Computing for Brain Science**
David Kennedy[1], Christian Haselgrove[2], Arnaud Delorme[3], David Boas[4], Randy Gollub[5], Li Shen[6]
[1]University of Massachusetts Medical Center, Worcester, United States, [2]UMass Medical School, Worcester, MA, [3]Swartz Center for Computational Neuroscience, La Jolla, CA, [4]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, Charlestown, MA, [5]Department of Psychiatry, Massachusetts General Hospital, Charlestown, MA, [6]Indiana University School of Medicine, Indianapolis, IN

**1453 There's an app for that: a semantic data provenance framework for reproducible brain imaging**
Nolan Nichols[1], Rich Stoner[2], David Keator[3], Jessica Turner[4], Karl Helmer[5], Naveen Ashish[3], Jason Steffener[6], Thomas Grabowski[7], Satrajit Ghosh[8]
[1]University of Washington, Seattle, WA, [2]University of California San Diego, San Diego, CA, [3]University of California Irvine, Irvine, CA, [4]MIND Research Network, Albuquerque, United States, [5]Massachusetts General Hospital, Charlestown, MA, [6]Columbia University, New York, United States, [7]University of Washington, Seattle, United States, [8]MIT, Cambridge, MA

## Informatics

### Pipelines

**1454 A framework for adaptive preprocessing optimization in functional MRI**
Nathan Churchill[1], Robyn Spring[2], Stephen Strother[2]
[1]University of Toronto, [2]Rotman Research Institute, Baycrest, Toronto, Canada

**1455 Analyzing fMRI and dMRI experiments with R**
Karsten Tabelow[1], Henning Voss[2], Joerg Polzehl[3]
[1]WIAS, Berlin, Germany, [2]Weill Cornell Medical College, New York, United States, [3]WIAS Berlin, Berlin, Germany

**1456 Cortical Surface : a BrainVisa toolbox for surface-based processing of neuroimaging data**
Olivier Coulon[1], Guillaume Auzias[2], Arnaud Le Troter[3], Grégory Operto[4], Denis Rivière[5]
[1]LSIS lab, UMR7296, Aix-Marseille University & CNRS, Marseille, France, [2]Institut de Neurosciences de la Timone UMR7289, Marseille, France, [3]CRMBM / CNRS, Marseille, France, [4]NeuroSpin / CEA, Gif-sur-Yvette, France, [5]NeuroSpin, CEA, Gif-sur-Yvette, France

**1457 DPARSF 2.2: an updated MATLAB toolbox for "pipeline" data analysis of resting-state fMRI**
Chao-Gan YAN[1], Zang Yufeng[2], Michael Milham[1,3]
[1]The Nathan Kline Institute for Psychiatric Research, New York, NY, [2]Center for Cognition and Brain Disorders, Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [3]Center for the Developing Brain, Child Mind Institute, New York, NY

**1458 Functional and Structural Connectivity of the Limbic System using automatic parcellation**
Luis Lacerda[1,2], Rafael Neto Henriques[1], Flavio Dell'Acqua[3], Rita Nunes[4], Alexandre Andrade[5], Rui Manaças[6], Pedro Gonçalves-Pereira[7], Hugo Ferreira[8]
[1]Institute of Biophysics and Biomedical Engineering, Lisbon, Portugal, [2]Natbrainlab, Institute of Psychiatry, King's College London, London, United Kingdom, [3]King's College London - Institute of Psychiatry, London, United Kingdom, [4]Institute of Biophysics and Biomedical Engineering, Faculty of Sciences of the University of Lisbon, Lisbon, Portugal, [5]IBEB-FCUL, Lisboa, Portugal, [6]Serviço de Radiologia do Hospital dos Lusíadas, Lisboa, Portugal, [7]Serviço de Radiologia, Hospital dos Lusíadas, Lisboa, Portugal, [8]Institute of Biophysics and Biomedical Engineering, Lisboa, Portugal

**1459 GPU based temporal ICA pipeline for fMRI data analysis**
Roland Boubela[1,2], Klaudius Kalcher[1,2], Wolfgang Huf[1,2], Georg Rath[3,2], Ewald Moser[1,2]
[1]Centre for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria, [3]Department of Radiodiagnostics and Nuclear Medicine, Medical University of Vienna, Vienna, Austria

**1460 Improving brain-behaviour relationships in fMRI via individual-subject preprocessing optimization**
Robyn Spring[1], Nathan Churchill[1,2], Stephen Strother[1,2]
[1]Rotman Research Institute, Baycrest, Toronto, Canada, [2]Department of Medical Biophysics, University of Toronto, Toronto, Canada

**1461 Optimization of rs-fMRI data for Enhanced SNR, Test-Retest Reliability and Group Discrimination**
William Shirer[1], Heidi Jiang[1], Michael Greicius[1]
[1]Stanford University School of Medicine, Stanford, CA

**1462 Straightforward Analysis of fMRI and EEG-fMRI (SAfE): A toolbox for SPM8**
Guilherme Beltramini[1], Roberto Covolan[1]
[1]Neurophysics Group, Gleb Wataghin Physics Institute, University of Campinas, Unicamp, Campinas, Brazil

**1463 The electrophysiological component of the Human Connectome Project: imaging fast dynamics**
Linda Larson-Prior[1], Robert Oostenveld[2], Stefania Della Penna[3], Giorgos Michalareas[4], Fred Prior[5], Abbas Babajani-Feremi[6], Jan-Mathijs Schoffelen[7], Laura Marzetti[8], Francesco de Pasquale[9], Francesco Di Pompeo[10], Jeffrey Stout[11,12], Mark Woolrich[13], Qian Luo[14], Richard Bucholz[15], Pascal Fries[4], Vittorio Pizzella[16], Gian Luca Romani[17], Maurizio Corbetta[18], Abraham Snyder[19]
[1]Dept Radiology and Neurology, Washington University School of Medicine, Saint Louis, United States, [2]Radboud University, Donders Institute, Nijmegen, Netherlands, [3]Department of Neuroscience and Imaging, "G. d'Annunzio" University Chieti-Pescara, Chieti, Italy, [4]Ernst Strünngmann Institute (ESI) in Cooperation with Max Planck Society, Frankfurt, Germany, [5]Washington University School of Medicine, Saint Louis, United States, [6]Washington University, St. Louis, St Louis, MO, [7]Radboud University Nijmegen, Nijmegen, Netherlands, [8]Department of Neuroscience and Imaging, University, Chieti, Italy, [9]Department of Neuroscience and Imaging and Institute for Advanced Biomedical Technologies, Universit, Chieti, Italy, [10]Institute for Advanced Biomedical Technologies, University G. D'Annunzio, Chieti, Italy, [11]Illinois Institute of Technology, Chicago, IL, [12]St. Louis University, St. Louis, MO, [13]University of Oxford, Oxford, United Kingdom, [14]Saint Louis University, Saint Louis, United States, [15]Saint Louis University, Saint Louis, MO, [16]Department of Neuroscience and Imaging, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy, [17]Department of Neuroscience and Imaging - G. D'Annunzio University of Chieti, Chieti, Chieti, [18]Dept. Neurology, Radiology, and Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO, [19]Department of Neurology, Washington University in St. Louis, St. Louis, MO

**1464 Towards A Fully Automatic Pipeline for Connectome Estimation from High-Resolution EM Data**
William Gray[1,2], Dean Kleissas[2], James Burck[2], Priya Manavalan[1], Joshua Vogelstein[1], Eric Perlman[3], Randal Burns[1], R. Jacob Vogelstein[1,2]
[1]Johns Hopkins University, Baltimore, MD, [2]Johns Hopkins University Applied Physics Laboratory, Laurel, MD, [3]Janelia Farm Research Campus, HHMI, Ashburn, VA


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**1465** **Towards Automated Analysis of Connectomes: The Configurable Pipeline for the Analysis of Connectomes**
Cameron Craddock[1], Sharad Sikka[2], Brian Cheung[1], Ranjit Khanuja[3], Satra Ghosh[4], Chao-Gan YAN[5], Qingyang Li[1], Daniel Lurie[1], Joshua Vogelstein[6], Randal Burns[7], Stan Colcombe[2], Maarten Mennes[8], Clare Kelly[9], Adriana Di Martino[10], F. Xavier Castellanos[11], Michael Milham[12,1]
[1]Child Mind Institute, New York, NY, [2]Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, [3]Center for the Developing Brain, Child Mind Institute, New York, NY, [4]MIT, cambridge, MA, [5]The Nathan Kline Institute for Psychiatric Research, New York, United States, [6]Johns Hopkins University, Baltimore, United States, [7]Johns Hopkins University, Baltimore, MD, [8]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [9]Phyllis Green and Randolph Cōwen Institute for Pediatric Neuroscience at the NYU Child Study Center, New York, NY, [10]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [11]Phyllis Green and Randolph Cōwen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [12]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, NY

**1466** **Validating software for (longitudinal) research in evolving computational environments**
Michael Hanke[1], Alex Waite[1], Yaroslav Halchenko[2], Satrajit Ghosh[3]
[1]Otto-von-Guericke Universität, Magdeburg, Germany, [2]Dartmouth College, Hanover, NH, [3]MIT, Cambridge, MA

## Language

### Language Acquisition

**1467** **Anatomical differences in Bilinguals of Spoken and Signed Languages**
Olumide Olulade[1], Nasheed Jamal[1], Eileen Napoliello[1], Daniel Koo[2], Charles Perfetti[3], Guinevere Eden[1]
[1]Center for the Study of Learning, Georgetown University Medical Center, Washington, DC, [2]Center for Visual Language and Visual Learning, Gallaudet University, Washinton, DC, [3]Pittsburgh Science of Learning Center, University of Pittsburgh, Pittsburgh, PA

**1468** **Development of neural systems for reading: activation and connectivity**
Matthew Scoggins[1], Ping Zou[1], Melissa Jones[1], Samina Taherbhoy[1], Carlos Parra[1], Heather Conklin[1], Amar Gajjar[1], Robert Ogg[1]
[1]St. Jude Children's Research Hospital, Memphis, United States

**1469** **Short-term effects of a vocabulary learning task on resting-state connectivity**
Elise Lesage[1], Emma Nailer[1], Chris Miall[1]
[1]University of Birmingham, Birmingham, United Kingdom

**1470** **Syllabic discrimination in "early premature cortex" A bimodal study using EEG-fNIRS**
Mahdi Mahmoudzadeh[1], Ghislaine Dehaene-Lambertz[2], Marc Fournier[1], Fabrice Wallois[1]
[1]INSERM U1105, University of picardie, Amiens, France, [2]Neurospin, Gif/Yvette, France

**1471** **The emergence of language competence: developmental attunement of Broca's area to complex syntax**
Anja Hubert[1], Lars Meyer[1], Angela Friederici[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

***1472** **The neural segregation of syntax from semantics in the developing brain, (O-T4)**
Michael Skeide[1], Jens Brauer[1], Angela Friederici[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1473** **Verbal cognitive style correlates regional gray matter volume in the right cerebellum in children**
Kohei Asano[1], Yasuyuki Taki[2], Hiroshi Hashizume[3], Benjamin Thyreau[2], Yuko Sassa[3], Michiko Asano[4], Hikaru Takeuchi[5], Ryuta Kawashima[3]
[1]Institute of Development, Aging and Cancer, Tohoku Universit, Sendai, Japan, [2]Tohoku Medical Megabank Organization, Tohoku University, Sendai, Japan, [3]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan, [4]Institute of Development, Aging and Cancer, Tohoku Universit,, Sendai, Japan, [5]IDAC Tohoku University, Sendai, Japan

## Language

### Language Comprehension and Semantics

**1474 Age-related differences in default network connectivity and language**
Michele Diaz[1], Deborah Burke[2], Micah Johnson[1], David Madden[1]
[1]Duke University, Durham, United States, [2]Pomona College, Pomona, United States

**1475 Building fictional worlds: Information updating during fairytale comprehension**
Jie Yang[1], Bethanie Gouldthorp[2], Manali Khadilkar[1], Jason Zevin[3], Steven Small[1]
[1]University of California Irvine, Irvine, United States, [2]School of Psychology, Murdoch University, Murdoch, Australia, [3]Sackler Institute for Developmental Psychobiology, Weill Medical College of Cornell University, New York, United States

**1476 Categorical Representation in Bilateral Occipitotemporal Cortex**
Sonya Mehta[1], Kittipat Kampa[2], Chun-An Chou[3], Rosalia Tungaraza[2], Wanpracha Chaovalitwongse[4], Thomas Grabowski[2]
[1]University of Washington, Settle, United States, [2]University of Washington, Seattle, United States, [3]Department of Systems Science and Industrial Engineering, SUNY Binghamton, Vestal, NY, [4]Integrated Brain Imaging Center at University of Washington Medical Center, Seattle, WA

**1477 Central and Peripheral Thematic Activation in fMRI**
Scott Burns[1], Amanda Miller[1], Nicole Davis[1], Sheryl Rimrodt[1], Laurie Cutting[1]
[1]Vanderbilt University, Nashville, TN

**1478 Withdrawn**

**1479 Cortical Mechanisms of L1 and L2 Sentence Processing in Japanese and English Sentence Comprehension**
Iku Kamei[1], Hideki Oshima[1], Atsushi Yuhaku[2], Takafumi Hamaoka[3]
[1]Shiga University, Otsu, Japan, [2]Ritsumeikan University, Kusatsu, Japan, [3]Rutsumeikan University, Kusatsu, Japan

**1480 Developmental Changes on the Semantic Integration during Chinese Sentence Comprehension**
Hsin-Chin Chen[1], Yi-Ting Tseng[1]
[1]National Chung Cheng University, Chia-Yi, Taiwan

**1481 Differences in Frontal and Temporal Contributions Predict Children's Comprehension of Iconic Gesture**
Anna Holt[1], Susan Goldin-Meadow[2], Anjali Raja Beharelle[3], Steven Small[4]
[1]UC Irvine, Irvine, United States, [2]University of Chicago, Chicago, IL, [3]Rotman Research Institute of Baycrest Centre, [4]University of California Irvine, Irvine, CA

**1482 Dual-echo fMRI can detect activations in inferior temporal lobe during speech comprehension**
Ajay Halai[1], Laura Parkes[2], Stephen Welbourne[3]
[1]Neuroscience and Aphasia Research Unit, School of Psychological Sciences, Univeristy of Manchester, Manchester, United Kingdom., [2]Centre for Imaging Sciences, Institute of Population Health, The University of Manchester, Manchester, United Kingdom., [3]Neuroscience and Aphasia Research Unit, School of Psychological Sciences, Univeristy of Manchester, Manchester, United Kingdom

**1483 Functional connectivity in Deaf signers and Hearing non-signers**
Evie Malaia[1], Ronnie Wilbur[2]
[1]University of Texas at Arlington, Arlington, United States, [2]Purdue University, West Lafayette, IN

**1484 Languages' transmogrifier: The role of motor cortex in processing observed iconic co-speech gestures**
Erica Seligson[1], Megan Calabrese[1], Jamie Azdair[1], Jeremy Skipper[1]
[1]Department of Psychology and Program in Neuroscience, Hamilton College, Clinton, NY, USA

**1485 Left fusiform activity patterns exhibit semantic similarity effects for words**
Rik Vandenberghe[1], Rose Bruffaerts[2], Ronald Peeters[3], simon de deyne[4], Gerrit Storms[4], Patrick Dupont[2]
[1]Neurology, University Hospitals Leuven, Leuven, Belgium, [2]Laboratory for Cognitive Neurology, Department of Neurosciences, KU Leuven, Leuven, Belgium, [3]Radiology, University Hospitals Leuven, leuven, Belgium, [4]Experimental Psychology, KU Leuven, Leuven, Belgium

**1486 MEG source-level oscillatory activity during sentence processing**
Jan-Mathijs Schoffelen[1,2], Annika Hulten[1,2], Nietzsche Lam[1,2], Julia Udden[1,2], Peter Hagoort[1,2]
[1]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Centre for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**1487 Mutlidimensional representation of concrete nouns in the left temporal cortex and left orbital gyrus**
Melissa Rundle[1], Andrew Connolly[1], Richard Granger[1]
[1]Dartmouth College, Hanover, USA

**1488 Neural Correlates of Processing Unaccusative Verbs**
Jennifer Mack[1], Aya Meltzer-Asscher[1], Elena Barbieri[1], Ellen Fitzmorris[1], Cynthia Thompson[1]
[1]Northwestern University, Evanston, United States


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**1489 Pre-trial high-gamma shows lateralized relationships with reaction time in the retrosplenial cortex**
Kurt Weaver[1], Tim Blakely[2], Lise Johnson[2], Devapratim Sarma[2], Jeremiah Wander[2], Thomas Grabowski[2], Jeffrey Ojemann[2]
[1]University of Washington, Seattle, United States, [2]University of Washington, Seattle, WA

**1490 Right Arcuate fasciculus volume predicts aphasia recovery**
Stephanie Forkel[1], Michel Thiebaut de Schotten[2], Flavio Dell'Acqua[3], Lalit Kalra[4], Declan Murphy[5], Steve Williams[1], Marco Catani[5]
[1]King's College London, London, United Kingdom, [2]Institute of Psychiatry, London, United Kingdom, [3]King's College London - Institute of Psychiatry, London, United Kingdom, [4]King's College Hospital, London, United Kingdom, [5]Institute of Psychiatry - King's College London, London, United Kingdom

**1491 Semantics depends on left inferior fronto-occipital fasciculus and anterior thalamic radiation**
Zaizhu Han[1], Yujun Ma[1], Gaolang Gong[1], Yong He[1], Alfonso Caramazza[2], Yanchao Bi[1]
[1]National Key Lab Laboratory of Cognitive neuroscience and learning, Beijing Normal University, Beijing, China, [2]Harvard University, Cambridge, United States

**1492 Shared regional responses to semantic attributes of pictures and words**
Julia Hocking[1], Kori Johnson[1], Ilvana Dzafic[1], Katie McMahon[1]
[1]The University of Queensland, Brisbane, Australia

**1493 Simile comprehension in Mandarin-English bilingual speakers: An fMRI study**
Yu-Chen Chang[1], Fan-pei Yang[1], JJ Wang[2], YY Wei[2]
[1]National Tsing Hua University, Hsinchu, Taiwan, [2]Chang-Gung Memorial Hospital, Linkou, Taiwan

**1494 Spatio-temporal dissociations of auditory and visual naming networks in human cortex**
Christopher Conner[1], Kiefer Forseth[2], Nitin Tandon[1]
[1]UT Houston, Houston, United States, [2]Rice University, Houston, TX

**1495 Spatiotemporal neural correlates of sentence processing using MEG**
Annika Hulten[1,2], Jan-Mathijs Schoffelen[1,2], Julia Udden[1,2], Nietzsche Lam[1,2], Peter Hagoort[1,2]
[1]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**1496 Speech acts in the brain: neurometabolic correlates of Naming and Requesting**
Natalia Egorova[1], Yury Shtyrov[1], Friedemann Pulvermüller[2]
[1]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [2]Brain Language Laboratory, Freie Universität, Berlin, Germany

**1497 The Neural Representation of Word Meaning Reflects Sensory-Motor Attributes**
Leonardo Fernandino[1], Jeffrey Binder[1], Rutvik Desai[1], Suzanne Pendl[1], Colin Humphries[1], Lisa Conant[1], Mark Seidenberg[2]
[1]Medical College of Wisconsin, Milwaukee, WI, [2]University of Wisconsin, Madison, WI

**1498 To what extent is cortical semantic representation independent from visual experience?**
Giacomo Handjaras[1], Emiliano Ricciardi[1], Alessandro Lenci[2], Andrea Leo[1], Luca Cecchetti[1], Mirco Cosottini[3], Giovanna Marotta[2], Pietro Pietrini[4]
[1]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, [2]Department of Philology, Literature, and Linguistics, University of Pisa, Pisa, Italy, [3]Neuroradiology Unit, University of Pisa, Pisa, Italy, [4]Clinical Psychology Branch, Pisa University Hospital, Pisa, Italy

**1499 Use of fMRI to Predict Post-Implant Language Outcomes in Children with Cochlear Implants**
Aniruddha Deshpande[1], Lirong Tan[2], Jason Lu[2], Mekibib Altaye[3], Scott Holland[4]
[1]University of Cincinnati, Cincinnati, United States, [2]Division of Biomedical Informatics, Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, [3]Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, [4]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**1500 Verb Semantics modulates neural activity in the left Lateral Temporal Cortex**
Domenica Romagno[1], Emiliano Ricciardi[2], Giuseppina Rota[3], Pietro Pietrini[2]
[1]Department of Philology, Literature and Linguistics, University of Pisa, Pisa, PI, Italy, [2]Clinical Psychology Branch and Laboratory of Clinical Biochemistry and Molecular Biology,Univ.Pisa, Pisa, PI, Italy, [3]Clinical Psychology Branch and Laboratory of Clinical Biochemistry and Molecular Biology,Univ. Pisa, Pisa, PI, Italy

## Language

### Reading and Writing

**1501 Altered resting EEG activity in children with dyslexia and central auditory processing disorders**
Monika Lewandowska[1], Rafal Milner[1], Malgorzata Ganc[1], Elżbieta Włodarczyk[1], Mateusz Rusiniak[1], Tomasz Wolak[1], Henryk Skarżyński[1]
[1]Institute of Physiology and Pathology of Hearing, Warsaw, Poland

**1502 Arcuate fasciculus connectivity is correlated with explicit phoneme-grapheme integration ability**
Margaret Gullick[1], Michelle Silver[2], James Booth[3]
[1]Northwestern University, Evanston, United States, [2]Northwestern University, Evanston, IL, [3]Department of Communication Sciences and Disorders, Northwestern University, Evanston, IL

**1503 Bayesian Models of Effective Connectivity Reveal Interaction of Consistency and Semantics in Reading**
Olga Boukrina[1], William Graves[2]
[1]Rutgers, The State University of New Jersey, Newark, United States, [2]Rutgers University, Newark, United States

**1504 Can We Train the Dyslexic's Brain to Read Like a Typical Reader? — an fMRI Study**
Tzipi Horowitz-Kraus[1], Nicole Cicchino[2], Jennifer Vannest[3], Yingying Wang[4], Benjamin Kay[5], Zvia Breznitz[6], Scott Holland[7]
[1]Cincinnati Children's Hopital Medical Center, Cincinnati, United States, [2]Cincinanti Children's Hospital Medical Center, Cincinnati, OH, [3]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [4]Cincinanti Children's Hospital Mediacal Center, Cincinnati, OH, [5]University of Cincinnati, Cincinnati, OH, [6]University of Haifa, Haifa, Israel, [7]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**1505 Children with Dyslexia/Dysgraphia and DTI parameter correlations with Single Word Reading**
Todd Richards[1], Thomas Grabowski[2], Katie Askren[2], Elliot Collins[2], Desiree Gulliford[2], Olivia Welker[2], Virginia Berninger[2]
[1]University of Washington, Seattle, United States, [2]University of Washington, Seattle, WA

**1506 Developing Specialization for Words, Nonwords, and Objects**
Anjali Raja Beharelle[1,2], Grigori Yourganov[1], Anthony McIntosh[1], Steven Small[3]
[1]Rotman Research Institute of Baycrest Centre, Toronto, ON, [2]University of Chicago, Chicago, IL, [3]University of California Irvine, Irvine, CA

**1507 Effect of difficulty on orthographic and phonological reading activation in developmental dyslexia**
Marita Partanen[1], Bruce Bjornson[1], Dorothy Edgell[2], Deborah Giaschi[1]
[1]University of British Columbia, Vancouver, Canada, [2]University of Victoria, Victoria, Canada

**1508 Fixation-related fMRI analysis in the domain of reading research**
Fabio Richlan[1], Benjamin Gagl[1], Stefan Hawelka[1], Mario Braun[1], Matthias Schurz[1], Martin Kronbichler[2], Florian Hutzler[1]
[1]Center for Neurocognitive Research, University of Salzburg, Salzburg, Austria, [2]Neuroscience Institute, Christian-Doppler-Clinic, Salzburg, Austria

**1509 Hemispheric lateralization of visual word and face activation in the fusiform gyri**
Jodie Davies-Thompson[1], Samantha Johnston[1], Yashar Tashakkor[1], Raika Pancaroglu[1], Jason Barton[1]
[1]University of British Columbia, Vancouver, Canada

**1510 Importance of Left Parietotemporal-Occipitotemporal White Matter Connection in Word Reading**
Kristen Smith[1], Alyssa Ailion[1], Tricia King[1]
[1]Georgia State University, Atlanta, United States

**1511 Increased responses to internal letter transpositions in left parietal cortex of Hebrew readers**
Nadav Stoppelman[1], Michal Cohen[1], Michal Ben-Shachar[1,2]
[1]Gonda Multidisciplinary Brain Research Center, Bar Ilan University, Israel, [2]English Department, Linguistic Division, Bar Ilan University, Israel

**1512 Withdrawn**

**1513 Neural specialization for letter writing : Evidence from coupled kinematics and fMRI recordings**
Marieke Longcamp[1], Aurélie Lagarrigue[2], Bruno Nazarian[3], Jean-Luc Anton[3], F-Xavier Alario[4], Jean-Luc Velay[5]
[1]Aix Marseille Université, Marseille, France, [2]2- LEAD - CNRS UMR 5022 - Université de Bourgogne,, Dijon, France, [3]Centre IRM Fonctionnelle - IFR 131, Marseille, France, [4]LPC UMR 7290 CNRS Université Aix Marseille, Marseille, France, [5]LNC UMR 7291 CNRS Université Aix Marseille, Marseille, France

**1514 Neuroanatomical precursors to dyslexia**
Kristi Clark[1], Turid Helland[2], Karsten Specht[2], Katherine Narr[1], Frank Manis[3], Arthur Toga[1], Kenneth Hugdahl[2]
[1]Laboratory of Neuro Imaging, Department of Neurology, Geffen School of Medicine at UCLA, Los Angeles, CA USA, [2]Bergen fMRI group, Department of Biological and Medical Psychology, University of Bergen, Bergen, Norway, [3]Department of Psychology, University of Southern California, Los Angeles, CA USA

**1515 Neuro-genetics of reading: Initial fMRI findings from readers with and without risk alleles**
William Graves[1], Megan Rozman[2], Ulrich Broeckel[2], David Osmon[3], Jeffrey Binder[4], Lisa Conant[2]
[1]Rutgers University, Newark, United States, [2]Medical College of Wisconsin, Milwaukee, WI, [3]University of Wisconsin, Milwaukee, WI, [4]Medical College of Wisconsin, Wauwatosa, WI


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**1516 Sub-Components of Early Reading Correlate with Cortical Thickness in Distinct Reading Network Areas**
Ola Ozernov-Palchik[1], Elizabeth Norton[2], Sara Beach[2], Nicolas Langer[3,1], Abigail Cyr[2], John Gabrieli[2], Nadine Gaab[1,3]
[1]Boston Children's Hospital, Boston, MA, [2]Massachusetts Institute of Technology, Cambridge, MA, [3]Harvard Medical School, Boston, MA

**1517 The (hidden) role of right hemisphere in reading comprehension: a DTI study**
Tzipi Horowitz-Kraus[1], Yingying Wang[2], Scott Holland[3]
[1]Cincinnati Children's Hopital Medical Center, Cincinnati, United States, [2]Cincinanti Children's Hospital Mediacal Center, Cincinnati, OH, [3]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

## Language

### Speech Perception

**1518 Communicative intentions conveyed by prosody activate theory of mind network**
Daniela Sammler[1,2], Pascal Belin[2,3,4]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom, [3]BRAMS, University of Montréal and McGill University, Montréal, Canada, [4]Institut des Neurosciences de La Timone, UMR 7289, CNRS & Aix-Marseille Université, Marseille, France

**1519 Dynamic modulation of beta activity by speech power during continuous listening**
Mathieu Bourguignon[1], Vincent Wens[1], MARTY Brice[1], Marc Op de beeck[1], Patrcik Van Bogaert[1], Serge Goldman[1], Xavier De Tiège[1]
[1]Laboratoire de Cartographie fonctionnelle du Cerveau, Université Libre de Bruxelles, Brussels, Belgium

**1520 Effective connectivity associated with auditory error detection in musicians with absolute pitch**
Amy Parkinson[1], Roozbeh Behroozmand[2], Nadine Ibrahim[3], Oleg Korzyukov[3], Charles Larson[3], Donald Robin[1]
[1]University of Texas Health Science Center, San Antonio, TX, [2]Human Brain Research Lab, The University of Iowa, Iowa City, IA, [3]Department of communication sciences and disorders, Northwestern University, Evanston, IL

**1521 How the brain extracts attended speech envelope in multi-talker background ?**
Marc Vander Ghinst[1], Mathieu Bourguignon[1], Marc Op de beeck[1], MARTY Brice[1], Vincent Wens[1], Hassid Sergio[2], Georges Choufani[2], Patrcik Van Bogaert[1], Serge Goldman[1], Xavier De Tiège[1]
[1]Laboratoire de Cartographie Fonctionnelle du Cerveau, ULB-Hopital Erasme, Bruxelles, Belgium, [2]Service d'ORL, ULB-Hopital Erasme, Bruxelles, Belgium

**1522 Withdrawn**

**1523 Native and Foreign Language Discrimination in Adults: an Optical Imaging Study**
Emanuele Perugia[1], Mahdi Mahmoudzadeh[1], Phetsamone Vannasing[2], Maryse Lassonde[3], Fabrice Wallois[1]
[1]GRAMFC Inserm U 1105, Université de Picardie Jules Verne, Amiens, France, [2]CHU Sainte-Justine, Montreal, Canada, [3]Université de Montréal, Montréal, Canada

**1524 Natural variations in speech intelligibility: An fMRI study**
Han-Gyol Yi[1], Rajka Smiljanic[1], Bharath Chandresekaran[1]
[1]The University of Texas at Austin, Austin, TX

**1525 Neural connectivity of voice control using structural equation modeling**
Sabina Flagmeier[1], Kimberly Ray[2], Amy Parkinson[3], Angela Laird[4], Charles Larson[5], Donald Robin[6]
[1]UT Health Science Center San Antonio, [2]UTHSCSA, [3]University of Texas Health Science Center, San Antonio, United States, [4]Florida International University, Miami, FL, [5]Department of communication sciences and disorders, Northwestern University, Evanston, IL, [6]University of Texas Health Science Center at San Antonio, San Antonio, United States

**1526 Neurobiological development of audiovisual speech perception: An fMRI study in 5- to 8-year olds**
Anthony Dick[1], Catherine Bradley[1], Iris Broce[1], Byron Bernal[2], Anna De Ferria[1], Gonzalo Iribarne[1], Jessica Mora[1], Nolan Altman[2]
[1]Florida International University, Miami, United States, [2]Miami Children's Hospital, Miami, United States

**1527 Neuronal networks strongly associated with speech hearing: functional MRI study**
HoJung Kang[1], Jong-Hwan Lee[1]
[1]Korea University, Seoul, Korea, Republic of

**1528 Of symmetries and asymmetries: a functional imaging perspective on a behavioral laterality task**
Rene Westerhausen[1], Kristiina Kompus[1], Kenneth Hugdahl[2]
[1]University of Bergen, Bergen, Norway, [2]Dept Biological and Medical Psychology,University of Bergen, Norway, Bergen, Norway

**1529 Organization of phonetic feature representation in the human superior temporal gyrus**
Connie Cheung[1], Nima Mesgarani[2], Emily Cibelli[3], Keith Johnson[3], Edward Chang[2]
[1]UC San Francisco, San Francisco, United States, [2]UC San Francisco, San Francisco, CA, [3]UC Berkeley, Berkeley, CA

**1530 Perceptual learning in speech processing and the role of visual information**
MICHAEL GROSVALD[1], HOWARD NUSBAUM[2], Steven Small[3]
[1]UNIV OF CALIFORNIA IRVINE, IRVINE, United States, [2]Univ of Chicago, Chicago, IL, [3]University of California Irvine, Irvine, CA

**1531 Speech dominance is a better predictor of dichotic listening results than handedness**
Lise Van der Haegen[1], Rene Westerhausen[2], Kenneth Hugdahl[2], Marc Brysbaert[1]
[1]Ghent University, Ghent, Belgium, [2]University of Bergen, Bergen, Norway

## Language

### Speech Production

**1532 Anatomical Correlates of Non-native Speech Sound Production in School Children**
Hiroshi Hashizume[1], Yasuyuki Taki[1,2,3], Benjamin Thyreau[1], Yuko Sassa[1], Michiko Asano[1], Kohei Asano[1], Hikaru Takeuchi[1], Hyeonjeong Jeong[4], Motoaki Sugiura[4,5], Ryuta Kawashima[1,4,6]
[1]Division of Developmental Cognitive Neuroscience, IDAC, Tohoku University, Sendai, Japan, [2]Division of Medical Image Analysis, Department of Community Medical Supports, Tohoku Medical Megabank Organization, Tohoku University, Sendai, Japan, [3]Department of Radiology and Nuclear Medicine, IDAC, Tohoku University, Sendai, Japan, [4]Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan, [5]International Research Institute of Disaster Science, Tohoku University, Sendai, Japan, [6]Smart Ageing International Research Center, IDAC, Tohoku University, Sendai, Japan

**1533 Complementary hemispheric specialization for language production and visuospatial attention**
Lise Van der Haegen[1], Qing Cai[1,2,3], Marc Brysbaert[1]
[1]Ghent University, Ghent, Belgium, [2]East China Normal University, Shanghai, China, [3]INSERM Cognitive Neuroimaging Unit, Gif sur Yvette, France

**1534 Correlation between clinical presentation and lesion sites: A VLSM-study in patients with aphasia**
Ilona Henseler[1,2], Frank Regenbrecht[2], Hellmuth Obrig[1,2]
[1]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Clinic for Cognitive Neurology, Leipzig, Germany

**1535 Functional Imaging of Speech Production and Fine Motor Skill in Children with Speech Sound Disorders**
Erin Redle[1], Jennifer Vannest[1], Thomas Maloney[2], Barbara Lewis[3], Lawrence Schriberg[4], Scott Holland[5], Jean Tkach[1]
[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [2]Cincinnati Children's Hospital Medical Center, Cincinnati, United States, [3]Case Western Reserve University, Cleveland, OH, [4]University of Wisconsin, Madison, WI, [5]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**1536 Internal Predictions and Auditory Goals for Speech**
Caroline Niziolek[1], Srikantan Nagarajan[1], John Houde[1]
[1]University of California, San Francisco, San Francisco, CA

**1537 Large N Pooled Analyses of Neuroimaging Data on Speech Production**
Jason Tourville[1], Alfonso Nieto-Castanon[1], Frank Guenther[1]
[1]Boston University, Boston, MA

**1538 Long-Range Connectivity Modulations in the Language Network when Preparing for Speech Production**
Mia Liljeström[1], Jan Kujala[1], Claire Stevenson[1], Riitta Salmelin[1]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory, Aalto University, Espoo, Finland

**1539 Neural correlates of delayed auditory feedback during speech production**
Lisa Bruckert[1], David Ward[2], Kate Watkins[1], Peter Howell[3]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Reading, Reading, United Kingdom, [3]UCL, London, United Kingdom

**1540 Reduced fractional anisotropy in the forceps minor predicts increased dysfluency in stuttering**
Oren Civier[1], Vered Kronfeld-Duenias[1], Ofer Amir[2], Ruth Ezrati[2], Michal Ben-Shachar[1,3]
[1]The Gonda Multidisciplinary Brain Research Center, Bar Ilan University, Ramat Gan, Israel, [2]The Department of Communication Disorders, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, [3]The English Department, Linguistics Division, Bar Ilan University, Ramat Gan, Israel

**1541 Self-reported accuracy of internal naming predicts brain activity in a person with aphasia**
William Hayward[1], Peter Turkeltaub[2]
[1]Georgetown University School of Medicine, Washington DC, United States, [2]Department of Neurology, Georgetown University, Washington, DC

***1542 Sensory-Motor Integration in Speech Production, a Voxel-Based Lesion-Symptom Mapping Study, (O-T4)**
Tasha Poppa[1], Corianne Rogalsky[1], Kristen Raphel[2], Steve Anderson[3], Hanna Damasio[4,2], Tracy Love[5,6], Gregory Hickok[1]
[1]University of California, Irvine, CA, [2]University of Southern California, Los Angeles, CA, [3]University of Iowa, Iowa City, IA, [4]Dornsife Cognitive Neuroscience Imaging Center and Brain and Creativity Institute, USC, Los Angeles, CA, [5]San Diego State University, San Diego, CA, [6]University of California, San Diego, CA

**1543 Speech motor control in aging: effects of sequencing and articulatory complexity**
Pascale Tremblay[1], Mylène Bilodeau-Mercure[2], Camille Routhier[2], Marc Sato[3]
[1]Institut Universitaire en Santé Mentale de Québec, Université Laval, Québec, Canada, [2]Université Laval, Québec, Canada, [3]Université de Grenoble & CNRS, Grenoble, France

**1544** **The effects of age and handedness on semantic decision lateralization in a large sample of adults**
Jerzy Szaflarski[1], Jane Allendorfer[1], Jennifer Vannest[2], Scott Holland[3], Christi Banks[4], Kimberly Hart[4], Christopher Lindsell[4]
[1]University of Alabama at Birmingham, Birmingham, AL, [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [3]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States, [4]University of Cincinnati, Cincinnati, OH

**1545** **Therapy-induced plasticity in three patients with chronic nonfluent aphasia and apraxia of speech**
Monika Jungblut[1], Walter Huber[2], Christiane Mais[3], Ralph Schnitker[4]
[1]Interdisciplinary Institute for Music- and Speech-Therapy, Duisburg, Germany, [2]Department of Cognitive Neurology, RWTH Aachen, Aachen, Germany, [3]Aphasia Center North Rhine Westphalia, Essen, FRG, Essen, Germany, [4]Interdisciplinary Centre for Clinical Research - Neurofunctional Imaging Lab, University Hospital, Aachen, Germany

**1546** **The representation of syllabic frame structures and phonological content in the brain**
Jennifer Segawa[1], Jason Tourville[2], Deryk Beal[3], Frank Guenther[2]
[1]Boston University, Boston, MA, [2]Boston University, Boston, MA, United States, [3]University of Alberta, Edmonton, Canada

## Learning and Memory

### Long-Term Memory (Episodic and Semantic)

**1547** **A network of representational hubs during associative memory recall**
Sander Bosch[1], Alexander Backus[1], Matthias Ekman[1], Alejandro Vicente-Grabovetsky[1], Christian Doeller[1]
[1]Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands

**1548** **A novel behavioral design to investigate the neural bases of olfactory episodic memory in humans**
Saive Anne-Lise[1], Ravel Nadine[1], Thévenet Marc[1], Garcia Samuel[1], Royet Jean-Pierre[1], Plailly Jane[1]
[1]Neuroscience Research Center, Lyon, France

**1549** **Classifying Memory Traces in Judgments of Learning Using Support Vector Machines**
Luciana Falbo[1], Anique Bruin[1], Tamara Gog[2], Alexandros Goulas[1], Peter Stiers[1]
[1]Maastricht University, Maastricht, Netherlands, [2]Erasmus University Rotterdam, Rotterdam, Netherlands

**1550** **Congruency Subsequent Memory Effect in Normal Aging from the Perspective of Brain Oscillations**
Maite Crespo-Garcia[1], Jose Luis Cantero[1], Mercedes Atienza[1]
[1]University Pablo de Olavide, Seville, Spain

**1551** **Cross-frequency power network based on persistent homology when blocking irrelevant memories**
Jarang Hahm[1], Hyojin Park[1], Hyekyoung Lee[1], Hyejin Kang[1], Dong Soo Lee[1]
[1]Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul, Korea, Republic of

**1552** **Hippocampal contribution to learning and recall of freshly encoded material**
Lea Himmer[1], Monika Schönauer[1], Dominik Heib[2], Manuel Schabus[2], Steffen Gais[1]
[1]LMU Munich, Munich, Germany, [2]University of Salzburg, Salzburg, Austria

**1553** **Hippocampal contributions to anterograde and retrograde memory revisited**
Clive Rosenthal[1], Penny Gowland[2], Thomas Miller[1], Anne Aimola Davies[1], Michael Johnson[3], Sarosh Irani[1], Christopher Butler[1], Angela Vincent[1], Christopher Kennard[1]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom, [3]Imperial College London, London, United Kingdom

****1554** **Hippocampal-neocortical reorganization and maturation of fact retrieval: a longitudinal fMRI study**
Shaozheng Qin[1], Arron Metcalfe[1], Anna Swigart[1], Tianwen Chen[1], Vinod Menon[1]
[1]Stanford University, Palo Alto, CA

**1555** **Insights in hippocampal representations of visual scenes**
David Berron[1], Hartmut Schütze[1], Emrah Duzel[1,2,3]
[1]Otto-von-Guericke University Magdeburg, Institute of Cognitive Neurology and Dementia Research, Magdeburg, Germany, [2]Institute of Cognitive Neuroscience, University College London, London, United Kingdom, [3]German Center for Neurodegenerative Diseases, Magdeburg, Germany

***1556** **Layer-specific encoding processes in the human medial temporal lobe, (O-T4)**
Anne Maass[1], Emrah Duezel[1], Andy Yonelinas[2], Hartmut Schuetze[1], Oliver Speck[3], Hans-Jochen Heinze[4]
[1]Institute of Cognitive Neurology and Dementia Research, University Magdeburg, Magdeburg, Germany, [2]Department of Psychology, Center for Mind and Brain, University of California, Davis, CA, [3]Biomedical Magnetic Resonance, Institute for Experimental Physics, University Magdeburg, Magdeburg, Germany, [4]University of Magdeburg, Magdeburg, Germany

**1557** **Medial Temporal Lobe Substructures Differentially Contribute to Compound Word Recognition with Age**
Marshall Dalton[1], Michael Hornberger[1], Olivier Piguet[1]
[1]Neuroscience Research Australia, Sydney, Australia

**1558 Portraying Unique Contribution of the Default Mode Network to Internally-Driven Mnemonic Processes**
Irit Shapira-Lichter[1], Noga Oren[2], Ilana Podlipsky[3], Michal Gruberger[4], Talma Hendler[5]
[1]Wohl Institute for Advanced Imaging, Sourasky Medical Center, Tel-Aviv , Israel, [2]Wohl Institute for Advanced Imaging, Sourasky Medical Center; Medicine, Tel Aviv University, Tel-Aviv, Israel, [3]Wohl Institute for Advanced Imaging, Sourasky Medical Center, Tel-Aviv, Israel, [4]Wohl Institute for Advanced Imaging, Sourasky Medical Center; Psychology, Tel Aviv University, Tel Aviv, Israel, [5]Wohl Institute for Advanced Imaging, Sourasky Medical Center, Tel Aviv University, Tel-Aviv, Israel

**1559 Quantifying aging's impact on mental replay's neural specificity using multivoxel pattern analysis**
Marie St-Laurent[1], Hervé Abdi[2], Bradley Buchsbaum[1]
[1]Rotman Research Institute, Toronto, Canada, [2]The University of Texas at Dallas,, Richardson, TX

**1560 Retest reliability of fMRI brain activity in the medial temporal lobe during memory-encoding**
Andreas Jansen[1], David Brandt[1], Soeren Krach[2], Johannes Bedenbender[2], Frieder Paulus[3], Jens Sommer[2]
[1]University of Marburg, Marburg, Germany, [2]Philipps-University, Marburg, Germany, [3]Department of Psychiatry, Philipps University Marburg, Germany, Marburg, Germany

**1561 Schema knowledge accelerates consolidation of new information**
Tobias Sommer[1], Jan Peters[2], Christian Büchel[3]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, [2]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Germany, [3]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany

**1562 Segregation between decision evidence and effector specificity in memory based decisions**
Carlo Sestieri[1], Mark McAvoy[2], Valeria Mignogna[3], Annalisa Tosoni[4], Gordon Shulman[5], Gian Luca Romani[6], Maurizio Corbetta[7]
[1]University G. d'Annunzio of Chieti, Chieti, Italy, [2]Washington University in Saint Louis, Saint Louis, MO, [3]University of Chieti-Pescara, Chieti, Italy, [4]Department of Neuroscience and Imaging, University G.d'Annunzio,, Chieti, Italy, [5]Washington University in St. Louis, St. Louis, MO, [6]Department of Neuroscience and Imaging, Gabriele D' Annunzio University, Chieti, Italy, [7]Dept. Neurology, Radiology, and Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO

**1563 Separating the content from the context: novelty processing in the amygdala and hippocampus**
Raphael Kaplan[1], Aidan Horner[1], Peter Bandettini[2], Christian Doeller[3], Neil Burgess[1]
[1]University College London, London, United Kingdom, [2]National Institutes of Health, Bethesda, United States, [3]Donders Centre for Cognitive Neuroimaging: Radboud University, Nijmegen, Netherlands

**1564 Subcortical structural connections binds functional memory consolidation networks**
Jesse Brown[1], Brian Renner[2], Susan Bookheimer[3]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]University of California - Los Angeles, Los Angeles, CA

**1565 Top-down Control Mediating Successful Memory Retrieval Across Development**
Hilary Marusak[1], Raphael Serota[2], Jonathan Stoltman[2], Vaibhav Diwadkar[1], Noa Ofen[2]
[1]Wayne State University School of Medicine, Detroit, United States, [2]Wayne State University, Detroit, United States

**1566 Tracking memory reactivation in sleep with EEG**
Monika Schönauer[1], Annedore Pawlizki[1], Annette Abraham[1], Isabella Hartwig[1], Steffen Gais[1]
[1]LMU Munich, Munich, Germany

**1567 Variable Encoding Improves Memory and Increases Neural Pattern Similarity**
Xiaoqian Xiao[1,2], Russell Poldrack[2,3,4], Qi Dong[1], Gui Xue[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [2]Department of Psychology, The University of Texas at Austin, Austin, TX, United States, [3]Imaging Research Center, The University of Texas at Austin, Austin, TX, United States, [4]Department of Neurobiology, The University of Texas at Austin, Austin, TX, United States


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## Learning and Memory

### Neural Plasticity and Recovery of Function

**1568 Additional effects of electric fingertip stimulation on hand motor training and representation**
Marie Ladda[1], Hubert Dinse[2], Karla Doppl[1], Tobias Kalisch[2], Thomas Platz[3], Sybille Roschka[3], Andrea Daniela Walz[1], martin lotze[1]
[1]Functional Imaging Unit, Center for Diagnostic Radiology, University of Greifswald, Greifswald, Germany, [2]Neural Plasticity Lab, Theory of Cognitive Systems, Institute for Neuroinformatics, Ruhr-University, Bochum, Germany, [3]BDH-Klinik Greifswald, Neurorehabilitation centre and Spinal Cord Injury Unit, Greifswald, Germany

**1569 Brain plasticity in drug-resistant epileptic patients undergoing insulectomy using multimodal MRI**
Sara Jamali[1], Alan Tucholka[1,2,3], Maria Del Carmen Alcarez Soto[1], Guillaume Gilbert[4], François Guilbert[1], Jean-Maxime Leroux[1], Dang Khoa Nguyen[5]
[1]Department of Radiology, University of Montreal Hospital (CHUM), Notre-Dame Hospital, Montreal, Quebec, Canada, [2]Research Center, Ste-Justine Hospital, Montreal, Quebec, Canada, [3]Centre Recherche en Neuropsychologie et Cognition (CERNEC), Université de Montreal, Montreal, Quebec, Canada, [4]Magnetic Resonance Clinical Science, Philips Healthcare, Cleveland, OH, United-States, [5]Department of Neurology, CHUM - Notre-Dame Hospital, Montreal, Quebec, Canada

**1570 Changes in Effective Connectivity following Nerve Repair after Brachial Plexus Lesions**
Florian Fischmeister[1], Ahmad Amini[1], Alexander Geissler[2], Robert Schmidhammer[3], Roland Beisteiner[1]
[1]Study Group Clinical fMRI, Department of Neurology, Medical University Vienna, Vienna, Austria, [2]High Field MR Centre of Excellence, Medical University of Vienna, Vienna, Austria, [3]Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna, Austria

**1571 Changes in Functional Connectivity Associated with Training and Generalization in Aphasia**
Chaleece Sandberg[1], Swathi Kiran[2]
[1]Boston University, Boston, US, [2]Boston University, Boston, United States

**1572 Diffusion Changes Reflect Oromotor Sequencing Gains in Children with Idiopathic Apraxia of Speech**
Darren Kadis[1], Dallas Card[2], Shane Kirby[2], Elizabeth Pang[2]
[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [2]Hospital for Sick Children, Toronto, ON

**1573 Withdrawn**

**1574 Effects of Biofeedback intervention for daily hassles**
Yuka Kotozaki[1], Hikaru Takeuchi[2], Atsushi Sekiguchi[3], Yuki Yamamoto[4], Takamitsu Shinada[4], Kei Takahashi[4], Tsuyoshi Araki[3], Yasuyuki Taki[4], Takeshi Ogino[5], Masashi Kiguchi[6], Ryuta Kawashima[7]
[1]Smart Ageing International Research Center, IDAC, Tohoku University, Sendai, Japan, [2]IDAC Tohoku University, Miyagi Sendai city , Japan, [3]Tohoku university, Sendai, Japan, [4]IDAC, Tohoku University, Sendai, Japan, [5]Hitachi Ltd., Tokyo, Japan, [6]Hitachi, Ltd., Central Research Laboratory, Hatoyama, Japan, [7]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**1575 Exercise impacts brain structure: A longitudinal VBM and TBSS study in overweight and obese subjects**
Karsten Mueller[1], Harald Möller[1], Alfred Anwander[1], Franziska Busse[1], Annette Horstmann[1,2], Matthias Raschpichler[2], Jöran Lepsien[1], Matthias Schroeter[1,3], Matthias Blüher[2], Arno Villringer[1,2,3], Burkhard Pleger[1,2,3]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Integrated Research and Treatment Center (IFB) Adiposity Diseases, Leipzig, Germany, [3]Clinic for Cognitive Neurology, University Clinic Leipzig, Leipzig, Germany

**1576 Expertise modulates local patterns of low frequency fluctuations using model of acupuncturists**
Minghao Dong[1], Kai Yuan[2], Wei Qin[1], jie tian[3,4]
[1]School of Life Sciences and Technology, Xidian University, xi'an, China, [2]School of life sciences and technology, Xi'an, China, [3]Institute of Automation, Chinese Academy of Sciences, beijing, China, [4]Life Sciences Research Center, School of Life Sciences and Technology,Xidian University, Xi'an, China

**1577 If we stay lying: the influence of 45 days -6° head-down bed rest on resting-state brain activity**
Yuan Zhou[1], Yun Wang[1], Yi Xiao[2], Chunhui Wang[2], Shanguang Chen[2], Shu Li[1]
[1]Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]National Key Laboratory of Human Factors Engineering, Beijing, China

**1578 Motor Plasticity Following Complete Hemispherectomy: A TMS study**
shalini narayana[1], Samuel McAfee[2], Asim Chaudhri[1], Andrew Papanicolaou[1], James Wheless[1]
[1]University of Tennessee HSC, Memphis, TN, [2]Le Bonheur Children's Hospital, Memphis, TN

**1579 Physical rehabilitation is associated with brain plasticity in patients with multiple sclerosis**
Emmanuelle Robinet[1], anthony Faivre[1], wafaa zaaraoui[1], Arnaud Le Troter[1], philippe bardot[2], patrick askinazi[3], Sylviane Confort-Gouny[1], Maxime Guye[1], jean pelletier[1], Jean-Philippe Ranjeva[1], Sophie Achard[4], bertrand audoin[1]
[1]CRMBM UMR AMU CNRS 7339, Marseille, France, [2]Centre Ponponiana Olbia, Marseille, France, [3]Clinique Saint Martin, Marseille, France, [4]GIPSA-lab UMR CNRS 5216, Grenoble, France

**1580 Withdrawn**

**1581 Tracking Brain Plasticity with Event-Related Optical Signal (EROS) in Cochlear Implant Patients**
Chun-Yu Tse[1,2], Brian Gordon[3], Chin-Hong Tan[2], Ed Maclin[2], Benjamin Zimmerman[2], Jennifer Black[4], Michael Novak[4], Gabriele Gratton[2], Monica Fabiani[2]
[1]National University of Singapore, Singapore, [2]University of Illinois, Urbana-Champaign, United States, [3]Washington University, St. Louis, United States, [4]Carle Clinic Association, Urbana-Champaign, United States

**1582 Working Memory Training and Transfer in Aging — an fMRI study**
Stephan Heinzel[1,2], Christine Stelzel[1,2,3], Robert Lorenz[1,2], Wolf-R. Brockhaus[1], Henrik Walter[1], Andreas Heinz[1], Norbert Kathmann[2], Michael Rapp[1]
[1]Charité Universitaetsmedizin, Berlin, Germany, [2]Department of Psychology, Humboldt-University, Berlin, Germany, [3]Berlin School of Mind and Brain, Berlin, Germany

## Learning and Memory

### Skill Learning

**1583 Alterations in brain function and connectivity linked to complex motor skill learning**
Maria Zangl[1], Lena Geiger[1], Axel Schäfer[1], Matthias Ruf[2], Arsene Ella[1], Janine Reis[3], Andreas Meyer-Lindenberg[1], Heike Tost[1]
[1]Department of Psychiatry and Psychotherapy, Central Institute of Mental Health, Mannheim, Germany, [2]Department Neuroimaging, Central Institute of Mental Health, Mannheim, Germany, [3]Department of Neurology, Albert-Ludwigs-University, Freiburg, Germany

**1584 Breakfast Improves Neural Efficiency during Tasks of Attention and Visuospatial Motor Learning**
Valerie Darcey[1], Laura Erickson[1], William Hayward[1], Kristin Brethel[1], John VanMeter[1]
[1]Georgetown University, Washington DC, United States

**1585 Cerebellar rTMS modulates behavioural and cortico-striatal responses during motor sequence learning**
Freja Gheysen[1], Traian Popa[2], Genevieve Albouy[3], Oury Monchi[3], Sabine Meunier[2], Habib Benali[4], Julien Doyon[5]
[1]Ghent University, Ghent, Belgium, [2]Centre de Recherche de l'Institut du Cerveau et de la Moelle épinière (CR-ICM), Paris, France, [3]CRIUGM, University of Montreal, Montreal, Canada, [4]UMR-S 678 INSERM-UPMC, Paris, France, [5]Functional Neuroimaging Unit, CRIUGM, University of Montreal, Montreal, PQ

**1586 Dance and the brain: white-matter structural differences in professional dancers**
Chiara Giacosa[1,2,3], Falisha Karpati[1,3], Virginia Penhune[2,3], Nicholas Foster[1,3], Krista Hyde[1,3]
[1]Depts. of Psychiatry and Neurology, McGill University, and Montreal Children's Hospital, Montreal, Canada, [2]Dept. of Psychology, Concordia University, Montreal, Canada, [3]International Laboratory for Brain, Music and Sound Research and Centre for Research on Brain, Language and Music, Montreal, Canada

**1587 Functional Reorganization in Motor Sequence Learning: A Functional Near-infrared Spectroscopy Study**
Yun Yin Huang[1], Chun-Yu Tse[1], Trevor Penney[1]
[1]National University of Singapore, Singapore, Singapore

**1588 Intrasession learning changes in striatal activity predict motor memory consolidation after sleep**
Philippe Saucier[1,2], Stuart Fogel[1,2], Genevieve Albouy[1,2], Ovidiu Lungu[1], Arnaud Boré[2], Julien Doyon[1,2]
[1]University of Montreal, Montreal, Canada, [2]CRIUGM, Montreal, Canada

**1589 Long-term dance training changes gray matter structure**
Falisha Karpati[1,2], Chiara Giacosa[1,2,3], Virginia Penhune[3,2], Nicholas Foster[1,2], Krista Hyde[1,2]
[1]Depts. of Psychiatry and Neurology, McGill University, and Montreal Children's Hospital, Montreal, Canada, [2]International Laboratory for Brain, Music and Sound Research and Centre for Research on Brain, Language and Music, Montreal, Canada, [3]Dept. of Psychology, Concordia University, Montreal, Canada

**1590 Maintaining vs Enhancing: Respective Roles of Striatum and Hippocampus in Motor Memory Consolidation**
Genevieve Albouy[1], Stuart Fogel[2], Samuel Laventure[3], Louis Patenaude-Veilleux[3], Habib Benali[4], Avi Karni[5], Julie Carrier[6], Edwin Robertson[7], Julien Doyon[8]
[1]CRIUGM, University of Montreal, Montreal, Canada, [2]University of Montreal, [3]CRIUGM, Montreal, Canada, [4]INSERM, Paris, France, [5]University of Haifa, Haifa, Israel, [6]University of Montreal, Montreal, Canada, [7]Harvard Medical School, Boston, MA, [8]Functional Neuroimaging Unit, CRIUGM, University of Montreal, Montreal, PQ

**1591 Motor memory consolidation depends upon brain functional reorganization related to sleep spindles**
Stuart Fogel[1], Genevieve Albouy[1], Bradley King[1], Catherine Vien[1], Avi Karni[2], Habib Benali[3], Pierre Maquet[4], Julie Carrier[1], Julien Doyon[1]
[1]CRIUGM, University of Montreal, Montreal, Canada, [2]University of Haifa, Haifa, Israel, [3]INSERM, Paris, France, [4]Cyclotron Research Centre, Liege, Belgium


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**1592** **Multiple Components of Motor Sequence Learning**
Christopher Steele[1,2], Avrum Hollinger[3], Joseph Thibodeau[4], Virginia Penhune[2]
[1]Max Planck Instutute for Human and Brain Sciences, Leipzig, Germany, [2]Dept. of Psychology, Concordia University, Montreal, Canada, [3]McGill University, Montreal, Quebec, [4]Dept. of Psychology, Concordia University, Montreal, Quebec

**1593** **Plasticity induced by long-term sensory training — an fMRI & DTI study**
Weronika Debowska[1], Maria Bierzynska[1], Tomasz Wolak[2], Malgorzata Kossut[1]
[1]Nencki Institute of Experimental Biology, Warsaw, Poland, [2]Institute of Physiology and Pathology of Hearnig, Kajetany, Poland

**1594** **Stronger Brain Functional Connectivity Is Associated with Learning Benefit of Interleaved Practice**
Chien-Ho Janice Lin[1,2], Barbara Knowlton[3], Yu-Ling Ye[1], Fu-Xing Lin[1], Kuan-Hong Liu[1], Allan Wu[3], Ming-Chang Chiang[1]
[1]National Yang-Ming University, Taipei, Taiwan, [2]Yeong-An Orthopaedic and Rehabiliation Clinic, Taipei, Taiwan, [3]UCLA, Los Angeles, CA

**1595** **Tai Chi Chuan Modulates Brain Regional Functional Homogeneity**
Gaoxia Wei[1], Lili Jiang[1], Hui-Jie Li[1], Ting Xu[1], Zhi Yang[1], Xi-Nian Zuo[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China

**1596** **The interactive role of the hippocampus explains personal strategy in probabilistic learning**
Valérie Zufferey[1], Stanislaw Adaszewski[1], Bogdan Draganski[1], Ferath Kherif[1]
[1]LREN, Département des neurosciences cliniques - CHUV, Lausanne, Switzerland

**1597** **Thickness of the Temporal Cortices Is Associated with Learning Benefit of Interleaved Practice**
Ming-Chang Chiang[1], Chien-Ho Janice Lin[1,2], Barbara Knowlton[3], Kuan-Hong Liu[1], Fu-Xing Lin[1], Yu-Ling Ye[1], Allan Wu[3]
[1]National Yang-Ming University, Taipei, Taiwan, [2]Yeong-An Orthopaedic and Rehabilitation Clinic, Taipei, Taiwan, [3]UCLA, Los Angeles, CA

## Learning and Memory

### Working Memory

***1598** **A longitudinal study of fronto-parietal and fronto-striatal networks and working memory development, (O-T4)**
Fahimeh Darki[1], Torkel Klingberg[2]
[1]Neuroscience Department, Stockholm, Sweden, [2]Neuroscience Department, Karolinska Institutet, Stockholm, Sweden

**1599** **Achieving Single Subject fMRI Hippocampal Activation Using a Reading Based Memory Task**
Suvarna Badhe[1], Xue Wang[1], Todd Parrish[1]
[1]Northwestern University, Chicago, IL

**1600** **BOLD frequency power indexes working memory performance**
Joshua Balsters[1,2], Ian Robertson[2], Vince Calhoun[3]
[1]Neural Control of Movement Lab, Department of Health Sciences and Technology, ETH Zurich, Zurich, Switzerland, [2]Trinity College Institute of Neuroscience, Trinity College Dublin, Dublin, Ireland, [3]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1601** **CapManDu: A New Paradigm for Studying Working Memory**
Ekaterina Dobryakova[1,2], Nancy Chiaravalloti[1,2], Adam Staffaroni[3], John DeLuca[1,2], James Sumowski[1,2], Glenn Wylie[1,2]
[1]Kessler Foundation Research Center, West Orange, NJ, [2]University of Medicine and Dentistry of New Jersey, Newark, NJ, [3]University of Palo Alto, Palo Alto, CA

**1602** **Comparison of Tasks for Hippocampal Activation During Memory Encoding and Retrieval**
Suvarna Badhe[1], Shreya Jain[2], Anna Kryczka[2], Xue Wang[1], Todd Parrish[1]
[1]Northwestern University, Chicago, IL, [2]Illinois Math and Science Academy, Aurora, IL

**1603** **Distractor-resistant category information in extrastriate cortex during working memory distraction**
Jan Derrfuss[1], Matthias Ekman[1], Christian Fiebach[2]
[1]Radboud University, Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, Netherlands, [2]University of Frankfurt, Frankfurt am Main, Germany

**1604** **Does chemotherapy alter visuospatial working memory? An fMRI study**
Carole Scherling[1], Barbara Collins[2], Joyce MacKenzie[3], Rocio Lopez[4], Catherine Bielajew[4], Andra Smith[4]
[1]University of California, San Francisco, San Francisco, CA, [2]University of Ottawa and Ottawa General Hospital, Ottawa, Ontario, [3]Ottawa General Hospital, Ottawa, Ontario, [4]University of Ottawa, School of Psychology, Ottawa, Ontario

**1605 Dynamic causal modeling reveals distinct working memory networks in fetal alcohol spectrum disorders**
Rohan Bhalla[1], Richard White[2], Ernesta M. Meintjes[3], Christopher Molteno[4], Sandra Jacobson[5], Joseph Jacobson[5], Vaibhav Diwadkar[6]
[1]Wayne State University, Detroit, United States, [2]Wayne State University, Detroit, MI, [3]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa, [4]University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, [5]Wayne State University School of Medicine, Detroit, MI, [6]Wayne State University School of Medicine, Detroit, United States

**1606 Effects of Working Memory Load on Facial Expression Processing: an ERP study**
Taejin Park[1], Junghee Kim[2]
[1]Department of Psychology, Chonnam National University, KWANGCHU, Korea, Republic of, [2]chonnam national university, Gwangju, Korea, Republic of

**1607 Enemy at the Gates: Neural Gating and Disruption of Bound Features in Visual Working Memory**
Jonathan Hakun[1], Susan Ravizza[2]
[1]Michigan State University, East Lansing, United States, [2]Michigan State University, East Lansing, MI

***1608 Feedback associated with reward normalizes responses in ADHD children during working memory tasks, (O-T4)**
Rubi Hammer[1], Michael Tennekoon[2], Gillian Cooke[3], Mark Stein[4], James Booth[5]
[1]Northwestern University, Evanston, United States, [2]Northwestern, Evanston, United States, [3]University of Illinois, Urbana, Urbana, United States, [4]University of Illinois at Chicago, Chicago, IL, [5]Department of Communication Sciences and Disorders, Northwestern UniversitY, Evanston, IL

**1609 FMRI and EEG fluctuations supporting increasing spatial working memory load**
Reza Khosrowabadi[1,2], Jiahou Poh[1], Yvonne Yiwen Chia[1,2], Zhaoping Hong[1,2], Shih Jen Weng[3], Juan Zhou[1,2]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, [2]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, [3]Department of Child and Adolescent Psychiatry, Institute of Mental Health, Singapore

**1610 Genetic and Environmental Influences on Effective Connectivity in Working Memory Networks**
Benjamin Sinclair[1], Gabriella Blokland[2], Paul Thompson[3], Margaret Wright[4], Greig Zubicaray[5], Katie McMahon[6]
[1]University of Queensland, Brisbane, Australia, [2]Queensland Institute of Medical Research, Brisbane, Australia, [3]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [4]Genetic Epidemiology Laboratory, Queensland Institute of Medical Research, Brisbane, Australia, [5]School of Psychology, The University of Queensland, Brisbane, Australia, [6]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD

**1611 Losing memory of the present: neural dynamics of Working Memory compromised by distraction**
Tomas Ossandon[1], Francisco Valenzuela[1], Francisco Aboitiz[1]
[1]Departamento de Psiquiatría, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

**1612 Memory training enlarges the working memory capacity: neurophysiological evidence from a P300 study**
Ju-Che Kuo[1], Chun-Chuan Chen[1], Hsin-Jung Wu[2], Min-Tsuei Chen[3]
[1]Graduate Institute of Biomedical Engineering, National Central University, TaoYuan, Taiwan, [2]Digital Education Institute, Institute for information industry, Taipei, Taiwan, [3]Digital Education Institute, Institute for information industry, Taipei, TN

**1613 Neural activities during self-referential working memory in generalized social phobia**
Hyung-Jun Yoon[1], Kiwan Han[2], Jung Eun Shin[3], Yu-Bin Shin[3], Jae-Jin Kim[1,2,3]
[1]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of

**1614 NMDA Receptor Antagonist Ketamine Reduces Prefrontal Activation and Connectivity**
Naomi Driesen[1], Alan Anticevic[2], Zubin Bhagwagar[3], Michael Bloch[2], Deepak D'Souza[2], Ralitza Gueorguieva[2], George He[4], John Krystal[2], Hoi-Chung Leung[5], Peter Morgan[2], Ramani Ramachandran[2], Vince Calhoun[6]
[1]Yale University School of Medicine, New Haven, United States, [2]Yale University School of Medicine, New Haven, CT, [3]Bristol Myers Squibb, Wallingford, CT, [4]Yale University, New Haven, CT, [5]State University of New York, Stonybrook, Stonybrook, NY, [6]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM

**1615 Representation of temporal order in verbal short term memory**
Kristjan Kalm[1]
[1]Medical Research Council, Cognition & Brain Sciences Unit, Cambridge, United Kingdom

**1616 Resting connectivity of parietal and parahippocampus predicts visual working memory performance**
Tonisha Kearney-Ramos[1], Jennifer Fausett[1], Jennifer Gess[1], Ashley Jones Reno[2], Jennifer Peraza[3], Clinton Kilts[1], George Andrew James[1]
[1]University of Arkansas for Medical Sciences, Little Rock, AR, [2]Wright State University, Dayton, OH, [3]Pacific University, Forest Grove, OR

**1617 The difference of brain activation depending on stimuli of visual N-back task**
Mitsunobu Kunimi[1], Toshiharu Nakai[1]
[1]National Center for Geriatrics and Gerontology, Aichi, Japan


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**1618 The prediction of working memory in the resting-state**
Xiaojing Fang[1], yun zhang[1], zhuo junjie[1], Tianzi Jiang[2]
[1]Key Laboratory for NeuroInformation of the Ministry of Education, School of Life Science and Technol, Chengdu, China, [2]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

**1619 Verbal working memory and morphometric analysis of hippocampus, caudate nucleus and cingulate cortex**
Stanislav Kozlovskiy[1], Maria Pyasik[1], Alexander Vartanov[1], Evgenia Nikonova[1]
[1]Lomonosov Moscow State University, Moscow, Russian Federation

**1620 Withdrawn**

## Modeling and Analysis Methods

### Bayesian Modeling

**1621 A Bayesian model of activation and functional connectivity for event-related fMRI**
Wesley Thompson[1], Dongli Zhou[2], Greg Siegle[3]
[1]University of California, San Diego, San Diego, United States, [2]Forest Labs, New York, NY, [3]University of Pittsburgh, pittsburgh, PA

****1622 A Bayesian Random Shape model for fMRI and MRI Brain Activity Analysis**
Lijun Zhang[1], Jian Kang[1], F. DuBois Bowman[1]
[1]Emory University, Atlanta, GA

***1623 Analysis of Multiple Sclerosis Lesions via Spatially Varying Coefficients, (O-W2)**
Tian Ge[1,2], Thomas Nichols[2], Nicole Muller-Lenke[3], Kerstin Bendfeldt[3], Timothy Johnson[4]
[1]Fudan University, Shanghai, China, [2]University of Warwick, Coventry, United Kingdom, [3]University Hospital Basel, Basel, Switzerland, [4]University of Michigan, Ann Arbor, MI, USA

**1624 Bayesian inversion of dynamic causal models using Gaussian processes**
Ekaterina Lomakina-Rumyantseva[1], Saee Paliwal[1], Kay H. Brodersen[1], Joachim Buhmann[2], Klaas Enno Stephan[3]
[1]Translational Neuromodeling Unit (TNU), University of Zurich & ETH Zurich, Zurich, Switzerland, [2]ETH Zurich, Zurich, Switzerland, [3]Translational Neuromodeling Unit (TNU), University & ETH Zurich, Zurich, Switzerland

**1625 Bayesian probit model with spatially varying coefficients and its application to fMRI**
fengqing zhang[1], Wenxin Jiang[1], Jiping Wang[1], Patrick Wong[1]
[1]Northwestern University, Evanston, IL

**1626 Effect of BOLD signal properties on accuracy of DCM estimation**
Martin Gajdoš[1], Michal Mikl[2], Martin Havlicek[3]
[1]CEITEC MU, Brno, Czech Republic, [2]CEITEC, Masaryk University, Brno, Czech Republic, [3]Maastricht University, Maastricht, Netherlands

**1627 The contribution of the Multisession Joint Detection-Estimation Model to language processing studies**
Solveig Badillo[1], Thomas Vincent[1], Ghislaine Dehaene-Lambertz[2], Philippe Ciuciu[1]
[1]Neurospin CEA, Paris, France, [2]Neurospin, Gif/Yvette, France

****1628 Using Bayesian priors to improve power of whole brain voxel- and connexelwise inferences**
Krzysztof Gorgolewski[1], Pierre-Louis Bazin[1], Daniel Margulies[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

## Modeling and Analysis Methods

### Classification and Predictive Modeling

**1629 A decoding alternative to contrasts conjunction**
Yannick Schwartz[1,2], Gaël Varoquaux[1,2], Bertrand Thirion[1,2]
[1]Parietal Team, Inria Saclay - Île-de-France, Saclay, France, [2]CEA, DSV, I2BM, Neurospin, Gif-sur-Yvette, France

**1630 A large-scale multivariate analysis of instruction-based learning**
Holger Mohr[1], Uta Wolfensteller[1], Hannes Ruge[1]
[1]Technische Universität Dresden, Dresden, Germany

**1631 A Multiple Kernel Learning Approach for Schizophrenia Classification from Complex-Valued fMRI Data**
Eduardo Castro[1], Manel Martinez-Ramon[2], Kent Kiehl[3], Vince Calhoun[3]
[1]University of New Mexico, Albuquerque, NM, [2]Universidad Carlos III, Leganes-Madrid, Spain, [3]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1632 A Network Diffusion Model Predicts Future Dementia Patterns in the ADNI Cohort**
Ashish Raj[1], Amy Kuceyeski[2]
[1]Weill Cornell Medical College, New York, NY, [2]Weill Cornell Medical College, New York, United States

**1633 A voxelwise classification toolbox for multimodal image analysis**
Robert Whelan[1], Richard Watts[2], Hugh Garavan[1]
[1]University of Vermont, Burlington, VT, [2]University of Vermont, Burlington , VT

**1634 Accurate Classification of Schizophrenia patients based on functional network connectivity**
Mohammad Reza Arbabshirani[1], Kent Kiehl[2], Godfrey Pearlson[3], Vince Calhoun[4]
[1]University of New Mexico, [2]The Mind Research Network and UNM, ALBUQUERQUE, NM, [3]Olin Neuropsychiatry Research Center, hartford, CT, [4]The Mind Research Network, Albuquerque, United States

**1635 Age classification using structural and functional connectivity**
Francisco Pereira[1], Hasan Cetingul[2], Shauna Stark[3], Craig Stark[3], Michael Yassa[4], Mariappan Nadar[2]
[1]Siemens Corporation, Corporate Technology, Princeton, United States, [2]Siemens Corporation, Corporate Technology, Princeton, NJ, [3]Department of Neurobiology and Behavior, University of California, Irvine, Irvine, CA, [4]Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore, MD

**1636 Assessment of Alzheimer's disease risk using large-scale machine learning methods**
Ramon Casanova[1], Fang-Chi Hsu[1], Kaycee Sink[1], Stephen Rapp[1], Jeff Williamson[1], Susan Resnick[2], Mark Espeland[1]
[1]Wake Forest University of Health Sciences, Winston Salem, NC, United States, [2]National Institute of Aging, Baltimore, MD, United States

**1637 Calibration of Resting-State Connectivity to Measure Language Laterality**
Mark DiFrancesco[1], Gregory Lee[1], Akila Rajagopal[1], Vincent Schmithorst[2], Jennifer Vannest[1], Luis Hernandez-Garcia[3], Scott Holland[1]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital Medical Center, Cincinnati, USA, [2]Children's Hospital of Pittsburgh of UPMC, Pittsburgh, USA, [3]University of Michigan, Ann Arbor, USA

**1638 Classification of resting fMRI of Alzheimer's disease using multivariate pattern analysis with clust**
Young-Beom Lee[1], Kwangsun Yoo[1], William Sohn[1], Yong Jeong[1]
[1]KAIST, Daejeon, Korea, Republic of

**1639 Classifying brain states induced by complex visual stimuli**
Andrew Floren[1], Bruce Naylor[2], Risto Miikkulainen[3], David Ress[2]
[1]Department of Electrical and Computer Engineering, University of Texas, Austin, TX, [2]Section of Neurobiology, University of Texas, Austin, TX, [3]Department of Computer Science, University of Texas, Austin, TX

**1640 Combining multiple functional imaging modalities improves automated detection of Alzheimer's Disease**
Alle Meije Wink[1], Sofie Adriaanse[1], Bart van Berckel[1], Betty Tijms[1], Jan de Munck[1], Philip Scheltens[1], Frederik Barkhof[1]
[1]VU University Medical Center, Amsterdam, The Netherlands

**1641 Decoding Emotional States from Prefrontal Brain Activity based on fNIRS**
Rui-na Dai[1], Wei-jie Liu[1], Fulun Tan[1], Xiang Xiao[1], Rui Li[1], Lian Duan[1], Yuxia Huang[1], Chao-Zhe Zhu[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**1642 Decoding transitional brain states using multivariate pattern analysis**
Dongha Lee[1], Joongil Kim[1], Changwon Jang[1], Hae-Jeong Park[2]
[1]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**1643 Withdrawn**

**1644 Fast validation testing of sparse classification and regression models for multi-voxel fMRI analysis**
Bryan Conroy[1], Jennifer Walz[2], Paul Sajda[2]
[1]Columbia University, New York, United States, [2]Columbia University, New York, NY

**1645 Identifying features critical to fMRI classification accuracy**
Daniel Handwerker[1], Zhi Yang[2,1], Javier Gonzalez-Castillo[1], Peter Bandettini[1]
[1]National Institute of Mental Health, Bethesda, United States, [2]Key Laboratory of Behavioral Sciences, Institute of Psychology, Chinese Academy of Sciences, Bejing, China

**1646 FMRI responses of contralateral and ipsilateral SI cortex to natural human touch**
Sanna Malinen[1,2], Ville Renvall[1,2], Riitta Hari[1,2]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory, Aalto University, Espoo, Finland, [2]Advanced Magnetic Imaging Centre, Aalto University, Espoo, Finland

**1647 Intrinsic functional connectivity of pain-related brain areas: a suitable biomarker of fibromyalgia?**
Benedikt Sundermann[1], Markus Burgmer[2], Esther Pogatzki-Zahn[3], Markus Gaubitz[4], Christoph Stüber[5], Erik Wessolleck[6], Gereon Heuft[2], Bettina Pfleiderer[1]
[1]University Hospital Münster, Department of Clinical Radiology, Münster, Germany, [2]University Hospital Münster, Department of Psychosomatics and Psychotherapy, Münster, Germany, [3]University Hospital Münster, Department of Anesthesiology, Intensive Care Medicine and Pain Therapy, Münster, Germany, [4]Akademie für Manuelle Medizin, Münster, Germany, [5]Clemenshospital Münster, Münster, Germany, [6]Medical University of Hannover, Department of Otorhinolaryngology, Hannover, Germany

**1648 Machine Learning for Connectivity-based Alzheimer's Disease Classification**
Gautam Prasad[1], Shantanu Joshi[2], Talia Nir[1], Arthur Toga[2], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States


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**1649 Model-based prediction of consciousness states from EEG data**
Maria Joao Rosa[1], Melanie Boly[2], Marta Garrido[3]
[1]Computer Science Department, University College London, London, United Kingdom, [2]Centre for Sleep and Consciousness, University of Wisconsin, Madison, United States, [3]Queensland Brain Institute, University of Queensland, Brisbane, Australia

**1650 Modulating 'crave' and 'don't crave' brain states using real-time fMRI neurofeedback**
Pearl Chiu[1,2], Jonathan Lisinski[1], Andre Plate[1], Brooks King-Casas[1,2,3], David Eagleman[4], Paul Cinciripini[5], Stephen LaConte[1,3]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Virginia Tech, Dept of Psychology, Blacksburg, VA, [3]Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, Blacksburg, VA, [4]Baylor College of Medicine, Houston, TX, [5]MD Anderson Cancer Center, Houston, TX

**1651 Monitoring Drivers' Attention based on The Brain Activities**
Yu-Kai Wang[1], Tzyy-Ping Jung[2], Chin-Teng Lin[1], Shi-An Chen[1]
[1]National Chiao-Tung University, Hsinchu, Taiwan, [2]University of California, San Diego, California, United States

**1652 Multi-class fMRI decoding: generalised information mapping and multivariate thresholding**
Jonas Richiardi[1,2], Melissa Saenz[3], Sandra Da Costa[4], Dimitri Van De Ville[5]
[1]Stanford University, Stanford, USA, [2]University of Geneva, Geneva, Switzerland, [3]University of Lausanne, Switzerland, [4]University Hospital of Lausanne (CHUV, UNIL), Lausanne, Vaud, [5]UniGE/EPFL, Lausanne, Switzerland

**1653 Network-Guided Sparse Learning for Improved MRI-based Prediction of Cognitive Performance**
Jingwen Yan[1,2], Shannon Risacher[1], Sungeun Kim[1], Heng Huang[3], Andrew Saykin[1], Li Shen[1], The ADNI[4]
[1]Indiana University School of Medicine, Indianapolis, IN, [2]Indiana University School of Informatics, Indianapolis, IN, [3]University of Texas Arlington Department of Computer Science and Engineering, Arlington TX, United States, [4]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, United States

**1654 Novel solutions toward high accuracy brain tissue classification in young children**
Nataliya Portman[1], Alan Evans[2]
[1]Montreal Neurological Institute, Montreal, Canada, [2]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec

**1655 Predicting Alzheimer's disease using a voxel-based approach: A comparison of three different atlases**
Kenichi Ota[1], Naoya Oishi[1], Kengo Ito[2], Hidenao Fukuyama[1]
[1]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, [2]National Center for Geriatrics and Gerontology, Obu, Japan

**1656 Predicting behavior from brain imaging measures using Regularized Regression**
Kosha Ruparel[1], David Roalf[1], Warren Bilker[1], Ryan Hopson[1], Simon Vandekar[1], Taki Shinohara[1], Theodore Satterthwaite[1], Chad Jackson[1], Raquel Gur[1], Ruben Gur[1]
[1]University of Pennsylvania, Philadelphia, United States

***1657 Predicting favorable vs non-favorable surgery outcome in patients with mesial temporal lobe epilepsy, (O-W2)**
Delia-Lisa Feis[1], Jan-Christoph Schoene-Bake[2,3], Marc Tittgemeyer[1], Bernd Weber[2]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]University of Bonn Medical Center, Bonn, Germany, [3]University of Freiburg Medical Center, Freiburg, Germany

**1658 Predicting Functional Cortical ROIs via Joint Modeling of Anatomical and Connectional Profiles**
Tuo Zhang[1], dajiang zhu[2], Xi Jiang[3], lei guo[4], tianming liu[5]
[1]Northwestern Polytechnical University, Xi'an, China, [2]University of Georgia, athens, United States, [3]The University of Georgia, Athens, GA, [4]Northwestern Polytechnical University, xian, China, [5]the University of Georgia, Athens, GA

**1659 Principal Feature Analysis: A Novel Voxel Selection method for fMRI Data**
Lijun Wang[1], Yu Lei[1], Ying Zeng[1], Yanjing Wang[1], Bin Yan[1], Dapeng Shi[2]
[1]China National Digital Switching System Engineering and Technological Research Center, ZhengZhou, China, [2]Henan Province People's Hospital, ZhengZhou, China

**1660 Sensitive and Specific Detection of Parkinson Disease using Diffusion Tensor Imaging**
Frank Skidmore[1], Phoebe Spetsieris[2], Thomas Anthony[3], Gary Cutter[3], Karen von Deneen[4], Yijun Liu[5], Keith White[6], Kenneth Heilman[7], Joanna Myers[3], David Standaert[3], Adrienne Lahti[3], David Eidelberg[2], Aziz Ulug[2]
[1]University of Alabama at Birmingham, Birmingham, United States, [2]Feinstein Institute for Medical Research, Manhasset, NY, [3]University of Alabama at Birmingham, Birmingham, AL, [4]Life Sciences Research Center, School of Life Sciences and Technology, Xi'an, Shaanxi, [5]Department of Psychiatry & McKnight Brain Institute, University of Florida, Gainesville, FL, [6]University of Florida, Gainesville, United States, [7]University of Florida, Gainesville, FL

**1661 Sleep Decoded: Decoding and Predicting NREM Sleep Stages Based on fMRI**
Andre Altmann[1,2], Manuel Sebastian Schröter[1,3], Sara Kiem[1], Victor Spoormaker[1], Renate Wehrle[1], Edward Bullmore[4], Michael Greicius[2], Michael Czisch[1], Philipp Sämann[1]
[1]Max Planck Institute of Psychiatry, Munich, Germany, [2]Stanford University, Stanford, United States, [3]University of Cambridge, Behavioural and Clinical Neuroscience Institute, Cambridge, United Kingdom, [4]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

***1662 Sparse network-based discriminative models for depression using fMRI, (O-T2)**
Maria Joao Rosa[1], Liana Portugal[1,2], Marta Garrido[3], Janaina Mourao-Miranda[1,4]
[1]Computer Science Department, University College London, London, United Kingdom, [2]LABNEC, Universidade Federal Fluminense, Rio de Janeiro, Brazil, [3]Queensland Brain Institute, University of Queensland, Brisbane, Australia, [4]Department of Neuroimaging, King's College London, London, United Kingdom

**1663 The added value of arterial spin labeling for classification of early-stage presenile dementia**
Esther Bron[1], Rebecca Steketee[2], Gavin Houston[3], Ruth Oliver[4], John van Swieten[5], Alexander Hammers[6,7], Wiro Niessen[1,8], Marion Smits[2], Stefan Klein[1]
[1]Biomedical Imaging Group Rotterdam, Departments of Medical Informatics and Radiology, Erasmus MC, Rotterdam, Netherlands, [2]Department of Radiology, Erasmus MC, Rotterdam, Netherlands, [3]Applied Science Lab, GE Healthcare, Den Bosch, Netherlands, [4]Institute of Neurology, University College London, London, United Kingdom, [5]Department of Neurology, Erasmus MC, Rotterdam, Netherlands, [6]Fondation Neurodis, CERMEP-Imagerie du Vivant, Lyon, France, [7]Division of Brain Sciences, Faculty of Medicine, Imperial College London, London, United Kingdom, [8]Imaging Science & Technology, Department of Applied Sciences, Delft University of Technology, Delft, Netherlands

**1664 The utility for multi-modal, multi-variate disease classification for amyotrophic lateral sclerosis**
Robert Welsh[1], Laura Jelsone-Swain[2], Bradley Foerster[3]
[1]Radiology, University of Michigan, Ann Arbor, MI, [2]University of Michigan, Ann Arbor, United States, [3]University of Michigan, Ann Arbor, MI

**1665 Unsupervised Learning of Invariant Features for Encoding fMRI Responses to Natural Images**
Umut Güçlü[1], Marcel van Gerven[1]
[1]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**1666 Using Structural and Functional MRI to Predict Diagnostic Status in Major Depression**
Blair Johnston[1], Victoria Gradin[1], Benson Mwangi[2], Mairi Stirling[1], Karen Walker[3], Jennifer MacFarlane[3], Keith Matthews[1], Douglas Steele[1]
[1]University of Dundee, Dundee, United Kingdom, [2]University of Texas, Houston, TX, [3]NHS Tayside, Dundee, United Kingdom

**1667 Volume-of-interest subsampling for diagnostic brain mapping: application to the ADNI cohort**
Malin Björnsdotter[1,2], Helge Malmgren[2], Justin Dauwels[1]
[1]Nanyang Technological University, Singapore, Singapore, [2]University of Gothenburg, Gothenburg, Sweden

**1668 Voxel Selection Framework for Predicting Visual Representation from fMRI**
Kittipat Kampa[1,2], Chun-An Chou[3], Sonya Mehta[4], Rosalia Tungaraza[5], Wanpracha Chaovalitwongse[1,2], Thomas Grabowski[1]
[1]Integrated Brain Imaging Center at University of Washington Medical Center, Seattle, WA, [2]Department of Industrial and Systems Engineering, University of Washington, Seattle, WA, [3]Department of Systems Science and Industrial Engineering, SUNY Binghamton, Vestal, NY, [4]University of Washington, Seatle, WA, [5]University of Washington, Seattle, WA

**1669 Whole-brain Proton MRSI Data Analysis in ALS using a High-Dimensional Machine Learning Method**
Ramon Casanova[1], Khema Sharma[2], Sulaiman Sheriff[3], Andrew Maudsley[3], Varan Govind[3]
[1]Department of Biostatistical Sciences, Wake Forest School of Medicine, Winston-Salem, North Carolina, United States, [2]Department of Neurology, University of Miami School of Medicine, Miami, Florida, United States, [3]Department of Radiology, University of Miami School of Medicine, Miami, Florida, United States

## Modeling and Analysis Methods

### Diffusion MRI Modeling and Analysis

**1670 A biased correction spherical deconvolution approach for fiber crossing in HARDI**
Xiaozheng Liu[1], Dongrong Xu[2]
[1]Center for Cognition and Brain Disorders & Computer Science Dept, Affiliated Hospital, Hangzhou Norm, PR China, [2]MRI unit, Columbia University Department of Psychiatry, & New York State Psychiatric Institute, New York, United States

**1671 Anatomical Plausibility of Probabilistic Tractography of the Inferior Fronto-Occipital Fasciculus**
Anna Slagle[1], Dharshan Chandramohan[2], Daniel Weinberger[3], Karen Berman[4], Stefano Marenco[5]
[1]NIMH, Bethesda, MD, United States, [2]NIMH/NIH, Bethesda, MD, United States, [3]Lieber Institute for Brain Development, Baltimore, MD, [4]NIMH, Bethesda, MD, [5]NIMH, Bethesda, United States

**1672 Atlas-based multi-direction tractography using tensor registration and orientation statistics**
Ryan Cabeen[1], David Laidlaw[2], Mark Bastin[3]
[1]Brown University, Providence, RI, United States, [2]Department of Computer Science, Brown University, Providence, RI, [3]University of Edinburgh, Edinburgh, United Kingdom

**1673 Biexponential model for DTI data analysis: considerations on the estimated directions of diffusion**
Letizia Squarcina[1], Denis Peruzzo[2], Filippo Arrigoni[3], Fabio Triulzi[4], Alessandra Bertoldo[1]
[1]University of Padova, Padova, Italy, [2]University of Verona, Verona, Italy, [3]IRCCS E.Medea, Bosisio Parini, Italy, [4]Neuroimaging Unit, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Milano, Italy

**1674 Brain Network Efficiency Comparison using 11 Tracking Algorithms**
Liang Zhan[1], Neda Jahanshad[1], Yan Jin[1], Emily Dennis[1], Katie McMahon[2], Greig Zubicaray[3], Nicholas Martin[4], Margaret Wright[4], Paul Thompson[5]
[1]University of California, Los Angeles, Los Angeles, United States, [2]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, [3]School of Psychology, The University of Queensland, Brisbane, Australia, [4]Queensland Institute of Medical Research, Herston, Queensland, [5]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**1675 Decoding and evaluation of cerebral maturation and aging patterns using Diffusion Tensor Imaging**
Benson Mwangi[1], Khader Hasan[2], Jair Soares[3]
[1]University of Texas Health Science Center at Houston., Houston, United States, [2]University of Texas Health Science Center at Houston, Houston, United States, [3]University of Texas Health Science Center at Houston, Houston, TX

***1676 DoubleAx: In-vivo Axon Measurement in the Human Corpus Callosum Using Angular Double-PFG MRI, (O-W2)**
Wenjin Zhou[1], Edward Walsh[2], David Laidlaw[3]
[1]Department of Computer Science and Engineering, Oakland University, Rochester Hills, MI, [2]Department of Neuroscience, Brown University, Providence, RI, [3]Department of Computer Science, Brown University, Providence, RI

**1677 DTI Geometric Distortion Correction by Non-linear Registration Evaluated by Tractography-Independent**
David Roteneberg[1], Nancy Lobaugh[1], Yogesh Rathi[2], Peter Savadjiev[2], Aristotle Voineskos[1], Mallar Chakravarty[1]
[1]Centre for Addiction and Mental Health, Toronto, Canada, [2]Psychiatry Neuroimaging Laboratory and Laboratory of Mathematics in Imaging, Brigham and Women's Hos, Boston, United States

**1678 DTI study of white matter abnormalities in children with fetal alcohol spectrum disorders**
Jia Fan[1,2], Sandra Jacobson[2,3,4], Christopher Molteno[3], Bruce Spottiswoode[1,5], Joseph Jacobson[2,3,4], Ernesta M. Meintjes[1,2]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa, [2]Department of Human Biology, University of Cape Town, Cape Town, South Africa, [3]Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa, [4]Department of Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, MI, [5]Siemens Medical Solutions USA Inc., Chicago, IL

**1679 Effects of Processing Pipelines on Reliability of Tract-Based Spatial Statistics**
Tara Madhyastha[1], Susan Merillat[2], Ladina Bezzola[2], Franziskus Liem[2], Sarah Hirsiger[2], Thomas Grabowski[1], Mike Martin[2], Lutz Jäncke[2]
[1]University of Washington, Seattle, WA, [2]University of Zurich, Zurich, Switzerland

**1680 Evaluating models of diffusion-weighted MRI data using cross-validation**
Ariel Rokem[1], Jason Yeatman[1], Franco Pestilli[1], Kendrick Kay[1], Aviv Mezer[1], Stefan Van der Walt[2], Brian Wandell[1]
[1]Stanford University, Stanford, CA, USA, [2]Stellenbosch University, Stellenbosch, South Africa

**1681 FATCAT: (an efficient) Functional And Tractographic Connectivity Analysis Toolbox**
Paul Taylor[1], Ziad Saad[2]
[1]UMDNJ, Newark, United States, [2]National Institutes of Health, Bethesda, MD

**1682 Fractal Dimension Analysis of Gray Matter Structure Applied to Schizophrenia Patients**
Alberto De Luca[1], Letizia Squarcina[1], Marcella Bellani[2], Paolo Brambilla[3], Federico Turkheimer[4], Alessandra Bertoldo[1]
[1]University of Padova, Padova, Italy, [2]University of Verona, Verona, Italy, [3]University of Udine, Udine, Italy, [4]King's College London, London, United Kingdom

**1683 High-resolution diffusion kurtosis imaging (DKI) improves detection of gray-white matter boundaries**
Siawoosh Mohammadi[1], Karsten Tabelow[2], Thorsten Feiweier[3], Joerg Polzehl[4], Nikolaus Weiskopf[5]
[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, University College London, London, United Kingdom, [2]WIAS, Berlin, Germany, [3]Siemens Healthcare, Erlangen, Germany, [4]WIAS Berlin, Berlin, Germany, [5]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom

**1684 Level Set Trees for Visualization and Clustering of Fiber Tractography Data**
Brian Kent[1], Alessandro Rinaldo[1], Fang-Cheng Yeh[2], Timothy Verstynen[3]
[1]Department of Statistics, Carnegie Mellon University, Pittsburgh, PA, [2]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, [3]Department of Pyschology & Center for the Neural Basis of Cognition, Carnegie Mellon University, Pittsburgh, PA

**1685 Linear fascicle evaluation (LiFE) of white matter connectomes**
Franco Pestilli[1], Jason Yeatman[2], Ariel Rokem[1], Kendrick Kay[1], Brian Wandell[1]
[1]Stanford University, Stanford, CA, [2] Stanford, United States

**1686 Massive Diffusion MRI Graph Structure Preserves Spatial Information**
Daniel Sussman[1], Disa Mhembere[1], Sephira Ryman[2], Rex Jung[2], R. Jacob Vogelstein[1], Randal Burns[1], Joshua Vogelstein[1], Carey Priebe[1]
[1]Johns Hopkins University, Baltimore, MD, [2]University of New Mexico, Albuquerque, NM

**1687 Multi-shell position-orientation adaptive smoothing (msPOAS)**
Karsten Tabelow[1], Saskia Becker[2], Siawoosh Mohammadi[3], Nikolaus Weiskopf[4], Joerg Polzehl[2]
[1]WIAS, Berlin, Germany, [2]WIAS Berlin, Berlin, Germany, [3]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, University College London, London, United Kingdom, [4]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom

**1688 New BrainSuite13 Tools for Image Segmentation, Registration, Connectivity Analysis and Visualization**
David Shattuck[1], Anand Joshi[2], Justin Haldar[2], Chitresh Bhushan[2], Soyoung Choi[2], Andrew Krause[1], Jessica Wisnowski[2,3], Hanna Damasio[2], Arthur Toga[1], Richard M. Leahy[2]
[1]University of California, Los Angeles, Los Angeles, CA, [2]University of Southern California, Los Angeles, CA, [3]University of Pittsburgh, Pittsburgh, PA

**1689 New Model to Determine Human White Matter's Axonal Orientation Distribution Function**
Rui Lavrador[1], Carlos Santos[1], Rui Travasso[2,1], Nicolás Lori[1]
[1]IBILI, Faculty of Medicine, University of Coimbra, Coimbra, Portugal, [2]Center for Computational Physics, Physics Department, University of Coimbra, Coimbra, Portugal

**1690 Optimization of an automatic white matter segmentation algorithm using CUDA**
Nicole Labra[1], Miguel Figueroa[1], Pamela Guevara[1], Delphine Duclap[2], Josselin Houenou[3], Marion Leboyer[4], Cyril Poupon[5], Jean-François Mangin[2]
[1]University of Concepción, Concepción, Chile, [2]LNAO, Neurospin, CEA, Gif-sur-Yvette, France, [3]INSERM, Creteil, France, [4]INSERM U955, Team 15 "Psychiatry & Genetics", Créteil, France, [5]NeuroSpin, CEA, Gif-Sur-Yvette, France

**1691 Robustness of TBSS and VBM-like Voxelwise DTI Analyses**
Vincent Schmithorst[1], Jessica Wisnowski[1], Ashok Panigrahy[1]
[1]Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA

**1692 Smart DTI fiber tracking through fully automated placement of regions of interest**
Ad Moerland[1], Liesbeth Geerts[1], Liz Moore[1], Hans Hoogduin[2]
[1]Philips Healthcare, Best, Netherlands, [2]UMC Utrecht, Utrecht, Netherlands

**1693 Stroke lesion analysis based on voxel-based intrinsic structural connectivity**
Benjamin Kalinosky[1], Brian Schmit[2]
[1]Marquette University, Milwaukee, WI, United States, [2]Marquette University, Milwaukee, United States

**1694 The effect of network constructing scheme on the between-subjects contrast of brain network topology**
Suyu Zhong[1], Yong He[1], Gaolang Gong[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**1695 The Non-Local Bootstrap — Estimation of Uncertainty in Diffusion MRI**
Pew-Thian Yap[1], Hongyu An[2], Yasheng Chen[3], Dinggang Shen[4]
[1]University of North Carolina, Chapel Hill, NC, [2]Univ. of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Univ. of North Carolina at Chapel Hill, Chapel Hill, United States, [4]University of North Carolina at Chapel Hill, Chapel Hill, United States

**1696 White Matter Connectivity in Tuberous Sclerosis Complex**
Banu Ahtam[1], Kiho Im[1], Daniel Haehn[1], Jurriaan Peters[1], Mustafa Sahin[1], Ellen Grant[1]
[1]Boston Children's Hospital, Harvard Medical School, Boston, MA, United States

## Modeling and Analysis Methods

### EEG/MEG Modeling and Analysis

**1697 A fast statistical significance test for baseline correction in phase locking**
Kunjan Rana[1], Lucia Maria Vaina[2], Matti Hamalainen[3]
[1]Boston University, [2]Boston University& Harvard Medical School, Massachusetts General Hospital, Boston, MA, [3]Massachusetts General Hospital, Charlestown, United States

**1698 A MEG multivariate data exploratory analysis based on prior knowledge**
Carlos Thomaz[1], Emma Hall[2], Peter Morris[2], Richard Bowtell[2], Matthew Brookes[2]
[1]Centro Universitario da FEI, Sao Bernardo do Campo, Brazil, [2]University of Nottingham, Nottingham, United Kingdom

**1699 A novel approach to bispectral analysis for cross-frequency connectivity estimation in EEG and MEG**
Federico Chella[1,2], Laura Marzetti[1,2], Filippo Zappasodi[1,2], Vittorio Pizzella[1,2], Guido Nolte[3]
[1]Department of Neuroscience and Imaging, G. d'Annunzio University of Chieti-Pescara, Chieti, Italy, [2]Institute of Advanced Biomedical Technologies, G. d'Annunzio University Foundation, Chieti, Italy, [3]Department of Neurophysiology and Pathophysiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany


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**1700 A novel method for automatic electrode location and identification**
Cameron Rodriguez[1], Mark Cohen[1]
[1]University of California Los Angeles, Los Angeles, CA

**1701 Accurate Pediatric Head Models for EEG Source Localization**
Jasmine Song[1], Sergei Turovets[1,2], Pavel Govyadinov[2], Phan Luu[1,3], Don Tucker[1,3], Fred Prior[4], Linda Larson-Prior[4]
[1]Electrical Geodesics, Inc., Eugene, United States, [2]Neuroinformatics Center, Eugene, United States, [3]Department of Psychology, University of Oregon, Eugene, United States, [4]Washington University School of Medicine, Saint Louis, United States

**1702 Bayesian Dipole Modeling from a Single MEG Topography with Adaptive Sequential Monte Carlo Samplers**
Alberto Sorrentino[1], Gianvittorio Luria[1], Riccardo Aramini[1]
[1]Università di Genova, Genova, Italy

**1703 Bayesian inference, synaptic function and ERFs in attention: a dynamic causal modelling study**
Harriet Brown[1], Karl Friston[1]
[1]University College London, London, United Kingdom

**1704 Decoding MEG using spectral information: toolbox and comparison of methods**
Jukka-Pekka Kauppi[1], Riitta Hari[2], Lauri Parkkonen[2], Aapo Hyvärinen[1]
[1]University of Helsinki, Helsinki, Finland, [2]Aalto University, Espoo, Finland

**1705 Discovery of Effective Connectivity between Brain Regions for Driving Task using Transfer Entropy**
Chih-Sheng Huang[1], Chun-Ling Lin[1], Chin-Teng Lin[1], Nikhil R. Pal[2]
[1]National Chiao Tung University, Hsinchu City, Taiwan, [2]Indian Statistical Institute, Kolkata, India

**1706 Dynamic State Allocation for Non-stationary MEG Source Reconstruction**
Mark Woolrich[1], Adam Baker[1], Henry Luckhoo[1], Gareth Barnes[2], Matthew Brookes[3], Iead Rezek[1]
[1]University of Oxford, Oxford, United Kingdom, [2]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, London, United Kingdom, [3]University of Nottingham, Nottingham, United Kingdom

**1707 EEG beta band sources modulated by gait cycle during robot-assisted walking**
Martin Seeber[1], Reinhold Scherer[1], Johanna Wagner[1], Teodoro Solis-Escalante[1], Gernot Müller-Putz[1]
[1]Graz University of Technology, Graz, Austria

***1708 EEG modeling of the sleep wake transition using physiologically based neural field theory, (O-T2)**
Romesh Abeysuriya[1,2,3], Svetlana Postnova[1,2], Peter Robinson[1,2,3], Christopher Rennie[1,3]
[1]School of Physics, University of Sydney, Sydney, Australia, [2]Centre for Integrated Research and Understanding of Sleep (CIRUS), Sydney, Australia, [3]Brain Dynamics Centre, Sydney Medical School and Westmead Millenium Institute, Sydney, Australia

**1709 Face or Body? Distinguishing Categorical Dependent Activity in the MEG using Pattern Classification**
Thomas Hartmann[1], Nikolaas Oosterhof[1,2,3], Nathan Weisz[1]
[1]CIMeC, Università degli Studi di Trento, Rovereto, Italy, [2]Dept. of Psychological and Brain Sciences, Dartmouth College, Hanover, NH, [3]Dept. of Psychology, Harvard, Cambridge, MA

****1710 Frequency Specific Interactions of MEG activity within and across resting state networks as revealed**
Laura Marzetti[1,2], Stefania Della Penna[1,2], Abraham Snyder[3,4], Vittorio Pizzella[1,2], Guido Nolte[5], Francesco de Pasquale[1,2], Gian Luca Romani[1,2], Maurizio Corbetta[3,4]
[1]Department of Neuroscience and Imaging, "G. d'Annunzio" University, Chieti, Italy, [2]Institute for Advanced Biomedical Technologies, "G. d'Annunzio" University Foundation, Chieti, Italy, [3]Department of Neurology, Washington University School of Medicine, St. Louis, MO, [4]Department of Radiology, Washington University School of Medicine, St. Louis, MO, [5]Department of Neurophysiology and Pathophysiology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

**1711 Functional connectivity using Brainstorm**
Sebastien Dery[1], Sergul Aydore[2], Syed Ashrafulla[2], Esther Florin[1], Elizabeth Bock[1], Richard M. Leahy[2], Sylvain Baillet[1], Francois Tadel[1]
[1]McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada, [2]University of Southern California, Los Angeles, CA

**1712 Granger causality analysis with resting-state MEG revealed default-mode network connectivity**
Wei Tang[1], Hesheng Liu[1], Uri Eden[2], Mark Kramer[2], Matti Hamalainen[1], Steven Stufflebeam[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States, [2]Department of Mathematics and Statistics, Boston University, Boston, MA, United States

**1713 Hyperbolic power density driven independent component approach to the analysis of EEG Recordings**
Arthur C. Tsai[1], Michelle Liou[2], Vincent Chien[3], Tzyy-Ping Jung[4], Philip Cheng[3], Scott Makeig[5]
[1]Institute of Statistical Science Academia Sinica, Taipei, Chinese Taipei, [2]Academia Sinica, Taipei, Taiwan, [3]Institute of Statistical Science, Taipei, CA, [4]University of California, San Diego, California, United States, [5]Swartz Center for Computational Neuroscience, UCSD, La Jolla, CA

**1714 Inclusion of Variance Information in MEG Measures of Functional Connectivity**
Emma Hall[1], Mark Woolrich[2], Carlos Thomaz[3], Peter Morris[1], Matthew Brookes[1]
[1]University of Nottingham, Nottingham, United Kingdom, [2]University of Oxford, Oxford, United Kingdom, [3]Centro Universitario da FEI, Sao Bernardo do Campo, Brazil

**Monday, June 17: 13:30 – 15:30 (even numbers)**
**Tuesday, June 18: 13:30 – 15:30 (odd numbers)**

**1715 Mapping Neural Rhythmic Activities from EEG in a Realistic Task: A Time-Frequency ICA Analysis**
Guofa Shou[1], Deepika Dasari[1], Lei Ding[1,2]
[1]School of Electrical and Computer Engineering, University of Oklahoma, Norman, OK, United States, [2]Center for Biomedical Engineering, University of Oklahoma, Norman, OK

**1716 Neuronal avalanches in neonatal cortex following perinatal hypoxia**
James Roberts[1], Kartik Iyer[1], Simon Finnigan[2], Sampsa Vanhatalo[3], Michael Breakspear[1]
[1]Queensland Institute of Medical Research, Brisbane, Australia, [2]Centre for Clinical Research and Perinatal Research Centre, University of Queensland, Brisbane, Australia, [3]University of Helsinki, Helsinki, Finland

**1717 New Approach for Detecting Phase Synchrony of Brain Signals**
Nasser Mourad[1,2], Rami Niazy[2,3]
[1]Department of Electrical Engineering, Aswan University, Aswan, Egypt, [2]Biomedical Physics Department, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia, [3]Centre for Autism Research, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia

**1718 New Parameter for Calculating Inter Trial Phase Coherence**
Nasser Mourad[1,2], Rami Niazy[2,3]
[1]Department of Electrical Engineering, Aswan University, Aswan, Egypt, [2]Biomedical Physics Department, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia, [3]Centre for Autism Research, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia

**1719 Observability of mesial versus lateral sources on surface EEG using simultaneous EEG-SEEG recordings**
Laurent KOESSLER[1], Thierry CECCHIN[1], Sophie COLNAT-COULBOIS[2], Jean-Pierre VIGNAL[3], Hervé VESPIGNANI[3], Louis MAILLARD[3]
[1]CRAN, CNRS UMR7039 - Université de Lorraine, NANCY, France, [2]Centre Hospitalier Universitaire de Nancy, NANCY, France, [3]CRAN, CNRS UMR7039 - Université de Lorraine; Centre Hospitalier Universitaire de Nancy, NANCY, France

**1720 Performance of MEG Head Motion Correction Using Spherical Harmonic Expansions of Scalar Potentials**
Maher Quraan[1], Sam Doesburg[2], Marc Lalancette[2], Matt MacDonald[2], Negar Memarian[3], Elizabeth Pang[2]
[1]Krembil Neuroscience Centre & Toronto Western Research Institute, Toronto, Ontario, Canada, [2]Department of Diagnostic Imaging and Neurosciences & Mental Health, Hospital for Sick Children, Toronto, Ontario, Canada, [3]Department of Neurology, University of California Los Angeles, Los Angeles, California, USA

**1721 Permutation ANOVA for Factorial Designs in MEG/EEG**
Saskia Helbling[1], Jochen Kaiser[1], Michael Wibral[2]
[1]Institute of Medical Psychology, Goethe University, Frankfurt am Main, Germany, [2]MEG Unit, Brain Imaging Center, Goethe University, Frankfurt am Main, Germany

**1722 Searching for effective connectivity underlying the evoked response in SEEG**
Jan Fousek[1], Petr Klimes[2], Pavel Jurák[2], Milan Brázdil[3]
[1]Faculty of Informatics, Masaryk University, Brno, Czech Republic, [2]Institute of Scientific Instruments of the ASCR, v.v.i., Brno, Czech Republic, [3]Behavioral and Social Neuroscience Research Group, CEITEC-Central European Institute of Technology,, Brno, Czech Republic

**1723 Significance and Error in MEG Data Modeling Using the Estimator-Correlator Approach**
John Mosher[1], Matti Hamalainen[2], Dimitrios Pantazis[3], Richard M. Leahy[4]
[1]Cleveland Clinic Epilepsy Center, Cleveland, United States, [2]Massachusetts General Hospital, Charlestown, United States, [3]McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA, [4]University of Southern California, Los Angeles, CA

**1724 Simultaneous Recording of intra-cranial EEG, surface EEG and MEG during Visual Stimulation**
Anne-Sophie Dubarry[1,2,3], Jean-Michel Badier[1,3], Martine GAVARET[1,3,4], Fabrice Bartolomei[1,3,4], Romain Caron[5], Catherine Liégois-Chauvel[3,4], Agnès Trebuchon[1,3,4], Jean Régis[3,4,5], Patrick Chauvel[1,3,4], F-Xavier Alario[2,3], Christian G Bénar[1,3]
[1]INSERM, UMR1106, Institut de Neurosciences des Systèmes, Marseille, France, [2]CNRS, UMR 7290, Laboratoire de Psychologie Cognitive, Marseille, France, [3]Aix-Marseille Université, Marseille, France, [4]AP-HM, Service de Neurophysiologie Clinique, Hôpital de la Timone, Marseille, France, [5]AP-HM, Service de Neurochirurgie Fonctionnelle, Hôpital de la Timone, Marseille, France

**1725 Sparse Source Imaging in Detecting Epileptic Sources Underlying Interictal MEG Spikes**
Lei Ding[1], Min Zhu[2], Wenbo Zhang[3], Deanna Dickens[3]
[1]School of Electrical & Computer Engineering,Center for Biomedical Engineering,University of Oklahoma, Norman, United States, [2]School of Electrical & Computer Engineering, University of Oklahoma, Norman, OK, [3]Minnesota Epilepsy Group, P.A. at United Hospital, St Paul, MN

**1726 Sparse Source Imaging Using a Novel Face-based Wavelet Transform**
Lei Ding[1], Min Zhu[2], Ke Liao[2]
[1]School of Electrical & Computer Engineering,Center for Biomedical Engineering,University of Oklahoma, Norman, OK, United States, [2]School of Electrical & Computer Engineering, University of Oklahoma, Norman, OK, United States

**1727** **State-dependent low-rank multivariate autoregression model for MEG analysis**
Diego Vidaurre[1], Iead Rezek[2], Sam Harrison[3], Steve Smith[3], Mark Woolrich[1,3]
[1]Oxford Centre for Human Brain Activity (OHBA), University of Oxford, Oxford, United Kingdom, [2]Department of Engineering Science, University of Oxford, Oxford, United Kingdom, [3]Oxford Centre for Functional MRI of the Brain (FMRIB), University of Oxford, Oxford, United Kingdom

**1728** **The MNE package for MEG and EEG data processing**
Alexandre Gramfort[1], Martin Luessi[2], Eric Larson[3], Denis A. Engemann[4], Daniel Strohmeier[5], Christian Brodbeck[6], Matti Hamalainen[7]
[1]Telecom ParisTech - CEA Neurospin, Paris, France, [2]Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, United States, [3]University of Washington, Seattle, United States, [4]Institute of Neuroscience and Medicine, Cognitive Neuroscience (INM-3), Juelich Research Centre, Jülich, Germany, [5]Ilmenau University of Technology, Ilmenau, Germany, [6]Department of Psychology, New York University, New York, United States, [7]Massachusetts General Hospital, Charlestown, United States

**1729** **Theta-gamma phase amplitude coupling in prefrontal and motor cortex during response inhibition**
Elinor Tzvi[1], Edward Chang[2], Robert Knight[3], Ulrike Krämer[4]
[1]Department of Neurology, University of Lübeck, Lübeck, Germany, [2]UC San Francisco, San Francisco, CA, [3]Helen Wills Neuroscience Institute, Berkeley, CA, [4]University of Lübeck, Lübeck, Germany

**1730** **Using Priors on Functio-Anatomical Similarity in EEG/MEG source analysis**
Mirco Fuchs[1], Burkhard Maess[2], Thomas Knösche[2]
[1]Laboratory for Biosignal Processing, HTWK Leipzig, University of Applied Sciences, Leipzig, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1731** **Using SVM pattern classification to determine informational content of EEG recordings**
Steffen Gais[1], Mirjam Emmersberger[1], Monika Schönauer[1]
[1]Ludwig-Maximilians-Universität München, München, Germany

**1732** **Volumetric sparse priors for the EEG inverse problem**
Gregor Strobbe[1], Pieter van Mierlo[1], José David Lopez[2], Maarten de Vos[3], Bogdan Mijovic[4], Sabine Van Huffel[4], Hans Hallez[5], Stefaan Vandenberghe[1]
[1]Ghent University - iMinds, Departement of Electronics and Information Systems, MEDISIP, Ghent, Belgium, [2]Universidad de Antioquia, Medellin, Colombia, [3]Neuroscience lab, Dep. of Psychology, University of Oldenburg, Oldenburg, Germany, [4]KU Leuven, Department of Electrical Engineering-ESAT, SCD-SISTA and iMinds Future Health Department, Leuven, Belgium, [5]Catholic University College of Bruges-Ostend, Ostend, Belgium

**1733** **Whole Brain Resting State Frequency Dependent Phase Locked Networks In MEG**
Benjamin Schmidt[1], Avniel Ghuman[2], Theodore Huppert[3]
[1]University of Pittsburgh Department of Bioengineering, Pittsburgh, United States, [2] Bethesda, United States, [3]University of Pittsburgh, Pittsburgh, PA

## Modeling and Analysis Methods

### Exploratory Modeling and Artifact Removal

**1734** **A Comparison of the Efficacy of Correction Methods for Global Signal Confounds in Resting State fMRI**
Bharath Atthe[1], Erik Beall[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, United States

**1735** **A novel method of minimizing EEG artefacts during simultaneous fMRI: a simulation study**
Muhammad Enamul Hoque Chowdhury[1], Karen Julia Mullinger[2], Andre Antunes[2], Paul Glover[2], Richard Bowtell[2]
[1]University Of Nottingham, Nottingham, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom

**1736** **Correlation-based Method for Removing Subject-specific Signals from Group fMRI Data**
Siina Pamilo[1], Jaakko Hotta[2,3], Mika Seppä[1], Sanna Malinen[1], Riitta Hari[1,2]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory and MEG core, AALTO NEUROIMAGING, Aalto University, Espoo, Finland, [2]Advanced Magnetic Imaging Centre, O.V. Lounasmaa Laboratory, AALTO NEUROIMAGING, Aalto University, Espoo, Finland, [3]Department of Neurology, Helsinki University Central Hospital, Helsinki, Finland

**1737** **Denoising with independent component analysis (ICA) to improve test-retest reliability of fMRI data**
Yunxia Tong[1], Ena Xiao[1], Kaitlin Healy[1], Lauren Sternberg[1], Yisheng Xu[2], Saumitra Das[1], Karen Berman[1], Daniel Weinberger[3], Venkata Mattay[3]
[1]NIH/NIMH, Bethesda, United States, [2]NIH/NIDCD, Bethesda, United States, [3]Lieber Institute for Brain Development, Baltimore, United States

**1738** **GLMdenoise: A fast, automated technique for denoising task-based fMRI data**
Kendrick Kay[1], Ariel Rokem[1], Jonathan Winawer[1], Brian Wandell[1]
[1]Stanford University, Stanford, CA

**1739** **Group analysis of event-related fMRI using event-related independent components analysis (eICA)**
Richard Masterton[1,2], Graeme Jackson[1,2], David Abbott[1,2]
[1]Florey Institute of Neuroscience and Mental Health, Melbourne, Australia, [2]The University of Melbourne, Melbourne, Australia

**1740** **Improving resting state fMRI data quality through accelerated acquisition and automatic denoising**
Ludovica Griffanti[1,2,3], Gholamreza Salimi-Khorshidi[3], Christian Beckmann[4,5], Edward Auerbach[6], Gwenaelle Douaud[3], Klaus Ebmeier[7], Nicola Filippini[3], Clare Mackay[3,7], Steen Moeller[6], Junqian Xu[6], Essa Yacoub[6], Giuseppe Baselli[1], Kamil Ugurbil[6], Karla Miller[3], Stephen Smith[3]
[1]Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milan, Italy, [2]MR Laboratory, Fondazione Don Carlo Gnocchi ONLUS, Milan, Italy, [3]FMRIB (Oxford University Centre for Functional MRI of the Brain), Oxford, United Kingdom, [4]NL Donders Institute for Brain, Cognition and Behavior Radboud University Nijmegen, Nijmegen, Netherlands, [5]MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, Netherlands, [6]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, [7]Department of Psychiatry, University of Oxford, Oxford, United Kingdom

**1741** **Manifestation of Cardiac Pulsation and Breathing in fMRI Data — the Quantification Approach**
Marek Barton[1], Radek Marecek[2], Michal Mikl[3]
[1]CEITEC MU, Molecular and Functional Neuroimaging, Masaryk University, Brno, Czech Republic, [2]Central European Institute of Technology, CEITEC, Masaryk University, Brno, Czech Republic, [3]CEITEC, Masaryk University, Brno, Czech Republic

**1742** **Numerical simulations of the effect of vessel orientation in BOLD fMRI**
zikuan chen[1], Vince Calhoun[2]
[1]Mind Research Network, Albuquerque, United States, [2]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1743** **Optimization of physiological noise removal in ultra-high temporal resolution fMRI**
Pierre LeVan[1], Jürgen Hennig[1]
[1]University Medical Center Freiburg, Freiburg, Germany

**1744** **Out of Body/Out of Mind: Scanner artifact detection in open access resting state fMRI**
Clark Johnson[1], Nolan Nichols[1], Su-Chun Huang[1], Thomas Grabowski[1], Todd Richards[1]
[1]University of Washington, Seattle, United States

**1745** **PHYCAA+: an improved technique for correcting physiological noise in fMRI**
Nathan Churchill[1], Stephen Strother[2]
[1]University of Toronto, [2]Rotman Research Institute, Baycrest, Toronto, Canada

**1746** **Quantitative evaluation of motion artifact reduction techniques in resting state fMRI data**
Janine Bijsterbosch[1], Stephen Smith[1], Sophie Forster[2], Sonia Bishop[2,1]
[1]FMRIB, Oxford University, Oxford, United Kingdom, [2]Department of Psychology and Helen Wills Neuroscience Institute, UC Berkeley, Berkeley, United States

**1747** **Resting State Networks in the Human Brainstem — Reproducibility and Functional Interpretation**
Florian Beissner[1], Andy Schumann[1], Franziska Brunn[1], Daniela Eisenträger[1], Karl-Jürgen Bär[1]
[1]Pain & Autonomics - Integrative Research, University Hospital Jena, Department of Psychiatry, Jena, Germany

**1748** **Resting-state networks consistently identified in high-frequency BOLD oscillations**
Klaudius Kalcher[1], Roland Boubela[1], Wolfgang Huf[1], Claudia Kronnerwetter[2], Peter Filzmoser[3], Ewald Moser[1]
[1]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [2]Department of Radiodiagnostics and Nuclear Medicine, Medical University of Vienna, Vienna, Austria, [3]Department of Statistics and Probability Theory, Vienna University of Technology, Vienna, Austria

**1749** **Sensitivity Enhancement in Evoked fMRI Data using Ensemble Empirical Mode Decomposition (EEMD)**
Geng-Hong Lin[1], Pei-Jung Tsai[2], Albert C. Yang[3], Shang-Hua Lin[4], Ching-Po Lin[4], Changwei Wu[1]
[1]National Central University, Taoyuan, Taiwan, [2]National Yang-Ming University, Hsinchu, Taiwan, [3]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Taiwan, [4]National Yang-Ming University, Taipei, Taiwan

**1750** **Simultaneous EEG-fMRI: Removing the Gradient Artefact using High Temporal Resolution Gradient Models**
Glyn Spencer[1], Karen Julia Mullinger[1], Andrew Peters[1], Richard Bowtell[1]
[1]University of Nottingham, Nottingham, United Kingdom

**1751** **Spatially Organised Component Klassifikator (SOCK): An automated artifact classifier for fMRI ICA**
Kaushik Bhaganagarapu[1,2], Graeme Jackson[1,2], David Abbott[1,2]
[1]Florey Institute of Neuroscience and Mental Health, Melbourne, Australia, [2]The University of Melbourne, Melbourne, Australia

***1752** **Spatiotemporal neural dynamics from fMRI: Deconvolution with a spatiotemporal HRF, (O-T2)**
Kevin Aquino[1], P. Robinson[1], Mark Schira[2], Michael Breakspear[3]
[1]University of Sydney, Sydney, Australia, [2]University of Wollongong, Wollongong, Australia, [3]Queensland Institute of Medical Research, Brisbane, Australia

**1753** **The Comparison Between An Improved 3D Cluster-size Test and TFCE Method Without Spatial Smoothness**
Huanjie Li[1,2], Qihong Zou[1,2], ma yajun[1,2], Yang Fan[1,2], Bingjiang Lv[1,2], Yuhui Chai[1,2], Jianqiao Ge[1,2], Jia-Hong Gao[1,2,3]
[1]MRI Research Center, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [2]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [3]University of Chicago, Chicago, IL


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## Modeling and Analysis Methods

### fMRI Connectivity and Network Modeling

**1754 4-D Fourier Analysis of Whole-Brain Resting fMRI Distinguishes Schizophrenia Patients from Controls**
Robyn Miller[1,2], Erik Erhardt[1,3], Elena Allen[1,4,5], Andrew Michael[1], Jessica Turner[1], Juan Bustillo[6], Judith Ford[7], Daniel Mathalon[8], Steven Potkin[9,10], Adrian Preda[9], Vince Calhoun[11,12]
[1]The MIND Research Network, Albuquerque, NM, USA, [2]Department of Mathematics, Cornell University, Ithaca, United NY, USA, [3]Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM, USA, [4]K.G. Jebsen Center for Research on Neuropsychiatric Disorders, University of Bergen, 5009, Norway, [5]Department of Biological and Medical Psychology, University of Bergen, 5009, Norway, [6]Department of Psychiatry, University of New Mexico, Albuquerque, NM, USA, [7]Department of Psychiatry, UCSF, San Francisco, CA, USA, [8]Department of Pyschiatry, UCSF, San Francisco, CA, USA, [9]Department of Psychiatry and Human Behavior, University of California, Irvine, Irvine, CA, USA, [10]UCI Brain Imaging Center, University of California, Irvine, Irvine, CA, USA, [11]The Mind Research Network and UNM, Albuquerque, NM, USA, [12]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA

**1755 A novel approach to determine the voxel-wise functional connectivity with meta-analysis**
Congying Chu[1], Lingzhong Fan[1], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**1756 A power analysis for multi-site studies in resting-state functional connectivity**
Christian L Dansereau[1], Celine Risterucci[2], Emilio Merlo Pich[2], Douglas Arnold[3,4], Pierre Bellec[5]
[1]CRIUGM, Montreal, Quebec, [2]Hoffmann-La Roche Ltd, Basel, Switzerland, [3]NeuroRx Research, Montreal, Qc, [4]Montreal Neurological Institute, McGill University, Montreal, Canada, [5]CRIUGM, Montreal, Canada

**1757 A resting state functional graph study of individuals at genetic risk for Alzheimer's disease**
Erik Hanson[1], Erling Westlye[1], Astri Lundervold[1], Arvid Lundervold[1]
[1]University of Bergen, Bergen, Norway

**1758 A Tale of Two Dynamic Cities: Robust Intrinsic Dynamic Functional Connectivity in Healthy Elderly**
Tara Madhyastha[1], Thomas Grabowski[1], Susan Merillat[2], Sarah Hirsiger[2], Mike Martin[2], Sherry Willis[1], K. Warner Schaie[1], Lutz Jäncke[2]
[1]University of Washington, Seattle, WA, [2]University of Zurich, Zurich, Switzerland

**1759 Aberrant motor system and disconnection of brain functional networks in Parkinson's disease**
Qing Ma[1], Biao Huang[2], Junjing Wang[1], Wanqun Yang[2], Changhong Li[1], Jieying Feng[2], Ruibin Zhang[1], Liqing Liu[1], Lijuan Wang[3], Ruiwang Huang[1]
[1]Center for the Study of Applied Psychology, Key Lab of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]Department of Radiology, Guangdong Academy of Medical Sciences, Guangdong General Hospital, Guangzhou, China, [3]Department of Neurology, Guangdong Academy of Medical Sciences, Guangdong General Hospital, Guangzhou, China

**1760 Activated Cliques: Network-based Activation Detection in Task-based FMRI**
Shu Zhang[1,2], Jinglei Lv[2], Tuo Zhang[2], Xiang Li[1], Xi Jiang[1], lei guo[2], tianming liu[1]
[1]Department of Computer Science, The University of Georgia, Athens, GA, [2]Northwestern Polytechnical University, Xi'an, China

**1761 Withdrawn**

**1762 Altered fronto-parietal and thalamic network properties related to impaired consciousness**
Julia Sophia Crone[1], Yvonne Hoeller[2], Matthias Schurz[3], Steven Laureys[4], Andrea Soddu[4], Audrey Vanhaudenhuyse[4], Eugen Trinka[2], Martin Kronbichler[1]
[1]Neuroscience Institute, Christian-Doppler-Clinic, Salzburg, Austria, [2]Department of Neurology, Christian-Doppler-Clinic, Salzburg, Austria, [3]University of Salzburg, Salzburg, Austria, [4]Coma Science Group, Cyclotron Research Center, Université de Liège, Liège, Belgium

**1763 Amygdalar Functional Connectivity Under High Stress Cortisol: An fMRI Study**
william ottowitz[1], Michael Gregory[2], W LaFrance[3], Lawrence Sweet[4]
[1]north shore university hospital, new york, United States, [2]NIH, Bethesda, MD, [3]Rhode Island Hospital, Providence, RI, [4]Emory University, Atlanta, GA

**1764 An activity-driven growth model to simulate cortical morphology**
Andrew Reid[1], Alan Evans[2], John Lewis[2]
[1]Montreal Neurological Institute, Montreal, Canada, [2]Montreal Neurological Institute, Montreal, QC

**1765 An assessment of the impact of autocorrelation on functional network connectivity**
Mohammad Reza Arbabshirani[1], Eswar Damaraju[2], Sergei Plis[3], Tulay Adali[4], Vince Calhoun[5]
[1]University of New Mexico, [2]Mind Research Network, [3]The Mind Research Network, Albuquerque, NM, [4]University of Maryland, Baltimore County, Baltimore, MD, [5]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1766** **An automatic iterative reclustering framework for extracting resting state networks**
Seyed-Mohammad Shams[1,2], Babak Afshin-Pour[2], Gholam Ali Hossein-Zadeh[1], Hamid Soltanian-Zadeh[1,3], Cheryl Grady[2,4], Stephen Strother[2,5]
[1]School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran, [2]Rotman Research Institute, Baycrest, Toronto, Canada, [3]Image Analysis Lab., Department of Radiology, Henry Ford Hospital, Detroit, MI, [4]Department of Psychology and Psychiatry, University of Toronto, Toronto, Canada, [5]Department of Medical Biophysics, University of Toronto, Toronto, Canada

**1767** **Applicability of lag-based measures to fMRI: influence of experimental parameters**
João Rodrigues[1], Patrícia Figueiredo[2], Alexandre Andrade[1]
[1]IBEB-FCUL, Lisbon, Portugal, [2]Institute for Systems and Robotics / Instituto Superior Técnico, Lisbon, Portugal

**1768** **Applying Resting State or Task fMRI Data for Presurgical Planning of Patients with Brain Tumors**
Bob Hou[1], Jeffrey Carpenter[1], Sanjay Bhatia[2], Kevin Han[3]
[1]Radiology, West Virginia University, Morgantown, WV, [2]Surgery, West Virginia University, Morgantown, WV, [3]Blackwell in Atlanta, Atlanta, GA

**1769** **Appraising and remembering emotion: Altered salience of brain networks in risk for schizophrenia**
Harinder Rai[1], Vaibhav Diwadkar[2]
[1]Wayne State University School of Medicine, Detroit, United States, [2]Wayne State University, Detroit, MI

**1770** **Assessing the effect of threshold on graph theory metrics**
Joanne Hale[1], Stephen Mayhew[1], Izabela Przezdzik[1], Theodoros Arvanitis[2], Andrew Bagshaw[1]
[1]School of Psychology, University of Birmingham, Birmingham, United Kingdom, [2]Electronic, Electrical and Computer Engineering, University of Birmingham, Birmingham, United Kingdom

**1771** **Automatic Component Identification Method Based on Normalized Sensitivity/Specificity Measurement**
Han Zhang[1], Wen-Bin Jia[1], Wei Liao[2], Yufeng Zang[2]
[1]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, China, [2]Center for Cognition and Brain Disorders and the Affiliated Hospital, Hangzhou, China

**1772** **Bayesian inference of fMRI resting state networks with Gaussian process priors**
Sam Harrison[1], Stephen Smith[1], Mark Woolrich[1,2]
[1]Oxford Centre for Functional MRI of the Brain, University of Oxford, Oxford, United Kingdom, [2]Oxford Centre for Human Brain Activity, University of Oxford, Oxford, United Kingdom

**1773** **Behavioural DCM: identifying the neural route to decision**
Lionel Rigoux[1], Jean Daunizeau[1]
[1]ICM, Paris, France

**1774** **Bootstrap Analysis of Stability in Sparse Dictionary Learning for Resting-State fcMRI**
Kangjoo Lee[1], Jean Gotman[1], Christophe Grova[2,1]
[1]Montreal Neurological Institute, McGill University, Montreal, Canada, [2]Biomedical Engineering, McGill University, Montreal, Canada

***1775** **Boundaries on Functional Connectivity Boundaries, (O-M3)**
Fenna Krienen[1], BT Thomas Yeo[2], Randy Buckner[1]
[1]Harvard University, Cambridge, MA, [2]Duke-NUS, Singapore, Singapore

**1776** **Brain Network: Dynamic while Stable Connect Distance**
Yong Liu[1], Wen Qin[2], Chunshui Yu[3], Tianzi Jiang[4]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Tianjin Medical University General Hospital, Tianjin, China, [3]Department of Radiology, Tianjin Medical University General Hospital, Tianjin, China, [4]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

**1777** **Capturing Inter-Subject Variability in fMRI Networks: A Performance Evaluation of ICA and IVA**
Andrew Michael[1], Robyn Miller[2], Mathew Anderson[3], Tulay Adali[4], Vince Calhoun[5]
[1]The Mind Research Network, [2]Mind Research Network, Albuquerque, United States, [3]University of Maryland, Baltimore, United States, [4]University of Maryland, Baltimore County, Baltimore, MD, [5]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1778** **Clustered Spontaneous Coordinated Network Events Contribute to Functional Connectivity**
Thomas Allan[1], Matthew Brookes[1], Sue Francis[1], Penny Gowland[1]
[1]University of Nottingham, Nottingham, United Kingdom

**1779** **Common Functional Connectomics Discovered from Brain Functional Connectivity Dynamics**
XIANG LI[1], dajiang zhu[2], Xi Jiang[3], Changfeng Jin[4], tianming liu[5]
[1]the University of Georgia, Athens, United States, [2]University of Georgia, athens, United States, [3]The University of Georgia, Athens, GA, [4]The Second Xiangya Hospital, Central South University, Changsha, China, [5]the University of Georgia, Athens, GA

**1780** **Comparability and Neurometrics of Task- vs. Rest-related Intrinsic Connectivity Networks**
Angus MacDonald[1], Andrew Poppe[1], Krista Wisner[1]
[1]University of Minnesota, Department of Psychology, Minneapolis, MN, USA

**1781** **Compare FcMRI Analysis Methods in Cerebellar Functional Connectivity Maps: ICA and Hybrid Method**
Chia-Wei Li[1], Jyh-Horng Chen[1]
[1]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan


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**1782 Comparison of Spin-echo and Gradient-echo BOLD Signals in The Default Network**
Toshihiko Aso[1], Shin-ichi Urayama[1], Hidenao Fukuyama[1]
[1]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan

**1783 Connectivity Analysis Based on Multi-voxel Pattern in fMRI**
Eunwoo Kim[1], Fayyaz Ahmad[1], Dae-Shik Kim[1], HyunWook Park[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of

**1784 Connectivity and characterization of a left IPC region disturbed in schizophrenia and depression**
Veronika Müller[1], Edna-Clarisse Cieslik[1], Angela Laird[2], Peter Fox[3], Simon Eickhoff[1]
[1]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [2]Department of Physics, Florida International University, Miami, FL, [3]Research Imaging Institute, UTHSCSA, San Antonio, TX

**1785 Connectivity networks in healthy subjects explain clinical variability in Alzheimer's disease**
Manja Lehmann[1], Cindee Madison[2], Pia Ghosh[3], William Seeley[3], Elizabeth Mormino[2], Michael Greicius[4], Maria Gorno-Tempini[3], Joel Kramer[3], Bruce Miller[5], William Jagust[2], Gil Rabinovici[3]
[1]UCSF Memory & Aging Center, San Francisco, United States, [2]Helen Wills Neuroscience Institute, University of California Berkeley, Berkeley, CA, [3]Memory & Aging Center, Department of Neurology, University of California San Francisco, San Francisco, CA, [4]Functional Imaging in Neuropsychiatric Disorders Laboratory, Stanford University, Stanford, CA, [5]University of California San Francisco, San Francisco, CA

***1786 Connectivity-based neurofeedback: dynamic causal modeling for real-time fMRI., (O-T2)**
Yury Koush[1,2], Maria Joao Rosa[3], Fabien Robineau[2], Klaartje Heinen[3], Nikolaus Weiskopf[3], Patrik Vuilleumier[2], Dimitri Van De Ville[2,1], Frank Scharnowski[1,2]
[1]Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, [2]University of Geneva, Geneva, Switzerland, [3]University College London, London, United Kingdom

**1787 Connectivity-Based Parcellation of the Frontal Pole**
Kimberly Ray[1], Sebastian Bludau[2], Michael Riedel[1], Zachery Hernandez[3], David Zald[4], Peter Fox[1], Simon Eickhoff[5], Angela Laird[3]
[1]Research Imaging Institute, UTHSCSA, San Antonio, TX, [2]Institute of Neuroscience and Medicine, INM-1, Juelich, Germany, [3]Florida International University, Miami, FL, [4]Department of Psychiatry, Vanderbilt University, Nashville, TN, [5]Research Center Jülich, Jülich, Germany

**1788 Connectome Visualizer: a Brain Connectivity Visualizer for AFNI/SUMA**
Lev Morgan[1], John Hale[2]
[1]The University of Tulsa, Tulsa, OK, United States, [2]The University of Tulsa, Tulsa, OK

**1789 Connectome-scale Assessments of Structural and Functional Connectivity in Mild Cognitive Impairment**
dajiang zhu[1], Kaiming Li[2], Douglas Terry[3], A. Nicholas Puente[4], Lihong Wang[5], Dinggang Shen[6], L. Stephen Miller[3], tianming liu[7]
[1]University of Georgia, athens, United States, [2]Emory University, Atlanta, United States, [3]University of Georgia, athens, GA, [4]University of Georgia, athens, UT, [5]Tsinghua University, Beijing, China, [6]Department of Radiology and BRIC, UNC-Chapel Hill, Chapel Hill, NC, [7]the University of Georgia, Athens, GA

****1790 Contradictory Conclusions in Analysis of Brain Functional Networks: the Role of Image Registration**
Maxime Taquet[1,2], Ruobin Gong[1], Simon Warfield[1]
[1]Computational Radiology Laboratory, Harvard Medical School, Boston, United States, [2]ICTEAM Institute, Université catholique de Louvain, Louvain-la-Neuve, Belgium

**1791 Cortical Gyrification Geometry Determines Key Measures of Cortical Network Architecture**
James Henderson[1], Peter Robinson[2]
[1]The Univeristy Of Sydney, Australia, [2]University of Sydney, Sydney, Australia

**1792 Decoding cognitive task-sets from rostral prefrontal cortex functional connectivity patterns**
Andrew Westphal[1], Nicco Reggente[1], Kaori Ito[1], W. Harry Fortuna[1], Jesse Rissman[1]
[1]UCLA, Los Angeles, CA

**1793 Data-driven approach for identifying subgroups using fMRI connectivity maps**
Kathleen Gates[1], Peter Molenaar[2], Joel Nigg[3], Damien Fair[4]
[1]Virginia Polytechnic Institute and State University, Washington, D.C., United States, [2]The Pennsylvania State University, University Park, PA, [3]Oregon Health & Science University, Portland, OR, [4]Oregon Health & Science University, Portland, United States

**1794 Detecting state related changes for single-subject fMRI data**
Ivor Cribben[1], Lauren Atlas[2], Tor Wager[3], Martin Lindquist[4]
[1]Alberta School of Business, University of Alberta, Edmonton, Alberta, [2]New York University, New York, United States, [3]Department of Psychology and Neuroscience, University of Colorado at Boulder, Boulder, CO, [4]Department of Biostatistics, Johns Hopkins University, Baltimore, MD

**1795 Detecting Time-Dependent Network Structure in fMRI data**
Lucy Robinson[1], Lauren Atlas[2], Tor Wager[3]
[1]Drexel University, Philadelphia, United States, [2]New York University, New York, NY, [3]Department of Psychology and Neuroscience, University of Colorado at Boulder, Boulder, CO

***1796 Detection of Spontaneous Co-activation Patterns by Selectively Grouping Resting-State fMRI Volumes, (O-M3)**
Xiao Liu[1], Catie Chang[1], Jeff Duyn[1]
[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, United States

**1797 Detection of task-dependent brain network changes by whole-brain psychophysiological interactions**
Martin Fungisai Gerchen[1], David Bernal Casas[1], Peter Kirsch[1]
[1]Central Institute of Mental Health, Mannheim, Germany

**1798 Determining a threshold for graph theory**
Linda Geerligs[1], Remco Renken[2]
[1]University of Groningen, Groningen, Netherlands, [2]University Medical Center Groningen, Groningen, Netherlands

**1799 DMN areas demonstrate frequency-dependent association between rs-fMRI signal power and head motion**
Jieun Kim[1], Koene Van Dijk[2], Randy Buckner[3], Vitaly Napadow[4]
[1]Martinos Center for Biomedical Imaging, Charlestown, MA, [2]Massachusetts General Hospital, Charlestown, MA, [3]Harvard University, Cambridge, MA, [4]Athinoula A. Martinos Center for Biomedical Imaging, Charlestown, MA

***1800 Dynamic causal modeling for arterial spin labeling data, (O-T2)**
Martin Havlicek[1], Alard Roebroeck[1], Karl Friston[2], Anna Gardumi[1], Dimo Ivanov[1], Kamil Uluda [1]
[1]Maastricht University, Maastricht, Netherlands, [2]University College London, London, United Kingdom

**1801 Dynamic causal modeling of the interactions between cognitive control brain areas of bilinguals**
Aurora Ramos Nunez[1], Maya Ravid[1], Arturo Hernandez[1]
[1]University of Houston, Houston, TX

**1802 Dynamic fluctuations in intrinsic functional connectivity within and between resting state networks**
Aaron Kucyi[1,2], Karen D Davis[2,3]
[1]Institute of Medical Science, University of Toronto, Toronto, Canada, [2]Division of Brain, Imaging and Behaviour - Systems Neuroscience, Toronto Western Research Institute, Toronto, Canada, [3]Department of Surgery and Institute of Medical Science, University of Toronto, Toronto, Canada

**1803 Dynamic Small-World Functional Networks of the Human Brain: a Multiband Resting-State fMRI Study**
Lin Yuan[1], Xuhong Liao[2], Zhengjia Dai[1], Mingrui Xia[1], Yong He[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, China, Beijing, China, [2]Center for Cognition and Brain Disorders and the Affiliated Hospital, Hangzhou Normal University, Hangzhou, China

**1804 EEG Signatures of Functional Connectivity States**
Elena Allen[1,2], Lei Wu[3], Eswar Damaraju[3], Sergei Plis[3], Vince Calhoun[3,4], Tom Eichele[5,6,3]
[1]Mind Research Network, Albuquerque, United States, [2]K.G. Jebsen Center for Research on Neuropsychiatric Disorders at the University of Bergen, Bergen, Norway, [3]Mind Research Network, Albuquerque, NM, [4]University of New Mexico, Albuquerque, NM, [5]University of Bergen, Bergen, Norway, [6]Haukeland University Hospital, Bergen, Norway

**1805 Effects of resting conditions and frequency bands on brain functional network: a test-retest study**
Liqing Liu[1], Junjing Wang[1], Qin Xu[1], Pengfei Xu[2], Qing Ma[1], Bishan Liang[1], Yong He[2], Ming Liu[1], Ruiwang Huang[1]
[1]Centre for Studies of Psychological Application, Key Laboratory of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**1806 Eigenvector Centrality Is Sensitive to Drug-Specific Changes in Subcortical Functional Connectivity**
Najmeh Khalili Mahani[1], Gabriele Lohmann[2], Serge Rombouts[3]
[1]Leiden University, Leiden, Netherlands, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Leiden Institute for Brain and Cognition, Leiden, Netherlands

**1807 Estimates of Segregation and Overlap of Functional Connectivity Networks in Human Cerebral Cortex**
BT Thomas Yeo[1], Fenna Krienen[2], M W.L. Chee[1], Randy Buckner[2]
[1]Duke-NUS Graduate Medical School, Singapore, Singapore, [2]Harvard University, Cambridge, MA

**1808 Estimating Community Structure in C. elegans Brain Network**
Dragana Pavlovic[1], Thomas Nichols[1], Petra Vertes[2], Edward Bullmore[3]
[1]University of Warwick, Dept. of Statistics, Coventry, United Kingdom, [2]Cambridge University, Cambridge, United Kingdom, [3]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

**1809 Evaluation of multivariate functional connectivity techniques for resting state data sets**
Babak Afshin-Pour[1], Cheryl Grady[1,2], Stephen Strother[1,3]
[1]Rotman Research Institute, Baycrest, Toronto, Canada, [2]Department of Psychlogy and Psychiatry, University of Toronto, Toronto, Canada, [3]Department of Medical Biophysics, University of Toronto, Toronto, Canada

**1810 Fast eigenvector centrality mapping (fECM) of resting-state fMRI time series: theory and application**
Alle Meije Wink[1], Jan De Munck[1], Ysbrand Van Der Werf[1], Menno Schoonheim[1], Maja Binnewijzend[1], Sofie Adriaanse[1], Odile van den Heuvel[1], Philip Scheltens[1], Bart van Berckel[1], Jeroen Geurts[1], Frederik Barkhof[1]
[1]VU University Medical Center, Amsterdam, The Netherlands


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****1811 Frequency-Dependent Resting-State Network Modules Revealed in MR-Encephalography**
Hsu-Lei Lee[1], Jakob Assländer[1], Pierre LeVan[1], Jürgen Hennig[1]
[1]University Medical Center Freiburg, Freiburg, Germany

**1812 Frequency-specific rich-club organization of human resting state networks**
Shuntaro Sasai[1,2], Fumitaka Homae[3], Hama Watanabe[1], Hiroki Tanabe[4], Akihiro Sasaki[5,2,6], Norihiro Sadato[5,6,7], Gentaro Taga[1]
[1]University of Tokyo, Tokyo, Japan, [2]Japan Society for the Promotion of Science, Tokyo, Japan, [3]Tokyo Metropolitan University, Tokyo, Japan, [4]Nagoya University, Nagoya, Japan, [5]National Institute for Physiological Sciences, Okazaki, Japan, [6]The Graduate University for Advanced Studies (Sokendai), Okazaki, Japan, [7]Japan Science and Technology Agency/Research Institute of Science and Technology for Society, Tokyo, Japan

**1813 Functional brain networks in 80 healthy middle-aged & elderly assessed with R-fMRI three years apart**
Rune Eikeland[1], Erlend Hodneland[1], Astri Lundervold[1], Arvid Lundervold[1]
[1]University of Bergen, Bergen, Norway

**1814 Functional connectivity modeling of cortico-striatal alterations in Huntington's disease**
Imis Dogan[1], Claudia Rottschy[2], Peter Fox[3], Angela Laird[4], Jörg Schulz[1], Simon Eickhoff[5], Kathrin Reetz[1]
[1]Department of Neurology, RWTH Aachen University, Aachen, Germany, [2]Department of Psychiatry, Psychotherapy and Psychosomatic, RWTH Aachen University, Aachen, Germany, [3]Research Imaging Center, University of Texas Health Science Center, San Antonio, TX, USA, [4]Department of Physics, Florida International University, Miami, FL, USA, [5]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**1815 Functional Connectivity Networks obtained using 10-20 EEG seeds and 7 standard functional networks**
Gonzalo Rojas[1], Marcelo Galvez[2]
[1]Laboratory of Medical Image Processing, Department of Radiology, Las Condes Clinic, Santiago, Chile, [2]Department of Radiology, Las Condes Clinic, Santiago, Chile

**1816 Functional connectivity of frontal and occipital cortex in congenitally blind adults**
Ben Deen[1], Marina Bedny[1], Rebecca Saxe[1]
[1]Massachusetts Institute of Technology, Cambridge, MA

**1817 Functional Connectivity within the Default Mode Network: The Effect of Epoch Length**
Rebecca Wilson[1,2], Stephen Mayhew[1], Sara Assecondi[1], Theodoros Arvanitis[2], Andrew Bagshaw[1]
[1]School of Psychology, University of Birmingham, Birmingham, United Kingdom, [2]School of Electronic, Electrical and Computer Engineering, University of Birmingham, Birmingham, United Kingdom

**1818 Functional Connectome Hubs and Their Test-Retest Reliability: A Multiband Resting-State fMRI Study**
Xuhong Liao[1], Mingrui Xia[2], Zhengjia Dai[2], Ting Xu[3], Haijing Niu[2], Xinian Zuo[3], Yong He[2], Yufeng Zang[1]
[1]Center for Cognition and Brain Disorders and the Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [3]Key Laboratory of Behavioral Science, Institute of Psychology, Beijing, China

**1819 Functional dysconnectivity of the orbitofrontal cortex in the resting-state among internet addicts**
Jin-Hun Sohn[1], Jin-Sup Eom[2], Ji-Woo Seok[3], Sunju Sohn[4], Mi-Sook Park[5]
[1]Chungnam National University, Daejeon, Republic Of Korea, [2]Chungbuk National University, cheongju, Korea, Republic of, [3]Chungnam National University, Daejeon, Korea, Republic of, [4]Cheongju University, Cheongju, Korea, Republic of, [5]Department of Psychology, Institute for Brain Research, Chungnam National University, dae jeon, Korea, Republic of

**1820 Functional Initiator, Terminator and Communicator: Roles of DICCCOLs**
XIANG LI[1], Changfeng Jin[2], dajiang zhu[3], Xi Jiang[4], tianming liu[5]
[1]the University of Georgia, Athens, United States, [2]The Second Xiangya Hospital, Central South University, Changsha, China, [3]University of Georgia, athens, United States, [4]The University of Georgia, Athens, GA, [5]the University of Georgia, Athens, GA

**1821 GLM analysis of fMRI neurofeedback of the primary motor cortex using kinesthetic motor imagery**
Ann Mansur[1], Mark Chiew[2], Fred Tam[3], Tom Schweizer[4], Simon Graham[5]
[1]St. Michael's, Toronto, Canada, [2]University of Oxford, Oxford, United Kingdom, [3]Sunnybrook Research Institute, Toronto, Canada, [4]Keenan Research Centre, Li Ka Shing Knowledge Institute, St. Michael's, Toronto, Canada, [5]Sunnybrook Research Institute, Sunnybrook Health Sciences Centre, Toronto, Canada

**1822 Global and local brain networks during resting state and an auditory oddball task in schizophrenia**
Qingbao Yu[1], Jing Sui[2], Kent Kiehl[3], Godfrey Pearlson[4], Vince Calhoun[3]
[1]The Mind Research Network, Albuquerque, United States, [2]The Mind Research Network, Albuquerque, NM, [3]The Mind Research Network and UNM, ALBUQUERQUE, NM, [4]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT

***1823 Granger causality analysis of fMRI is invariant to hemodynamic convolution but not downsampling, (O-T2)**
Anil Seth[1], Lionel Barnett[1], Paul Chorley[1]
[1]Sackler Centre for Consciousness Science, University of Sussex, Brighton, United Kingdom

**1824 Group-Wise Global Signal Regression Effects on a Resting State Analysis of TBI Patients and Controls**
John Graner[1], Binquan Wang[2], Ping-Hong Yeh[2], Hai Pan[2], Wei Liu[1], John Ollinger[1], Terry Oakes[1], Gerard Riedy[1]
[1]National Intrepid Center of Excellence, Bethesda, MD, United States, [2]Uniformed Services University of the Health Sciences, Bethesda, MD, United States

**1825 Hierarchical characterization of brain activity based on necessity and sufficiency**
Alejandro Veloz[1,2], Magnús Úlfarsson[3], Luis Hernández-García[4]
[1]Universidad Técnica Federico Santa María, Valparaíso, Chile, [2]Universidad de Valparaíso, Valparaíso, Chile, [3]University of Iceland, Reykjavik, Iceland, [4]University of Michigan, Ann Arbor, MI

**1826 High resolution BOLD imaging allows for DCM that includes individual posterior fossa structures**
Joe Wildenberg[1], Mary Meyerand[2]
[1]Legacy Health Systems, Portland, United States, [2]UW-Madison, Madison, WI

**1827 Hypothalamic - cortical functional connectivity : ventromedial vs. lateral hypothalamic network**
Stephanie Kullmann[1,2], Martin Heni[3], Sabine Frank[2], Maike Hege[2], Ralf Veit[2], Andreas Fritsche[3], Hubert Preissl[1]
[1]1) Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Center, Tübingen, Germany, [2]2) Institute of Medical Psychology and Behavioral Neurobiology, University Tuebingen, Tübingen, Germany, [3]3) Department of Internal Medicine IV, University of Tübingen, Tübingen, Germany

**1828 Hypothesis Tests for Detecting Differential Features in Functional Connectivity Networks**
Manjari Narayan[1], Steffie Tomson[2], David Eagleman[2], Genevera Allen[1,2]
[1]Rice University, Houston, United States, [2]Baylor College of Medicine, Houston, United States

**1829 Identification of rTMS responders vs. non-responders for MDD via a network theory approach on fMRIs**
Joseph Geraci[1], Jonathan Downar[1], Tim Salomons[2]
[1]University Health Network, Toronto, Canada, [2]Toronto Western Research Institute, Toronto, Canada

**1830 Identifying temporally independent functional subunits of amygdala in long acquisition fMRI**
Joongil Kim[1], Bumhee Park[1], Tak Youn[2], Eun Kyung Ji[3], Hae-Jeong Park[4]
[1]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Dongguk University Medical School, Goyang city, Korea, Republic of, [3]Dongnam Inst. of Radiological & Medical Sciences, Busan, Korea, Republic of, [4]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**1831 Identifying the Default Mode Network Structure Using Dynamic Causal Modeling on Resting-state fMRI**
Xin Di[1], Bharat Biswal[1]
[1]Department of Biomedical Engineering, New Jersey Institute of Technology, Newark, NJ, United States

**1832 Identifying the overlapping community of functional brain networks in healthy young individuals**
Sigi Wang[1], Mingrui Xia[1], Zhengjia Dai[1], Yong He[1]
[1]State Key laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**1833 Inferring Disrupted Functional Connectivity in Parkinson's Disease Using Affine Invariant Metric**
Bernard Ng[1,2], Kathleen Poston[2], Gaël Varoquaux[1], Bertrand Thirion[1], Michael Greicius[2]
[1]Parietal Team, INRIA Saclay - Île-de-France, Saclay, France, [2]Stanford University, Stanford, United States

****1834 Inferring Ontologies of Mind-Brain Relations from Neuroimaging Data**
BT Thomas Yeo[1], Fenna Krienen[2], Siti N. Yaakub[1], Christopher L Asplund[1], Randy Buckner[2], Michael W.L. Chee[1]
[1]Duke-NUS Graduate Medical School, Singapore, Singapore, [2]Harvard University, Cambridge, MA

**1835 Infraslow EEG Correlates of fMRI**
Joshua Grooms[1], Garth Thompson[2], Hillary Schwarb[3], Eric Schumacher[3], Regina Schmidt[4], Charles Epstein[5], Shella Keilholz[6]
[1]Georgia Institute of Technology, Atlanta, United States, [2]Georgia Institute of Technology and Emory University, Atlanta, GA, [3]Georgia Institute of Technology, Atlanta, GA, [4]Air Force Research Laboratory, Wright-Patterson Air Force Base, OH, [5]Emory University School of Medicine, Atlanta, GA, [6]Emory/Georgia Tech, Atlamta, United States

**1836 Interaction of Sensory and Motor Sub-networks when Initiating a Willed Movement using Graph Analysis**
Christof Karmonik[1], Mario Dulay[1], Amit Verma[1], Steve Fung[1], Robert Grossman[1]
[1]The Methodist Hospital Neurological Institute, Houston, TX United States

**1837 Intra- and Inter-Network Changes in Functional Connectivity During Active Steady-States**
Sasidhar Madugula[1], Tamar Makin[1], Heidi Johansen-Berg[1], Steve Smith[1], Eugene Duff[2]
[1]University of Oxford, Oxford, United Kingdom, [2]FMRIB Centre, Oxford, United Kingdom

**1838 Intrinsic connectivity and behavioral parcellation of the cerebellum through meta-analytic modeling**
Michael Riedel[1], Kimberly Ray[2], Zachery Hernandez[3], Mickle Fox[4], Simon Eickhoff[5], Peter Fox[4], Angela Laird[6]
[1]Research Imaging Institute, UTHSCSA, San Antonio, TX, [2]UTHSCSA, [3]Florida International University, Miami, United States, [4]UTHSCSA, San Antonio, TX, [5]Research Center Jülich, Jülich, Germany, [6]Florida International University, Miami, FL

**1839** **Laser acupuncture induced the alternation in default mode network on acupoint K1**
Yun-An Huang[1], Chao-Hsien Hsieh[2,3], Chun-Hao Tseng[4], Jyh-Horng Chen[5], Chang-Wei Hsieh[6]
[1]National Taiwan University, Taipei, Taiwan, [2]Interdiciplinary MRI/MRS Lab, NationalTaiwan University, Taipei, Taiwan, [3]Neurobiology and Cognitive Science Center, National Taiwan University, Taipei, Taiwan, [4]Taiwan University, Taipei, Taiwan, [5]Interdiciplinary MRI/MRS Lab, National Taiwan University, Taipei, Chinese Taipei, [6]Department of Photonic and Communication Engineering, Asia University, Taichung, Chinese Taipei

**1840** **Macroscopic Effects of Susceptibility Gradients on Functional Connectivity MRI**
Sheeba Anteraper[1], Susan Whitfield-Gabrieli[2], Alice Sawyer[3], John Gabrieli[2], Christina Triantafyllou[4]
[1]A. A. Martinos Imaging Center at McGovern Institute for Brain Research, MIT, Cambridge, MA, United States, [2]Department of Brain and Cognitive Sciences, MIT, Cambridge, MA, United States, [3]Program in Clinical Psychology, Boston University, Boston, MA, United States, [4]Massachusetts General Hospital, Charlestown, MA, United States

**1841** **Making large-scale networks (> 1000 nodes) from functional MRI**
Lourens Waldorp[1], Verena Schmittmann[2], Sara Jahfari[1], Alexander Savi[1], Denny Borsboom[1]
[1]University of Amsterdam, Amsterdam, Netherlands, [2]Tilburg University, Tilburg, Netherlands

**1842** **Making Meta-Analytic Co-Activation Mapping More Specific**
Robert Langner[1], Claudia Rottschy[2], Angela Laird[3], Peter Fox[4], Simon Eickhoff[1]
[1]Institute of Clinical Neuroscience & Medical Psychology, Heinrich Heine University Duesseldorf, Duesseldorf, Germany, [2]Department of Psychiatry, Psychotherapy & Psychosomatics, RWTH Aachen University Hospital, Aachen, Germany, [3]Department of Physics, Florida International University, Miami, FL, [4]University of Texas Health Science Center at San Antonio, San Antonio, TX

**1843** **Modeling Hierarchical Components and Information Flows in Working Memory Cognitive Processes**
dajiang zhu[1], tianming liu[2]
[1]University of Georgia, athens, United States, [2]the University of Georgia, Athens, GA

**1844** **Modelling and testing the relationship of connectivity measures to regional signal fluctuations**
Eugene Duff[1], Tamar Makin[1], Sasidhar Madugula[1], Heidi Johansen-Berg[1], Mark Woolrich[1], Stephen Smith[2]
[1]University of Oxford, Oxford, United Kingdom, [2]Oxford University, Oxford, United Kingdom

**1845** **Modelling the N-Methyl-D-Aspartate Receptor Hypofunction Model in Subjects with Schizophrenia**
Maria Dauvermann[1], Liana Romaniuk[1], Neil Roberts[2], Jeremy Hall[1], Andrew MCINTOSH[1], Thomas Moorhead[1], Stephen Lawrie[1]
[1]University of Edinburgh, Dpt Psychiatry, Edinburgh, United Kingdom, [2]University of Edinburgh, Edinburgh, United Kingdom

**1846** **Modularity Gradients: Relating Local Connections to Global Community Structure of a Brain Connectome**
Yu-Teng Chang[1], Dimitrios Pantazis[1]
[1]McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA

**1847** **Modulations on resting-state functional connectivity by other regions**
Xin Di[1], Bharat Biswal[1]
[1]Department of Biomedical Engineering, New Jersey Institute of Technology, Newark, NJ, United States

**1848** **Multi-modal connectivity network mapping applied to the dPMC as a key region in motor learning**
Robert Hardwick[1], Claudia Rottschy[2], Peter Fox[3], Simon Eickhoff[4]
[1]Johns Hopkins University, Baitimore, USA, [2]Department of Neurology, University Hospital Aachen, [3]UTHSCSA, San Antonio, TX, [4]Research Center Jülich, Jülich, Germany

**1849** **On the topological properties of rs-fMRI networks extracted by common multivariate techniques**
Babak Afshin-Pour[1], Cheryl Grady[1,2], Stephen Strother[1,3]
[1]Rotman Research Institute, Baycrest, Toronto, Canada, [2]Department of Psychology and Psychiatry, University of Toronto, Toronto, Canada, [3]Department of Medical Biophysics, University of Toronto, Toronto, Canada

**1850** **Post-hoc optimization reveals decreasing regional self-inhibition in progressing neurodegeneration**
Elisa Scheller[1,2], Stefan Klöppel[1,3]
[1]University Medical Center Freiburg, Freiburg Brain Imaging, Dept. of Psychiatry and Psychotherapy, Freiburg, Germany, [2]Department of Psychology, Laboratory for Biological and Personality Psychology, University of Freiburg, Freiburg, Germany, [3]University Medical Center Freiburg, Department of Neurology, Freiburg, Germany

**1851** **Principal component analysis identifies building blocks of dynamic brain connectivity during rest**
Nora Leonardi[1,2], Jonas Richiardi[2,3], Markus Gschwind[4], Samanta Simioni[4], Jean-Marie Annoni[2], Myriam Schluep[4], Patrik Vuilleumier[2], Dimitri Van De Ville[1,2]
[1]Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [2]University of Geneva, Geneva, Switzerland, [3]Stanford University, Stanford University, [4]University Hospital Lausanne (CHUV), Lausanne, Switzerland

**1852** **Real-time Monitoring of Functional Network Connectivity Dynamics using Echo Volumar Imaging**
Stefan Posse[1], Elena Ackley[1]
[1]University of New Mexico, Department of Neurology, Albuquerque, NM

**1853 Recovering directed networks in neuroimaging datasets using partially conditioned Granger causality**
Guo-Rong Wu[1,2], Wei Liao[3], Sebastiano Stramaglia[4], Huafu Chen[2], Daniele Marinazzo[5]
[1]Ghent University, Ghent, Belgium, [2]University of Electronic Science and Technology of China, Chengdu, China, [3]Center for Cognition and Brain Disorders and the Affiliated Hospital,, Hangzhou, China, [4]University of Bari, Bari, Italy, [5]University of Ghent, Gent, Belgium

**1854 Regional preference of hub identification and classification in human rsfMRI**
Viola Borchardt[1], Marie-José van Tol[2], Anton Lord[3], Claus Tempelmann[4], Martin Walter[5,2]
[1]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University Magdeburg, Magdeburg, Germany, [2]Leibniz Institute for Neurobiology, Magdeburg, Germany, [3]Division of Mental Health Research, Queensland Institute of Medical Research, Brisbane, Queensland, [4]Department of Neurology II, Otto-von-Guericke University of Magdeburg, Magdeburg, Germany, [5]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany

**1855 Reproducibility of Graph Measures and Functional Connectivity of the Associative-Semantic Network**
Yu Wang[1], Natalie Nelissen[1], Kate Adamczuk[1], An-Sofie De Weer[1], Mathieu Vandenbulcke[1], Stefan Sunaert[1], Rik Vandenberghe[1], Patrick Dupont[1]
[1]KU Leuven, Leuven, Belgium

**1856 Resting State Functional Connectivity Analysis Based on Mutual Information Graphs For MS Patients**
Ehsan Eqlimi[1,2], Nader Riyahi Alam[1], Mohammad Ali Sahraian[2], Sajad Riyahi Alam[2], Aida Aghsaei[2], Tina Roostaei[2], Arash Nazeri[2], Amir Reza Azimi[2], Ali Shakourirad[2], Hossein Ghanaati[3], Kavous Firouznia[3], Manije Pakravan[3], Arman Eshaghi[2]
[1]Department of Biomedical Engineering and Medical Physics,Tehran University of Medical Sciences, Tehran, Iran, [2]Sina MS Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, [3]Department of Radiology,Medical Imaging Center,Imam Khomeini Hospital,Tehran University, Tehran, Iran

**1857 Resting-State Analysis Using Empirical Mode Decomposition and Canonical Correlation Analysis**
Alireza Sojoudi[1], Michel Lauzon[1], Bradley Goodyear[1]
[1]University of Calgary, Calgary, Alberta

**1858 Resting-state connectivity changes in women with breast cancer**
Scott Peltier[1], Marc Berman[2], Katie Askren[3], Bratislav Misic[2], Mi Jung[1], Anthony McIntosh[2], Lynn Ossher[1], Min Zhang[1], Patricia Reuter-Lorenz[1], Bernadine Cimprich[1]
[1]University of Michigan, Ann Arbor, United States, [2]Rotman Research Institute, Toronto, Canada, [3]University of Washington, Seattle, United States

**1859 Resting-state Connectivity-based Parcellation of the Temporoparietal Region**
Benjamin Stengel[1], Colin Humphries[1], Jeffrey Binder[1]
[1]Medical College of Wisconsin, Wauwatosa, United States

**1860 Resting-state functional connectivity of specialized occipitotemporal cortical regions**
Kaundinya Gopinath[1], Simon Lacey[1], Shaheen Ahmed[1], Randall Stilla[1], K Sathian[1]
[1]Emory University, Atlanta, United States

**1861 Resting-State Network Estimation in Individuals Using a Supervised Classifier**
Carl Hacker[1], Timothy Laumann[1], Nicholas Szrama[1], Antonello Baldassarre[1], Abraham Snyder[1], Eric Leuthardt[1], Maurizio Corbetta[1]
[1]Washington University School of Medicine, St. Louis, United States

**1862 Salience network is responsible for switching between default mode and central executive networks**
Nia Goulden[1], Aygul Khusnullina[1], Nick Davis[1], Martyn Bracewell[1], Paul Mullins[1]
[1]Bangor University, Bangor, United Kingdom

**1863 Small-world connectivity in FMRI based functional language networks using ICA in pediatric epilepsy**
Anas Salah Eddin[1], Saman Sargolzaei[1], Jin Wang[1], William Gaillard[2], Malek Adjouadi[1]
[1]Florida International University, Miami, FL, [2]Children's National Medical Center, Washington, DC

**1864 Small-world functional connectivity: a methodological artifact?**
Jaroslav Hlinka[1], Martin Vejmelka[1], David Hartman[1], Jaroslav Tintera[2], Milan Paluš[1]
[1]Institute of Computer Science, Academy of Sciences of the Czech Republic, Prague, Czech Republic, [2]Department of Radiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

**1865 State space modeling of time-varying contemporaneous and lagged network relationships**
Peter Molenaar[1], Kathleen Gates[2]
[1]The Pennsylvania State University, University Park, PA, [2]Virginia Polytechnic Institute and State University, Washington, D.C., United States

**1866 Stochastic DCM of the DMN using resting-state fMRI: test-retest reliability**
Gerard Ridgway[1], António Bastos Leite[2], William Penny[1], Karl Friston[1]
[1]Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, London, United Kingdom, [2]Faculty of Medicine, University of Porto, Porto, Portugal

**1867 Structural and Resting-State Functional Connectivity Disturbances in Bipolar Disorder**
Micah Chambers[1], Andrei Irimia[2], Lori Altshuler[3], John Van Horn[3]
[1]University of California, Los Angeles, Los Angeles, United States, [2]University of California, Los Angeles, [3]University of California, Los Angeles, Los Angeles, CA


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**1868 Structural connectivity estimation via Bayesian data fusion**
Max Hinne[1,2], Tom Heskes[1], Marcel van Gerven[2]
[1]Radboud University Nijmegen, Institute for Computing and Information Sciences, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**1869 Temporally sensitive multi-voxel functional connectivity in fMRI**
Peter Boord[1], Sonya Mehta[1], Thomas Grabowski[1]
[1]University of Washington, Seattle, United States

**1870 Testing MEG Functional Connectivity Methods During Audiovisual Integration**
Tyler Ard[1], Tom Holroyd[2], Frederick Carver[3], Richard Coppola[4]
[1]NIMH, Bethesda, United States, [2]National Institute of Mental Health (NIMH), NIH, Bethesda, MD, [3]NIMH, Bethesda, MD, [4]NIMH/NIH, Bethesda, MD

**1871 Test-retest reliability of the lateralization of language network**
Yang Fan[1,2], Linlin Zhu[3], Qihong Zou[2], Zhendong Niu[3], Jia-Hong Gao[1,2,4]
[1]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [2]MRI Research Center, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [3]School of Computer Science and Technology, Beijing Institute of Technology, Beijing, China, [4]Brain Research Imaging Center, University of Chicago, Chicago, IL, USA

**1872 Thalamocortical connectivity of the sensorimotor system in typically developing children**
Ellen Jaspers[1], Joshua Balsters[2,1], Nicole Wenderoth[3,1]
[1]ETH Zurich, Zurich, Switzerland, [2]Trinity College Dublin, Dublin, Ireland, [3]KU Leuven, Leuven, Belgium

**1873 The acute effect of heroin on inhibition-related fronto-cingulate connectivity in addicts**
André Schmidt[1,2], Marc Walter[3], Kerstin Bendfeldt[1,2], Renata Smieskova[1,2], Stefan Borgwardt[1,2,3]
[1]University of Basel, Basel, Switzerland, [2]Medical Imaging Analysis Center, Basel, Switzerland, [3]University Hospital of Psychiatry, Basel, Switzerland

**1874 The Brain Selectively Reconfigures due to Specific Cognitive Demands**
Jessica Cohen[1], Mark D'Esposito[1]
[1]University of California, Berkeley, Berkeley, CA

**1875 The functional connectivity of emotional memory blockade via propranolol during reconsolidation**
Philip Dickinson[1], Pierre Bellec[2,3], Lars Schwabe[4], Jens Pruessner[5,6]
[1]Integrated Program in Neuroscience, Faculty of Medicine, McGill University, Montréal, Canada, [2]CRIUGM, Montreal, Canada, [3]Département d'informatique et de recherche opérationnelle, Université de Montréal, Montréal, Québec, Canada, [4]Department of Cognitive Psychology, Ruhr-University Bochum, Bochum, Germany, [5]Department of Psychiatry, Faculty of Medicine, McGill University, Montréal, Canada, [6]McGill Centre for Studies in Aging, McGill University, Montreal, Quebec, Canada

**1876 Timecourse Homogeneity within Atlas Defined Nodes for Connectivity Analysis**
Xilin Shen[1], Emily Finn[1], Dustin Scheinost[2], Xenophon Papademetris[2], R Constable[2]
[1]Yale University, New Haven, United States, [2]Yale University, New Haven, CT

**1877 Time-Frequency Dynamics of Brain Connectivity by Stochastic Oscillator Models and Kalman Filtering**
Arno Solin[1,2], Enrico Glerean[1,2], Simo Särkkä[1,2]
[1]Department of Biomedical Engineering and Computational Science, Aalto University, Espoo, Finland, [2]Advanced Magnetic Imaging Centre, Aalto University, Espoo, Finland

**1878 Time-varying Causal Flow for Brain Information Flow Measurement**
Jungsoo Lee[1], Dae-Shik Kim[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of

**1879 Transient connectivity changes during a visual task — time-varying correlation estimation analysis**
Xin Di[1], Zening Fu[2], Zhiguo Zhang[2], Shing-Chow Chan[2], Bharat Biswal[1]
[1]Department of Biomedical Engineering, New Jersey Institute of Technology, Newark, NJ, United States, [2]Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

**1880 Transient synchronising sub-networks within large scale networks**
Thomas Allan[1], Matthew Brookes[1], Sue Francis[1], Penny Gowland[1]
[1]University of Nottingham, Nottingham, United Kingdom

**1881 Validation of group-level estimation methods for causal interactions in fMRI**
Srikanth Ryali[1], Tao Tu[2], Tianwen Chen[3], Vinod Menon[4]
[1]Stanford University School of Medicine, Palo Alto, United States, [2]Stanford School of Medicine, Palo Alto, CA, [3]Stanford University, Palo Alto, United States, [4]Stanford school of medicine, Palo Alto, CA

## Modeling and Analysis Methods

### Image Registration and Computational Anatomy

**1882 A New Volume Preserved Warping Method for Measuring Changes of Local Brain Volume**
Xiaofu He[1], Xu Yan[2], Xuejun Hao[1], Ravi Bansal[1], Zhishun Wang[1], Bradly Peterson[1], Dongrong Xu[1]
[1]Brain Imaging Lab, Department of Psychiatry, Columbia University, New York, NY 10032, USA, [2]The Cognitive Neuroscience Institute & Shanghai Key Lab of MR, East China Normal University, Shanghai 20062, China

***1883 Automated Analysis of the Shape of Sulcal Curves using the Anisotropic Helmholtz Equation, (O-W2)**
Anand Joshi[1], Syed Ashrafulla[1], David Shattuck[2], Hanna Damasio[1], Richard Leahy[1]
[1]University of Southern California, Los Angeles, CA, [2]University of California, Los Angeles, CA

**1884 Automatic Nonlinear Transformation of Brain MR images to Talairach Stereotaxic Space**
Mingyi Li[1], Blessy Mathew[1], Katherine Koenig[1], Jian Lin[1], Michael Phillips[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, OH, USA

***1885 Brain Image and Fiber Log-demons Registration with Currents, (O-W2)**
Viviana Siless[1], Joan GLAUNES[2], Pamela Guevara[3], Jean-François Mangin[4], Cyril Poupon[5], Denis Le BIhan[6], Pierre Fillard[7], Bertrand Thirion[8]
[1]Parietal Team, INRIA, Saclay, Paris, France, [2]MAP5, CNRS, Université Paris Descartes, PARIS, France, [3]University of Concepción, Concepción, Chile, [4]LNAO, Neurospin, CEA, Gif-sur-Yvette, France, [5]NeuroSpin, CEA, Gif-Sur-Yvette, France, [6]NeuroSpin, Gif-sur-Yvette, France, [7]Parietal Team, INRIA Saclay-Île-de-France, Saclay, France, [8]Parietal Team, INRIA Saclay - Île-de-France, Saclay, France

**1886 Comparison of cortical surface reconstructions from quantitative T1 and T1-weighted volumetric data**
Kyoko Fujimoto[1], Lawrence Wald[2,3,4], Jonathan Polimeni[2,3]
[1]Weill Cornell Medical College, New York, NY, [2]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States, [3]Department of Radiology, Harvard Medical School, Boston, MA, [4]Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA

**1887 Cortical Folding Analysis with Local Gyrification Index**
Evgeniy Lebed[1], Claudia Jacova[2], Lei Wang[3], Mirza Faisal Beg[1]
[1]Simon Fraser University, Burnaby, Canada, [2]University of British Columbia, Vancouver, Canada, [3]Northwestern University, Chicago, United States

**1888 Group-wise Image Registration based on Dynamic Directed Graph Models**
Zhenyu Tang[1], Di Jiang[1], Yong Fan[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**1889 Large Deformation Diffeomorphic Registration of Diffusion-Weighted Images with Explicit Orientation**
Pei Zhang[1], Marc Niethammer[2], Dinggang Shen[1], Pew-Thian Yap[1]
[1]Department of Radiology and BRIC, University of North Carolina at Chapel Hill, Chapel Hill, United States, [2]Department of Computer Science and BRIC, University of North Carolina at Chapel Hill, Chapel Hill, United States

**1890 MRI based head surface mesh of young and old people for finite element analysis**
Kazunori Sato[1], Benjamin Thyreau[1], Toshiyuki Yanaoka[2], Ryuta Kawashima[1], Hiroshi Fukuda[1]
[1]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan, [2]Honda R&D Co., Ltd. Automobile R&D Center, Haga, Japan

**1891 Multimodal Surface Matching: a new surface registration approach that improves functional alignment**
Emma Robinson[1], Steve Smith[2], Jesper Andersson[3], Saad Jbabdi[4], David Van Essen[5], Matthew Glasser[6], Mark Jenkinson[2], Gregory Burgess[7], Michael Harms[7], Deanna Barch[7]
[1]FMRIB, Oxford, United Kingdom, [2]University of Oxford, Oxford, United Kingdom, [3]FMRIB, Oxford , United Kingdom, [4]FMRIB Centre, Oxford, United Kingdom, [5]Washington University, [6]Washington University in St. Louis, St. Louis, MO, [7]Washington University Medical School, St. Louis, MO

**1892 Nonlinear Image Registration in AFNI**
Robert Cox[1], Daniel Glen[1]
[1]National Institute of Mental Health, Bethesda, MD

**1893 One or Two Analyses? An Integrated Approach for Macro-Anatomical and ROI-Based Functional Alignment**
Martin Frost[1], Rainer Goebel[1,2]
[1]Maastricht University, Maastricht, Netherlands, [2]Netherlands Institute for Neuroscience, an Institute of the Royal Netherlands Academy of Arts and Sciences (KNAW), Amsterdam, Netherlands

**1894 Robust registration of multi-modal images**
Christian Wachinger[1,2], Polina Golland[1], Bruce Fischl[2], Martin Reuter[3]
[1]MIT, Cambridge, United States, [2]Massachusetts General Hospital, Boston, MA, [3]Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School/ MGH, Charlestown, MA



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**1895** **Skull-stripping Free Preprocessing Pipeline for Functional Magnetic Resonance Imaging**
Klaus Sembritzki[1], Björn Heismann[2], Sebastian Schmidt[2], Johannes Kornhuber[3], Joachim Hornegger[1], Andreas Maier[1], Firas Mualla[1], Aleksandar Petrovic[2]
[1]Pattern Recognition Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany, [2]Siemens AG, Healthcare Sector, Erlangen, Germany, [3]Department of Psychiatry, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

**1896** **Spatial Registration of fMRI Data via Graph Matching of Functional Connectivity Patterns**
Zhenyu Tang[1], Di Jiang[2], Yong Fan[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Department of Mathematics, Zhejiang University, Hangzhou, China

**1897** **SPM Toolbox for Voxel- and Surface-based Morphometry**
Christian Gaser[1,2], Robert Dahnke[3]
[1]Structural Brain Mapping Group, Department of Psychiatry, Jena University Hospital, Jena, Germany, [2]Department of Neurology. Jena University Hospital, Jena, Germany, [3]Department of Neurology, Jena University Hospital, Jena, Germany

***1898** **Towards joint morphometry of white matter tracts and gray matter surfaces, (O-W2)**
Pietro Gori[1,2], Olivier COLLIOT[2,1], Yulia Worbe[2], Linda Marrakchi-Kacem[2,3,1], Sophie Lecomte[2,3,1], Cyril Poupon[3], Andreas Hartmann[2], Nicholas Ayache[4], Stanley Durrleman[1,2]
[1]Aramis project-team, Inria Paris-Rocquencourt, Pitie Salpetriere Hospital, Paris, France, [2]Centre de recherche de l'institut du cerveau et de la moelle épiniére (UPMC, CNRS, INSERM), Pitie Salpetriere Hospital, Paris, France, [3]NeuroSpin, CEA, Gif-Sur-Yvette, France, [4]Asclepios project-team, Inria Sophia Antipolis, Sophia Antipolis, France

**1899** **X-ray and MRI mapping using Co linearity in Temporal Epilepsy study**
Ian Burger[1], Victoria Ives-Deliperi[1], James Butler[2], Ernesta Meintjes[1]
[1]University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, [2]Constantiaberg Mediclinic, Cape Town, South Africa

## Modeling and Analysis Methods

### Motion Correction and Preprocessing

**1900** **Algorithms for Simultaneous Low-Pass Filtering and Total Variation Denoising of Neuroimaging Data**
Ivan Selesnick[1], Harry Graber[2], Douglas Pfeil[2], Randall Barbour[2]
[1]Polytechnic Institute of New York University, Brooklyn, NY, [2]SUNY Downstate Medical Center, Brooklyn, NY

**1901** **Automatic Template-based Brain Extraction in Fetal MR Images**
Youssef Taleb[1], Marc Schweitzer[1], Colin Studholme[2], Meriam Koob[3], Jean-Louis Dietemann[3], François Rousseau[1]
[1]CNRS - University of Strasbourg, Strasbourg, France, [2]University of Washington, Seattle, WA, [3]Centre Hospitalo-Universitaire de Strasbourg, Strasbourg, France

**1902** **BOLD motion injection shows total correction possible with accurate parameters and parameterization**
Erik Beall[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, United States

**1903** **Effects of Head Motion on Resting-State Connectivity are Exacerbated by a Common Preprocessing Error**
Michael Hallquist[1], Kai Hwang[2], Beatriz Luna[3]
[1]University of Pittsburgh, [2]University of Pittsburgh, Pittsburgh, United States, [3]University of Pittsburgh, Pittsburgh, PA

**1904** **Effects of Motion Corrupted Volumes on DTI Findings between HIV-Infected and Healthy Children**
Muhammad G. Saleh[1], Alkathafi A. Alhamud[1], Christelle Ackermann[2], Savvas Andronikou[3], Barbara Laughton[4], Andre J.W. van der Kouwe[5], Ernesta M. Meintjes[1]
[1]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa, [2]Department of Radiodiagnosis, University of Stellenbosch, Stellenbosch, South Africa, [3]Department of Radiology, University of Witwatersrand, Johannesburg , South Africa, [4]Children's Infectious Diseases Clinical Research Unit, Stellenbosch University, Stellenbosch, South Africa, [5]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States

**1905** **Effects of Spatial Smoothing to Inter-Subject Correlation Based Analysis of fMRI**
Juha Pajula[1], Jussi Tohka[1]
[1]Tampere University of Technology, Tampere, Finland

**1906 Fast online analysis of resting state "performance" using dynamic time wrapping**
Meng Li[1], Johan van der Meer[1], Anna Krause[2], Marie-José van Tol[3], Coraline Metzger[4], Hans-Jochen Heinze[5], Berhard Bogerts[6], Johann Steiner[7], Martin Walter[7]
[1]Department of Neurology - Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany, [2]Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany, [3]Leibniz Institute for Neurobiology, Otto von Guericke University, Magdeburg, Germany, [4]Department of Psychiatry - Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany, [5]University of Magdeburg, Magdeburg, Germany, [6]Department of Psychiatry, Otto von Guericke University, Magdeburg, Germany, [7]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany

**1907 Improved motion censoring using normalized DVARS in resting-state fMRI**
Rayus Kuplicki[1,2], John Hale[1,3], William Coberly[1,4], W. Kyle Simmons[2,5], Jerzy Bodurka[2], Patrick Bellgowan[2,6]
[1]The University of Tulsa, Tulsa, OK, [2]Laureate Institute for Brain Research, Tulsa, OK, [3]Tandy School of Computer Science, University of Tulsa, Tulsa, OK, [4]Department of Mathematics, University of Tulsa, Tulsa, OK, [5]College of Engineering, University of Oklahoma, Tulsa, OK, [6]Faculty of Community Medicine, University of Tulsa, Tulsa, OK

**1908 Improvements in fMRI Functional Connectivity Results Achieved with E-REMCOR Motion Correction**
Vadim Zotev[1], Han Yuan[1], Masaya Misaki[1], Raquel Phillips[1], Kymberly Young[1], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]College of Engineering, University of Oklahoma, Tulsa, OK

**1909 Linear Trend of Resting-State fMRI Time Series**
Xindi Wang[1], Zhao Qing[1], Zhangye Dong[1], Chaogan Yan[2], Yu-Feng Zang[3]
[1]National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [2]The Nathan Kline Institute for Psychiatric Research, New York, United States, [3]Center for Cognition and Brain Disorders, Affiliated Hospital, Hangzhou Normal University, Hangzhou, China

**1910 Noise-optimized Head Position Transformation Algorithm for Multichannel MEG**
Liisa Helle[1], Samu Taulu[1]
[1]Elekta Oy, Helsinki, Finland

**1911 Quantifying Movement in fMRI Time-series Using Estimated Movements from Realign Procedure**
Michal Mikl[1], Radek Marecek[1]
[1]CEITEC, Masaryk University, Brno, Czech Republic

**1912 Rethinking the Origins, Impact and Handling of Head Motion Effects for Functional Connectomics**
Chao-Gan YAN[1], Brian Cheung[2], Clare Kelly[3], Stan Colcombe[4], Cameron Craddock[2], Adriana Di Martino[5], Qingyang Li[2], Xi-Nian Zuo[6], F. Xavier Castellanos[7], Michael Milham[8]
[1]The Nathan Kline Institute for Psychiatric Research, New York, United States, [2]Child Mind Institute, New York, NY, [3]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience at the NYU Child Study Center, New York, NY, [4]Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, [5]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [6]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [7]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [8]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, NY

**1913 To scrub or not to scrub: the impact of scrubbing on resting-state connectivity in healthy adults**
Christian L Dansereau[1,2], Pierre Orban[1], Pierre Bellec[1,2]
[1]CRIUGM, University of Montreal, Montreal, Canada, [2]DIRO, University of Montreal, Montreal, Canada

**1914 Understanding and mitigating the effects of in-scanner motion on resting-state fMRI**
Theodore Satterthwaite[1], Mark Elliott[1], Raphael Gerraty[2], Kosha Ruparel[1], Simon Eickhoff[3], Hakon Hakonarson[4], Ruben Gur[1], Raquel Gur[1], Daniel Wolf[1]
[1]University of Pennsylvania, Phialdelphia, United States, [2]Columbia University, NY, United States, [3]Research Center Jülich, Jülich, Germany, [4]Children's Hospital of Philadelphia, Phialdelphia, United States

## Modeling and Analysis Methods

### Multivariate modeling

**1915 A Frequentist approach to Statistical Inference in the Analysis of fMRI Data for Multiple Groups**
Daniel Rio[1], Robert Rawlings[2], Lawrence Woltz[3], Daniel Hommer[4]
[1]NIAAA/NIH, Betheda, United States, [2]NIH retired, Bethesda, MD, [3]Synergy research Inc., Monrovia, MD, [4]NIAAA/NIH, Bethesda, United States

**1916 A Statistically Motivated Simulation Framework for Data Fusion Models Applied to Neuroimaging**
Rogers Silva[1], Sergei Plis[1], Tulay Adali[2], Vince Calhoun[3]
[1]The Mind Research Network, Albuquerque, NM, [2]University of Maryland, Baltimore County, Baltimore, MD, [3]The Mind Research Network and UNM, Albuquerque, NM

**1917 Analyzing the volumetric variation for Alzheimer disease by mixture model of factor analysis**
Wei-Chen Cheng[1], Philip E. Cheng[1], Michelle Liou[1]
[1]Institute of Statistical Science, Academia Sinica, Taipei, Chinese Taipei


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**1918 Beyond Decoding: Pattern-Based Analysis of Neuroimaging Data by Cross-Validated MANOVA**
Carsten Allefeld[1,2], John-Dylan Haynes[1,2,3,4,5,6]
[1]Bernstein Center for Computational Neuroscience, Berlin, Germany, [2]Berlin Center of Advanced Neuroimaging, Berlin, Germany, [3]Department of Neurology, Charité - Universitätsmedizin, Berlin, Germany, [4]Berlin School of Mind and Brain, Humboldt-Universität, Berlin, Germany, [5]Excellence Cluster NeuroCure, Charité - Universitätsmedizin, Berlin, Germany, [6]Department of Psychology, Humboldt-Universität, Berlin, Germany

**1919 Combination of Resting state fMRI, DTI & sMRI Data to Discriminate Schizophrenia by N-way MCCA+jICA**
JING SUI[1], Hao He[2], Qingbao Yu[3], Jiayu Chen[4], Andrew Mayer[3], Vince Calhoun[5]
[1]The Mind Research Network, ALBUQUERQUE, United States, [2]The Mind Research Network, Albuquerque, NM, [3]The Mind Research Network, Albuquerque, United States, [4]University of New Mexico, [5]The Mind Research Network and UNM, ALBUQUERQUE, NM

***1920 Decoding cell-type specific spatial representations in human entorhinal layers, (O-M4)**
Tobias Navarro Schroeder[1], Alejandro Vicente Grabovetsky[1], Tim van Mourik[1], Peter Koopmans[1], David Norris[2], Markus Barth[3], Christian Doeller[4]
[1]Donders Institute for Brain, Cognition and Behaviour; Radboud University, Nijmegen, Netherlands, [2]Donders Centre for Cognitive Neuroimaging, Radboud University Nijmegen, Nijmegen, Netherlands, [3]Donders Insitute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [4]Donders Centre for Cognitive Neuroimaging: Radboud University, Nijmegen, Netherlands

**1921 Facilitating functional brain atlases using searchlight-based inter-subject hyperalignment**
J Swaroop Guntupalli[1], James Haxby[2]
[1]Dartmouth College, Hanover, United States, [2]Department of Psychological & Brain Sciences, Dartmouth College, Dartmouth, NH

**1922 Independent component analysis for brain fMRI does indeed select for maximal independence**
Vince Calhoun[1,2], Vamsi K. Potluru[3], Ronald Phlypo[4], Rogers Silva[2], Barak Pearlmutter[5,6], Arvind Caprihan[7], Sergei Plis[2], Tulay Adali[8]
[1]University of New Mexico, Albuquerque, NM, [2]The Mind Research Network, Albuquerque, NM, [3]The Mind ResearchNetwork, Albuquerque, NM, [4]University of Maryland, Baltimore County, Catonsville, MD, [5]NUI Maynooth, Co. Kildare, Ireland, [6]Hamilton Institute, Co. Kildare, Ireland, [7]The Mind Research Network and LBERI, Albuquerque, NM, [8]University of Maryland, Baltimore County, Baltimore, MD

**1923 Multivariate fMRI Analysis using Optimally-Discriminative Voxel-Based Analysis**
Tianhao Zhang[1], Mark Elliott[1], Theodore Satterthwaite[2], Christos Davatzikos[1]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, United States, [2]Department of Psychiatry, University of Pennsylvania, Philadelphia, United States

**1924 Multivariate inference of effective connectivity of complex brain networks**
Joseph Lizier[1], Mikail Rubinov[2]
[1]CSIRO Information and Communications Technology Centre, Marsfield, Australia, [2]Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

**1925 Multivariate Invariants from Massive Brain-Graphs**
Disa Mhembere[1], Sephira Ryman[2], Daniel Sussman[3], Rex Jung[4], Joshua Vogelstein[1], R. Jacob Vogelstein[3], Carey Priebe[3], Randal Burns[3]
[1]Johns Hopkins University, Baltimore, United States, [2]University of New Mexico, New Mexico, United States, [3]Johns Hopkins University, Baltimore, MD, [4]University of New Mexico, Albuquerque, NM

**1926 Multivariate Modeling Approach to FMRI Group Analysis: No Bound on the Number of Variables**
Gang Chen[1], Johanna Jarcho[2], Ziad Saad[3], Daniel Pine[4], Robert Cox[5]
[1]SSCC/DIRP/NIMH, National Institutes of Health, USA, [2]Section on Development and Affective Neuroscience, NIMH/NIH, Bethesda, MD, [3]National Institutes of Health, Bethesda, MD, [4]Section on Development and Affective Neuroscience, NIMH, National Institutes of Health, Bethesda, MD, [5]National Institute of Mental Health, Bethesda, MD

**1927 Multivariate pattern interpretation using PRoNTo**
Jessica Schrouff[1], Luca Baldassarre[2], Maria Joao Rosa[3], Jane Rondina[3], Andre Marquand[4], Chia-Yueh Carlton Chu[5], John Ashburner[6], Jonas Richiardi[7], Gaëtan Garraux[1], Christophe Phillips[1], Janaina Mourao-Miranda[3]
[1]Cyclotron Research Centre, University of Liège, Sart-Tilman, Liege, Belgium, [2]Ecole Polytechnique Fédérale de Lausanne, London, United Kingdom, [3]Computer Science Department - University College London, London, United Kingdom, [4]King's College London, London, United Kingdom, [5]Section of Functional Imaging Methods, LBC, NIMH, NIH, Rockvill, MD, [6]Wellcome Trust Centre for Neuroimaging, London, United Kingdom, [7]Stanford Hospital, Palo Alto, California, USA

**1928 Non-negative matrix factorization of fMRI data using spectral coherence**
Gabriele Lohmann[1], Daniel Margulies[1], Alexander Schaefer[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1929 Non-Parametric Combination for Analyses of Multi-Modal Imaging**
Anderson Winkler[1], Stephen Smith[2], Thomas Nichols[3]
[1]FMRIB/University of Oxford, Oxford, UK, [2]FMRIB, Oxford University, Oxford, United Kingdom, [3]University of Warwick, Dept. of Statistics, Coventry, United Kingdom

**1930 Reliability of Information-based Integration of EEG and fMRI Data: a Simulation Study**
Sara Assecondi[1], Dirk Ostwald[2,1], Andrew Bagshaw[1]
[1]School of Psychology, University of Birmingham, Birmingham, United Kingdom, [2]Max Planck Institute for Human Development, Center for Adaptive Rationality (ARC), Berlin, Germany

**1931 Scanning Effects in Source-based Morphometry of Multi-site Studies**
Jiayu Chen[1,2], Vince Calhoun[1,2], Jessica Turner[1], Alejandro Arias-Vásquez[3,4], Marcel Zwiers[4], Cota Navin Gupta[1], Jingyu Liu[1,2]
[1]The Mind Research Network, Albuquerque, United States, [2]Dept. of Electrical and Computer Engineering, University of New Mexico, Albuquerque, United States, [3]Radboud University Nijmegen Medical Center, Departments of Human Genetics and Psychiatry, Nijmegen, Netherlands, [4]Radboud University Nijmegen Medical Centre, Department of Cognitive Neuroscience, Nijmegen, Netherlands

**1932 Using Functional Alignment of Spectral Embeddings in "Resting State" fMRI Studies**
Georg Langs[1], Anisha Keshavan[2], Polina Golland[3], Satrajit Ghosh[2]
[1]Medical University of Vienna, Vienna, Austria, [2]MIT, Cambridge, MA, [3]MIT, Cambridge, United States

**1933 Valid Group-Level Statistical Inference for Pattern-Based Analysis of Neuroimaging Data**
Carsten Allefeld[1,2], John-Dylan Haynes[1,2,3,4,5,6]
[1]Bernstein Center for Computational Neuroscience, Berlin, Germany, [2]Berlin Center of Advanced Neuroimaging, Berlin, Germany, [3]Department of Neurology, Charité - Universitätsmedizin, Berlin, Germany, [4]Berlin School of Mind and Brain, Humboldt-Universität, Berlin, Germany, [5]Excellence Cluster NeuroCure, Charité - Universitätsmedizin, Berlin, Germany, [6]Department of Psychology, Humboldt-Universität, Berlin, Germany

## Modeling and Analysis Methods

### Other Methods

**1934 4D magnetic susceptibility tomography for susceptibility-based functional imaging**
zikuan chen[1], Vince Calhoun[2]
[1]Mind Research Network, Albuquerque, United States, [2]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1935 A mixed-norm regularized HRF estimation method for rapid event-related fMRI experiments**
Lei Yu[1], Li Tong[1], Jiangxing Wu[1], Bin Yan[1]
[1]China National Digital Switching System Engineering and Technological Research Center, Zhengzhou, China

**1936 A Three-Modality ICA Method for Analyzing Genetic Effect on Brain Structure and Functional Variation**
Jingyu Liu[1], David Boutte[2], Jiayu Chen[3], Vince Calhoun[4]
[1]Mind Research Network, Albuquerque, United States, [2]Mind Research Network, Albuquerque, NM, [3]University of New Mexico, [4]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1937 A Toolbox for Human Brain Local Oscillations Analysis**
Lejian Huang[1], Ali Mansour[1], Marwan Baliki[1], Alex Baria[1], A. Vania Apkarian[1]
[1]Northwestern University, Chicago, United States

**1938 Activation Likelihood Estimation Meta-Analyses: Recent Developments and Future Perspectives**
Simon Eickhoff[1], Angela Laird[2], Mickle Fox[3], Angela Uecker[3], Jack Lancaster[3], Danilo Bzdok[1], Robert Langner[1], Claudia Rottschy[4], Peter Turkeltaub[5], Peter Fox[3]
[1]Institute of Clinical Neuroscience & Medical Psychology, Heinrich Heine University Duesseldorf, Duesseldorf, Germany, [2]Department of Physics, Florida International University, Miami, FL, [3]University of Texas Health Science Center at San Antonio, San Antonio, TX, [4]Department of Psychiatry, Psychotherapy & Psychosomatics, RWTH Aachen University Hospital, Aachen, Germany, [5]Department of Neurology, Georgetown University, Washington, DC

**1939 Alternative based thresholding for pre-surgical fMRI**
Joke Durnez[1], Beatrijs Moerkerke[1], Andreas Bartsch[2], Thomas Nichols[3]
[1]Ghent University, Ghent, Belgium, [2]Department of Neuroradiology, University of Heidelberg, Heidelberg, Germany, [3]University of Warwick, Dept. of Statistics, Coventry, United Kingdom

**1940 Application of Mean-Shift Clustering in fMRI Analysis**
Leo Ai[1], Jinhu Xiong[2]
[1]University of Iowa, [2]University of Iowa, Iowa City, IA

**1941 Automated identification of brain tumours based on MRI segmentation with patient-specific priors**
Ana Sanjuan[1,2], Cathy Price[1], Laura Mancini[3], Goulven Josse[4], Alice Grogan[1], Kenji Adam[3], Sharon Geva[5], Alexander Leff[1], Tarek Yousry[3], Mohamed Seghier[1]
[1]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom, [2]Departamento de Psicología Básica, Universitat Jaume I, Castellon, Spain, [3]Lysholm Department of Neuroradiology, National Hospital for Neurology and Neurosurgery, London, United Kingdom, [4]Institut du Cerveau et de la Moëlle épinière, Hôpital de la Pitié-Salpêtrière, Paris, France, [5]Developmental Cognitive Neuroscience Unit, University College of London, Institute of Child Health, London, United Kingdom

**1942 Biases when using single trial activation estimates in representational similarity analyses**
Jeanette Mumford[1], Tyler Davis[2]
[1]University of Texas at Austin, Austin, United States, [2]University of Texas at Austin, Austin, TX

**1943 Correcting for publication bias in meta-analyses of neuroimaging studies**
Ruth Seurinck[1], Beatrijs Moerkerke[1]
[1]Department of Data Analysis, Ghent University, Ghent, Belgium

**1944 Determining a sufficient block length for a real-time fMRI experiment**
Paul Wighton[1], M. Dylan Tisdall[1], Jodi Gilman[2,1], Sang Lee[3], Hans Breiter[2,4,5], André Van der Kouwe[1]
[1]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Boston, MA, [2]Laboratory of Neuroimaging and Genetics, Dept. of Psychiatry, Massachusetts General Hospital, Boston, MA, [3]Dept. of Psychiatry, Massachusetts General Hospital, Boston, MA, [4]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, [5]Dept. of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, Chiacgo, IL

**1945 Early postnatal cytomegalovirus infection & brain maturation in children & adolescents born preterm**
Alissa Winkler[1], Christian Gaser[1], Rangmar Goelz[2], Till-Karsten Hauser[3], Katja Franke[4], Marko Wilke[5]
[1]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany, [2]Department of Neonatology, University Children's Hospital, Tuebingen, Germany, [3]Department of Neuroradiology, University Hospital, Tuebingen, Germany, [4]Structural Brain Mapping Group, Jena University Hospital, Jena, Germany, [5]University Children's Hospital, Tuebingen, Germany

**1946 Evaluating cluster-wise inference in fMRI: beyond type I error rate**
Sanne Roels[1], Han Bossier[1], Beatrijs Moerkerke[1], Loeys Tom[1]
[1]Department of data analysis, Ghent University, Ghent, Belgium

**1947 Exporting 3D Figures for Neuroimaging**
John Muschelli[1], Elizabeth Sweeney[1], Ciprian Crainiceanu[1]
[1]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

**1948 Extending Pattern Mining in NeuroImaging: Functional decoding of co-activation patterns**
Julian Caspers[1,2], Svenja Caspers[2], Danilo Bzdok[2], Gerald Antoch[1], Simon Eickhoff[2,3]
[1]Department of Diagnostic and Interventional Radiology, University Düsseldorf, Düsseldorf, Germany, [2]Institute of Neuroscience and Medicine INM-1, Research Centre Jülich, Jülich, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, University Düsseldorf, Düsseldorf, Germany

**1949 Fractal analysis of resting state fMRI signals in adults with ADHD**
Moses Sokunbi[1], Wilson Fung[2], Vijay Sawlani[3], Rossen Donev[2], David Linden[1], Johannes Thome[4]
[1]Cardiff University, Cardiff, United Kingdom, [2]Swansea University, Swansea, United Kingdom, [3]Birmingham University Hospitals, Birmingham , United Kingdom, [4]University of Rostock, Rostock, Germany

**1950 GRETNA and BrainNet Viewer Toolkits for Graph-Theoretical Network Analysis and Visualization**
Mingrui Xia[1], Jinhui Wang[2,1], Xindi Wang[1], Zhengjia Dai[1], Rui Hou[1], Ni Shu[1], Gaolang Gong[1], Alan Evans[3], Yong He[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [2]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, China, [3]McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada

**1951 High-fidelity Time-Frequency Analysis on fMRI Signal using Hilbert-Huang Transform**
Geng-Hong Lin[1], Changwei Wu[1], Pei-Jung Tsai[2], Albert C. Yang[3], Ching-Po Lin[2]
[1]National Central University, Taoyuan, Taiwan, [2]National Yang-Ming University, Taipei, Taiwan, [3]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Taiwan

**1952 Joint ICA Links DTI and MEG to Cognitive Outcome in Schizophrenia**
Julia Stephen[1], Brian Coffman[2], Juan Bustillo[3], Cheryl Aine[4], Vince Calhoun[5]
[1]The Mind Research Network, Albuquerque, NM, [2]The Mind Research Network; Dept. of Psychology, University of New Mexico, Albuquerque, NM, [3]Dept. of Psychiatry, University of New Mexico School of Medicine, Albuquerque, NM, [4]Dept. of Radiology, University of New Mexico School of Medicine, Albuquerque, NM, [5]The Mind Research Network; Dept. of Computer and Electrical Engineering, University of New Mexico, Albuquerque, NM

**1953 Mathematically Reliable Stereological Measurement of Motion Corrected Fetal Brain Volume**
Devasuda Anblagan[1], Kaiming Yin[1], Rebecca Reynolds[1], Fiona Denison[1], Mark Bastin[1], Colin Studholme[2], Jane Norman[1], Scott Semple[1], Neil Roberts[1]
[1]University of Edinburgh, Edinburgh, United Kingdom, [2]University of Washington, Seattle, WA, United States

**1954 Metabolic and morphometric brain connectivity by multidimensional persistent homology using PET-MR**
Hyekyoung Lee[1], Hyejin Kang[1], Moo Chung[2], Eunkyung Kim[1], Bung-Nyun Kim[1], Dong Soo Lee[1]
[1]Seoul National University, Seoul, Korea, Republic of, [2]University of Wisconsin, Madison, WI

**1955 Optimized signal separation for 3D-Polarized Light Imaging**
Giuseppe Tabbi[1], Jürgen Dammers[2], Lukas Breuer[2], Katrin Amunts[1], Markus Axer[1]
[1]Institute of Neuroscience and Medicine (INM-1), Research Center Jülich, Jülich, Germany, [2]Institute of Neuroscience and Medicine (INM-4), Research Center Jülich, Jülich, Germany

**1956 Semi-supervised activation likelihood estimation meta-analysis**
zhuo junjie[1], Congying Chu[2], Xiaojing fang[1], Yong Yang[2], Zhang Yuanchao[1], Tianzi Jiang[2]
[1]Key Laboratory for NeuroInformation of the Ministry of Education, School of Life Science and Technol, Chengdu, China, [2]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

**1957 Spatially regularized discriminant analysis boosts biomarker power in Alzheimer's Disease**
Boris Gutman[1], Xue Hua[2], Arthur Toga[3], Paul Thompson[4]
[1]UCLA, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA, [3]Laboratory of Neuro Imaging, Department of Neurology, University of California School of Medicine, Los Angeles, United States, [4]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**1958 Test-retest reproducibility of brain morphometry, diffusion and rs-fMRI in a 3T European consortium**
Moira Marizzoni[1], Jorge Jovicich[2], Roser Sala-Llonch[3], Beatriz Bosch[3], David Bartrés-Faz[3], Jennifer Arnold[4], Jens Benninghoff[4], Jens Wiltfang[4], Luca Roccatagliata[5], Flavio Nobili[5], Tilmann Hensch[6], Peter Schönknecht[6], Melanie Leroy[7], Regis Bordet[7], Valérie Chanoine[8], Jean-Philippe Ranjeva[8], Mira Didic[9], Hélène Gros-Dagnac[10], Pierre Payoux[10], Giada Zoccatelli[11], Alberto Beltramello[11], Núria Bargalló[12], Oliver Blin[8], Giovanni Frisoni[1]
[1]IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy, [2]CIMeC Center for Mind/Brain Science, University of Trento, Trento, Italy, [3]Departmento. de Psiquiatria i Psicobiologia Clinica, Facultat de Medicina, Universitat de Barcelona, Barcelona, Spain, [4]Department. of Psychiatry and Nuclear Medicine, Universität Duisburg-Essen, Essen, Germany, [5]Department. of Neuroscience, Ophthalmology and Genetics University of Genoa, Genoa, Italy, [6]Department of Mental Health, Clinic for Psychiatry and Psychotherapy, University Hospital Leipzig, Leipzig, Germany, [7]Université Lille 2, UL2, Lille, France, [8]Centre de Résonance Magnétique Biologique et Médicale, CNRS UMR 7339, Aix Marseille Université, Marseille, France, [9]APHM, CHU Timone, Service de Neurologie et Neuropsychologie, Marseille, France, [10]Institut National de la Sant et de la Recherche Médicale, Toulouse, France, [11]Department of Neuroradiology, General Hospital, Verona, Italy, [12]Department. of Neuroradiology and Image Research Platform, Hospital Clínic de Barcelona, IDIBAPS, Barcelona, Spain

**1959 Texture Analysis of the Brain in Amyotrophic Lateral Sclerosis**
Rouzbeh Maani[1], Yee-Hong Yang[1], Sanjay Kalra[1]
[1]University of Alberta, EDMONTON, Canada

**1960 Using Cross-Map Classification Accuracy to Quantify Informational Similarity**
Benjamin Turner[1], Michael Miller[1]
[1]UC Santa Barbara, Santa Barbara, United States

**1961 Utilization and Congestion in Large-Scale Brain Networks**
Bratislav Misic[1], Olaf Sporns[2], Anthony McIntosh[3]
[1]Rotman Research Institute of Baycrest Centre, Toronto, Canada, [2]Indiana University, Bloomington, United States, [3]Rotman Research Institute of Baycrest Centre, Toronto, ON

## Modeling and Analysis Methods

### PET Modeling and Analysis

**1962** **A Novel Method to Normalize PET and SPECT Images for Statistical Parametric Mapping**
Zhiyong Xie[1], Laigao Chen[1], Garry Honey[1], Richard Carson[2], Timothy J. McCarthy[1]
[1]Pfizer Inc., Groton, CT, United States, [2]Yale University, New Haven, CT, United States

**1963** **An optimal framework for surface-based 11C PIB-PET mapping with partial volume correction**
Chan Mi Kim[1], Uicheul Yoon[2], Hyuk Jin Yun[1], Jong-Min Lee[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of

**1964** **Application of a Bayesian Model for Localized Brain Activity and Connectivity in Alzheimer's Disease**
Lijun Zhang[1], Gordana Derado[1], F. DuBois Bowman[1]
[1]Emory University, Atlanta, GA

## Modeling and Analysis Methods

### Segmentation and Parcellation

**1965** **A study on improving the unified segmentation of human brain based on the probabilistic mask**
Maeng-Keun Oh[1,2], Do-Sik Hwang[2], Jong Doo Lee[1], Hae-Jeong Park[1]
[1]Department of Radiology and Division of Nuclear Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]School of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea, Republic of

**1966** **An automated algorithm for longitudinal tracking of individual lesions in multiple sclerosis**
Colin Shea[1], Navid Shiee[2], Elizabeth Sweeney[3], Taki Shinohara[4], Emily Wood[1], Dzung Pham[2], Ciprian Crainiceanu[5], Daniel Reich[1], Govind Nair[1]
[1]National Institute of Neurological Disorders and Stroke, Bethesda, MD, United States, [2]Center for Neuroscience and Regenerative Medicine, Bethesda, MD, United States, [3]Department of Biostatistics, Johns Hopkins University, Baltimore, MD, United States, [4]Department of Biostatistics and Epidemiology, University Of Pennsylvania, Philadelphia, PA, United States, [5]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, United States

**1967** **Automated Segmentation of Chronic Stroke Lesions**
Yousef Ahmed[1], Xue Wang[2], Todd Parrish[2]
[1]Feinberg School of Medicine, Chicago, IL, [2]Northwestern University, Chicago, IL

**1968** **Automatic Generation of Head Models for EEG Source Analysis from MRI**
Benjamin Lanfer[1,2], Isabella Paul-Jordanov[1], Michael Scherg[1], Carsten Wolters[2]
[1]BESA GmbH, Gräfelfing, Germany, [2]Institute for Biomagnetism and Biosignalanalysis, University of Münster, Münster, Germany

**1969** **Automatic segmentation method in T1 MR images using cerebra mask and brainstem atlas**
Dong-Kyun Lee[1], Jong-Min Lee[1], Uicheul Yoon[2], Kichang Kwak[3]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of, [3]Department of Biomedical Engineering, Hanyang Univ, seoul, Korea, Republic of

**1970** **Bootstrapping Multi-Atlas Hippocampus Segmentation: MAGeT Brain**
Jon Pipitone[1], Julie Winterburn[1], Jason Lerch[2,3], Aristotle Voineskos[4,5], Mallar Chakravarty[1,5,6], for the Alzheimer's Disease Neuroimaging Initiative[7]
[1]Kimel Family Translational Imaging-Genetics Lab, Centre for Addiction and Mental Health, Toronto, Canada, [2]Neurosciences and Mental Health, Hospital for Sick Children, Toronto, Ontario, [3]Department of Medical Biophysics, University of Toronto, Toronto, Canada, [4]Kimel Family Translational Imaging-Genetics Lab, Center for Addiction and Mental Health, Toronto, Ontario, [5]Department of Psychiatry, University of Toronto, Toronto, Canada, [6]Institute of Biomedical Engineering, University of Toronto, Toronto, Canada, [7]Duke University, Durham, NC

**1971** **Combining DTI and rs-fMRI: A new approach to connectivity-based brain parcellation**
Yu Zhang[1], Svenja Caspers[2], Lingzhong Fan[1], Katrin Amunts[2], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Institute of Neuroscience and Medicine, INM-1, Research Center Julich, Julich, Germany

**1972** **Connectivity Patterns Revealed by Whole Brain Tractography Parcellation with Group ICA**
Lei Wu[1,2], Arvind Caprihan[1], Vince Calhoun[1,2]
[1]The Mind Research Network, Albuquerque, NM, [2]Dept of ECE, University of New Mexico, Albuquerque, NM

**1973** **Connectivity-based cortex parcellation of the anterior prefrontal cortex**
Corina Melzer[1], Nico Gorbach[1], Olivia Sujazow[1], Marc Tittgemeyer[1]
[1]Max Planck Institute for Neurological Research, Cologne, Germany

***1974** **Convergent functional organization of Broca's area across multi-sites rs-fMRI datasets, (O-M3)**
Yu Zhang[1], Lingzhong Fan[1], Svenja Caspers[2], Katrin Amunts[2], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Institute of Neuroscience and Medicine, INM-1, Research Center Julich, Julich, Germany

**1975 Detection and Classification of Microcalcifications in Digital Mammograms, Using ANN and SVM**
Naeim Bahrami[1]
[1]University of California, San Francisco, San Francisco, United States

**1976 Evaluating Diffusion MRI Parcellations along the Inferior Parietal Lobule (IPL)**
Rosalia Tungaraza[1], Sonya Mehta[1], David Haynor[1], Thomas Grabowski[1]
[1]University of Washington, Seattle, WA

**1977 Evaluation of three automated methods of identifying the hippocampus on T1 weighted images**
Jian Lin[1], Mingyi Li[1], Katherine Koenig[1], Mark Lowe[1], Michael Phillips[1]
[1]Cleveland Clinic, Cleveland, United States

**1978 Identifying Functional Subregions of Human Brain with Meta-analytic Sequence**
Yong Yang[1], Lingzhong Fan[1], Wang Jiaojian[2], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Key Laboratory for NeuroInformation of the Ministry of Education, School of Life Science and Technol, Chengdu, China

**1979 Multi-Subject Comparison of Whole-Brain Connectivity-Based Hierarchical Parcellations**
David Moreno-Dominguez[1], Alfred Anwander[1], Thomas Knösche[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**1980 Multi-subject Connectivity-based-pacellation of Human IPL Using GMMs and Hidden Markov Random Fields**
Erzhuo Wang[1], Rosalia Tungaraza[2], David Haynor[1], Thomas Grabowski[1]
[1]University of Washington, Seattle, WA, [2]University of Washington, Seattle, United States

**1981 Practical impact of MRI parameters on the Voxel-Based-Morphometry measures in SPM**
benjamin thyreau[1], Yasuyuki Taki[2], Susumu Yokota[1], Hiroshi Hashizume[3], Ryuta Kawashima[1]
[1]Tohoku University, Sendai, Japan, [2]IDAC, Tohoku University, Sendai, Japan, [3]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**1982 Probabilistic Atlas-Guided Detection of White Matter Signal Abnormalities in Very Preterm Infants**
Lili He[1], Nehal Parikh[2]
[1]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Columbus, OH, United States, [2]Center for Perinatal Research, The Research Institute at Nationwide Children's Hospital, Columbus, OH, United States

**1983 Retrospective correction of inhomogeneity and brain extraction of T1 MR images**
Robert Dahnke[1], Christian Gaser[1]
[1]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany

**1984 Retrospective Quality Assurance of MR images**
Robert Dahnke[1], Gabriel Ziegler[1], Christian Gaser[1], Julian Grosskreutz[2]
[1]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany, [2]Department of Neurology, University of Jena, Jena, Germany

**1985 Robust Vertex Clustering of Massive Brain-Graphs via Lq-Likelihood**
Yichen Qin[1], Disa Mhembere[2], Sephira Ryman[3], Rex Jung[3], R. Jacob Vogelstein[2], Randal Burns[2], Joshua Vogelstein[1], Carey Priebe[2]
[1]Johns Hopkins University, Baltimore, United States, [2]Johns Hopkins University, Baltimore, MD, [3]University of New Mexico, Albuquerque, NM

**1986 Segmentation of cerebellum and cerebellar lobules with multiple automatically generated templates**
Min Tae Park[1], Jon Pipitone[1], Larry Baer[1], Julie Winterburn[1], Yashvi Shah[1], Jason Lerch[2], Aristotle Voineskos[1,3], Mallar Chakravarty[1,3]
[1]Centre for Addiction and Mental Health, Toronto, Canada, [2]Hospital for Sick Children, Toronto, Canada, [3]University of Toronto, Department of Psychiatry, Toronto, Canada

**1987 Temporal Lobe Region of Interest Cortical Analysis in Primary Progressive Aphasia**
Shannon Cebron[1], Jenny Crinion[2], Andreia Faria[3], Argye Hillis[4], Tilak Ratnanather[5]
[1]Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, United States, [2]Institute of Cognitive Neuroscience, University College London, London, United Kingdom, [3]Department of Radiology, School of Medicine, Johns Hopkins University, Baltimore, United States, [4]Department of Neurology, School of Medicine, Johns Hopkins University, Baltimore, United States, [5]Center for Imaging Science, Johns Hopkins University, Baltimore, MD


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## Modeling and Analysis Methods

### Task-Independent and Resting-State Analysis

**1988 "Correct" Sensorimotor Network Detected by Independent Component Analysis on Resting-state fMRI**
Wen-Bin Jia[1], Han Zhang[1], Wei Liao[2], Yufeng Zang[2]
[1]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, China, [2]Center for Cognition and Brain Disorders and the Affiliated Hospital, Hangzhou, China

**1989 A case for correcting attenuation of correlation in resting state fMRI**
Jacco de Zwart[1], Peter van Gelderen[1], Jeff Duyn[1]
[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, MD, USA

**1990 A Resting State Functional Connectivity Study of Tinnitus and Hearing Loss**
Sara Schmidt[1], Kwaku Akrofi[1], Jake Carpenter-Thompson[1], Fatima Husain[1]
[1]University of Illinois at Urbana-Champaign, Urbana, IL

**1991 An exploratory study on default mode network's time course analysis**
Burak AKIN[1,2], Zeynep Basgoze[2], Didem Gokcay[2]
[1]National Magnetic Resonance Resarch Center (UMRAM), Ankara, Turkey, [2]Middle East Technical University, Ankara, Turkey

**1992 Anti-phase Spontaneous Activity between Two Brain Networks Exists without Removing Global Signal**
Xiao Liu[1], Jeff Duyn[1]
[1]Advanced MRI section, LFMI, NINDS, National Institutes of Health, Bethesda, United States

**1993 Attentional Flexibility Predicts Functional Connectivity Between Striatum and Default Mode Network**
Deniz Vatansever[1], David Menon[1], Anne Manktelow[1], Barbara Sahakian[1], Emmanuel Stamatakis[1]
[1]University of Cambridge, Cambridge, United Kingdom

**1994 Changes in Resting State Functional Connectivity for Youth with ADHD: Independent Component Analysis**
Suzanne Czerniak[1], Elif Sikoglu[1], Wei Huang[1], David Kennedy[1], Jean King[1], Constance Moore[1]
[1]University of Massachusetts Medical School, Worcester, MA

**1995 Changes in resting state networks in patients with neuropathic pain: A template-based approach**
Epifanio Bagarinao[1], Ian Carroll[1], Neil Chatterjee[1], Hoameng Ung[1], Charlie Wang[1], Rachel Moericke[1], Sean Mackey[1]
[1]Stanford University, Palo Alto, CA

***1996 Characterizing Intrinsic Connectivity Microstates Within The Posteromedial Cortex, (O-M3)**
Zhen Yang[1], Cameron Craddock[1,2], Chao-Gan YAN[3], Sebastian Urchs[3], Michael Milham[4,1]
[1]Center for the Developing Brain, Child Mind Institute, New York, NY, [2]The Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, [3]The Nathan Kline Institute for Psychiatric Research, New York, United States, [4]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, NY

**1997 Comparing techniques for resting state extraction from task data**
Sebastian Ganger[1], Andreas Hahn[1], Ronald Sladky[2], Martin Kueblboeck[2], Georg Kranz[1], Anna Hoeflich[1], Christoph Kraus[1], Jan Losak[1], Marie Spies[1], Christian Windischberger[2], Rupert Lanzenberger[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]MR Centre Of Excellence, Medical University Of Vienna, Vienna, Austria

**1998 Comparison of resting state dynamics in healthy, schizophrenia and bipolar disease**
Barnaly Rashid[1], Eswar Damaraju[2], Godfrey Pearlson[3], Vince Calhoun[4]
[1]University of New Mexico, Albuquerque, United States, [2]Mind Research Network, [3]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT, [4]The Mind Research Network and UNM, ALBUQUERQUE, NM

**1999 Correction of Long-term Physiological Noise Increases the Reproducibility of Resting-State Networks**
Jaemin Shin[1], Zhi Yang[2], Audrey Duarte[3], Xiaoping Hu[1]
[1]Georgia Institute of Technology/Emory University, Atlanta, GA, [2]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [3]Georgia Institute of Technology, Atlanta, GA

**2000 Correlation of head movement and fMRI temporal signal in motor processing areas: What is artifact?**
Dustin Scheinost[1], Xenophon Papademetris[1], R Constable[1]
[1]Yale University, New Haven, CT

**2001 Coupled Intrinsic Connectivity Distribution: A Principled Method for Exploration of Paired Data**
Dustin Scheinost[1], Xilin Shen[2], Emily Finn[2], R Constable[1], Xenophon Papademetris[1]
[1]Yale University, New Haven, CT, [2]Yale University, New Haven, United States

**2002 Defining "olfactory matrix" using data-driven and model-driven methods based on resting-state fMRI**
Han Zhang[1], Qing Yang[2], Jianli Wang[3], Karunanayaka Prsanna[4]
[1]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou , China, [2]Pennsylvania State College of Medicine, Hershey, PA, [3]Department of Radiology, Center for NMR Research, Penn State University College of Medicine, Hershey , PA, [4]Department of Radiology, Center for NMR Research, Penn State University College of Medicine, Hershey, PA

**2003** **Definition and characterization of the extended default mode network (eDMN)**
Maren Amft[1], Leonhard Schilbach[2], Angela Laird[3], Peter Fox[4], Simon Eickhoff[5]
[1]Clinical neuroscience and medical psychology, Düsseldorf, Germany, [2]Dept. of Psychiatry, Cologne, Germany, [3]University of Texas Health Science Center San Antonio, San Antonio, United States, [4]Research Imaging Institute, San Antonio, TX, [5]Research Center Jülich, Jülich, Germany

**2004** **Docosahexanoic Acid Consumption Enhances Distributed Functional Connectivity of Macaque Neocortex**
David Grayson[1], Christopher Kroenke[2], Martha Neuringer[2], Damien Fair[3]
[1]University of California - Davis, Davis, United States, [2]Oregon Health and Science University, Portland, OR, [3]Oregon Health & Science University, Portland, United States

**2005** **Does functionally inhomogeneous parcellation affect brain network properties?**
Bumhee Park[1,2,3], Jeong Hoon Ko[4], Jong Doo Lee[2], Hae-Jeong Park[1,2,3]
[1]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Nuclear Medicine and Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Department of Biomedical Engineering, Duke University, Durham, North Carolina, USA

**2006** **Dopamine precursor depletion alters flexibility of dynamic network structure in resting-state fMRI**
Peter Donhauser[1], Jennifer Coull[2], Marco Leyton[1], Yong He[3], Alain Dagher[1]
[1]McGill University, Montreal, Quebec, [2]Universite de Provence & CNRS, Marseille, France, [3]Beijing Normal University, Beijing, China

**2007** **Dynamics in between network connectivity**
Ashish Rao[1], Ek Tsoon Tan[2], Rakesh Mullick[1], Suresh Joel[1]
[1]General Electric Global Research, Bangalore, Karnataka, [2]General Electric Global Research, Niskayuna, NY

**2008** **Early Adversity Increases Salience Network Connectivity in Irritable Bowel Syndrome Patients**
Arpana Gupta[1], Lisa Kilpatrick[1], Adam Braun[2], Jui-Hang Hong[1], Jennifer Labus[1], Kirsten Tillisch[1], Jean Stains[1], Suzanne Smith[1], Bahar Ebrat[1], Cody Ashe-McNalley[1], Bruce Naliboff[1], Emeran Mayer[1]
[1]UCLA Center for Neurobiology of Stress, Los Angeles, United States, [2]Emory University, Atlanta, United States

**2009** **Effect of Satiety Hormone Analog, Exenatide, on Resting State Brain Activity**
Kristen Coveleskie[1], Lisa Kilpatrick[1], Cody Ashe-McNalley[2], Jean Stains[3], Lynn Connolly[2], Emeran Mayer[3]
[1]UCLA Oppenheimer Family Center for Neurobiology of Stress, Los Angeles, United States, [2]UCLA Oppenheimer Family Center for Neurobiology of Stress, Los Angeles, CA, [3]UCLA, Los Angeles, CA

**2010** **Exploring the relationship between resting state and task-based connectivity: Replication and ADHD**
Maarten Mennes[1,2], Daan van Rooij[2], Marcel Zwiers[1,2], Barbara Franke[3], Catharina Hartman[4], Pieter Hoekstra[4], Marjolein Luman[5], Jaap Oosterlaan[5], Christian Beckmann[2,6,7], Jan Buitelaar[1,2]
[1]Department of Cognitive Neuroscience, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [2]Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands, [3]Department of Human Genetics, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [4]Department of Child Psychiatry, University Medical Centre Groningen, Groningen, Netherlands, [5]Department of Clinical Neuropsychology, VU, Amsterdam, Netherlands, [6]University of Twente, Enschede, Netherlands, [7]University of Oxford, Oxford, United Kingdom

***2011** **Frequency characteristics of large scale resting state networks using 7T Spin Echo EPI, (O-M3)**
Erik van Oort[1], Peter Koopmans[2], Rasim Boyacioglu[2], Markus Barth[2], David Norris[2], Christian Beckmann[1]
[1]MIRA Institute, University of Twente, Donders Institute, Radboud University Nijmegen, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Centre for Cognitive Neuroimaging, Nijmegen, Netherlands

**2012** **Frequency mapping of BOLD oscillations in the resting-state human brain**
Xiaopeng Song[1], Yi Zhang[2], Yijun Liu[1]
[1]Department of Biomedical Engineering, College of Engineering, Peking University, Beijing, China, [2]School of Life Sciences and Technology, Xidian University, Xi'an, China

**2013** **Functional Connectivity and a Default Mode in the Awake Macaque: Evidence from Oxygen Electrodes**
William Bentley[1], Jingfeng Li[2], Abraham Snyder[2], Marcus Raichle[2], Lawrence Snyder[2]
[1]Washinton University, Saint Louis, United States, [2]Washington University, Saint Louis, United States

**2014** **Functional segmentation of R-FMRI data using top-down parcellation of within-network dynamics**
Erik van Oort[1,2], Maarten Mennes[3], Christian Beckmann[1,2]
[1]MIRA Institute, University of Twente, Enschede, Netherlands, [2]Radboud University Nijmegen, Donders Center for Cognitive Neuroimaging, Nijmegen, The Netherlands, Nijmegen, Netherlands, [3]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands

**2015 Gender affects activity of the brain's default mode network at rest**
Gianluca Mingoia[1,2], Kerstin Langbein[2], Maren Dietzek[2], Gerd Wagner[2], Stefan Smesny[2], Sigrid Scherpiet[2], Raka Maitra[2], Jürgen Reichenbach[3], Ralf Schlösser[2], Christian Gaser[4], Heinrich Sauer[2], Igor Nenadic[2]
[1]IZKF - Brain Imaging Facility, RWTH, Aachen, Germany, [2]Department of Psychiatry and Psychotherapy, Jena University Hospital, Jena, Germany, [3]Medical Physics Group, Institute of Diagnostic and Interventional Radiology 1, Jena University Hospi, Jena, Germany, [4]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany

**2016 Global Correlation (GCOR) Correction for Group Analysis in Resting-State FMRI**
Hang Joon Jo[1,2], Richard Reynolds[1], Stephen Gotts[3], Gang Chen[1], Alex Martin[3], Robert Cox[1], Ziad Saad[1]
[1]Scientific and Statistical Computing Core, NIMH, Bethesda, MD, [2]Section on Functional Imaging Methods, Laboratory of Brain and Cognitions, NIMH, Bethesda, MD, [3]Section on Cognitive Neuropsychology, Laboratory of Brain and Cognition, NIMH, Bethesda, MD

**2017 Global Frequency Coupling in the Resting State across EEG and Hemodynamic Bands**
Andrei V. Medvedev[1]
[1]Center for Functional and Molecular Imaging, Georgetown University, Washington DC, United States

**2018 Homotopic Functional Connectivity: Dynamic Anterior and Stable Posterior Brain**
Suresh Joel[1], Ek Tsoon Tan[2], Rakesh Mullick[1]
[1]General Electric Global Research, Bangalore, Karnataka, [2]General Electric Global Research, Niskayuna, NY

***2019 Inferring Transiently Synchronising Networks using a Hidden Markov Model, (O-M3)**
Adam Baker[1], Matthew Brookes[2], Henry Luckhoo[1], Iead Rezek[1], Paul Brodersen[1], Sofia Palazzo Corner[2], Penny Probert Smith[1], Mark Woolrich[1]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom

**2020 Invariance of resting-state network patterns**
Kathrin Kollndorfer[1], Florian Fischmeister[2], Gregor Kasprian[1], Daniela Prayer[1], Veronika Schöpf[1]
[1]Department of Radiology, Division of Neuroradiology, Medical University of Vienna, Vienna, Austria, [2]Department of Neurology, Study group fMRI, Medical University of Vienna, Vienna, Austria

**2021 Learning resting state fMRI total neuronal activity maps from PET**
Francisco Gómez[1], Audrey Vanhaudenhuyse[1], Vincent Perlbarg[2], Athena Demertzi[1], Quentin Noirhomme[1], Habib Benali[2], Steven Laureys[1], Andrea Soddu[1]
[1]Coma Science Group, Cyclotron Research Center, University of Liège, Liège, Belgium, [2]INSERM / UPMC Univ. Paris 06, UMR_S678, LIF, Paris, France

**2022 Load-Dependent Differences in Resting-State Connectivity Subsequent to Working Memory Performance**
Andrew Breeden[1], Megan Norr[1], Evan Gordon[1], Chandan Vaidya[1]
[1]Georgetown University, Washington, DC

**2023 Localized Independent Component Analysis for mapping functional sub-networks**
William Sohn[1], Kwangsun Yoo[1], Yong Jeong[1]
[1]KAIST, Daejeon, Korea, Republic of

**2024 Localizing Sources of Interictal Epileptic Discharges using Total-Activation Regularized BOLD FMRI**
Fikret Isik Karahanoglu[1], Frédéric Grouiller[2], Cesar Caballero Gaudes[3], Margitta Seeck[4], Serge Vulliemoz[5], Dimitri Van De Ville[6]
[1]Ecole Polytechnique Federale de Lausanne/ University of Geneva, Lausanne/Geneva, Switzerland, [2]University Hospital, Department of Radiology and Medical Informatics, Geneva, Switzerland, [3]Basque Center on Cognition, Brain and Language, Donostia-San Sebastian, Spain, [4]University Hospital, Geneva, Switzerland, [5]University Hospital of Geneva, [6]UniGE/EPFL, Lausanne, Switzerland

**2025 Measuring cross-frequency functional connectivity in resting-state MEG**
Henry Luckhoo[1], Matthew Brookes[2], Sofia Palazzo Corner[2], Adam Baker[1], Mark Woolrich[1]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom

**2026 Method for ROI selection affects measured intrinsic connectivity of resting state networks**
William Sohn[1], Kwangsun Yoo[1], Yong Jeong[1]
[1]KAIST, Daejeon, Korea, Republic of

**2027 Model-Free Assessment of Reliability in fMRI Experiments**
Michelle Liou[1], Philip Cheng[1], Alexander Zhigalov[2]
[1]Institute of Statistical Science, Academia Sinica, Taipei, Taiwan, [2]Neuroscience Center, University of Helsinki, Helsinki, Finland

**2028 Network-Specific Effects of Age on Resting State Level of Activations**
Alireza Salami[1,2], Lars Nyberg[2]
[1]Karolinska Institute, Stockholm, Sweden, [2]Umea university, Umea, Sweden

**2029 Neural Correlates of Temperament: A Preliminary Study**
seungjin Choi[1], Kiwan Han[2], Jung Eun Shin[3], Hyung-Jun Yoon[4], Jae-Jin Kim[5]
[1]Department of Psychiatry, Yonsei University College of Medicine, seoul, Korea, Republic of, [2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [5]Department of Psychiatry and Institute of Behavioral Science in Medicine, Yonsei University College, Seoul, Korea, Republic of

**2030** **Non-Local Means Smoothing: A demonstration on multiband resting state MRI**
Xiu-Xia Xing[1], Ting Xu[2], Zhi Yang[2], Xi-Nian Zuo[2]
[1]College of Applied Sciences, Beijing University of Technology, Beijing, China, [2]Institute of Psychology, Chinese Academy of Sciences, Beijing, China

**2031** **Regional Discrepancy of Noise Contributions on Resting-state fMRI Dataset**
Chih-Chun Yeh[1], Pei-Jung Tsai[2], Ching-Po Lin[3], Changwei Wu[1]
[1]National Central University, Taoyuan, Taiwan, [2]Institute of Brain Science, National Yang-Ming University, Hsinchu, Chinese Taipei, [3]National Yang-Ming University, Taipei, Chinese Taipei

**2032** **Removal of motion artifacts in rs-fMRI functional connectivity analysis using partial correlations**
Tianwen Chen[1], Srikanth Ryali[2], Vinod Menon[3]
[1]Stanford University, Palo Alto, United States, [2]Stanford University School of Medicine, Palo Alto, United States, [3]Stanford school of medicine, Palo Alto, CA

**2033** **Reproducibility Assessment for Frequency-Specific Modulation of BOLD Oscillations Amplitude**
Dongqiang Liu[1], Binke Yuan[1], Yufeng Zang[1,2]
[1]Center for Cognition and Brain Disorders and The Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**2034** **Resting State Networks as Prior Information: Classify Schizophrenia Using Connectome Binary Patterns**
Che-Wei Chang[1,2], Chien-Chan Ho[2], Jyh-Horng Chen[1,2]
[1]Electrical Engineering, National Taiwan University, Taipei, Taiwan, [2]Interdiciplinary MRI/MRS Lab, National Taiwan University, Taipei, Taiwan

**2035** **Resting-State Functional Connectivity at Different Cognitive Conditions**
David Zhu[1]
[1]Michigan State University, East Lansing, MI

**2036** **Sensitivity and Specificity of Sliding-Window Correlation for Analysis of the Brain's Resting State**
Victoria Mosher[1], Ali Golestani[1], Bradley Goodyear[1]
[1]University of Calgary, Calgary, Alberta

**2037** **Spatial and Temporal Similarity of EEG Microstates and BOLD Resting State Networks**
Han Yuan[1], Lei Ding[2], Min Zhu[2], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States, [2]University of Oklahoma, Norman, OK, United States

**2038** **Standardizing the Intrinsic Brain: Towards Nuisance Robust Measurement of Inter-Individual Variation**
Chao-Gan YAN[1], Cameron Craddock[2], Xi-Nian Zuo[3], Zang Yufeng[4], Michael Milham[5]
[1]The Nathan Kline Institute for Psychiatric Research, New York, United States, [2]Child Mind Institute, New York, NY, [3]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [4]Center for Cognition and Brain Disorders, Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [5]Nathan Kline Institute for Psychiatric Research, New York, NY

**2039** **Syncline: An open-source platform for evaluating fMRI intrinsic connectivity preprocessing pipelines**
Jonathan Ipser[1], Gregory Brown[1], Amanda Bischoff-Grethe[1], Colm Connolly[2], Stephan Jordan[1], Igor Grant[1], Translational Methamphetamine AIDS Research Center (TMARC) group[1]
[1]University of California, San Diego, San Diego, CA, [2]University of California, San Francisco, San Francisco, CA

**2040** **Task Modulation of Low-frequency Functional Connectivity with respect to Posterior Cingulate Cortex**
Jingyuan Chen[1], Gary Glover[2]
[1]Department of Electrical Engineering, Stanford, Stanford, United States, [2]Stanford University, Palo Alto, CA

**2041** **The Amplitude of High Frequency BOLD Fluctuations Could be Reliably Modulated**
Binke Yuan[1], Yufeng Zang[1,2], Dongqiang Liu[1]
[1]Center for Cognition and Brain Disorders and The Affiliated Hospital, Hangzhou Normal University, Hangzhou, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**2042** **The amplitude of low frequency fluctuations in resting fMRI in a multi-site study of schizophrenia**
Jessica Turner[1], Eswar Damaraju[1], Theo van Erp[2], Daniel Mathalon[3], Judith Ford[3], James Voyvodic[4], Bryon A. Mueller[5], Juan Bustillo[6], Aysenil Belger[7], Sarah McEwen[8], Steven Potkin[9], Function BIRN[9], Vince Calhoun[10]
[1]Mind Research Network, Albuquerque, United States, [2]University of California Irvine, Irvine, CA, [3]UCSF, San Francisco, CA, [4]Duke University, Raleigh-Durham, NC, [5]University of Minnesota, Minneapolis, MN, [6]University of New Mexico, Albuquerque, NM, [7]University of North Carolina, Chapel Hill, NC, [8]University of California, Los Angeles, Los Angeles, CA, [9]University of California, Irvine, Irvine, CA, [10]The Mind Research Network and UNM, ALBUQUERQUE, NM


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**2043** **The impact of physiological noise correction on resting state ALFF and ReHo analysis**
Yazhuo Kong[1], Giovanna Zamboni[1,2], Erin Drazich[1], Xi-Nian Zuo[3], Yu-Feng Zang[4], Gordon Wilcock[2], Jonathan Brooks[5]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom, [2]Nuffield Department of Clinical Medicine, University of Oxford, Oxford, United Kingdom, [3]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [4]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, China, [5]Clinical Research and Imaging Centre, University of Bristol, Bristol, United Kingdom

**2044** **Understanding the Vascular Origins of Resting-State BOLD Fluctuation**
Sungho Tak[1], J. Jean Chen[1]
[1]Rotman Research Institute at Baycrest Centre, University of Toronto, Toronto, ON, Canada

## Modeling and Analysis Methods

### Univariate Modeling

**2045** **Defining ROIs based on localizer studies: more specific localization using adaptive smoothing**
Marijke Welvaert[1], Karsten Tabelow[2], Ruth Seurinck[1], Yves Rosseel[1]
[1]Department of Data Analysis, Ghent University, Gent, Belgium, [2]Weierstrass Institute for Applied Analysis and Stochastics, Berlin, Germany

**2046** **Fast and accurate longitudinal modelling of neuroimaging data: an application to ADNI data**
Bryan Guillaume[1,2], Thomas Nichols[1], Lourens Waldorp[3]
[1]University of Warwick, Dept. of Statistics, Coventry, United Kingdom, [2]University of Liège, Liège, Belgium, [3]University of Amsterdam, Amsterdam, Netherlands

**2047** **How to make SPMs of effects that can be replicated by later experiments: The New Null**
Torben E. Lund[1], Kim Mouridsen[1]
[1]CFIN, Aarhus University, Aarhus, Denmark

**2048** **Post-hoc power estimation for topological inference in fMRI**
Joke Durnez[1], Beatrijs Moerkerke[1], Thomas Nichols[2]
[1]Ghent University, Ghent, Belgium, [2]University of Warwick, Dept. of Statistics, Coventry, United Kingdom

**2049** **Robust Regression Increases the Sensitivity of Neuroimaging-Genetic Studies**
Virgile Fritsch[1], Benoit Da Mota[2], Eva Loth[3], Jean Baptiste Poline[4], Bertrand Thirion[5]
[1]Inria, Saclay, France, [2]INRIA, Saclay, France, [3]King's College London, Institute of Psychiatry, London, United Kingdom, [4]INRIA Saclay, Gif-sur-Yvette, France, [5]Parietal Team, INRIA Saclay - Île-de-France, Saclay, France

## Modeling and Analysis Methods

### Brain Machine Interface

**2050** **A novel method for high-performance of brain-machine interface**
Hong Gi Yeom[1], June Sic Kim[2], Chun Kee Chung[1]
[1]Seoul National University, Seoul, Korea, Republic of, [2]MEG Center, Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, Republic of

**2051** **Decodability of BOLD signal for hand gestures from the sensorimotor hand area**
Nick Ramsey[1], Johan Jansma[1], Martin Bleichner[1]
[1]Rudolf Magnus Institute, UMC Utrecht, Utrecht, Netherlands

**2052** **Decoding of limb trajectories from fMRI signal — a simulation study**
Seungkyu Nam[1], Kyung Hwan Kim[2], Dae-Shik Kim[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of, [2]Yonsei University, Wonju, Kangwon

**2053** **Recognition of Motor Imagery with Single EEG Channel based on An Improved CSP Algorithm**
RuiMin Wang[1], K Iramina[2], DongChuan Yu[3], W Wu[1], Sheng Ge[3]
[1]Nanjing University of Science and Technology, Nanjing, China, [2]Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan, [3]Key Laboratory of Child Development and Leaning Science, Ministry of Education, Southeast University, Nanjing, China

**2054** **Simultaneous recording of EEG and near-infrared spectroscopy during motor preparation**
Takuro Zama[1], Shimada Sotaro[2]
[1]Meiji Univ., Kanagawa, Japan, [2]Meiji University, Kawasaki, Japan

**2055** **Single-trial detection of visual evoked potentials for brain-computer interface**
Yiheng Tu[1], Yeung Sam Hung[1], Li Hu[2], Zhiguo Zhang[1]
[1]The University of Hong Kong, Hong Kong, Hong Kong, [2]Southwest University, Chongqing, China

**2056** **The effect of long-term neurofeedback training on motor performance: an fNIRS study**
Rui Li[1], Fulun Tan[2], Wei-jie Liu[3], Lian Duan[3], Rui-na Dai[3], Xiang Xiao[3], Li Yao[3], Chao-Zhe Zhu[3]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing normal university, Bejing, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing normal university, Beijing, China, [3]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

***2057** **The role of the anterior midcingulate cortex in neurofeedback training, (O-M1)**
Tibor Auer[1,2], Renate Schweizer[1], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany, [2]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom

**2058** **Uncoupling task and feedback processing during cognitive fMRI neurofeedback training**
Wan Ilma Dewiputri[1,2], Renate Schweizer[1], Tibor Auer[1,3], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH at the Max Planck Institute for Biophysical Chemistry, Goettingen, Germany, [2]Universiti Sains Malaysia, Kubang Kerian, Malaysia, [3]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom

**2059** **White matter changes associated with fMRI-based neurofeedback training**
Renate Schweizer[1], Tibor Auer[1,2], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany, [2]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom

## Motor Behavior

### Mirror System

**2060** **Action processing under attentional load**
Veronika Halasz[1,2], Jason Mattingley[3,1], Ross Cunnington[3,1]
[1]Queensland Brain Institute, Brisbane, Australia, [2]The University of Queensland, Brisbane, Australia, [3]The University of Queensland, Brisbane, Australia

***2061** **Exploring the Neural Basis of Observational Motor Learning using Resting-state fMRI, (O-M1)**
Heather McGregor[1], Paul Gribble[1]
[1]Western University, London, Ontario, Canada

**2062** **Viewing hands in manual work but not in social touch modulates activity of area 3b of human SI**
Elina Pihko[1], Eero Smeds[1], Riitta Hari[1]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory, Aalto University, Espoo, Finland

## Motor Behavior

### Motor Planning and Execution

**2063** **An investigation of the neural circuits underlying grasping: from planning to execution**
Teresa De Sanctis[1], Chiara Begliomini[1], Vincenza Tarantino[1], Mattia Marangon[2], Diego Miotto[3], Raffaella Motta[3], Roberto Stramare[3], Umberto Castiello[1]
[1]Dept. of General Psychology - University of Padova, Padova, Italy, [2]Department of General Psychology, University of Padua, Padua, Italy, [3]Department of Medicine, University of Padua, Padua, Italy

**2064** **An MEG study of motor-related beta oscillations during imitation of hand movements**
Isabelle Buard[1], David Arcieniegas[2], Don Rojas[3]
[1]University of Colorado Denver, Aurora, United States, [2]Baylor College of Medicine, Houston, TX, [3]University of Colorado Anschutz Medical Center

**2065** **An MRI-compatible, computer-interfaced drawing pad**
Frederick Reitz[1], Todd Richards[1], Kelvin Wu[1], Peter Boord[1], Katie Askren[1], Thomas Lewis[1], Virginia Berninger[1]
[1]University of Washington, Seattle, United States

**2066** **Audiovisual congruency influences the anticipation of table tennis strokes**
Matthias Bischoff[1], Karen Zentgraf[2], Britta Lorey[3], Sebastian Pilgramm[3], Rudolf Stark[4], Dieter Vaitl[4], Joern Munzert[3]
[1]Department of Psychology and Sport Sciences, University of Muenster, Muenster, Germany, [2]Department of Psychology and Sport Sciences, University of Muenster, Germany, Muenster, Germany, [3]Department of Psychology and Sport Sciences, University of Giessen, Germany, Giessen, Germany, [4]Bender Institute of Neuroimaging, Giessen, Germany

**2067** **Brain activity preceding observation of upcoming object-oriented actions**
Chiara Bozzacchi[1], Francesco Di Russo[2], Maria Assunta Giusti[2], Donatella Spinelli[2], Sabrina Pitzalis[3]
[1]University of Rome 'Foro Italico', Roma, Italy, [2]University of Rome 'Foro Italico', Rome, Italy, [3]University of Rome 'Foro Italico'

**2068** **Brain correlates of hand preference:fMRI study of ipsilateral and contralateral motor representation**
Anna Grabowska[1,2], Marek Binder[3], Malgorzata Gut[4], Andrzej Urbanik[5]
[1]Nencki Institute, Warsaw, Poland, [2]Warsaw School of Social Sciences and Humanities, Warsaw, Poland, [3]Institute of Psychology, Jagiellonian University, Cracow, Poland, [4]University of Finance and Management, Warsaw, Poland, [5]Collegium Medicum, Jagiellonian University, Cracow, Poland

**2069** **Cortical connectivity predicts short-term motor skill acquisition**
Jennifer Wu[1], Arshdeep Kaur[2], Ramesh Srinivasan[3], Steven C. Cramer[4]
[1]Department of Anatomy and Neurobiology, University of California-Irvine, Irvine, CA, USA, [2]University of California-Irvine, Irvine, CA, USA, [3]Department of Cognitive Sciences, University of California-Irvine, Irvine, CA, USA, [4]Departments of Neurology and Anatomy & Neurobiology, University of California-Irvine, Irvine, CA, USA

**2070** **Direct current stimulation (tDCS) of left parietal cortex facilitates gesture processing**
Peter Weiss[1], Elisabeth Achilles[2], Maike Hesse[2], Katharina Moos[2], Roland Sparing[2], Gereon Fink[3]
[1]Research Centre Juelich, Juelich, Germany, [2]Department of Neurology, Cologne, Germany, [3]Department of Neurology, University of Cologne, Cologne, Germany

**2071** **EEG Demonstrates Dynamics of Praxis Network During Gesture Execution**
Joshua Ewen[1], Nathan Crone[2], Anna Korzeniewska[2], Balaji Lakshmanan[3], Stewart Mostofsky[4]
[1]Kennedy Krieger Institute, Baltimore, United States, [2]Johns Hopkins University School of Medicine, Baltimore, MD, [3]Kennedy Krieger Institute, Baltimore, MD, [4]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**2072** **Effect of Sensory Attenuation on Cortical Movement Related Oscillations**
Joseph Lee[1], Brian Schmit[1]
[1]Marquette University, Milwaukee, United States

**2073** **Human brain representations for online adjustments of voluntary actions**
Jerome Sanes[1], Patrick Bédard[2], Roberto Caminiti[3], Meera Chappidi[2], Alexandra Battaglia-Mayer[3]
[1]Brown University, Providence, United States, [2]Brown University, Providence, RI, [3]Sapienza University, Rome, Italy

**2074** **Improving efficient action selection by tuning cortico-subthalamic connectivity**
Damian Herz[1,2], Mark Christensen[1,2,3], Norbert Bruggemann[1], Kristoffer Hougaard Madsen[1,4], Hartwig Siebner[1]
[1]Danish Research Centre for Magnetic Resonance (DRCMR), Copenhagen, Denmark, [2]Department of Neuroscience and Pharmacology, University of Copenhagen, Copenhagen, Denmark, [3]Department of Nutrition, Exercise and Sports, University of Copenhagen, Copenhagen, Denmark, [4]DTU Informatics, Technical University of Denmark, Lyngby, Denmark

**2075** **Lower Limb Motor Control as Assessed by Clustered-Sparse Temporal Acquisition fMRI**
Lukas Jaeger[1,2], Laura Marchal-Crespo[1], Peter Wolf[1], Lars Michels[2,3], Robert Riener[1], Spyros Kollias[2]
[1]Sensory-Motor Systems Lab, ETH Zurich, Zurich, Switzerland, [2]Clinic for Neuroradiology, University Hospital Zurich, Zurich, Switzerland, [3]Center of MR-Research, University Children's Hospital, Zurich, Switzerland

**2076** **Mental rotation of hand as a task to evaluate motor imagery capability: an fMRI study**
Saman Rassaei Kashuk[1], Jacqueline Williams[1], Peter Wilson[2], Graham Thorpe[1], Gary Egan[3]
[1]Victoria University, Melbourne, Australia, [2]Australian Catholic University, Melbourne, Australia, [3]Monash University, Melbourne, Australia

**2077** **Neural Correlates of Handedness: Differences between dominant and non-dominant hand movements**
Eva-Maria Pool[1], Anne Rehme[1], Gereon Fink[2], Simon Eickhoff[3], Christian Grefkes[1]
[1]Max Planck Institute for Neurological Research, Cologne, Germany, [2]Department of Neurology, University of Cologne, Cologne, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**2078** **Separating temporal and ordinal aspects of motor control in cortical and basal ganglia networks**
Jeff Bednark[1], Megan Campbell[1], Ross Cunnington[2]
[1]The University of Queensland, QBI, Brisbane, Australia, [2]University of Queensland, Brisbane, Australia

**2079** **Slow Potentials of the Sensorimotor Cortex during Active & Passive Bilateral, Cyclic Ankle Movement**
Ryan McKindles[1], Brian Schmit[1]
[1]Marquette University, Milwaukee, United States

**2080** **Spectro-temporal dynamics of motor cortex activity during speech processing**
Johannes Gehrig[1], Marie-Therese Forster[1], Agi Oszvald[1], Ines Kropff[1], Volker Seifert[1], Helmut Laufs[1], Christian Alexander Kell[1]
[1]Goethe University, Frankfurt, Germany

**2081** **Tapping into the brain: An ultra-high resolution investigation of the motor system with 7-Tesla fMRI**
Roy Salomon[1], Wietske van der Zwaag[1], Jana Darulova[1], Rolf Gruetter[2], Olaf Blanke[3]
[1]EPFL, Lausanne, Switzerland, [2]EPFL, UNIL and HUG, Lausanne, Switzerland, [3]EPFL, HUG, Lausanne, Switzerland

**2082** **Temporal interactions between somatosensory and motor cortices during cued pinch movement in humans**
Hai Sun[1], Jeffrey Ojemann[2], Tim Blakely[2], Felix Darvas[3], Jeremiah Wander[2], Kai Miller[4]
[1]Oregon Health & Science University, Portland, United States, [2]University of Washington, Seattle, WA, [3]University of Washington, Seattle, United States, [4]Stanford University, Stanford, CA

## Motor Behavior

### Visuo-Motor Functions

**2083** **Asymmetric bi-manual effects on inter-hemispheric information transfer with the Poffenberger task**
Vaibhav Diwadkar[1], Marcella Bellani[2], Giada Zoccatelli[3], Carlo Marzi[4], Sylvia Savazzi[2], Gianluca Rambaldelli[2], Franco Alessandrini[3], Alberto Beltramello[3], Richard White[1], Paolo Brambilla[5]
[1]Wayne State University, Detroit, MI, [2]University of Verona, Verona, Italy, [3]Department of Neuroradiology, General Hospital, Verona, Italy, [4]University of Verona, Verona, MI, [5]University of Udine, Udine, Italy

**2084** **Empathy and ability modulate neural activation during facial imitation**
Lieke Braadbaart[1], Hendrik de Grauw[2], David Perrett[2], Justin Williams[3], Gordon Waiter[1]
[1]Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, United Kingdom, [2]Perception Lab, University of St Andrews, St Andrews, United Kingdom, [3]Clinical Research Centre, University of Aberdeen, Aberdeen, United Kingdom

**2085** **Frontoparietal Network Resting Connectivity is Related to Antisaccade Task Performance**
Sharna Jamadar[1], Beth Johnson[1], Jason Lee[1], Gary Egan[1], Joanne Fielding[1]
[1]Monash University, Melbourne, Australia

**2086** **Interaction between parietal and premotor areas is disrupted during visually guided gait adaptation**
Johanna Wagner[1], Teodoro Solis-Escalante[1], Christa Neuper[1,2], Reinhold Scherer[1], Gernot Müller-Putz[1]
[1]Graz University of Technology, Graz, Austria, [2]Karl Franzens University, Graz, Austria

**2087** **Meta-analysis of anti-saccades: functional differentiation in supplementary and frontal eye fields**
Isabelle Seidler[1], Simon Eickhoff[1], Edna-Clarisse Cieslik[1]
[1]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**2088** **Quantitative Meta-Analysis of fMRI Activity During Antisaccades**
Sharna Jamadar[1], Joanne Fielding[1], Gary Egan[1]
[1]Monash University, Melbourne, Australia

**2089** **SMA and dorsal ACC modulation of motor networks: Effects of task complexity and response hand**
Manisha Ravi[1], Richard White[1], Vaibhav Diwadkar[1]
[1]Wayne State University, Detroit, MI

## Physiology, Metabolism and Neurotransmission

### Cerebral Metabolism and Hemodynamics

***2090** **A hemodynamic model for layered BOLD signals, (O-M4)**
Jakob Heinzle[1], Peter Koopmans[2,3], Hanneke den Ouden[2,4], Sudhir Raman[1], Klaas Enno Stephan[1,5,6]
[1]Translational Neuromodeling Unit, Inst. for Biomedical Engineering, Univ. of Zurich & ETH Zurich, Zurich, Switzerland, [2]Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands, [3]FMRIB Centre, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom, [4]Center for Neural Science, New York University, New York, NY, [5]Wellcome Trust Centre for Neuroimaging, University College London, London, United Kingdom, [6]Laboratory for Social and Neural Systems Research, Dept. of Economics, University of Zurich, Zurich, Switzerland

**2091** **Computational model for the BOLD response for brief neural stimulation in the brain**
Jung Hwan Kim[1], Reswanul Khan[1], David Ress[1]
[1]The University of Texas at Austin, Austin, TX

**2092** **Distributions of Oxidative Demand and Oxygen Extraction in the Human Brain**
Fahmeed Hyder[1], Albert gjedde[2], Arne Møller[3], Ronen Globinsky[1], Christopher Bailey[3], Douglas Rothman[1]
[1]Yale University, New Haven, CT, [2]University of Copenhagen, Copenhagen, Denmark, [3]Aarhus University, Aarhus, Denmark

**2093** **Glutamatergic Function in the Resting Awake Human Brain Demands Uniformly High Oxidative Energy**
Fahmeed Hyder[1], Robert Fulbright[1], Robert Shulman[1], Douglas Rothman[1]
[1]Yale University, New Haven, CT

**2094** **Increasing BOLD Effect with Age May Reflect Decreased Metabolic Demand: A Functional ASL/ BOLD Study**
Vincent Schmithorst[1,2], Gregory Lee[2], Luis Hernandez-Garcia[3], Jennifer Vannest[2], Elena Plante[4], Scott Holland[5]
[1]Children's Hospital of Pittsburgh of UPMC, Pittsburgh, United States, [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [3]University of Michigan, Ann Arbor, United States, [4]University of Arizona, Tucson, AZ, [5]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**2095** **Neurochemical consequences of trigeminal nerve (TGN) stimulation in rat barrel cortex**
Nathalie Just[1], Rolf Gruetter[2]
[1]EPFL, Lausanne, Switzerland, [2]EPFL, UNIL and HUG, Lausanne, Switzerland

***2096** **Quantification of baseline oxygen metabolism at 7T using QUO2, (O-Th2)**
Claudine Gauthier[1], Steffen Krieger[2], Elisabeth Roggenhofer[1], Laurentius Huber[1], Richard Hoge[3], Robert Turner[4]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Max-Plank-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Université de Montréal, Montréal, Canada, [4]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**2097** **Quantitative cerebral blood flow measurement using multi-band arterial spin labeling technique**
Wanyong Shin[1], Tae Kim[2], Tiejun Zhao[3], Erik Beall[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, OH, [2]University of Pittsburgh, Pittsburgh, PA, [3]Siemens Medical Solutions, Pittsburgh, PA

**2098** **Regional Variability of Glucose Oxidation in the Awake Human Brain**
Fahmeed Hyder[1], Ronen Globinsky[1], Christopher Bailey[2], Arne Møller[2], Douglas Rothman[1], Albert gjedde[3]
[1]Yale University, New Haven, CT, [2]Aarhus University, Aarhus, Denmark, [3]University of Copenhagen, Copenhagen, Denmark

**2099** **Relation between Cerebral Glucose Metabolism and Hemodynamic Response during a Visual Attention Task**
Jing Zhang[1], Monte Buchsbaum[2], King-Wai Chu[2]
[1]Capital Medical University, Beijing, China, [2]Mount Sinai School of Medicine, New York, United States


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**2100** **Sevoflurane Uniformly and Significantly Reduces Glucose Consumption in Gray Matter, Not White Matter**
Fahmeed Hyder[1], Michael Alkire[2], Ronen Globinsky[1], Xenophon Papademetris[1], Douglas Rothman[1]
[1]Yale University, New Haven, CT, [2]University of California, Irvine, CA

**2101** **Volatile Anesthetics Uniformly Reduce Glucose Consumption in Gray Matter of the Human Brain**
Fahmeed Hyder[1], Xenophon Papademetris[1], Ronen Globinsky[1], Douglas Rothman[1], Michael Alkire[2]
[1]Yale University, New Haven, CT, [2]University of California, Irvine, CA

## Physiology, Metabolism and Neurotransmission

### Neurophysiology of Imaging Signals

**2102** **Coherence between Spontaneous Neural Activity and Blood Flow Is State-dependent**
Peter Herman[1], Robert Sachdev[1], Yuguo Yu[1], Basavaraju Sanganahalli[1], Hal Blumenfeld[1], David McCormick[1], Fahmeed Hyder[1]
[1]Yale University, New Haven, CT

**2103** **Correlating High Gamma Band EEG Activity and fMRI BOLD Response**
Melissa Smith[1], Kurt Weaver[2], Thomas Grabowski[3], Rajesh Rao[3], Felix Darvas[1]
[1]University of Washington, Seattle, United States, [2]Integrated Brain Imaging Center, University of Washington, Seattle, WA, [3]University of Washington, Seattle, WA

***2104** **Correspondence of Spontaneous and Evoked Inter-Laminar Functional Connectivity of Current Sources, (O-M4)**
Shmuel Naaman[1], Aleksandra Bortel[1], Victor Mocanu[1], Anupama Iyengar[1], Doina Precup[2], Amir Shmuel[1]
[1]MNI, McGill University, Montreal, Canada, [2]McGill University, Montreal, Canada

**2105** **Energy Budget of Signaling and Non-signaling Components in Mammalian Cerebral Cortex**
Fahmeed Hyder[1], Douglas Rothman[1], Maxwell Bennett[2]
[1]Yale University, New Haven, CT, [2]University of Sidney, Sydney, Australia

**2106** **How High? - MEG Complexity Imaging Above 150 Hz Reveals Ensemble Neuronal Firing Patterns**
Stephen Robinson[1], Allison Nugent[2], Arnold Mandell[3], Richard Coppola[1]
[1]NIMH/NIH, Bethesda, MD, [2]NIMH, Bethesda, United States, [3]UCSD & SRI, La Jolla, CA

**2107** **Investigation of cardiac and respiratory pressure waves in the brain by high resolution EPI at 7 T**
Marta Bianciardi[1], Karleyton Evans[2], Jonathan Polimeni[1], Tian Song[2], Boris Keil[1], Thomas Witzel[1], Bruce Rosen[1], David Boas[1], Lawrence Wald[1]
[1]Department of Radiology, A.A. Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Charlestown, MA, United States, [2]Department of Psychiatry, MGH and Harvard Medical School, Charlestown, MA, United States

**2108** **Monochromatic ultra-slow oscillations in the human electroencephalogram**
Vadim Nikulin[1], tommaso fedele[1], Gabriel Curio[1], Axel Lipp[2], Jan Mehnert[3], Cornelia Noack[2], Jens Steinbrink[3]
[1]Neurophysics Group, Department of Neurology, Campus Benjamin Franklin, Charité, University Medicine, Berlin, Germany, [2]Department of Neurology, Virchow Klinikum, University Medicine, Berlin, Germany, [3]Berlin NeuroImaging Center, University Hospital, Berlin, Germany

**2109** **Regional Homogeneity Alterations During the Post-Effect of Electro-Acupuncture**
yanyan wang[1,2], Yanjun Diao[2], Jianhao Tan[1], Xiaojing Long[2], Shuzhong Chen[2], Bensheng Qiu[2], Lijuan Zhang[2]
[1]College of Electrical and Information Engineering, Hunan University, Changsha, China, [2]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China

***2110** **The Amplitude of the Resting State fMRI Global Signal Is Related to EEG Vigilance Measures, (O-Th2)**
Chi Wah Wong[1], Valur Olafsson[1], Omer Tal[1], Thomas Liu[1]
[1]University of California San Diego, La Jolla, CA

**2111** **The most dynamic regions in a resting brain — MEG results from Rank Vector Entropy analysis**
Qian Luo[1], Stephen Robinson[2], Xi Cheng[3], P. Tyler Roskos[1], Duo Xu[1], Jeffrey Stout[4], Diane Whitson[1], Tom Holroyd[2], Lynda Kull[1], Richard Bucholz[1]
[1]Saint Louis University, Saint Louis, MO, [2]NIMH, Bethesda, MD, [3]Lieber Institute for Brain Development, Baltimore, United States, [4]Illinois Institute of Technology, Chicago, IL

**2112** **The relationship between motor cortex neurotransmitter levels, %BOLD changes and neural oscillations**
Mary Stephenson[1], SoYoung Kim[1], Matthew Brookes[1], Stephen Jackson[1], Peter Morris[1]
[1]University of Nottingham, Nottingham, United Kingdom

**2113** **The Role of Adenosine Receptors in Infraslow BOLD Signal Oscillations**
Anna-Clare Milazzo[1,2], Heidi Jiang[1], William Shirer[1], Michael Greicius[1]
[1]Functional Imaging in Neuropsychiatric Disorders Laboratory, Stanford School of Medicine, Stanford, CA, [2]War Related Illness and Injury Study Center, VA Palo Alto Health Care System, Palo Alto, CA

**2114** **Tight neurovascular coupling in human sensorimotor cortex: a combined ECoG and 7T BOLD fMRI study**
Jeroen Siero[1], Dora Hermes[2], Hans Hoogduin[3], Peter Luijten[3], Natalia Petridou[1,3], Nick Ramsey[1]
[1]Rudolf Magnus Institute, UMC Utrecht, Utrecht, Netherlands, [2]Stanford University, Stanford, CA, [3]Radiology, UMC Utrecht, Utrecht, Netherlands

***2115** **Variable Couplings between Neural Activity and Flow-metabolism across Cortical Lamina, (O-M4)**
Peter Herman[1], Basavaraju Sanganahalli[1], Douglas Rothman[1], Hal Blumenfeld[1], Fahmeed Hyder[1]
[1]Yale University, New Haven, CT

## Physiology, Metabolism and Neurotransmission

### Pharmacology and Neurotransmission

**2116** **A neuroimaging study on the cognitive effects of three contrasting cocoa based beverages**
Qing Yang[1], Jianli Wang[1], Prasanna Karunanayaka[1], Parvez Lokhandwala[1], Robert McHugh[1], Paul Eslinger[1], Debra Miller[2], Stephen Crozier[2]
[1]Pennsylvania State College of Medicine, Hershey, PA, [2]The Hershey Center for Health & Nutrition, Hershey, PA

**2117** **Discovery and replication of acute nicotine effects on white matter integrity and cognitive function**
Peter Kochunov[1], Michael Du[2], Lauren Moran[2], Laura Rowland[3], Elliot Stein[4], Yihong Yang[5], Elliot Hong[6]
[1]Maryland Psychiatric Research Center, Baltimore, United States, [2]Maryland Psychiatric Research Center, baltimore, MD, [3]University of Maryland, baltimore, United States, [4]NIDa/NIH, Baltimroe, MD, [5]Neuroimaging Research Branch, National Institute on Drug Abuse, National Institutes of Health, Baltimore, United States, [6]Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD

**2118** **Mapping brain volume associations of fat hormones, adipokines, in the elderly: An n=517 ADNI study**
Priya Rajagopalan[1], Arthur Toga[2], Clifford R. Jack Jack[3], Michael Weiner[4], Paul Thompson[1], The ADNI[5]
[1]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [2]University of California - Los Angeles, Los Angeles, CA, [3]Department of Radiology, Mayo Clinic and Foundation, Rochester, MN, [4]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA, [5]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, United States

**2119** **Monitoring the Effect of Alcohol on Cerebral Blood Flow using Arterial Spin Labeling**
Michael Marxen[1], Gabriela Gan[1], Daniel Schwarz[1], Ulrich Zimmermann[1], Maximilian Pilhatsch[1], Matthias Guenther[2,3], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany, [2]Fraunhofer MEVIS-Institute for Medical Image Computing, Bremen, Germany, [3]Universität Bremen, Bremen, Germany


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# SCHEDULE OF POSTER PRESENTATIONS

## Wednesday, June 19, 2013 and Thursday, June 20, 2013

** Indicates poster will also be presented during an Oral Session. The oral session number is indicated in parantheses after the poster title.*

*** Indicates poster will also be presented during an Interactive Poster (I-Poster) Session. Please check the Program Book for I-Poster Presentation times.*

Information listed, including author affiliations, appear as submitted.

## Disorders of the Nervous System

### Addictions

**3000 A pilot study of the neural correlates of obesity treatment in ethnic minorities**
Janet Ng[1], Gary Foster[2], Feroze Mohamed[3], Godfrey Pearlson[4]
[1]Olin Neuropsychiatry Research Center, Hartford, United States, [2]Center for Obesity Research and Education, Philadelphia, PA, [3]Temple university, philadelphia, PA, [4]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT

**3001 Abnormal cortical thickness associate with changes in substance use behavior during adolescence**
Yaling Yang[1], Pan Wang[2], Laura Baker[3], Adrian Raine[4]
[1]Children's Hospital Los Angeles/ University of Southern California, Los Angeles, United States, [2]University of Southern California, Los Angeles, CA, [3]Department of Psychology, University of Southern California, Los Angeles, CA, [4]Departments of Criminology, Psychiatry, and Psychology, University of Pennsylvania, Philadelphia, CA

***3002 Abnormal Patterns of Gyrification in Fetal Alcohol Spectrum Disorder, (O-M2)**
Shantanu Joshi[1], Katherine Narr[2], Eric Kan[3], Roger Woods[2], Arthur Toga[4], Sarah Mattson[5], Ed Riley[5], Kenneth Jones[6], Colleen Adnams[7], Philip May[8], Mary O'Connor[2], Elizabeth Sowell[9]
[1]UCLA, Los Angeles, United States, [2]University of California at Los Angeles, Los Angeles, CA, [3]Children's Hospital, Los Angeles, Los Angeles, CA, [4]University of California - Los Angeles, Los Angeles, CA, [5]San Diego State University, San Diego, CA, [6]University of San Diego, La Jolla, CA, [7]University of Cape Town, Cape Town, South Africa, [8]University of North Carolina, Chapel Hill, NC, [9]University of Southern California, Los Angeles, CA

**3003 Acute and chronic nicotine effects during intertemporal decision making: an fMRI study**
Stephan Ripke[1], Andrea Kobiella[1], Nils Kroemer[1], Christian Vollmert[2], Sabine Vollstädt-Klein[2], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany, [2]Central Institute of Mental Health, Mannheim, Germany

**3004 Acute cocaine impacts brain responses to the anticipation of monetary losses in cocaine-dependence**
Emma Rose[1], James Waltz[2], Betty Jo Salmeron[3], Julie Schweitzer[4], Elliot Stein[5], Thomas Ross[6]
[1]RTI International, Baltimore, United States, [2]University of Maryland, Baltimore, MD, [3]Neuroimaging Research Branch, National Institute on Drug Abuse, Baltimore, MD, [4]MIND Institute, UC Davis Medical Center, Sacramento, CA, [5]NIH, Baltimore, United States, [6]NIDA/NIH, Baltimore, MD

**3005 Addiction-related polymorphisms in dopamine D2 receptor gene relate to brain volumes in 1316 adults**
Florence Roussotte[1], Neda Jahanshad[1], Derrek Hibar[2], Elizabeth Sowell[3], Katie McMahon[4], Greig de Zubicaray[5], Margaret Wright[6], Paul Thompson[7], The ADNI[8]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]University of Southern California, Los Angeles, CA, [4]Centre for Advanced Imaging, The University of Queensland, Brisbane, QLD, [5]University of Queensland, Brisbane, Australia, [6]Queensland Institute of Medical Research, Herston, Queensland, [7]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA, [8]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, United States

**3006 Alcohol MID Task as a Determinant of Acute Alcohol Drinking Motivation and Effects with Varenicline**
Vatsalya Vatsalya[1], Reza Momenan[2], Marion Coe[1], Selena Barlett[3], Daniel Hommer[4], Markus Heilig[1], Vijay Ramchandani[5]
[1]NIAAA, Bethesda, MD, [2]NIAAA/NIH, Bethesda, MD, [3]University of Queensland, St. Lucia, Queensland, [4]NIAAA/NIH, Bethesda, United States, [5]NIAAA, NIH, Bethesda, MD

**3007 Alcohol Use History is Associated with Fractional Anisotropy among Justice-Involved Adolescents**
Rachel Thayer[1], Kent Hutchison[2], Angela Bryan[3]
[1]University of Colorado Boulder, Boulder, United States, [2]Departments of Psychology and Neuroscience, University of Colorado, Boulder, Boulder, CO, [3]University of Colorado, Boulder, CO

**3008 Alteration of resting state functional connectivity for cannabis users**
Hu Cheng[1], Patrick Skosnik[2], Dae-Jin Kim[1], Benjamin Pruce[1], William Hetrick[1], Brian O'donnell[1], Aina Puce[1], Sharlene Newman[1]
[1]Indiana University, Bloomington, IN, [2]Yale University, New Haven, CT

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

***3009 Altered Brain Network Interactions Are Associated With Nicotine Withdrawal, (O-W4)**
Hong Gu[1], Mary Falcone[2], Kosha Ruparel[3], Leah LaPrate[2], Ruben Gur[2], Yihong Yang[1], Elliot Stein[1], Caryn Lerman[2]
[1]NIDA/NIH, Baltimore, MD, [2]University of Pennsylvania, Philadelphia, PA, [3]Hospital of the University of Pennsylvania, Philadelphia, PA

**3010 Brain network organization is disrupted in chronic cocaine dependence as revealed by module analysis**
xia liang[1,2], Hong Gu[1], Betty Jo Salmeron[1], Yuzheng Hu[1], Yong He[2], Elliot Stein[1], Yihong Yang[1]
[1]Neuroimaging Research Branch, National Institute on Drug Abuse, Baltimore, United States, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**3011 Cigarette Dependence Associated with Insula Thickness and Fractional Anisotropy in Young Smokers**
Angelica Morales[1], Dara Ghahremani[2], Milky Kohno[3], Edythe London[4]
[1]University of California, Los Angeles, Los Angeles, United States, [2]UCLA, Los Angeles, United States, [3]University of California Los Angeles, Los Angeles, United States, [4]University of California, Los Angeles, CA

**3012 Classification and prediction of alcohol misuse in an adolescent sample**
Robert Whelan[1], Tobias Banaschewski[2], Gareth Barker[3], Christian Büchel[4], Fabiana Carvalho[5], Patricia Conrod[6], Herta Flor[2], Andreas Heinz[7], Bernd Ittermann[8], Claire Lawrence[9], Karl Mann[2], Jean-Luc Martinot[10], Eva Loth[6], Tomas Paus[11], Zdenka Pausova[12], Marcella Rietschel[2], Trevor Robbins[13], Mira Fauth-Bühler[2], Michael Smolka[14], Rainer Spanagel[2], Dai Stephens[15], Jürgen Gallinat[7], Maren STRUVE[16], Gunter Schumann[3], Hugh Garavan[1], Consortium IMAGEN[17]
[1]University of Vermont, Burlington, VT, [2]Central Institute of Mental Health, Mannheim, Germany, [3]King's College London, London, United Kingdom, [4]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [5]King's College London, London, United Kingdom, [6]King's College London, Institute of Psychiatry, London, United Kingdom, [7]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [8]Physikalisch-Technische Bundesanstalt, Berlin, Germany, [9]University of Nottingham, Nottingham, United Kingdom, [10]UMR INSERM-CEA U1000, ORSAY, France, [11]Rotman Research Institute - Baycrest Centre, Toronto, ON, [12]The Hospital for Sick Children, Toronto, Canada, [13]University of Cambridge, Cambridge, United Kingdom, [14]Technische Universität Dresden, Dresden, Germany, [15]University of Sussex, Sussex, United Kingdom, [16]Central Institute of Mental Health, MANNHEIM, Germany, [17]France

**3013 Coherence of fiber tract bundles associated with impulsivity in methamphetamine abusers**
Laura Dennis[1], Britta Tremblay[2], Daniel Schwartz[2], Vanessa Wilson[1], Suzanne Mitchell[3], William Hoffman[4]
[1]OHSU, Portland, United States, [2]Portland VA Medical Center, Portland, OR, [3]Oregon health & science university, Portland, OR, [4]Department of Veterans Affairs, Portland, United States

**3014 Converging Evidence for a General Reward Deficiency in frequent Online Gamers**
Tim Hahn[1], Karolien Notebaert[2], Thomas Dresler[3], Andreas Reif[4], Andreas Fallgatter[3]
[1]University of Frankfurt, Frankfurt, Germany, [2]1Department of Cognitive Psychology II, Johann Wolfgang Goethe University, Frankfurt, Germany, [3]University of Tuebingen, Department of Psychiatry and Psychotherapy, Tübingen, Germany, [4]University of Wuerzburg, Department of Psychiatry, Psychosomatics and Psychotherapy, Würzburg, Germany

**3015 Crack Cocaine Use is Associated with Decreased White Matter Integrity in Women with HIV**
Vanessa Grauzas[1], Deborah Little[2], Leah Rubin[1], Rhoda Jamadar[3], Lillian Soong[1], Erin Sundermann[1], Kathleen Weber[4], Mardge Cohen[4,5], Pauline Maki[1]
[1]University of Illinois at Chicago, Chicago, IL, [2]VISN 17 Center of Excellence for Research on Returning War Veterans Texas A&M Health Science Center, Waco, TX, [3]Texas A&M Health Science Center College of Medicine, Bryan, TX, [4]CORE Center/Cook County Health and Hospital System, Chicago, IL, [5]Rush University, Chicago, IL

**3016 CTBS on right dorsolateral prefrontal cortex mimics impulsive behavior induced by alcohol**
Noemi Robles[1], Ignacio Obeso[2], Diego Redolar-Ripoll[3], Elena Muñoz-Marrón[1]
[1]Universitat Oberta de Catalunya, Barcelona, Spain, [2]Institute of cognitive neuroscience, Bron, France, [3]IN3-Universitat Oberta de Catalunya (UOC), Barcelona, Spain

**3017 Decreased Insula-Cingulate Resting-State Functional Connectivity in Cocaine Dependence**
Yuzheng Hu[1], Hong Gu[1], Betty Jo Salmeron[1], xia liang[1], Elliot Stein[1], Yihong Yang[1]
[1]Neuroimaging Research Branch, National Institute on Drug Abuse, National Institutes of Health, Baltimore, United States


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**3018** **Development of a robust Pavlovian-Instrumental fMRI paradigm in alcohol use disorders-a pilot study**
Maria Garbusow[1], Nadine Bernhard[2], Claudia Hägele[3], Elisabeth Jünger[4], Miriam Sebold[3], Christian Sommer[5], Eva Friedel[6], Michael Rapp[7], Michael Smolka[8], Ulrich Zimmermann[9], Schlagenhauf Florian[6], Anne Beck[10], Quentin Huys[11], Andreas Heinz[6]
[1]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, CCM, Berlin, Germany, [2]Department of Psychiatry and Psychotherapy Section of Systems Neuroscience, Technische Universität D, Dresden, Germany, [3]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, CCM, Berlin, Germa, Berlin, Germany, [4]Department of Psychiatry and Psychotherapy, University Hospital Carl Gustav Carus at Technische Univ, Berlin, Germany, [5]Department of Psychiatry and Psychotherapy, University Hospital Carl Gustav Carus at Technische Univ, Dresden, Germany, [6]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [7]Charité Universitätsmedizin Berlin, Berlin, Germany, [8]Technische Universität Dresden, Dresden, Germany, [9]Department of Psychiatry and Psychotherapy, University Hospital Dresden, Dresden, Germany, [10]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Univeristätsmedizin Berlin, Berlin, Germany, [11]Gatsby Computational Neuroscience Unit and Wellcome Trust Centre for Neuroimaging, UCI, London, United Kingdom

**3019** **Disentangling Delay Discounting in Methamphetamine Dependent Individuals**
Vanessa Wilson[1], Britta Tremblay[2], Daniel Schwartz[2], Laura Dennis[1], William Hoffman[3], Suzanne Mitchell[4]
[1]OHSU, Portland, United States, [2]Portland VA Medical Center, Portland, OR, [3]Department of Veterans Affairs, Portland, United States, [4]Oregon health & science university, Portland, OR

**3020** **Effects of baclofen on neurobiological correlates of alcohol dependence: a pharmaco-fMRI study**
Anne Beck[1], Patricia Pelz[1], Robert C. Lorenz[1], Katrin Charlet[1], Josephine Krüger[1], Eva Friedel[1], Olga Geisel[1], Sebastian Ivens[1], Roman Banas[1], Andreas Heinz[1], Christian Müller[1]
[1]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany

**3021** **Effects of smoking cessation on neural processing of emotional stimuli**
Franziska Wuttig[1], Nils Kroemer[1], Juliane Helbig[1], Gabriela Gan[1], Andrea Kobiella[1], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany

**3022** **Error-related dACC hypoactivity in cannabis users predicts the failure to learn from mistakes**
Susan Carey[1], Jennifer Jones[2], Liam Nestor[2], Hugh Garavan[3], Robert Hester[1]
[1]University of Melbourne, Melbourne, Australia, [2]Trinity College Dublin, Dublin, Ireland, [3]University of Vermont, Burlington, VT

**3023** **Ethanol-induced Brain Activation and Emotional Processing in Alcoholics: Effect of Opioid Antagonism**
Primavera Spagnolo[1], Reza Momenan[1], Melanie Schwandt[1], Vijay Ramchandani[1], David George[1]
[1]LCTS/NIAAA/NIH, Bethesda, United States

**3024** **Executive dysfunction in excessive internet users while performing a financial decision-making task**
Ji-Woo Seok[1], Jin-Hun Sohn[2], Kyung Hwa Lee[3], Sook-Hee Kim[4], Hyo-Eun Kim[5]
[1]Chungnam National University, Daejeon, Korea, Republic of, [2]Chungnam National University, Daejeon, Republic Of Korea, [3]University of Pittsburgh, Pittsburgh, PA, [4]US Army Substance Abuse Program, Daejeon, Korea, Republic of, [5]Institute for Brain Research, dae jeon, Korea, Republic of

**3025** **Expanding the boundaries of addiction neuroscience: Impact of dimensionality on prediction**
Krista Wisner[1], Edward Patzelt[1], Kelvin O. Lim[1], Angus MacDonald[1]
[1]University of Minnesota, Minneapolis, MN

**3026** **Functional Connectivity Dysfunction Relates to Alcohol Use Severity**
Barbara Weiland[1], Amithrupa Sabbineni[2], Vince Calhoun[3], Robert Welsh[4], Kent Hutchison[1]
[1]Department of Psychology and Neuroscience, University of Colorado, Boulder, CO, [2]Department of Psychology and Neuroscience, University of Coloradof Colorado, Boulder, Boulder, CO, [3]The Mind Research Network and University of New Mexico, Albuquerque, NM, [4]Radiology, University of Michigan, Ann Arbor, MI

**3027** **Hyperactivation of the Cognitive Control Network in Cocaine Use Disorders During a Stroop Task**
Claire Wilcox[1], Josef Ling[2], Teri Teshiba[2], Zhen Yang[2], Andrew Mayer[3]
[1]University of New Mexico, Dept of Psychiatry, Albuquerque, United States, [2]Mind Research Network, Albuquerque, NM, [3] Albuquerque, United States

**3028** **Increased Functional Connectivity In Resting State Networks In Cocaine Users Compared to Controls**
Suchismita Ray[1], Suril Gohel[2,3], Bharat Biswal[4], Stephen Hanson[5], Catherine Hanson[5]
[1]Rutgers Univesity, Piscataway, NJ, [2]New Jesey Institute of Technology, Newark, NJ, [3]University of Medicine and Dentistry of New Jersey, Newark, NJ, [4]New Jersey Institute of Technology, Newark, NJ, [5]Rutgers University, RUBIC, Psychology Dept, Newark, NJ

**3029** **Large-scale cortical networks in the prediction of relapse to cocaine use**
Meredith McHugh[1], Hong Gu[1], Yihong Yang[1], Jacquelyn Braud[2], Michael Devous, Sr[3], Briggs Richard[3], Walker Robrina[2], Bryon Adinoff[2], Elliot Stein[1]
[1]Neuroimaging Research Branch, National Institite on Drug Abuse, Baltimore, MD, [2]Department of Psychiatry, UT Southwestern Medical Center, Dallas, TX, [3]Department of Radiology, UT Southwestern, Dallas, TX

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3030 Neural activation during processing of aversive faces predicts treatment outcome in alcoholism**
Katrin Charlet[1], Florian Schlagenhauf[2,3], Anne Richter[4], Lioba Wimmer[6], Henrik Walter[6,5], Anne Beck[7], Jürgen Gallinat[2], Falk Kiefer[4], Andreas Heinz[2]
[1]Charité - Universitätsmedizin Berlin, Dept. of Psychiatry and Psychotherapy, CCM, Berlin, Germany, [2]Charité - Universitätsmedizin Berlin, Dept. of Psychiatry and Psychotherapy, CCM, Berlin, Germany, [3]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]Central Institute of Mental Health, ZI Mannheim, Mannheim, Germany, [5]Universitätsklinikum Bonn, Department of Medical Psychology, Zentrum für Nervenheilkunde, Bonn, Germany, [6]Charité - Universitätsmedizin Berlin, Division of Mind and Brain Research, Berlin, Germany, [7]Charité - Univeristätsmedizin Berlin, Dept. of Psychiatry and Psychotherapy, CCM, Berlin, Germany

**3031 Neural responses to reward cues in the mesocorticolimbic system predict successful smoking cessation**
Michael Smolka[1], Andrea Kobiella[1], Nils Kroemer[1]
[1]Technische Universität Dresden, Dresden, Germany

**3032 Neurobiological changes in pathological gambling**
Nina Seiferth[1], Saskia Koehler[2], Torsten Wüstenberg[3], Andreas Heinz[4]
[1]Charite Berlin, Berlin, Germany, [2]Berlin School of Mind and Brain, Berlin, Germany, [3]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, CCM, Berlin, Germany, [4]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany

**3033 Persistent cannabis use is linked to smaller thickness in the hippocampus decades after abstinence**
Alison Burggren[1], Edythe London[1], Brian Renner[1], Michael Jones[1], Karen Miller[1], Prabha Siddarth[1], Gary Small[1], Susan Bookheimer[1]
[1]University of California, Los Angeles, CA

**3034 Prefrontal activation linked to frontostriatal connectivity in controls but not stimulant abusers**
Milky Kohno[1], Angelica Morales[1], Dara Ghahremani[1], Edythe London[1]
[1]University of California Los Angeles, Los Angeles, United States

**3035 Preliminary Functional MRI Results from a Combined Stop-Signal/Alcohol-Cue Exposure Task**
Hollis Karoly[1], Barbara Weiland[1], Amithrupa Sabbineni[1], Kent Hutchison[1]
[1]University of Colorado, Boulder, United States

**3036 Relationship of brain function responding to alcohol and smoking cues during separate tasks**
Jingyu Liu[1], Eric Claus[2], Kent Hutchison[3], David Boutte[2], Vince Calhoun[4]
[1]Mind Research Network, Albuquerque, United States, [2]Mind Research Network, Albuquerque, NM, [3]Departments of Psychology and Neuroscience, University of Colorado, Boulder, Boulder, CO, [4]The Mind Research Network and UNM, ALBUQUERQUE, NM

**3037 Resting-state brain connectivity alteration caused by Internet addiction**
Hewei Cheng[1], Jiajia Feng[2], Lin Lu[2], Jie Shi[2], Liyan Zhao[2], Yong Fan[3]
[1]National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Peking University Healthy Science Center, Beijing, China, [3]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**3038 Self-regulation of insula cortex in chronic smokers using fMRI**
mohit rana[1], Sergio Ruiz[2], Korhan Buyukturkoglu[3], Josué Dalboni da Rocha[4], Axel Muehleck[5], Sandra Eck[6], Anil Batra[7], Niels Birbaumer[8], Ranganatha Sitaram[9]
[1]institute of medical psychology and behavioural neurobiology,tuebingen, tuebingen, Germany, [2]Pontificia Universidad Catolica de Chile, Santiago, Chile, [3]institute of medical psychology, tübingen, Germany, [4]Institute of Medical Psychology and Behavioral Neurobiology, Eberhard Karls-University, Tübingen, Germany, [5]Department of Psychiatry and Psychotherapy, University of Tuebingen, Tübingen, Germany, [6]Department of Psychiatry and Psychotherapy, University of Tuebingen, tübingen, Germany, [7]department of Psychiatry and Psychotherapy, University of Tuebingen, Tübingen, Germany, [8]University of Tübingen, Tübingen, Germany, [9]Institute of medical psychology and behavioral neurobiology, Tuebingen, Germany

**3039 Structural Changes in Current and Former Cocaine Users using Freesurfer Measures**
Krishna Patel[1], Christopher Hyatt[2], Anderson Winkler[1,3], Godfrey Pearlson[4]
[1]Hartford Hospital, Hartford, CT, [2]Olin Neuropsychiatry Research Center of the Institute of Living, Hartford, CT, [3]Dept. of Psychiatry & Neurobiology, Yale University School of Medicine, Hartford, CT, [4]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT

**3040 The influence of nicotine on functional coupling of resting state networks**
Dara Ghahremani[1], Allen Azizian[2], Liam Nestor[3], John Monterosso[2], Edythe London[4]
[1]UCLA, Los Angeles, United States, [2]USC, Los Angeles, CA, [3]Trinity College Dublin, Dublin, Ireland, [4]University of California, Los Angeles, CA

**3041 The neurobiology of successful heroin abstinence**
Katie Brennan[1], Robert Whelan[1], Nick Ortiz[1], Katriona O'Sullivan[2], Adam Stone[3], Hugh Garavan[1]
[1]University of Vermont, Burlington, VT, [2]School of Psychology, Trinity College, Dublin, Ireland, [3]Trinity College Institute of Neuroscience (TCIN), Dublin, Ireland

**3042 The thinner cortical thickness of rostral anterior cingulate cortex in internet addiction disorder**
Kai Yuan[1], Minghao Dong[1], Wei Qin[1], Jie Tian[2]
[1]School of Life Sciences and Technology, Xidian University, xi'an, China, [2]Institute of Automation,, Chinese Academy of Sciences, Beijing, Shaanxi

**3043** **Using real-time neurofeedback to modulate ventral striatal responses to alcohol cues: A pilot study**
Martina Kirsch[1], Daniela Hirsch[1], Matthias Ruf[1], Falk Kiefer[1], Peter Kirsch[1]
[1]Central Institute of Mental Health, Mannheim, Germany

**3044** **Validation of a questionnaire for the assessment of automated alcohol consumption with fMRI**
Sabine Vollstädt-Klein[1], Tagrid Leménager[1], Helmut Nakovics[1], Anne Richter[1], Karl Mann[1], Falk Kiefer[1]
[1]Central Institute of Mental Health, Department of Addictive Behavior and Addiction Medicine, Medical, Heidelberg University, Mannheim, Germany

## Disorders of the Nervous System

### Alzheimer's Disease and Other Dementias

**3045** **A Bayesian Network Analysis of Default Mode Network Connectivity in Mild Cognitive Impairment**
Rui Li[1,2], Juan Li[1,2]
[1]Key Laboratory of Mental Health, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Magnetic Resonance Imaging Research Center, Institute of Psychology, Chinese Academy of Sciences, Beijing, China

**3046** **A Combined MR-PET Analysis of Whole field and Sub field Hippocampal Changes in AD and FTLD**
Courtney Bishop[1,2], Giovanni Zamboni[1,3], Juergen Dukart[4,5], Karsten Mueller[6], Henryk Barthel[6], Osama Sabri[6,7], Matthias Schroeter[6,8,7,9], Jerome Declerck[10], Dorit Merhof[11], Mark Jenkinson[1]
[1]FMRIB, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, United Kingdom, [2]Imanova Centre for Imaging Sciences, Hammersmith Hospital, London, United Kingdom, [3]OPTIMA, Experimental Medicine Division of NDM, University of Oxford, Oxford, United Kingdom, [4]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, [5]Max Planck Institute for Human Cognitive and Brain Sciences, University of Leipzig, Leipzig, Germany, [6]Department of Nuclear Medicine, University of Leipzig, Leipzig, Germany, [7]Leipzig Research Center for Civilization Diseases, University of Leipzig, Leipzig, Germany, [8]Day Clinic of Cognitive Neurology, University of Leipzig, Leipzig, Germany, [9]German consortium for frontotemporal lobar degeneration, Ulm, Germany, [10]Siemens Molecular Imaging, Oxford, United Kingdom, [11]Visual Computing, University of Konstanz, Konstanz, Germany

**3047** **Alzheimer's Disease Risk Factors Modulate Longitudinal Changes in Semantic Memory fMRI Activation**
Sally Durgerian[1], John Woodard[2], Kristy Nielson[3], Michael Seidenberg[4], J Carson Smith[5], Alissa Butts[3], Melissa Lancaster[4], Monica Matthews[4], Michael Sugarman[2], Christina Kay[4], Cassandra Kandah[4], Nathan Hantke[3], Andria Norman[2], Kathleen Hazlett[3], Christina Figueroa[3], Stephen Rao[6]
[1]Medical College of Wisconsin, Milwaukee, WI, United States, [2]Wayne State University, Detroit, MI, [3]Marquette University, Milwaukee, WI, [4]Rosalind Franklin University of Medicine and Science, North Chicago, IL, [5]University of Maryland, College Park, MD, [6]Cleveland Clinic, Cleveland, OH

**3048** **Analysis of the ADNI data set with BRAINS AutoWorkup and ANN Segmentation**
Ronald Pierson[1]
[1]Brain Image Analysis, LLC, Simi Valley, United States

**3049** **Brain regions with higher disconnection associated with lower glucose metabolism and β-amyloid load**
Amy Kuceyeski[1], Ashish Raj[1], Lidia Glodzik[2]
[1]Weill Cornell Medical College, New York, United States, [2]New York University, New York, United States

***3050** **Carriers of TREM2 Alzheimer risk gene show accelerated temporal lobe atrophy and cognitive decline, (O-Th3)**
Priya Rajagopalan[1], Derrek Hibar[2], Xue Hua[3], Arthur Toga[4], Clifford R. Jack Jack[5], Michael Weiner[6], Paul Thompson[7]
[1]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]Laboratory Of Neuro Imaging, Department Of Neurology, UCLA School Of Medicine, United States, [4]University of California, Los Angeles, Los Angeles, CA, [5]Department of Radiology, Mayo Clinic and Foundation, Rochester, MN, [6]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA, [7]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA

**3051** **Central Hubs Affected by Early Small Vessel Disease**
Alexander Schäfer[1], Eva Quinque[1], Judy Kipping[1], Katrin Arelin[1], Elisabeth Roggenhofer[1], Stefan Frisch[2], Arno Villringer[1], Karsten Müller[1], Matthias Schroeter[1]
[1]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]J. W. Goethe University, Frankfurt/Main, Germany

**3052** **Changes in Alzheimer's disease biomarkers and cognitive measures across disease stages**
Thomas Adi Kurnia Susanto[1], Juan Zhou[1,2]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, Singapore, [2]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, Singapore, Singapore

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3053 Changes in the default mode network connectivity in Alzheimer's disease during visual memory task**
Lenka Krajcovicova[1], Michal Mikl[2], Radek Marecek[2], Irena Rektorova[3]
[1]Central European Institute of Technology, CEITEC, Masaryk University, Brno, Czech Republic, [2]CEITEC, Masaryk University, Brno, Czech Republic, [3]Central European Institute of Technology, CEITEC, Masaryk University, Brno, Czech Republic, Brno, Czech Republic

**3054 Cognitive Reserve modulates neural responses in the very early stages of Cognitive Impairment**
Luca Cecchetti[1,2], Emiliano Ricciardi[1], Leda Volpi[3], Cecilia Carlesi[3], Cristina Pagni[3], Giacomo Handjaras[1], Andrea Leo[1], Gloria Tognoni[3], Pietro Pietrini[1,2]
[1]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, [2]Clinical Psychology Branch, University Hospital, Pisa, Italy, [3]Neurological Clinic, Department of Clinical and Experimental Medicine, University of Pisa, Pisa, Italy

***3055 Conceptualizing frontotemporal dementia with data-driven multimodal imaging meta-analyses, (O-Th3)**
Matthias Schroeter[1], Angela Laird[2], Caroline Chwiesko[1], Christine Deuschl[1], Else Schneider[1], Danilo Bzdok[3], Simon Eickhoff[4], Jane Neumann[5]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]University of Texas Health Science Center at San Anotnio, San Antonio, TX, [3]Institute for Neuroscience and Medicine (INM-1), Research Center Jülich, Jülich, Germany, [4]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [5]MPI for Human Cognitive and brain Sciences, Leipzig, Germany

**3056 Default mode network global and local intrinsic functional connectivity in Alzheimer's disease**
Lorenzo Pasquini[1], Christian Sorg[2], Claus Zimmer[3], Valentin Riedl[4], Afra Wohlschlaeger[5]
[1]Department of Neuroradiology Klinikum Rechts der Isar TUM, Munich, Germany, [2]Department of Psychiatry, Neuroradiology and Nuclear Medicine, Technische Universität München, Munich, Germany, [3]Department of Neuroradiology, Klinikum rechts der Isar, Technische Universitaet Muenchen, Munich, Germany, [4]Department of Neuroradiology and Neurology, Technische Universität München, Munich, Germany, [5]Klinikum Rechts der Isar der TU Muenchen, Muenchen, Germany

**3057 Differences in network organization in early and late-onset Alzheimer's disease**
Natalina Gour[1,2,3], Olivier FELICIAN[2,3], Mira Didic[2,3], Lejla Koric[3], claude gueriot[3], Valérie Chanoine[1,3], Sylviane Confort-Gouny[1,3], Maxime Guye[1,3], Mathieu Ceccaldi[2,3], Jean-Philippe Ranjeva[1,3]
[1]CRMBM AMU-CNRS 7339, Aix-Marseille university, Marseille, France, [2]INS AMU-INSERM 1106, Aix-Marseille university, Marseille, France, [3]Hopital Timone, AP-HM, Marseille, France

**3058 Different involvement of Default Mode Network in Alzheimer Disease and Amyotrophic Lateral Sclerosis**
Letizia Casiraghi[1], Gloria Castellazzi[2], Fulvia Palesi[3], Elena Alvisi[4], Carol Di Perri[5], Paolo Vitali[6], Elena Sinforiani[4], Mauro Ceroni[7], Egidio D'Angelo[8], Stefano Bastianello[6]
[1]Department of Psychology University of Pavia; Brain Connectivity Center, IRCCS C. Mondino, Pavia, Italy, [2]Department of Industrial and Informat; Department of InBrain Connectivity Center, IRCCS C. Mondino, Pavia, Italy, [3]Department of Physics, University of Pavia, PV, ItalyBrain Connectivity Center, IRCCS C. Mondino, Pavia, Italy, [4]Neurology Unit, IRCCS C. Mondino, PV, Italy, pavia, Italy, [5]Brain Connectivity Center, IRCCS C. Mondino, PV, Italy, Pavia, Italy, [6]Neuroradiology Unit, IRCCS C. Mondino, PV, Italy, Pavia, Italy, [7]Neurology Unit, IRCCS C. Mondino, PV, Italy, Pavia, Italy, [8]Brain Connectivity Center, IRCCS C. Mondino Pavia, PV, Italy; Public Health, Neuroscience, Experimen, Pavia, Italy

**3059 Disconnection of Functional Cortical Hubs in the Early-Stage of Alzheimer's Disease**
Zhengjia Dai[1], Chaogan Yan[1,2], Zhiqun Wang[3], Jinhui Wang[1], Miao Cao[1], Mingrui Xia[1], Ni Shu[1], Kuncheng Li[3], Yong He[1]
[1]State key laboratory of cognitive neuroscience and learning, Beijing Normal University, Beijing, China, [2]Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, USA, [3]Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China

**3060 Disrupted functional connectivity of subregions in the posteromedial cortex in Alzheimer's disease**
Mingrui Xia[1], Zhiqun Wang[2], Zhengjia Dai[1], Haiqing Song[3], Kuncheng Li[2], Yong He[1]
[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [2]Department of Radiology, Xuanwu Hospital of Capital Medical University, Beijing, China, [3]Department of Neurology, Xuanwu Hospital of Capital Medical University, Beijing, China

**3061 Distinct Electrophysiological Patterns of Repetition Effects in Stages of Early Alzheimer Disease**
Lucas Broster[1], Juan Li[2], Charles Smith[3], Gregory Jicha[3], Frederick Schmitt[3], McKinley Heflin[1], Nancy Munro[4], Lee Hively[4], Yang Jiang[1]
[1]Department of Behavioral Science, University of Kentucky College of Medicine, Lexington, KY, [2]Chinese Academy of Sciences, Beijing, China, [3]Department of Neurology, University of Kentucky College of Medicine, Lexington, KY, [4]Oak Ridge National Laboratory, Oak Ridge, TN

**3062 Effects of Donepezil on Brain Activity in Mild Cognitive Impairment and Healthy Controls**
Erika Raven[1], Ivy Estabrooke[2], Paul Aisen[3], Michael Ullman[1], John VanMeter[1]
[1]Georgetown University, Washington, DC, United States, [2]Office of Naval Research, Washington, DC, United States, [3]University of California, San Diego, La Jolla, CA, United States


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**3063 Entorhinal Verrucae Height Correlates with Alzheimer's Disease Severity**
Jean Augustinack[1], Matthew Frosch[2], Sita Kakunoori[3], Gheorghe Postelnicu[3], Kristen Huber[3], Ruopeng Wang[3], André Van der Kouwe[3], Bruce Fischl[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging,Massachusetts General Hospital, Charlestown, MA, [2]Department of Neuropathology, Massachusetts General Hospital, Boston , MA, [3]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**3064 FMRI of the Primary Olfactory Cortex in Alzheimer's Disease and Mild Cognitively Impaired Patients**
Megha Vasavada[1], Jianli Wang[2], Xiaoyu Sun[1], Paul Eslinger[3], Prasanna Karunanayaka[4], Qing X Yang[1]
[1]Penn State College of Medicine, Hershey, PA, [2]Pennsylvania State College of Medicine - Radiology, Hershey , PA, [3]pennsylvania state university, Hershey, PA, [4]Pennsylvania State College of Medicine, Hershey, PA

**3065 Functional Connectivity Alterations in C9ORF72 Mutation Carriers**
Suzee Lee[1], Andrew Trujillo[1], Anna Khazenzon[1], Cong Guo[1], Jennifer Yokoyama[1], Sharon Sha[1], Anna Karydas[1], Jamie Fong[1], Howard Rosen[1], Bruce Miller[1], William Seeley[1]
[1]University of California San Francisco, San Francisco, United States

**3066 Functional connectivity decreases beyond atrophy in early-onset Alzheimer's disease patients**
Sofie Adriaanse[1], Maja Binnewijzend[1], Rik Ossenkoppele[1], Betty Tijms[1], Wiesje van der Flier[1], Alle Meije Wink[1], Bart van Berckel[1], Frederik Barkhof[1]
[1]VU University Medical Center, Amsterdam, Netherlands

**3067 Gray matter atrophy patterns shared by mild general paresis of the insane, MCI and AD**
Linwen Liu[1], Yingru Lv[2], Qihao Guo[3], Yong Fan[1]
[1]National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Department of Radiology, Huashan Hospital, Shanghai Medical Colledge, Fudan University, Shanghai, China, [3]Department of Neurology, Huashan Hospital, Shanghai Medical Colledge, Fudan University, Shanghai, China

**3068 Hippocampal CA1 Atrophy Correlates with Default Mode Network Connectivity in Alzheimer's Disease**
Geoffrey Kerchner[1], William Shirer[1], Jeffrey Bernstein[1], Michael Greicius[1]
[1]Stanford University School of Medicine, Stanford, CA

**3069 How Early Can We Predict Alzheimer's Disease Using Computational Anatomy?**
Stanislaw Adaszewski[1,2], Juergen Dukart[1], Ferath Kherif[1], Richard Frackowiak[1], Bogdan Draganski[1]
[1]LREN, Département des Neurosciences Cliniques, CHUV, Université de Lausanne, Lausanne, Switzerland, [2]Faculty of Electronics and Information Technology, Warsaw University of Technology, Warsaw, Poland

**3070 Increased frontoparietal functional coupling in MCI during strategic memory encoding**
Joana Balardin[1,2], Marcelo Batistuzzo[2], Maria da Graça Martin[1], Jerusa Smid[2], Claudia Porto[2], Gilson Vieira[1], João Ricardo Sato[3], Ricardo Nitrini[2], Edson Amaro Junior[1], Eliane Miotto[2]
[1]LIM-44, Dep. Radiologia - Faculdade de Medicina, USP - Brazil, São Paulo, Brazil, [2]Dep. Neurologia - Faculdade de Medicina, USP - Brazil, São Paulo, Brazil, [3]Center of Mathematics, Computation and Cognition, Universidade Federal do ABC - Brazil, São Caetano, Brazil

**3071 Increased functional connectivity within DAN and DFLP networks overlap in FTD and schizophrenia**
Riikka Rytty[1], Ville Huossa[2], Sami Karjalainen[3], Jenni Koivukangas[3], Harri Littow[2], Juha Nikkinen[4], Erika Jääskeläinen[3], Jouko Miettunen[5], Anne Remes[6], Juha Veijola[5], Matti Isohanni[5], Osmo Tervonen[4], Vesa Kiviniemi[7]
[1]Department of Neurology, Oulu University Hostpital, Oulu, Finland, [2]Department of Radiology, Oulu University Hospital, Oulu, Finland, [3]Department of Psychiatry, Oulu University Hospital, Oulu, Finland, [4]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland, [5]University of Oulu, Department of Psychiatry, Oulu, Finland, [6]Department of Neurology, Oulu University Hospital, Oulu, Finland, [7]Department of Diagnsotic Radiology, Oulu University Hospital

**3072 Increasing Statistical Power by Modeling Spatiotemporal Correlations in Longitudinal Neuroimage Data**
Jorge Luis Bernal-Rusiel[1], Douglas Greve[1], Bruce Fischl[1,2], Martin Reuter[1,3], Mert Sabuncu[1,2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School/MGH, Charlestown, MA, United States, [2]Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA, United States, [3]Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States

**3073 Influence of PET Normalization Method on Diagnosis of Frontotemporal Lobar Degeneration and Subtypes**
Katharina Stuke[1,2], Karsten Mueller[1], Daniel-Paolo Streitbürger[3], Juergen Dukart[4], Igor Yakushev[5], Robert Perneczky[6,7,2], Janine Diehl-Schmid[7,2], Alexander Drzezga[5], Matthias Schroeter[1,8,2]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Consortium for Frontotemporal Lobar Degeneration, Ulm, Germany, [3]Max Planck Institut for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, [5]Technische Universität München, Munich, Germany, [6]Neuroepidemiology and Ageing Research, School of Public Health, Imperial College London, London, United Kingdom, [7]Department of Psychiatry and Psychotherapy, Technische Universität München, Munich, Germany, [8]Clinic for Cognitive Neurology, University of Leipzig, Leipzig, Germany

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
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**3074 Inverse Consistent Surface Fluid Registration Applied to Study ApoE4 Effects on Hippocampal Atrophy**
Jie Shi[1], Paul Thompson[2], Boris Gutman[3], Yalin Wang[1], The ADNI[4]
[1]Arizona State University, Tempe, AZ, [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA, [3]UCLA, Los Angeles, CA, [4]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, CA

**3075 Investigating the Predictive Value of Functional MR Scans During a Memory Task in Alzheimer Disease**
Vanessa Rocha-Rego[1], Andre Marquand[2], Andrew Simmons[3], Janaina Mourao-Miranda[4]
[1]Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, [2]King's College London, London, United Kingdom, [3]Institute of Psychiatry - King's College London, London, United Kingdom, [4]Computer Science Department - University College London, London, United Kingdom

**3076 Is Superior Occipital Gyrus a Disease Related Epicenter for Amnestic Mild Cognitive Impairment?**
Ai-Ling Hsu[1], Kun-Hsien Chou[2], Pei-Ning Wang[3], Changwei Wu[4], Ching-Po Lin[2]
[1]Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, [2]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [3]Department of Neurology, Taipei Veterans General Hospital, Taipei, Taiwan, [4]Institute of Biomedical Engineering,National Central University, Taoyuan, Taiwan

**3077 Longitudinal Cortical Thinning Patterns in Alzheimer's Disease**
Teng Xie[1], Gaolang Gong[1], Yong He[1]
[1]National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**3078 Mapping Hippocampal Atrophy in Alzheimer's Disease at 3T and 1.5T MRI**
Nicole Chow[1,2], Kristy Hwang[1,2], Sona Babakchanian[1,2], Amity Green[3], Johanne Somme[4], Paul Thompson[1,2], Clifford R. Jack Jack[5], Michael Weiner[6], Liana Apostolova[1,2]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA, USA, [2]Department of Neurology, UCLA School of Medicine, Los Angeles, CA, USA, [3]Department of Physiology, Monash University, Melbourne, Australia, [4]Department of Neurology, Cruces University Hospital, Baraclado, Spain, [5]Department of Radiology, Mayo Clinic and Foundation, Rochester, MN, [6]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA

**3079 MEG oscillatory activity during visual processing in HIV-infected and uninfected older adults**
Tony W Wilson[1], Elizabeth Heinrichs-Graham[1,2], Kevin Robertson[3], Uriel Sandkovsky[1], Jennifer O'Neill[1], Howard Fox[1], Susan Swindells[1]
[1]University of Nebraska Medical Center, Omaha, NE, USA, [2]University of Nebraska - Omaha, Omaha, NE, USA, [3]University of North Carolina School of Medicine, Chapel Hill, United States

**3080 Micro- and Macro-structural changes in Alzheimer's Disease: Diffusion Tensor Imaging Study**
Oh-Hun Kwon[1], Uicheul Yoon[2], Sang Won Seo[3], Duk L. Na[3], Jong-Min Lee[4]
[1]Hanyang University, Republic Of Korea, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of, [3]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [4]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of

**3081 Multimodal neuroimaging correlates of brain amyloidosis**
Duygu Tosun[1], Michael Weiner[2], The ADNI[3]
[1]UCSF, San Francisco, CA, [2]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA, [3]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, United States

**3082 Neural Correlates of Language Impairment in the Logopenic Variant of Primary Progressive Aphasia**
Lisette Isenberg[1], John Powers[2], Murray Grossman[2]
[1]University of Pennsylvania, Philadelphia, United States, [2]University of Pennsylvania, Philadelphia, PA

**3083 Nonparametric hierarchical causality structure of AD with hierarchical dirichlet process of MR image**
Hyoungkyu Kim[1], Jaeseung Jeong[1]
[1]Korea Advanced Institute of Science and Technology (KAIST), Deajon, Korea, Republic of

**3084 Primary Olfactory Cortex Atrophy in Alzheimer's Disease**
Xiaoyu Sun[1], Jianli Wang[1], Megha Vasavada[1], Paul Eslinger[1], Qing X Yang[1]
[1]Penn State College of Medicine, Hershey, United States

**3085 Pattern of white and gray matter atrophy underlying visual field loss in posterior cortical atrophy**
Rebecca Millington[1], Merle James-Galton[2], Gordon Plant[2], Holly Bridge[1]
[1]University of Oxford, Oxford, United Kingdom, [2]The National Hospital for Neurology and Neurosurgery, London, United Kingdom

**3086 Regional Exceptions to the "High Amyloid-Low Metabolism" Expectation in Preclinical Alzheimer's Disease**
Andre Altmann[1], Bernard Ng[2,1], Michael Greicius[1], The ADNI[3]
[1]Stanford University, Stanford, United States, [2]INRIA, Gif-Sur-Yvette, France, [3]The Alzheimer's Disease Neuroimaging Initiative, San Francisco, United States

**3087 Relationship between Cognition, Amyloid Burden, and Cortical Connections in Alzheimer's Dementia**
Jeff Prescott[1], Arnaud Guidon[2], Murali Doraiswamy[2], Chunlei Liu[2], Jeff Petrella[2], for the Alzheimer's Disease Neuroimaging Initiative[2]
[1]Duke University, Durham, United States, [2]Duke University, Durham, NC


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**3088 Relationship between Large-Scale Functional Connectivity and Gray Matter Concentration in AD**
*Wenjun Li[1], Gang Chen[1], Xiaolin Liu[1], Chunming xie[1], Guangyu Chen[1], B. Douglas Ward[1], Jennifer Jones[1], Malgorzata Franczak[1], Joseph Goveas[1], Piero Antuono[1], Shi-Jiang Li[1]*
*[1]Medical College of Wisconsin, Milwaukee, United States*

**3089 Resting-state fMRI study of MCI patients with Type 2 diabetes**
*Junying Zhang[1,2], Xiaoqing Zhou[1], Ting Zhang[1], Yunxia wang[1], Zhanjun Zhang[1]*
*[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [2]School of Basic Medical Sciences, Lanzhou University, Lanzhou, China*

**3090 Structural motor system integrity across the amyotrophic lateral sclerosis — frontotemporal dementia**
*Michele Ferguson[1], Rachel Tan[1], John Hodges[2], Matthew Kiernan[1], Michael Hornberger[1]*
*[1]Neuroscience Research Australia, Sydney, Australia, [2]Neuroscience Research Australia, S, Australia*

**3091 Tensor Distribution Function Measures Boost Power to Detect Deficits in Alzheimer's Disease**
*Talia Nir[1], Liang Zhan[1], Julio Villalon Reina[1], Neda Jahanshad[1], Arthur Toga[1], Alex Leow[2], Clifford Jack[3], Michael Weiner[4], Paul Thompson[1]*
*[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. of Neurology, UCLA School of Medicine, Los Angeles, CA, [2]Department of Psychiatry, University of Illinois, Chicago, IL, [3]Department of Radiology, Mayo Clinic and Foundation, Rochester, MN, [4]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA*

**3092 The effects of APOE 4 on individual BrainAGE in normal aging, MCI, and AD**
*Katja Franke[1], Luise Löwe[1], Christian Gaser[1]*
*[1]Structural Brain Mapping Group, Jena University Hospital, Jena, Germany*

**3093 The effects of brain stem atrophy on the binaural masking level difference**
*Laura Hughes[1,2], Rowe James[3], Boyd Ghosh[4], Robert Carlyon[2], Hedwig Gockel[2]*
*[1]Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom, [2]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [3]Department of Clinical Neurosciences, University of Cambridge, Cambridge, United Kingdom, [4]Wessex Neuroscience Centre, Southampton, United Kingdom*

**3094 The Functional and Structural Alterations in Mild Leukoaraiosis: a Combined TBSS and ALFF Study**
*Ying Liang[1], He Li[1], Xuan Sun[1], Yaojing Chen[1], Zhanjun Zhang[1]*
*[1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China*

**3095 The Patterns of Brain Cortices and Deep Grey Matter in Patients with Subcortical Vascular Dementia**
*Xuntao Yin[1], Chen Liu[1], Jian Wang[1], Lu Zhao[2]*
*[1]Department of Radiology, Southwest Hospital, Third Military Medical University, Chongqing, China, [2]Montreal Neurological Institute, McGill University, Montreal, Canada*

**3096 The Power of Multimodal Neuroimaging Biomarkers for Screening Neurodegenerative Diseases**
*Corey McMillan[1], Brian Avants[2], Philip Cook[1], Lyle Ungar[1], Murray Grossman[1]*
*[1]University of Pennsylvania, Philadelphia, PA, [2]University of Pennsylvania, Philadelphia, United States*

**3097 The role of α4β2 nicotinic acetylcholine system in aging and Alzheimer's disease**
*Yasuomi Ouchi[1], Tatsuhiro Terada[1], Yumi Oboshi[1], Etsuji Yoshikawa[2], Masami Futatsubashi[2], Toshihiko Kanno[3], Mikako Ogawa[1], Yasuhiro Magata[1]*
*[1]Hamamatsu University School of Medicine, Hamamatsu, Japan, [2]Hamamatsu Photonics KK, Hamamatsu, Japan, [3]Hamamatsu Medical Center, Hamamatsu, Japan*

**3098 Visceral fat is associated with gray matter in brain regions vulnerable to Alzheimer's Disease**
*Deborah Schwartz[1,2], Mallar Chakravarty[3,4,5], Gabriel Leonard[6], Michel Perron[7], G. Bruce Pike[6], Louis Richer[7], Catriona Syme[8], Suzanne Veillette[7,9], Zdenka Pausova[8], Tomas Paus[1,2,4,6]*
*[1]Rotman Research Institute, Baycrest Centre for Geriatric Care, Toronto, Canada, [2]Department of Psychology, University of Toronto, Toronto, Canada, [3]Kimel Family Translational Imaging Genetics Laboratory, Centre for Addiction and Mental Health, Toronto, Canada, [4]Department of Psychiatry, University of Toronto, Toronto, Canada, [5]Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada, [6]Montréal Neurological Institute, McGill University, Montréal, Canada, [7]Université du Québec à Chicoutimi, Chicoutimi, Canada, [8]Hospital for Sick Children, University of Toronto, Toronto, Canada, [9]ÉCOBES, Recherche et transfert, Cégep de Jonquière, Jonquière, Canada*

**3099 White matter hyperintensity in normal aged and dementia**
*Chang Chun Yuan[1,2], Jong-Ling Fuh[3], Fa-Hsuan Lin[1]*
*[1]National Taiwan University, Taipei,Chinese-Taipei, [2]Department of Neurology,Min-Sheng General Hospital, Taoyuan,Chinese-Taipei, [3]Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan, Taipei, Chinese Taipei*

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Disorders of the Nervous System

### Epilepsy

**3100 A Feasibility Study Analyzing Brain Connectivity in 5 Hemispherectomized Children**

Kristian Eschenburg[1], Julio Villalon Reina[1], Talia Nir[1], Neda Jahanshad[1], Anand Joshi[2], Kevin Terashima[3], Michael Jones[3], Stella de Bode[4], Susan Bookheimer[3], Noriko Salamon[5], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medic, Los Angeles, CA, United States, [2]University of Southern California, Los Angeles, Los Angeles, CA, United States, [3]David Geffen School of Medicine at University of California Los Angeles, Semel Institute, Los Angeles, CA, United States, [4]Brain Recovery Project, Pasadena, CA, United States, [5]Mattel Children's Hospital, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, United States

**3101 Abnormal Inter-hemispheric Connectivity in Patients with Generalized Tonic-Clonic Seizures**

Gongjun Ji[1], Zhiqiang Zhang[2], Wei Liao[3], Yu-Feng Zang[4], Guangming Lu[5]
[1]Beijing Normal University, Beijing, China, [2]Jinling Hospital, Clinical School of Medical College, Nanjing University, Nanjing, China, [3]Center for Cognition and Brain Disorders and the Affiliated Hospital,, Hangzhou, China, [4]Hangzhou Normal University, Hangzhou, China, [5]Dept. Med. Img., Jinling Hospital, Nanjing, China

**3102 Altered Resting State Functional Connectivity in Patients with Mesial Temporal Lobe Epilepsy**

Jaime Ide[1], Kelly Cotosck[1], Luise Martins[1], Bruno Silva[1], Chiang-shan Li[2], Carlo Rondinoni[3], Antonio Carlos dos Santos[3], Tonicarlo Velasco[3], Joao Leite[3]
[1]Federal University of Sao Paulo, Sao Jose dos Campos, Brazil, [2]Yale University, New Haven, CT, [3]University of Sao Paulo, Ribeirao Preto, Brazil

**3103 Altered Stuctural Connectivity and Network Organization in Mesial Temporal Lobe Epilepsy**

Matthew DeSalvo[1], Linda Douw[1], Naoaki Tanaka[1], Claus Reinsberger[1], Steven Stufflebeam[1]
[1]Athinoula A Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**3104 Altered Thalamic and Cerebellar Connectivity in Idiopathic Generalized Epilepsy**

Benjamin Kay[1], Scott Holland[2], Michael Privitera[1], Jerzy Szaflarski[3]
[1]University of Cincinnati, Cincinnati, OH, [2]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States, [3]University of Alabama at Birmingham, Birmingham, United States

**3105 Analysis of neuroimaging indicators of functional integrity of the MTL in Temporal Lobe Epilepsy**

Alexander Barnett[1], Jon Pipitone[2], Min Tae Park[2], Mallar Chakravarty[2], Mary Pat McAndrews[3]
[1]University of Toronto, Toronto, Canada, [2]Centre for Addiction and Mental Health, Toronto, Canada, [3]Krembil Neuroscience Centre & Toronto Western Reserch Institute, Toronto, Ontario

**3106 Clinical application of peri- and intra-operative HARDI tractography in paediatric epilepsy surgery**

Joseph Y M Yang[1], Wirginia Maixner[1], James King[1], Simon Harvey[1], Richard Beare[2], Marc Seal[2], Vicki Anderson[2]
[1]Royal Children's Hospital, Melbourne, Australia, [2]Murdoch Childrens Research Institute, Melbourne, Australia

**3107 Combinatory use of multiple iEEG analysis methods for the localization of epileptogenic zones in LGS**

Jeong-Youn Kim[1], Hoon-Chul Kang[2], Jae-Hyun Cho[1], Heung Dong Kim[2], Chang-Hwan Im[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Pediatrics, Yonsei University College of Medicine, Seoul, Korea, Republic of

**3108 Connectional abnormalities of functional and structural networks in childhood frontal lobe epilepsy**

Maarten Vaessen[1,2,3], Hilde Braakman[4], paul hofman[3], Anton de Louw[4], Bert Aldenkamp[4], Jacobus Jansen[3], Walter Backes[3]
[1]Laboratory for Neurology & Imaging of Cognition, University of Geneva, Geneva, Switserland, [2]Swiss Center for Affective Sciences, University of Geneva, Geneva, Switzerland, [3]Maastricht University Medical Center, Maastricht, Netherlands, [4]Epilepsy Center Kempenhaeghe, Heeze, Netherlands

**3109 Decreased Inhibitory Neuronal Activity of Brain Tumor-related Epilepsy: MEG Study**

Won Seok Chang[1], Bong Soo Kim[2], Hyun Ho Jung[1], Kiwoong Kim[3], Hyuk Chan Kwon[3], Yong Ho Lee[3], Jin Woo Chang[1]
[1]Department of Neurosurgery, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Neurosurgery, Yonsei University College of Medicin, Seoul, Korea, Republic of, [3]Korea Research Institute of Standards and Science (KRISS), Daejeon, Korea, Republic of

**3110 Determining Language Lateralization by Resting State Functional MRI for Epilepsy Surgical Evaluation**

Varina Wolf[1], Daniel Curry[2], Jeremy Jones[2], Angus Wilfong[2]
[1]Baylor College of Medicine, Houston, United States, [2]Baylor College of Medicine, Houston, TX

**3111 DTI-based evidence for compromised white matter integrity in non-lesional temporal lobe epilepsy**

Christopher Whelan[1], Saud Alhusaini[1], Andrew Fagan[2], Jim Meaney[2], Erik O'Hanlon[1], Colin Doherty[3], Norman Delanty[4], Gianpiero Cavalleri[1]
[1]Royal College of Surgeons in Ireland, Dublin, Ireland, [2]Centre for Advanced Medical Imaging (CAMI), Dublin, Ireland, [3]Neurology Department, St. James's Hospital, Dublin 8, Ireland, [4]Division of Neurology, Beaumont Hospital, Dublin 9, Ireland



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**3112 EEG-MREG reveals negative BOLD in the default mode network in single patients with focal epilepsy**
Antonia Menzel[1], Julia Jacobs[2], Georgia Ramantani[3], Andreas Schulze-Bonhage[2], Jürgen Hennig[2], Pierre LeVan[2]
[1]University Medical Centre Freiburg, Freiburg, Germany, [2]University Medical Center Freiburg, Freiburg, Germany, [3]University of Freiburg, freiburg, Germany

**3113 Effective connectivity analysis of non-stationary intracranial EEG during epileptic seizures**
Pieter van Mierlo[1], Kristl Vonck[2], Robrecht Raedt[2], Evelien Carrette[2], Hans Hallez[3], Steven Staelens[4], Paul Boon[2], Stefaan Vandenberghe[1]
[1]MEDISIP, Ghent University - iMinds, Ghent, Belgium, [2]Ghent University Hospital, Ghent, Belgium, [3]Faculty of Industrial Engineering, KHBO (campus Oostend), KU Leuven, Ostend, Belgium, [4]Antwerp University - iMinds, Antwerp, Belgium

**3114 Effects of temporal lobe epilepsy and surgery on the default-mode network**
Gaelle Doucet[1], Ashwini Sharan[1], James Evans[1], Michael Sperling[1], Joseph Tracy[1]
[1]Thomas Jefferson University Hospital, Philadelphia, United States

**3115 Electrical source imaging and ICA in EEG-fMRI of patients with focal epilepsy**
Danilo Maziero[1], Marcio Sturzbecher[1], Tonicarlo Velasco[2], Carlo Rondinoni[1], Agustin Castellanos[3], Carlos Salmon[1]
[1]Physics Department, University of São Paulo, Ribeirão Preto, Brazil, [2]Faculty of Medicine, University of São Paulo, Ribeirão Preto, Brazil, [3]Cuban Neurosciences Center, Havana, Cuba

**3116 Electrical Source Imaging: an aid to localize the epileptogenic zone in the cortical malformations**
Laurent KOESSLER[1], Estelle RIKIR[2], Martine GAVARET[3], Jean-Pierre VIGNAL[4], Hervé VESPIGNANI[4], Louis MAILLARD[4]
[1]CRAN, CNRS UMR7039 - Université de Lorraine, NANCY, France, [2]Centre Hospitalier Universitaire de Liège, LIEGE, Belgium, [3]INS, UMR 1106, MARSEILLE, France, [4]CRAN, CNRS UMR7039 - Université de Lorraine; Centre Hospitalier Universitaire de Nancy, NANCY, France

**3117 Encoding of Episodic and Working Memories in Patients with Mesial Temporal Lobe Epilepsy**
Andrea Alessio[1,2], Helka Ozelo[2,3], Fabricio Pereira[1], Mauricio Sercheli[2], Jane Rondina[4], Elisabeth Bilevicius[1], Tatiane Pedro[1], Roberto Covolan[2], Benito Damasceno[1], Fernando Cendes[1]
[1]Neuroimaging Laboratory, School of Medical Sciences, University of Campinas, Unicamp, Campinas, Brazil, [2]Neurophysics Group, Gleb Wataghin Physics Institute, University of Campinas, Unicamp, Campinas, Brazil, [3]Department of Natural Sciences, Mathematics and Education, Federal University of São Carlos, UFSCar, Sao Carlos, Brazil, [4]King's College London, London, United Kingdom

**3118 Frequency of centrotemporal spikes affects language function and organization in children with BECTS**
Jennifer Vannest[1], Thomas Maloney[1], Jeffrey Tenney[1], Kate Hibbard[1], Jerzy Szaflarski[2], Diego Morita[1], Tracy Glauser[1]
[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [2]University of Alabama at Birmingham, Birmingham, United States

**3119 Functional Connectivity Analysis of Pediatric Epilepsy Patients with Focal Cortical Dysplasia**
Andrew Poliakov[1], Edward Novotny[2,3], Sandra Poliachik[1,2], Seth Friedman[1], Elisabeth Simard-Tremblay[2], Gisele Ishak[4], Dennis Shaw[4], Jeffrey Ojemann[5,6]
[1]Radiology, Settle Children's Hospital, Seattle, WA, [2]Neurology, Seattle Children's Hospital, Seattle, WA, [3]Pediatrics, University of Washington, Seattle, WA, [4]Radiology, Seattle Children's Hospital, Seattle, WA, [5]University of Washington, Seattle, WA, [6]Neurological Surgery, Seattle Children's Hospital, Seattle, WA

**3120 Functional network topology alterations in left and right epilepsy during resting-state fMRI**
Celia Rousseau[1], Sophie Achard[2], Arnaud Le Troter[1], Agnès Trebuchon[3,4], Sylviane Confort-Gouny[1], Patrick Cozzone[1,4], Patrick Chauvel[3,4], Fabrice Bartolomei[3,4], Jean-Philippe Ranjeva[1,4], Maxime Guye[4,1]
[1]CRMBM UMR AMU CNRS 7339, Marseille, France, [2]GIPSA-lab UMR CNRS 5216, Grenoble, France, [3]INSERM UMR 1106, Marseille, France, [4]Aix-Marseille University, Marseille, France

**3121 GENERALIZED SPIKE-AND-WAVE DISCHARGES OFFSET IS RELATED TO PRECUNEAL-POSTERIOR CINGULATE ACTIVITY**
Francesca Benuzzi[1], Micaela Zucchelli[1], Elisabetta Ferrari[2], Anna Elisabetta Vaudano[1], Andrea Ruggieri[1], Laura Mirandola[1], Paolo Nichelli[1], Stefano Meletti[1]
[1]Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy, [2]IIT Genova, Genova, Italy

**3122 Hippocampal internal architecture asymmetry and outcome of epilepsy surgery with a "normal" MRI**
Lawrence Ver Hoef[1,2], Frank Williams[3], Andrew Romeo[1], Kristen Riley[1], Robert Knowlton[4], Jerzy Szaflarski[1]
[1]University of Alabama at Birmingham, Birmingham, AL, [2]Birmingham VA Medical Center, Birmingham, AL, [3]University of Alabama at Birmingham, Birminghm, AL, [4]University of Texas at Houston, Houston, TX

**3123 Induced visual beta/gamma oscillations: a window on cortical excitability in photosensitive epilepsy**
Krish Singh[1], Gavin Perry[1], Lisa Brindley[1], Suresh Muthukumaraswamy[1], Khalid Hamandi[2]
[1]CUBRIC, School of Psychology, Cardiff University, Cardiff, United Kingdom, [2]Cardiff and Vale University Health Board, University Hospital of Wales, Cardiff, United Kingdom

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3124 Information-theoretic analysis of interictal epileptic discharges using simultaneous EEG-fMRI**
Cesar Caballero Gaudes[1], Dimitri Van De Ville[2], Frédéric Grouiller[3], Rachel Thornton[4], Louis Lemieux[4], Margitta Seeck[5], François Lazeyras[3], Serge Vulliemoz[5]
[1]Basque Center on Cognition, Brain and Language, Donostia-San Sebastian, Spain, [2]UniGE/EPFL, Lausanne, Switzerland, [3]Department of Radiology and Medical Informatics, University Hospital of Geneva, Geneva, Switzerland, [4]UCL Institute of Neurology, London, United Kingdom, [5]Presurgical Epilepsy Evaluation Unit, Neurology Department, University Hospital of Geneva, Geneva, Switzerland

**3125 Localization of epileptogenic zones in LGS using graph theoretical analysis of intracranial EEG**
Jeong-Youn Kim[1], Hoon-Chul Kang[2], Heung Dong Kim[2], Chang-Hwan Im[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Pediatrics, Yonsei University College of Medicine, Seoul, Korea, Republic of

**3126 Mapping the High Frequency Epileptic Brain Activity from Scalp EEG**
Yunfeng Lu[1], Gregory Worrell[2], Huishi Zhang[1], Benjamin Brinkmann[2], Cindy Nelson[2], Bin He[1]
[1]University of Minnesota, Minneapolis, MN, [2]Mayo Clinic, Rochester, MN

**3127 Network Characteristics of Spike-and-Wave Discharge in patients with Juvenile Myoclonic Epilepsy**
Chany Lee[1], Sung-Min Kim[1], Ki-Young Jung[2]
[1]Korea University, Seoul, Korea, Republic of, [2]Korea University Medical Center Anam Hospital, Seoul, Korea, Republic of

**3128 Pathologic gamma oscillations (30-70Hz) in neocortical epilepsy patients with cortical dysplasia**
Woorim Jeong[1], June Sic Kim[1,2], Chun Kee Chung[1,3,4]
[1]MEG Center, Department of Neurosurgery, Seoul National University Hospital, Seoul, Korea, Republic of, [2]Research Center for Sensory Organs, Seoul National University, Seoul, Korea, Republic of, [3]Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, Republic of, [4]Neuroscience Research Institute, Seoul National University Medical Research Center, Seoul , Korea, Republic of

**3129 Presurgical hippocampal subfield volume correlates with neuronal density in temporal lobe epilepsy**
Simon Keller[1], Jan-Christoph Schöne-Bake[2], Pitt Niehusmann[3], Michael Deppe[4], Bernd Weber[5]
[1]Department of Clinical Neuroscience, Institute of Psychiatry, King's College London, London, United Kingdom, [2]Centre for Paediatric and Adolescent Medicine, University of Freiburg, Freiburg, Germany, [3]Department of Neuropathology, University of Bonn, Bonn, Germany, [4]Department of Neurology, University of Muenster, Muenster, Germany, [5]Department of NeuroCognition Imaging, Life & Brain Center, University of Bonn, Bonn, Germany

**3130 Reliability of diffusion tensor imaging (DTI) tractography in paediatric epilepsy**
Helen Carlson[1], Christianne Laliberte[1], Jacquie Hodge[1], Adam Kirton[1], Luis Bello-Espinosa[1], Walter Hader[1], Brian Brooks[1], Elisabeth Sherman[1]
[1]Alberta Children's Hospital, Calgary, AB, Canada

**3131 Thalamic Medial Pulvinar as Target for DBS in Medial Temporal Lobe Epilepsy**
Daniel Barron[1], Nitin Tandon[2], Jack Lancaster[1], Peter Fox[1]
[1]Research Imaging Institute, UTHSCSA, San Antonio, TX, [2]UT Houston, Houston, TX

**3132 Thalamocortical Dysconnectivity in Patients with Idiopathic Generalized Epilepsy**
Wei Liao[1], Gongjun Ji[2], Zhiqiang Zhang[3], Guangming Lu[4]
[1]Center for Cognition and Brain Disorders and the Affiliated Hospital,, Hangzhou, China, [2]Beijing Normal University, Beijing, China, [3]Jinling Hospital, Clinical School of Medical College, Nanjing University, Nanjing, China, [4]Dept. Med. Img., Jinling Hospital, Nanjing, China

**3133 Tract integrity changes following left and right anterior temporal lobectomy in epileptic patients**
Dorian Pustina[1], James Evans[1], Ashwini Sharan[1], Michael Sperling[1], Joseph Tracy[1]
[1]Thomas Jefferson University Hospital, Philadelphia, United States

**3134 White matter abnormalities in Temporal lobe epilepsy revealed by machine learning methods**
Peng Fang[1], Jie An[2], Ling-Li Zeng[1], Hui Shen[1], Shijun Qiu[2], Dewen Hu[1]
[1]College of Mechatronics and Automation, National University of Defense Technology, Changsha, China, [2]Medical Imaging Centre, Nanfang Hospital, Southern Medical University, Guangzhou, China

**3135 Working Memory Maintenance in a Patient with Left Mesial TLE**
Helka Ozelo[1,2], Andrea Alessio[1,3], Mauricio Sercheli[1], Elisabeth Bilevicius[3], Tatiane Pedro[3], Fabricio Pereira[3], Benito Damasceno[3], Fernando Cendes[3], Roberto Covolan[1]
[1]Neurophysics Group, Gleb Wataghin Physics Institute, University of Campinas, Unicamp, Campinas, Brazil, [2]Department of Natural Sciences, Mathematics and Education, Federal University of São Carlos, UFSCar, Araras, Brazil, [3]Neuroimaging Laboratory, School of Medical Sciences, University of Campinas, Unicamp, Campinas, Brazil

## Disorders of the Nervous System

### Mood and Anxiety Disorders

**3136 A CWAS on Depression and Anxiety across Adult Lifespan**

Ye He[1,2], Ting Xu[2], Zhi Yang[2], F. Xavier Castellanos[3,4], Michael Milham[4,5], Xi-Nian Zuo[2]
[1]University of Chinese Academy of Sciences, Beijing, China, [2]Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [3]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [4]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, NY, [5]Center for the Developing Brain, Child Mind Institute, New York, NY

**3137 A multilevel approach for studying individual stress responsiveness: from brain to epigenetics**

Sharon Vaisvaser[1,2], Shira Modai[2], Tamar Lin[1,3], Haggai Sharon[1,2], Luba Farberov[2], Avital Gilam[2], Roee Admon[1,2,4], Yona Greenman[2,5], Naftali Stern[2,5], Eyal Fruchter[6], Yair Bar-Haim[3], Noam Shomron[2], Talma Hendler[1,2,3]
[1]Functional Brain Center, Wohl Institute for Advanced Imaging, Sourasky Medical Center, Tel Aviv, Israel, [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, [3]School of Psychological Sciences, Tel Aviv University, Tel Aviv, Israel, [4]Center for Depression, Anxiety and Stress Research, McLean Hospital, Harvard Medical School, Belmont, MA, USA, [5]Institute of Endocrinology, Metabolism and Hypertension, Sourasky Medical Center, Tel Aviv, Israel, [6]Division of Mental Health, Medical Corps, IDF, Tel Hashomer, Israel

**3138 A single dose of oral escitalopram decreases resting-state functional connectivity**

Inga Burmann[1], Alexander Schäfer[2], Ralf Regenthal[3], Arno Villringer[4], Daniel Margulies[1], Julia Sacher[5]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, [3]Rudolf-Boehm-Institute of Pharmacology and Toxicology, Leipzig, Germany, [4]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [5]Max-Planck-Institute for Human Cognitive and Brain Sciences, Stephanstr. 1A, 04103 Leipzig, Germany.

**3139 Abnormal perceptual responses to sad faces in unipolar and bipolar disorders: an MEG study**

Tai-Ying Liu[1], Yong-Sheng Chen[2], Tung-Ping Su[3,4], Jen-Chuen Hsieh[5,6], Li-Fen Chen[5,7]
[1]National Yang-Ming University, Taipei, Taiwan, [2]Department of Computer Science, National Chiao Tung University, Hsinchu, Taiwan, [3]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Taiwan, [4]Division of Psychiatry, School of Medicine, National Yang-Ming University, Taipei, Taiwan, [5]Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, [6]Integrated Brain Research Unit, Veterans General Hospital, Taipei, Taiwan, [7]Integrated Brain Research Unit, Veterans General Hospital,, Taipei, Taiwan

**3140 Abnormal Resting-State Connectivity in Major Depressive Disorder: Multimodal EEG and BOLD fMRI Study**

Han Yuan[1], Vadim Zotev[1], Raquel Phillips[1], Kymberly Young[1], Masaya Misaki[1], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States, [2]University of Oklahoma, Norman, OK, United States

**3141 Affective state-dependent changes in the brain functional network in major depressive disorder**

Shengmin Wang[1], Chang-hyun Park[2], Kyoung-Uk Lee[1]
[1]Uijeongbu St. Mary's Hospital, The Catholic University of Korea, Uijeongbu, Korea, Republic of, [2]UCL Institute of Neurology, London, United Kingdom

**3142 Altered recruitment of the parahippocampal gyri predicts mood in depression**

Vera Zamoscik[1], Silke Huffziger[1], Christine Kuehner[1], Peter Kirsch[1]
[1]Central Institute of Mental Health, Mannheim, Germany

**3143 Altered Resting State Connectivity in Subcortical and Prefrontal Nodes In Pediatric Bipolar Disorder**

Minjie Wu[1], Lisa Lu[2], Alexander Kmicikewycz[1], Shaolin Yang[1], Donatello Arienzo[1], Mani Pavuluri[1]
[1]University of Illinois at Chicago, Chicago, United States, [2]University of Roosevelt, Chicago, United States

**3144 Altered White Matter Architecture in Adolescent Depression**

Moji Aghajani[1,2], Ilya Veer[2], Natasja van Lang[1], PHF Meens[3], Bianca van den Bulk[1], Serge Rombouts[2], Robert Vermeiren[1], Nic van der Wee[4]
[1]Leiden University Medical Center, Leiden, Netherlands, [2]Leiden Institute for Brain and Cognition, Leiden, Netherlands, [3]Curium-LUMC / LIBC, [4]Department of Psychiatry, Leiden University Medical Center, Leiden, Netherlands

**3145 Amygdala and cingulate resting-state functional connectivity in Borderline Personality Disorder**

Ilya Veer[1], Annegret Krause-Utz[2], Serge Rombouts[1], Martin Bohus[2], Christian Schmahl[2], Bernet Elzinga[1]
[1]Leiden Institute for Brain and Cognition, Leiden, Netherlands, [2]Department of Psychosomatic Medicine and Psychotherapy, Central Institute of Mental Health, Mannheim, Germany

**3146 Anterior cingulate white matter predicts treatment outcomes in depression: DTI data from iSPOT-D**

Stuart M Grieve[1], Mayuresh Korgaonkar[1], Yun Ju Song[1], Tim Usherwood[2], Leanne M Williams[1,3]
[1]Brain Dynamics Center, Sydney Medical School, Westmead Millennium Institute, University of Sydney, Sydney, Australia, [2]Department of General Practice, Sydney Medical School, University of Sydney, Sydney, Australia, [3]Department of Psychiatry and Behavioral Sciences, Stanford University, Stanford, CA

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

***3147 Assaulted Adolescents Fail to Recruit Domain-Specific Neural Networks during Conflict Processing, (O-M2)**
James Steele[1], Jennifer Lenow[2], Sonet Smitherman[1], Clinton Kilts[1], Josh Cisler[3]
[1]University of Arkansas for Medical Sciences, Little Rock, AR, [2]University of Arkansas for Medical Sciences, Little Rock, United States, [3]University of Arkansas for Medical Sciences

**3148 Attention bias during laughter perception in social anxiety: mediation through prefrontal activation**
Benjamin Kreifelts[1], Sarah Schlipf[1], Jan Ritter[1], Carolin Brück[1], martin lotze[2], Dirk Wildgruber[1]
[1]University of Tübingen, Department of Psychiatry and Psychotherapy, Tübingen, Germany, [2]University of Greifswald, Baltic Imaging Center, Greifswald, Germany

**3149 Body Mass Index, but not FTO genotype, influences brain structure in Major Depressive Disorder**
James Cole[1], Christina Boyle[2], Andrew Simmons[3], Sarah Cohen-Woods[1], Margarita Rivera[4], Peter McGuffin[4], Paul Thompson[5], Cynthia Fu[4]
[1]King's College London, London, United Kingdom, [2]UCLA, Los Angeles, CA, [3]Institute of Psychiatry - King's College London, London, United Kingdom, [4]King's College, London, United Kingdom, [5]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**3150 BOLD Response to Masked Sad and Happy Faces in Healthy Subjects with a Family-History of Depression**
Teresa Victor[1], Patrick Bellgowan[2], Jerzy Bodurka[2], Wayne Drevets[2], Jonathan Savitz[2]
[1]Laureate Institute for Brain Research, Tulsa, United States, [2]Laureate Institute for Brain Research, Tulsa, OK

**3151 Brain BOLD signal temporal fluctuations at rest increase in major depressive disorder**
Masaya Misaki[1], Vadim Zotev[1], Raquel Phillips[1], Kymberly Young[1], Han Yuan[1], Jonathan Savitz[1,2], Wayne Drevets[1,3], Jerzy Bodurka[1,4]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]Tulsa School of Community Medicine, University of Tulsa, Tulsa, OK, [3]Johnson & Johnson, Inc., New Brunswick, NJ, [4]College of Engineering, University of Oklahoma, Tulsa, OK

**3152 Brain Correlates of Acute Depression before and after Treatment Initiation with Escitalopram**
Ulrich Rabl[1], Bernhard Meyer[1], Lucie Bartova[1], Klaudius Kalcher[2], Roland Boubela[2], Christian Scharinger[1], Manuel Kuhn[1], Ana Popovic[1], Franz Endstraßer[1], Nicole Praschak-Rieder[1], Christian Windischberger[2], Siegfried Kasper[1], Ewald Moser[2], Harald Sitte[3], Lukas Pezawas[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [3]Center for Physiology and Pharmacology, Medical University of Vienna, Vienna, Austria

**3153 Changes in cortical thickness after electroconvulsive therapy for treatment refractory depression**
Philip van Eijndhoven[1], Peter Mulders[1], Indira Tendolkar[1]
[1]Donders Institute for Brain and Cognition, Nijmegen, Netherlands

**3154 Changes in Upper Alpha EEG Power Predict Performance in rtfMRI Neurofeedback Training of Amygdala**
Vadim Zotev[1], Han Yuan[1], Masaya Misaki[1], Raquel Phillips[1], Kymberly Young[1], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]College of Engineering, University of Oklahoma, Tulsa, OK

***3155 Childhood Maltreatment Contributes to Altered Resting State Connectivity in Young Combat Veterans, (O-M2)**
Remi Patriat[1], Rasmus Birn[2], Anne Germain[3], Mary Phillips[4], Ryan Herringa[5]
[1]University of Wisconsin Madison, Madison, United States, [2]University of Wisconsin-Madison, Madison, WI, [3]University of Pittsburgh School of Medicine, Pittsburgh, PA, [4]Clinical and Translational Affective Neuroscience Program, University of Pittsburgh School of Medic, Pittsburgh , PA, [5]University of Wisconsin Madison, Madison, WI

**3156 Cingulate resting state connectivity predicts treatment response to DMPFC rTMS in major depression**
Katharine Dunlop[1], Tim Salomons[2,3,4], Joseph Geraci[3,4], Sidney Kennedy[3,4], Peter Giacobbe[2,3,4], Jonathan Downar[2,3,4]
[1]Faculty of Arts & Sciences, University of Toronto, Toronto, Canada, [2]MRI-Guided rTMS Clinic, Toronto Western Hospital, Toronto, Canada, [3]Department of Psychiatry, University Health Network, Toronto, Canada, [4]Department of Psychiatry, University of Toronto, Toronto, Canada

**3157 Correlations between amygdala volume and cortico-limbic emotional responses in depressed children**
Natasha Marrus[1], Hideo Suzuki[2], Joan Luby[2], Kelly Botteron[3], Huong Trinh[4], Tomoyuki Nishino[2], Deanna Barch[5]
[1]Washington University School of Medicine, Saint Louis, United States, [2]Washington University School of Medicine, Saint Louis, MO, [3]Washington University, St-Louis, MO, [4]Center for Imaging Science, Johns Hopkins University, Baltimore, MO, [5]Washington University Medical School, St. Louis, MO

**3158 Decreased Fronto-Limbic Activation and Disrupted Semantic Memory in Major Depressive Disorder (MDD)**
Michelle Kassel[1], Sara Walker[1], Sara Weisenbach[1,2], Brennan Haase[1], Marta Peciña[3], Ciaran Considine[1], Doug Noll[4], Jon-Kar Zubieta[1,3], Scott Langenecker[1]
[1]Department of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI, [2]Ann Arbor VA Medical Center, Ann Arbor, MI, [3]Molecular and Behavioral Neuroscience Institute, University of Michigan, Ann Arbor, MI, [4]Department of Radiology, University of Michigan, Ann Arbor, MI

**3159 Decreased Neural Activation during Regulating Negative Emotion in Euthymic Bipolar Disorder**
Tae Hyon Ha[1], Ju Young Her[1], Ji Sun Kim[1], Jae Seung Chang[1], Kyooseob Ha[1]
[1]Seoul National University Bundang Hospital, Seongnam, Korea, Republic of

**3160 Default Mode Network connectivity is Associated with Improvement in Major Depressive Disorder**
Allison Nugent[1], Maura Furey[1], Joseph Rasimas[1], Nancy Brutsche[1], Carlos Zarate, Jr[1]
[1]Experimental Therapeutics and Pathophysiology Branch, NIH/NIMH, Bethesda, MD, United States

**3161 Difference in migraine with and without depression: a preliminary DTI study**
Junran Zhang[1,2], Qin Chen[3], Ning Chen[3], xiaoqi huang[4], Qiyong Gong[5]
[1]School of Electrical Engineering and Information, Sichuan University, ChengDu, China, [2]University of Nebraska Medical Center, Omaha, NE, [3]West China Hospital, Sichuan University, ChengDu, China, [4]Huaxi MR Research Center (HMRRC), Department of Radiology, West China Hospital of Sichuan University, chengdu, sichuan, [5]Huaxi MR Research Center, Department of Radiology, West China Hospital of Sichuan University, Chengdu, China

**3162 Different Therapeutic Responsive Structural Networks in Non-Refractory Depressive Disorder**
Ling-Li Zeng[1], Hui Shen[1], Xinguo Lu[1,2], Peng Fang[1], Yadong Liu[1], Dewen Hu[1]
[1]College of Mechatronics and Automation, National University of Defense Technology, Changsha, Hunan, China, [2]School of Information and Engineering, Hunan University, Changsha, Hunan, China

**3163 Diffusivity and Anisotropy Comparisons between Amygdala Subregions in Healthy and Depressed Children**
Hideo Suzuki[1], Joan Luby[1], Deanna Barch[1,2], Natasha Marrus[1], Huong Trinh[3], Tomoyuki Nishino[1], Michael Miller[3], Tilak Ratnanather[3], Robert McKinstry[1], Kelly Botteron[1]
[1]Washington University School of Medicine, Saint Louis, MO, [2]Washington University in St. Louis, Saint Louis, MO, [3]Johns Hopkins University, Baltimore, MD

**3164 Diminished success in pursuit of individually titrated rewards for females with depression**
Anne Weldon[1], Brian Mickey[2], Patrick Pruitt[3], Wai-Ying Yau[2], Kortni Meyers[2], David Hsu[2], Stephan Taylor[2], Mary Heitzeg[2], Jon-Kar Zubieta[2], Scott Langenecker[2]
[1]University of Michigan, Chicago, IL, [2]University of Michigan, Ann Arbor, MI, [3]University of Michigan, Ann Arbor, United States

***3165 Disrupted effective connectivity between amygdala and OFC in social anxiety disorder revealed by DCM, (O-W4)**
Ronald Sladky[1], Anna Höflich[2], Martin Kueblboeck[3], Christoph Kraus[2], Pia Baldinger[2], Ewald Moser[4], Rupert Lanzenberger[5], Christian Windischberger[6]
[1]MR Centre Of Excellence, Medical University Of Vienna, Austria, [2]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [3]MR Center of Excellence, Medical University of Vienna, Vienna, Austria, [4]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [5]Medical University of Vienna, Wien, Austria, [6]MR Center, Medical University of Vienna, Vienna, Austria

**3166 Disturbed prefrontal control of the reward system and increased impulsivity in bipolar disorder**
Sarah Trost[1], Mirjana Lewandowski[1], Juliana Usher[1], Esther Diekhof[2], Kerstin Zvonik[1], Maria Keil[1], David Zilles[1], Peter Falkai[3], Peter Dechent[4], Oliver Gruber[1]
[1]Centre for Translational Research in Systems Neuroscience and Psychiatry, Goettingen, Germany, [2]Biozentrum Grindel, Institut für Humanbiologie, University Hamburg, Hamburg, Germany, [3]Psychiatry, Munich, Germany, [4]MR-Research in Neurology and Psychiatry, Department of Cognitive Neurology, University Medicine, Goettingen, Germany

**3167 Effect of electroconvulsive therapy on executive functions: an fMRI study with depressive patients**
Nicola Palomero-Gallagher[1,2], Felix Hoffstaedter[3], Ralph Weidner[4], Hartmut Mohlberg[5], Thomas Nickl-Jockschat[6], Simon Eickhoff[7,4], Michael Grözinger[6]
[1]1Institute of Neurosciences and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [2]JARA-BRAIN, Jülich-Aachen Research Alliance, Juelich, Germany, [3]Research Center Jülich, Jülich, Germany, [4]Research Center Juelich, Juelich, Germany, [5]Institute of Neurosciences and Medicine (INM), Research Centre Jülich, Jülich, Germany, [6]Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital Aachen, Aachen, Germany, [7]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**3168 Effects of ECT on white matter microstructure in major depressive disorder**
Hannah Lyden[1], Randall Espinoza[1], Tara Pirnia[1], Kristi Clark[1], Shantanu Joshi[1], Jeffry Alger[1], Roger Woods[1], Katherine Narr[1]
[1]David Geffen School of Medicine at UCLA, Los Angeles, CA

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3169 Electroconvulsive therapy (ECT) increases structural connectivity in treatment resistant depression**
Indira Tendolkar[1], Jennifer Arndold[2], Holger Siemann[3], Philip van Eijndhoven[1]
[1]Donders Institute for Brain and Cognition, Nijmegen, Netherlands, [2]Donders Institute for Brain, Cognition and Behavior, Center for Cognitive Neuroimaging, Nijmegen, Netherlands, [3]Department of Psychiatry, University of Essen-Duisburg, Essen, Germany

**3170 Exploring the neural correlates of perceived stress**
Josephine Archer[1], Annie Lee[2], Anqi Qiu[2], Annabel Chen[1]
[1]Nanyang Technological University, Singapore, Singapore, [2]National University of Singapore, Singapore, Singapore

**3171 FMRI of Autobiographical Memory Recall Deficits in Patients Remitted from Depression**
Kymberly Young[1], Patrick Bellgowan[1,2], Jerzy Bodurka[1,3], Wayne Drevets[1,4]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]University of Tulsa, Tulsa, OK, [3]University of Oklahoma, Tulsa, OK, [4]Johnson & Johnson, Inc., New Brunswick, NJ

**3172 Functional Connectivity Changes are Associated with Treatment Outcome in Major Depression**
Jessica Damoiseaux[1], Matthew White[2], Heidi Jiang[3], William Shirer[4], Michael Greicius[5]
[1]Stanford University School of Medicine, Stanford, United States, [2]Stanford University Medical Center, Stanford, United States, [3]Stanford University School of Medicine, Stanford, CA, [4]Stanford University, Palo Alto, CA, [5]Stanford University, Stanford, United States

**3173 Functional Organization of Frontocingulate Network during Trust Violations among Assaulted Girls**
Jennifer Lenow[1], J. Scott Steele[1], Sonet Smitherman[1], Clinton Kilts[1], Josh Cisler[1]
[1]University of Arkansas for Medical Sciences, Little Rock, AR

**3174 Hyperconnectivity in an introspective socio-affective network model in major depression**
Felix Hoffstaedter[1], Leonhard Schilbach[2], Veronika Müller[3], Mareike Clos[1], Roberto Goya-Maldonado[4], Oliver Gruber[4], Simon Eickhoff[3]
[1]Research Center Jülich, Jülich, Germany, [2]Department of Psychiatry, University of Cologne, Cologne, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Düsseldorf, Germany, [4]University Medical Center Göttingen, Göttingen, Germany

**3175 Hypoactivity in left vlPFC during reappraisal in bipolar disorder euthymia**
Salvatore Torrisi[1], Nathalie Vizueta[2], Susan Bookheimer[3], Lori Altshuler[4]
[1]UCLA, [2]UCLA, Los Angeles, CA, [3]University of California - Los Angeles, Los Angeles, CA, [4]University of California, Los Angeles, Los Angeles, CA

**3176 Impact of Cumulative Stress and Trauma on Childhood Brain Emotional Reactivity**
Hideo Suzuki[1], Joan Luby[1], Kelly Botteron[1], Rebecca Tillman[1], Deanna Barch[1,2]
[1]Washington University School of Medicine, Saint Louis, MO, [2]Washington University in St. Louis, Saint Louis, MO

**3177 Increased Amygdala and Thalamus gray matter volume in relatives of patients with major depression**
Lydia Pöhland[1], Nina Seiferth[1], Sebastian Mohnke[1], Maria Garbusow[1], Claudia Schütz[2], Susanne Erk[1], Leila Haddad[3], Grimm Oliver[3], Heike Tost[3], Andreas Meyer-Lindenberg[4], Henrik Walter[1], Torsten Wüstenberg[1], Andreas Heinz[1]
[1]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [2]University of Bonn, Bonn, Germany, [3]Central Institute of Mental Health Mannheim, Mannheim, Germany, [4]Department of Psychiatry and Psychotherapy, CIMH Medical Faculty Mannheim/ Heidelberg University, Mannheim, Germany

**3178 Induced rumination reveals the relation between global connectivity and major depression**
Marc Berman[1], Bratislav Misic[1], Martin Buschkuehl[2], Ethan Kross[3], Patricia Deldin[3], Scott Peltier[4], Susanne Jaeggi[2], Anthony McIntosh[5], John Jonides[3]
[1]Rotman Research Institute, Toronto, Canada, [2]Department of Psychology, University of Maryland, College Park, MD, [3]The University of Michigan, Ann Arbor, United States, [4]University of Michigan, Ann Arbor, United States, [5]Rotman Research Institute of Baycrest Centre, Toronto, ON

**3179 Insular dysfunction reflects inter-network connectivity and severity of symptoms in depression**
Andrei Manoliu[1], Masoud Tahmasian[2], Chun Meng[3], Felix Brandl[2], Claus Zimmer[2], Hans Förstl[4], Josef Bäuml[4], Afra Wohlschläger[2], Valentin Riedl[5], Christian Sorg[6]
[1]Department of Psychiatry and Neuroradiology, Technische Universität München, Munich, Germany, [2]Department of Neuroradiology, Technische Universität München, Munich, Germany, [3]GSN, LMU, Munich, Germany, [4]Department of Psychiatry, Technische Universität München, Munich, Germany, [5]Department of Neuroradiology and Neurology, Technische Universität München, Munich, Germany, [6]Department of Psychiatry, Neuroradiology and Nuclear Medicine, Technische Universität München, Munich, Germany

**3180 Intranasal oxytocin dampens amygdala reactivity in PTSD patients towards fearful and angry faces**
Saskia Koch[1], Laura Nawijn[1], Mirjam van Zuiden[1], Jessie Frijling[1], Dick Veltman[2,1], Miranda Olff[1,3]
[1]Department of Psychiatry, Academic Medical Center, Amsterdam, Netherlands, [2]Department of Psychiatry, VU University Medical Center Amsterdam, Amsterdam, Netherlands, [3]Arq Psychotrauma Expert Group, Diemen, Netherlands

**3181 Investigation of Youths with Bipolar Spectrum Disorders: A Multi-modal NeuroImaging Study**
Elif Sikoglu[1], Ana Liso Navarro[1], Debra Starr[1], Michael Cirillo[1], Benjamin Nwosu[1], Ryan Rogan[1], Suzanne Czerniak[1], Martha Castro[1], Richard Edden[2], David Kennedy[1], Jean Frazier[1], Constance Moore[1]
[1]University of Massachusetts Medical School, Worcester, MA, United States, [2]The Johns Hopkins University School of Medicine, Baltimore, MD, United States

**3182 Left Prefrontal Hypofunction in Young People with Dysthymic Disorder during Spatial Working Memory**
Veronika Vilgis[1], Jian Chen[2], Timothy Silk[2], Marc Seal[2], Alasdair Vance[1]
[1]Department of Paediatrics, University of Melbourne, Melbourne, Australia, [2]Murdoch Childrens Research Institute, Melbourne, Australia

**3183 Linking Electro-convulsive Therapy Induced Brain Plasticity to Clinical Outcome in Mood Disorders**
Juergen Dukart[1], Francesca Regen[2], Ferath Kherif[3], Isabella Heuser[4], Richard Frackowiak[5], Bogdan Draganski[6]
[1]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, [2]Charité-University Medicine Berlin, Berlin, Germany, [3]LREN, CHUV, DNC university lausanne, Lausanne, Switzerland, [4]Department of Psychiatry and Psychotherapy, Charite, Berlin, Germany, [5]LREN, Département des Neurosciences Cliniques, CHUV, Université de Lausanne, Lausanne, Switzerland, Lausanne, Switzerland, [6]LREN, Département des neurosciences cliniques - CHUV, Lausanne, Switzerland

**3184 Meta-analysis of structural brain differences in bipolar disorder: the ENIGMA-Bipolar Project**
Derrek Hibar[1], Theo van Erp[2], Jerod Rasmussen[3], Unn Kristin Haukvik[4], Lars Westlye[4], Ingrid Agartz[5], Oliver Gruber[6], Bernd Krämer[6], Sarah Trost[7], Benny Liberg[8], Carl Ekman[8], Mikael Landen[8], Allison Nugent[9], Wayne Drevets[10], Scott Fears[1], Carrie Bearden[1], David Glahn[11], Godfrey Pearlson[12], Colm McDonald[13], Dara Cannon[13], Jorge Almeida[14], Amelia Versace[14], Xavier Caseras[15], Mary Phillips[16], Stephen Strakowski[17], Caleb Adler[17], Melissa DelBello[17], Danai Dima[18], Sophia Frangou[18], Andrew MCINTOSH[19], Heather Whalley[20], Paul Thompson[1], Ole Andreassen[4]
[1]University of California, Los Angeles, Los Angeles, CA, [2]University of California Irvine, Irvine, CA, [3]University of California, Irvine, Irvine, CA, [4]University of Oslo, Oslo, Norway, [5]Universirty of Oslo, Oslo, Norway, [6]Georg August University, Goettingen, Germany, [7]Center for Translational Research in Systems Neuroscience and Psychiatry, Goettingen, Germany, [8]Karolinska Institutet, Stockholm, Sweden, [9]NIMH, Bethesda, MD, [10]Laureate Institute for Brain Research, Tulsa, OK, [11]Yale University, Hartford, CT, [12]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT, [13]National University of Ireland Galway, Galway, Ireland, [14]University of Pittsburgh, Pittsburgh, PA, [15]Cardiff University, Cardiff, United Kingdom, [16]Clinical and Translational Affective Neuroscience Program, University of Pittsburgh School of Medic, Pittsburgh , PA, [17]University of Cincinnati College of Medicine, Cincinnati, OH, [18]Mount Sinai School of Medicine, New York, NY, [19]University of Edinburgh, Edinburgh, United Kingdom, [20]Edinburgh Hospital, Dpt Psychiatry, Edinburgh, United Kingdom

**3185 Microstructural variation in white matter integrity in adolescents with major depressive disorder**
Kirstie Whitaker[1], Cindy Hagan[1], Julia Graham[1], Cinly Ooi[1,2], Adrienne van Nieuwenhuizen[1], Barbara Sahakian[1,2,3], Ian Goodyer[1,2,3,4], Edward Bullmore[1,2,3,4], Belinda Lennox[5], John Suckling[1,2,3,4]
[1]Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [2]Biomedical Research Centre, Cambridge, United Kingdom, [3]Behavioural & Clinical Neurosciences Institute, Cambridge, United Kingdom, [4]Cambridgeshire and Peterborough NHS Foundation Trust, Cambridge, United Kingdom, [5]Department of Psychiatry, University of Oxford, Oxford, United Kingdom

**3186 Neural activation to seeing male-female interactions among mothers in context of IPV-PTSD**
Dominik Moser[1,2], Tatjana Aue[3], Francesca Suardi[4], Sandra Rusconi[4,2], Ana Sancho-Rossignol[4], Maria Cordero[4], Nicolas Favez[2], François Ansermet[4], Daniel Schechter[4]
[1]University Hospitals of Geneva, Geneva, Switzerland, [2]Faculty of Psychology and Education Sciences, University of Geneva, Geneva, Switzerland, [3]Swiss Center for Affective Sciences, University of Geneva, Geneva, Switzerland, [4]Department of Child & Adolescent Psychiatry, University of Geneva Hospitals, Geneva, Switzerland

**3187 Neural Correlates of Full Remission in Adolescent- and Adult-Onset Major Depressive Disorder**
Lucie Bartova[1], Kersten Diers[2], Bernhard Meyer[1], Ulrich Rabl[1], Christian Scharinger[1], Ana Popovic[1], Gerald Pail[1], Manuel Kuhn[1], Klaudius Kalcher[3], Sharon Schwarzbaum-Russo[1], Nicole Praschak-Rieder[1], Christian Windischberger[3], Ewald Moser[3], Siegfried Kasper[1], Burkhard Brocke[2], Lukas Pezawas[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Technical University of Dresden, Dresden, Germany, [3]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

**3188 Neural Correlates of Recovery from Depression: A Longitudinal Study to memory of Emotional Words**
Hui Ai[1], Esther Opmeer[1], Jan-Bernard Marsman[1], Marie-José van Tol[2], Saskia Woudstra[3], Nic van der Wee[4], Mark van Buchem[5], Dick Veltman[6], A. Aleman[7]
[1]BCN Neuroimaging Center, University Medical Center Groningen, Groningen, Netherlands, [2]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany, [3]Leiden University Medical Center, VU University Medical Center Amsterdam, Leiden, Amsterdam, Netherlands, [4]Leiden University Medical Center, Leiden Institute for Brain and Cognition, Leiden, Netherlands, [5]Leiden Institute for Brain and Cognition, Leiden Institute for Brain and Cognition, leiden, Netherlands, [6]Department of Psychiatry, VU University Medical Center Amsterdam, Amsterdam, Netherlands, [7]BCN NeuroImaging Center, Department of Psychology, University of Groningen, Groningen, Netherlands

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3189 Neural Correlates of Social Decision-making in Neuroticism**
M.N. Servaas[1], H. Riese[2], J. Ormel[2], A. Aleman[1]
[1]Neuroimaging Center, Department Cognitive Neuroscience, Groningen, the Netherlands, [2]Interdisciplinary Center for Psychopathology and Emotion Regulation, Groningen, the Netherlands

**3190 Neural Response to Negative Socioemotional Information in Adolescents with Major Depressive Disorder**
Kyung Hwa Lee[1], Greg Siegle[1], Grace Lee[1], Cecile Ladouceur[1], Ronald Dahl[2], Jennifer Silk[1]
[1]University of Pittsburgh, Pittsburgh, United States, [2]University of California, Berkeley, Berkeley, United States

**3191 Neurochemical correlates of ECT response in the hippocampus in major depression**
Tara Pirnia[1], Katherine Narr[1], Jingjing Zhang[1], Shantanu Joshi[1], Hannah Lyden[1], Jeffry Alger[1], Roger Woods[1], Randall Espinoza[1]
[1]David Geffen School of Medicine at UCLA, Los Angeles, CA

**3192 Neuroimaging Flashbacks: The Formation and Occurrence of Involuntary Autobiographical Memories**
Ian Clark[1], Emily Holmes[2], Clare Mackay[1]
[1]University of Oxford, Oxford, United Kingdom, [2]MRC Cognition & Brain Sciences Unit, Cambridge, United Kingdom

**3193 Perturbed vmPFC Fear Response in Anxiety Predicted by Thickness and Connectivity with Fear Circuit**
Jiook Cha[1], Tsafrir Greenberg[1], Joshua Carlson[1], Lilianne Mujica-Parodi[1]
[1]State University of New York at Stony Brook, School of Medicine, Stony Brook, NY

**3194 Predicting Elevated Symptoms of Mania in Adolescents from Functional Neuroimaging Scans**
Liana Portugal[1,2], Maria Joao Rosa[1], Leticia Oliveira[2], Mirtes Pereira[2], Genna Bebko[3], Michele Bertocci[3], Robert Flinding[4], Sarah Horwitz[5], Eugene Arnold[6], Mary Fristad[7], Scott Holland[8], Robert Kowatch[9], Eric Youngstom[10], Mary Phillips[11,12], Janaina Mourão-Miranda[1,13]
[1]Computer Science Department, University College London, London, United Kingdom, [2]Department of Physiology and Pharmacology, Fluminense Federal University, Niteroi, Brazil, [3]Department of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical, Pittsburgh, United States, [4]University Hospitals Case Medical Center/Case Western Reserve University, Cleveland, United States, [5]Department of Child Psychiatry, New York University School of Medicine, New York, United States, [6]Department of Psychiatry, Ohio State University, Columbs, United States, [7]Department of Psychiatry, Ohio State University, Columbus, OH, [8]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States, [9]The Research Institute at Nationwide Children's Hospital, Columbus, United States, [10]Center for Excellence in Research and Treatment of Bipolar Disorder University of North Carolina at, Chape Hill, United States, [11]Clinical and Translational Affective Neuroscience Program, University of Pittsburgh School of Medic, Pittsburgh , PA, [12]Department of Psychological Medicine, Cardiff University, Cardiff, United Kingdom, [13]Department of Neuroimaging, King's College London, London, United Kingdom

**3195 Pre-treatment intrinsic functional architecture predicts clinical outcome in Social Anxiety Disorder**
Susan Whitfield-Gabrieli[1], Satra Ghosh[1], Oliver Doehrmann[1], Gretchen Reynolds[1], Christina Triantafyllou[1], Mark Pollack[2], Stefan Hofmann[3], John Gabrieli[1]
[1]MIT, Cambridge, MA, [2]MGH, Boston, MA, [3]Boston University, Boston, MA

**3196 Real-Time fMRI Neurofeedback Training of Amygdala Alters Resting-State Connectivity in Depression**
Han Yuan[1], Vadim Zotev[1], Raquel Phillips[1], Kymberly Young[1], Masaya Misaki[1], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States, [2]University of Oklahoma, Norman, OK, United States

***3197 Real-time fMRI Neurofeedback Training of Amygdala Modulates Frontal EEG Asymmetry in MDD Patients, (O-W4)**
Vadim Zotev[1], Han Yuan[1], Masaya Misaki[1], Raquel Phillips[1], Kymberly Young[1], Jerzy Bodurka[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]College of Engineering, University of Oklahoma, Tulsa, OK


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**3198 Regional Gray Matter Volumes related to Clinical Course in Bipolar I Disorder**
Jisun Kim[1], Tae Hyon Ha[1], Ju Young Her[1], Jae Seung Chang[1], Jae Hyoung Kim[2], Kyooseob Ha[1]
[1]Department of Psychiatry, Seoul National University Bundang Hospital, Seongnam, Korea, Republic of, [2]Department of Radiology, Seoul National University Bundang Hospital, Seongnam, Korea, Republic of

**3199 Relationship between COMT gene polymorphism and brain volume in major depressive disorder**
Keita Watanabe[1], Satoru Ide[1], Shingo Kakeda[1], Osamu Abe[2], Reiji Yoshimura[3], Jun Nakamura[3], Yukunori Korogi[1]
[1]Department of Radiology, University of Occupational and Environmental Health, Fukuoka, Japan, [2]Department of Radiology, Nihon University School of Medicine, Tokyo, Japan, [3]Department of Psychiatry, University of Occupational and Environmental Health, Fukuoka, Japan

**3200 Resilience after 3/11: white matter microstructural changes one-year after the Japanese Earthquake**
Atsushi Sekiguchi[1], Motoaki Sugiura[2], Yuka Kotozaki[3], Tsuyoshi Araki[1], Sugiko Hanawa[1], Seishu Nakagawa[2], Carlos Miyauchi[1], Atsushi Sakuma[1], Yasuyuki Taki[2], Ryuta Kawashima[4]
[1]Tohoku university, Sendai, Japan, [2]IDAC, Tohoku University, Sendai, Japan, [3]Tohoku University, Sendai, Japan, [4]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**3201 Response inhibition and anticipatory anxiety processes in physically active and sedentary adults**
Rowen Morioka[1], Jeremy Sibold[2], Hugh Garavan[3]
[1]University of Vermont, Burlington , United States, [2]University of Vermont, Burlington , VT, [3]University of Vermont, Burlington, VT

**3202 Resting-state functional connectivity in an affective network in major depression**
Tanja Kellermann[1], Veronika Müller[2], Felix Hoffstaedter[2], Oliver Gruber[3], Roberto Goya-Maldonado[4], Valentin Riedl[5], Birgit Derntl[1], Simon Eickhoff[2]
[1]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [2]Heinrich Heine University, Düsseldorf, Germany, [3]Department of Psychiatry and Psychotherapy, Goettingen, Germany, [4]University Medical Center Goettingen, Goettingen, Germany, [5]Department of Neuroradiology and Neurology, Technical University Munich, Munich, Germany

**3203 Reward in Depression - Hypo- and Hyper-Activation of the Nucleus Accumbens with fMRI**
Roberto Goya-Maldonado[1], Kristina Weber[1], Sarah Trost[1], Esther Diekhof[2], Peter Dechent[3], Oliver Gruber[1]
[1]Center for Translational Research in Systems Neuroscience and Psychiatry, Georg August University, Goettingen, Germany, [2]Biozentrum Grindel, Institut für Humanbiologie, University Hamburg, Hamburg, Germany, [3]MR-Research in Neurology and Psychiatry, Department of Cognitive Neurology, Georg August University, Goettingen, Germany

**3204 Social anxiety predicts increases in functional connectivity in the Default Mode Network**
Claudio Gentili[1], Emiliano Ricciardi[2], Andrea Leo[3], Luca Cecchetti[4], Ioana Cristea[5], Pietrini Pietro[6]
[1]Clinical Psychology Chair, Department of Pathology, University of Pisa, Pisa, Italy, [2]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, [3]Department of Pathology, University of Pisa, Pisa, Italy, [4]Department of Pathology, University of Pisa, PISA, Italy, [5]Babes-Bolyai University and Department of Pathology, University of Pisa, Cluj-Napoca, Romania, [6]Chair of Clinical Psychology, Department of Pathology, University of Pisa, Pisa, Italy

**3205 Stable Emotion Processing Deficits in Young Individuals with Remitted Depression**
Laura Gabriel[1], Sara Weisenbach[1], Kelly Ryan[1], Gloria Harrington[1], Anne Weldon[2], Michelle Kassel[1], Cheryl King[1], Robert Welsh[3], Timothy Johnson[1], Jon-Kar Zubieta[1], Scott Langenecker[1]
[1]University of Michigan, Ann Arbor, MI, [2]University of Michigan, Chicago, IL, [3]Radiology, University of Michigan, Ann Arbor, MI

**3206 Stress-induced reward processing dysfunction in healthy controls: an fMRI study**
Poornima Kumar[1,2], Lisa Berghorst[1,3], Lisa Nickerson[4,2], Sunny Dutra[5], Douglas Greve[6], Diego Pizzagalli[1,2,4]
[1]Center for Depression, Anxiety and Stress Research, McLean Hospital, Harvard Medical School, Belmont, MA, United States, [2]Department of Psychiatry, Harvard Medical School, Boston, MA, United States, [3]Department of Psychology, Harvard University, Cambridge, MA, United States, [4]Neuroimaging Center, McLean Hospital, Harvard Medical School, Belmont, MA, United States, [5]Department of Psychology, Yale University, New Haven, CT, United States, [6]Department of Radiology, Massachusetts General Hospital, Boston, MA, United States

**3207 Structural covariance network analysis of anxious/depressed symptoms in healthy children**
Simon Ducharme[1], Matthew Albaugh[2], James Hudziak[3], Kelly Botteron[4], Tuong-Vi Nguyen[5], Alan Evans[6], Sherif Karama[7]
[1]McGill University and Harvard University, Montreal, Canada, [2]University of Vermont College of Medicine, Burlington, United States, [3]University of Vermont, Burlington, VT, [4]Washington University, St-Louis, MO, [5]McGill University and National Institutes of Mental Health, Montreal, Quebec, [6]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [7]Montreal Neurological Institute, Montreal, Quebec

**3208 Trauma exposure is associated with left uncinate fasciculus abnormalities in PTSD patients**
Aleksandra Klimova[1], Thomas Whitford[1], Richard Bryant[1]
[1]University of New South Wales, Sydney, Australia

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3209 Visual Cortical Response to Emotion Stimuli Predicts Clinical Outcome to Rapid Antidepressant Agents**
Maura Furey[1], Joanna Szczepanik[1], Allison Nugent[1], Nancy Brutsche[1], Joseph Rasimas[1], David Luckenbaugh[1], Carlos Zarate, Jr[1]
[1]Experimental Therapeutics and Pathophysiology Branch, NIH/NIMH, Bethesda, MD

**3210 Volumetric MRI study of the insular cortex in female patients with current and remitted depression**
chunhong liu[1], Chuan-Yue Wang Wang[2]
[1]Department of Radiology, Beijing Anding Hospital, Capital Medical University, Beijing, China, beijing, China, [2]Laboratory of Clinical Psychopharmacology, Beijing, China

## Disorders of the Nervous System

### Schizophrenia and Psychotic Disorders

**3211 A Prospective Meta-Analysis of Subcortical Brain Volumes in Schizophrenia via the ENIGMA Consortium**
Jessica Turner[1,2], Derrek Hibar[3], Jerod Rasmussen[4], Ole Andreassen[5], Unn Kristin Haukvik[5], Ingrid Agartz[5], Steven Potkin[4], Roel Ophoff[3], Hilleke Hulshoff Pol[6], Neeltje van Haren[6], Oliver Gruber[7], Bernd Krämer[7], Stefan Ehrlich[8], Johanna Hass[8], Kathryn Alpert[9], Erik Jönsson[10], Lei Wang[9], Godfrey Pearlson[11], David Glahn[11], Paul Thompson[12], Theo van Erp[13]
[1]Mind Research Network, Albuquerque, United States, [2]University of New Mexico, Albuquerque, NM, [3]University of California, Los Angeles, Los Angeles, United States, [4]University of California, Irvine, Irvine, United States, [5]University of Oslo, Oslo, Norway, [6]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Department of Psychiatry, Utrecht, Netherlands, [7]Georg August University, Goettingen, Germany, [8]University Hospital Carl Gustav Carus, Dresden University of Technology, Dresden, Germany, [9]Northwestern University, Chicago, United States, [10]Department of Clinical Neuroscience, Psychiatry Section, Karolinska Institutet, Stockholm, Sweden, [11]Olin Neuropsychiatric Research Center, Institute of Living and Department of Psychiatry, Yale Univer, Hartford, United States, [12]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States, [13]University of California Irvine, Irvine, United States

**3212 Aberrant coupling between default mode, task positive and salience network in psychosis risk-state**
Diana Wotruba[1,2,3], Roman Buechler[1,2,3], Lars Michels[4,3], Anastastia Theodoridou[1,2], Miriam Gerstenberg[2], Spyros Kollias[3], Wulf Rössler[1,2,5], Karsten Heekeren[1,2]
[1]Psychiatric University Hospital, Zurich, Switzerland, [2]The Zurich Program for Sustainable Development of Mental Health Services (ZInEP), Zurich, Switzerland, [3]Clinic for Neuroradiology, University Hospital of Zurich, Zurich, Switzerland, [4]Center for MR Research, University Children's Hospital Zurich, Zurich, Switzerland, [5]Collegium Helveticum, a joint Research Institute between the University of Zurich and the Swiss Federal Institute of Technology, Zurich, Switzerland

**3213 Alterations in the Theory of Mind network in unaffected relatives of patients with schizophrenia**
Sebastian Mohnke[1], Andreas Meyer-Lindenberg[2], Susanne Erk[1], Nina Seiferth[3], Lydia Pöhland[1], Maria Garbusow[4], Phoebe Schmierer[1], Björn Schott[1], Oliver Grimm[2], Leila Haddad[5], Knut Schnell[6], Andreas Heinz[7], Henrik Walter[8]
[1]Charité Universitätsmedizin Berlin, Berlin, Germany, [2]Central Institute of Mental Health, Mannheim, Germany, [3]Charite Berlin, Berlin, Germany, [4]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, CCM, Berlin, Germany, [5]Central Institute of Mental Health Mannheim, [6]University of Heidelberg, Heidelberg, Germany, [7]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [8]Department of Psychiatry and Psychotherapy, Charité Universitaetsberlin, Berlin, Germany

**3214 Altered cortical thickness in first-episode schizophrenia**
Meng Li[1], Qinling Wei[2,3], Ruibin Zhang[1], Zhuang Kang[4], Junjing Wang[1], Jinbei Zhang[2], Ruiwang Huang[1]
[1]Center for the Study of Applied Psychology, Guangdong Key Laboratory of Mental Health and Cognitive Science, School of Psychology, South China Normal University, Guangzhou, 510631, China, [2]Department of Psychiatry, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, 510631, China, [3]Mental Health Institute, The Second Xiangya Hospital, Central South University, Changsha, 410011, China, [4]Department of Radiology, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, 510631, China

**3215 Altered gene expression in the dorsolateral prefrontal cortex of individuals with schizophrenia**
Angela Guillozet-Bongaarts[1], Thomas Hyde[2], Rachel Dalley[1], Michael Hawrylycz[1], Alex Henry[1], Patrick Hof[3], John Hohmann[1], Allan Jones[1], Chihchua Kuan[1], Josh Royall[1], Elaine Shen[1], Beryl Swanson[1], Hongkui Zeng[1], Joel Kleinman[2]
[1]Allen Institute for Brain Science, Seattle, WA, [2]Lieber Institute for Brain Development, Johns Hopkins Medical Campus, Baltimore, MD, [3]Mount Sinai School of Medicine, New York, NY

**3216 Altered relationships between brain activity and behavior in first episode schizophrenia**
Yuan Zhou[1], Huiran Zhang[2], Xi-Nian Zuo[3], Yun Wang[1], Tianzi Jiang[4], Zhening Liu[2]
[1]Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Institute of Mental Health, Second Xiangya Hospital, Central South University, Changsha, China, [3]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [4]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

***3217 An fMRI study of impaired sensory prediction in schizophrenia, (O-W4)**
Thomas White[1], Daniel Joyce[1], Paul Bays[2], Daniel Wolpert[3], Chris Frith[4], Sukhi Shergill[1]
[1]Institute of Psychiatry, King's College London, London, United Kingdom, [2]Institute of Neurology, University College London, London, United Kingdom, [3]University of Cambridge, Cambridge, United Kingdom, [4]University College London, London, United Kingdom

**3218 Auditory verbal hallucinations in a non-clinical sample: functioning of the primary auditory cortex**
Kristiina Kompus[1], Rene Westerhausen[1], Kenneth Hugdahl[2]
[1]University of Bergen, Bergen, Norway, [2]Dept Biological and Medical Psychology,University of Bergen, Norway, Bergen, Norway

**3219 Brain networks underlying active hallucinations during fMRI in schizophrenia**
Jessica Turner[1,2], Corbin Wilhemi[1], Rose Bigelow[2], Juan Bustillo[2], Jon Houck[2], Vince Calhoun[1,2], Robert Thoma[2]
[1]Mind Research Network, Albuquerque, United States, [2]University of New Mexico, Albuquerque, United States

**3220 Changes in stimulus valency are related to differences in brain activity in schizophrenia**
Paul Metzak[1], Todd Woodward[1]
[1]University of British Columbia, Vancouver, Canada

**3221 Clinical profile and disruption of structural connectivity in violent schizophrenia patients**
Yi Liao[1], Xinyu Hu[1], Jianmei Liu[2], Xiaoyu Jiang[1], Danlin Shen[2], Junmei Hu[2], Qiyong Gong[1], Xiaoqi Huang[1]
[1]Huaxi MR Research Center, Department of Radiology, West China Hospital of Sichuan University, Chengdu, China, [2]School of Basic Science and Forensic Medicine, Sichuan University, Chengdu, China

**3222 Consistent functional connectivity abnormalities across distinct cognitive contexts in schizophrenia**
Pierre Orban[1], Martin Desseilles[1], Adrianna Mendrek[1], Josiane Bourque[1], Pierre Bellec[1], Emmanuel Stip[1]
[1]University of Montreal, Montreal, Canada

**3223 Cortical dynamics of fast learning in patients with schizophrenia**
Leighton Hinkley[1], Bruno Biagianti[2], Sophia Vinogradov[3], Melissa Fisher[3], Danielle Mizuiri[3], Srikantan Nagarajan[3]
[1]University of California, San Francisco, San Francisco, USA, [2]University of California, San Francisco, San Francisco, United States, [3]University of California, San Francisco, San Francisco, CA

**3224 Cortical plasticity in schizophrenia after cognitive training and relation to behavioral outcomes**
Corby Dale[1], Melissa Fisher[2], Alexander Herman[2], Karuna Subramaniam[2], Sophia Vinogradov[2], Ethan Brown[3], Anne Findlay[2], Leighton Hinkley[4], Srikantan Nagarajan[2]
[1]University of California, San Francisco, San Francisco, United States, [2]University of California, San Francisco, San Francisco, CA, [3]UCSF, [4]University of California, San Francisco

**3225 Decreased striatal intrinsic connectivity into the fronto-insular brain in schizophrenia psychosis**
Henning Peters[1], Valentin Riedl[2], Maria Suttner[1], Andrei Manoliu[3], Dirk Schwerthoffer[1], Martin Scherr[1], Josef Bäuml[4], Claus Zimmer[5], Hans Förstl[4], Christian Sorg[6]
[1]TUM, Munich, Germany, [2]Department of Neuroradiology and Neurology, Technische Universität München, Munich, Germany, [3]Klinikum Rechts der Isar, TU Munich, Munich, Germany, [4]Department of Psychiatry, Technische Universität München, Munich, Germany, [5]Department of Neuroradiology, Technische Universität München, Munich, Germany, [6]Department of Psychiatry, Neuroradiology and Nuclear Medicine, Technische Universität München, Munich, Germany

**3226 Default and sensory-motor hemodynamic modes discriminate first-episode and chronic schizophrenia**
F.P. Yang[1], T.J. Hwang[2], C.C. Liu[2], C.M. Liu[2], M.H. Hsieh[2], I.L. Chien[2], S.C. Lee[2], W.Y Tseng[2], H.G. Hwu[2]
[1]National Tsing Hua University, Taiwan, [2]National Taiwan University Hospital, Taiwan

**3227 Deficits in hemispheric specialization of the caudate nucleus in schizophrenia**
Sophia Mueller[1,2], Danhong Wang[1], Daphne Holt[3], Hesheng Liu[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH, Charlestown, MA, [2]Institute of Clinical Radiology, Ludwig Maximilians University, Munich, Germany, [3]Department of Psychiatry, Massachusetts General Hospital, Boston, MA

**3228 Deprived connections in hallucinations: language network and hallucinations in schizophrenia**
Branislava Curcic-Blake[1], Lisette Van Der Meer[2], Leonardo Cerliani[3], Luca Nanetti[4], Rikuus Knegtering[5], Remco Renken[4], A. Aleman[6]
[1]University medical center Groningen, Groningen, Netherlands, [2]Lentis, Netherlands, [3]UMCG, Groningen, Netherlands, [4]University Medical Center Groningen, Groningen, Netherlands, [5]Lentis, Groningen, Nederland, [6]NeuroImaging Center, Groningen, Netherlands

**3229 Diffusion Tensor Imaging of the Mesocorticolimbic Pathway in Schizophrenia**
Meredith Reid[1], David White[1], Adrienne Lahti[2]
[1]University of Alabama at Birmingham, Birmingham, AL, [2]Univeristy of Alabama at Birmingham, Birmingham, AL

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3230 Disrupted anatomical connectivity in medication-naïve patients with first-episode schizophrenia**
Ruibin Zhang[1], Qinling Wei[2,3], Zhuang Kang[4], Andrew Zalesky[5], Meng Li[1], Yong Xu[1], Leijun Li[2], Bin Wang[1], Liangrong Zheng[2], Jinbei Zhang[2], Ruiwang Huang[1]
[1]Centre for the Study of Applied Psychology, Guangdong Key Laboratory of Mental Health and Cognitive Science, School of Psychology, South China Normal University, Guangzhou, China, [2]Department of Psychiatry, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, China, [3]Mental Health Institute, The Second Xiangya Hospital, Central South University, Changsha, China, [4]Department of Radiology, the Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, China, [5]Melbourne Neuropsychiatry Centre, The University of Melbourne, Victoria, Australia

**3231 Disrupted Functional Connectivity and Impaired Associative Memory in First Episode Schizophrenia**
Kristen Haut[1], Kenneth Subotnik[2], Joseph Ventura[2], Kieth Nuechterlein[3], Tyrone Cannon[4]
[1]Yale University, New Haven, United States, [2]University of California, Los Angeles, Los Angeles, CA, [3]Geffen School of Medicine at UCLA, Los Angeles, CA, [4]University of California, Los Angeles, LOS ANGELES, CA

**3232 Effective Dysconnectivity in the Prefrontal Cortex Underlying Cognitive Control in Schizophrenia**
Ian Harding[1], Ben J Harrison[1], Murat Yücel[1], Christos Pantelis[1], Michael Breakspear[2]
[1]Melbourne Neuropsychiatry Centre, Department of Psychiatry, the University of Melbourne, Melbourne, Australia, [2]Queensland Institute of Medical Research, Brisbane, Australia

**3233 Effects of a schizophrenia risk variant in CSMD1 on left temporal activity during social cognition**
Omar Mothersill[1], Derek Morris[1], Emma Rose[2], Sinead Kelly[1], Ciara Fahey[1], Carol O'Brien[1], Michael Gill[1], Aiden Corvin[1], Gary Donohoe[1]
[1]Trinity College Dublin, Dublin, Ireland, [2]Transdisciplinary Science and Translational Prevention Program (TSTPP), Research Triangle Institute, Baltimore, United States

**3234 Emotional Mismatch Negativity (MMN) in Chronic Schizophrenia**
Yu-Fen Kuan[1], Shin-Yi Lee[1], Pei-yuan Weng[2], Yawei Cheng[3]
[1]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [2]Department of Psychiatry, National Yang-Ming University Hospital, Yilan, Taiwan, [3]Institute of Neuroscience, National Yang-Ming UniversityNational Yang-Ming University Hospital, Yil, Taipei, Taiwan

**3235 Evoked potentials as indicators of serotonergic dysfunction of negative symptoms in schizophrenia**
Christine Wyss[1], Konrad Hitz[1], Michael Hengartner[1], Anastasia Theodoridou[1], Caitriona Obermann[1], Idun Uhl[2], Patrik Roser[2], Edna Gruenblatt[3], Georg Juckel[2], Wolfram Kawohl[1]
[1]Department of General and Social Psychiatry, University of Zurich, Zurich, Switzerland, [2]Department of Psychiatry, Ruhr University Bochum, LWL University Hospital, Bochum, Germany, [3]Department of Child and Adolescent Psychiatry, University of Zurich, Zurich, Switzerland

**3236 FMRI investigations of motor control in Childhood Onset Schizophrenia: antipsychotic dosage effects**
Carol Noronha[1], Richard White[2], Vaibhav Diwadkar[3], Nitin Gogtay[4]
[1]Wayne State University, Detroit, United States, [2]Wayne State University, Detroit, MI, [3]Wayne State University School of Medicine, Detroit, United States, [4]National Institute of Mental Health, Bethesda, MD

**3237 Frequency domains of resting state default mode network activity in schizophrenia**
Gianluca Mingoia[1,2], Kerstin Langbein[2], Maren Dietzek[2], Gerd Wagner[2], Stefan Smesny[2], Sigrid Scherpiet[2], Raka Maitra[2], Jürgen Reichenbach[3], Ralf Schlösser[2], Christian Gaser[4], Heinrich Sauer[2], Igor Nenadic[2]
[1]IZKF Brain Imaging Facility, Aachen, Germany, [2]Department of Psychiatry and Psychotherapy, Jena University Hospital, Jena, Germany, [3]Medical Physics Group, Institute of Diagnostic and Interventional Radiology 1, Jena University Hospi, Jena, Germany, [4]Structural Brain Mapping Group, Department of Psychiatry, University of Jena, Jena, Germany

**3238 Functional Homogeneity in both Early Onset and Adult Schizophrenia**
Lili Jiang[1], Yong Xu[2], Hui-Jie Li[1], Matthew Hoptman[3,4], Yong He[5], Xi-Nian Zuo[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Department of Psychiatry, First Hospital of Shanxi Medical University, Taiyuan, China, [3]Department of Psychiatry, New York University School of Medicine, New York, United States, [4]Schizophrenia Research Division, Nathan S. Kline Institute for Psychiatric Research, Orangeburg, NY, [5]State key laboratory of cognitive neuroscience and learning, Beijing Normal University, Beijing, China

**3239 Functional Homotopy in First-episode, Drug-naïve, Early-onset Schizophrenia**
Hui-Jie Li[1], Yong Xu[2], Matthew Hoptman[3], Xi-Nian Zuo[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Department of Psychiatry, First Hospital of Shanxi Medical University, Taiyuan, China, [3]Department of Psychiatry, New York University School of Medicine, New York, United States

**3240 GRAICAR analyses of intrinsic functional networks in early-onset schizophrenia**
Zhi Yang[1], Yong Xu[2], Ting Xu[1], Lili Jiang[1], Peter Bandettini[3], Xi-Nian Zuo[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Department of Psychiatry, First Hospital of Shanxi Medical University, Taiyuan, China, [3]National Institutes of Health, Bethesda, United States

**3241 Hallucinations are associated with hyperactivity in a corticostriatal network in speech perception**
Katie Lavigne[1], Lucile Rapin[2], Paul Metzak[1], Jen Whitman[1], Todd Woodward[1]
[1]University of British Columbia, Vancouver, Canada, [2]Université du Québec à Montreal, Montreal, Canada

**3242 Hippocampal volume and memory performance following aerobic exercise in first-episode schizophrenia**
Philip Ward[1,2], Simon Rosenbaum[3,2], Andrew Watkins[4], Jim Lagopoulos[5], Lauren Taylor[4], Ben Barry[6], E. Gail Trapp[6], Pamela Ward[2], Jackie Curtis[4,2]
[1]South Western Sydney Local Health District, Sydney, Australia, [2]Psychiatry, UNSW, Sydney, NSW, Australia, [3]George Institute, University of Sydney, Sydney, NSW, [4]South Eastern Sydney Local Health District, Sydney, NSW, [5]Brain and Mind Research Institute, University of Sydney, Sydney, NSW, [6]Exercise Physiology, School of Medical Sciences, UNSW, Sydney, NSW

**3243 Imaging endophenotypic markers for schizophrenic and affective disorders in key neural circuits**
Oliver Gruber[1], Sarah Trost[1], Kathrin Jakob[1], Anna Fanelli[1], Aleksandra Petrovic[1], Kristina Weber[1], Maria Keil[1], Esther Diekhof[2,1], Tobias Melcher[1], David Zilles[1], Henning Vieker[1]
[1]Center for Translational Research in Systems Neuroscience and Psychiatry, Georg August University, Goettingen, Germany, [2]Biozentrum Grindel, Institut für Humanbiologie, University Hamburg, Hamburg, Germany

**3244 Impact of Schizophrenia Risk Variant rs10503253 at CSMD1 on White Matter Connectivity**
Sinead Kelly[1], Derek Morris[1], Emma Rose[2], Omar Mothersill[1], Ciara Fahey[1], Carol O'Brien[1], Michael Gill[1], Aiden Corvin[1], Gary Donohoe[1]
[1]Trinity College Dublin, Dublin, Ireland, [2]Transdisciplinary Science and Translational Prevention Program (TSTPP), Research Triangle Institute, Baltimore, United States

**3245 Increased dACC modulation of fronto-parietal cortices in schizophrenia during cognitive control**
Nino Papale[1], Richard White[1], Chris Walker[2], Raymond Cho[2], Vaibhav Diwadkar[1]
[1]Wayne State University School of Medicine, Detroit, United States, [2]University of Pittsburgh, Pittsburgh, United States

**3246 Insular activity reflects inter-network connectivity and different disease states in schizophrenia**
Andrei Manoliu[1], Valentin Riedl[2], Mark Mühlau[3], Claus Zimmer[4], Hans Förstl[5], Josef Bäuml[5], Afra Wohlschläger[4], Christian Sorg[6]
[1]Department of Psychiatry and Neuroradiology, Technische Universität München, Munich, Germany, [2]Department of Neuroradiology and Neurology, Technische Universität München, Munich, Germany, [3]Department of Neurology, Technische Universität München, Munich, Germany, [4]Department of Neuroradiology, Technische Universität München, Munich, Germany, [5]Department of Psychiatry, Technische Universität München, Munich, Germany, [6]Department of Psychiatry, Neuroradiology and Nuclear Medicine, Technische Universität München, Munich, Germany

**3247 Investigation of dysfunctional cortical network of schizophrenia using network analysis**
Miseon Shim[1], Do-Won Kim[1], Seung-Hwan Lee[2], Chang-Hwan Im[1]
[1]Department of Biomedical Engineering, Hanyang Universiy, Seoul, Korea, Republic of, [2]Psychiatry Department, Ilsan Paik Hospital, Inje University, Goyang, Kyunggido, Korea, Republic of

**3248 Investigation on cognitive dysfunction in schizophrenia using current source analysis of P300 ERP**
Miseon Shim[1], Do-Won Kim[1], Seung-Hwan Lee[2], Chang-Hwan Im[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Psychiatry Department, Ilsan Paik Hospital, Inje University, Goyang, Kyunggido, Korea, Republic of

**3249 Magnetoencephalography of Multisensory (AV) Responses in Schizophrenia Patients and Healthy Controls**
Brian Coffman[1], Lucinda Romero[2], David Stone[1], Juan Bustillo[3], Cheryl Aine[4], Julia Stephen[2]
[1]The Mind Research Network; University of New Mexico, Albuquerque, NM, [2]The Mind Research Network, Albuquerque, NM, [3]University of New Mexico, Albuquerque, NM, [4]Department of Radiology, UNM School of Medicine, Albuquerque, NM

***3250 Mapping thalamo-cortical function in psychiatric disease: focus on schizophrenia and bipolar illness, (O-W4)**
Alan Anticevic[1], Michael Cole[2], Grega Repovš[3], John Murray[4], Margaret Brumbaugh[4], Anderson Winkler[5], Aleksandar Savic[4], John Krystal[1], Godfrey Pearlson[6], David Glahn[7]
[1]Yale University School of Medicine, New Haven, CT, [2]Washington University in St. Louis, St. Louis, MO, [3]Department of Psychology, University of Arts, Ljubljana, Slovenia, [4]Yale University, New Haven, CT, [5]Oxford Centre for Functional MRI of the Brain, University of Oxford, Oxford, United Kingdom, [6]Department of Psychiatry, Yale University School of Medicine, Olin Research Center, Hartford, CT, [7]Yale University, Hartford, United States

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3251 Modulation of affective face processing deficits in schizophrenia by congruent emotional sounds**
Veronika Müller[1], Tanja Kellermann[2], Sarah Seligman[3], Bruce Turetsky[4], Simon Eickhoff[1]
[1]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [2]Deparment of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [3]Department of Psychology, Temple University, Philadelphhia, PA, [4]Neuropsychiatry Division, Department of Psychiatry, University of Pennsylvania School of Medicine, Philadelphia, PA

***3252 Modules of synchronized cortical maturation in typical development and childhood-onset schizophrenia, (O-M2)**
Aaron F. Alexander-Bloch[1], Philip Reiss[2], Edward Bullmore[1], Jay Giedd[3], Nitin Gogtay[3]
[1]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [2]New York University, New York, NY, [3]National Institute of Mental Health, Bethesda, MD

**3253 NCAN, a Risk Factor for Bipolar Disorder and Schizophrenia, Alters Cortical Folding in Schizophrenia**
Thomas Mühleisen[1], Christoph Schultz[2], Igor Nenadic[2], Kathrin Koch[2], Gerd Wagner[2], Claudia Schachtzabel[2], Florian Siedek[3], Markus Nöthen[3], Marcella Rietschel[4], Thomas Deufel[5], Michael Kiehntopf[5], Sven Cichon[1], Jürgen Reichenbach[6], Heinrich Sauer[2], Ralf Schlösser[2]
[1]Institute of Neuroscience and Medicine (INM-1), Research Center Juelich, Juelich, Germany, [2]Department of Psychiatry and Psychotherapy, Jena University Hospital, Jena, Germany, [3]Institute of Human Genetics, University of Bonn, Bonn, Germany, [4]Central Institute of Mental Health, Medical Faculty Mannheim/ Heidelberg University, Mannheim, Germany, [5]Department of Clinical Chemistry and Laboratory Diagnostics, Jena University Hospital, Jena, Germany, [6]Institute of Diagnostic and Interventional Radiology, Jena University Hospital, Jena, Germany

**3254 Neural activities during recognition of emotional main theme words in patients with schizophrenia**
Jooyoung Oh[1], Ji-Won Chun[2], Hae-Jeong Park[2], Jae-Jin Kim[3]
[1]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Department of Psychiatry and Institute of Behavioral Science in Medicine, Yonsei University, Seoul, Korea, Republic of

**3255 Neural correlates of declarative memory encoding and genetic risk for schizophrenia**
Tara Pirnia[1], Roger Woods[1], Hannah Lyden[1], Liberty Hamilton[2], Shantanu Joshi[1], Robert Asarnow[1], Kieth Nuechterlein[1], Katherine Narr[1]
[1]Geffen School of Medicine at UCLA, Los Angeles, CA, [2]Helen Wills Neuroscience Institute, UC Berkeley, Berkeley, CA

**3256 Neural correlates of insight in dreaming and psychosis**
Martin Dresler[1], Renate Wehrle[1], Victor Spoormaker[1], Michael Czisch[1], J. Allan Hobson[2]
[1]Max Planck Institute of Psychiatry, Munich, Germany, [2]Harvard Medical School, Boston, United States

**3257 Predicting treatment response in schizophrenia using structural and functional MRI**
Nathan Hutcheson[1], Mark Bolding[1], David Clark[1], Jennifer Hadley[1], Meredith Reid[1], David White[1], Adrienne Lahti[1]
[1]Univeristy of Alabama at Birmingham, Birmingham, AL

**3258 Prefrontal cortex activity is associated with cumulative polygenetic risk in schizophrenia patients**
Esther Walton[1], Daniel Geisler[1], Phil Hyoun Lee[2], Johanna Hass[1], Jessica Turner[3], Jingyu Liu[3], Scott Sponheim[4], Thomas Wassink[5], Veit Roessner[1], Randy Gollub[6], Vince Calhoun[7], Stefan Ehrlich[1]
[1]Department of Child and Adolescent Psychiatry, University Hospital Carl Gustav Carus, Dresden, Germany, [2]Center for Human Genetic Research, Massachusetts General Hospital, Boston, MA, United States, [3]The MIND Research Network, Albuquerque, NM, United States, [4]Minneapolis VA Health Care System and Dept. of Psychiatry, University of Minnesota, Minneapolis, MN, United States, [5]Department of Psychiatry, University of Iowa, Iowa City, IA, United States, [6]Department of Psychiatry, Massachusetts General Hospital, Charlestown, MA, United States, [7]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, United States

**3259 Quetiapine-induced neuroplasticity in first-episode schizophrenia**
Timm Poeppl[1], Martin Schecklmann[1], Peter Kreuzer[1], Rainer Rupprecht[1,2], Berthold Langguth[1], Michael Landgrebe[1,3]
[1]University of Regensburg, Regensburg, Germany, [2]Max Planck Institute of Psychiatry, Munich, Germany, [3]Social Foundation Bamberg, Bamberg, Germany

**3260 R2* Relaxometry in Schizophrenia**
Joshua Chiappelli[1], Andrea Wijtenburg[2], Elliot Hong[1], Peter Kochunov[1], Laura Rowland[3]
[1]Maryland Psychiatric Research Center, Baltimore, United States, [2]Maryland Psychiatric Research Center, Baltimore, MD, [3]University of Maryland, baltimore, United States

**3261** **Reduced structural and functional connectivity of salience network in persons at-risk for psychosis**
Yvonne Y. Chia[1,2], Zhaoping Hong[1,2], Jimmy Lee[3], Siti N. Yaakub[1], Joann S. Poh[1], Ranga Krishnan[1], Richard S.E. Keefe[4], R. Alison Adcock[4,5], Stephen J. Wood[6,7], Michael W.L. Chee[1], Juan Zhou[1,2]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, [2]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, [3]Research Division, Institute of Mental Health, Singapore, [4]Department of Psychiatry and Behavioral Sciences, Duke University, Durham, NC, [5]Center for Cognitive Neuroscience, Duke University, Durham, NC, [6]School of Psychology, University of Birmingham, Edgbaston, UK, [7]Melbourne Neuropsychiatry Centre, Department of Psychiatry, University of Melbourne, Australia

**3262** **Relationships between diffusion and functional deficits in patients with schizophrenia**
Elise Leroux[1], Nicolas Delcroix[2], Mathieu Alary[3], Annick Razafimandimby[4], Perrine Brazo[1,4], Pascal Delamillieure[1,4], Sonia Dollfus[1,4]
[1]CHU de caen, Service de Psychiatry, Centre Esquirol, Caen, France, [2]CNRS, UMS 3408, GIP CYCERON, Caen, France, [3]CNRS, UMR 6301 ISTCT, ISTS team, GIP CYCERON, Caen, France, [4]Université de Caen Basse-Normandie, UMR 6301 ISTCT, ISTS team, Caen, France

**3263** **Relationships between functional network connectivity and measures of attention in schizophrenia**
Michael Hunter[1,2,3], Vincent Clark[1,4], Vince Calhoun[3,4,5], Jose Canive[2,3]
[1]Department of Psychology, Clinical Neuroscience Center, The University of New Mexico, Albuquerque, NM, [2]New Mexico Raymond G. Murphy VA Healthcare System, Psychiatry Research, Behavioral Health Care Line, Albuquerque, NM, [3]Department of Psychiatry, The University of New Mexico School of Medicine, Albuquerque, NM, [4]The Mind Research Network, Albuquerque, NM, [5]Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM

**3264** **Resting state fMRI reveals dysconnectivity of the mirror neuron system in schizophrenia**
Leonhard Schilbach[1], Mareike Clos[2], Veronika Müller[3], Edna-Clarisse Cieslik[3], A. Aleman[4], Svenja Caspers[2], Kelly Diederen[5], Edith Liemburg[4], Iris Sommer[5], Simon Eickhoff[3]
[1]Department of Psychiatry, University of Cologne, Cologne, Germany, [2]Research Centre Juelich, Juelich, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [4]University Medical Center Groningen, Groningen, Netherlands, [5]Neuroscience Division, University Medical Center Utrecht & Rudolf Magnus Institute for Neuroscience, Utrecht, Netherlands

**3265** **Sex differences in schizophrenia: A resting state fMRI study**
Suril Gohel[1,2], Philip Szesko[3], Eunhe Kim[2], Ching-Po Lin[4], Bharat Biswal[2]
[1]University of Medicine and Dentistry of NewJersey, Newark, United States, [2]New Jersey Institute of Technology, Newark, NJ, [3]North Shore Long Island Jewish Health System, Manhasset, NY, [4]National Yang-Ming University, Taipei, Chinese Taipei

**3266** **Temporal dynamics of distributed brain networks in schizophrenia**
Darren Price[1], Matthew Brookes[1], Lena Palaniyappan[1], Peter Liddle[1], Elizabeth Liddle[1], Emma Hall[1], Helen Smith[1], Mary Stephenson[1], Peter Morris[1]
[1]University of Nottingham, Nottingham, United Kingdom

**3267** **Tolcapone modulates PFC-cingulate connectivity during response inhibition in schizophrenia patients**
Christopher Li[1], Roberta Rasetti[1], Qiang Chen[2], Nicholas Fogleman[1], Karen Berman[1], José A Apud[1], Daniel R Weinberger[2], Venkata S Mattay[2]
[1]National Institute of Mental Health, Bethesda, United States, [2]Lieber Institute for Brain Development, Baltimore, United States

**3268** **Ventral Tegmental Area Functional Connectivity Predicts Antipsychotic Drug Response in Schizophrenia**
Jennifer Hadley[1], Rodolphe Nenert[1], Nina Kraguljac[1], Mark Bolding[1], David White[1], Kristina Visscher[1], Adrienne Lahti[1]
[1]University of Alabama at Birmingham, Birmingham, United States

**3269** **Vision-related Cognition in Patients with Schizophrenia: Etiological Considerations**
Steffen Landgraf[1,2], Elke van der Meer[3], Michael Osterheider[1]
[1]University of Regensburg, District Hospital, Regensburg, Germany, [2]Berlin School of Mind and Brain, Humboldt University Berlin, Berlin, Germany, [3]Humboldt University Berlin, Berlin, Germany

**3270** **Volumetric and Shape abnormalities of subcortex in multiplex families with schizophrenia**
David Roalf[1], Simon Vandekar[2], Ruben Gur[2], Kosha Ruparel[2], Theodore Satterthwaite[2], Mark Elliott[2], Sean Gallagher[3], Joel Wood[4], Konasale Prasad[4], Michael Pogue-Giele[4], Laura Almasy[5], Vishwaijit Nimgaonkar[4], Raquel Gur[2]
[1]University of Pennsylvania, Phildelphia, United States, [2]University of Pennsylvania, Philadelphia, PA, [3]University of Pennsylvania, Phildelphia, PA, [4]University of Pittsburgh, Pittsburgh, PA, [5]Texas Biomedical Research Institute, San Antonio, TX

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Disorders of the Nervous System

### Traumatic Brain Injury

**3271 Aberrant cingulate cortex functioning in traumatic brain injury and substance use disorders**
Elliott Bueler[1], Jadwiga Rogowska[2], Erin McGlade[3], Melissa Lopez-Larson[3], Deborah Yurgelun-Todd[3]
[1]The Brain Institute, University of Utah, Salt Lake City, United States, [2]The Brain Institute, University of Utah, Lynnfield, MA, [3]The Brain Institute, University of Utah; VISN 19 MIRECC, Salt Lake City, UT

**3272 Altered resting-state connectivity correlating Stroop task performance: a study of military mTBI**
Hai Pan[1], John Graner[2], Binquan Wang[1], Wei Liu[2], Haiying Tang[1], Ping-Hong Yeh[1], Terry Oakes[2], Gerard Riedy[2]
[1]Traumatic Brain Injury Image Analysis Lab, USUHS/Henry Jackson Foundation, Bethesda, MD, United States, [2]National Intrepid Center of Excellence, Bethesda, MD, United States

**3273 Withdrawn**

**3274 Cingulum injury in patients with diffuse axonal injury: a diffusion tensor imaging study**
Min Cheol Chang[1], Sung Ho Jang[1]
[1]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**3275 Diffusion Tensor Imaging of OEF/OIF Veterans With and Without Exposure to Primary Blast Forces**
Rajendra Morey[1,2,3], Katherine Taber[4], Susan Hart[4], Courtney Haswell[5,2], Robin Hurley[4]
[1]Psychiatry, Duke University, Durham, NC, [2]Mental Illness Research Education and Clinical Center for Post Deployment Mental Health, Durham VA Medical Center, Durham, NC, [3]Duke-UNC Brain Imaging and Analysis Center, Duke University, Durham, NC, [4]Mental Health, W.G. (Bill) Hefner VA Medical Center, Salisbury, NC, [5]Duke-UNC Brain Imaging and Analysis Center, Durham, NC

**3276 Disruptions Between Networks: Resting State fMRI and CBF in Mild TBI**
Chandler Sours[1,2], Jiachen Zhuo[3], Steven Roys[3], Kathirkamanthan Shanmuganathan[4], Rao Gullapalli[3,5]
[1]University of Maryland at Baltimore, Baltimore, United States, [2]Program in Neuroscience, Baltimore, MD, [3]University of Maryland School of Medicine, Department of Diagnostic Radiology and Nuclear Medicine, Baltimore, MD, [4]University of Maryland School of Medicine, Department Diagnostic Radiology and Nuclear Medicine, Baltimore, MD, [5]Magnetic Resonance Research Center, Baltimore, MD

**3277 DTI Detection of Symptomatic and Asymptomatic Injury Due to Repetitive Head Blows**
Il Yong Chun[1], Allan Diaz[2], Xiaodong Li[2], Yun Jang Jin[2], Larry Leverenz[2], Eric Nauman[2], Thomas Talavage[1]
[1]Purdue University, West Lafayette, United States, [2]Purdue University, West Lafayette, IN

**3278 Effects of traumatic brain injury upon the inverse localization accuracy of electroencephalography**
Andrei Irimia[1], Matt Goh[1], Carinna Torgerson[1], Ron Kikinis[2], Paul Vespa[3], John Van Horn[1]
[1]Laboratory of Neuro Imaging, University of California, Los Angeles, Los Angeles, United States, [2]Surgical Planning Laboratory, Harvard Medical School, Boston, United States, [3]Brain Injury Research Center, University of California, Los Angeles, Los Angeles, United States

**3279 Fractional Amplitude of Low-Frequency Fluctuations in Mild Traumatic Brain Injury**
Jadwiga Rogowska[1], Piotr Bogorodzki[2], Melissa Lopez-Larson[1,3], Elliott Bueler[1], Jace King[1], Deborah Yurgelun-Todd[1,3]
[1]Brain Institute, University of Utah, Salt Lake City, UT, [2]Technical University of Warsaw, Warsaw, Poland, [3]VISN 19 MIRECC, Salt Lake City Health Care System, Salt Lake City, UT

**3280 Functional Connectivity in Asymptomatic High School Football Players and Non-Contact Athletes**
Kausar Abbas[1], Trey Shenk[1], Evan Breedlove[1], Victoria Poole[1], Katherine Breedlove[1], Larry Leverenz[1], Eric Nauman[1], Thomas Talavage[1], Meghan Robinson[1,2]
[1]Purdue University, West Lafayette, IN, USA, [2]VA Boston Healthcare System, Boston, MA, USA

**3281 Heterogeneity in the TBI population fMRI response to a go/no-go task**
Jennifer Evans[1], John Graner[2], David Joy[3], Hai Pan[4], T erry Oakes[5], Gerard Riedy[5]
[1]NICoE, Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD, United States, [2]NICoE, WRNMMC, Bethesda, MD, United States, [3]Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD, United States, [4]Uniformed Services University of the Health Science, Bethesda, MD, United States, [5]National Intrepid Center of Excellence, Bethesda, MD, United States

**3282 Impact of brain injury upon the EEG forward solution as computed using the finite element method**
Matt Goh[1], Andrei Irimia[1], Carinna Torgerson[1], Ron Kikinis[2], Paul Vespa[3], John Van Horn[1]
[1]Laboratory of Neuro Imaging, University of California, Los Angeles, Los Angeles, United States, [2]Surgical Planning Laboratory, Harvard Medical School, Boston, United States, [3]Brain Injury Research Center, University of California, Los Angeles, Los Angeles, United States

**3283 Localizing abnormal brain tissue in mild TBI patients using the shape of the evoked BOLD response**
Serguei Astafiev[1], Gordon Shulman[1], Nicholas Metcalf[1], Jennifer Rengachary[1], Robert Fucetola[1], Deborah Harrington[2], Jun Maruta[3], Jamshid Ghajar[3], Mithun Diwakar[2], Mingxiong Huang[2], Roland Lee[2], Maurizio Corbetta[1]
[1]Washington University in St. Louis, St. Louis, MO, [2]University of California, San Diego, San Diego, CA, [3]Brain Trauma Foundation, New York, NY

**3284 MEG reveals a reduction of cortical activity in patients with TBI during a spatial attention task**
Corby Dale[1], Anne Findlay[2], Susanne Honma[2], Hana Lee[2], Tracy Luks[2], Danielle Mizuiri[2], Phiroz Tarapore[2], Leighton Hinkley[3], Srikantan Nagarajan[2], Pratik Mukherjee[1], Shelly Cooper[4], Sara LaHue[4]
[1]University of California, San Francisco, San Francisco, United States, [2]University of California, San Francisco, San Francisco, CA, [3]University of California, San Francisco, [4]University of California San Francisco, San Francisco, CA

**3285 Meta-Analysis of Cortical Neuroimaging Abnormalities due to Chronic Stage Traumatic Brain Injury**
Timothy Herron[1], Xiaojian Kang[2], And Turken[3], David Woods[4]
[1]Human Cognitive Neurophysiology Lab, US Veterans Affairs, Martinez, CA, [2]University of California at Davis, Martinez, United States, [3]US Department of Veterans Affairs, Research Service, Martinez, United States, [4]University of California at Davis, Martinez, CA

**3286 Methylphenidate modulates working memory networks in TBI patients**
Anne Manktelow[1], Barbara Sahakian[1], Vishwajit Verma[2], David Menon[1], Emmanuel Stamatakis[3]
[1]University of Cambridge, Cambridge, United Kingdom, [2]Barts and the London NHS Trust, London, United Kingdom, [3]Queens' College, Cambridge, Cambridge, United Kingdom

**3287 Military Blast TBI Diagnosis using Support Vector Machine Classification of FDG-PET**
Jeffrey Stout[1], Randall Frausto[1], P. Tyler Roskos[2], Medhat Osman[2], Richard Bucholz[2], David Mogul[1]
[1]Illinois Institute of Technology, Chicago, IL United States, [2]Saint Louis University School of Medicine, Saint Louis, MO United States

**3288 Multimodal Neuroimaging of Military-related Traumatic Brain Injury - a Pilot Study**
Ping-Hong Yeh[1], Binquan Wang[1], David Joy[1], John Ollinger[2], Wei Liu[1], Terrence Oakes[2], Gerard Riedy[2], Jennifer Jurgens[3]
[1]Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD, [2]National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, [3]WRNMMC, Bethesda, MD

**3289 Network Analysis of Intrinsic Functional Organization of the Brain in Mild Traumatic Brain Injury**
Rajendra Morey[1,2,3], Courtney Haswell[4,2], Shannon Beall[4,2], Madeline Jacobs[4,2], Jaehyuk Lee[4,2], Gregory McCarthy[5,2]
[1]Duke University, Durham, United States, [2]Mental Illness Research Education and Clinical Center for Post Deployment Mental Health, Durham VA Medical Center, Durham, NC, [3]Duke-UNC Brain Imaging and Analysis Center, Duke University, Durham, NC, [4]Duke-UNC Brain Imaging and Analysis Center, Durham, NC, [5]Department of Psychology, Yale University, New Haven, CT

**3290 PET-FDG Metabolism is Correlated with Multiple TBI-related symptoms in Military TBI**
Terrence Oakes[1], Jesus Caban[2], Andrew Bryant[3], David Joy[2], Jennifer Jurgens[4], John Ollinger[5], Gerard Riedy[1]
[1]National Intrepid Center of Excellence, Bethesda, MD, [2]NICoE, Bethesda, MD, [3]NICoE, Bethesda, United States, [4]WRNMMC, Bethesda, MD, [5]National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD

**3291 Recovering the balance between DMN and task networks after mild traumatic brain injury**
Anders Eklund[1], Cameron Craddock[2], Cyrus Eierud[1], Lisinski Jonathan[3], Brittany Hamilton[3], Damon Kuehl[4], Stephen LaConte[1]
[1]Virginia Tech Carilion Research Institute, Roanoke, United States, [2]Child Mind Institute, New York, NY, [3]Virginia Tech Carilion Research Institute, Roanoke, VA, [4]Virginia Tech Carilion School of Medicine, Roanoke, VA

**3292 Reduced Hippocampal Volume in Collegiate Athletes After Concussion**
Rashmi Singh[1], Rayus Kuplicki[1,2], Ikuko Mukai[1], Thomas Allen[3], Lamont Cavanagh[3], David Polanski[2], Christopher Nerio[2], Kent Teague[3], Patrick Bellgowan[1,2]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]University of Tulsa, Tulsa, OK, [3]University of Oklahoma HSC, Tulsa, OK

**3293 Withdrawn**

**3294 Resting State Connectivity of the Orbitofrontal Cortex and Thalamus in Mild Traumatic Brain Injury**
Jadwiga Rogowska[1], Piotr Bogorodzki[2], Melissa Lopez-Larson[1,3], Deborah Yurgelun-Todd[1,3]
[1]Brain Institute, University of Utah, Salt Lake City, UT, [2]Technical University of Warsaw, Warsaw, Poland, [3]VISN 19 MIRECC, Salt Lake City Health Care System, Salt Lake City, UT

**3295 Spatially and Temporally Resolving the Changes in White Matter in Mild Traumatic Brain Injury**
Cyrus Eierud[1], Cameron Craddock[2], Manek Aulakh[3], Sean Fletcher[3], BROOKS KING-CASAS[1], Damon Kuehl[3], Stephen LaConte[1]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Child Mind Institute, New York, NY, [3]Virginia Tech Carilion School of Medicine, Roanoke, VA

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3296** **Spectroscopic Analysis of Neuro-metabolic Changes in Female Soccer Players**
Victoria Poole[1], Ulrike Dydak[1], Larry Leverenz[1], Eric Nauman[1], Thomas Talavage[1]
[1]Purdue University, West Lafayette, IN, United States

**3297** **Structural Connectivity Abnormality in Children with mTBI using Graph Theoretical Analysis**
Weihong Yuan[1], Lynn Babcock[2], Shari Wade[3]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [2]Division of Emergency Division, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [3]Division of Physical Medicine and Rehabilitation, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

**3298** **Subjects surviving moderate drowning episodes have memory and motor systems affected: an fMRI study**
Mariana Nucci-da-Silva[1], Katerina Lukasova[2], João Sato[3], Edson Amaro Junior[4]
[1]NIF-Neuroimagem Funcional - LIM44, Department of Radiology - Universidade de São Paulo, São Paulo, Brazil, [2]NIF-Neuroimagem Funcional - LIM44, Department of Radiology - Universidade de São Paulo, São Paulo, Brazil, [3]ABC Federal University, Santo André, Brazil, [4]University of São Paulo, São Paulo, Brazil

**3299** **Third Ventricular Volume and Repetitive Head Trauma: the Professional Fighters Brain Health Study**
Charles Bernick[1], Sarah Banks[1], Nancy Obuchowski[2], Micheal Phillips[3], Michael Modic[4], Wanyong Shin[5], Stephen Jones[2], Mark Lowe[4]
[1]Cleveland Clinic, Las Vegas, United States, [2]Cleveland Clinic, Cleveland, OH, [3]Cleveland Clinic Foundation, Cleveland, United States, [4]Cleveland Clinic, Cleveland, United States, [5]Cleveland Clinic

**3300** **Using fMRI to understand socio-behavioral changes in adolescents with traumatic brain injury**
Blessy Mathew[1], Evan Goldstein[2], Mark Lowe[1], Angela Ciccia[3]
[1]Cleveland Clinic, Cleveland, United States, [2]Ohio State University, Columbus, United States, [3]Case Western Reserve University, Cleveland, United States

**3301** **White matter disruption and pragmatic linguistic impairments after mild traumatic brain injury**
Fan-pei Yang[1], Kailyn Bradley[2], Daniel Krawczyk[3]
[1]National Tsing Hua University, Hsichu, Chinese Taipei, [2]University of Houston, Houston, TX, [3]University of Texas at Dallas, Dallas, TX

## Emotion and Motivation

### Emotional Learning

**3302** **Brain responses during aversive learning are modulated by instructions**
Lauren Atlas[1], Bradley Doll[2], Jian Li[3], Nathaniel Daw[2], Elizabeth Phelps[1]
[1]New York University, New York, United States, [2]New York University, New York, NY, [3]Peking University, Peking, China

**3303** **Differential influences of reward processing on working memory through development and ADHD**
Michael Tennekoon[1], Gillian Cooke[2], Jessica Gayda[3], Anshu Hemrajani[1], Mark Stein[4], Darren Gitelman[5], James Booth[6]
[1]Northwestern, Evanston, United States, [2]University of Illinois, Urbana, Urbana, United States, [3]Northwestern, Chicago, United States, [4]University of Illinois, Chicago, Chicago, United States, [5]Northwestern University, Chicago, United States, [6]Department of Communication Sciences and Disorders, Northwestern University, Evanston, IL

**3304** **Effective connectivity reveals learning-related changes in the emotional response to a threat**
Muriah Wheelock[1], Karthik Sreenivasan[2], Kimberly Wood[1], Lawrence Ver Hoef[3], Gopikrishna Deshpande[2], David Knight[1]
[1]Univeristy of Alabama at Birmingham, Birmingham, United States, [2]Auburn University, Auburn, United States, [3]University of Alabama at Birmingham, Birmingham, United States

**3305** **FMRI-based social neurofeedback of the ACC in patients with PTSD and controls**
Eliza M. Alawi[1,2], Anastasia Kacela[1], Krystyna Mathiak[3], Guido Flatten[4], Klaus Mathiak[1,5,2]
[1]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [2]JARA-Brain, Translational Brain Medicine, Aachen, Germany, [3]Department of Child and Adolescent Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen, Aachen, Germany, [4]Euregio-Institut für Psychosomatik und Psychotraumatologie, Aachen, Germany, [5]INM-1, Forschungszentrum Jülich GmbH, Jülich, Germany

***3306** **Neural pattern similarity predicts long-term fear memory, (O-Th4)**
Renée Visser[1], H. Steven Scholte[1], Tinka Beemsterboer[1], Merel Kindt[1]
[1]University of Amsterdam, Amsterdam, Netherlands


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## Emotion and Motivation

### Emotional Perception

**3307 Amygdala activation to emotional faces in freely viewing non-human primates**

Jane Joseph[1], Xun Zhu[2], Christine Corbly[3], Faraday Davies[2], Ashley Kangas[3], Eric Forman[3], Anders Andersen[3], Zhiming Zhang[3], Lee Blonder[3], Ramesh Bhatt[3], Peter Hardy[3]
[1]Medical University of South Carolina, Charleston, United States, [2]Medical University of South Carolina, Charleston, SC, [3]University of Kentucky, Lexington, KY

**3308 Amygdala Volume Predicts Inter-Individual Performance in Rapid Fear Faces Recognition**

Ke Zhao[1], Wen-Jing Yan[1], Yu-Hsin Chen[1], Xi-Nian Zuo[1], Xiaolan Fu[1]
[1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China

**3309 An ERP study of task-relevant and -irrelevant emotion in participants with symptoms of depression**

Fern Jaspers-Fayer[1], Jennifer Barrie[2], Mario Liotti[3], Matthias Ertl[4]
[1]Simon Fraser University, Vancouver, Canada, [2]BC Children's Hospital, Vancouver, BC, [3]Simon Fraser University, Vancouver, BC, [4]Department of Psychiatry and Psychotherapy University Medical Centre Hamburg-Eppendorf, Hamburg, Germany

**3310 An eye color fixation task mitigates amygdala responses to fearful faces**

Alison Mattek[1], Paul Whalen[2]
[1]Dartmouth College, Hanover, United States, [2]Dartmouth, Hanover, NH

**3311 Are affective responses in fMRI independent of previous affect-inducing stimuli?**

MOHAMMAD MOGHADAMFALAHI[1], Ajay Satpute[2], Murat Akcakaya[1], Dana Brooks[3], Jennifer Dy[4], Deniz Erdogmus[1], Lisa Barrett[2]
[1]Electrical and Comp. Engineering Dept.,Northeastern University, Boston, MA, [2]Affective Scinece Institute,Northeastern Univarsity, Boston, MA, [3]Center for Integrative Biomedical Computing,U. of Utah;Engineering Department,Northeaster University, Boston, MA, [4]Electrical and Comp. Engineering Dept.,Northeastern University, boston, MA

**3312 Brain Regions for Representation of Negative Affect Revealed by Repetition Suppression**

Ikuko Mukai[1], W. Kyle Simmons[2], Rashmi Singh[2], Patrick Bellgowan[2]
[1]Laureate Institute for Brain Research, Tulsa, OK, United States, [2]Laureate Institute for Brain Research, Tulsa, OK

**3313 Cerebral processing of nonverbal affective vocalizations studied using MEG and voice morphing**

Emilie SALVIA[1], Patricia Bestelmeyer[2], Joachim Gross[1], Pascal Belin[1]
[1]University of Glasgow, GLASGOW, United Kingdom, [2]Bangor University, Bangor, Gwynedd, United Kingdom

**3314 Comparing EEG responses to emotions expressed through music, speech and non-linguistic vocalizations**

Simon Rigoulot[1,2,3], William Aubé[2,4], Isabelle Peretz[2,4], Marc Pell[5], Jorge Armony[1,2,3]
[1]Dept. of Psychiatry, McGill University, Montreal, QC, Canada, [2]Centre for Research on Brain, Music and Language, Montreal, QC, Canada, [3]Douglas Mental Health University Institute, Montreal, QC, Canada, [4]Dept. of Psychology, Université de Montréal, Montreal, QC, Canada, [5]School of Communication Sciences and Disorders, McGill University, Montreal, QC, Canada

**3315 Coordinated Insular and Amygdalar Networks Underlie Experience Across Discrete Emotion Categories**

Gal Raz[1,2], Christine Wilson-Mendenhall[3,4], Alexandra Touroutoglou[4], Shir Atzil[3,4], Yael Jacob[1,5], Gadi Gilam[1,6], Tamar Lin[7,6], Tal Gonen[8,6], Roee Admon[1,4,9], Lisa Feldman Barrett[3,4], Talma Hendler[8,2,10]
[1]Functional Brain Center, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, [3]Northeastern University, Boston, MA, [4]Massachusetts General Hospital, Harvard Medical School, Boston, MA, [5]Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, Israel, [6]School of Psychological Sciences, Tel Aviv, Israel, [7]Wohl Institute for Advanced Imaging, Sourasky Medical Center, Tel-Aviv, Israel, [8]Functional Brain Center, Tel Aviv Sourasky Medical Center, Tel-Aviv, Israel, [9]Center for Depression, Anxiety and Stress Research, McLean Hospital, Harvard Medical School, Belmont, MA, [10]School of Psychological Sciences, Tel Aviv University, Tel Aviv, Israel

**3316 Cross-Cultural Differences of Cerebral Responses to Affective Voices by Caucasian & Asian Listeners**

Michihiko Koeda[1,2], David Fleming[1], Sébastien Paquette[1], Frances Crabbe[3], Pascal Belin[1]
[1]Voice Neurocognition Laboratory, Institute of Neuroscience & Psychology, University of Glasgow, Glasgow, United Kingdom, [2]Department of Neuropsychiatry, Nippon Medical School, Tokyo, Japan, [3]Centre for Cognitive Neuroimaging, Institute of Neuroscience & Psychology, University of Glasgow, Glasgow, United Kingdom

**3317 Detection of facial mimicry by electromyography during fMRI scanning**

Gustav Nilsonne[1,2], Sandra Tamm[1], Paolo d'Onofrio[2], Johanna Schwarz[2], Göran Kecklund[2], Mats Lekander[1], Torbjörn Åkerstedt[2], Håkan Fischer[2]
[1]Karolinska Institutet, Stockholm, Sweden, [2]Stockholm University, Stockholm, Sweden

**3318 Distributed brain networks involved in emotion processing and emotional traits**

Alexander Petti[1], Daniel Kessler[1], Scarlet Guo[1], Jon-Kar Zubieta[1], Chandra Sripada[1], Brian Mickey[1]
[1]University of Michigan, Ann Arbor, United States

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3319 Early attentional bias to emotional pictures: Evidence for a distinct frontal generator**
Patrick Carolan[1], Deyar Asmaro[2], Mario Liotti[3]
[1]Simon Fraser University, Burnaby, BC, Canada, [2]Simon Fraser University, Burnaby, Canada, [3]Simon Fraser University, Vancouver, BC

**3320 EEG alpha-band activity in response to auditory emotional expressions**
Sophie Nolden[1,2], Simon Rigoulot[1,3,4], Pierre Jolicoeur[1,2], Jorge Armony[1,3,4]
[1]International Laboratory for Brain, Music and Sound Research (BRAMS), Montreal, QC, Canada, [2]CERNEC, Université de Montréal, Montreal, QC, Canada, [3]Dept. of Psychiatry, McGill University, Montreal, QC, Canada, [4]Douglas Mental Health University Institute, Montreal, QC, Canada

**3321 Effective connectivity during voluntary cognitive re-appraisal emotion regulation**
Sabin Khadka[1], Katie Bessette[1], Alexandra Gaynor[1], Godfrey Pearlson[1,2], Suzanne Witt[1], Michael Stevens[1,2]
[1]Olin Neuropsychiatry Research Center, Hartford Hospital, Hartford, CT, U.S.A., [2]Department of Psychiatry, Yale University, New Haven, CT, U.S.A.

**3322 Effects of gaze direction, head orientation and valence of facial expression on amygdala activation**
Thomas Straube[1], Martin Mothes-Lasch[1], Andreas Sauer[2]
[1]Institute of Medical Psychology and Systems Neuroscience, Muenster, Germany, [2]MPI for Brain Research, Frankfurt/ Main, Germany

**3323 Emotion regulation by cognitive reappraisal — The role of frontal theta oscillations**
Matthias Ertl[1,2,3], Maria Hildebrandt[1], Kristina Ourina[1], Gregor Leicht[1], Christoph Mulert[1]
[1]Department of Psychiatry, Hamburg, Germany, [2]Institute of Biomedical Engineering and Informatics, Ilmenau University of Technology, Ilmenau, Germany, [3]Department of Neurology, Ludwig-Maximilians-University, Munich, Germany

**3324 Emotional Mismatch negativity is associated with unconscious processing of amygdala reactivity**
Chia Hsuan Hu[1], Yawei Cheng[1,2]
[1]Institute of Neuroscience and Brain Research Center, National Yang-Ming University, Tapei, Taiwan, [2]Department of Rehabilitation, National Yang-Ming University Hospita, Yilan, Taiwan

**3325 Empathic neural processing among antisocial individuals: Typical responding and voluntary modulation**
Nathan Arbuckle[1], Matthew Shane[2,3]
[1]Mind Research Network, Albuquerque, United States, [2]University of Ontario Institute of Technology, Oshawa, Ontario, [3]Mind Research Network, Albuquerque , NM

**3326 Explicit and implicit emotion regulation affect amygdala differently - An ALE meta-analysis**
Susanne Leiberg[1], Ernst Fehr[2], Simon Eickhoff[3], Robert Langner[4]
[1]Laboratory for Social and Neural Systems Research, Zurich, Switzerland, [2]University of Zurich, Zurich, Switzerland, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [4]Heinrich Heine University, Duesseldorf, Germany

**3327 Gender differences in the activation of temporal voice areas while reading voice descriptions**
Carolin Brück[1], Benjamin Kreifelts[2], Christina Gößling-Arnold[3], Jürgen Wertheimer[3], Dirk Wildgruber[4]
[1]Eberhard- Karls- University, Tübingen -Department of Psychiatry and Psychotherapy, Tübingen, Germany, [2] Tuebingen, Germany, [3]Eberhard Karls University, Department of Comparative Literature (International Literature), Tübingen, Germany, [4]Dpt. of Psychiatry, University of Tuebingen, Tuebingen, Germany

**3328 Hemodynamic response and functional connectivity in women and men while experiencing compassion**
Geraldine Rodríguez-Nieto[1], Roberto Mercadillo[1], Joel Martínez-Soto[1], Leopoldo González-Santos[1], Fernando Barrios[1]
[1]Universidad Nacional Autónoma de México, Querétaro, QRO

**3329 Human Attack Pictures Produce Increased Activity in Motor-related Areas**
Mirtes Pereira[1], Liana Portugal[2,3], Orlando Fernandes Junior[3], Rita de Cassia Alves[3], Tiago Sanchez[4], Izabela Mocaiber[3], Isabel David[3], Fatima Erthal[4], Eliane Volchan[4], Leticia Oliveira[1]
[1]Federal Fluminense University, Niterói, Brazil, [2]Computer Science Department, University College London, London, United Kingdom, [3]Federal Fluminense University, Niteroi, Brazil, [4]Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

**3330 Neural Activity Associated with Online Game Images from Diablo III in Healthy Internet Users**
Hyeon Min An[1], Shin Ah Kim[1], You Jin Jung[1], Hyeon Guk Kang[1], Sang Hee Kim[1]
[1]Department of Brain and Cognitive Engineering, Korea University, Seoul, Korea, Republic of

**3331 Neural basis of anger regulation- insights in up-and down regulation using reappraisal**
Tanja Kellermann[1], Jens Blechert[2], Felix Hoffstaedter[3], Frank Schneider[4], Birgit Derntl[4]
[1]RWTH Aachen University, Aachen, Germany, [2]Department of Psychology, University of Salzburg, Salzburg, Austria, [3]Research Center Jülich, Jülich, Germany, [4]RWTH Aachen University, Aachen, Germany


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**3332 Neural basis of emotional conflict induced by interference of contextual sentence**
Zhiguo Hu[1], Hongyan Liu[2]
[1]Center for Cognition and Brain Disorders,Hangzhou Normal University, Hangzhou, China, [2]Department of Psychology, Zhejiang Sci-Tech University, Hangzhou, China

**3333 Neural responses to emotional voices: Dissociable effects of attentional focus and demands**
Martin Mothes-Lasch[1], Thomas Straube[1]
[1]University of Muenster, Muenster, Germany

**3334 Neural substrate of the late positive potential in emotional processing**
Mingzhou Ding[1], Yuelu Liu[1], Haiqing Huang[1], Menton McGinnis[1], Andreas Keil[1]
[1]University of Florida, Gainesville, FL

**3335 Neural substrates of sound stimulation effects on the implicit processing of facial emotions**
Tiziana Quarto[1], Giuseppe Blasi[2], Maria Celeste Fasano[2], Leonardo Fazio[2], Paolo Taurisano[2], Alessandro Bertolino[2], Elvira Brattico[3]
[1]University of Helsinki, Helsinki, Finland, [2]University of Bari Aldo Moro, Bari, Italy, [3]Brain & Mind Lab, Aalto University, Espoo, Finland

**3336 Neuroimaging Correlates of Implicit Emotional Processing Biases in Major Depressive Disorder**
Teresa Victor[1], Jonathan Savitz[1,2], Patrick Bellgowan[1,2], Jerzy Bodurka[1,3], Wayne Drevets[1,4]
[1]Laureate Institute for Brain Research, Tulsa, United States, [2]Tulsa School of Community Medicine at the University of Tulsa, Tulsa, United States, [3]College of Engineering at the University of Oklahoma, Tulsa, United States, [4]Janssen Pharmaceuticals of Johnson & Johnson, Inc., Titusville, United States

**3337 Neuroticism and extraversion modulate cortical-amygdala coupling before, during and after stress**
Henk Cremers[1], Ilya Veer[2], Philip Spinhoven[3], Serge Rombouts[2], Karin Roelofs[4]
[1]University of Chicago, Chicago, United States, [2]Leiden Institute for Brain and Cognition, Leiden, Netherlands, [3]Leiden University - Institute of Psychology, Leiden, Netherlands, [4]Radboud University Nijmegen (RUN): Behavioral Science Institute (BSI) and Donders Institute for Bra, Nijmegen, Netherlands

**3338 Physiological Mood Features Modulate Resting State Brain Activity In Healthy Individuals**
Ioana Cristea[1,2], Gentili Claudio[3], Emiliano Ricciardi[4], Nicola Vanello[5], Pietro Pietrini[6]
[1]Department of Clinical Psychology and Psychotherapy, Babes-Bolyai University, Cluj-Napoca, Romania, [2]Department of Pathology, University of Pisa, Pisa, Italy, [3]Chair of Clinical Psychology, Department of Pathology, University of Pisa, Pisa, Italy, [4]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, [5]Department of Information Engineering, University of Pisa, Italy, Pisa, Italy, [6]University of Pisa Medical School, Pisa, Italy

**3339 Test-Retest Reliability of Emotional Mismatch Negativity**
pin-chia huang[1], Yawei Cheng[1,2], Shin-Yi Lee[1]
[1]Institute of Neuroscience and Brain Research Center, National Yang-Ming University, Taipei, Taiwan, [2]Department of Rehabilitation, National Yang-Ming University Hospital, Yilan, Taiwan

**3340 Tests of Modality-specific Affective Processing for Visual and Auditory Stimuli Derived from fMRI**
Svetlana Shinkareva[1], Jing Wang[1], Jongwan Kim[1], Matthew Facciani[1], Laura Baucom[1], Douglas Wedell[1]
[1]University of South Carolina, Columbia, United States

**3341 Withdrawn**

**3342 The neural mechanisms involved in overcoming emotional distraction**
Robert Clarke[1], Tom Johnstone[1]
[1]University of Reading, Reading, United Kingdom

**3343 Timing of Emotional Discrimination in Human Amygdala and Ventrolateral Prefrontal Cortex**
Satoru Kohno[1], Madoka Noriuchi[1], Yoshinobu Iguchi[1], Yoshiaki Kikuchi[2], Yoko Hoshi[1]
[1]Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan, [2]Graduate School of Tokyo Metropolitan University, Tokyo, Japan

**3344 Valence modulation of crossmodal olfactory-visual neural integration**
Jessica Freiherr[1], Anna-Nora zur Nieden[1], Johan Lundström[2,3,4]
[1]RWTH Aachen University, Aachen, Germany, [2]Monell Chemical Senses Center, Philadelphia, PA, [3]University of Pennsylvania, Philadelphia, PA, [4]Karolinska Institute, Stockholm, Sweden

**3345 Withdrawn**

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## Emotion and Motivation

### Reward and Punishment

**3346 A multimodal study on gain and loss anticipation combining fMRI and EEG**
Daniela M. Pfabigan[1], Eva-Maria Seidel[1], Ronald Sladky[2,3], Andreas Hahn[4], Katharina Paul[1], Martin Kueblboeck[2,3], Christoph Kraus[4], Allan Hummer[2,3], Georg Kranz[4], Christian Windischberger[2,3], Rupert Lanzenberger[4], Claus Lamm[1]
[1]Social Cognitive and Affective Neuroscience Unit, Faculty of Psychology, University of Vienna, Vienna, Austria, [2]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria, [3]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [4]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria

**3347 Alternated brain responses in alcoholics during the rejection of alcohol-associated cues**
Tobias Melcher[1], Bernd Kraemer[1], Jasmin Said[1], Andrea Sauer[1], Oliver Gruber[1]
[1]University Medical Center Göttingen, Goettingen, Germany

**3348 Amygdala activation by fearful faces modulates the fronto-striatal reward system**
Bernd Kraemer[1], Oliver Gruber[1]
[1]Center for Translational Research in Systems Neuroscience and Psychiatry, Georg August University, Goettingen, Germany

**3349 Anterior Cingulate Cortex Morphology Correlates with Changes in Intrasubject Variability with Reward**
Keri Rosch[1], Benjamin Dirlikov[2], Stewart Mostofsky[3]
[1]Kennedy Krieger Institute, Baltimore, MD, [2]The Kennedy Krieger Institure, Baltimore, United States, [3]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**3350 Anticipation of social but not monetary reward engages the default mode network**
Adriana Barman[1], Joram Soch[2], Anna Deibele[1], Sylvia Richter[3], Constanze Seidenbecher[1], Björn Schott[2]
[1]Leibniz Institute for Neurobiology, Magdeburg, Germany, [2]Charité, Berlin, Germany, [3]University of Salzburg, Salzburg, Austria

**3351 Balancing Reward and Work: Anticipatory Brain Activation in NAcc and VTA Encode Effort Differential**
Nils Kroemer[1], Caroline Burrasch[1], Alvaro Guevara[1], Iuliana Teodorescu[2], Franziska Wuttig[1], Andrea Kobiella[1], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany, [2]University of Oxford, Oxford, United Kingdom

**3352 Chronic Back Pain Patients Show Differences in Behavior and Brain Activity in a Loss Aversion Task**
Sara Berger[1], Alex Baria[2], Marwan Baliki[1], Ali Mansour[3], A. Vania Apkarian[2]
[1]Northwestern University, Chicago, United States, [2]Northwestern University, Chicago, IL, [3]Northwestern University

**3353 Clustering by weight and eating style reveals congruent structural and functional brain differences**
Annette Horstmann[1], Anja Dietrich[1], Burkhard Pleger[2], Arno Villringer[3], Maurice Hollmann[4]
[1]MPI for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Department of Neurology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]Max-Planck-Institute for Human Cognitive and Brain Sciences

**3354 Effects of oxytocin on amygdala activation during anticipation of faces in socially anxious women**
Sarah Groppe[1], Anna Gossen[1], Lena Rademacher[1], Alexa Nellen[1], Luzie Westphal[1], Gerhard Gründer[1], Katja Spreckelmeyer[2]
[1]RWTH Aachen University Department of Psychiatry, Psychotherapy and Psychosomatics, Aachen, Germany, [2]Stanford University Department of Psychology, Stanford, CA, USA

**3355 Global and local functional connectivity changes with increased body weight**
Paul Geha[1], R Constable[1], Guillermo Cecchi[2], Dana Small[3]
[1]Yale University, New Haven, CT, [2]IBM, Thomas J. Watson Research Center, Yorktown Heights, NY, [3]Yale University & The John B. Pierce Laboratory, New Haven, CT

**3356 Human functional connectivity in relation to delay discounting with ADHD**
KAMARI AYKES[1], Taciana Costa Dias[2], Suzanne Mitchell[3], Joel Nigg[4], Damien Fair[5]
[1]OREGON HEALTH & SCIENCE UNIVERSITY, PORTLAND, United States, [2]Universidade de São Paulo, São Paulo, Brazil, [3]Oregon health & science university, Portland, OR, [4]Oregon Health & Science University, Portland, OR, [5]Oregon Health & Science University, Portland, United States

**3357 Linking Discount Rate and Consistency in Intertemporal Choice Task with Anticipatory Brain Responses**
Alvaro Guevara[1,2], Nils Kroemer[1], Michael Smolka[1]
[1]Technische Universität Dresden, Dresden, Germany, [2]Universidad de Costa Rica, San José, Costa Rica

**3358 Menstrual cycle phase modulates mesolimbic activity and the certainty of response during learning**
Esther Diekhof[1], Marian Langbehn[1]
[1]University of Hamburg, Institute of Human Biology, Neuroendocrinology Unit, Hamburg, Germany

**3359 Menstrual cycle phase modulates reward sensitivity and performance monitoring in young women**
Melanie Ratnayake[1], Luise Reimers[1], Marian Langbehn[1], Yumi Hartmann[1], Christian Büchel[2], Esther Diekhof[1]
[1]University of Hamburg, Institute of Human Biology, Neuroendocrinology Unit, Hamburg, Germany, [2]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany


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**3360 Neural Correlates of Chocolate Craving during Cue Exposure with Response Prevention**
Astrid Frankort[1], Anne Roefs[1], Nicolette Siep[1], Alard Roebroeck[1], Remco Havermans[1], Anita Jansen[1]
[1]Maastricht University, Maastricht, Netherlands

**3361 Neural Correlates of Sleep Deprivation and Food Intake**
Ruri Katsunuma[1], Kentaro Oba[1], Yuki Motomura[1], Yuri Terasawa[1], Kyoko Nakazaki[1], Yasuko Katayose[1], Shingo Kitamura[1], Akiko Hida[1], Yoshiya Moriguchi[1], Kazuo Mishima[1]
[1]National Center of Neurology and Psychiatry, Tokyo, Japan

**3362 Neuroplastic effects of goal-directed mood and bipolar symptoms on reward and executive function**
Christina Young[1], Mutahir Rauf[1], Sandra Shi[1], Todd Parrish[2], Robin Nusslock[1]
[1]Northwestern University, Evanston, IL, [2]Northwestern University, Chicago, IL

**3363 Relation between personality traits and brain reward responses when playing on a team**
Carmen Morawetz[1], Toni Muffel[1], Evgeniya Kirilina[2], Juergen Baudewig[3], Hauke Heekeren[1]
[1]Department of Education and Psychology, Freie Universitaet Berlin, Berlin, Germany, [2]Dahlem Institute for Neuroimaging of Emotion, Freie Universitaet Berlin, Berlin, Germany, [3]Biomedical Imaging, Department of Radiology, Christian-Albrecht University Kiel, Kiel, Germany

**3364 Reward anticipation in patients with anorexia nervosa**
Stefan Ehrlich[1], Daniel Geisler[1], Marion Breier[1], Luisa Flohr[1], Franziska Ritschel[1], Johannes Zwipp[1], Yvonne Friedrich[1], Jessica Weiss[1], Nils Kroemer[2], Michael Smolka[3], Veit Roessner[1]
[1]Dresden University of Technology, Department of Child and Adolescent Psychiatry, Dresden, Germany, [2]Dresden University of Technology, Department of Psychiatry, Dresden, Germany, [3]Technische Universität Dresden, Dresden, Germany

**3365 The Anterior Cingulate Gyrus signals the net-value of others' rewards**
Matthew Apps[1], Narender Ramnani[1]
[1]Royal Holloway, University of london, Egham, United Kingdom

**3366 The impact of obesity, gender and impulsivity on fronto-striatal system function**
David Mathar[1,2], Jane Neumann[1,2], Burkhard Pleger[1,2,3,4], Arno Villringer[1,2,3,4], Annette Horstmann[1,2]
[1]MPI for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Leipzig University Medical Center, IFB Adiposity Diseases, Leipzig, Germany, [3]Clinic of Cognitive Neurology, University Hospital Leipzig, Leipzig, Germany, [4]Mind & Brain Institute, Berlin School of Mind and Brain, Humboldt-University, Berlin, Germany

**3367 The neural substrate of prediction errors: an Activation likelihood estimation meta analysis**
Poornima Kumar[1,2], Henry Chase[3], Simon Eickhoff[4,5], Alexandre Dombrovski[3]
[1]Center for Depression, Anxiety and Stress Research, McLean Hospital, Harvard Medical School, Belmont, MA, United States, [2]Department of Psychiatry, Harvard Medical School, Boston, MA, United States, [3]Department of Psychiatry, University of Pittsburgh, Pittsburgh, PA, United States, [4]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [5]Research Centre Jülich, Institute of Neuroscience and Medicine (INM-1), Jülich, Germany

## Emotion and Motivation

### Sexual Behavior

**3368 Gender differences in erotic stimulus-related brain network**
Sang Won Lee[1], bum seok Jeong[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of

**3369 Intrinsic connectivity networks and sexual risk behavior among high-risk adolescents**
Jon Houck[1,2], Sarah Feldstein Ewing[1], Angela Bryan[3,2]
[1]University of New Mexico, Albuquerque, NM, [2]Mind Research Network, Albuquerque, NM, [3]University of Colorado, Boulder, CO

**3370 Neuronal long-term effects of increasing sexual arousal studied with resting state fMRI**
Coraline Metzger[1,2,3], Constanze Seidenbecher[4], Anna Linda Krause[1,3], Anika Hentrich[1,3], Johann Steiner[1,3], Joern Kaufmann[5], Claus Tempelmann[5], Bernhard Bogerts[1,3], Martin Walter[1,2,3]
[1]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany, [2]Leibniz Institute for Neurobiology, Magdeburg, Germany, [3]Center for Behavioral Brain Sciences (CBBS), Magdeburg, Germany, [4]Department of Neurochemistry and Molecular Biology, Leibniz Institute for Neurobiology, Magdeburg, Germany, [5]Department of Neurology, Otto-von-Guericke University, Magdeburg, Germany

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Imaging Methods

### Anatomical MRI

**3371 350 µm isotropic, high-contrast, low-blur, low-distortion MPRAGE morphometry acquisition at 3T**
M. Dylan Tisdall[1], Jonathan Polimeni[1], Jean Augustinack[1], Andre J.W. van der Kouwe[1]
[1]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**3372 50 ways to assess brain volumes — effects of various SPM8-VBM approaches and template composition**
Traute Demirakca[1], Julia van Eijk[1], Matthias Ruf[1], Gabriele Ende[1]
[1]Central Institute of Mental Health, Mannheim, Germany

**3373 A Gradient Based Algorithm For Imaging Electrical Properties Using Magnetic Resonance Imaging**
Jiaen Liu[1], Xiaotong Zhang[1], Sebastian Schmitter[2], Pierre-Francois Van de Moortele[2], Bin He[1,3]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, United States, [2]CMRR - University of Minnesota, Minneapolis, United States, [3]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, United States

**3374 Auditory cortex is implicated in tinnitus distress: a voxel-based morphometry study**
Martin Schecklmann[1], Astrid Lehner[2], Timm Poeppl[1], Peter Kreuzer[2], Rainer Rupprecht[2], Julia Rackl[2], Julia Burger[2], Elmar Frank[2], Göran Hajak[3], Berthold Langguth[2], Michael Landgrebe[3]
[1]University of Regensburg, Department of Psychiatry and Psychotherapy, Regensburg, Germany, [2]University of Regensburg, Department of Psychiatry, Regensburg, Germany, [3]Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, Social Foundation Bamberg, Bamberg, Germany

**3375 Automated method for measuring the atrophy of the cortex using surface based approach**
Kichang Kwak[1], Uicheul Yoon[2], Sang Won Seo[3], Duk L. Na[3], Jong-Min Lee[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of, [3]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of

****3376 Background-Suppressed Myelin Water Imaging**
Sehong Oh[1], Jongho Lee[1]
[1]Department of Radiology, Perelman School of Medicine,University of Pennsylvania, Philadelphia, PA, United States

**3377 Borderline Intellectual Functioning: the relationship between brain volume and IQ profile**
Monia Cabinio[1,2], Francesca Baglio[1], Cristian Ricci[3], Gisella Baglio[1], Maria Giulia Preti[1,4], Ludovica Griffanti[1,4], Mario Clerici[1,2], Michela Zanette[5], Valeria Blasi[1]
[1]Fondazione Don Carlo Gnocchi ONLUS, MR Laboratory, Milan, Italy, [2]Università Statale di Milano, Milan, Italy, [3]Fondazione Don Carlo Gnocchi ONLUS, Epidemiology and Statistics Unit, Milan, Italy, [4]Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milan, Italy, [5]Fondazione Don Carlo Gnocchi ONLUS, Adolescence and Pediatric Neuropsychiatry Unit, Milan, Italy

**3378 Withdrawn**

**3379 Cross-Samples Cross-Methods Cross-Pipelines Exploration of Structural Correlates of Suicidal Risk**
Yang Ding[1], Natalia Lawrence[2], Emilie Olié[3], Fabienne Cyprien[4], Emmanuelle le Bars[5], Alain Bonafé[6], Gustavo Turecki[1], Mary Phillips[7], Philippe Courtet[4], Fabrice Jollant[1]
[1]McGill Group for Suicide Studies, Douglas Mental Health University Institute, McGill University, Montreal, Canada, [2]Mood Disorders Centre, School of Psychology, University of Exeter, Exeter, UK, [3]Université Montpellier I & CHU Montpellier, Department of Psychiatry & Inserm, U1061, Montpellier, France, [4]Université Montpellier I & CHU Montpellier, department of psychiatry & Inserm, U1061, Montpellier, France, [5]Université Montpellier I & CHU Montpellier, Department of Radiology,, Montpellier, France, [6]Université Montpellier I & CHU Montpellier, Department of Radiology, Montpellier, France, [7]Clinical and Translational Affective Neuroscience Program, University of Pittsburgh School of Medic, Pittsburgh, USA

**3380 Differences in Cortical Thickness Among Deaf Signers, Hearing Signers, and Hearing Nonsigners**
Stephen McCullough[1], Karen Emmorey[2]
[1]San Diego State University, San Diego, United States, [2]San Diego State University, San Diego, CA

**3381 Education-related volumes:an index of cognitive reserve or the effect of cardiovascular risk factors**
Moyra Mortby[1], Andrew Janke[2], Richard Burns[1], Perminder Sachdev[3], Kaarin Anstey[1], Nicolas Cherbuin[1]
[1]Australian National University, Canberra, Australia, [2]University of Queensland, Brisbane, QLD, [3]University of New South Wales, Sydney, NSW



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**3382 Estimating pituitary volume from T1-weighted MR images: effects of age, puberty, and testosterone**
Angelita Pui-Yee Wong[1,2], Jon Pipitone[3,4], Min Tae Park[3,4], Erin Dickie[2], Gabriel Leonard[5], Michel Perron[6,7], G. Bruce Pike[5], Louis Richer[6], Suzanne Veillette[6,7], Mallar Chakravarty[2,3,4,8,9], Zdenka Pausova[10], Tomas Paus[1,2,5,8]
[1]Department of Psychology, University of Toronto, Toronto, Canada, [2]Rotman Research Institute, University of Toronto, Toronto, Canada, [3]Centre for Addiction and Mental Health, Toronto, Canada, [4]Kimel Family Translational Imaging Genetics Research Laboratory, Toronto, Canada, [5]Montréal Neurological Institute, McGill University, Montréal, Canada, [6]Université du Québec à Chicoutimi, Chicoutimi, Canada, [7]ECOBES, Research and transfert, Cegep of Jonquiere, Jonquiere, Canada, [8]Department of Psychiatry, University of Toronto, Toronto, Canada, [9]Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada, [10]The Hospital for Sick Children, Toronto, Canada

**3383 Evaluation of Automated Hippocampal Segmentation Software in a Clinically Complex Psychiatric Sample**
Cassie MacRae[1], Geoffrey Smith[1], William Panenka[1], Wayne Su[1], William Honer[1], Donna Lang[1]
[1]University of British Columbia, Vancouver, Canada

***3384 Fine details of brain anatomy revealed in-vivo by ultra-high resolution quantitative T1 mapping, (O-M4)**
Pierre-Louis Bazin[1], Andreas Schäfer[1], Juliane Dinse[1], Christine Tardif[1], Miriam Waehnert[1,2], Eyesha Hashim[3], Laurentius Huber[1], Stefan Geyer[1], Nicholas Bock[3], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]OvGU Magdeburg, Magdeburg, Germany, [3]MacMaster University, Hamilton, Ontario, Canada

**3385 Grey matter volume differences in spinal cord injury patients with and without pain**
Thomas Mole[1], Kate MacIver[2], Vanessa Sluming[3], Turo Nurmikko[2]
[1]Pain Research Institute, Liverpool, United Kingdom, [2]Pain Research Institute, WCNN, Liverpool, United Kingdom, [3]University of Liverpool, Liverpool, United Kingdom

**3386 Impact of Repeated MRI on Long Term Outcome of Healthy Children**
Mekibib Altaye[1], Scott Holland[2]
[1]Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, [2]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**3387 Improved reconstruction of parallel multi-slice imaging using TV regularization**
Ya-jun Ma[1], Wentao Liu[1], Xin Tang[1], Huanjie Li[1], Yang Fan[1], Jia-Hong Gao[1,2]
[1]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [2]University of Chicago, Chicago, IL

**3388 Mapping T1rho and T2rho relaxation across the whole brain with robust MRI sequences**
Ovidiu Andronesi[1], Himanshu Bhat[2], Martin Reuter[1], Bruce Rosen[1]
[1]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA, [2]Siemens Medical Solutions USA Inc., Charlestown, MA, USA

**3389 Measurement variability in quantitative brain MRI and its importance for epidemiologic studies**
Anja Teuber[1], André Kemmling[2], Harald Kugel[3], Michael Deppe[4], Klaus Berger[1], Heike Wersching[1]
[1]Institute for Epidemiology and Social Medicine, Muenster, Germany, [2]Department of Diagnostic and Interventional Neuroradiology, Hamburg, Germany, [3]Dept. of Clinical Radiology, University of Muenster, Muenster, Germany, [4]University of Muenster, Muenster, Germany

**3390 Medical Image Registration Based on High Order Tensor Statistics**
Songyuan Tang[1]
[1]Beijing Institute of Technology, Beijing, China

**3391 Multiband Slice Accelerated Spin Echo T2-weighted Imaging with Whole Brain Coverage at 7 Tesla**
Dingxin Wang[1,2], An Vu[2], Edward Auerbach[2], Steen Moeller[2], Essa Yacoub[2], Kamil Ugurbil[2], Vibhas Deshpande[3]
[1]Siemens Healthcare, Minneapolis, MN, [2]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN, [3]Siemens Medical Solutions USA Inc., Austin, TX

**3392 Multiple T1 Components in White Matter of the Brain**
Daeun Kim[1], Jongho Lee[2]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, [2]1Department of Radiology, University of Pennsylvania, Philadelphia, PA

**3393 Neural correlates of Jung's psychological types**
Daewook Ko[1], Yeonsun Choi[1], Soyoung Youn[1], Yong-Wook Shin[1]
[1]Department of Psychiatry, ASAN Medical Center, University of Ulsan College of Medicine, Seoul, Korea

**3394 Neuroimaging sex differences in gray and white matter**
Dennis van 't Ent[1,2], Anouk den Braber[1,2], Diederick Stoffers[3,4,2,5], Klaus Linkenkaer-Hansen[3,4,2], Dorret Boomsma[1], Eco de Geus[1]
[1]Department of Biological Psychology, VU university, Amsterdam, Netherlands, [2]Neuroscience Campus Amsterdam, Amsterdam, Netherlands, [3]Department of Integrative Neurophysiology, VU university, Amsterdam, Netherlands, [4]Center for Neurogenomics and Cognitive Research, Amsterdam, Netherlands, [5]Department of Sleep and Cognition, Netherlands Institute for Neuroscience, Amsterdam, Netherlands

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3395 Neuroimaging-Genetics Pipelines: Big Data, Independent Software Tools and Dispersed Devices**
Ivo Dinov[1], Paul Eggert[2], Jonathan Pierce[2], Sam Sam Hobel [2], Zhizhong Liu[2], Petros Petrosyan[2], Alen Zamanyan[2], John Van Horn[3], Arthur Toga[3]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA, [3]University of California, Los Angeles, Los Angeles, CA

**3396 Novel combination of T1- and T2-weighted MRI images for enhancing structural contrast**
Masaya Misaki[1], Jonathan Savitz[1,2], Vadim Zotev[1], Raquel Phillips[1], Han Yuan[1], Kymberly Young[1], Wayne Drevets[1,3], Jerzy Bodurka[1,4]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]Tulsa School of Community Medicine, University of Tulsa, Tulsa, Tulsa, OK, [3]Johnson & Johnson, Inc., New Brunswick, NJ, [4]College of Engineering, University of Oklahoma, Tulsa, OK

**3397 Novel Erosion/Dilation Method To Eliminate Edge Artifacts Stemming From MRI Inhomogeneity Correction**
Kevin McCarthy[1], Francois Lalonde[1], Jay Giedd[1], Wen-Ming Luh[2]
[1]Child Psychiatry Branch, NIMH, Bethesda, United States, [2]FMRIF, NIMH, Bethesda, United States

**3398 Placement in Scanner Causes Significant Diagnostic Errors in Brain Tumors Treatment Assessment**
Martin Reuter[1], Otto Rapalino[1], Elizabeth Gerstner[1], Bruce Fischl[1]
[1]Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

**3399 Postmortem temperature effects on human brain MRI signal intensity within the first 24 hours**
Rafael Emídio da Silva[1], Maria Otaduy[2], Edson Amaro Junior[2]
[1]Radiology Institute, University of Sao Paulo, Sao Paulo, Brazil, [2]University of São Paulo, São Paulo, Brazil

**3400 Quantitative Validation of Morphometric Data from a Rapid 2-Minute Multi-Echo MPRAGE Scan**
Ross Mair[1,2], Martin Reuter[2,3], Andre J.W. van der Kouwe[2], Bruce Fischl[2,4], Randy Buckner[1,2]
[1]Center for Brain Science, Harvard University, Cambridge, MA, [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, [3]Dept. of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, [4]Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA

**3401 Reducing MRI gradient nonlinearity distortions using the ADNI phantom**
Jesper Fredriksson[1], Christine Nordahl[2]
[1]Raförninn EHF, Reykjavik, Iceland, [2]The MIND Institute University of California Davis, Sacramento, CA

**3402 Structural properties of the corticospinal tract in children exposed to prenatal maternal stress**
Melissa Pangelinan[1], Suzanne King[2], Alain Brunet[2], Mallar Chakravarty[3,4], Arnaud Charil[5], Erin Dickie[1], Richard Hoge[6], Jens Pruessner[7], David Laplante[2], Tomas Paus[8,4]
[1]Rotman Research Institute - Baycrest Centre, Toronto, Canada, [2]McGill University, Montreal, Quebec, [3]Centre for Addiction and Mental Health, Toronto, Canada, [4]University of Toronto, Toronto, Canada, [5]Biospective, Inc., Montreal, Quebec, [6]Université de Montréal, Montréal, Canada, [7]McGill University, Montréal, Canada, [8]Rotman Research Institute - Baycrest Centre, Toronto, ON

**3403 Tensor-based Morphometry on Parametric Surfaces for MRI-based Disease Detection and Classification**
Yalin Wang[1], Lei Yuan[1], Jie Shi[1], Jieping Ye[1], Arthur Toga[2], Allan Reiss[3], Paul Thompson[2]
[1]Arizona State University, Tempe, AZ, [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, CA, [3]Stanford University, Stanford, CA

**3404 Test-Retest Reliability of Cortical Thickness in an Older Sample**
Sarah Hirsiger[1], Franziskus Liem[1], Ladina Bezzola[1], Tara Madhyastha[2], Mike Martin[1], Susan Merillat[1], Lutz Jäncke[1]
[1]University of Zurich, Zurich, Switzerland, [2]University of Washington, Seattle, United States

**3405 Ultra-low field MRI for clinical and research applications**
Michelle Espy[1], John George[2], Per Magnelind[2], Andrei Matlashov[2], Henrik Sandin[2], Larry Schultz[2], Algis Urbaitis[2], Petr Volegov[2]
[1]Los Alamos National Laboratory, Los Alamos, United States, [2]Los Alamos National Laboratory, Los Alamos, NM

**3406 What is really causing the contrast in spin-echo imaging at 7T?**
Robert Trampel[1], Laurentius Huber[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

## Imaging Methods

### BOLD fMRI

**3407 A simple solution to the movement-induced distance-dependent connectivity problem in fMRI**
Ameera Patel[1], Prantik Kundu[2,1], P. Simon Jones[3], Petra Vertes[1], Mikail Rubinov[1], Edward Bullmore[1]
[1]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [2]NIMH, Bethesda, MD 20892, USA, [3]Herchel Smith Building for Brain and Mind Sciences, University of Cambridge, Cambridge, United Kingdom

**3408 Acceleration of Resting State FMRI Data Acquisition using Matrix Completion**
Mark Chiew[1], Stephen Smith[1], Peter Koopmans[1], Thomas Blumensath[2], Karla Miller[1]
[1]FMRIB Centre, University of Oxford, Oxford, United Kingdom, [2]ISVR, University of Southampton, Southampton, United Kingdom

**3409 Activated Voxel Increase 3.5 Times with Commercially Available Small Footprint Motion System in fMRI**
Hao Jia[1], Oleg Pustovyy[2], Paul Waggoner[3], Ronald Beyers[4], John Schumacher[5], Jay Barrett[6], Edward Morrison[2], Robert Gillette[5], Thomas Denney[4], Vitaly Vodyanoy[6], Gopikrishna Deshpande[7], Chester Wildey[8]
[1]Auburn University, Auburn, United States, [2]Dept. of Anatomy, Physiology & Pharmacology, Auburn University, Auburn, AL, [3]Canine Detection Research Institute, Auburn University, Auburn, AL, [4]AU MRI research center, Dept. of ECE, Auburn University, Auburn, AL, [5]Dept. of Clinical Sciences, Auburn University, Auburn, AL, [6]College of Veterinary Medicine, Auburn University, Auburn, AL, [7]AU MRI Research Center, Auburn, AL, [8]MRRA Inc., Euless, Texas, United States

**3410 Altered resting-state functional connectivity of subthalamic nucleus in early Parkinson's disease**
Guangying Jiang[1], Jiaojian Wang[1], Tianzi Jiang[2]
[1]Key Laboratory for NeuroInformation of MOE, School of Life Science and Technology, UESTC, Chengdu, China, [2]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

**3411 An fMRI study of emotional autobiographical memory retrieval and its relation to adaptive coping**
Kentaro Oba[1,2], Yuri Terasawa[1], Yuki Motomura[1], Yoshiaki Kikuchi[2], Yoshiya Moriguchi[1], Kazuo Mishima[1]
[1]National Center of Neurology and Psychiatry, Kodaira, Japan, [2]Tokyo Metropolitan University, Arakawa-Ku, Japan

**3412 Are there advantages to using 32 versus 12 channel coils in routine BOLD functional MRI experiments?**
Stephanie McMains[1], Ross Mair[2,3]
[1]Harvard University - Center for Brain Science, Cambridge, MA, [2]Harvard University - Center for Brain Science, Cambridge, United States, [3]Martinos Center For Biomedical Imaging, Charlestown, MA

**3413 Assessing the regional homogeneity of Resting-State fMRI signals to predict Task-induced Responses**
Rui Yuan[1], Eunhe Kim[2], sabrina Barik[3], Suril Gohel[4], Xin Di[5], Bharat Biswal[6]
[1]New Jersey Institute of Technology, Kearny, United States, [2]New Jersey Institute of Technology, Newark, NJ, [3]UMDNJ, Newark, NJ, [4]New Jesey Institute of Technology, Newark, NJ, [5]New Jersey Institute of Technology, Harrison, United States, [6]University of Med. and Dent. of New Jersey, Newark, NJ

**3414 Associative Cortex Responses Improve when Accounting for the Primary Cortex HRF Variability in fMRI**
Jaroslaw Harezlak[1], Mario Dzemidzic[2], Maria Kudela[1], Brandon Oberlin[2], David Kareken[2]
[1]Indiana University Fairbanks School of Public Health, Indianapolis, IN, [2]Indiana University School Medicine, Indianapolis, IN

**3415 Binocular rivalry in patients with disorders of consciousness**
Stefania Ferraro[1], Nicola Bertolino[2], Maria Grazia Bruzzone[1], Ludovico D'Incerti[1], Francesca Epifani[1], Matilde Leonardi[1], Eleonora Visintin[1], Anna Nigri[3]
[1]Neurological Fondation Carlo Besta, Milan, Italy, [2]Neurological Fondation Carlo Besta, Milano, Italy, [3]Neurological Foundation Carlo Besta, Milan, Italy

****3416 BOLD mapping of finger movement compares with electrophysiology; a combined 7T fMRI and ECoG study**
Jeroen Siero[1], Dora Hermes[2], Hans Hoogduin[3], Peter Luijten[3], Nick Ramsey[1], Natalia Petridou[1,3]
[1]Rudolf Magnus Institute, UMC Utrecht, Utrecht, Netherlands, [2]Stanford University, Stanford, CA, [3]Radiology, UMC Utrecht, Utrecht, Netherlands

**3417 BOLD signal change or activation volume — which one is more robust measure of fMRI activation?**
Pallab Bhattacharyya[1], Blessy Mathew[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, United States

**3418 Brain network properties reflect on the difference of individual communicative intelligence**
Shin-ae Yoon[1], Bumhee Park[2], Joohan Kim[3], Dae-Shik Kim[4], Eun-joo Kim[5], Hae-Jeong Park[6]
[1]Department of Radiology, Nuclear Medicine and Research Institute of Radiological Science, Yonsei Uni, [2]Department of Radiology and Division of Nuclear Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Department of Communication, Yonsei University, Seoul, Korea, Republic of, [4]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of, [5]Department of Education, Yonsei University, Seoul, Korea, Republic of, [6]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**3419 Breath-Hold Calibration Improves Detection of Fitness-Related Differences in the BOLD Response**
Mitzi Gonzales[1], Hirofumi Tanaka[2], Takashi Tarumi[2], Andreana Haley[3]
[1]University of Texas, Austin, TX, [2]Univeristy of Texas at Austin, Austin, TX, [3]University of Texas at Austin, Austin, United States

**3420 Withdrawn**

**3421 Characterization of Cerebrovascular Pulsatility in Neurological Disorders with Echo Volumar Imaging**
Stefan Posse[1], Ruslan Hummatov[2], Radu Mutihac[3], Massoud Akhtari[4], Elena Ackley[1], Muhammad Chohan[5], Bruce Fisch[1], Howard Yonas[5]
[1]University of New Mexico, Department of Neurology, Albuquerque, NM, [2]University of New Mexico, Department of Physics and Astronomy, Albuquerque, NM, [3]Walter Reed Army Institute of Research, Silver Spring, MD, [4]Semel Institute for Neuroscience & Human Behavior, UCLA, Los Angeles, CA, [5]University of New Mexico, Department of Neurosurgery, Albuquerque, NM

**3422 Chronic occupational stress is associated with selective changes in limbic connections**
Emilia Johansson[1], Walter Osika[2], Armita Golkar[1], Elin Allzen[1], Ivanka Savic[1]
[1]Karolinska Institute, Stockholm, Sweden, [2]Stockholm University, Stockholm, Sweden

**3423 Cognitive state and resting state: a comparison between conventional and emulated fMRI data**
Marisa Loitfelder[1], Daniela Pinter[1], Margit Jehna[2], Franz Fazekas[2], Siegrid Fuchs[2], Schmidt Reinhold[2], Christian Enzinger[2]
[1]Medical University Graz, Graz, Austria, [2]Medical University of Graz, Graz, Austria

**3424 Comparing quality control indices for functional MRI**
David Soltysik[1], Sunder Rajan[2], David Thomasson[3], Daniel Krainak[2], Javier Gonzalez-Castillo[4], Nadia Biassou[5]
[1]U.S. Food & Drug Administration, Silver Spring, United States, [2]U.S. Food & Drug Administration, Silver Spring, MD, [3]NIH/NIAID, Bethesda, MD, [4]National Institute of Mental Health, Bethesda, United States, [5]NIH/Radiology, Bethesda, MD

**3425 Comparing the specificity of the 3 T and 7 T BOLD response using ICA**
Alexander Geissler[1], Guenther Grabner[2], Florian Fischmeister[1], Moritz Wurnig[1], Jakob Rath[1], Thomas Foki[1], Eva Matt[1], Siegfried Trattnig[2], Roland Beisteiner[1], Simon Robinson[2]
[1]Study Group Clinical fMRI, Department of Neurology, Medical University of Vienna, Vienna, Austria, [2]MR Center of Excellence, Medical University of Vienna, Vienna, Austria

**3426 Comparison of a 32-channel and an 8-channel rf-coil for fMRI at 7T**
Roy Salomon[1], Jana Darulova[1], Wietske van der Zwaag[1]
[1]EPFL, Lausanne, Switzerland

**3427 Comparison of directly measured and modeled calibrated BOLD M-values at 7T**
Steffen Krieger[1,2], Claudine Gauthier[1], Elisabeth Roggenhofer[1], Bernhard Sehm[1], Laurentius Huber[1], Dimo Ivanov[1], Robert Turner[1], Gary Egan[2]
[1]Max-Plank Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Monash Biomedical Imaging, Melbourne, Victoria, Australia

**3428 Consistency of fMRI responses in large-datasets: does the left hemisphere predict the right one?**
Marc Berman[1], Karl Mann[2], Natasa Kovacevic[3], Erin Dickie[4], Amir Tahmasebi[5,1], Tobias Banaschewski[2], Gareth Barker[6], Arun Bokde[7], Christian Büchel[8], Patricia Conrod[9], Herta Flor[10,11], Jürgen Gallinat[12], Hugh Garavan[13,14], Penny Gowland[15], Andreas Heinz[12], Bernd Ittermann[16], Claire Lawrence[15], Eva Loth[9], Jean-Luc Martinot[17], Frauke Nees[10,11], Zdenka Pausova[18], Marcella Rietschel[2], Michael Smolka[19], Andreas Ströhle[20], Gunter Schumann[6], Tomas Paus[21,22,23], Consortium IMAGEN[24]
[1]Rotman Research Institute, Toronto, Canada, [2]Central Institute of Mental Health, Mannheim, Germany, [3]Rotman Research Institute, Baycrest Centre, Toronto, Ontario, [4]Rotman Research Institute at Baycrest, Toronto, Canada, [5]Philips Research North America, Briarcliff Manor, United States, [6]King's College London, London, United Kingdom, [7]Trinity College Dublin, Dublin, Ireland, [8]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [9]King's College London, Institute of Psychiatry, London, United Kingdom, [10]Department of Cognitive and Clinical Neuroscience, Central Institute of Mental Health, Mannheim, Germany, [11]Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany, [12]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [13]University of Vermont, Burlington, VT, [14]Institute of Neuroscience, Trinity College Dublin, Dublin, Ireland, [15]University of Nottingham, Nottingham, United Kingdom, [16]Physikalisch-Technische Bundesanstalt, Berlin, Germany, [17]UMR INSERM-CEA U1000, ORSAY, France, [18]The Hospital for Sick Children, Toronto, Canada, [19]Technische Universität Dresden, Dresden, Germany, [20]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, Berlin, Germany, [21]Rotman Research Institute - Baycrest Centre, Toronto, ON, [22]School of Psychology, University of Nottingham, Nottingham, United Kingdom, [23]Montreal Neurological Institute, McGill University, Montreal, Canada, [24]France

**3429 Consistency of fractional amplitude of low frequency fluctuations (fALFF) maps**
Martin Kueblboeck[1], Ronald Sladky[1], Allan Hummer[1], Andreas Hahn[2], Anna Höflich[3], Rupert Lanzenberger[4], Christian Windischberger[1]
[1]MR Centre Of Excellence, Medical University of Vienna, Vienna, Austria, [2]Medical University of Vienna, Department of Psychiatry and Psychotherapy, Vienna, Austria, [3]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [4]Medical University of Vienna, Wien, Austria

**3430 CREB1 Genotype affects Reward-based Decision Making Performance and Correlated ACC Activation**
Claudia Wolf[1], Holger Mohr[2,1], Esther Diekhof[3,1], Maria Keil[1], Oliver Gruber[1]
[1]Center for Translational Research in Systems Neuroscience and Psychiatry, Georg-August-University, Göttingen, Germany, [2]Department of General Psychology, TU Dresden, Dresden, Germany, [3]Biozentrum Grindel, Institut für Humanbiologie, University Hamburg, Hamburg, Germany

**3431 Demonstration that choice of anesthetic can dramatically affect functional connectivity**
Erik Beall[1], John Gale[2], Ken Sakaie[1], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, United States, [2]Cleveland Clinic, Cleveland, OH

**3432 Detection of BOLD fMRI and Magnetic Source MRI Activations Using Repeated Median Nerve Stimulation**
Leo Ai[1], Jinhu Xiong[2]
[1]University of Iowa, [2]University of Iowa, Iowa City, IA

**3433 Detection of slow changes in BOLD fMRI after multi-echo denoising**
Jennifer Evans[1], Prantik Kundu[1], Silvina Horovitz[2], Peter Bandettini[1]
[1]NIMH, NIH, Bethesda, MD, [2]NINDS, NIH, Bethesda, MD

**3434 Discriminating Large Sinuses using Resting State BOLD fMRI data and the Physiological Recordings**
Maryam Falahpour[1,2], Hazem Refai[2], Jerzy Bodurka[1,3]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]Department of Electrical and Computer Engineering, University of Oklahoma, Tulsa, OK, [3]College of Engineering, University of Oklahoma, Tulsa, OK

**3435 Effect of the Hyperbaric Oxygen on ReHo in resting fMRI: a placebo-controlled study**
Huang Huang[1], Ronghao Yu[2], Qiuyou Xie[2], Bin Wang[1], Shufang Chu[2], Junjing Wang[1], Delong Zhang[1], Fangfang He[1], Ruiwang Huang[1], Ming Liu[1]
[1]Centre for Studies of Psychological Application, Key Laboratory of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]Department of Neurorehabilitaiton, Lihuaqiao Hospital, Guangzhou, China

**3436 Effect of voluntary long-lasting muscle contraction on BOLD signal assessed by the optimal HRF**
Silvia Francesca Storti[1], Emanuela Formaggio[2], Alessandra Bertoldo[3], Francesca Benedetta Pizzini[4], Gianna Maria Toffolo[3], Paolo Manganotti[1,4,2]
[1]University of Verona, Verona, Italy, [2]Foundation IRCCS San Camillo Hospital, Venice, Italy, [3]University of Padova, Padova, Italy, [4]AOUI of Verona, Verona, Italy

**3437 Emotion perception of acoustic stimuli in Tinnitus — A silent-event-related functional MRI study**
Mariana Nucci-da-Silva[1], Tanit Sanchez[2], Silvia C Batezati-Alves[2], Vivian Sacomano-Sakamoto[3], Antonio Cesario Cruz Jr[3], Marcos Akiba[3], Maria Elizabeth Pedalini[2], Edson Amaro Junior[4]
[1]NIF-HCFMUSP, São Paulo, Brazil, [2]Department of Otolaryngology - University of Sao Paulo, São Paulo, Brazil, [3]NIF-Neuroimagem Functional - LIM44, Department of Radiology - University of Sao Paulo, São Paulo, Brazil, [4]University of São Paulo, São Paulo, Brazil

**3438 Emotional stimuli activate amygdala and ventromedial prefrontal cortex across nosological boundaries**
Claudia Haegele[1], Eva Friedel[2], Schlagenhauf Florian[2], Philipp Sterzer[3], Anne Beck[4], Felix Bermpohl[5], Meline Stoy[6], Andreas Ströhle[7], Andreas Heinz[2]
[1]Charite Universitaetsmedizin Berlin, Berlin, Germany, [2]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [3]Department of Psychiatry and Psychotherapy, Campus Charité Mitte, Berlin, Germany, [4]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Univeristätsmedizin Berlin, Berlin, Germany, [5]Department of Psychiatry and Psychotherapy, Charité, Berlin, Germany, [6]Department of Psychiatry and Psychotherapy, Campus Charité Mitte, Charité - Universitätsmedizin Berl, Berlin, Germany, [7]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin Berlin, Berlin, Germany

**3439 Feasibility of Deriving Subject-Specific Respiratory/ Cardiac Response Function at Various Conditions**
Maryam Falahpour[1,2], Hazem Refai[2], Jerzy Bodurka[1,3]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]Department of Electrical and Computer Engineering, University of Oklahoma, Tulsa, OK, [3]College of Engineering, University of Oklahoma, Tulsa, OK

**3440 FMRI Evaluation of the Effects of Chronic Exposure to Low-Level Blast**
Kris Knutson[1], James Stone[2], Matthew LoPresti[3], Elena Polejaeva[4,1], Michael Tierney[1], Eric Wassermann[1], Walter Carr[5]
[1]NINDS/NIH, Bethesda, MD, [2]University of Virginia, Charlottesville, VA, [3]Department of Behavioral Biology, Walter Reed Army Institute of Research, Bethesda, MD, [4]Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD, [5]Naval Medical Research Center, Bethesda, MD

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3441 Functional Brain Abnormalities in Amblyopia Patients' Rest-state fMRI**
Jieqiong Wang[1], Wenjing Li[1], Huiguang He[1], Likun Ai[2], Ling Hu[3]
[1]State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, CAS, Beijing, China, [2]Department of Ophthalmology, Beijing Tongren Hospital, Capital Medical University, Beijing, China, [3]Department of Radiology, Beijing Tongren Hospital, Capital Medical University, Beijing, China

**3442 Functional Connectivity in Imaging Genetics: Considerations on Methods and Data Interpretation**
Johannes Bedenbender[1], Andreas Jansen[1], Tilo Kircher[1], Soeren Krach[1], Axel Krug[1], Marcella Rietschel[2], Jens Sommer[1], Stephanie Witt[2], Frieder Paulus[3], Martin Pyka[4], Davide Laneri[5]
[1]Philipps-University, Marburg, Germany, [2]Central Institute of Mental Health, Mannheim, Germany, [3]Department of Psychiatry, Philipps University Marburg, Germany, Marburg, Germany, [4]Department of Psychiatry and Psychotherapy, Philipps-University Marburg, Marburg, Germany, [5]University of Marburg

**3443 Functional Correlates of PTSD Symptom Subscales in Veterans With and Without Combat Experience**
Britta Tremblay[1], Mary Lu[1], Laura Dennis[2], Vanessa Wilson[2], Daniel Schwartz[1], Suzanne Mitchell[3], William Hoffman[4]
[1]Portland VA Medical Center, Portland, OR, [2]OHSU, Portland, United States, [3]Oregon health & science university, Portland, OR, [4]Department of Veterans Affairs, Portland, United States

**3444 Genetic influences on the neural response to food cues during satiety: an fMRI twin study**
Sonya Mehta[1], Susan Melhorn[1], Vidhi Tyagi[1], Mary Webb[1], Thomas Grabowski[1], Ellen Schur[1]
[1]University of Washington, Seattle, United States

**3445 Group-wise FMRI Activation Detection Based on DICCCOL**
Jinglei Lv[1,2], lei guo[1], dajiang zhu[2], Tuo Zhang[1], Kaiming Li[3], Xi Jiang[2], tianming liu[2]
[1]Northwestern Polytechnical University, Xi'an, China, [2]The University of Georgia, Athens, GA, United States, [3]Emory University, Atlanta, GA, United States

**3446 How do task demands affect BOLD activation extent at hi gh TSNR?**
Javier Gonzalez-Castillo[1], Colin Hoy[1], Daniel Handwerker[1], Ziad Saad[2], Peter Bandettini[1]
[1]Section on Functional Imaging Methods, NIMH, NIH, Bethesda, MD, [2]Scientific and Statistical Computing Core, NIMH, NIH, Bethesda, MD

**3447 Hybrid acquisition of EPI to reduce respiratory effect in motion correction of fMRI data**
Hu Cheng[1], Aina Puce[2]
[1]Indiana University, [2]Indiana University, Bloomington, United States

**3448 Impact of multiband EPI acquisition in a simple FMRI task paradigm and analysis**
Michael Harms[1], Junqian Xu[2], Essa Yacoub[2], Daniel Nolan[1], Deanna Barch[3]
[1]Washington University School of Medicine, St. Louis, MO, [2]University of Minnesota, Minneapolis, MN, [3]Washington University, St. Louis, MO

**3449 Integrating Group-wise Functional Brain Activities via Point Processes**
Xi Jiang[1], Jinglei Lv[2,1], Tuo Zhang[2,1], lei guo[2], tianming liu[1]
[1]Department of Computer Science and Bioimaging Research Center, The University of Georgia, Athens, GA, [2]Northwestern Polytechnical University, Xi'an, China

**3450 Investigating the benefit of ultra-high field MR systems for clinical fMRI**
Roland Beisteiner[1], Moritz Wurnig[1], Florian Fischmeister[1], Eva Matt[1], Engelbert Knosp[2], Martha Feucht[3], Eduard Auff[4], Siegfried Trattnig[5], Simon Robinson[5], Alexander Geissler[1]
[1]Study Group Clinical fMRI, Dep. of Neurology, High Field MR Center, Medical University of Vienna, Austria, [2]Department of Neurosurgery, Medical University of Vienna, Austria, [3]Department of Pediatrics, Medical University of Vienna, Austria, [4]Department of Neurology, Medical University of Vienna, Austria, [5]High Field MR Center, Department of Radiology, Medical University of Vienna, Austria

**3451 Laminar profiles with gradient echo at 7T: dissociating two components**
Alessio Fracasso[1], Natalia Petridou[2], Serge Dumoulin[1]
[1]Utrecht University, Utrecht, Netherlands, [2]UMC Utrecht, Utrecht, Netherlands

**3452 Large scale networks in the macaque brain share topological features with the human brain**
Oscar Miranda Dominguez[1], David Grayson[2], Andrew Woodall[3], Kathy Grant[3], Christopher Kroenke[4,5,6], Damien Fair[7]
[1]OREGON HEALTH AND SCIENCE UNIVERSITY, PORTLAND, United States, [2]University of California - Davis, Davis, United States, [3]OREGON HEALTH AND SCIENCE UNIVERSITY, PORTLAND, OR, [4]Oregon Health & Science University, Portland, OR, [5]Advanced Imaging Research Center, Oregon Health and Science University, Portland, OR, [6]Division of Neuroscience, Oregon National Primate Research Center, Beaverton, OR, [7]Oregon Health & Science University, Portland, United States

**3453 Longitudinal fMRI using a cognitive paradigm in patients with Multiple Sclerosis**
Marisa Loitfelder[1], Franz Fazekas[2], Karl Koschutnig[3], Siegrid Fuchs[2], Katja Petrovic[2], Stefan Ropele[2], Alexander Pichler[2], Arthur Mader[2], Margit Jehna[2], Christian Langkammer[4], Schmidt Reinhold[2], Christa Neuper[5], Christian Enzinger[2]
[1]Medical University Graz, Graz, Austria, [2]Medical University of Graz, Graz, Austria, [3]University of Graz, Graz, Austria, [4]Medical Universtity of Graz, Graz, Austria, [5]Department of Psychology, Karl-Franzens University, Graz, Austria

**3454 Benefits of measuring MEG on the scalp: A comparison of atomic magnetometer and SQUID arrays**

Joonas Iivanainen[1], Matti Stenroos[2,1], Lauri Parkkonen[1]
[1]Aalto University School of Science, Espoo, Finland, [2]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom

**3455 Memory Efficient Approaches For Performing Group ICA**

Srinivas Rachakonda[1], Vince Calhoun[2]
[1]The Mind Research Network, Albuquerque, NM, [2]The Mind Research Network and UNM, ALBUQUERQUE, NM

**3456 Minimizing Spurious Functional Connectivity Findings from Resting State fMRI**

Prantik Kundu[1,2], Noah Brenowitz[1], Valerie Voon[2], Yulia Worbe[2], Petra Vertes[2], Souheil Inati[1], Ziad Saad[1], Peter Bandettini[1], Edward Bullmore[2]
[1]National Institute of Mental Health, Bethesda, MD, USA, [2]Cambridge University, Cambridge, United Kingdom

**3457 Model-free reliability assessment of BOLD responses in a block-designed Sensorimotor Task**

Aleksandr Simak[1,2], Michelle Liou[1], S.H. Annabel Chen[3,4]
[1]Institute of Statistical Science, Academia Sinica, Taipei, Taiwan, [2]Department of Computer Science and Information Engineering, National Taiwan University, Taipei, Taiwan, [3]Nanyang Technological University, Singapore, Singapore, [4]Department of Psychology, National Taiwan University, Taipei, Taiwan

**3458 Modeling Cognitive Processes via Multi-stage Consistent Functional Response Detection Using DICCCOL**

Jinglei Lv[1,2], Xintao Hu[1], Tuo Zhang[1], dajiang zhu[2], Kaiming Li[3], lei guo[1], tianming liu[2]
[1]Northwestern Polytechnical University, Xi'an, China, [2]The University of Georgia, Athens, GA, [3]Emory University, atlanta, GA

**3459 Modeling the hemodynamic response to visual stimulation in children with retinoblastoma**

Ann Viano[1,2], Michelle Hatch[2], Carlos Parra[2], Matthew Scoggins[2], Ping Zou[2], Kathleen Helton[2], Ibrahim Qaddoumi[2], Matthew Wilson[3], Robert Ogg[2]
[1]Rhodes College, Memphis, United States, [2]St. Jude Children's Research Hospital, Memphis, United States, [3]University of Tennessee Health Sciences Center, Memphis, United States

**3460 Neural basis of the evaluative and emotional processes of the self-concept**

Eun Seong Kim[1], Eun Joo Kim[2], Ji Won Chun[3], Jung Suk Lee[1], Hae-Jeong Park[3], Eosu Kim[3,4], Jae-Jin Kim[3,4]
[1]Institute of Behavioral Science in Medicine and Department of Psychiatry, Yonsei University College, Seoul, Korea, Republic of, [2]The Graduate School of Education, Yonsei University, Seoul, Korea, Republic of, [3]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Department of Psychiatry, Yonsei University, Seoul, Korea, Republic of

**3461 Neurobiological Sex Differences in Adolescent Drinkers**

Karen Weierstall[1], Robert Whelan[2], Tobias Banaschewski[3], Gareth Barker[4], Christian Büchel[5], Fabiana Carvalho[6], Patricia Conrod[7], Herta Flor[3], Andreas Heinz[8], Bernd Ittermann[9], Claire Lawrence[10], Karl Mann[3], Jean-Luc Martinot[11], Eva Loth[7], Tomas Paus[12], Zdenka Pausova[13], Jean-Baptiste Poline[14], Marcella Rietschel[3], Trevor Robbins[15], Mira Fauth-Bühler[3], Michael Smolka[16], Rainer Spanagel[3], Dai Stephens[17], Jürgen Gallinat[8], Maren STRUVE[18], Gunter Schumann[4], Hugh Garavan[2]
[1]University of Vermont, Burlington , United States, [2]University of Vermont, Burlington, VT, [3]Central Institute of Mental Health, Mannheim, Germany, [4]King's College London, London, United Kingdom, [5]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [6]King's College London, London, United Kingdom, [7]King's College London, Institute of Psychiatry, London, United Kingdom, [8]Dept. of Psychiatry and Psychotherapy, CCM, Charité - Universitätsmedizin Berlin, Berlin, Germany, [9]Physikalisch-Technische Bundesanstalt, Berlin, Germany, [10]University of Nottingham, Nottingham, United Kingdom, [11]UMR INSERM-CEA U1000, ORSAY, France, [12]Rotman Research Institute - Baycrest Centre, Toronto, ON, [13]The Hospital for Sick Children, Toronto, Canada, [14]CEA, Neurospin, Gif-sur-Yvette, France, [15]University of Cambridge, Cambridge, United Kingdom, [16]Technische Universität Dresden, Dresden, Germany, [17]University of Sussex, Sussex, United Kingdom, [18]Central Institute of Mental Health, MANNHEIM, Germany

**3462 Neuronal correlates of anxiety in somatoform vertigo and peripheral vertigo**

Anna Länger[1,2], Agnieszka Chrobok[3,2], Daniel Keeser[4,5], Susanne Karch[3], Kerstin Lehmann[6], Daniela Eser-Valeri[5], Birgit Ertl-Wagner[7], Marianne Dieterich[8,2], Rainer Rupprecht[9,2], Oliver Pogarell[10,2]
[1]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University Munich, Munich, Germany, [2]German Center for Vertigo and Balance Disorders, Ludwig-Maximilian University, Munich, Germany, [3]Department of Psychiatry and Psychotherapy, Munich, Germany, [4]Ludwig Maximilians University Munich, Institute of Clinical Radiology, Munich, Germany, [5]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany, [6]German Center for Vertigo and Balance Disorders (IFB), Ludwig-Maximilian University, Munich, Germany, [7]Institute for Clinical Radiology, Ludwig-Maximilian University, Munich, Germany, [8]Department of Neurology, Ludwig-Maximilians University, Munich, Germany, [9]University of Regensburg, Department of Psychiatry, Regensburg, Germany, [10]Departement of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3463 Optimal SNR combinations of multi-channel coil data for GRAPPA reconstructions and EPI time series**
Jonathan Polimeni[1,2], Kawin Setsompop[1,2], Christina Triantafyllou[1,2], Lawrence Wald[1,2,3]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, [2]Department of Radiology, Harvard Medical School, Boston, MA, [3]Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA

**3464 Performing a cognitive task alters the brain's response to foot sole stimulation in young adults**
Ye Wang[1], Kai Zhang[1], Fan Jia[1], Ya Cao[1], Hao Li[1], Jun Lv[1], Hui Zhang[1], Xiaoying Wang[1,2], Jue Zhang[1,3], Jing Fang[1,3], Brad Manor[1,4]
[1]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [2]Peking University First Hospital, Beijing, China, [3]College of Engineering, Peking University, Beijing, China, [4]Division of Gerontology, Beth Israel Deaconess Medical Center, Boston, MA

****3465 Physiological Noise Reduction in 7 T fMRI using Concurrent Magnetic Field Monitoring**
Lars Kasper[1,2], S. Johanna Vannesjo[2], David Brunner[2], Simon Gross[2], Jakob Heinzle[1], Klaas Enno Stephan[1,3], Klaas Pruessmann[2]
[1]Translational Neuromodeling Unit, Inst. for Biomedical Engineering, Univ. of Zurich & ETH Zurich, Zurich, Switzerland, [2]Institute for Biomedical Engineering, Univ. of Zurich & ETH Zurich, Zurich, Switzerland, [3]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, London, United Kingdom

**3466 Population distributions of brain size: Normative guides for maximal coverage in human brain MRI**
Maarten Mennes[1,2], Mark Jenkinson[3], Jan Buitelaar[1,2], Christian Beckmann[4,3,2], Stephen Smith[3]
[1]Department of Cognitive Neuroscience, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [2]Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, Netherlands, [3]Centre for Functional MRI of the Brain, University of Oxford, Oxford, United Kingdom, [4]University of Twente, Enschede, Netherlands

**3467 Population receptive field estimation in the human lateral geniculate nucleus**
Kevin DeSimone[1], Joseph Viviano[1], Keith Schneider[1,2]
[1]York University, Toronto, ON Canada, [2]Centre for Vision Research, Toronto, ON Canada

**3468 Prefrontal effective connectivity during attentional control as a potential intermediate phenotype**
Paolo Taurisano[1], Linda Antonucci[1], Tiziana Quarto[1], Leonardo Fazio[1], Raffaella Romano[1], Barbara Gelao[1], Grazia Caforio[1], Annabella Di Giorgio[1], Rosa Vitale[1], Pierluigi Selvaggi[1], Teresa Popolizio[2], Giuseppe Blasi[1], Alessandro Bertolino[1]
[1]University of Bari Aldo Moro, Bari, Italy, [2]IRCSS, San Giovanni Rotondo (FG), Italy

**3469 Preliminary study of fMRI response patterns in a syntactic sentences comprehension task in children**
Domitille Malfait[1], Alan Tucholka[2], Jean-Maxime Leroux[2], Sarah Lippé[1]
[1]Centre de Recherche en Neuropsychologie et Cognition (CERNEC), Université de Montréal, Montréal, Québec, Canada, [2]Centre de Recherche du Centre Hospitalier Universitaire de Montréal (CRCHUM), Hôpital Notre Dame, Montréal, Québec, Canada

**3470 Processing of olfactory stimuli in patients with disorders of consciousness**
Anna Nigri[1], Nicola Bertolino[2], Stefania Ferraro[3], Eleonora Visintin[3], Maria Grazia Bruzzone[3], Ludovico D'Incerti[3], Matilde Leonardi[3], Francesca Epifani[3], Johan Lundström[4]
[1]Neurological Foundation Carlo Besta, Milan, Italy, [2]Neurological Fondation Carlo Besta, Milano, Italy, [3]Neurological Fondation Carlo Besta, Milan, Italy, [4]Monell Chemical Senses Center, Philadelphia, PA

**3471 Prospective motion correction reduces false activations caused by task-correlated motion**
Jessica Schulz[1], Thomas Siegert[1], Pierre-Louis Bazin[1], Julian Maclaren[2], Michael Herbst[3], Maxim Zaitsev[3], Robert Turner[4]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Dept. of Radiology, Stanford University, Stanford, CA, [3]Medical Physics, Dept. of Radiology, University Medical Center Freiburg, Freiburg, Germany, [4]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3472 Real time motion feedback reduces motion-induced artifacts**
Samuel Carpenter[1], Bill Rooney[2], Jingang XU[3], Corinne Stevens[1], Joel Nigg[4], Damien Fair[1]
[1]Oregon Health & Science University, Portland, United States, [2]Advanced Imaging Resource Center, Portland, OR, [3]Advanced Imaging Research Center, Portland, United States, [4]Oregon Health & Science University, Portland, OR

**3473 Real-time fMRI links subjective experience with brain activity during focused attention**
Kathleen Garrison[1], Dustin Scheinost[2], Patrick Worhunsky[3], Hani Elwafi[1], Thomas Thornhill IV[2], Evan Thompson[4], Clifford Saron[5], Gaelle Desbordes[6], Hedy Kober[1], Michelle Hampson[1], Jeremy Gray[2], R Constable[2], Xenophon Papademetris[2], Judson Brewer[7]
[1]Yale University, New Haven, United States, [2]Yale University, New Haven, CT, [3]Department of Psychiatry, Yale University School of Medicine, VA CT Healthcare, West Haven, CT, [4]University of Toronto, Toronto, Canada, [5]UC Davis, Davis, CA, [6]Boston University, Boston, MA, [7]Yale University, West Haven, CT

**3474 Reducing Nyquist ghost level in fMRI by avoidance of mechanical resonance frequencies**
Liesbeth Geerts[1], Zhaolin Chen[1], Silke Hey[1], Jos Koonen[1]
[1]Philips Healthcare, Best, Netherlands


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**3475 Regional homogeneity in the caudate affected by depressive symptom in migraine patients without aura**
Dahua Yu[1], Kai Yuan[1], Minghao Dong[1], Wei Qin[1], Jie Tian[2]
[1]School of Life Sciences and Technology, Xidian University, xi'an, China, [2]Institute of Automation,, Chinese Academy of Sciences, Beijing, Shaanxi

**3476 Reproducability of laterality index over sites for clinical protocols**
Johan Jansma[1], Geert-Jan Rutten[2], Gert Kristo[3], Alberto Bizzi[4], Gord von Campe[5], Elke Hattingen[6], Mar Jimenez de la Pena[7], Katharina Rosengarth[8], Nick Ramsey[3]
[1]Rudolf Magnus Institute, UMC Utrecht, Utrecht, Netherlands, [2]Department of Neurosurgery, Tilburg, Netherlands, [3]UMC Utrecht, Rudolf Magnus Institute of Neuroscience, Utrecht, Netherlands, [4]Department of Neuroradiology, Instituto Neurologico Carlo Besta, Milan, Italy, [5]Department of Neurosurgery, Medical University of Graz, Graz, Austria, [6]Goethe University, Frankfurt, Germany, [7]Diagnostic Imaging Department, Hospital Universitario Quirón, Madrid, Spain, [8]Institute for Experimental Psychology, University of Regensburg, Regensburg, Germany

**3477 Reproducibility of EEG-fMRI results in a patient with fixation-off sensitivity**
Emanuela Formaggio[1], Silvia Francesca Storti[2], Ilaria Boscolo Galazzo[2], Luigi Bongiovanni[3], Roberto Cerini[3], Paolo Manganotti[2,3,1]
[1]Foundation IRCCS San Camillo Hospital, Venezia, Italy, [2]University of Verona, Verona, Italy, [3]AOUI of Verona, Verona, Italy

**3478 Respiratory Effects in Resting State fMRI: A Comparison Between Respiration Measurement Techniques**
Yasha Khatamian[1], Jean Chen[1]
[1]Rotman Research Institute, Toronto, Canada

**3479 Resting State fMRI Evidence of Increased Frontal-Striatal Clustering in Pediatric OCD**
Casey Armstrong[1], John Piacentini[2], Teena Moody[2], Jesse Brown[3], Donatello Arienzo[4], Jamie Feusner[4], Joseph O'Neill[1], Jennifer Levitt[1]
[1]UCLA, Westwood, CA, [2]UCLA, Los Angeles, CA, [3]UCLA, Los Angeles, United States, [4]UCLA

**3480 Resting-state fMRI at 4 Hz**
Ying-Hua Chu[1], Shang-Yueh Tsai[2], Jyrki Ahveninen[3], Tommi Raij[3], Wen-Jui Kuo[4], Fa-Hsuan Lin[1]
[1]National Taiwan University, Taipei, Taiwan, [2]National Chengchi University, Taipei, Taiwan, [3]Massachusetts General Hospital, Charlestown, MA, United States, [4]National Yang-Ming University, Taipei, Taiwan

**3481 Resting-State fMRI Data Analysis in Subjects' Native Space**
Qolamreza Razlighi[1], Christian Habeck[2], Jason Steffener[1], Yunglin Gazes[1], Yaakov Stern[2]
[1]Columbia University, New York, United States, [2]Columbia University, New York, NY

**3482 Reward anticipation maps comparing high and ultrahigh field functional MRI**
Christoph Kraus[1], Georg Kranz[1], Martin Küblböck[2], Daniela Pfabigan[3], Andreas Hahn[1], Ronald Sladky[2], Eva-Maria Seidel[3], Allan Hummer[2], Katharina Paul[3], Sebastian Ganger[1], Christian Windischberger[2], Claus Lamm[3], Rupert Lanzenberger[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [3]Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology, University of Vienna, Vienna, Austria

**3483 Self-Modulation of Motor Brain Areas during Training with Neurofeedback by fMRI**
Theo Ferreira Marins[1,2], Erika Rodrigues[3,2], Rodrigo Basilio[4], Ivanei Bramati[2,1], Jorge Moll[2], Fernanda Tovar-Moll[2,1]
[1]Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, [2]D'Or Institute for Research and Education, Rio de Janeiro, Brazil, [3]Augusto Motta University-UNISUAM, Rio de Janeiro, Brazil, [4]D'Or Institute for Research and Education, Rio de Janeiro, Brazil

**3484 Similar Inter-ictal EEG Discharges Have Different Hemodynamic Responses in Temporal Lobe Epilepsy**
Brunno Machado de Campos[1], Ana Carolina Coan[2], Guilherme Beltramini[3], Roberto Covolan[4], Fernando Cendes[5]
[1]University of Campinas - UNICAMP, Campinas, Brazil, [2]Unicamp, Campinas, Brazil, [3]University of Campinas, Campinas, Brazil, [4]Neurophysics Group, Gleb Wataghin Physics Institute, University of Campinas - UNICAMP, Campinas, Brazil, [5]university of campinas, campinas, Brazil

**3485 Single shot fMRI with signal-loss compensation using Interleaved Dual-Echo Acquisition (IDEA) EPI**
Benedikt Poser[1,2], Benjamin Zahneisen[1], Robert Anderson[1], Markus Barth[2,3], V Andrew Stenger[1]
[1]Neuroscience and MR Research Program, Department of Medicine, University of Hawaii, Honolulu, United States, [2]Donders Insitute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [3]Erwin L Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany

**3486 Structural connections from associative to auditory areas alters effective connectivity in rs-fcMRI**
Carlo Rondinoni[1], Carlos Salmon[2], Antonio Carlos dos Santos[3]
[1]University of Sao Paulo, Ribeirao Preto, Brazil, [2]Dept. of Physics and Mathematics, University of São Paulo at Ribeirão Preto - USP-RP, Ribeirão Preto, SP, [3]University of Sao Paulo, Ribeirao Preto, Sao Palo

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3487** **Sub millimeter resolution fMRI (both 3 & 7T); BOLD modulation results in motion correction artifact**
Mark Schira[1,2], Juan Lei[3], Renat Yakupov[4], Falko Kaule[3], Zoey Isherwood[2], Michael Breakspear[5], Oliver Speck[4], Michael Hoffmann[3]
[1]School of Psychology, University of Wollongong, Wollongong, Australia, [2]Neuroscience Research Australia, Sydney, Australia, [3]Visual Processing Laboratory, Otto-von-Universität Guericke-University, Magdeburg, Germany, [4]Institute for Experimental Physics, Biomedical Magnetic Resonance, Otto-von-Guericke-University, Magdeburg, Germany, [5]Queensland Institute for Medical Research, Herston, Austalia

**3488** **Subject-Specific BOLD fMRI Respiratory and Cardiac Response Functions Obtained from Global Signal**
Maryam Falahpour[1,2], Hazem Refai[2], Jerzy Bodurka[1,3]
[1]Laureate Institute for Brain Research, Tulsa, OK, [2]Department of Electrical and Computer Engineering, University of Oklahoma, Tulsa, OK, [3]College of Engineering, University of Oklahoma, Tulsa, OK

**3489** **Task-related, behaviorally relevant changes of intra/inter-RSN functional and effective connectivity**
Sara Spadone[1], Stefania Della Penna[1], Viviana Betti[1], Carlo Sestieri[1], Annalisa Tosoni[1], Gian Luca Romani[1], Maurizio Corbetta[2]
[1]Department of Neuroscience and Imaging, "G. d'Annunzio" University Chieti-Pescara, Chieti, Italy, [2]Dept. Neurology, Radiology, and Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO

**3490** **The effect of moderate hypercapnia on functional connectivity**
Alex Ing[1], Christian Schwarzbauer[2]
[1]The University of Aberdeen, Aberdeen, United Kingdom, [2]University of Aberdeen, Aberdeen, United Kingdom

**3491** **The evaluation of multi-band EPI acquisition using simulation**
Wanyong Shin[1], Erik Beall[1], Mark Lowe[1]
[1]Cleveland Clinic Foundation, Cleveland, OH

**3492** **The Image Intra-class Correlation Coefficient (I2C2) for Replication Studies**
Haochang Shou[1], Ani Eloyan[2], Seonjoo Lee[2], Vadim Zipunnikov[2], Brian Caffo[3], Martin Lindquist[3], Ciprian Crainiceanu[4]
[1]Johns Hopkins University, BALTIMORE, United States, [2]Johns Hopkins University, BALTIMORE, MD, [3]Johns Hopkins University, Baltimore, United States, [4]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

**3493** **The importance of physiological noise in cerebellar fMRI**
Wietske van der Zwaag[1], João Jorge[2], Rolf Gruetter[3]
[1]EPFL, Lausanne, Switzerland, [2]Instituto Superior Técnico, [3]EPFL, UNIL and HUG, Lausanne, Switzerland

**3494** **The neural correlates of negative and positive reward prediction errors: An fMRI study at 7Tesla**
TURKI ABUALAIT[1], Susan Francis[2], Stephen Jackson[1]
[1]University of Nottingham, Nottingham, United Kingdom, [2]Sir Peter Mansfield Magnetic Resonance Centre, School of Physics, University of Nottingham, Nottingham, United Kingdom

**3495** **Using ICA to improve mapping of motor activation in 7 T clinical fMRI**
Pedro Cardoso[1], Veronika Schöpf[1], Alexander Geissler[2], Florian Fischmeister[2], Moritz Wurnig[2], Siegfried Trattnig[1], Roland Beisteiner[2], Simon Robinson[1]
[1]High Field MR Center of Excellence, Department of Radiology, Medical University of Vienna, Vienna, Austria, [2]Study Group Clinical fMRI, Department of Neurology, Medical University of Vienna, Vienna, Austria

**3496** **Variation in amygdala task-free connectivity and task-evoked activity independently predict affect**
Alexandra Touroutoglou[1,2], Kevin Bickart[3], Mark Hollenbeck[1,2], Bradford C. Dickerson[1,2], Lisa Feldman Barrett[4,2,1]
[1]A. Martinos Imaging Center for Biomedical Imaging, Charlestown, MA, [2]Harvard Medical School, Boston, MA, [3]Boston University School of Medicine, Boston, MA, [4]Northeastern University, Boston, MA

**3497** **Visualization of Functional Architecture of the Human Brain Using Functional Tensor Images**
Ran Xu[1], Xiawei Ou[2], Victoria Morgan[1], John Gore[1], Thomas Badger[3], Zhaohua Ding[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States, [2]Department of Radiology, University of Arkansas for Medical Sciences, Little Rock, AR, United States, [3]Arkansas Children's Nutrition Center, Little Rock, AR, United States

**3498** **Visual-Stimulus-Locked Extravascular non-BOLD Effects in fMRI**
Ville Renvall[1], Cathy Nangini[1], Riitta Hari[1]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory and AMI Centre, AALTO NEUROIMAGING, Aalto University, ESPOO, Finland

**3499** **VOLUNTARY ATTENTION ORIENTING WITH EVENT-RELATED FUNCTIONAL MAGNETIC RESONANCE IMAGING**
Thaís Contenças[1], Luiz Eduardo Ribeiro-do-Valle[2], Mariana Nucci-da-Silva[3], Edson Amaro Junior[4]
[1]USP, São Paulo, Brazil, [2]ICB - USP, São Paulo, Brazil, [3]NIF-HCFMUSP, São Paulo, Brazil, [4]University of São Paulo, São Paulo, Brazil

**3500** **Whole brain BOLD fMRI at 7T using T2-prepared single-shot 3D fast gradient echo (GRE) sequence**
Jun Hua[1], Qin Qin[1], Peter van Zijl[1], Craig Jones[1]
[1]The Johns Hopkins University School of Medicine, Kennedy Krieger Institute, Baltimore, United States


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## Imaging Methods

### Diffusion MRI

**3501 Advances on Multi-Compartment Model Simulations to Interpret the 3D Geometry of Diffusion Kurtosis**
Rafael Neto Henriques[1], Marta Correia[2], Rita Nunes[1], Joana Ramalho[3], Hugo Ferreira[1]
[1]Institute of Biophysics and Biomedical Engineering, Faculty of Sciences of the University of Lisbon, Lisbon, Portugal, [2]Medical Research Council - Cognition and Brain Sciences Unit, Cambridge, United Kingdom, Cambridge, United Kingdom, [3]Centro Hospitalar Lisboa Central, Lisbon, Portugal

**3502 Age-related changes of the ventricular with and periventricular white matter in the human brain**
Yong Hyun Kwon[1], Hyeok Gyu Kwon[2], Sang Seok Yeo[3], Sung Ho Jang[2]
[1]Yeungnam College, Daegu, Korea, Republic of, [2]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [3]Yeungnam University Medical Center, Daegu, Korea, Republic of

**3503 Altered Amygdala Nuclei Projections in Young Adults with Autism Spectrum Disorder**
Clare Gibbard[1], Juejing Ren[2], David Skuse[2], Jonathan Clayden[1], Chris Clark[1]
[1]Imaging and Biophysics Unit, UCL Institute of Child Health, London, United Kingdom, [2]Behavioural and Brain Sciences Unit, UCL Institute of Child Health, London, United Kingdom

**3504 Altered Brain Network Metrics in Alzheimer's Disease, Based on the Structural k-Core**
Madelaine Daianu[1], Neda Jahanshad[2], Talia Nir[3], Arthur Toga[4], Clifford Jack[5], Michael Weiner[6], Paul Thompson[7]
[1]University of California, Los Angeles, Los Angeles, United States, [2]University of California Los Angeles, Los Angeles, CA, [3]UCLA, Los Angeles, United States, [4]Laboratory of Neuro Imaging, Department of Neurology, University of California School of Medicine, Los Angeles, United States, [5]Department of Radiology, Mayo Clinic and Foundation, Rochester, MN, [6]Department of Radiology and Biomedical Imaging, UCSF School of Medicine, San Francisco, CA, [7]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**3505 Altered structural brain connectivity in Tourette syndrome children: a diffusion tensor image study**
Wen Miao[1], Yue Liu[2,3], Jieqiong Wang[1], Peiyi Gao[4], Guangheng Yin[2,3], Liping Zhang[5], Chuankai Lv[2,3], Zhiying Ji[5], Tong Yu[2,3], Yun Peng[2,3], Huiguang He[1]
[1]State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, CAS, Beijing, China, [2]Department of Radiology, Beijing Children's Hospital, Capital Medical University, Beijing, China, [3]Beijing key Lab of Magnetic Imaging Device and Technique, Beijing Children's Hospital, Capital Medical University, Beijing, China, [4]Department of Neuroradiology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China, [5]Medical Department, Beijing Children's Hospital, Capital Medical University, Beijing, China

**3506 Analysis of Diffusion Tensor Imaging for Subjects with Down Syndrome**
Neda Sadeghi[1], Clement Vachet[1], Marcel Prastawa[1], Julie Korenberg[1], Guido Gerig[1]
[1]University of Utah, Salt Lake City, UT

**3507 Anatomical location and somatotopic organization of corticospinal tract in corona radiata**
HyoKeong Shin[1], JunBum Park[2], Hun Lee[3], SoonHo Choi[4], Hyeok Gyu Kwon[5], Jeong-Hee Yang[6], DongSeok Yang[7]
[1]Department of Physical Medicine and Rehabilitation, University of Ulsan College of Medicine, Ulsan U, Ulsan, Korea, Republic of, [2]Department of Neurosurgery, University of Ulsan College of Medicine, Ulsan University Hospital, Ulsan, Korea, Republic of, [3]Dept. of Occupational and Environmental Medicine,Uni.of Ulsan College of Medicine, Ulsan Uni.Hospital, Ulsan, Korea, Republic of, [4]Department of Physical Therapy, Ulsan College, Ulsan, Korea, Republic of, [5]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [6]Lab.of Thrombosis & Vascular Medicine, Medical Research Institute, CHA Uni. College of Medicine, Kyunggi-Do, Korea, Republic of, [7]Dept. of Physical Medicine and Rehabilitation, Uni. of Ulsan College of Medicine, Ulsan Uni.Hospital, Ulsan, Korea, Republic of

**3508 Anatomical location of the frontopontine fibers in the internal capsule: a DTT study**
Hando Lee[1], Sung Ho Jang[2], Mi Young Lee[3]
[1]Department of Physical Medicine & Rehabilitation College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [2]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [3]Dept. of Physical Therapy, College of Health and Therapy, Daegu Haany University, Daegu, Korea, Republic of

**3509 Automated Fiber-tract Quantification of White Matter Tissue Biology**
Jason Yeatman[1], Aviv Mezer[1], Ariel Rokem[1], Franco Pestilli[1], Heidi Feldman[2], Brian Wandell[1]
[1]Stanford University, Stanford, United States, [2]Stanford University School of Medicine, Stanford, United States

**3510 Cognitive impairment with and without depression history: An analysis of white matter microstructure**
Shantel Duffy[1], Jim Lagopoulos[1], Ian Hickie[1], Matt Paradise[1], Loren Mowszowski[1], Simon Lewis[1], Sharon Naismith[1]
[1]Brain & Mind Research Institute, The University of Sydney, Sydney, Australia

****3511 Combining ZOOPPA and blipped CAIPIRINHA for highly accelerated Diffusion Weighted Imaging at 7T & 3T**
Cornelius Eichner[1,2], Kawin Setsompop[1], Peter Koopmans[3], Alfred Anwander[2], Ralf Lützkendorf[4], Steven Cauley[1], Himanshu Bhat[5], David Norris[3], Robert Turner[2], Lawrence Wald[1], Robin Heidemann[2,6]
[1]Massachusetts General Hospital, Charlestown, United States, [2]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [4]University of Magdeburg, Germany, [5]Siemens Medical Solutions, Malvern, PA, [6]Siemens Healthcare Sector, Erlangen, Germany

**3512 Comparison of structural connectivity using HARDI and DTI**
Akila Rajagopal[1], Weihong Yuan[2], Gregory Lee[3], Jennifer Vannest[3], Scott Holland[4]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati, United States, [2]Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, [3]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [4]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**3513 Conspicuity of Medial Longitudinal Fasciculus at Ultra High Field in Multiple Sclerosis**
Ken Sakaie[1], Masaya Takahashi[2], Koji Sagiyama[2], Ivan Dimitrov[3], Gina Remington[2], Teresa Frohman[2], Elliot Frohman[2], Robert Fox[4]
[1]Cleveland Clinic, Cleveland, United States, [2]University of Texas-Southwestern Medical Center, Dallas, TX, [3]Philips Medical Systems, Cleveland, OH, [4]Mellen Center, The Cleveland Clinic, Cleveland, OH

**3514 Diffusion Tensor Atlas and Tract-based Spatial Statistics in Macaque Monkey**
Takuya Hayashi[1], Shin-ichi Urayama[2], Hiroshi Watabe[3], Takayuki Ose[1], Yumi Murata[4], Noriyuki Higo[4], Hirotaka Onoe[1]
[1]RIKEN Center for Molecular Imaging Science, Kobe, Japan, [2]Kyoto University Human Brain Research Center, Kyoto, Japan, [3]Osaka University Molecular Imaging in Medicine, Suita, Japan, [4]AIST, Tsukuba, Japan

**3515 Diffusion Tensor Imaging of Cerebellar Tracts in Preterm and Full Term 9-16 Year Olds**
Katherine Travis[1], Yael Leitner[2], Michal Ben-Shachar[3], Heidi Feldman[4]
[1]Stanford University, Palo Alto, United States, [2]Tel Aviv University, Tel Aviv, Israel, [3]Bar Ilan University, Ramat-Gan, Israel, [4]Stanford University School of Medicine, Stanford, CA

**3516 Disrupted properties of brain anatomical networks related to Parkinson's disease: a DTI study**
Changhong Li[1], Biao Huang[2], Qing Ma[1], Wanqun Yang[2], Huang Huang[1], Yuhu Zhang[3], Yong Xu[1], Shumei Li[1], Ruiwang Huang[1]
[1]Centre for Studies of Psychological Application, Key Laboratory of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]Department of Radiology, Guangdong Academy of Medical Sciences, Guangdong General Hospital, Guangzhou, China, [3]Department of Neurology, Guangdong Academy of Medical Sciences, Guangdong General Hospital, Guangzhou, China

**3517 Distributed white matter abnormalities in schizophrenia detected by FA fiber integral (FAFI) maps**
Paolo Nucifora[1], Raquel Gur[2], Ruben Gur[2]
[1]University of Pennsylvania, Philadelphia, United States, [2]University of Pennsylvania, Philadelphia, PA

**3518 DTI Analysis in Amyotrophic Lateral Sclerosis at Single Subject Level: a Pilot Study**
Jan Kassubek[1], Albert Ludolph[1], Hans-Peter Müller[1]
[1]Dept. of Neurology, University of Ulm, Ulm, Germany

**3519 Early white matter changes in childhood multiple sclerosis: A diffusion tensor imaging study**
Daniel Keeser[1,2], Astrid Blaschek[3], Sophia Mueller[4], Florian Heinen[3], Inga Koerte[5], Sebastian Schröder[3], Wolfgang Müller-Felber[3], Birgit Ertl-Wagner[4]
[1]Ludwig Maximilians University Munich, Institute of Clinical Radiology, Munich, Germany, [2]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany, [3]Dr. von Haunersches Children's Hospital, Ludwig-Maximilian University, Munich, Germany, [4]Institute for Clinical Radiology, Ludwig-Maximilian University, Munich, Germany, [5]Brigham and Women's Hospital & Harvard Medical School, Boston, MA

**3520 Effect of Retrospective Noise Floor Correction on Diffusion Tensor Measures of Tissue Integrity**
Jian Lin[1], Ken Sakaie[1], Bharath Atthe[1], Katherine Koenig[1], Kecheng Liu[2], Mark Lowe[1]
[1]Cleveland Clinic, Cleveland, United States, [2]Siemens Medical Solutions, Inc, Malvern, PA United States

**3521 Effects of motion in a diffusion tractography study of children with autism spectrum disorder**
Anastasia Yendiki[1], Kami Koldewyn[2], Sita Kakunoori[1], Bruce Fischl[1,2], Nancy Kanwisher[2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA, [2]Massachusetts Institute of Technology, Cambridge, MA

**3522** **Ex vivo diffusion imaging: the effects of tissue preparation and imaging parameters on data quality**
David Slater[1], Po-Wah So[1], Istvan Bodi[2], Michel Modo[3], Flavio Dell'Acqua[1]
[1]King's College London - Institute of Psychiatry, London, United Kingdom, [2]King's College Hospital - Department of Clinical Neuropathology, London, United Kingdom, [3]University of Pittsburgh - Department of Radiology, Pittsburgh, United States

**3523** **FA as a marker for White Matter Abnormalities in children with HIV on ART**
Christelle Ackermann[1], Savvas Andronikou[2], Els Dobbels[3], Muhammad G. Saleh[4], Alkathafi A. Alhamud[4], J.W. van der Kouwe Andre[5], Barabara Laughton[6], Ernesta M. Meintjes[4]
[1]Department of Radiodiagnosis, University of Stellenbosch, Stellenbosch, South Africa, [2]Department of Radiology, University of Witwatersrand, Johannesburg , South Africa, [3]4Children's Infectious Diseases Clinical Research Unit, Department of Paediatrics and Child Health,, Cape Town, South Africa, [4]MRC/UCT Medical Imaging Research Unit, Department of Human Biology, University of Cape Town, Cape Town, South Africa, [5]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, United States, [6]Children's Infectious Diseases Clinical Research Unit, Stellenbosch University, Stellenbosch, South Africa

**3524** **FA of the left cingulum bundle is reduced in children treated with glucocorticoids earlier in life**
Martin Vestergaard[1], William Baaré[1], Sara Damsted[1,2], Peter Uldall[2], Alfred Peter Born[2], Hartwig Siebner[1,3], Olaf B. Paulson[1,4], Kathrine Skak Madsen[1,5]
[1]Danish Research Centre for Magnetic Resonance, Hvidovre, Denmark, [2]Department of Paediatrics, Copenhagen University Hospital, Rigshospitalet, Juliane Marie Center, Copenhagen, Denmark, [3]University of Copenhagen, Copenhagen, Denmark, [4]Neurobiology Research Unit Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark, [5]Center for Integrated Molecular Brain Imaging, Copenhagen, Denmark

**3525** **Gridography: A new approach to diffusion MRI tracking**
Carlos Santos[1], Rui Lavrador[1], Nicolás Lori[1]
[1]IBILI, Faculty of Medicine, University of Coimbra, Coimbra, Portugal

**3526** **How Does B-Value Affect the Estimation of Ensemble Average Propagator in HARDI?**
Sangma Xie[1], Nianming Zuo[1], Liqing Shang[2], Ming Song[1], Lingzhong Fan[1], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]School of Life Science and Technology, University of Electronic Science and Technology of China, Chengdu, China

**3527** **Importance Sampling on Orientation Distribution Functions for Filtered Probabilistic Tractography**
Hasan Cetingul[1], Ali Demir[1], Laura Dumont[1], Christophe Lenglet[2]
[1]Siemens Corporation, Corporate Technology, Princeton, NJ, [2]University of Minnesota, Minneapolis, MN

**3528** **Local Information is Enough for Parcellation of Primary Cerebral Cortex**
Li Qiaojun[1], Ming Song[1], Tianzi Jiang[1]
[1]Institute Of Automation, Chinese Academy of Sciences, Beijing, China

**3529** **Mapping patterns of white matter maturation in human brain using tract-specific analysis**
Zhang Chen[1], Min Liu[2], Hui Zhang[3], Christian Beaulieu[2]
[1]Department of Biomedical Engineering, University of Alberta, Edmonton, Canada, [2]Department of Biomedical Engineering, University of Alberta, Edmonton, Alberta, [3]Department of Computer Science, University College London, London, United Kingdom

**3530** **Maturational Process of the Arcuate Fasciculus from Infant to Adolescent: DTI Study**
Su min Son[1], Woo mok Byun[2], Kyung woo Kang[1], Sung Ho Jang[3], Hyung Jun Tak[3]
[1]Department of Physical Medicine & Rehabilitation College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [2]Department of Diagnostic Radiology, College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [3]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**3531** **Measuring vibrations in MRI with an inexpensive device**
Jens Sommer[1], Alexandra Hellerbach[1], Andreas Jansen[1], Felix Hebenstreit[2]
[1]Department of Psychiatry and Psychotherapy, Marburg, Germany, [2]Department of Neurophysics, University of Marburg, Marburg, Germany

**3532** **MRI phantoms - are there alternatives to agar?**
Alexandra Hellerbach[1], Verena Schuster[1], Jens Sommer[1]
[1]Department of Psychiatry and Psychotherapy, Philipps-University, Marburg, Germany

**3533** **Neuro-imaging of white matter and neuro-cognitive outcome following cranial radiation for pediatric**
Nadia Scantlebury[1], Eric Bouffet[1], Marie-Eve Briere[2], Adam Fleming[3], Christopher Fryer[4], Juliette Hukin[4], Nada Jabado[3], Daniel Keene[5], Abhaya Kulkarni[1], Normand Laperriere[6], Fang Liu[1], Dina McConnell[4], Isabelle Montour-Proulx[5], Michael Noseworthy[7], Michael Sharpe[6], Douglas Strother[2], Suzanne Laughlin[8], Nicole Law[1], Donald Mabbott[8]
[1]The Hospital for Sick Children, Toronto, Canada, [2]Alberta Children's Hospital, Calgary, Canada, [3]Montreal Children's Hospital, Montreal, Canada, [4]British Columbia Children's Hospital, Vancouver, Canada, [5]Children's Hospital of Eastern Ontario, Ottawa, Canada, [6]Princess Margaret Hospital, Toronto, Canada, [7]McMaster University, Hamilton, Canada, [8]The Hospital for Sick Children, Toronto, Ontario

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3534 Nodes Parcellation Method for Brain Connectivity Analysis Based on Diffusion Tensor Tractography**
Hunki Kwon[1], Uicheul Yoon[2], Jun Sung Park[1], Sang Won Seo[3], Duk L. Na[3], Jong-Min Lee[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan-si, Korea, Republic of, [3]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of

**3535 Online Hierarchical Clustering of White Matter Fiber Pathways**
Ali Demir[1], Hasan Cetingul[1]
[1]Siemens Corporation, Corporate Technology, Princeton, NJ

**3536 Relation between aphasia and diffusion tensor tractography for the arcuate fasciculus in stroke**
Ah Young Lee[1], Hyung Jun Tak[1], Sung Ho Jang[1]
[1]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**3537 Sensitivity of Diffusion MRI Anisotropy Indices to Pathological White Matter Changes in Parkinson's**
Marta Correia[1], Charlotte Rae[2], Rowe James[3]
[1]Medical Research Council - Cognition and Brain Sciences Unit, Cambridge, United Kingdom, Cambridge, United Kingdom, [2]MRC Cognition and Brain Sciences Unit, Cambridge, United Kingdom, [3]Cambridge University Department of Clinical Neurosciences, Cambridge, United Kingdom

**3538 Simultaneous structural and resting functional connectivity using interleaved DTI and BOLD fMRI**
Frances Robertson[1], Alkathafi Alhamud[1], Paul Taylor[2,3], André Van der Kouwe[4], Ernesta Meintjes[1]
[1]University of Cape Town, Cape Town, South Africa, [2]UMDNJ, Newark, United States, [3]African Institute for Mathematical Sciences, Cape Town, South Africa, [4]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

**3539 Suppressing mulit-channel diffusion tensor imaging noise using the data consistency constraint**
Yi-Cheng Hsu[1], Shang-Yueh Tsai[2], Ying-Hua Chu[1], Wen-Jui Kuo[3], Fa-Hsuan Lin[1]
[1]National Taiwan University, Taipei, Taiwan, [2]National Chengchi University, Taipei, Taiwan, [3]National Yang-Ming University, Taipei, Taiwan

**3540 Thalamocortical connections between the mediodorsal nucleus of the thalamus and prefrontal cortex in**
Sang Seok Yeo[1], Mi Young Lee[2], Sung Ho Jang[3]
[1]Yeungnam University Medical Center, Daegu, Korea, Republic of, [2]Department of Physical Therapy, College of Health and Therapy, Daegu Haany University, Daegu, Korea, Republic of, [3]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**3541 The crossing angles between the corpus callosum and the left-sided corticospinal tract with DSI**
Yong Xu[1], Ruibin Zhang[1], Pengfei Xu[2], Litao Zhu[2], Bida Zhang[3], Jerecic Renate[4], Ruiwang Huang[1]
[1]Center for the Study of Applied Psychology, Key Lab of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China, [3]Siemens Shenzhen Magnetic Resonance, Shenzhen, China, [4]Siemens MR PI CM, Munich, Germany

**3542 Tractography-based parcellation of the cerebellum based on high-resolution diffusion tensor imaging**
Henrik Lundell[1], Tim Dyrby[1]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark

**3543 White matter microstructure in children with Williams Syndrome compared to matched controls**
Nicholas Turner[1], Katherine Roe[1], Dharshan Chandramohan[1], Melanie Sottile[1], Daniel Rubinstein[2], Joelle Sarlls[3], Carolyn Mervis[4], Joseph Masdeu[2], Daniel Eisenberg[5], Jeffrey Bloch[1], Katherine Damme[1], Jonathan Kippenhan[2], Stefano Marenco[2], Karen Berman[2]
[1]NIMH/NIH, Bethesda, MD, United States, [2]NIMH, Bethesda, MD, United States, [3]NIH, Bethesda, MD, United States, [4]Dept Psych and Brain Sci., U Louisville, Louisville, KY, [5]National Institutes of Health, Bethesda, MD, United States

**3544 White-Matter Microstructural Changes in Primary dysmenorrheal: a Diffusion Tensor Imaging Study**
Yuanqiang Zhu[1], Lingmin Jin[1], Jinbo Sun[1], Minghao Dong[1], Wei Qin[1], Jie Tian[2]
[1]School of Life Sciences and Technology, Xidian University, xi'an, China, [2]Institute of Automation, Chinese Academy of Sciences, Beijing, Shaanxi

**3545 Within-Subject Reliability of DTI Tractography Across 4 Centres in the NeuroDevNet Study**
Sarah Treit[1], Christian Beaulieu[2]
[1]Centre for Neuroscience, University of Alberta, Edmonton, Alberta, Canada, [2]Department of Biomedical Engineering, University of Alberta, Edmonton, Alberta, Canada

## Imaging Methods

### EEG

**3546 Accuracy and reliability of ESI using simultaneous EEG-SEEG and electrical cortical stimulations**
Gael KUHN[1], Frederic PIETTE[1], Sophie COLNAT-COULBOIS[2], Jean-Pierre VIGNAL[3], Hervé VESPIGNANI[3], Louis MAILLARD[3], Laurent KOESSLER[4]
[1]CRAN, CNRS UMR7039 - Université de Lorraine, NANCY, France, [2]Centre Hospitalier Universitaire de Nancy, NANCY, France, [3]CRAN, CNRS UMR7039 - Université de Lorraine; Centre Hospitalier Universitaire de Nancy, NANCY, France, [4]CRAN, CNRS UMR7039, NANCY, France

**3547 Affective Modulation of Brain Responses during a Go/No-Go task: An ERP study**
Killian Kleffner-Canucci[1], Mario Liotti[2]
[1]Simon Fraser University, Burnaby, Canada, [2]Simon Fraser University, Vancouver, BC

**3548 Changes of resting-state EEG and functional connectivity in patients with major depression**
Daniel Keeser[1,2], Susanne Karch[3], Kirsch Valerie[4], John Davis[5], Anna Länger[6], Agnieszka Chrobok[3], Fabian Loy[3], Tanju Surmeli[7], Hessel Engelbregt[8,6], Robert Thatcher[9], Oliver Pogarell[10]
[1]Institute of Clinical Radiology, Ludwig Maximilians University, Munich, Germany, [2]Department of Psychiatry and Psychotherapy, Ludwig Maximilians University, Munich, Germany, [3]Department of Psychiatry and Psychotherapy, Munich, Germany, [4]Ludwig Maximilian University, Institute of Clinical Radiology, Munich, Germany, [5]Department of Psychiatry and Behavioral Neurosciences, Michael G. DeGroote School of Medicine,, Ontario, Canada, [6]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University Munich, Munich, Germany, [7]Living Mental Health Center for Research and Education, Istanbul, Turkey, [8]Hersencentrum, Amsterdam, Netherlands, [9]NeuroImaging Laboratory, Applied Neuroscience Research Institute, St. Petersburg, FL, [10]Departement of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany

****3549 Colocalizing EEG and fMRI in Space**
Pamela Douglas[1], Mark Cohen[2], Daniel Moyer[2]
[1]UCLA, LOS ANGELES, United States, [2]UCLA, Los Angeles, CA

**3550 Withdrawn**

**3551 Cordance as a Biomarker in Sleep-EEG for Treatment Response in Depression**
Marcel Pawlowski[1], Marek Adamczyk[1], Mary Gazea[1], Bastian Wollweber[1], Florian Holsboer[1], Axel Steiger[1], Martin Dresler[1]
[1]Max Planck Institute of Psychiatry, Munich, Germany

****3552 EEG dynamic source imaging based on general linear modeling and non-parametric statistical testing**
Anna Custo[1], Dimitri Van De Ville[2], Christoph Michel[1,3]
[1]Functional Brain Mapping Laboratory, UniGE, Geneva, Switzerland, [2]UniGE/EPFL, Lausanne, Switzerland, [3]HUG, Geneva, Switzerland

**3553 EEG SPECTRAL POWER CHANGES IN BETA, GAMMA FREQUENCY RANGES AND EMOTIONAL VALENCES**
Julia Boytsova[1], Sergey Danko[2], Larisa Gratcheva[3], Maryia Solovjeva[2]
[1]N.P. Bechtereva Institute of the Human Brain RAS, Saint-Petersburg, Russian Federation, [2]N.P. Bechtereva Institute of the Human Brain RAS, Saint-Petersburg , Russian Federation, [3]State Academy of Theatre Arts, Saint-Petersburg , Russian Federation

**3554 Effect of high-frequency rTMS on brain excitability in severely brain-injured patients in MCS or VS**
Emanuela Formaggio[1], Silvia Francesca Storti[2], Leontino Battistin[1], Paolo Tonin[1], Francesco Piccione[1], Marianna Cavinato[1], Paolo Manganotti[2,3,1]
[1]Foundation IRCCS San Camillo Hospital, Venezia, Italy, [2]University of Verona, Verona, Italy, [3]AOUI of Verona, Verona, Italy

**3555 Fronto-temporal interactions in theta-band during auditory change detection**
Jeong Woo Choi[1], Deokwon Ko[2], Gwan-Taek Lee[2], Ki-Young Jung[2], Kyung Hwan Kim[1]
[1]Yonsei University, Wonju, Gangwon, Korea, Republic of, [2]Korea University Medical Center Anam Hospital, Seoul, Korea, Republic of

**3556 Functional Brain Mapping: Optimization for clinical purposes**
Christoph Kapeller[1], Cristhian Potes[2], Christoph Guger[1], Robert Prueckl[1], Rupert Ortner[1], Guenter Edlinger[1]
[1]g.tec Guger Technologies OG, Graz, Austria, [2]Wadsworth Center, Albany, NY, USA

**3557 Gamma-band activity; Role of Music Perception in the Brain**
Yuko Urakami[1], Yoshikazu Washizawa[2], Koki Kawamura[3,4], Kazuko Hiyoshi[4,5], Andrzej Cichocki[4]
[1]National Rehabilitation Center for Persons with Disabilities, Tokorozawa, Japan, [2]Department of Communication Engineering and Informatics, The University of Electro-Communications, Tokyo, Japan, [3]Department of Anatomy, Medical school, Keio University, Tokyo, Japan, [4]RIKEN Brain Science Institute, Laboratory for Advanced Brain Signal Processing, Wako-shi, Japan, [5]Department of Functional Brain Imaging, Human Brain Research Center, Graduate School of Medicine, Kyoto University, Kyoto, Japan

**3558 Grammatical violations on regular & irregular verbs elicit P600 (but not LAN): an ERP study**
Laura Kemmer[1], Marta Kutas[2]
[1]Pacific Lutheran University, Tacoma, WA, [2]Department of Cognitive Science, University of California, San Diego, San Diego, CA

**3559 Imaging half a million ICA-component scalp maps reveals EEG source hotspots**
nima bigdely-shamlo[1,2], Kennet Kreutz-Delgado[3], Christian Kothe[4], Scott Makeig[5]
[1]Swartz Center for Computational Neuroscience, UCSD, San Diego, United States, [2]Department of Electrical and Computer Engineering, University of California San Diego, san diego, CA, [3]ECE Dept, UCSD, La Jolla, CA, [4]UCSD, San Diego, United States, [5]Swartz Center for Computational Neuroscience, UCSD, La Jolla, CA

**3560 Inefficiency of post-error adjustment in violent adolescents: an event-related potential study**
chiaoyun chen[1]
[1]Department and Graduate Institute of Criminology, Chiayi, Taiwan

**3561 Influence of therapy on reward-related neurobiological responses in patients with alcohol-disorder**
Susanne Karch[1], Daniel Keeser[2,3], Shari Langemak[3], Florian Riegg[4], Gabriele Koller[4], Felix Segmiller[4], Irmgard Hantschk[4], Oliver Pogarell[5]
[1]Department of Psychiatry and Psychotherapy, Munich, Germany, [2]Institute of Clinical Radiology, Ludwig Maximilians University, Munich, Germany, [3]Department of Psychiatry and Psychotherapy, Ludwig-Maximilians-University, Munich, Germany, [4]Department of Psychiatry and Psychotherapy, Ludwig-Maximilians-University Munich, Munich, Germany, [5]Department of Psychiatry and Psychotherapy, Ludwig-Maximilian University, Munich, Germany

**3562 Modulation of ERD in robot-assisted hand performance: active, passive and imagined movements**
Emanuela Formaggio[1], Silvia Francesca Storti[2], Ilaria Boscolo Galazzo[2], Marialuisa Gandolfi[2], Christian Geroin[2], Nicola Smania[2], Paolo Manganotti[2,3,1]
[1]Foundation IRCCS San Camillo Hospital, Venezia, Italy, [2]University of Verona, Verona, Italy, [3]AOUI of Verona, Verona, Italy

**3563 Re-Navigation Effect: EEG Analysis of Spatial Navigation under Threats**
Wei-Jong Tang[1], Shih-Yu Li[2], Li-Wei Ko[3], Chin-Teng Lin[4], Sheng-Hua Chen[5], Klaus Gramann[6]
[1]Brain Research Center, National Chiao Tung University, Hsinchu, Taiwan, Republic of China, Taipei, Taiwan, [2]National Chiao Tung University, Hsinchu, Taiwan, [3]National Chiao Tung University, Hsinchu, Taiwan, Republic of China, [4]National Chiao-Tung University, Hsinchu, Taiwan, Republic of China, [5]Brain Research Center, National Chiao Tung University, Hsinchu, Taiwan, Republic of China, Hsinchu, Taiwan, [6]Institute for Cognitive Science, University of Osnabrück, Osnabrück, Germany, Osnabrück, Germany

**3564 Real-time EEG population-based classifier of brain states of emotion and motor execution**
Sergio Ruiz[1,2], Andreas Schmidt[3,2], Korhan Buyukturkoglu[2], Emanuele Pasqualotto[4], Francisco Aboitiz[1], Niels Birbaumer[2], Ranganatha Sitaram[5,2]
[1]Departamento de Psiquiatría, Pontificia Universidad Católica de Chile, Santiago, Chile, [2]Institute of Medical Psychology and Behavioral Neurobiology, Tuebingen, Germany, [3]Wilhelm-Schickard-Institut fur Informatik, Tuebingen, Germany, [4]Psychological Sciences Research Institute, Université Catholique de Louvain, Louvain-la-Neuve, Belgium, [5]Department of Biomedical Engineering, University of Florida, Florida, United States

**3565 Source level analysis of oddball evoked potentials correlates with cognitive deterioration in MS**
Jeroen Van Schependom[1], Marie Bie D'hooghe[1,2], Mélanie De Schepper[3], Krista Cleynhens[2], Mieke D'hooge[2], Marie-Claire Haelewyck[3], Jacques De Keyser[1], Guy Nagels[1,2,3]
[1]Vrije Universiteit Brussel, Brussel, Belgium, [2]National Multiple Sclerosis Center Melsbroek, Melsbroek, Belgium, [3]UMONS, Mons, Belgium

**3566 Source localization of olfactory and trigeminal ERPs**
Emilia Iannilli[1], Stefan Wiens[2], Artin Arshamian[3], Han-Seok Seo[4], Thomas Hummel[5]
[1]Smell and Taste Clinic - Department of Otorhinolaryngology - University of Dresden Medical School, Dresden, Germany, [2]Department of Psychology, Stockholm University, Stockholm, Sweden, [3]Department of Psychology, Stockholm University,, Stockholm, SC, [4]Department of Food Science, University of Arkansas, Fayetteville, AR, [5]Department of Otorhinolaryngology, University of Dresden Medical School, Dresden, Germany

**3567 Statistical significance of task related deep brain EEG in the time-frequency domain**
Jan Chládek[1], Milan Brázdil[2], Josef Halámek[1], Pavel Jurák[1]
[1]Institute of Scientific Instruments of the ASCR, v.v.i., Brno, Czech Republic, [2]Behavioral and Social Neuroscience Research Group, CEITEC-Central European Institute of Technology,, Brno, Czech Republic

**3568 Sustained thermal pain modulates spontaneous sensorimotor rhythms**
HUISHI ZHANG[1], Bin He[1,2], Yunfeng Lu[1]
[1]Department of Biomedical Engineering, University of Minnesota, Minneapolis, United States, [2]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, United States

**3569 Temporal Constraints of Behavioral Inhibition: Relevance of Inter-stimulus Interval in a GoNogo Task**
Francisco Zamorano[1], Pablo Billeke[1], Vladimir López[2], José María Hurtado[2], Francisco Aboitiz[2]
[1]Universidad del Desarrollo, Santiago, Chile, [2]Pontificia Universidad Católica de Chile, Santiago, Chile

**3570** **The analgesic effect of buprenorphine based on wavelet analysis of single-sweep EEG**
Tine Hansen[1,2], Mikkel Gram[2], Carina Graversen[2], Carsten Mørch[3], Asbjørn Drewes[2]
[1]Department of Radiology, Aalborg University Hospital, Aalborg, Denmark, [2]Mech-Sense, Department of Gastroenterology, Aalborg University Hospital, Aalborg, Denmark, [3]Center for Sensory-Motor Interaction, Department of Health Science and Technology,Aalborg University, Aalborg, Denmark

## Imaging Methods

### MEG

**3571** **A Comparison of Beamformer and Minimum Norm Solutions for Network Connectivity Mapping in MEG**
George O'Neill[1], Emma Hall[1], Sofia Palazzo Corner[1], Peter Morris[1], Matthew Brookes[1]
[1]University of Nottingham, Nottingham, United Kingdom

***3572** **A multi-variate method for assessment of dynamic functional connectivity in MEG, (O-Th2)**
Matthew Brookes[1], George O'Neill[1], Sofia Palazzo Corner[1], Emma Hall[1], Gareth Barnes[2], Peter Morris[3]
[1]University of Nottingham, Nottingham, United Kingdom, [2]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, London, United Kingdom, [3]University of Nottingham, Oxford, United Kingdom

**3573** **Moved to 3454**

**3574** **Correspondence of BOLD fMRI and Beta-Band MEG Activation in an N-Back Working Memory Task**
Frederick Carver[1], Tom Holroyd[2], Joseph Callicott[3], Richard Coppola[4]
[1]NIMH, Bethesda, MD, [2]National Institute of Mental Health (NIMH), NIH, Bethesda, MD, [3]NIH/NIMH, Bethesda, MD, [4]NIMH/NIH, Bethesda, MD

**3575** **Dynamic Synchronization Likelihood Maps with Variable Threshold in the Resting MEG**
Chia-Yen Yang[1], Ching-Po Lin[2]
[1]Ming-Chuan University, Taoyuan, Taiwan, Republic of China, [2]National Yang-Ming University, Taipei, Taiwan, Republic of China

**3576** **Face processing in pre-school aged children: An MEG neuroimaging study**
Wei He[1], Jon Brock[1], Blake Johnson[1]
[1]Macquarie University, Sydney, Australia

**3577** **Functional cortical hubs in the eyes-closed resting human brain using MEG**
Seung-Hyun Jin[1], Woorim Jeong[1], Jaeho Seol[1], Jiyeon Kwon[1], Chun Kee Chung[1,2]
[1]MEG center, Seoul National University Hospital, Seoul, Korea, Republic of, [2]Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, Republic of

**3578** **Gamma Rhythm Deficits in Children Treated with Cranial-Radiation Therapy for Brain Tumors**
Colleen Dockstader[1], Frank Wang[1], Eric Bouffet[1], Suzanne Laughlin[1], Donald Mabbott[1]
[1]The Hospital for Sick Children, Toronto, Canada

**3579** **Gamma-band rhythms in human visual cortex are phase-locked to preceding retinal activity**
Tzvetan Popov[1], Mathis Kaiser[1], Sarang Dalal[2]
[1]University of Konstanz, Konstanz, Germany, [2]University of Konstanz and Zukunftskolleg, Konstanz, Germany

**3580** **Lexical access in preschool children: Localizing the N400m**
Graciela Tesan[1], Blake Johnson[1], Stephen Crain[1]
[1]Macquarie University, Sydney, Australia

**3581** **Magnetoencephalography with Cryogen-Free Atomic Magnetometers**
Peter Schwindt[1], Cort Johnson[1], Michael Weisend[2]
[1]Sandia National Laboratories, Albuquerque, NM, [2]Mind Research Network, Albuquerque, NM

**3582** **Modulating Coherence between Left and Right Primary Motor Cortex Using Neurofeedback**
Diljit Singh Kajal[1,2], Matthew Sacchet[3,4], Juergen Mellinger[5], Christoph Braun[6,7,8], Sergio Ruiz[9,10], Ranganatha Sitaram[1,11,12], Niels Birbaumer[1,13]
[1]Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany, [2]MEG-Center, University of Tübingen, Tübingen, Germany, [3]Neuroscience Program, Stanford University School of Medicine, Stanford, CA, [4]Department of Psychology, Stanford University, Stanford, CA, [5]MEG-Center, University of Tübingen Medical School, Tübingen, Germany, [6]MEG Center, University of Tübingen, Tuebingen, Germany, [7]CIMEC, University of Trento, Trento, Italy, [8]Department of Psychology and Cognitive Science, University of Trento, Trento, Italy, [9]Departamento de Psiquiatría, Pontificia Universidad Catolica de Chile, Santiago, Chile, [10]Institute of Medical Psychology and Behavioral Neurobiology, Tübingen, Germany, [11]Department of Biomedical Engineering, University of Florida, Gainsville, FL, [12]Sri Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India, [13]San Camillo Hospital, Scientific Institute for Research, Hospitalization and Health Care, Venice, Italy

**3583** **Natural scenes viewing alters the dynamics of functional connectivity in the human brain**
Viviana Betti[1], Stefania Della Penna[1], Francesco de Pasquale[1], Dante Mantini[2,3], Laura Marzetti[1], Gian Luca Romani[1], Maurizio Corbetta[4]
[1]Department of Neuroscience and Imaging, "G. d'Annunzio" University Chieti-Pescara, Chieti, Italy, [2]Department of Experimental Psychology, University of Oxford, Oxford, United Kingdom, [3]Department of Health Sciences and Technology, ETH Zurich, Zurich, Switzerland, [4]Dept. Neurology, Radiology, and Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3584 Picturing names: the learning of a depicted object-sound association in a new language, an MEG study**
Cristiano Micheli[1,2], Matthew MacDonald[3], Thilo Womelsdorf[1], Taufik Valiante[4], Elizabeth Pang[3]
[1]York University, Toronto, Canada, [2]Toronto Western Hospital Research Institute, Toronto, Canada, [3]Hospital for Sick Children, Toronto, Canada, [4]Krembil Neuroscience Center, Toronto, Canada

## Imaging Methods

### MR Spectroscopy

**3585 A 1-Minute Relaxometry Acquisition for Water Referencing in Quantitative Spectroscopy**
Jack Knight-Scott[1], Susan Palasis[2], Katrina Johnson[3]
[1]Children's Healthcare of Atlanta, Atlanta, United States, [2]Children's Healthcare of Atlanta, Atlanta, GA, [3]Emory University, Atlanta, GA

**3586 Application of independent component analysis to proton magnetic resonance spectroscopy**
Ravi Kalyanam[1,2], David Boutte[1], Chuck Gasparovic[1], Kent Hutchison[1,3], Vince Calhoun[1,4]
[1]The Mind Research Network, Albuquerque, NM, [2]University of New Mexico, Albuquerque, NM, [3]Departments of Psychology and Neuroscience, University of Colorado, Boulder, CO, [4]Depts. of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM

**3587 Deficient energy modulation and neuroenergetic decline related to insular atrophy in obese men**
Ferdinand Binkofski[1], Kamila Jauch-Chara[2], Michaela Loebig[2], Uwe Melchert[3], Kerstin Oltmanns[2], Kathrin Reetz[4], Harald Scholand-Engler[3]
[1]Division of Cognitive Neurology, RWTH Aachen, Aachen, Germany, [2]Department of Psychiatry, University of Luebeck, Luebeck, Germany, [3]Department of Neuroradiology, University of Luebeck, Luebeck, Germany, [4]Department of Neurology, RWTH Aachen University, Aachen, Germany

**3588 Magnetic Resonance Spectroscopy in Mild Cognitive Impairment: a Meta-Analysis**
Shankar Tumati[1], Sander Martens[1], A. Aleman[1]
[1]NeuroImaging Center, Groningen, Netherlands

**3589 Neurochemical Changes in Occipital Cortex in Congenital Blindness due to Bilateral Anophthalmia**
Gaelle Coullon[1], Alan Cowey[1], Kate Watkins[1], Holly Bridge[1]
[1]University of Oxford, Oxford, United Kingdom

**3590 Neurotransmitter balance follows GABA receptor profiles in cingulate cortex - A multivoxel MRS study**
Martin Walter[1,2], Weiquiang Dou[3], Joern Kauffman[4], Marie-José van Tol[2], Oliver Speck[3]
[1]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany, [2]Leibniz Institute for Neurobiology, Magdeburg, Germany, [3]Department of Biomedical Magnetic Resonance, Otto-von-Guericke University, Magdeburg, Germany, [4]Department of Neurology, Otto-von-Guericke University, Magdeburg, Germany

**3591 Preliminary results of GABA dynamics underlying visual stimulation at different frequencies**
Ricardo Landim[1], Richard Edden[2], Bernd Foerster[3], Thiago Costa[1], Elvis Silva[1], Li Li[4], Roberto Covolan[1], Gabriela Castellano[1]
[1]Neurophysics Group, Gleb Wataghin Physics Institute, University of Campinas - UNICAMP, Campinas, Brazil, [2]John Hopkins School of Medicine, Baltimore, MD, [3]Philips Medical Systems, Sao Paulo, Brazil, [4]Neurology Department, Medical Sciences School, University of Campinas - UNICAMP, Campinas, Brazil

**3592 Real time detection of subject motion during MEGA-PRESS MR Spectroscopy scans**
Blessy Mathew[1], Erik Beall[1], Pallab Bhattacharyya[1]
[1]Cleveland Clinic, Cleveland, United States

## Imaging Methods

### Multi-Modal Imaging

****3593 A combined portable multimodal imaging system for electric and hemodynamic activity of the brain**
javad safaie[1], Reinhard Grebe[1], Hamid Abrishami Moghaddam[1], Fabrice Wallois[1]
[1]UPJV - GRAMFC - Inserm U1105, amiens, France

**3594 An EKG-free method for extracting BCG timing from the EEG signal**
Cameron Rodriguez[1], Agatha Lenartowicz[1], Mark Cohen[1]
[1]University of California Los Angeles, Los Angeles, CA

**3595 Approaches for Functional Neuroimaging with Ultra-Low Field MRI**
John George[1], Per Magnelind[1], Michelle Espy[2], Andrei Matlashov[1], Henrik Sandin[1], Larry Schultz[1], Algis Urbaitis[1], Petr Volegov[1]
[1]Los Alamos National Laboratory, Los Alamos, NM, [2]Los Alamos National Laboratory, Los Alamos, United States

**3596 BOLD functional connectivity density probed as predictor of regional cerebral blood flow**
Philipp Sämann[1], Immanuel Elbau[1], Victor Spoormaker[1], Michael Czisch[1]
[1]Max Planck Institute of Psychiatry, Neuroimaging Research Group, Munich, Germany

**3597 Brainstem Modulation of the P300: Evidence from Simultaneous EEG-fMRI**
Jennifer Walz[1], Robin Goldman[1], Jordan Muraskin[1], Bryan Conroy[1], Truman Brown[2], Paul Sajda[1]
[1]Columbia University, New York, NY, [2]Medical University of South Carolina, Charleston, SC

**3598 Changes in Opioid Receptor Binding Modulate Functional Connectivity: a Simultaneous fMRI-PET Study**
Hsiao-Ying Wey[1], Jacob Hooker[1], Ciprian Catana[1], Darin Dougherty[2], Gitte Knudsen[3], Bruce Rosen[1], Randy Gollub[2], Jian Kong[2]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, MGH, Charlestown, MA, [2]Department of Psychiatry, Massachusetts General Hospital, Charlestown, MA, [3]Center for Integrated Molecular Brain Imaging, Copenhagen University Hospital, Copenhagen, Denmark

**3599 Combination of ESI, ASL and PET for quantitative assessment of pharmaco-resistant focal epilepsy**
Silvia Francesca Storti[1], Ilaria Boscolo Galazzo[1], Alessandra Del Felice[1], Chiara Arcaro[2], Emanuela Formaggio[2], Francesca Benedetta Pizzini[3], Roberto Mai[4], Paolo Manganotti[1,2,3]
[1]University of Verona, Verona, Italy, [2]Foundation IRCCS San Camillo Hospital, Venice, Italy, [3]AOUI of Verona, Verona, Italy, [4]Niguarda Hospital, Milan, Italy

**3600 Comparison of cerebral blood flow derived from ASL and SPECT in children with Moyamoya disease**
Tomoko Matsuzaki[1], Reizo Shirane[1,2], Yoshihisa Shimanuki[3], Yasuyuki Taki[4,5], Hiroshi Hashizume[5], benjamin thyreau[5], Ryuta Kawashima[5]
[1]Department of Pediatric Neurosurgery, Tohoku University Graduate School of Medicine, Sendai, Japan, [2]Department of Neurosurgery, Miyagi Children's Hospital, Sendai, Japan, [3]Department of Radiology, Miyagi Children's Hospital, Sendai, Japan, [4]Tohoku Medical Megabank Organization, Tohoku University, Sendai, Japan, [5]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan

**3601 Correlated Pattern of Reduced Cortical Thickness and White Matter Integrity in AD and SVaD**
Jin-Ju Yang[1], Hee Jin Kim[2], Sang Won Seo[2], Duk L. Na[2], Jong-Min Lee[3]
[1]a. Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea, Republic of, [3]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of

**3602 Coupling between Visual Alpha Oscillations and Default Mode Activity**
Mingzhou Ding[1], Jue Mo[2], Yuelu Liu[1], Haiqing Huang[1]
[1]University of Florida, Gainesville, FL, [2]University of Florida, GAINESVILLE, FL

**3603 Critically sampled MREG and NIRS data detect similar DMN activity simultaneously**
Vesa Korhonen[1], Jussi Kantola[1], Teemu Myllylä[2], Tuomo Starck[3], Mika Kallio[4], Hanna Ansakorpi[5], Jakob Assländer[6], Juha Nikkinen[3], Osmo Tervonen[3], Pierre LeVan[6], Jürgen Hennig[6], Vesa Kiviniemi[3]
[1]Department of Radiology, Oulu University Hospital, Oulu, Finland, [2]Optoelectronics and Measurement Techniques Laboratory, University of Oulu, Oulu, Finland, [3]Department of Diagnostic Radiology, Oulu University Hospital, Oulu, Finland, [4]Department of Clinical Neurophysiology, Oulu University Hospital, Oulu, Finland, [5]Department of Neurology, Oulu University Hospital, Oulu, Finland, [6]Department of Radiology, Medical Physics, University Medical Center Freiburg, Freiburg, Germany

**3604 Diffusion MRI informed dynamic MEG source reconstruction with application to face recognition data**
Makoto Fukushima[1,2], Okito Yamashita[2], Thomas Knösche[3], Masa-aki Sato[2]
[1]Nara Institute of Science and Technology, Nara, Japan, [2]ATR Neural Information Analysis Laboratories, Kyoto, Japan, [3]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3605 Distribution of brain sodium accumulation in progressive multiple sclerosis reflect clinical deficit**
Adil MAAROUF[1], bertrand audoin[1], Arnaud Le Troter[1], Simon Konstandin[2], Elisabeth Soulier[1], Audrey Rico[1], Sylviane Confort-Gouny[1], Maxime Guye[1], Lothar Schad[2], jean pelletier[1], Jean-Philippe Ranjeva[1], Wafaa Zaaraoui[1]
[1]CRMBM UMR AMU CNRS 7339, Marseille, France, [2]Department of Computer Assisted Clinical Medicine, Heidelberg University, Mannheim, Germany

**3606 Effective connectivity during face perception with concurrent EEG-fMRI and Dynamic Causal Modelling**
Vinh Nguyen[1], Michael Breakspear[2], Ross Cunnington[3]
[1]Queensland Brain Institute, University of Queensland, St Lucia, QLD, [2]The University of New South Wales, Sydney, NSW, [3]University of Queensland, Brisbane, Australia

**3607 FMRI-guided tractography reveals functional and structural brain changes in amnestic MCI**
Maria Giulia Preti[1,2], Francesca Baglio[3], Maria Marcella Laganà[3], Ludovica Griffanti[4,3], Francesca Lea Saibene[5], Pietro Cecconi[3], Raffaello Nemni[5,6], Nikos Makris[7], Giuseppe Baselli[4]
[1]Fondazione Don Carlo Gnocchi ONLUS, MR laboratory, Milano, Italy, [2]Politecnico di Milano, Department of Electronics, Information, and Bioengineering, Milano, Italy, [3]Fondazione Don Carlo Gnocchi ONLUS, MR Laboratory, Milano, Italy, [4]Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milano, Italy, [5]Fondazione Don Carlo Gnocchi ONLUS, Neurorehabilitation Unit, Milano, Italy, [6]Università degli studi di Milano, Milano, Italy, [7]Center For Morphometric Analysis, Massachusetts General Hospital, Harvard Medical School, Boston, MA

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3608** **High-Resistive EEG Technology for Enhanced EEG/MRI Recording: MRI and EEG Data Quality**
Catherine Poulsen[1], Giorgio Bonmassar[2], Daniel Wakeman[2], Phan Luu[1]
[1]Electrical Geodesics, Inc., Eugene, OR, United States, [2]Massachusetts General Hospital/Harvard Medical School, Boston, MA

**3609** **Inhibitory control in ADHD assessed through simultaneous EEG-fMRI imaging**
Sarah Baumeister[1], Sarah Hohmann[1], Isabella Wolf[1], Nathalie Holz[1], Regina Boecker[1], Michael Plichta[1], Matthias Ruf[1], Andreas Meyer-Lindenberg[1], Martin Holtmann[2], Tobias Banaschewski[1], Daniel Brandeis[1,3]
[1]Central Institute of Mental Health Medical Faculty Mannheim/ Heidelberg University, Mannheim, Germany, [2]Ruhr-University Bochum, Bochum, Germany, [3]University of Zurich, Zurich, Switzerland

**3610** **Integrating EEG and fMRI with Group Joint Independent Component Analysis**
David Bridwell[1], Lei Wu[2], Tom Eichele[3], Vince Calhoun[4]
[1]The Mind Research Network, Albuquerque, United States, [2]The Mind Research Network and UNM, Albuquerque, NM, [3]University of Bergen, Bergen, Norway, [4]The Mind Research Network and UNM, ALBUQUERQUE, NM

**3611** **Interactive Exploration of Large Tractography and EEG Data for Source Localization**
Erik Anderson[1], David Hammond[2], Don Tucker[3]
[1]SCI Institute, University of Utah, Salt Lake City, United States, [2]University of Oregon, Eugene, OR, [3]Electrical Geodesics, Inc., Eugene, OR

**3612** **Investigation of neurovascular coupling during a pulsed-pair median nerve stimulation**
Theodore Huppert[1], Benjamin Schmidt[1], Avniel Ghuman[2]
[1]University of Pittsburgh, Pittsburgh, PA, [2] Bethesda, United States

**3613** **Modelling hemodynamic response function in epilepsy**
Silvia Francesca Storti[1], Emanuela Formaggio[2], Alessandra Bertoldo[3], Paolo Manganotti[1,2,4], Gianna Maria Toffolo[3]
[1]University of Verona, Verona, Italy, [2]Foundation IRCCS San Camillo Hospital, Venice, Italy, [3]University of Padova, Padova, Italy, [4]AOUI of Verona, Verona, Italy

**3614** **Neural correlates of semantic integration and expectancy: ERP source model and validation from fMRI**
Jessica Wise[1], Gwen Frishkoff[1], Kate Revill[2], William Gross[3], Jeffrey Binder[4], Annette Baumgaertner[5]
[1]Georgia State University, Atlanta, United States, [2]GSU/GT Center for Advanced Brain Imaging, Atlanta, GA, [3]Medical College of Wisconsin, Milwaukee, WI, [4]Medical College of Wisconsin, Wauwatosa, WI, [5]University of Hamburg, Hamburg, Germany

***3615** **Neuroelectrical Decomposition of Resting State fMRI, (O-Th2)**
Zhongming Liu[1], Jacco de Zwart[1], Catie Chang[1], Qi Duan[1], Peter van Gelderen[1], Jeff Duyn[1]
[1]Advanced MRI Section, NINDS, National Institutes of Health, Bethesda, MD, USA

**3616** **Neurovascular coupling and Hemodynamic response in rat cortex: an electro-optico-cortical imaging**
Mahdi Mahmoudzadeh[1], Ghislaine Dehaene-Lambertz[2], Marc Fournier[1], Fabrice Wallois[1]
[1]INSERM U1105, University of picardie, Amiens, France, [2]Neurospin, Gif/Yvette, France

**3617** **Neurovascular Coupling Networks in the Sensorimotor Rhythm**
Tanveer Talukdar[1], Solomon Diamond[1]
[1]Thayer School of Engineering at Dartmouth, Hanover, NH

**3618** **Reference Layer Artefact Subtraction: A novel method of minimizing EEG artefacts during EEG-fMRI**
Muhammad Enamul Hoque Chowdhury[1], Karen Julia Mullinger[2], Richard Bowtell[2]
[1]University Of Nottingham, Nottingham, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom

**3619** **Relating Structure and Function of the Human Brain Using Relational Imaging Tensors**
Zhaohua Ding[1], Allen Newton[1], Adam Anderson[1], Victoria Morgan[1], John Gore[1]
[1]Vanderbilt University Institute of Imaging Science, Nashville, TN, United States

**3620** **Simultaneous EEG/fMRI reveals Spatiotemporal Correlates of Baseball Pitch Recognition**
Jordan Muraskin[1], Jason Sherwin[1,2], Paul Sajda[1]
[1]Columbia University, New York, NY, [2]US Army Research Laboratory, Aberdeen, MD

**3621** **Simultaneous EEG-fMRI of Passive Sensory Processing**
Nasim Shams[1,2], Claude Alain[1,3], Stephen Strother[1,2]
[1]Rotman Research Institute, Baycrest, Toronto, ON, Canada, [2]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada, [3]Department of Psychology, University of Toronto, Toronto, ON, Canada

**3622** **Single-trial fMRI correlations of inhibitory ERP components**
Lena Schmueser[1], Alexandra Sebastian[1], Klaus Lieb[1], Bernd Feige[2], Oliver Tuescher[1]
[1]University Hospital Mainz, Mainz, Germany, [2]University Hospital Freiburg, Freiburg, Germany


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**3623** **Spatiospectral heterogeneity of neurovascular coupling during cognitive processing**
Jan Kujala[1], Gustavo Sudre[2], Johanna Vartiainen[1], Mia Liljeström[1], Tom Mitchell[3], Riitta Salmelin[1]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory, Aalto University, Espoo, Finland, [2]Center for the Neural Basis of Cognition, Carnegie Mellon University, Pittsburgh, PA, [3]Machine Learning Department, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

**3624** **Spectral patterns of EEG and brain hemodynamics**
Radek Marecek[1], Michal Mikl[1], Marek Barton[1], Milan Brazdil[1]
[1]CEITEC, Masaryk University, Brno, Czech Republic

**3625** **Structural and effective connectivity in focal epilepsy**
Marcio Sturzbecher[1], Tonicarlo Velasco[2], Veriano Jr.[2], Américo Sakamoto[2], João Leite[1]
[1]FMRP - University of São Paulo, Ribeirão Preto, Brazil, [2]CIREP - University of São Paulo, Ribeirão Preto, Brazil

**3626** **Visualization of cardiac pulsation wave in the brain using concurrent fNIRS and multiband fMRI**
Yunjie Tong[1], Lia Hocke[1,2], Blaise Frederick[1]
[1]McLean Hospital, Harvard Medical School, Belmont, MA, United States, [2]Biomedical Engineering Department, Tufts University, Medford, MA, United States

## Imaging Methods

### Non-BOLD fMRI

**3627** **A methodology for semi-automated cerebral blood volume (CBV) calculation and mapping**
Frank Provenzano[1], Usman Khan[2], Andrew Laine[1], Scott Small[1]
[1]Columbia University, New York, NY, [2]SUNY Downstate Medical Center, Brooklyn, NY

**3628** **Comparison of Tissue Occupancy Functional Contrasts for 3D Turbo-spin-echo Acquisition**
Paul Summers[1], Armando Bauleo[1], Fabiola Cretti[2], Fausta Lui[1], Carlo Porro[1]
[1]Univ Modena & Reggio Emilia, Modena, Italy, [2]Osp. Riuniti di Bergamo, Bergamo, Italy

**3629** **Generation of robust maps of fractional CBF change for respiratory calibrated MRI**
Isabelle Lajoie[1], Felipe Tancredi[2], Richard Hoge[3]
[1]CRIUGM - University of Montreal, Montreal, Canada, [2]University of Montreal, Montreal, Canada, [3]Université de Montréal, Montréal, Canada

**3630** **Measurements of Brain Activation by ASL Perfusion in Elderly at 1.5 T — A Feasibility Study**
Sigurdur Sigurdsson[1], Lars Forsberg[2], Vilmundur Gudnason[3]
[1]The Icelandic Heart Association, Kopavogur, Iceland, [2]Karolinska Institutet, [3]Icelandic Heart Association, Reykjavik, Iceland

**3631** **PCASL Rest Perfusion in Elderly at 1.5T — A Reproducibility Study**
Sigurdur Sigurdsson[1], Lars Forsberg[2], Vilmundur Gudnason[3]
[1]The Icelandic Heart Association, Kopavogur, Iceland, [2]Karolinska Institutet, [3]Icelandic Heart Association, Reykjavik, Iceland

**3632** **Predicting chronological age from patterns of time-averaged MRI activation in adolescents**
Bart Larsen[1], Beatriz Luna[2]
[1]University of Pittsburgh, Pittsburgh, United States, [2]University of Pittsburgh, Pittsburgh, PA

**3633** **Resting-State Brain Activities Detected by Spontaneous CBV Fluctuations using 3D-VASO Imaging**
Xinyuan Miao[1], Hong Gu[2], Lirong Yan[3], Hanzhang Lu[4], Danny JJ Wang[3], Yan Zhuo[1], Yihong Yang[2]
[1]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, [2]Neuroimaging Research Branch, National Institute on Drug Abuse, National Institutes of Health, Baltimore, United States, [3]Department of Neurology, UCLA, Los Angeles, United States, [4]University of Texas Southwestern Medical Center, Dallas, United States

**3634** **Spatial linearity of diffusion-weighted fMRI in human retinotopic V1**
Rebecca Williams[1], David Reutens[1], Julia Hocking[1]
[1]Centre for Advanced Imaging, The University of Queensland, Brisbane, Australia

## Imaging Methods

### Optical Imaging/NIRS

**3635** **A NIRS-fMRI study for validation of a deep/shallow separation method with multi-distance optodes**
Tsukasa Funane[1], Hiroki Sato[1], Noriaki Yahata[2], Ryu Takizawa[2], Yukika Nishimura[2], Akihide Kinoshita[2], Takusige Katura[1], Hirokazu Atsumori[1], Masato Fukuda[3], Kiyoto Kasai[2], Hideaki Koizumi[1], Masashi Kiguchi[1]
[1]Hitachi, Ltd., Central Research Laboratory, Saitama, Japan, [2]Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [3]Graduate School of Medicine, Gunma University, Gunma, Japan

**3636** **A Wearable Multi-channel NIRS Imaging System for Brain Imaging in Freely Moving Subjects**
Christoph Schmitz[1,2], Christina Habermehl[2], Arne Krüger[2], Stefan Koch[2], Jens Steinbrink[2], Hellmuth Obrig[3], Sophie Piper[2]
[1]NIRx Medizintechnik GmbH, Berlin, Germany, [2]Charité, Department of Neurology, Berlin, Germany, [3]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3637** **Atlas-based head modeling and spatial normalization for HD-DOT: In vivo validation against fMRI**
Silvina Ferradal[1], Adam Eggebrecht[2], Mahlega Hassanpour[3], Abraham Snyder[4], Joseph Culver[5]
[1]Washington University in St. Louis, St. Louis, United States, [2]Washington University School of Medicine, St Louis, United States, [3]Washington university in St. Louis, St. Louis, United States, [4]Washington University, Saint Louis, MO, [5]Washington University in St. Louis, St. Louis, MO

**3638** **Autoregressive model based algorithm for correction of motion artifacts and type I errors in fNIRS**
Jeffrey Barker[1], Ardalan Aarabi[2], Theodore Huppert[2]
[1]University of Pittsburgh, Pittsburgh, United States, [2]University of Pittsburgh, Pittsburgh, PA

**3639** **Cytoarchitecture of cortex imaged by Optical Coherence Tomography**
Caroline Magnain[1], Jean Augustinack[1], Martin Reuter[1], David Boas[1], Bruce Fischl[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School/MGH, Charlestown, MA

**3640** **Differences of cortical activation pattern during the use of fork, wooden and metallic chopsticks**
Hae Min Jo[1], Sung Ho Jang[1], Sang Seok Yeo[2]
[1]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of, [2]Yeungnam University Medical Center, Daegu, Korea, Republic of

**3641** **Expertise-related disparity in executive control and motor planning on complex surgical skills**
Kunal Shetty[1], Daniel Leff[1], Felipe Orihuela-Espina[1], Kumuthan Sriskandarajah[1], Shusuke Yasuura[1], Thomas Cundy[1], Professor Guang-Zhong Yang[1], Professor Ara Darzi[1]
[1]Hamlyn Centre for Robotic Surgery, Imperial College London, London, United Kingdom

**3642** **First functional NIRS imaging of drivers' brains during driving in Japanese Shin-Tomei Expressway**
Toshinori Kato[1], Kayoko Yoshino[1], Noriyuki Oka[1], Kouji Yamamoto[2], Hideki Takahashi[2]
[1]Department of Brain Environmental Research, KATOBRAIN Co., Ltd., Tokyo, Japan, [2]Central Nippon Expressway CO.,LTD, Nagoya, Japan

**3643** **Impact of skin blood flow and head anatomy on functional near-infrared spectroscopy (fNIRS) signals**
Florian Haeussinger[1], Thomas Dresler[2], Sebastian Heinzel[3], Andreas Fallgatter[2], Ann-Christine Ehlis[3]
[1]Department of Psychiatry and Psychotherapy at the University Hospital, Tuebingen, Germany, [2]University of Tuebingen, Department of Psychiatry and Psychotherapy, Tübingen, Germany, [3]University of Tuebingen, Dept. of Psychiatry and Psychotherapy, Tuebingen, Germany

**3644** **Improving detection of fast optical signals in visual cortex through General Linear Model**
Antonio Chiarelli[1], Assunta Di Vacri[2], Gian Luca Romani[3], Arcangelo Merla[4]
[1]Department of Neuroscience and Imaging, University of Chieti-Pescara, Chieti, Italy, [2]Department of Neuroscience and Imaging, University of Chieti-Pescara, CHieti, Italy, [3]Department of Neuroscience and Imaging, Gabriele D' Annunzio University, Chieti, Italy, [4]University of Chieti-Pescara, Chieti, Italy

***3645** **Mapping higher order resting-state networks with high-density diffuse optical tomography, (O-Th2)**
Adam Eggebrecht[1], Silvina Ferradal[2], Amy Viehoever[3], Mahlega Hassanpour[4], Abraham Snyder[5], Joseph Culver[2]
[1]Washington University School of Medicine, St Louis, United States, [2]Washington University in St. Louis, St. Louis, MO, [3]Washington University School of Medicine, St Louis, MO, [4]Washington university in St. Louis, St. Louis, United States, [5]Department of Neurology, Washington University in St. Louis, St. Louis, MO

**3646** **Multi-person NIRS Measurement for Estimating Empathetic Brain Behavior**
Makoto Takahashi[1], Kiyokazu Haga[2], Fumiyasu Shirai[2], Ryuta Kawashima[3]
[1]Graduate School of Engineering,Tohoku University, Sendai, Japan, [2]Graduate School of Engineering,Tohoku University, Sendai, Miyagi, [3]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**3647** **Neural Activity during observation, imagery, and execution of eating: An fNIRS pilot study**
Jinung An[1], Seung Hyun Lee[1], Gwanghee Jang[1], Sang Hyeon Jin[1], Berdakh Abibullaev[1], Jeon-Il Moon[1]
[1]Robotics Research Division, DGIST, Daegu, Korea, Republic of

**3648** **Neuroimaging and Cognition using functional Near Infrared Spectroscopy in Multiple Sclerosis**
Jelena Stojanovic-Radic[1], Nancy Chiaravalloti[1], John DeLuca[1], Gerald Voelbel[2], Glenn Wylie[1]
[1]Kessler Foundation Research Center, West Orange, NJ, [2]Rusk Institute of Rehabilitation Medicine, New York University Langone Medical Center, New York, NY

**3649** **Presurgical diagnosis of the epileptogenic focus using near-infrared spectroscopy mapping**
EIJU WATANABE[1], hidenori yokota[1], keiji oguro[1], Rizki Edmi[1], Ippeita Dan[1]
[1]Jichi Medical University, Tochigi, Japan

**3650** **Real-time brain imaging with robustness against noise and model discrepancy**
Muhammad Aqil[1,2], Myung-Yung Jeong[1], Shuzhi Sam Ge[3,1]
[1]Pusan National University, Busan, Korea, Republic of, [2]Pakistan Institute of Engineering and Applied Sciences, Islamabad, Pakistan, [3]National University of Singapore, Singapore, Singapore


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**3651** **Show me how you walk & I tell you how you feel: A NIRS study on emotion recognition from human gait**
Sabrina Schneider[1], Florian Haeussinger[2], Andrea Christensen[3], Andreas Fallgatter[1], Martin Giese[3], Ann-Christine Ehlis[1]
[1]University of Tuebingen, Department of General Psychiatry and Psychotherapy, Tuebingen, Germany, [2]Department of Psychiatry and Psychotherapy at the University Hospital, Tuebingen, Germany, [3]Hertie Institute for Clinical Brain Research Tuebingen, Section Computational Sensomotorics, Tuebingen, Germany

**3652** **Statistical analysis for high density diffuse optical tomography**
Mahlega Hassanpour[1], Brian White[2], Adam Eggebrecht[3], Silvina Ferradal[4], Abraham Snyder[5], Joseph Culver[4]
[1]Washington University in St. Louis, St. Louis, United States, [2]Washington university in St. Louis, St. Louis, United States, [3]Washington University School of Medicine, St. Louis, MO, United States, [4]Washington University in St. Louis, St. Louis, MO, United States, [5]Washington University School of Medicine, St. Louis, MO

**3653** **Synergy effect of motor function between occlusal force and grip using vectors derived from NIRS**
Masaaki Arai[1], Kayoko Yoshino[2], Noriyuki Oka[2], Toshinori Kato[2]
[1]Total Health Advisers Co., Ltd., Chiba, Japan, [2]Department of Brain Environmental Research, KATOBRAIN Co., Ltd., Tokyo, Japan

**3654** **Test-retest assessment of resting-state brain network based on functional near-infrared spectroscopy**
Haijing Niu[1], Zhen Li[1], Ni Shu[1], Yong He[1]
[1]Beijing Normal University, Beijing, China

**3655** **The cortical activation pattern by bilateral arm raising movements: A functional NIRS study**
Mi Young Lee[1], Sang Seok Yeo[2], Sung Ho Jang[2]
[1]Department of Physical Therapy, College of Health and Therapy, Daegu Haany University, Daegu, Korea, Republic of, [2]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**3656** **The effect of mental fatigue on executive functions: An optical imaging study**
Zih-Yun Yang[1], Hsin-Chin Chen[1], Hsiu-Chen Tsai[1], Yi-Hao Chang[1], Yu-Lin Chen[1]
[1]National Chung Cheng University, Chia-Yi, Taiwan

***3657** **Using Optical Coherence Tomography to Validate Diffusion MRI, (O-Th2)**
Caroline Magnain[1], Anastasia Yendiki[1], David Boas[1], Bruce Fischl[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA

## Imaging Methods

PET

**3658** **Cerebral metabolic activity mapping with continuous infusion FDG-PET: feasibility study**
Vincent Keereman[1], Pieter van Mierlo[1], Stefaan Vandenberghe[1]
[1]MEDISIP, Ghent University - iMinds, Ghent, Belgium

**3659** **Cortical Surface-based Kinetic Modeling of Neuroreceptor PET Data**
Douglas Greve[1], Ling Feng[2], Claus Svarer[2], Bruce Fischl[1], Bruce Rosen[1], Gitte Knudsen[2]
[1]Massachusetts General Hospital, Boston, MA, [2]Center for Integrated Molecular Brain Imaging, Rigshospitalet and University of Copenhagen, Copenhagen, Denmark

**3660** **Effect of Methylphenidate Challenge on Presynaptic Dopamine Metabolism: An [18F]FDOPA PET study**
Ina Schabram[1], Susanne Prinz[1], Karsten Henkel[1], Claudia Dietrich[1], Marc Felzen[1], Oliver Winz[1], Siamak Mohammadkhani Shali[1], Gerhard Gründer[1], Felix Mottaghy[2], Ingo Vernaleken[1]
[1]RWTH Aachen University, Aachen, Germany, [2]RWTH Aachen University, aachen, Germany

**3661** **Regional serotonin transporter occupancy by SSRIs investigated using positron emission tomography**
Georg Kranz[1], Rupert Lanzenberger[1], Daniela Haeusler[2], Pia Baldinger[1], Markus Savli[1], Marie Spies[1], Wolfgang Wadsak[2], Markus Mitterhauser[2], Siegfried Kasper[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Department of Nuclear Medicine, Medical University of Vienna, Vienna, Austria

**3662** **SPM analysis of 18F-FDG PET images in patients with refractory mesial temporal lobe epilepsy**
Manuel Schutze[1], Bruno Costa[2], Daniela Rosa[3], Marcelo Mamede[4], Debora Miranda[4], Marco Romano-Silva[5]
[1]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [2]SCMBH, Belo Horizonte, Brazil, [3]Univ. Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil, [4]Univ. Federal de Minas Gerais (UFMG), Belo Horizonte, MG, [5]Univ. Federal de Minas Gerais (UFMG), BELO HORIZONTE, Brazil

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## Lifespan Development

### Aging

**3663 1000BRAINS: Studying variability of normal brain aging in a population-based German cohort**

Svenja Caspers[1], Susanne Moebus[2], Silke Lux[3], Holger Schütz[4], Vincent Gras[5], Thomas Mühleisen[6], Noreen Pundt[2], Ulrich Mödder[3], Karl-Heinz Jöckel[2], Raimund Erbel[7], Sven Cichon[6], Dieter Sturma[4], Andreas Bauer[8], Nadim Shah[5], Karl Zilles[9], Katrin Amunts[10]
[1]Institute of Neuroscience and Medicine, INM-1, Research Center Julich, Julich, Germany, [2]Institute of Medical Informatics, Biometry and Epidemiology, University of Duisburg-Essen, Essen, Germany, [3]Institute of Neuroscience and Medicine, INM-1, Research Centre Jülich, Jülich, Germany, [4]Institute of Neuroscience and Medicine, INM-8, Research Centre Jülich, Jülich, Germany, [5]Institute of Neuroscience and Medicine, INM-4, Research Centre Jülich, Jülich, Germany, [6]Institute of Human Genetics, University of Bonn, Bonn, Germany, [7]Department of Cardiology, University of Duisburg-Essen, Essen, Germany, [8]Institute of Neuroscience and Medicine, INM-2, Research Centre Jülich, Jülich, Germany, [9]Institute of Neuroscience and Medicine, INM-1, Research Center Jülich, Jülich, Germany, [10]Institute of Neurosciences and Medicine, INM-1, Research Centre Jülich, Jülich, Germany

**3664 Age group differences in neural activity that reflect differential task performance**

Jason Steffener[1], Daniel Barulli[2], Christian Habeck[2], Yaakov Stern[2]
[1]Columbia University, New York, United States, [2]Columbia University, New York, NY

**3665 Age-dependent effects of brain structure on speed of processing in normal aging**

Zhaoping Hong[1,2], Sam K.Y. Sim[1], Mei Yi Ngeow[1], Hui Zheng[1], Sarayu Parimal[1], Michael W. L. Chee[1], Juan Zhou[1,2]
[1]Center for Cognitive Neuroscience, Neuroscience Program, Duke-NUS Graduate Medical School, Singapore, Singapore, [2]Neuroscience Research Partnership, Agency for Science, Technology and Research, Singapore, Singapore

**3666 Ageing in the Human Brainstem**

Christian Lambert[1], Rumana Chowdhury[2], Thomas Fitzgerald[3], Steve Fleming[4], Antoine Lutti[3], Chloe Hutton[3], Bogdan Draganski[5], Richard Frackowiak[5], John Ashburner[3]
[1]St Georges University of London, London, United Kingdom, [2]Institute of Cognitive Neuroscience, UCL, London, United Kingdom, [3]Wellcome Trust Centre for Neuroimaging, UCL, London, United Kingdom, [4]Centre for Neural Science, NYU, New York, NY, [5]LREN, Département des Neurosciences Cliniques, CHUV, Université de Lausanne, Lausanne, Switzerland, Lausanne, Switzerland

**3667 Age-related brain connectivity during attention task and motor task**

Perrine Bertrand[1], Jorge Gutierrez[1], Helene Gros-Dagnac[1], Jean-Albert Lotterie[1], Isabelle Berry[1], Pierre Celsis[1], Abdel-Kader Boulanouar[1]
[1]INSERM Unit825, Toulouse, France

**3668 Age-related changes in regions co-activated with dorsolateral prefrontal cortex during memory tasks**

David Maillet[1], Maria Rajah[2,3]
[1]McGill University, Montreal, Canada, [2]McGill University, Montreal, Quebec, [3]Douglas Mental Health University Institute, Montreal, Canada

**3669 Age-related changes of resting-state functional connectivity of the subthalamic nucleus**

Christian Mathys[1], Felix Hoffstaedter[2], Julian Caspers[2,1], Svenja Caspers[2], Simon Eickhoff[2,3], Robert Langner[2,3]
[1]Institute of Diagnostic and Interventional Radiology, Heinrich Heine University Düsseldorf, Düsseldorf, Germany, [2]Institute of Neuroscience and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [3]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University Düsseldorf, Düsseldorf, Germany

**3670 Age-related dynamics of executive functions in resting state networks**

Christiane Jockwitz[1], Svenja Caspers[1], Silke Lux[1], Kerstin Juetten[1], Stefan Lenzen[1], Susanne Moebus[2], Noreen Pundt[2], Holger Schütz[1], Vincent Gras[1], Karl-Heinz Jöckel[2], Raimund Erbel[3], Ulrich Mödder[1], Sven Cichon[1,4,5], Andreas Bauer[1,6], Dieter Sturma[1,7], Nadim Shah[1,8,9], Karl Zilles[1,9,10,11], Katrin Amunts[1,9,10,11]
[1]Institute of Neuroscience and Medicine (INM-1,2,4,8), Research Centre Jülich, Jülich, Germany, [2]Heinz Nixdorf Recall Study, Institute of Medical Informatics, Biometry and Epidemiology, University of Duisburg-Essen, Essen, Germany, [3]Heinz Nixdorf Recall Study, Department of Cardiology, University of Duisburg-Essen, Essen, Germany, [4]Institute of Human Genetics, University of Bonn, Bonn, Germany, [5]Department of Genomics, Life & Brain Center, Bonn, Germany, [6]Department of Neurology, Heinrich-Heine-University, Düsseldorf, Germany, [7]Institute for Science and Ethics, University of Bonn, Bonn, Germany, [8]Department of Neurology, RWTH Aachen University, Aachen, Germany, [9]JARA-Brain, Jülich-Aachen Research Alliance, Jülich, Germany, [10]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [11]C. & O. Vogt Institute for Brain Research, Heinrich Heine University, Düsseldorf, Germany

**3671 Age-related effects on neural activity and functional connectivity in the FPN and DMN**

Emi Saliasi[1], Linda Geerligs[2], Monicque Lorist[2], Natasha Maurits[1]
[1]Department of Neurology, University Medical Center Groningen, University of Groningen, Groningen, Netherlands, [2]University of Groningen, Groningen, Netherlands

**3672 Withdrawn**

**3673 Attenuated anticorrelation with aging: Evidence from an autobiographical planning task**
R. Nathan Spreng[1], Daniel Schacter[2]
[1]Cornell University, Ithaca, NY, [2]Harvard University, Cambridge, MA

**3674 Beta-Amyloid Deposition is Associated with Decreased White Matter Integrity in Healthy Adults**
Kristen Kennedy[1], Karen Rodrigue[1], Jennifer Rieck[1], Patrick Evans[1], Michael Devous, Sr[2], Denise Park[1]
[1]University of Texas at Dallas, Dallas, United States, [2]University of Texas Southwestern Medical Center, Dallas, United States

**3675 BOLD Activity During Reward Processing: A Lifespan Approach**
Tobias Gleich[1], Robert Lorenz[1], Simone Kühn[1], Lydia Pöhland[1], Torsten Wüstenberg[1], Diana Raufelder[2], Anne Beck[1], Michael Rapp[1], Andreas Heinz[1], Jürgen Gallinat[1]
[1]Department of Psychiatry and Psychotherapy, Charité - Universitätsmedizin, CCM, Berlin, Germany, [2]Freie Universität, Berlin, Germany

**3676 Brain specific signature associated with a 10 year episodic memory decline during aging**
Charlotte Bernard[1,2,3], Bixente Dilharreguy[1,2], Catherine Helmer[4,5], Sandra Chanraud[1,2,3], Hélène Amieva[4,5], Jean-François Dartigues[4,5], Michèle Allard[1,2,3], Gwénaëlle Catheline[1,2,3]
[1]Univ. Bordeaux, INCIA, UMR 5287, F-33400, Talence, France, [2]INCIA, UMR CNRS 5287, F-33400, Talence, France, [3]EPHE, Bordeaux, France, [4]INSERM, ISPED, Centre INSERM U897-Epidemiologie-Biostatistique, F-33000, Bordeaux, France, [5]Univ. Bordeaux, F-33000, Bordeaux, France

**3677 Dedifferentiation, compensation, loss of efficiency? Neural correlates of inhibition in older adults**
Eva Bauer[1], Harald Gruppe[1], Helge Gebhardt[1], Bernd Gallhofer[1], Gebhard Sammer[1]
[1]Justus Liebig University, Giessen, Germany

**3678 Differential age relations of network integrity and signal power in the Default-Mode network**
Christian Habeck[1], Ray Razlighi[1], Yunglin Gazes[1], Jason Steffener[1], Yaakov Stern[1]
[1]Columbia University, New York, NY, United States

**3679 Dose-dependent effects of sleep duration on age-related structural brain changes**
June Lo[1], Joann Poh[1], Kep Kee Loh[1], Mei Yi Ngeow[1], Hui Zheng[1], Sam Sim[1], Michael Chee[1]
[1]Duke-NUS Graduate Medical School, Singapore, Singapore

**3680 DTI, fMRI, and cognitive intraindividual variability in young versus older adults**
Nathalie Mella[1], Sandrine de Ribaupierre[2], Roy Eagleson[2], Anik de Ribaupierre[1]
[1]University of Geneva, Geneva, Switzerland, [2]University of Western Ontario, London, Canada

***3681 Effect of chronic smoking on brain atrophy: assessment in a cohort of 1,184 healthy elderly, (O-Th1)**
Quentin Duriez[1], Fabrice Crivello[1], Nathalie Tzourio-Mazoyer[1], Bernard Mazoyer[1]
[1]GIN-UMR5296, CNRS, CEA, Bordeaux University, Bordeaux, France

**3682 Effects of formula-diet supplementation on cognition and brain structure in healthy older women**
Lucia Kerti[1], Veronica Witte[1], Eva Tydecks[1], Anna Szela[1], Joachim Spranger[2], Agnes Flöel[1]
[1]Charité University Hospital, Berlin, Germany, [2]Clinic for Endocrinology, Diabetes and Nutrition, Berlin, Germany

**3683 Effects of resveratrol supplementation on memory performance and brain structure in older adults**
Veronica Witte[1], Lucia Kerti[1], Angela Winkler[1], Jan Philipp Schuchardt[2], Andreas Hahn[2], Agnes Flöel[1]
[1]Charite University Berlin, Berlin, Germany, [2]Leibniz University Hannover, Hannover, Germany

**3684 Face-name encoding in young, elderly and MCI using fMRI**
Christiane Oedekoven[1], Andreas Jansen[1], Tilo Kircher[1], Dirk Leube[1]
[1]Department of Psychiatry and Psychotherapy, Philipps-University Marburg, Marburg, Germany

**3685 Graph analysis reveals the nature of functional connectivity changes in the aging brain**
Linda Geerligs[1], Remco Renken[2], Emi Saliasi[2], Natasha Maurits[2], Monicque Lorist[1]
[1]University of Groningen, Groningen, Netherlands, [2]University Medical Center Groningen, Groningen, Netherlands

**3686 How resting-state and task activated functional MRI networks differ between age groups**
S.H. Annabel Chen[1], Chiao-Yi Wu[1], Rui-ping Lua[1]
[1]Nanyang Technological University, Singapore, Singapore

**3687 Impact of age-related vascular changes on cognitive aging and its measurement using the BOLD signal**
Claudine Gauthier[1,2,3], Cécile Madjar[4,5], Muriel Lefort[6], Laurence Desjardins-Crépeau[7,3], Frédérique Frouin[6], Said Mekary[8], Louis Bherer[9,3], Richard Hoge[10,3]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Université de Montréal/ CRIUGM, Montreal, Canada, [3]CRIUGM, Montreal, Canada, [4]CRIUGM, Montreal, Quebec, [5]McGill University, Montreal, Canada, [6]Inserm 678, UPMC, CHU Pitié Salpêtrière, Paris, France, [7]UQAM, Montreal, Canada, [8]Université de Montréal, [9]PERFORM/Concordia University, Montreal, Canada, [10]Université de Montréal, Montréal, Canada

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**3688 Impact of the absence and presence of White Matter Hyperintensities on diffusion values in elderly**
Amandine Pelletier[1,2,3], Olivier Periot[1,2], Bixente Dilharreguy[1,2], Martine Bordessoules[1,2], Bassem Hiba[4], Karine Pérès[5,6], Hélène Amieva[5,6], Jean-François Dartigues[5,6], Michèle Allard[1,2,3], Gwénaëlle Catheline[1,2,3]
[1]Univ. Bordeaux, INCIA, UMR 5287, F-33400, Talence, France, [2]INCIA, UMR CNRS 5287, Talence, France, [3]EPHE, Bordeaux, France, [4]RMSB, UMR 5536, Bordeaux, France, [5]INSERM, ISPED, Centre INSERM U897-Epidemiologie-Biostatistique, F-33000, Bordeaux, France, [6]Univ. Bordeaux, F-33000, Bordeaux, France

**3689 Increased CSF neurofilament correlate structural neural correlates in Frontotemporal degeneration**
Carole Scherling[1], Tracey Hall[2], Flora Berisha[3], Kristen Klepac[4], Anna Karydas[5], Joel Kramer[5], Gil Rabinovici[5], Michael Ahlijanian[6], Bruce Miller[7], Howard Rosen[7], Jere Meredith Jr.[6], Adam Boxer[8]
[1]University of California, San Francisco, San Francisco, CA, [2]2 Neuroscience Discovery, Bristol-Myers Squibb Company,, WallingFord, CT, USA, CT, [3]Bioanalytical Science-Biologics, Bristol-Myers Squibb Company, Lawrenceville, NJ, [4]Memory and Aging Center, Department of Neurology, University of California, San Francisco,, CA, [5]Memory & Aging Center, Department of Neurology, University of California San Francisco, San Francisco, CA, [6]Neuroscience Discovery, Bristol-Myers Squibb Company, WallingFord, CT, [7]University of California San Francisco, San Francisco, CA, [8]University of California, San Francisco, San francisco, CA

**3690 Is default network activity selectively linked to its white matter tracts' integrity in aging?**
Jean-Philippe Coutu[1,2], Tyler Triggs[2], J. Jean Chen[3], H. Diana Rosas[2], David Salat[2,4]
[1]Harvard-MIT Health Sciences and Technology, Cambridge, MA, [2]Massachusetts General Hospital, Athinoula A. Martinos Center for Biomedical Imaging, Boston, MA, [3]The Rotman Research Institute of Baycrest, Toronto, Ontario, Canada, [4]VA Boston Healthcare System, Neuroimaging Research for Veterans Center, Boston, MA

**3691 Mapping Life-span Functional Brain Graph Changes of the Human Brain**
Miao Cao[1], Jinhui Wang[1,2], Zhengjia Dai[1], Xiaoyan Cao[3,2], Lili Jiang[3], Fengmei Fan[4,5], Xiao-Wei Song[4], Mingrui Xia[1], Ni Shu[1], Qi Dong[1], Michael Milham[6,7], F. Xavier Castellanos[7,8], Xi-Nian Zuo[3], Yong He[1]
[1]State key laboratory of cognitive neuroscience and learning, Beijing Normal University, Beijing, China, [2]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou, China, [3]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [4]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, [5]Psychiatry Research Center, Beijing Huilongguan Hospital, Beijing, China, [6]Center for the Developing Brain, Child Mind Institute, New York, USA, [7]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, USA, [8]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, New York University Langone Medical Center, New York, USA

**3692 More Than Slowed Processing Speed: Earlier Engagement of Frontal Cortex in Older Adults**
Yang Jiang[1], Adam Lawson[2], Chunyan Guo[3]
[1]University of Kentucky College of Medicine, Lexington, KY, [2]Eastern Kentucky University, Richmond, KY, [3]Capital Normal University, Beijing, China

**3693 Withdrawn**

**3694 Neural basis for the elderlies' difficulty of visually-guided bimanual finger coordination**
Sachiko Kiyama[1], Mitsunobu Kunimi[1], Tetsuya Iidaka[2], Toshiharu Nakai[1]
[1]National Center for Geriatrics and Gerontology, Ohbu, Aichi, Japan, [2]Nagoya University, Nagoya, Aichi, Japan

**3695 Neuronal Integrity and Cognitive Performance in Midlife: The Role of Cognitive Reserve**
Andreana Haley[1], Mitzi Gonzales[2], Takashi Tarumi[3,4], Kayla Steward[5], Kennon Kasischke[5], Hirofumi Tanaka[3]
[1]University of Texas at Austin, Austin, United States, [2]University of Texas, Austin, TX, [3]Univeristy of Texas at Austin, Austin, TX, [4]University of Texas Southwestern Medical Center, Dallas, TX, [5]University of Texas at Austin, Austin, TX

**3696 Physical Activity is Correlated with Regional Brain Volumes in Normal Aging and Alzheimer's Disease**
Christina Boyle[1], Cyrus Raji[2], Kirk Erickson[2], Oscar Lopez[2], James Becker[2], H. Michael Gach[2], William Longstreth[3], Leonid Teverovskiy[2], Lewis Kuller[2], Owen Carmichael[4], Paul Thompson[5]
[1]UCLA, Los Angeles, CA, [2]University of Pittsburgh, Pittsburgh, PA, [3]University of Washington, Seattle, WA, [4]University of Pittsburgh, Pittsburgh, CA, [5]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**3697 Positive effects of physical exercise and aerobic capacity on white matter in old age**
Agnieszka Burzynska[1], Lura Chaddock-Heyman[2], Chelsea Wong[1], Michelle Voss[3], Andrew Lewis[1], Thomas Wojcicki[4], Neha Gothe[4], Erin Olson[4], Jason Fanning[4], David Chung[4], Elisabeth Awick[4], Edward McAuley[4], Arthur Kramer[1]
[1]The Beckman Institute for Advanced Science and Technology at the University of Illinois, Urbana, United States, [2]The Beckman Institute for Advanced Science and Technology at the University of Illinois, Urbana, United States, [3]Department of Psychology, University of Iowa, Iowa, United States, [4]Department of Kinesiology and Community Health, University of Illinois, Urbana, United States

**3698 Possible effects of iron deposition on the measurement of DTI metrics in deep gray matter nuclei**
Jiuquan Zhang[1], Ran Tao[1], Jian Wang[2]
[1]Southwest Hospital, Third Military Medical University, Chongqing, China, [2]Department of Radiology, Southwest Hospital, Third Military Medical University, Chongqing, China


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**3699** **Sulcal width, not cortical volume, is associated with physical activity and cognition**
Nicolas Cherbuin[1], Ashley Lamont[2], Moyra Mortby[3], Kaarin Anstey[3]
[1]Australian National University, Canberra, Australia, [2]Australian National University, Canberra, ACT, [3]australian national university, Canberra, ACT

**3700** **Support vector prediction of resting-state functional connectivity over the lifespan**
Scott Peltier[1], Rachael Seidler[1], Jillian Wiggins[1], Laura Jelsone-Swain[1], Christopher Monk[1], Robert Welsh[1]
[1]University of Michigan, Ann Arbor, United States

**3701** **The aging effect on three cognitive abilities is mediated by distinct white matter topographies**
Yunglin Gazes[1], Jason Steffener[1], Brian Rakitin[1], Yaakov Stern[1]
[1]Columbia University, New York, United States

**3702** **Time of Day Affects Functional Connectivity in the Elderly**
John Anderson[1], Karen Campbell[1], Lynn Hasher[1], Cheryl Grady[1]
[1]University of Toronto & Rotman Research Institute, Toronto, Canada

**3703** **Verification the validity of the cognitive stress test for clinical diagnosis using fMRI**
Mitsunobu Kunimi[1], Sachiko Kiyama[1], Toshiharu Nakai[1]
[1]National Center for Geriatrics and Gerontology, Aichi, Japan

**3704** **Voxel-Wise Analysis of Brain Iron Content**
Yosef Berlow[1], Manoj Sammi[1], Audrey Selzer[1], James Pollaro[1], William Rooney[1]
[1]Advanced Imaging Research Center, Oregon Health & Science University, Portland, United States

***3705** **White matter lesion burden and cognitive function: a voxel-wise analysis in late middle age., (O-Th1)**
Alex Birdsill[1], Rebecca Koscik[2], Erin Jonaitis[2], Sterling Johnson[3,1], Ozioma Okonkwo[1], Bruce Hermann[4], Asenath LaRue[2], Mark Sager[2], Barbara Bendlin[1]
[1]Wisconsin Alzheimer's Disease Research Center, Dept. of Medicine, University of Wisconsin-Madison, Madison, WI, [2]Wisconsin Alzheimer's Institute, University of Wisconsin-Madison, Madison, WI, [3]Madison VA Geriatric Research, Education, & Clinical Center (GRECC), Madison, WI, [4]Dept. of Neurology, University of Wisconsin-Madison, Madison, WI

**3706** **Within-person response time variability and the default mode network in older adults**
Sarah Bauermeister[1], Adrian Williams[1], David Bunce[2]
[1]Brunel University, Centre for Cognition and Neuroimaging, London, United Kingdom, [2]Institute of Psychological Sciences, Faculty of Medicine and Health, University of Leeds, Leeds, United Kingdom

## Lifespan Development

### Normal Brain Development: Fetus to Adolescence

**3707** **"Back to the future" — A longitudinal fMRI study the relating reading skill in the adolescent period**
Tzipi Horowitz-Kraus[1], Jennifer Vannest[2], Scott Holland[3]
[1]Cincinnati Children's Hopital Medical Center, Cincinnati, United States, [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [3]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**3708** **3D MAPPING OF CALLOSAL GROWTH IN THE HEALTHY HUMAN BRAIN**
Jennyfer Ansado[1], D. Louis Collins[2], Vladimir Fonov[3], Mathieu Garon[4], Sherif Karama[5], Alan Evans[6], Miriam Beauchamp[7]
[1]Université de Montréal, [2]McConnell Brain Imaging Centre, Montréal Neurological Institute, McGill University, Montréal, Québec, [3]Montreal Neurological Institute, Montreal, Canada, [4]University of Montreal, Montréal, Canada, [5]Montreal Neurological Institute, Montreal, Quebec, [6]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [7]University of Montreal, Montreal, Quebec

***3709** **A reference curve of neuroanatomical development: Identifying normal and abnormal brain maturation, (O-Th1)**
Katja Franke[1], Eileen Luders[2], Arne May[3], Marko Wilke[4], Alissa Winkler[1], Christian Gaser[1]
[1]Structural Brain Mapping Group, Jena University Hospital, Jena, Germany, [2]UCLA School of Medicine, Los Angeles, CA, [3]University of Hamburg, Hamburg, Germany, [4]University Children's Hospital, Tuebingen, Germany

**3710** **Age-related differences in fMRI activation during cognitive control across childhood and adolescence**
Katherine Karlsgodt[1], Bart Peters[1], Toshikazu Ikuta[1], Angelica Bato[1], Pamela DeRosse[1], Kimberly Cameron[1], Philip Szeszko[1], Anil Malhotra[1]
[1]Zucker Hillside Hospital, Glen Oaks, NY

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3711 Age-specific Impact of COMT Val158Met on Default Mode and the Executive Control Network Connectivity**
Bernhard Meyer[1], Julia Huemer[2], Fabiana Carvalho[3], Ulrich Rabl[1], Lucie Bartova[1], Ana Popovic[1], Christian Scharinger[1], Roland Boubela[4], Helmuth Haslacher[5], Thomas Perkmann[5], Nicole Praschak-Rieder[1], Consortium IMAGEN[3], Christian Windischberger[4], Siegfried Kasper[1], Harald Esterbauer[6], Ewald Moser[7], Harald Sitte[8], Gunter Schumann[3], Lukas Pezawas[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Medical University of Vienna, Vienna, Austria, [3]Institute of Psychiatry, King's College London, London, United Kingdom, [4]Centre for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [5]Department of Medical and Chemical Laboratory Diagnostics, Medical University of Vienna, Vienna, Austria, [6]Department of Laboratory Medicine, Medical University of Vienna, Vienna, Austria, [7]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [8]Institute of Pharmacology, Medical University of Vienna, Vienna, Austria

**3712 Anatomical network development in healthy adolescents**
Marinka Koenis[1], Rachel Brouwer[1], Martijn van den Heuvel[1], René Mandl[1], Inge van Soelen[1], Dorret Boomsma[2], Hilleke Hulshoff Pol[1]
[1]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Utrecht, Netherlands, [2]VU University, Amsterdam, Netherlands

**3713 Association of DLPFC BOLD activity and gamma oscillations during working memory in early adolescence**
Daniel Simmonds[1], Nicola Polizzotto[1], Raymond Cho[1], Beatriz Luna[1]
[1]University of Pittsburgh, Pittsburgh, PA, USA

**3714 Children have half an excuse for not listening: Functional Development of the Temporal Voice Areas**
Paddy Ross[1], Pascal Belin[1], Marie-Helene Grosbras[1]
[1]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom

**3715 Classification of fMRI activation in adolescent development by probabilistic cytoarchitectonic maps**
Mojtaba Akhavantafti[1], Vaibhav Diwadkar[2]
[1]Kalamazoo College, Kalamazoo, MI, [2]Wayne State University, Detroit, MI

**3716 Cortical myelination during childhood and adolescence**
Seun Jeon[1], Budhachandra Khundrakpam[2], Lu Zhao[2], Eun Kyoung Kim[1], Samir Das[2], Alan Evans[2], Jong-Min Lee[1]
[1]Department of Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of, [2]Montreal Neurological Institute, McGill University, Montreal, Canada

**3717 Default Mode Network Development in Early Childhood using scMRI**
Lindsay Helm[1], Brandon Zielinski[1]
[1]University of Utah, Salt Lake City, UT

**3718 Development of Cingulo-Opercular and Default Mode Networks across Childhood and Adolescence**
Anita Barber[1,2], Yoonho Chung[3], Hauke Bartsch[3], Burcu Darst[4], Natacha Akshoomoff[3], David Amaral[5], BJ Casey[6], Linda Chang[7], Thomas Ernst[8], Jean Frazier[9], Jeffrey Gruen[10], Walter Kaufmann[11], Tal Kenet[12], Joshua Kuperman[3], David Kennedy[9], Sarah Murray[4], Elizabeth Sowell[13], Peter van Zijl[14], Cinnamon Bloss[4], Anders Dale[15], Terry Jernigan[15], Stewart Mostofsky[16]
[1]Johns Hopkins University School of Medicine, Baltimore, United States, [2]Kennedy Krieger Institute, Baltimore, MD, [3]University of California at San Diego, San Diego, CA, [4]Scripps Translational Science Institute, La Jolla, CA, [5]The MIND Institute University of California Davis, Sacramento, CA, [6]Weill Cornell Medical College, New York, United States, [7]University of Hawaii, Manao, HI, [8]Department of Medicine, University of Hawaii at Manoa, Honolulu, HI, [9]University of Massachusetts Medical School, Worcester, MA, [10]Yale University, New Haven, CT, [11]Harvard University, Cambridge, MA, [12]Massachusetts General Hospital, Harvard University, Boston, MA, [13]University of California at Los Angeles, Los Angeles, CA, [14]The Johns Hopkins University School of Medicine, Kennedy Krieger Institute, Baltimore, United States, [15]University of California, San Diego, La Jolla, United States, [16]Kennedy Krieger Institute, Johns Hopkins, Baltimore, United States

**3719 Development of Verbal and Non-verbal Intelligence revealed by Structural Covariance Networks**
Budhachandra Khundrakpam[1], John Lewis[1], herif Karama[1], Alan Evans[1]
[1]Montreal Neurological Institute, Montreal, Canada

**3720 Developmental Changes of Structural Connectivity using HARDI Based on Graph Theoretical Analysis**
Weihong Yuan[1], Akila Rajagopal[1], Gregory Lee[1], Jennifer Vannest[1], Scott Holland[1]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States

**3721 Developmental trajectories of cortical thickness and surface area are independent of one another**
Lara Wierenga[1], Marieke Langen[1], Bob Oranje[1], Sarah Durston[1]
[1]UMC Utrecht, Utrecht, Netherlands

**3722 Diffusion MRI of the fetal brain: anatomically distinct patterns of radial and tangential coherence**
James Kolasinski[1,2], Emi Takahashi[3], Allison Stevens[2], Thomas Benner[2], Bruce Fischl[2], Lilla Zollei[2], P Ellen Grant[3]
[1]FMRIB, University of Oxford, Oxford, United Kingdom, [2]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Boston, MA, [3]Children's Hospital Boston, Boston, United States

***3723 Dynamic changes in heritability of brain morphology: a longitudinal pediatric twin study, (O-Th1)**
Eric Schmitt[1], Bilquis Fassasi[2], Jay Giedd[2], Mike Neale[3]
[1]Department of Radiology, University of Pennsylvania, Philadelphia, PA, [2]National Institutes of Mental Health, Bethesda, MD, [3]Virginia Institute for Psychiatric and Behavioral Genetics, Richmond, VA

**3724 Emerging Functional Segregation of the Insula during the First Two Years of Life**
Sarael Alcauter[1], John Gilmore[1], Wei Gao[1]
[1]University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

**3725 Functional brain network organisation of children between 2 and 5 years derived from EEG recordings**
Joe Bathelt[1], Michelle de Haan[1], J Helen Cross[1], Helen O'Reilly[2], Jonathan Clayden[1]
[1]University College London, London, United Kingdom, [2]University of Cambridge, Cambridge, United Kingdom

**3726 Intrinsic functional brain architecture derived from graph theoretical analysis in the human fetus**
Moriah Thomason[1], Jesse Brown[2], Amy Anderson[1], Maya Dassanayake[3], Rupal Shastri[3], Matthew Nye[3], Edgar Hernandez-Andrade[4], Lami Yeo[4], Yashwanth Katkuri[5], Sonia Hassan[6], Roberto Romero[6]
[1]Merrill Palmer Skillman Institute, Wayne State University, Detroit, MI, [2]Department of Psychiatry and Biobehavioral Sciences, University of California Los Angeles, Los Angeles, CA, [3]School of Medicine, Wayne State University, Detroit, MI, [4]Department of Obstetrics and Gynecology, Wayne State University, Detroit, MI, [5]Department of Radiology, Wayne State University, Detroit, MI, [6]Perinatology Research Branch, NICHD/NIH; Wayne State University, Detroit, MI

**3727 Investigation of Language Networks During Infancy Using Functional Connectivity MRI**
Christopher Smyser[1], Joshua Shimony[2], Abraham Snyder[3], Tyler Blazey[2], Terrie Inder[4], Jeffrey Neil[5]
[1]Departments of Neurology and Pediatrics, Washington University, St. Louis, MO, United States, [2]Department of Radiology, Washington University, St. Louis, MO, United States, [3]Departments of Neurology and Radiology, Washington University, St. Louis, MO, United States, [4]Departments of Pediatrics, Neurology and Radiology, Washington University, St. Louis, MO, United States, [5]Departments of Neurology, Pediatrics and Radiology, Washington University, St. Louis, MO, United States

**3728 Left amygdala functional connectivity during rest linked to morning cortisol levels in adolescents**
Louise Baruël[1,2], William Baaré[1], Kristoffer Hougaard Madsen[1,3], Arnold Skimminge[4,3], Hartwig Siebner[1,2], Kathrine Skak Madsen[1,5]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark, [2]Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark, [3]Technical University of Denmark, DTU Informatics, Kgs. Lyngby, Denmark, [4]Danish Research Centre for Magnetic Resonance, Hvidovre, Denmark, [5]Center for Integrated Molecular Brain Imaging, Copenhagen, Denmark

**3729 Luteinizing hormone as a precursor for gray matter maturation**
Rachel Brouwer[1], G. Caroline M. van Baal[1], Inge van Soelen[1], Hugo Schnack[1], Marinka Koenis[1], Dorret Boomsma[2], Hilleke Hulshoff Pol[1]
[1]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Department of Psychiatry, Utrecht, Netherlands, [2]VU University, Amsterdam, Netherlands

**3730 Mapping nonlinear trajectories of cortical thickness during adolescent development**
Theodore Satterthwaite[1], Nicholas DeLeo[1], Kosha Ruparel[1], David Roalf[1], Russell Shinohara[1], Mark Elliott[1], Warren Bilker[1], Elizabeth Sweeney[2], Madhura Ingalhalikar[1], Alex Smith[1], Hakon Hakonarson[3], Christos Davatzikos[1], Ragini Verma[1], Ruben Gur[1], Raquel Gur[1]
[1]University of Pennsylvania, Philadelphia, United States, [2]Department of Biostatistics, Johns Hopkins University, Baltimore, MD, [3]Children's Hospital of Philadelphia, Philadelphia, United States

**3731 MEG neuroimaging of perceptual, motor and cognitive brain function in preschool-aged children**
Blake Johnson[1], Graciela Tesan[1], Wei He[1], Stephen Crain[1]
[1]Macquarie University, Sydney, Australia

**3732 Neuroimaging and neurocognitive effects of exposure to anesthesia before 4 years of age**
Scott Holland[1], Barynia Backeljauw[2], Mekibib Altaye[3], Andreas Loepke[4]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital, Cincinnati, United States, [2]University of Cincinnati, College of Medicine, Cincinnati, OH, [3]Cincinnati Children's Hospital Research Foundation, Cincinnati, OH, [4]Dept. of Anesthesiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

**3733 Neuroticism is associated with cingulum asymmetry in children: Opposite effects in boys and girls**
Kathrine Skak Madsen[1,2], Terry Jernigan[1,2,3], William Baaré[1,2]
[1]Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital, Hvidovre, Denmark, [2]Center for Integrated Molecular Brain Imaging, Copenhagen, Denmark, [3]Center for Human Development, University of California, San Diego, CA

**3734 Pediatric spatial brain growth patterns, longitudinal DBM study**
Vladimir Fonov[1], Berengere Aubert-Broche[1], D. Louis Collins[1]
[1]McConnell Brain Imaging Centre, Montréal Neurological Institute, McGill University, Montréal, Québec

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3735 Probabilistic Neighbourhood Tractography in the Preterm Neonatal Brain**
Devasuda Anblagan[1], Mark Bastin[1], Lucy Kershaw[1], Susana Maniega[1], Jonathan Clayden[2], Chinthika Piyasena[1], Graham Wilkinson[1], Neil Roberts[1], Scott Semple[1], Jane Norman[1], James Boardman[1]
[1]University of Edinburgh, Edinburgh, United Kingdom, [2]University College London, London, United Kingdom

**3736 Puberty Related Subcortical Maturation Across Adolescence: A Longitudinal MRI Study**
Megan Herting[1,2], Ronald Dahl[3], Erika Forbes[4], Elizabeth Sowell[2]
[1]Children's Hospital Los Angeles, Los Angeles, United States, [2]University of Southern California, Los Angeles, CA, [3]University of California, Berkeley, Berkeley, CA, [4]University of Pittsburgh, Pittsburgh, PA

***3737 Quantitative biological measurements of white matter development, (O-Th1)**
Jason Yeatman[1], Aviv Mezer[1], Michael Perry[1], Jenny Nguyen[1], Keith Main[1], Brian Wandell[1]
[1]Stanford University, Stanford, USA

***3738 Spatial-temporal atlas of fetal brain development during the early second trimester, (O-Th1)**
Shuwei Liu[1], Jinfeng Zhan[1], Ivo Dinov[2], Zhonghe Zhang[1], Arthur Toga[2]
[1]Research Center for Sectional and Imaging Anatomy, Shandong University School of Medicine, Jinan, China, [2]Laboratory of Neuro Imaging, Department of Neurology, University of California School of Medicine, Los Angeles, United States

**3739 Spatiotemporal brain dynamics of inhibitory control in young adults and adolescents**
Kai Hwang[1], Avniel Ghuman[1], Beatriz Luna[1]
[1]University of Pittsburgh, Pittsburgh, United States

**3740 The development of attentional network during childhood and adult: an fMRI study**
Daisuke Saito[1,2,3], Hisakazu Yanaka[4,2,3], Takeshi Fujii[5,2,3], Hirotaka Kosaka[5,6], Tomoko Muramatsu[7], Taisuke Shimada[8], Kyoko Matsumura[9], Makoto Sato[10,1,3], Hidehiko Okazawa[2,1,3]
[1]Research Center for Child Mental Development, Fukui Univ., Eiheiji, Japan, [2]Biomedical Imaging Research Center, University of Fukui, Eiheiji, Japan, [3]Research and Education Program for Life Science, University of Fukui, Eiheiji, Japan, [4]Dept. of Education, Fac. of Regional Sci., Tottori University, Tottori, Japan, [5]Research Center for Child Mental Development, University of Fukui, Eiheiji, Japan, [6]Dept. of Neuropsychiatry, Fac. of Med. Sci., University of Fukui, Eiheiji, Japan, [7]Second Dept. of Intrnl. Med. (Neurology), Univ. of Fukui, Eiheiji, Japan, [8]Faculty of Engineering, University of Fukui, Fukui, Japan, [9]Hyogo University of Teacher Education, Kato, Hyogo, Japan, [10]Division of Cell Biology and Neuroscience, University of Fukui, Eiheiji, Japan

****3741 The Human Cerebral Cortex Flattens During Adolescence**
Yasser Alemán-Gómez[1], joost janssen[1], Hugo Schnack[2], E Balaban[3], J Castro-Fornieles[4], N Bargalló[4], M Parellada[1], L Pina Camacho[1], C Arango[1], M Desco[1]
[1]Instituto de Investigación Sanitaria Gregorio Marañón, IiSGM, HGUGM, CIBERSAM, Madrid, Spain, [2]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Department of Psychiatry, Utrecht, Netherlands, [3]McGill University, Montreal, Canada, [4]Hospital Clinic, CIBERSAM, Barcelona, Spain

**3742 The impact of parental income and education on brain development during childhood and adolescence**
Suzanne Houston[1,2,3], Kimberly Noble[4,5,6], Eric Kan[2,3], Hauke Bartsch[7], Elizabeth Sowell[2,3]
[1]Department of Psychology, University of Southern California, Los Angeles, CA, [2]Department of Pediatrics, Children's Hospital, Los Angeles, Los Angeles, CA, [3]Keck School of Medicine, University of Southern California, Los Angeles, CA, [4]Department of Pediatrics, Columbia University, New York, NY, [5]GH Sergievsky Center, Columbia University, New York, NY, [6]New York Presbyterian Hospital/Columbia University Medical Center, New York, NY, [7]The Brain Observatory, University of California at San Diego, San Diego, CA

**3743 Using Graph Theory to Study the Development of Fetal Brain Connectivity**
Xi Cheng[1], Mads Fogtmann[1], Christopher Kroenke[2], Sharmishtaa Seshamani[1], Jakob Wilm[3], Colin Studholme[1]
[1]University of Washington, Seattle, WA, [2]Oregon Health & Science University, Portland, OR, [3]Technical University of Denmark, Kongens, Lyngby

## Neuroanatomy

### Anatomy and Function

**3744 A meta-analysis of the functional correlates of dorsal and ventral fronto-parietal networks**
Valeria Parlatini[1], Marco Catani[1], Flavio Dell'Acqua[1], Andrew Simmons[1], Joaquim Radua[1], Declan Murphy[1], Michel Thiebaut de Schotten[1]
[1]Institute of Psychiatry, King's College London, London, United Kingdom

**3745 A novel frontal pathway underlies verbal fluency in Primary Progressive Aphasia**
Marco Catani[1], Marsel Mesulam[2], Estrid Jakobsen[1], Farah Malik[1], Christina Wieneke[3], Cynthia Thompson[3], Michel Thiebaut de Schotten[4], Flavio Dell'Acqua[5], Sandra Weintraub[6], Emily Rogalski[3]
[1]Institute of Psychiatry - King's College London, London, United Kingdom, [2]Cognitive Neurology and Alzheimer's Disease Center, Chicago, IL, [3]Cognitive Neurology and Alzheimer's Disease Center, Chicago, IL, [4]Institute of Psychiatry, London, United Kingdom, [5]King's College London - Institute of Psychiatry, London, United Kingdom, [6]Departments of Psychiatry and Behavioral Sciences, Chicago, United States

**3746** **Alpha rhythm hemispheric dominance — an EEG-fMRI study (preliminary results)**
Mateusz Rusiniak[1], Monika Lewandowska[1], Tomasz Wolak[1], Rafal Milner[1], Krzysztof Kochanek[1], Henryk Skarżyński[1]
[1]Institute of Physiology and Pathology of Hearing, Warsaw, Poland

**3747** **An Observer-Independent Structural-Functional Connectome Approach reveals Default Mode Regions**
Andreas Horn[1,2], Dirk Ostwald[1], Felix Blankenburg[2,1]
[1]Max Planck Institute for Human Development, Center for Adaptive Rationality (ARC), Berlin, Germany, [2]Free University Berlin, D.I.N.E., Cluster Languages of Emotion, Berlin, Germany

**3748** **Anatomical development of hippocampus and striatum predict spontaneous navigation strategy**
Jason Lerch[1], Sarah Lin[1], Rebecca Calcott[2], Kyoko Konishi[3], Jurgen Germann[1], Jon Pipitone[4], Julie Winterburn[4], Mallar Chakravarty[4], Veronique Bohbot[3]
[1]Hospital for Sick Children, Toronto, Canada, [2]University of Oregon, Eugene, OR, [3]McGill University, Montreal, Canada, [4]Centre for Addiction and Mental Health, Toronto, Canada

**3749** **Asymmetry of the Superior Temporal Sulcus: a Robust Human Landmark**
Francois Leroy[1], Stephanie Bogart[2], william Hopkins[2], Olivier Coulon[3], Qing Cai[4], Roberto Toro[5], Jean-François Mangin[6], Ghislaine Dehaene-Lambertz[7]
[1]INSERM, Paris, France, [2]Georgia State University, Atlanta, GA, [3]LSIS lab, UMR7296, Aix-Marseille University & CNRS, Marseille, France, [4]Ghent University, Gent, Belgium, [5]CNRS URA 2182 'Genes, synapses and cognition', Paris, France, [6]LNAO, Neurospin, CEA, Gif-sur-Yvette, France, [7]Neurospin, Gif/Yvette, France

**3750** **BEAT: Brain Exploration for Anatomy Toy**
Nianming Zuo[1], Sangma Xie[2], Tianzi Jiang[3]
[1]NLPR&LIAMA, Institute of Automation, Chinese Academy Of Science, Beijing, China, [2]Institute of Automation Chinese Academy of Sciences, Beijing, China, [3]Institute Of Automation, Chinese Academy Of Sciences, Beijing, China

**3751** **Being More Centered: A Shift in Gray Matter Asymmetries in Long-term Meditation Practitioners**
Florian Kurth[1], Allan MacKenzie-Graham[1], Arthur Toga[1], Eileen Luders[1]
[1]UCLA, Los Angeles, CA

**3752** **Blindness alters functional connectivity between dorsal and ventral quadrants of extrastriate cortex**
Omar Butt[1], Noah Benson[1], Ritobrato Datta[1], Geoffrey Aguirre[1]
[1]University of Pennsylvania, Philadelphia, PA

**3753** **Withdrawn**

**3754** **Co-activation based parcellation and functional characterization of the intraparietal sulcus**
Edna-Clarisse Cieslik[1], Mareike Clos[2], Veronika Müller[1], Angela Laird[3], Peter Fox[4], Christian Grefkes[5], Simon Eickhoff[1]
[1]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [2]Research Centre Juelich, Juelich, Germany, [3]Florida International University, Miami, FL, [4]Research Imaging Institute, San Antonio, TX, [5]Max Planck Institute for Neurological Research Cologne, Cologne, Germany

***3755** **Gray matter volume analysis in major depression based on cytoarchitectonic maps of the frontal pole, (O-W4)**
Sebastian Bludau[1], Simon Eickhoff[2], Hartmut Mohlberg[1], Oliver Gruber[3], Nils Kohn[4], Valentin Riedl[5], Veronika Müller[1], Felix Hoffstaedter[1], Katrin Amunts[6]
[1]Research Centre Juelich (INM-1), Jülich, Germany, [2]Research Centre Juelich (INM-1), Jülich, Düsseldorf, Germany, [3]Department of Psychiatry and Psychotherapy, Georg August University, Göttingen, Göttingen, Germany, [4]Department of Psychiatry, Psychotherapy and Psychosomatics, University Hospital Aachen, Aachen, Germany, [5]Department of Neuroradiology and Neurology, Technische Universität München, Munich, Germany, [6]Research Centre Juelich (INM-1), Jülich; Aachen, Germany

**3756** **HESCHL'S GYRI ANATOMY AND HANDEDNESS INTERACT ON THE LATERALIZATION OF SPEECH LISTENING**
Marie Damien[1], Gael Jobard[1], Gaelle Leroux[1], Fabrice Crivello[1], Laurent Petit[1], Marc Joliot[1], Emmanuel Mellet[1], Zago laure[1], Bernard Mazoyer[1], Nathalie Tzourio-Mazoyer[1]
[1]GIN UMR5296 CNRS CEA University Bordeaux Segalen, Bordeaux, France

**3757** **High-Resolution Histological and Molecular Reference Atlases of the Human Prenatal Brain**
Joshua Royall[1], Robert Hevner[2], Phil Lesnar[1], Lydi Ng[3], Song-Lin Ding[4], John Hohmann[3], Benjamin Facer[4], Bergen McMurray[4], Rachel Dalley[3], Allan Jones[3], Susan Sunkin[3], Michael Hawrylycz[3], Ed Lein[3]
[1]Allen Institute for Brain Science, Seattle, United States, [2]University of Washington, Seattle, WA, [3]Allen Institute for Brain Science, Seattle, WA, [4]Allen Institute for Brain Science

**3758** **Lateralisation of the connections between Broca-s area and the pre-SMA in relation to handedness**
Henrietta Howells[1], Flavio Dell'Acqua[2], Anoushka Leslie[3], Michel Thiebaut de Schotten[1], Mitul Mehta[4], Declan Murphy[5], Andrew Simmons[5], Marco Catani[5]
[1]Institute of Psychiatry, London, United Kingdom, [2]King's College London - Institute of Psychiatry, London, United Kingdom, [3]Institute of Psychiatry, King's College London, London, United Kingdom, [4]King´s College London, London, United Kingdom, [5]Institute of Psychiatry - King's College London, London, United Kingdom

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
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***3759 Learning to read improves the structure of the arcuate fasciculus., (O-W3)**
Michel Thiebaut de Schotten[1], Laurent Cohen[2], Eduardo Amemiya[3], Lucia Braga[3], Stanislas Dehaene[4]
[1]Institute of Psychiatry, London, United Kingdom, [2]ICM Res.Center, UMRS 975, INSERM, Paris, France, [3]SARAH Network-International Center for Neurosciences and Rehabilitation, Brazilia, Brazil, [4]CEA, Saclay, France

**3760 Mapping white matter damage in Phineas Gage, Monsieur Leborgne and patient H.M**
Michel Thiebaut de Schotten[1], Flavio Dell'Acqua[2], Peter Ratiu[3], Suzanne Corkin[4], Emmanuel Cabanis[5], Marie-Therese Iba-Zizen[5], Anoushka Leslie[6], Nina Dronkers[7], Odile Plaisant[8], Andrew Simmons[3], Declan Murphy[3], Marco Catani[3]
[1]Institute of Psychiatry, London, United Kingdom, [2]King's College London - Institute of Psychiatry, London, United Kingdom, [3]Institute of Psychiatry - King's College London, London, United Kingdom, [4]Department of Brain and Cognitive Sciences and the Clinical Research Center, Massachussetts, MA, [5]Centre Hospitalier National d'Ophtalmology des Quinze-Vingts, Paris, France, [6]Institute of Psychiatry, King's College London, London, United Kingdom, [7]VA Northern California Health Care System, UC Davis, Martinez, CA, [8]University of Paris-Descartes, GH Pitié-Salpêtrière, URDIA, EA4465, Paris, France

**3761 Networks underlying impaired communication and social interaction in adults with ASC**
Marco Catani[1], Flavio Dell'Acqua[2], Sanja Budisavljevic[3], Henrietta Howells[4], Sean Froudist Walsh[1], Michel Thiebaut de Schotten[4], Consortium MRC AIMS[1], Edward Bullmore[5], John Suckling[5], Simon Baron-Cohen[6], Michael Lombardo[7], Sally Wheelwright[8], Christine Ecker[3], Michael Craig[9], Declan Murphy[1]
[1]Institute of Psychiatry - King's College London, London, United Kingdom, [2]King's College London - Institute of Psychiatry, London, United Kingdom, [3]Institute of Psychiatry, King's College London, London, United Kingdom, [4]Institute of Psychiatry, London, United Kingdom, [5]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [6]Autism Research Centre, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [7]Autism Research Centre, University of Cambridge, Cambridge, United Kingdom, [8]Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [9]Institute of Psychiatry, Kings College London, London, United Kingdom

**3762 Neural Pathways of Stable and Variable Affordances: A Coordinate-Based Meta-Analysis**
Katrin Sakreida[1], Mareike Menz[2], Serge Thill[3], Claudia Rottschy[4], Simon Eickhoff[5,6], Anna Borghi[7,8], Tom Ziemke[3], Ferdinand Binkofski[1,9]
[1]Division of Clinical and Cognitive Neurosciences, Department of Neurology, Medical Faculty of RWTH, Aachen, Germany, [2]Department of Systems Neuroscience and Neuroimage Nord, University Medical Center Hamburg Eppendorf, Hamburg, Germany, [3]Interaction Lab, School of Humanities and Informatics, University of Skövde, Skövde, Sweden, [4]Department of Neurology, Medical Faculty of RWTH, Aachen, Germany, [5]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [6]Research Centre Juelich, Institute of Neuroscience and Medicine (INM-1), Juelich, Germany, [7]Department of Psychology, University of Bologna, Bologna, Italy, [8]Institute of Cognitive Sciences and Technologies, National Research Council, Rome, Italy, [9]Research Centre Juelich, Institute of Neuroscience and Medicine (INM-4), Juelich, Germany

**3763 Novel real-time functional mapping of cortical activity for neurosurgical operative planning**
Connie Cheung[1], Edward Chang[1]
[1]UC San Francisco, San Francisco, CA

**3764 Parcellation of the Multifunctional Left Area 44 using Meta-Analytic Co-activation Modeling**
Mareike Clos[1], Katrin Amunts[2], Angela Laird[3], Peter Fox[4], Simon Eickhoff[5]
[1]Research Centre Juelich, Juelich, Germany, [2]Research Centre Juelich (INM-1), Juelich; Aachen, Germany, [3]Florida International University, Miami, FL, [4]UTHSCSA, San Antonio, TX, [5]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

***3765 Pupil diameter indexes locus coeruleus activity in humans, (O-W3)**
Joshua Balsters[1,2], Redmond O'Connell[1], Ian Robertson[1], Peter Murphy[1]
[1]Trinity College Institute of Neuroscience, Trinity College Dublin, Dublin, Ireland, [2]Neural Control of Movement Lab, Department of Health Sciences and Technology, ETH Zurich, Zurich, Switzerland

**3766 Relationship between educational level and longitudinal change in gray matter in healthy adults**
Yasuyuki Taki[1], Benjamin Thyreau[2], Shigeo Kinomura[2], Kazunori Sato[2], Ryoi Goto[2], Kai Wu[2], Ryuta Kawashima[3], Hiroshi Fukuda[3]
[1]ToMMo, Tohoku Univ., Sendai, Japan, [2]IDAC, Tohoku Univ., Sendai, Japan, [3]IDAC, Tohoku Univ., Sendai, Miyagi


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**3767** **Serotonergic modulation of global brain dynamics: changes in global dynamics after Psilocybin**
Peter Hellyer[1], Robert Leech[1], Gregory Scott[1], David Sharp[1], Murray Shanahan[1], David Erritzoe[1], David Nutt[1], Robin Carhart-Harris[1]
[1]Imperial College London, London, United Kingdom

**3768** **Significant Association Between IQ and Degree of Overall Cortical Gyrification**
Venkataramana Bhat[1], Alan Evans[2], Sherif Karama[3]
[1]McGill University, Montreal, Canada, [2]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [3]Montreal Neurological Institute, Montreal, Quebec

**3769** **Specific contribution of callosal section growth to the development of visual and verbal skills**
Mathieu Garon[1], Jennyfer Ansado[2], D. Louis Collins[3], Vladimir Fonov[4], Alan Evans[5], Miriam Beauchamp[6]
[1]University of Montreal, Montréal, Canada, [2]Université de Montréal, [3]McConnell Brain Imaging Centre, Montréal Neurological Institute, McGill University, Montréal, Québec, [4]Montreal Neurological Institute, Montreal, Canada, [5]McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Quebec, [6]University of Montreal, Montreal, Quebec

**3770** **Structure-function relationship of Heschl's gyrus duplications in human auditory cortex**
Jan Benner[1], Martina Wengenroth[2], Julia Reinhardt[1], Christoph Stippich[1], Peter Schneider[2], Maria Blatow[1]
[1]Division of Neuroradiology, Department of Radiology, University of Basel Hospital, Bâle, Switzerland, [2]Department of Neuroradiology, University of Heidelberg Medical School, Heidelberg, Germany

**3771** **Subdivisions of the insular cortex and the lateralization of language and gestures**
Szymon Bidułа[1], Gregory Kroliczak[1]
[1]Institute of Psychology, Adam Mickiewicz University, Poznań, Poland

**3772** **Subject-specific cortical cerebellar mapping at 3T and 7T**
Pierre-Louis Bazin[1], Judy Kipping[1], Christopher Steele[1], Daniel Margulies[1], Robert Turner[1], Arno Villringer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3773** **The impact of cardiovascular disease on cortical structure of an aging brain**
Udunna Anazodo[1], Kevin Shoemaker[2], Neville Suskin[3], Keith St Lawrence[1]
[1]Lawson Health Research Institute, London, Ontario, [2]Laboratory for Brain and Heart Health, School of Kinesiology, Western University, London, Ontario, [3]London Health Sciences Cardiology Rehabilitation Program, London, Ontario

**3774** **The mid-fusiform sulcus identifies cytoarchitectonic and functional divisions of human visual cortex**
Kevin Weiner[1], Golijeh Golarai[1], Julian Caspers[2], Hartmut Mohlberg[2], Karl Zilles[2], Katrin Amunts[2], Kalanit Grill-Spector[1]
[1]Stanford University, Stanford, CA, [2]Institute of Neurosciences and Medicine (INM-1), Research Centre Jülich, Jülich, Germany

**3775** **The neural bases of chronic spatial neglect**
Michel Thiebaut de Schotten[1], Francesco Tomaiuolo[2], Massimo Silvetti[3], Marilena Aiello[3], Francesca Lecce[4], Paolo Bartolomeo[5], Fabrizio Doricchi[3]
[1]Institute of Psychiatry, London, United Kingdom, [2]Dipartimento di Radiologia di Volterra, Pisa, Italy, [3]Fondazione Santa Lucia IRCCS, Rome, Italy, [4]La Sapienza, Rome, Italy, [5]INSERM-UPMC UMR_S 975, Centre de Recherche de l'Institut du Cerveau et de la Moelle épinière, Paris, France

****3776** **The role of fronto-parietal networks in mental imagery**
Henrietta Howells[1], Marco Catani[2], Flavio Dell'Acqua[3], Andrew Simmons[2], Anoushka Leslie[4], Christine Ecker[4], Declan Murphy[2], Mitul Mehta[5], Michel Thiebaut de Schotten[1]
[1]Institute of Psychiatry, London, United Kingdom, [2]Institute of Psychiatry - King's College London, London, United Kingdom, [3]King's College London - Institute of Psychiatry, London, United Kingdom, [4]Institute of Psychiatry, King's College London, London, United Kingdom, [5]King´s College London, London, United Kingdom

**3777** **Thinner auditory-related cortex is associated with larger auditory N1 amplitude**
Franziskus Liem[1], Tino Zaehle[2], Lutz Jäncke[1], Martin Meyer[1]
[1]University of Zurich, Zurich, Switzerland, [2]Department of Neurology, Otto v. Guericke University, Magdeburg, Germany

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Neuroanatomy

### Brain Networks

**3778 A Connectome Wide Association Study of Human Intelligence**

Zhe Zhang[1,2], Ting Xu[1], Zhi Yang[1], F. Xavier Castellanos[3,4], Michael Milham[4,5], Xi-Nian Zuo[1]
[1]Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]University of Chinese Academy of Sciences, Beijing, China, [3]Phyllis Green and Randolph Cowen Institute for Pediatric Neuroscience, NYU Langone Medical Center, New York, NY, [4]Nathan Kline Institute for Psychiatric Research, Orangeburg, New York, NY, [5]Center for the Developing Brain, Child Mind Institute, New York, NY

**3779 A longitudinal study of structural brain network changes with normal aging**

Kai Wu[1,2], Yasuyuki Taki[1,3,4], Kazunori Sato[1], Haochen Qi[2], Ryuta Kawashima[4,5,6], Hiroshi Fukuda[1]
[1]Department of Nuclear Medicine and Radiology, IDAC, Tohoku University, Sendai, Japan, [2]School of Materials Science and Engineering, South China University of Technology, Guangzhou, China, [3]Division of Medical Image Analysis, Department of Community Medical Supports, Tohoku Medical Megabank Organization, Tohoku University, Sendai, Japan, [4]Division of Developmental Cognitive Neuroscience, IDAC, Tohoku University, Sendai, Japan, [5]Smart Ageing International Research Centre, IDAC, Tohoku University, Sendai, Japan, [6]Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan

**3780 Abnormalities of Structural Brain Connections in Adolescents with Prelingual Deafness**

Wenjing Li[1], Jianhong Li[2], Wen Miao[1], Junfang Xian[2], Huiguang He[1]
[1]State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, CAS, Beijing, China, [2]Department of Radiology, Beijing Tongren Hospital, Capital Medical University, Beijing, China

**3781 Altered orbitofrontal tissue microstructure in patients with chronic anterior temporal lobe lesions**

Soyoung Choi[1], Chitresh Bhushan[1], Anand Joshi[1], Kristen Raphel[1], Daniel Tranel[2], David Shattuck[3], Justin Haldar[1], Richard M. Leahy[1], Hanna Damasio[1], Jessica Wisnowski[1,4]
[1]University of Southern California, Los Angeles, United States, [2]University of Iowa, Iowa City, IA, [3]University of California Los Angeles, Los Angeles, United States, [4]University of Pittsburgh, Pittsburgh, PA

**3782 Are all brains wired equally?**

Danai Koutra[1], Yu Gong[2], Sephira Ryman[3], Rex Jung[3], Joshua Vogelstein[4], Christos Faloutsos[1]
[1]Carnegie Mellon University, Pittsburgh, United States, [2]Carnegie Mellon University, Pittsburgh, PA, [3]University of New Mexico, Albuquerque, NM, [4]Johns Hopkins University, Baltimore, United States

**3783 Associations between brain structural covariance networks and attentional networks**

Lu Zhao[1], Xuntao Yin[2], Andrew Reid[3], Budhachandra Khundrakpam[3], Alan Evans[4]
[1]Montreal Neurological Institute, McGill University, Canada, [2]Shandong University, Jinan, China, [3]Montreal Neurological Institute, Montreal, Canada, [4]Montreal Neurological Institute, McGill University, Montreal, Canada

**3784 Asymmetric projection of the arcuate fasciculus in the human posterior language cortices**

Shigetoshi Takaya[1], Hesheng Liu[1], Douglas Greve[1], Steven Stufflebeam[1]
[1]Athinoula A. Martinos Center for Biomedical Imaging, MGH, Charlestown, MA

**3785 Brainnetome: A new -ome to understand the brain and its disorders**

Tianzi Jiang[1,2,3], Ming Song[1]
[1]Institute Of Automation, Chinese Academy of Sciences, Beijing, China, [2]University of Electronic Science and Technology of China, Chengdu, China, [3]University of Queensland, Queensland, Australia

**3786 Can brain anatomical connectivity predict the resting state functional connectivity?**

Seong-yong Park[1], Bumhee Park[1,2,3], MinHee Um[1], Hae-Jeong Park[4]
[1]Department of Nuclear Medicine and Radiology,Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]BK21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**3787 Can strenuous exercise modulate brain connectivity?**

Eduardo Fontes[1], Alexandre Franco[2], Hélio Yoshida[1], Gabriela Castanho[1], Paula Fernandes[1], Li Min Li[1]
[1]University of Campinas, Campinas, Brazil, [2]Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil

**3788 Comparing Putative Hubs in Human, Chimpanzee and Rhesus Macaque Brains via Diffusion Tractography**

Longchuan Li[1], Xiaoping Hu[1], Todd Preuss[2], Matthew Glasser[3], Frederick Damen[1], Yuxuan Qiu[4], James Rilling[5]
[1]Department of Biomedical Engineering, Georgia Tech/Emory University, Atlanta, GA, United States, [2]Division of Neuropharmacology and Neurologic Diseases, Yerkes National Primate Research Center, Emor, Atlanta, GA, [3]Washington University in St. Louis, St. Louis, MO, [4]School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, [5]Department of Anthropology, Emory University, Atlanta, GA

**3789 Distinct anatomical, hemodynamic and neurophysiological brain networks**
Linda Douw[1,2,3,4], Matthew DeSalvo[5], Naoaki Tanaka[6], Matti Hamalainen[7], Steven Stufflebeam[6]
[1]Athinoula A. Martinos center for Biomedical Imaging, Charlestown, United States, [2]Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA, [3]Harvard Medical School, Boston, MA, [4]VU University Medical Center, Amsterdam, Netherlands, [5]Athinoula A Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, United States, [6]Martinos center for biomedical imaging, Charlestown, MA, [7]Massachusetts General Hospital, Charlestown, United States

**3790 Does edge matter? An optimized definition of edge weight for constructing brain anatomical networks**
Qin Xu[1], Ruibin Zhang[1], Shumei Li[1], Liqing Liu[1], Changhong Li[1], Yong Xu[1], Gaolang Gong[2], Yong He[2], Ruiwang Huang[1]
[1]Centre for Studies of Psychological Application, Key Laboratory of Mental Health and Cognitive Science of Guangdong Province, School of Psychology, South China Normal University, Guangzhou, China, [2]State key laboratory of cognitive neuroscience and learning, Beijing Normal University, Beijing, China

**3791 Effect of Intravenous Amphetamine on Resting State Networks**
Reza Momenan[1], James Bjork[2], Rabina Joshi[3], Daniel Hommer[4]
[1]NIH/NIAAA, Bethesda, United States, [2]NIH/NIDA, Rockville, MD, [3]NIAAA, NIH, Bethesda, MD, [4]NIAAA/NIH, Bethesda, United States

**3792 Functional Connectivity Correlates of Cognition in Healthy Aging**
William Shirer[1], Jessica Damoiseaux[1], Michael Greicius[1]
[1]Stanford University School of Medicine, Stanford, CA

**3793 Functional dissociation of ventral and dorsal default mode network components**
Patricia Bado[1,2], Annerose Angel[3,4], Ricardo de Oliveira-Souza[5,6], Ivanei Bramati[4,2], Fernando Paiva[4], Rodrigo Basilio[4], João Sato[7,4], Fernanda Tovar-Moll[1,2], Jorge Moll[1]
[1]D'Or Institute for Research and Education, Rio de Janeiro, Brazil, [2]Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, [3]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]D'Or Institute for Research and Education, Rio de Janeiro, Brazil, [5]D'Or Institute for Research and Education / Federal University of the State of Rio de Janeiro, Rio de Janeiro, Brazil, [6]Federal University of the State of Rio de Janeiro, Rio de Janeiro, Brazil, [7]ABC Federal University, Santo André, Brazil

**3794 Group ICA reveals brain networks supporting story listening**
Yingying Wang[1], Scott Holland[2]
[1]Pediatric Neuroimaging Research Consortium, Cincinnati Children's Hospital, Cincinnati, OH, United States, [2]Cincinnati Children's Hospital Research Foundation, Cincinnati, United States

**3795 Group-wise Optimization and Individualized Prediction of Structural Connectomes**
Hanbo Chen[1], Kaiming Li[2], dajiang zhu[3], lei guo[4], tianming liu[5]
[1]the university of georgia, Athens, United States, [2]Emory University, atlanta, GA, [3]University of Georgia, athens, United States, [4]Northwestern Polytechnical University, xian, China, [5]the University of Georgia, Athens, GA

**3796 Increased Connectivity in Language Network after Hemispherotomy**
Jeong-Sug Kyong[1], June Sic Kim[2,3], Chun Kee Chung[2,4]
[1]Medical Research Centre, College of Medicine, Seoul National University, Seoul, Korea, Republic of, [2]Dept. of Neurosurgery, Seoul National University Hospital, Seoul, Korea, Republic of, [3]Sensory organ Research Institute, College of Medicine, Seoul National University, Seoul, Korea, Republic of, [4]MEG Center, Seoul National University Hospital, Seoul, Korea, Republic of

**3797 Inferring Group-wise Consistent Multimodal Brain Networks via Multi-view Spectral Clustering**
Hanbo Chen[1], Kaiming Li[2], dajiang zhu[3], Xi Jiang[4], Yixuan Yuan[5], Peili Lv[5], Tuo Zhang[5], lei guo[6], Dinggang Shen[7], tianming liu[8]
[1]the university of georgia, Athens, United States, [2]Emory University, atlanta, GA, [3]University of Georgia, athens, United States, [4]The University of Georgia, Athens, GA, [5]Northwestern Polytechnical University, Xi'an, China, [6]Northwestern Polytechnical University, xian, China, [7]University of North Carolina at Chapel Hill, Chapel Hill, United States, [8]the University of Georgia, Athens, GA

**3798 Inter- and Intra-Subject Variability of MEG Resting State Networks**
Vincent Wens[1], Mathieu Bourguignon[1], Serge Goldman[1], MARTY Brice[1], Marc Op de beeck[1], Catherine Clumeck[1], Alison Mary[2], Philippe PEIGNEUX[2], Patrcik Van Bogaert[1], Xavier De Tiège[1]
[1]Laboratoire de Cartographie Fonctionnelle du Cerveau, Université Libre de Bruxelles, Brussels, Belgium, [2]UR2NF, Université Libre de Bruxelles, Brussels, Belgium

**3799 Intrinsic Functional Connections of Lateral Temporal Cortical Regions**
And Turken[1], Nina Dronkers[2]
[1]VA Northern California Health Care System, Martinez, CA, USA, [2]VA Northern California Health Care System, UC Davis, Martinez, CA, USA

**3800 Neurovascular coupling of resting state networks: a concurrent NIRS/MEG and NIRS/fMRI study**
Theodore Huppert[1], Avniel Ghuman[2]
[1]University of Pittsburgh, Pittsburgh, PA, [2] Bethesda, United States

**3801 Resting State Functional Connectivity and the Default Mode Network - During Rest and During Movement**
Michael Jurkiewicz[1], Adrian Crawley[1], David Mikulis[2]
[1]University of Toronto and the Toronto Western Hospital, Toronto, Canada, [2]University of Toronto and the Toronto Western Hospital, Toronto, Ontario

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3802** **Segregating the human language network at rest using resting-state fMRI and DTI**
Merina Su[1], Frederique Liegeois[1], Chris Clark[1]
[1]UCL Institute of Child Health, London, United Kingdom

**3803** **Single-subject grey matter graphs in Alzheimer's disease**
Betty Tijms[1], Willem de Haan[1], Christiane Möller[1], Hugo Vrenken[2], Alle Meije Wink[3], Wiesje van der Flier[1], Cornelis Stam[1], Philip Scheltens[1], Frederik Barkhof[1]
[1]VU University Medical Center, Amsterdam, Netherlands, [2]VU University Medical Center, [3]VU University Medical Centre, Amsterdam, Noord - Holland

**3804** **Structural covariance networks of dorsal anterior insula predict individual differences in empathy**
Boris Bernhardt[1], Olga Klimecki[1], Susanne Leiberg[2], Tania Singer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Department of Social Neuroscience, Leipzig, Germany, [2]Laboratory for Social and Neural Systems Research, Zurich, Switzerland

**3805** **Structural network abnormalities and cognitive impairment in cerebral small vessel disease**
Andrew Lawrence[1], Ai Wern Chung[1], Robin Morris[2], Hugh Markus[1], Thomas Barrick[1]
[1]St. George's, University of London, London, United Kingdom, [2]Department of Psychology, Institute of Psychiatry, London, United Kingdom

**3806** **Subject-specific parcellations of the inferior frontal cortex**
Hubert Fonteijn[1], Dan Acheson[1], Roel Willems[2], Peter Hagoort[1]
[1]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [2]Donders Centre for Cognitive Neuroimaging, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**3807** **The cognitive relevance of the community structure of the brain's functional co-activation network**
Nicolas Crossley[1], Andrea Mechelli[2], Petra Vertes[3], Toby Winton-Brown[4], Ameera Patel[5], Cedric Ginestet[2], Philip McGuire[6], Edward Bullmore[7]
[1]Institute of Psychiatry - King's College London, [2]Institute of Psychiatry - King's College London, London, United Kingdom, [3]Cambridge University, Cambridge, United Kingdom, [4]Institute of Psychiatry, London, United Kingdom, [5]University of Cambridge, Cambridge, United Kingdom, [6]Institute of Psychiatry, King's College, London, United Kingdom, [7]Brain Mapping Unit, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom

**3808** **The resting state is context dependent: Eyes closed rest variations after interim tasks**
Elisabeth Hurliman[1], Joel Lee[1], Jose Pardo[1]
[1]Cognitive Neuroimaging Unit, Minneapolis, United States

**3809** **The Test-Retest Reliability of Structural Brain Networks Obtained from Diffusion MRI**
Colin Buchanan[1], Cyril Pernet[1], Krzysztof Gorgolewski[2], Amos Storkey[1], Mark Bastin[1]
[1]University of Edinburgh, Edinburgh, United Kingdom, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

## Neuroanatomy

### Cortical Anatomy and Segregation

**3810** **3D cortical profiles of diffusion MRI data in primary motor (M1) and somatosensory (S1) cortex**
Christoph Leuze[1], Pierre-Louis Bazin[1], Alfred Anwander[1], Juliane Dinse[1], Miriam Waehnert[1], Till Riffert[1], Stefan Geyer[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3811** **A generative model of intra-cortical T1 contrast based on histology and 7 Tesla imaging**
Juliane Dinse[1,2], Pierre-Louis Bazin[1], Miriam Waehnert[1], Christine Tardif[1], Stefan Geyer[1], Robert Turner[1], Andreas Schäfer[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Department of Simulation and Graphics, Faculty of Computer Science, Otto-von-Guericke-University of Magdeburg, Magdeburg, Germany

**3812** **Connectome Visualization using Cortical Surface-based Glyphs**
Joachim Böttger[1], Daniel Margulies[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3813** **Cortical depth-mapping approach based on signed-distance function**
Reswanul Khan[1], Qin Zhang[1], Chandrajit Bajaj[1], David Ress[1]
[1]The University of Texas at Austin, Austin, TX

**3814** **Decreased cortical thickness in food and reward related brain areas with increasing body mass index**
Ralf Veit[1], Stephanie Kullmann[1,2], Sabine Frank[1], Martin Heni[3], Hans-Ulrich Häring[3], Andreas Fritsche[3,2], Hubert Preissl[1,2]
[1]Institute of Medical Psychology and Behavioral Neurobiology, University of Tübingen, Tübingen, Germany, [2]Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Center Munich, Tübingen, Germany, [3]Department of Internal Medicine IV, University of Tübingen, Tübingen, Germany

***3815 Detailed laminar characteristics of the human neocortex revealed by NODDI and histology, (O-M4)**
Michiel Kleinnijenhuis[1,2], Hui Zhang[3], Dirk Wiedermann[4], Benno Küsters[5], David Norris[2,6,7], Anne-Marie van Cappellen van Walsum[1,6]
[1]Department of Anatomy, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, [2]Radboud University Nijmegen, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [3]Department of Computer Science & Centre for Medical Image Computing, University College London, London, United Kingdom, [4]Max Planck Institute for Neurological Research, Cologne, Germany, [5]Department of Pathology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands, [6]MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, Netherlands, [7]Erwin L. Hahn Institute for Magnetic Resonance Imaging, University Duisburg-Essen, Essen, Germany

***3816 Identifying Heavily Myelinated Areas of the Cortex using subject-specific Cortical Profiles of T1, (O-W3)**
Miriam Waehnert[1], Juliane Dinse[1,2], Christine Tardif[1], Andreas Schäfer[1], Stefan Geyer[1], Pierre-Louis Bazin[1], Robert Turner[1]
[1]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Otto-von-Guericke University Magdeburg, Magdeburg, Germany

**3817 In Vivo Mapping of MT/V5 Using High Resolution T1 maps at 7 Tesla**
Christine Tardif[1], Juliane Dinse[1], Miriam Waehnert[1], Andreas Schäfer[1], Pierre-Louis Bazin[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3818 Parcellation of Human Cortical Areas Using Resting-State Correlations**
Timothy Laumann[1], Gagan Wig[2], Alexander Cohen[3], Steven Petersen[1]
[1]Washington University, St. Louis, United States, [2]University of Texas at Dallas, Dallas, United States, [3]Mayo Clinic, Rochester, United States

**3819 Realistic Modelling of Cortical Laminae**
Miriam Waehnert[1], Juliane Dinse[1,2], Marcel Weiss[1], Markus Streicher[1], Philipp Waehnert[3], Stefan Geyer[1], Robert Turner[1], Pierre-Louis Bazin[1]
[1]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Otto-von-Guericke University Magdeburg, Magdeburg, Germany, [3]Max-Planck Institute for Mathematics in the Sciences, Leipzig, Germany

**3820 Simulating MRI tissue contrast as a function of iron and myelin concentration**
Carsten Stueber[1], Andreas Schaefer[1], Miriam Waehnert[1], Daniel Spemann[2], Katja Reimann[1], Stefan Geyer[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Dept. Neurophysics, Leipzig, Germany, [2]LIPSION Laboratory, Institute of Nuclear Solid State Physics, University of Leipzig, Leipzig, Germany

**3821 The Asymmetric Subregional Connections of Superior Parietal Lobule for Visuospatial Attention**
Jiaojian Wang[1], Lingzhong Fan[2], Yun Zhang[1], Tianzi Jiang[2]
[1]Electronic sicience and techonology of China, Chengdu, China, [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**3822 Uncovering Subregions in Human Orbitofrontal Cortex with Meta-Analytic Sequence based Parcellation**
Lingzhong Fan[1], Yong Yang[1], Congying Chu[1], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China

## Neuroanatomy

### Subcortical Structures

**3823 A Quantitative Meta-Analysis of Subthalamic Nucleus Activation**
Cordelia Erickson-Davis[1], Vinod Menon[2], Kathleen Poston[3]
[1]Stanford University, Stanford, CA, [2]Stanford school of medicine, Palo Alto, CA, [3]Stanford University, Stanford, United States

**3824 Antidromic effects of exercise on amygdalar and hippocampal volume**
Lukas Scheef[1], Sandra Rojas Vega[2], Marcel Daamen[1], Helge Knigge[2], Max Pensel[1], Ahmed Othman[1], Heiko Strüder[2], Henning Boecker[1]
[1]Functional Neuroimaging Group, Dept. of Radiology, University Hospital, Bonn, Germany, [2]Institute of Movement and Neurosciences, German Sport University, Cologne, Germany

**3825 Cognitive and Behavioral Correlates of Caudate Subregion Shape Variation in Fragile X Syndrome**
Daniel Peng[1], Ryan Kelley[1], Eve-Marie Quintin[1], Mira Raman[1], Allan Reiss[1], Paul Thompson[2]
[1]Stanford University, Stanford, CA, [2]Laboratory of Neuro Imaging, Department of Neurology, UCLA School of Medicine, Los Angeles, United States

**3826 Genes contributing to subcortical volumes and intellectual functioning implicate the thalamus**
Marc Bohlken[1], Rachel Brans[1], Rachel Brouwer[2], René Mandl[1], Neeltje van Haren[3], G. Caroline M. van Baal[3], Eco de Geus[4], Dorret Boomsma[4], René Kahn[3], Hilleke Hulshoff Pol[3]
[1]UMC Utrecht, Utrecht, Netherlands, [2]University Medical Center Utrecht, Utrecht, Netherlands, [3]Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Department of Psychiatry, Utrecht, Netherlands, [4]VU University, Amsterdam, Netherlands

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3827** **High-Resolution fMRI of the Human Habenula at 7T**
Barbara Strotmann[1], Robin Heidemann[2,3], Robert Trampel[2], Arno Villringer[4], Robert Turner[5]
[1]Max Planck Institute For Human Cognitive And Brain Sciences, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Siemens Healthcare Sector, Erlangen, Germany, [4]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [5]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3828** **Internal structure of human habenula with ex vivo MRI at 7T**
Barbara Strotmann[1], Carsten Koegler[2], Marcel Weiss[3], Arno Villringer[4], Robert Turner[2]
[1]Max Planck Institute For Human Cognitive And Brain Sciences, Leipzig, Germany, [2]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [4]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3829** **Limits of cluster thresholds in analyzing striatal reward-related activity**
Matthew Sacchet[1], Brian Knutson[1]
[1]Stanford University, Stanford, United States

**3830** **Links between Meditation Practices and Gray Matter Tissue within the Hippocampal Subiculum**
Eileen Luders[1], Florian Kurth[1], Katherine Narr[1], Arthur Toga[1], Christian Gaser[2]
[1]UCLA, Department of Neurology, Los Angeles, CA, United States, [2]University of Jena, Departments of Psychiatry and Psychology, Jena, Germany

**3831** **Multimodal receptor and cytoarchitectonic mapping of the human amygdala**
Olga Kedo[1,2], Karl Zilles[1,2,3,4], Axel Schleicher[1], Nicola Palomero-Gallagher[1], Hartmut Mohlberg[1], Katrin Amunts[1,2,3,4]
[1]Institute of Neurosciences and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [2]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [3]C.&O. Vogt Institute of Brain Research, Düsseldorf University, Düsseldorf, Germany, [4]Jülich-Aachen Research Alliance (JARA), RWTH Aachen University, Aachen, Germany

**3832** **Retinotopic, Somatotopic and Visuo-tactile Maps in the Human Pulvinar as revealed by 7 Tesla fMRI**
Ursula Budnik[1,2], Marty Sereno[3], Robert Trampel[2], Vincent Walsh[4], Robert Turner[2]
[1]Institute of Cognitive Neuroscience, UCL, LONDON, United Kingdom, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Birkbeck-UCL Centre for Neuroimaging, LONDON, United Kingdom, [4]Institute of Cognitive Neuroscience, UCL, London, United Kingdom

**3833** **Thalamocortical coupling is spatially specific and structurally constrained**
Mahsa Malekmohammadi[1], W. Jeff Elias[2], Nader Pouratian[3]
[1]UCLA, Los Angeles, United States, [2]University of Virginia, Charlottesville, VA, [3]UCLA, Los Angeles, CA

## Neuroanatomy

### White Matter Anatomy, Fiber Pathways and Connectivity

**3834** **A comparison of the connections of laryngeal motor cortex in humans and macaque monkeys using DWI**
Paula Croxson[1], Kristina Simonyan[1]
[1]Mount Sinai School of Medicine, New York, United States

**3835** **Blindness differentially affects the integrity of the dorsal and ventral visual streams**
Nina Linde Reislev[1,2], Ron Kupers[2], Hartwig Siebner[1,2], Maurice Ptito[1,2,3], Tim Dyrby[1]
[1]Danish Research Centre for Magnetic Resonance, Section 340B, Copenhagen University Hospital Hvidovre, Hvidovre, Denmark, [2]Department of Neuroscience and Pharmacology, Faculty of Health Sciences, Copenhagen University, Copenhagen, Denmark, [3]Université de Montreál, School of Optometry, Montreál, Québec, Canada

**3836** **Brain Connectivity based on Maximum Flow in Alzheimer's Disease: The EMFATIC Method**
Gautam Prasad[1], Shantanu Joshi[2], Talia Nir[1], Arthur Toga[2], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States

***3837** **Chronic neglect and disconnection of white matter pathways: A longitudinal study, (O-Th3)**
Marine Lunven[1,2,3], Michel Thiebaut de Schotten[4,5], Christophe Duret[2], Clémence Bourlon[2], Raffaella Migliaccio[1], Gilles RODE[6], Paolo Bartolomeo[1,7,8]
[1]INSERM-UPMC UMR_S 975, Centre de Recherche de l'Institut du Cerveau et de la Moelle épinière, Paris, France, [2]Service de Neurorééducation, clinique Les Trois Soleils, Boissise-Le-Roi, France, [3]Inserm U1028 CNRS UMRS292, Equipe ImpAct, Bron, France, [4]Institute of Psychiatry, London, United Kingdom, [5]CNRS UMR 7225, Paris, France, [6]Hôpital Henri Gabrielle - Hôpital Neurologique, Saint-Genis Laval, France, [7]AP-HP, Groupe Hospitalier Pitié Salpétrière, Fédération de Neurologie, Paris, France, [8]Department of Psychology, Catholic University, Milan, Italy

**3838** **Connection length and strength**
John Lewis[1], Miyoko Onishi[2], Katie Travis[3], Rebecca Theilmann[4], Jeanne Townsend[2], Alan Evans[1]
[1]Montreal Neurological Institute, McGill University, Montreal, Canada, [2]Research on Aging and Development Laboratory, UC San Diego, La Jolla, CA, [3]Department of Neurosciences, UC San Diego, La Jolla, CA, [4]Department of Radiology, UC San Diego, La Jolla, CA

**3839** **Connectivity in Aging Adult Survivors of Childhood ALL**
*Wilburn Reddick[1], John Glass[1], Qing Ji[1], Jung Won Hyun[2], Ying Yuan[2], Kevin Krull[3], Gregory Armstrong[3]*
*[1]Division of Translational Imaging Research, St. Jude Children's Research Hospital, Memphis, TN, [2]Department of Biostatistics, St. Jude Children's Research Hospital, Memphis, TN, [3]Department of Epidemiology and Cancer Control, St. Jude Children's Research Hospital, Memphis, TN*

***3840** **Connectome based classification of brain-derived neurotrophic factor Met allele carriers., (O-W3)**
*Erik Ziegler[1], Jessica Schrouff[1], Pierre Maquet[1], Christophe Phillips[1]*
*[1]Cyclotron Research Centre, University of Liege, Liege, Belgium*

**3841** **Diffusion properties along fiber bundles in typically developing children between 2 and 5 years old**
*Ryan Johnson[1], Christine Nordahl[2], Jason Yeatman[3], Brian Wandell[3], David Amaral[2]*
*[1]The MIND Institute, University of California Davis, Sacramento, CA, [2]The MIND Institute University of California Davis, Sacramento, CA, [3]Stanford University, Stanford, CA*

**3842** **Elucidating plasticity of cerebellar white matter pathways in Spinocerebellar Ataxia Type 6**
*Inez Falcon[1], Duke Shereen[2], Christopher Gomez[3], Ana Solodkin[2]*
*[1]University of California, Irvine, Irvine, United States, [2]University of California, Irvine, Irvine, CA, [3]The University of Chicago, Chicago, IL*

**3843** **Emotional detachment in psychopaths is related to the microstructure of the default-mode network**
*Arjun Sethi[1], Marco Catani[1], Flavio Dell'Acqua[1], Sarah Gregory[1], Tom Fahy[1], Declan Murphy[1], Michael Craig[2], Nigel Blackwood[1]*
*[1]Institute of Psychiatry, King's College London, London, United Kingdom, [2]Institute of Psychiatry, Kings College London, London, United Kingdom*

***3844** **Estimation of fiber orientation distribution functions in 3D-polarized light imaging, (O-W3)**
*Markus Axer[1], Sven Strohmer[2], David Graessel[1], Julia Reckfort[1], Melanie Dohmen[1], Guido Dehnhardt[3], Karl Zilles[1], Katrin Amunts[1]*
*[1]Institute of Neuroscience and Medicine (INM-1), Research Center Juelich, Juelich, Germany, [2]Juelich Supercomputing Center (JSC), Research Center Juelich, Juelich, Germany, [3]Institute for Biosciences, University Rostock, Rostock, Germany*

**3845** **Fiber Density and Connectivity in Alzheimer's Disease**
*Gautam Prasad[1], Talia Nir[1], Arthur Toga[2], Paul Thompson[1]*
*[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States*

**3846** **Functional Connectivity Suggests Mean Radial Diffusivity as a Metric of Anatomic Connectivity**
*Mark Lowe[1], Ken Sakaie[1], Katherine Koenig[1], Lael Stone[1], Robert Bermel[1], Michael Phillips[1]*
*[1]Cleveland Clinic, Cleveland, OH*

**3847** **Functional pathway of human central auditory system revealed by gray and white matters' BOLD signal**
*Woo-Suk Tae[1], Sam Soo Kim[2], Eui-Cheol Nam[2], Natalia Yakunina[2]*
*[1]Kangwon National University Hospital, Chunchen, Korea, Republic of, [2]Kangwon National University Hospital, Chuchen, Korea, Republic of*

**3848** **Impact of Therapy Induced Leukoencephalopathy on Connectivity in Children Treated for ALL**
*Qing Ji[1], John Glass[1], Wilburn Reddick[1]*
*[1]Division of Translational Imaging Research, St. Jude Children's Research Hospital, Memphis, United States*

**3849** **Language white matter tract laterality: from tractography to biophysical meaning**
*Aviv Mezer[1], Jason Yeatman[1], Ariel Rokem[1], Brian Wandell[1]*
*[1]Stanford University, Stanford, United States*

**3850** **Longitudinal Changes in Connectivity During Treatment for Childhood ALL**
*John Glass[1], Qing Ji[1], Jung Won Hyun[2], Ying Yuan[2], Wilburn Reddick[1]*
*[1]Division of Translational Imaging Research, St. Jude Children's Research Hospital, Memphis, TN, [2]Department of Biostatistics, St. Jude Children's Research Hospital, Memphis, TN*

***3851** **MR diffusion-based histology and micro-tractography reveal mesoscale details of the human cerebellum, (O-W3)**
*Flavio Dell'Acqua[1], Istvan Bodi[2], David Slater[1], Marco Catani[1], Michel Modo[3]*
*[1]King's College London - Institute of Psychiatry, London, United Kingdom, [2]King's College Hospital, London, United Kingdom, [3]University of Pittsburgh, Pittsburgh, United States*

**3852** **Neurobiological Differences in White Matter Connections Related to Reading Comprehension Skill**
*Nicole Davis[1], Laura Barquero[1], Qiuyun Fan[1], Scott Burns[1], Dwayne Dove[1], Sheryl Rimrodt[1], Laurie Cutting[1]*
*[1]Vanderbilt University, Nashville, TN*

**3853** **Neuronal correlates of personality in healthy young adults: a diffusion tensor imaging study**
*Hye Ill Shin[1], Sun Young Choi[1], You Jin Jung[1], Sang Hee Kim[1]*
*[1]Department of Brain and Cognitive Engineering, Korea University, Seoul, Korea, Republic of*

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**3854 Noninvasive Functional and Structural Connectivity Mapping of the Human Vestibular System**
Valerie Kirsch[1,2], Daniel Keeser[3,4], Thomas Meindl[3], Marianne Dieterich[1,2]
[1]Department of Neurology, Ludwig-Maximilians University, Munich, Germany, [2]German Center for Vertigo and Balance Disorders (IFB-LMU), Ludwig-Maximilians University, Munich, Germany, [3]Ludwig Maximilians University Munich, Institute of Clinical Radiology, Munich, Germany, [4]Department of Psychiatry, Ludwig-Maximilians University, Munich, Germany

**3855 On the Geometric Structure of the Brain Fiber Pathways**
Flavio Dell'Acqua[1], Istvan Bodi[2], Marco Catani[1]
[1]King's College London - Institute of Psychiatry, London, United Kingdom, [2]King's College Hospital, London, United Kingdom

**3856 Population-Based Multi-Tensor Atlas of White Matter Tracts: Detecting Differences in Schizophrenia**
Demian Wassermann[1,2,3], Nikos Makris[4], Yogesh Rathi[2], Martha Shenton[2], Ron Kikinis[3], Carl-Fredrik Westin[1], Marek Kubicki[2]
[1]Laboratory of Mathematics in Imaging, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States, [2]Psychiatry Neuroimaging Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States, [3]Surgical Planning Lab, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States, [4]Center For Morphometric Analysis, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States

**3857 Q-ball reconstruction of the Inferior Fronto-Occipital Fasciculus**
Eduardo Caverzasi[1], Nico Papinutto[1], Bago Amirbekian[2], Monica Bucci[2], Mitchel Berger[2], Roland Henry[2]
[1]UCSF, San Francisco, United States, [2]UCSF, San Francisco, CA

**3858 Reciprocal Cerebrocerebellar Pathways in Pediatric Medulloblastoma**
Nicole Law[1,2,3], Mark Greenberg[1,3], Eric Bouffet[1], Michael Taylor[1], Suzanne Laughlin[1], Fang Liu[1], Iska Moxon-Emre[1,2], Nadia Scantlebury[1], Donald Mabbott[1,2]
[1]The Hospital for Sick Children, Toronto, Ontario, Canada. [2]University of Toronto, Toronto, Ontario, Canada, [3]Pediatric Oncology Group of Ontario, Toronto, Ontario, Canada

**3859 Refining Brain Connectivity Networks to Optimally Identify Brain Disease: The EPIC Algorithm**
Gautam Prasad[1], Shantanu Joshi[2], Talia Nir[1], Arthur Toga[2], Paul Thompson[1]
[1]Imaging Genetics Center, Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States, [2]Laboratory of Neuro Imaging, Dept. Neurology, UCLA School of Medicine, Los Angeles, United States

**3860 Seeking the Hidden: Uncovering the Claustrum's Curious Connections Using Diffusion Tensor Imaging**
Carinna Torgerson[1], Andrei Irimia[2], Micah Chambers[3], John Van Horn[3]
[1]University of California, Los Angeles, Los Angeles, United States, [2]University of California, Los Angeles, [3]University of California, Los Angeles, Los Angeles, CA

**3861 Simulation Tool for 3D Polarized Light Imaging (SimPLI)**
Melanie Dohmen[1], Hendrik Wiese[1], Julia Reckfort[1], Uwe Pietrzyk[2], Guido Dehnhardt[3], Karl Zilles[1], Katrin Amunts[1], Markus Axer[1]
[1]Institute of Neuroscience and Medicine (INM-1), Research Centre Jülich, Jülich, Germany, [2]Institute of Neuroscience and Medicine (INM-4), Research Centre Jülich, Jülich, Germany, [3]Institute for Biosciences, University Rostock, Rostock, Germany

**3862 Thalamus and it's connections with Broca's area: A DW-MRI tractography study**
Anastasia Ford[1], Bruce Crosson[2], David FitzGerald[3], Thomas Mareci[1], Keith McGregor[2], William Triplett[1], Keith White[1]
[1]University of Florida, Gainesville, United States, [2]Emory University, Atlanta, United States, [3]VAMC, Gainesville, United States

**3863 The anatomy of the fronto-occipital networks**
Stephanie Forkel[1], Michel Thiebaut de Schotten[2], Jamie Kawadler[3], Flavio Dell'Acqua[4], Adrian Danek[5], Marco Catani[6]
[1]King's College London, London, United Kingdom, [2]Institute of Psychiatry, London, United Kingdom, [3]University College London, London, United Kingdom, [4]King's College London - Institute of Psychiatry, London, United Kingdom, [5]Ludwigs-Maximilian-University Munich, Munich, Germany, [6]Institute of Psychiatry - King's College London, London, United Kingdom

**3864 The effect of alcohol dependence on white matter anisotropy in human brain**
Caitlin Durkee[1], Joelle Sarlls[2], Daniel Hommer[1], Reza Momenan[1]
[1]NIH/NIAAA, Bethesda, MD United States, [2]NIH/NINDS, Bethesda, MD United States

**3865 The effect of retinal gene therapy on the brain's visual fibers**
Manzar Ashtari[1], Laura Cyckowski[2], Gary Zhang[3], Philip Cook[4], Kathleen Marshall[1], James Gee[4], Arastoo Vossough[2], Kenneth Shindler[5], Albert Maguire[5], Jean Bennett[5]
[1]Children's Hospital of Philadelphia, Philadelphia, PA, [2]Children's Hospital of Philadelphia, Philadelphia, United States, [3]University College of London, London, United Kingdom, [4]University of Pennsylvania, Philadelphia, PA, [5]Scheie Eye Institute, University of Pennsylvania, Philadelphia, PA


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**3866** **The visual dorsal and ventral streams communicate through the vertical occipital fasciculus**
Hiromasa Takemura[1,2], Franco Pestilli[1], Ariel Rokem[1], Jonathan Winawer[1], Jason Yeatman[1], Brian Wandell[1]
[1]Stanford University, Stanford, CA, [2]The Japan Society for the Promotion of Science, Tokyo, Japan

**3867** **Tractography-based subdivision of the occipital lobe**
Michel Thiebaut de Schotten[1], Marika Urbanski[2], Emmanuelle Volle[2], Dimitri Bayle[3], Romain Valabrègue[4]
[1]Institute of Psychiatry, London, United Kingdom, [2]Institute of Brain and Spine, Paris, France, [3]CRICM inserm U975, Paris, France, [4]Centre de Neuro-Imagerie de Recherche (CENIR), CR-ICM, Inserm, U975, CNRS, UMR 7225, Paris, France

**3868** **TractRender: A Customization Platform for Diffusion Tensor Tractography Visualization**
Darryl Hwang[1], Sinchai Tsao[1], Bryce Wilkins[1], Niharika Gajawelli[1], Meng Law[1,2], Natasha Lepore[1,2,3]
[1]Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, [2]Department of Radiology, Keck School of Medicine, University of Southern California, Los Angeles, CA, [3]Department of Radiology, Children's Hospital of Los Angeles, Los Angeles, CA

**3869** **U-shape Axonal Fibers Course along Sulci and Connect Neighboring Gyri**
Tuo Zhang[1], hanbo chen[2], lei guo[3], Kaiming Li[4], Longchuan Li[4], Shu Zhang[5], Dinggang Shen[6], Xiaoping Hu[4], tianming liu[5]
[1]Northwestern Polytechnical University, Xi'an, China, [2]The University of Georgia, Athens, GA, [3]Northwestern Polytechnical University, xian, China, [4]Emory University, Atlanta, United States, [5]the University of Georgia, Athens, GA, [6]Department of Radiology and BRIC, UNC-Chapel Hill, Chapel Hill, NC

**3870** **Whole Tract versus Tract Based Spatial Statistics Assessment of Fornix Fractional Anisotropy**
Tiffany Lazar[1], Sunny Thind[2], Bruce Bolster[3], Patricia Gervai[2], Uta Sboto-Frankenstein[2]
[1]University of Manitoba, Winnipeg, Canada, [2]National Research Council Institute for Biodiagnostics, Winnipeg, Canada, [3]University of Winnipeg, Winnipeg, Canada

## Perception and Attention

### Attention: Auditory/Tactile/Motor

**3871** **A vibrotactile P300 communication tool**
Javi Rodriguez[1], Guenter Edlinger[2], Rupert Ortner[1], Zulay Lugo[3], Christoph Guger[1]
[1]g.tec Guger Technologies OG, Schiedlberg, Austria, [2]g.tec Guger Technologies OG, Graz, Austria, [3]Coma Science Group, Cyclotron Research Centre and CHU Neurology Department, University of Liège, Liege, Belgium

**3872** **Attention control and language lateralization — evidence from fMRI and dichotic listening task**
Patrycja Naumczyk[1], Zdzisław Kurkowski[2], Agnieszka Sabisz[1], Tomasz Wolak[3]
[1]University of Gdańsk, Gdańsk, Poland, [2]Maria Curie-Skłodowska University, Lublin, Poland, [3]Institute of Physiology and Pathology of Hearnig, Kajetany, Poland

**3873** **EEG activity associated with time-on-task decrements and rest quality**
Julian Lim[1,2], Francis Quevenco[1,2], Kenneth Kwok[1,2]
[1]Temasek Laboratories, National University of Singapore, Singapore, Singapore, [2]Singapore Institute for Cognitive Science and Neurotechnologies (SINAPSE), Singapore, Singapore

**3874** **Feature-based BOLD fMRI modulation in human somatosensory cortex**
Meike Annika Schweisfurth[1,2], Renate Schweizer[1], Stefan Treue[2], Jens Frahm[1]
[1]Biomedizinische NMR Forschungs GmbH, Max-Planck-Institut fuer biophysikalische Chemie, Goettingen, Germany, [2]Cognitive Neuroscience Laboratory, German Primate Center, Goettingen, Germany

**3875** **Kinesthesia in Driving**
Chun-Hsiang Chuang[1], Chin-Teng Lin[1], Tzyy-Ping Jung[2]
[1]National Chiao Tung University, Hsinchu, Taiwan, [2]University of California, San Diego, La Jolla, United States

**3876** **Separating auditory and visual attention networks using eye tracking**
Rodrigo Braga[1], Richard Fu[1], Richard Wise[1], Robert Leech[1]
[1]Imperial College London, London, United Kingdom

**3877** **Turning lemons into lemonade: MR scanner noise as a stimulus source in an auditory go/nogo task**
Bruno Pastorello[1], Bernd Foerster[2], Arthur Borgonovi[1,3], Edson Amaro Junior[4]
[1]NIF, LIM-44, Dep. Radiology - Faculdade de Medicina - USP, Sao Paulo, Brazil, [2]Philips Heathcare, Sao Paulo, Brazil, [3]Philips Healthcare, Eindhoven, Netherlands, [4]NIF, LIM-44, Dep. Radiology - Faculdade de Medicina - USP, São Paulo, Brazil

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Perception and Attention

### Attention: Visual

**3878 An ERP study on Visual Attention: Egocentric and Allocentric Frames of Reference in Older Adults**
Brian Au[1], Eric Tsang[1,2], K. Ting[1], Chetwyn Chan[1]
[1]Applied Cognitive Neuroscience Lab, Department of Rehab Sciences, Hong Kong Polytechnic University, Hong Kong, China, [2]Social Cognitive Neuroscience and Neuropsychology Laboratory, Department of Psychology, The University of Hong Kong, Hong Kong, China

**3879 An fMRI Study on processing information in task-relevant and -irrelevant dimensions in visual search**
Ping Wei[1], Hermann Müller[2], Stefan Pollmann[3], Xiaolin Zhou[4]
[1]Capital Normal University, Beijing, China, [2]Department of Psychology, LMU München, Munich, Germany, [3]Otto-von-Guericke Univerität Magdeburg, Magdeburg, Germany, [4]Center for Brain and Cognitive Sciences and Department of Psychology, Beijing, China

****3880 Attentional base response in human superior colliculus measured using high-resolution fMRI**
Sucharit Katyal[1], David Ress[2]
[1]The University of Texas at Austin, Austin, United States, [2]The University of Texas at Austin, Austin, TX

**3881 Attentional Modulation of Early Visual Activity during Visual Short-Term Memory Encoding**
Hsin-Ya Fan[1], Ai-Ling Hsu[2], Changwei Wu[3], Ching-Po Lin[4], Bo-Cheng Kuo[5]
[1]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [2]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, [3]Graduate Institute of Biomedical Engineering, National Central University, Taoyuan, Chinese Taipei, [4]Institute of Neuroscience, National Yang-Ming University, Taipei, Chinese Taipei, [5]Department of Psychology, National Chengchi University, Taipei, Taiwan

**3882 Attentional Networks in Children with High-Functioning Autism: An fMRI Investigation**
Dan Fang[1], David Richman[1], Wes Dotson[1], Mary Baker[1], Ron Anderson[1], Liz Hames[1], Richie Hou[1], Michael O'Boyle[1]
[1]Texas Tech University, Lubbock, TX

**3883 Brain Activations in Anticipatory Attention Prior to Face, Word, and Symbol Stimuli**
Yoshimi Ohgami[1], Yasunori Kotani[1], Jun-ichiro Arai[2], Shigeru Kiryu[3], Yusuke Inoue[4]
[1]Tokyo Institute of Technology, Meguro, Tokyo, Japan, [2]Daikin Industries, Tokyo, Japan, [3]The University of Tokyo, Tokyo, Japan, [4]Kitasato University, Sagamihara, Japan

**3884 Category-dependent effects of non-masked subliminal primes during a visual categorization task**
Robert Becker[1], Holger Sperdin[1], Theodor Landis[1], Christoph Michel[1]
[1]Functional Brain Mapping Lab, Department of Fundamental Neurosciences, University of Geneva, Geneva, Switzerland

**3885 DCM reveals asymmetric modulation of fronto-thalamic pathways during sustained attention**
Pranav Jagtap[1], Vaibhav Diwadkar[1]
[1]Wayne State University, Detroit, MI

**3886 EEG beta band activity is related to attention and decreases with age**
Mateusz Gola[1], Mikolaj Magnuski[1], Iza Szumska[2], Wróbel Andrzej[3]
[1]Warsaw School of Social Sciences and Humanities, Warsaw, Poland, [2]University of Finance and Management, Warsaw, Poland, [3]Nencki Institute of Experimental Biology, Warsaw, Poland

**3887 Effect of Unilateral Stimulus Presentation on Neural Systems of Anterior Insular Cortex**
Yasunori Kotani[1], Yoshimi Ohgami[1], Jun-ichiro Arai[2], Shigeru Kiryu[3], Yusuke Inoue[4]
[1]Tokyo Institute of Technology, Meguro, Tokyo, Japan, [2]Daikin Industries, Tokyo, Japan, [3]The University of Tokyo, Tokyo, Japan, [4]Kitasato University, Sagamihara, Japan

**3888 Neural activation of static and dynamic feature attention**
Sarah Tyler[1], Samhita Dasgupta[1], Sara Agosta[2], Lorella Battelli[2], Emily Grossman[1]
[1]Department of Cognitive Sciences, Center for Cognitive Neuroscience, University of California, Irvine, Irvine, United States, [2]Center for Neuroscience and Cognitive Systems@UniTn, Italian Institute of Technology, Rovereto, Italy

**3889 Neural Signatures of Individual Differences in Sustained Attention**
Sarah Noonan[1], Michael Esterman[2], Monica Rosenberg[3]
[1]VA Puget Sound, Seattle, USA, [2]VA Boston, Boston, MA, [3]Yale University, New Haven, CT

**3890 Neurocognitive Development of Selective Attention: fMRI Evidence from Object Tracking**
Christian Fiebach[1,2,3], Kerstin Wolf[4,1,2], Pfeiffer Till[4]
[1]Department of Psychology, Goethe University Frankfurt, Frankfurt am Main, Germany, [2]IDeA Center for Individual Development and Adaptive Education, Frankfurt am Main, Germany, [3]Donders Center for Cognition, Radboud University Nijmegen, Nijmegen, Netherlands, [4]University of Education Karlsruhe, Karlsruhe, Germany


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***3891 Predicting Response Time Variations from Anticipatory Modulation of Large-scale Brain Networks, (O-W1)**
Matthias Ekman[1], Jan Derrfuss[2], Marc Tittgemeyer[3], Christian Fiebach[4]
[1]Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [2]Donders Institute for Brain, Cognition and Behavior, Radboud University Nijmegen, Nijmegen, the Neth, Nijmegen, Netherlands, [3]Max-Planck-Institute for Neurological Research, Cologne, Germany, [4]University of Frankfurt, Frankfurt am Main, Germany

**3892 Reward guides attention to real-world object categories: evidence from event-related fMRI and MVPA**
Clayton Hickey[1], Marius Peelen[2]
[1]VU University Amsterdam, Amsterdam, The Netherlands, [2]Center for Mind/Brain Sciences, University of Trento, Trento, Italy

**3893 Sleep Deprivation Alters Dorsal-Ventral Attentional Networks Functional Connectivity**
Chunlei Liu[1], Zhou Renlai[1,2], Xinyun Tang[1]
[1]Beijing Key Lab of Applied Experimental Psychology, School of Psychology, Beijing Normal University, Beijing, China, [2]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

**3894 Sleep Deprivation Exacerbates Temporal Limitations in Object Processing**
Danyang Kong[1], Christopher L. Asplund[1], Michael W.L. Chee[1]
[1]Neuroscience and Behavioural Disorders Program, Duke-NUS Graduate Medical School, Singapore, Singapore

**3895 Top-down modulation of the primary visual cortex in resting state: a multivariate linear analysis**
Bishan Liang[1], Delong Zhang[1], Xiaoling Peng[1], Yibo Wang[1], Zengjian Wang[1], Qianqian Sun[1], Ming Liu[1], Ruiwang Huang[1]
[1]Centre for the Study of Applied Psychology, Guangdong Key Laboratory of Mental Health and Cognitive Science, School of Psychology, South China Normal University, Guangzhou, China

***3896 White matter damage in healthy aging disrupts neural oscillations underlying top-down attention, (O-W1)**
David Ziegler[1], Paymon Ashourian[2], Erica Griffith[2], Leslie Hansen[2], Matti Hamalainen[3], Suzanne Corkin[2]
[1]UCSF, San Francisco, United States, [2]MIT, Cambridge, MA, [3]Massachusetts General Hospital, Charlestown, United States

**3897 White matter fibers involved in attention**
Haitao Ge[1], Shuwei Liu[1], Yuchun Tang[1], Junhai Xu[1], Xuntao Yin[1]
[1]Research Center for Sectional and Imaging Anatomy, Shandong University School of Medicine, Jinan, China

**3898 White Matter Pathway Involvement in Controlled Visual Search**
Krista Schendel[1], Lynn Robertson[1,2], And Turken[1]
[1]VA Northern California Health Care System, Martinez, CA, USA, [2]University of California, Berkeley, Berkeley, CA

## Perception and Attention

### Chemical Senses: Olfaction, Taste

**3899 Changes in CBF in gustatory brain areas after intake of a fat-free olive oil aroma extract**
Sabine Frank[1], Katarzyna Linder[2], Louise Fritsche[2], Stephanie Kullmann[1,3], Maike Hege[1], Alina Krzeminski[4], Andreas Fritsche[2,3], Peter Schieberle[5], Veronika Somoza[6], Jörg Hinrichs[4], Ralf Veit[1], Hubert Preissl[1,3]
[1]Institute of Medical Psychology and Behavioral Neurobiology, University Tübingen, Tübingen, Germany, [2]Department of Internal Medicine IV, University Hospital, Tübingen, Germany, [3]Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Center, Tübingen, Germany, [4]Institute of Food Science and Biotechnology, University of Hohenheim, Stuttgart, Germany, [5]German Research Center for Food Chemistry, Freising, Germany, [6]Department of Nutritional and Physiological Chemistry, University of Vienna, Vienna, Austria

**3900 Individual Brain responses to taste cluster into 5 distinct patterns related to dynamic liking**
Luca Nanetti[1,2], Remco Renken[1,2], Cees de Graaf[1,3], Jelle Dalenberg[1,2], Gert ter Horst[1,2]
[1]Top Institute Food & Nutrition, Wageningen, Netherlands, [2]University Medical Center Groningen, Groningen, Netherlands, [3]WU Agrotechnologie & Voedingswetenschappen, Wageningen, Netherlands

**3901 MAPPING ODOR-RELATED AND RESTING STATE NETWORKS USING OLFACTORY FMRI**
Prasanna Karunanayaka[1], Megha Vasavada[1], Han Zhang[2], Sarah Molitoris[1], Jianli Wang[1], Qing X Yang[1]
[1]Penn State College of Medicine, Hershey, PA, [2]Center for Cognition and Brain Disorders, Hangzhou Normal University, Hangzhou , China

**3902 Neural Investigation of Olfactory Fear Conditioning in High and Low Anxious Individuals**
Valentina Parma[1], Fredrik Åhs[2], Laura Hackl[1], Johan Lundström[3]
[1]Monell Chemical Senses Center, Philadelphia, United States, [2]Duke University, Duke, NC, [3]Monell Chemical Senses Center, Philadelphia, PA

**3903 Olfactory fMRI activation patterns of chocolate and lavender odors**
Prasanna Karunanayaka[1], Sarah Molitoris[1], Michael Miceli[1], Jian-Li Wang[1], Emily Grun[2], Andrew Smith[2], Quin Yang[1]
[1]Pennsylvania State College of Medicine, Hershey, PA, [2]The Hershey Company, Hershey, PA

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
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**3904** **Resting-state connectivity of olfactory networks and its correlations with psychophysics measures**
Christine Paula de los Angeles[1], Xue Wang[1], Todd Parrish[1], Jay Gottfried[1]
[1]Northwestern University Feinberg School of Medicine, Chicago, IL

**3905** **The chemosensory path of pain**
Kathrin Kollndorfer[1], Ksenia Kowalczyk[1], Johannes Frasnelli[2], Elisabeth Hoche[1], Ewald Unger[3], Christian Mueller[4], Siegfried Trattnig[5], Veronika Schöpf[1]
[1]Department of Radiology, Division of Neuroradiology, Medical University of Vienna, Vienna, Austria, [2]CERNEC, Département de Psychologie, Université de Montréal, Montréal, Canada, [3]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [4]Department of Otorhinolaryngology, Medical University of Vienna, Vienna, Austria, [5]MR Center of Excellence, Medical University of Vienna, Vienna, Austria

**3906** **To smell or not to smell: Habituation of the brain to sustained odorant stimulation revealed by fMRI**
Frédéric Grouiller[1], Alexandra Darqué[2], Cesar Caballero Gaudes[3], Russia Ha-Vinh Leucter[2], Petra Huppi[2], François Lazeyras[1]
[1]Department of Radiology and Medical Informatics, University Hospital, Geneva, Switzerland, [2]Division of Development and Growth, Department of Pediatrics, University of Geneva, Geneva, Switzerland, [3]Basque Center on Cognition, Brain and Language, Donostia-San Sebastian, Spain

## Perception and Attention

### Consciousness and Awareness

**3907** **A Combined ERP and PET Study in Persistent Vegetative State Patients**
Irena Holeckova[1], Nicolas Coste[2], Catherine Fischer[3], Dominique Morlet[4]
[1]Department of Neurosurgery, University Hospital and Medical Faculty, Plze , Czech Republic, [2]CERMEP, Lyon, France, [3]Department of Clinical Neurophysiology, Neurological Hospital aINSERM U 821, Université Lyon 1 and, Lyon, France, [4]INSERM U 821, Université Lyon 1, Lyon, France

**3908** **An ECoG exploration of the neural correlates of perceptual continuity during eye blinks**
Tal Golan[1], Ido Davidesco[1], David Groppe[2], Lucia Melloni[3], Elana Zion-Golumbic[3,4], Corey Keller[2,5], Charles Schroeder[3,4], Ashesh Mehta[2], Rafael Malach[6]
[1]Edmond and Lily Safra Center for Brain Sciences, Hebrew University of Jerusalem, Jerusalem, Israel, [2]Comprehensive Epilepsy Center, Long Island Jewish Medical Center, New Hyde Park, NY, USA, [3]Department of Psychiatry, Columbia University College of Physicians and Surgeons, New York, NY, USA, [4]Cognitive Neuroscience and Schizophrenia Program, Nathan Kline Institute, Orangeburg, NY, USA, [5]Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY, USA, [6]Department of Neurobiology, Weizmann Institute of Science, Rehovot, Israel

**3909** **Brain function of patients in prolonged unawareness. Evaluation with fMRI and MEG**
HIROKAZU KAWANO[1], Ai Tajima[2], Naoko Torihara[2], Kazuhito Tsuruta[2]
[1]JUNWAKAI MEMORIAL HOSPITAL, MIYAZAKI, Japan, [2]Junwakai Memorial Hospital, Miyazaki, Japan

**3910** **Decreased functional connectivity between thalamus and default mode network in vegetative state**
Yue Cui[1], Jianghong He[2], Ming Song[1], Bing Liu[1], Tianzi Jiang[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China, [2]Beijing Army General Hospital, Beijing, China

**3911** **Dynamic change of global and local information processing in propofol-induced loss of consciousness**
Martin M Monti[1], Evan Lutkenhoff[1], Pierre Boveroux[2], Melanie Boly[3], Steven Laureys[4]
[1]UCLA, Los Angeles, United States, [2]Department of Anesthesia, University Hospital of Liege, Liège, Belgium, [3]Coma Science Group, Cyclotron Research Centre, University of Liège, Liège, Belgium, [4]Université de Liège, Liège, Belgium

**3912 Effect of parasympathetic stimulation on brain activity during emotional processing**
Barbara Basile[1,2], Andrea Bassi[1], Giovanni Calcagnini[3], Carlo Caltagirone[4], Marco Bozzali[1]
[1]Santa Lucia Foundation, Rome, Italy, [2]Shool of Cognitive Psychotherapy, Rome, Italy, [3]Italian Institute of Health, Rome, Italy, [4]University of Rome "Tor Vergata", IRCCS Santa Lucia Foundation, Rome, Italy

**3913 Functional Connectivity in the Motor Network is Associated with Thinking of a Recently Learned Task**
Michael Gregory[1,2], Yigal Agam[3], Chindhuri Selvadurai[3], Amanda Nagy[4], Edwin Robertson[5], Robert Stickgold[6], Dara Manoach[3]
[1]Section on Integrative Neuroimaging, National Institute of Mental Health, NIH, Bethesda, MD, [2]Clinical Brain Disorders Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, MD, [3]Dept. of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA, [4]Harvard College, Cambridge, MA, [5]Dept. of Neurology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, [6]Dept. of Psychiatry, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA

**3914 Global Structural Brain Network underlining for Binocular Rivalry**
Masanori Shimono[1,2], Kazuhisa Niki[3]
[1]Indiana Univerisity, Bloomington, IN, [2]Tokyo University, Tokyo, Japan, [3]AIST, Tsukuba, Japan

**3915 Hitchcock probes disorders of consciousness**
Lorina Naci[1], Rhodri Cusack[1], Leah Sinai[1], Adrian M Owen[1]
[1]Western University, London, Canada

**3916 Hypnotic Susceptibility Explains Differences in Resting State Functional Connectivity**
Alexa Huber[1], Fausta Lui[1], Giuseppe Pagnoni[1], Davide Duzzi[1], Paul Summers[1], Carlo Porro[1]
[1]Univ Modena & Reggio Emilia, Dept. Scienze Biomediche, Metaboliche e Neuroscienze, Modena, Italy

**3917 Is the EEG alpha rhythm reflected in the fMRI resting state network?**
Mateusz Rusiniak[1], Tomasz Wolak[2], Monika Lewandowska[1], Katarzyna Cie la[1], Agnieszka Pluta[1], Krzysztof Kochanek[1], Henryk Skarżyński[1]
[1]Institute of Physiology and Pathology of Hearing, Warsaw, Poland, [2]Institute of Physiology and Pathology of Hearnig, Warsaw, Poland

**3918 Medial and lateral networks in anterior PFC support meta-cognitive ability for memory and perception**
Benjamin Baird[1], Jonathan Smallwood[2], Krzysztof Gorgolewski[3], Daniel Margulies[4]
[1]University of California Santa Barbara, Santa Barbara, United States, [2]Max Planck Institute for Human Cognitive Brain Sciences, Department of Social Neuroscience, Leipzig, Germany, [3]Max Planck Institute for Human Cognitive Brain Sciences, Leipzig, Germany, [4]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**3919 Neural basis for awareness of body sensation and modulation of autonomic nervous system**
Yoshiya Moriguchi[1], Hiroki Murakami[1], Ruri Katsunuma[1], Kentaro Oba[1], Yuri Terasawa[1], Yuki Motomura[1], Yusuke Kanayama[1], Kazuo Mishima[1], Hiroshi Matsuda[1]
[1]National Center of Neurology and Psychiatry, Kodaira, Tokyo

**3920 Neural correlates of interoceptive awareness and alexithymic trait evaluated by structured interview**
Yoshiya Moriguchi[1], Yuri Terasawa[1]
[1]National Center of Neurology and Psychiatry, Kodaira, Japan

**3921 Neural Correlates of Visual Consciousness — an ALE Meta-Analysis**
Sandrine Bisenius[1], Sabrina Trapp[1], Jane Neumann[1,2], Matthias Schroeter[1,3]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Leipzig University Medical Center, IFB Adiposity Diseases, Leipzig, Germany, [3]Clinic of Cognitive Neurology, University of Leipzig, Leipzig Research Center for Civilization Diseases, University of Leipzig & FTLD Consortium Germany, Leipzig, Germany

**3922 Neural discrimination of sequences of sounds during acute coma**
Alexandre Simonin[1], Natacha Cossy[2], Athina Tzovara[2], Andrea Rossetti[1], Mauro Oddo[3], Marzia De Lucia[2]
[1]Department of Clinical Neurosciences, Lausanne, Switzerland, [2]Center for Biomedical Imaging, Department of Radiology, University Hospital of Lausanne, Lausanne, Switzerland, [3]Adult intensive care medicine, University Hospital Lausanne, Lausanne, Switzerland

**3923 Qualia in the Brain: an fMRI Approach to Neurophenomenology**
Clemens Bauer[1], José Díaz[2], Luis Concha[1], Fernando Barrios[1]
[1]Instituto de Neurobiología, Universidad Nacional Autónoma de México, Querétaro, México, [2]Facultad de Medicina, Universidad Nacional Autónoma de México, Mexico D.F., México

**3924 Resting-state cognitive processing is associated with decreased functional connectivity**
Diederick Stoffers[1], Alexander Diaz[2], Gang Chen[3], Anouk den Braber[2], Dennis van 't Ent[2], Dorret Boomsma[2], Eco de Geus[2], Klaus Linkenkaer-Hansen[2]
[1]Netherlands Institute for Neuroscience, Amsterdam, Netherlands, [2]VU University, Amsterdam, Netherlands, [3]SSCC/DIRP/NIMH, National Institutes of Health, USA, Bethesda, MD

## Perception and Attention

### Perception: Auditory/ Vestibular

**3925 Abnormal synchronization patterns of left and right auditory cortex in children with ADHD**
Annemarie Seither-Preisler[1], Peter Schneider[2]
[1]Institute of Psychology, Cognitive Psychology and Neuroscience, University of Graz, Graz, Austria, [2]Department of Neuroradiology, University of Heidelberg Medical School, Heidelberg, Germany

**3926 Auditory deviance detection in the brainstem: evidences from functional magnetic resonance imaging**
Raffaele Cacciaglia[1], Lavinia Slabu[1], Ana Sanjuán[2], Sabine Grimm[1], Noelia Ventura-Campos[2], César Ávila[2], Carles Escera[1]
[1]Department of Psychiatry and Clinical Psychobiology, University of Barcelona, Barcelona, Spain, [2]Department of Psychology, University Jaume I, Castellón de la Plana, Spain

**3927 Binaural Integration is Abnormal in Children Receiving Bilateral Cochlear Implants Sequentially**
Daniel Wong[1], Karen Gordon[2]
[1]University of Toronto, Toronto, Canada, [2]Hospital for Sick Children, Toronto, Canada

**3928 BOLD signal tuning to interaural level and time differences in human auditory cortex**
Susan McLaughlin[1], Nathan Higgins[2], G. Christopher Stecker[2]
[1]University of Washington, Seattle, United States, [2]University of Washington, Seattle, WA

**3929 Brain Morphometry in Deaf Native Users of ASL and Deaf Native Users of English**
Olumide Olulade[1], Daniel Koo[2], Carol LaSasso[2], Guinevere Eden[1]
[1]Center for the Study of Learning, Georgetown University Medical Center, Washington, DC, [2]Center for Visual Language and Visual Learning, Gallaudet University, Washington, DC

**3930 Connectivity Based Parcellation of the Auditory Cortex Produces Network Specific Sub-Regions**
Felipe Salinas[1], Simon Eickhoff[2], Amy Parkinson[1], Peter Fox[1]
[1]Research Imaging Institute, University of Texas Health Science Center at San Antonio, San Antonio, TX, [2]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**3931 Cortical Interaction Areas During Visual and Vestibular Tasks Using fMRI**
Hellen Della-Justina[1], Humberto Gamba[1], Anderson Winkler[2], Edson Amaro Junior[3]
[1]Federal Technological University of Parana, Curitiba, Brazil, [2]University of Oxford, Oxford, United Kingdom, [3]University of São Paulo, São Paulo, Brazil

**3932 Evaluation of activity in intraparietal sulcus during classification of auditory stream segregation**
Christian H. Uhlig[1], Alexander Gutschalk[1]
[1]Department of Neurology, Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany

**3933 Exploring the specificity of neural responses to music in the temporal lobe using fMRI adaptation**
Jorge Armony[1,2,3,4], William Aubé[2,3,5], Arafat Angulo-Perkins[6], Isabelle Peretz[2,3,5], Luis Concha[3,6]
[1]Dept. of Psychiatry, McGill University, Montreal, QC, Canada, [2]Centre for Research on Brain, Music and Language, Montreal, QC, Canada, [3]International Laboratory for Brain, Music and Sound Research (BRAMS), Montreal, QC, Canada, [4]Douglas Mental Health University Institute, Montreal, QC, Canada, [5]Dept. of Psychology, Université de Montréal, Montreal, QC, Canada, [6]Universidad Nacional Autónoma de México, Queretaro, Mexico

**3934 Functional Brain Imaging during Computerized Dynamic Posturography using Near-Infrared Spectroscopy**
Helmet Karim[1], Susan Fuhrman[2], Joseph Furman[2], Theodore Huppert[2], Patrick Sparto[2]
[1]University of Pittsburgh, Pittsburgh, United States, [2]University of Pittsburgh, Pittsburgh, PA

**3935 Lateralization of monaural sound in auditory cortex is strongly reduced by amplitude modulation**
Alexander Gutschalk[1], Iris Steinmann[1]
[1]Department of Neurology, Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany

***3936 Measurement of auditory frequency selectivity in the depth of human inferior colliculus, (O-W1)**
David Ress[1], Bharath Chandresekaran[2]
[1]The University of Texas at Austin, Austin, United States, [2]The University of Texas at Austin, Austin, TX

**3937 Modulation of auditory cortex during action execution**
Daniel Reznik[1,2], Noa Schadel[1], Yael Henkin[3,4], Roy Mukamel[1,2]
[1]Sagol School of Neuroscience, Tel Aviv University, Tel Aviv 69978, Israel, [2]School of Psychological Sciences, Tel Aviv University, Tel Aviv 69978, Israel, [3]Department of Communication Disorders, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv 69978, Israel, [4]Hearing, Speech, and Language Center, Sheba Medical Center, Tel Hashomer, Israel

**3938 Modulations of Auditory Categorization Mechanisms in Musicians and Simultaneous Interpreters**
Carina Klein[1], Stefan Elmer[1], Lutz Jaencke[1], Martin Meyer[2]
[1]Division of Neuropsychology, Institute of Psychology, University of Zurich, Zurich, Switzerland, [2]International Normal Aging and Plasticity Imaging Center, University of Zurich, Zurich, Switzerland


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**3939** **Phase of low-frequency cortical oscillations encodes sound edges and sound-specific structure**
Bruno Giordano[1], Stefano Panzeri[1], Robin Ince[1], Alain de Cheveigné[2], Joachim Gross[1], Pascal Belin[1]
[1]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom, [2]Département d'Etudes Cognitives, Ecole Normale Supérieure, Paris, France

**3940** **Pitches & Patterns: Distinct encoding mechanisms for different acoustic regularity levels**
Marc Recasens[1,2], Sumie Leung[1,2], Sabine Grimm[1,2], Andreas Wollbrink[3], Christo Pantev[3], Carles Escera[1,2]
[1]Institute for Brain, Cognition and Behavior (IR3C), Universitat de Barcelona, Catalonia, Spain, [2]Cognitive Neuroscience Research Group, Universitat de Barcelona, Catalonia, Spain, [3]Institut für Biomagnetismus und Biosignalanalyse (IBB), Westfälishe Wilhems-Universität Münster, Münster, Germany

**3941** **Population Receptive Field Analysis of Human Primary Auditory Cortex**
Jessica Thomas[1], Elizabeth Huber[1], Melissa Saenz[2], Ione Fine[3]
[1]University of Washington, Seattle, United States, [2]University of Lausanne, Switzerland, [3]University of Washington, Seattle, WA

**3942** **Prestimulus oscillatory dynamics predict subjective perception of auditory simultaneity**
Therese Lennert[1], Sylvain Baillet[1]
[1]McConnell Brain Imaging Center, Montreal Neurological Institute, McGill University, Montreal, Canada

**3943** **Representation of Speech Temporal Envelope on Posterolateral Superior Temporal Gyrus**
Kirill Nourski[1], Christopher Kovach[1], Mitchell Steinschneider[2], Richard Reale[1,3], Hiroyuki Oya[1], Hiroto Kawasaki[1], Matthew Howard[1]
[1]The University of Iowa, Iowa City, IA, United States, [2]Albert Einstein College Of Medicine, Bronx, NY, United States, [3]The University of Wisconsin - Madison, Madison, WI, United States

**3944** **Task and Resting Functional Networks in Tone-Deafness: An Auditory-Motor Disconnection Syndrome**
Psyche Loui[1], Gus Halwani[1], Jan Iyer[2], Gottfried Schlaug[3]
[1]Harvard Medical School, Boston, MA, [2]University of California at Berkeley, Berkeley, CA, [3]Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA

**3945** **Tonotopic columns in human auditory cortex: preliminary results**
Federico De Martino[1], Michelle Moerel[2], Rainer Goebel[1], Kamil Ugurbil[3], Essa Yacoub[4], Elia Formisano[1]
[1]Maastricht University, Maastricht, Netherlands, [2]Maastricht University, Netherlands, [3]Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, United States, [4]University of Minnesota, Minneapolis, United States

**3946** **Tonotopic Maps in Human Auditory Cortex: 7T vs 3T comparison**
Sandra Da Costa[1], Stephanie Clarke[1], Wietske van der Zwaag[2], Melissa Saenz[3]
[1]University Hospital of Lausanne (CHUV, UNIL), Lausanne, Switzerland, [2]Biomedical Imaging Center (CIBM, EPFL), Lausanne, Switzerland, [3]University of Lausanne (UNIL), Lausanne, Switzerland

## Perception and Attention

### Perception: Multisensory and Crossmodal

**3947** **Activity in extrastriate body area reflects the Rubber Hand Illusion in an automated fMRI setup**
Jakub Limanowski[1], Antoine Lutti[2], Felix Blankenburg[3]
[1]Berlin School of Mind and Brain, Humboldt-Universität zu Berlin, Berlin, Germany, [2]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, UCL, London, United Kingdom,, London, United Kingdom, [3]Dahlem Institute for Neuroimaging of Emotion, Freie Universität Berlin, Berlin, Germany

**3948** **Audiovisual Integration Modulates the Amplitude of MEG Time Series in the Primary Auditory Cortex**
Dimitrios Pantazis[1], Yu-Teng Chang[2], Radoslaw Cichy[3]
[1]McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA, [2]McGovern Institute, MIT, Cambridge, United States, [3]Massachusetts institute of technology, Cambridge, MA

**3949** **Disintegration of multisensory signals from the real hand reduces default limb self-attribution**
Giovanni Gentile[1], Arvid Guterstam[1], Claudio Brozzoli[1], H. Henrik Ehrsson[1]
[1]Karolinska Institutet, Stockholm, Sweden

**3950** **Disrupted dynamic causal and spectral cortical connectivity in a patient with occipital lobe lesion**
Lucia Maria Vaina[1,2], Kunjan Rana[2], Ferdinando Buonanno[1], Matti Hamalainen[1,2]
[1]Massachusetts General Hospital, Harvard Medical School, Boston, United States, [2]Boston University, Brain and Vision Research Laboratory Department of Biomedical Engineering, Boston, United States

***3951** **Electrocorticography of visual cortex responses to multisensory speech, (O-T4)**
Inga Schepers[1], Ping Sun[2], Xiaomei Pei[2], Sarah Baum[1], Daniel Yoshor[2], Michael Beauchamp[1]
[1]University of Texas Health Science Center at Houston, Houston, TX, [2]Baylor College of Medicine, Houston, TX

**3952** **Increased Neural Variability during Multisensory Speech Perception in Older Adults**
Sarah Baum[1], Michael Beauchamp[1]
[1]University of Texas Health Science Center at Houston, Houston, TX

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

***3953 Is this really an orange? Effects of crossmodal semantic congruency on olfactory perception, (O-W1)**
Janina Seubert[1], Kristen Gregory[2], Lauren Foster[3], Johan Lundström[2,4,5]
[1]Monell Chemical Senses Center, Philadelphia, United States, [2]Monell Chemical Senses Center, Philadelphia, PA, [3]College of Arts and Sciences, University of Pennsylvania, Philadelphia, PA, [4]Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden, [5]Department of Psychology, University of Pennsylvania, Philadelphia, PA

**3954 Neurodevelopmental Changes in Subcortical Sensory Pathways in Congenital Blindness (Anophthalmia)**
Gaelle Coullon[1], Fang Jiang[2], Ione Fine[2], Kate Watkins[1], Alan Cowey[1], Holly Bridge[1]
[1]University of Oxford, Oxford, United Kingdom, [2]University of Washington, Seattle, WA, United States

**3955 Neuroimaging and genetics of colored sequence synesthesia**
Steffie Tomson[1], Manjari Narayan[2], Genevera Allen[2,1], Richard Gibbs[1], Suzanne Leal[1], David Eagleman[1]
[1]Baylor College of Medicine, Houston, TX, [2]Rice University, Houston, TX

**3956 Oboes are Red, Violins are Blue: Network Connectivity of White Matter in Colored-Music Synesthesia**
Psyche Loui[1], Anna Zamm[2], Gottfried Schlaug[3]
[1]Harvard Medical School, Boston, MA, [2]McGill University, Montreal, Quebec, [3]Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA

**3957 Population receptive field analysis of auditory frequency tuning in early blind individuals**
Elizabeth Huber[1], Jessica Thomas[1], Ione Fine[1]
[1]University of Washington, Seattle, WA, United States

****3958 Reciprocal anti-correlation underlies multi-functionality of the temporo-parietal junction**
Danilo Bzdok[1], Robert Langner[2], Angela Laird[3], Peter Fox[4], Simon Eickhoff[5]
[1]Research Center Jülich, Jülich, Germany, [2]Heinrich Heine University, Duesseldorf, Germany, [3]Florida International University, Miami, FL, [4]Research Imaging Institute, San Antonio, TX, [5]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**3959 Recognizing familiar identities from the face and voice: an fMRI cross-classification study**
Bashar Awwad Shiekh Hasan[1], Mitchell Vades-Soza[2], Marianne Latinus[3], Joachim Gross[1], Pascal Belin[1,4,5]
[1]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom, [2]Cuban Neuroscience Center, La Habana, Cuba, [3]Department of Psychological and Brain Sciences. Indiana University Bloomington, Bloomington. USA, [4]Department de Psychologie, Universite de Montreal, Montreal, Canada, [5]Institut des Neurosciences de La Timone, UMR 7289, CNRS & Aix-Marseille Université, Marseille, France

***3960 Reorganization of auditory motion direction encoding in early blind humans, (O-W1)**
Fang Jiang[1], G. Christopher Stecker[2], Ione Fine[2]
[1]University of Washington, Seattle, United States, [2]University of Washington, Seattle, WA

**3961 Structural correlates of auditory-motor synchronization in children with autism spectrum disorder**
Ana Tryfon[1], Nicholas Foster[1], Tia Ouimet[2], Krissy Doyle-Thomas[3], Evdokia Anagnostou[3], Alan Evans[4], Lonnie Zwaigenbaum[5], Krista Hyde[1], NeuroDevNet ASD imaging group[6]
[1]Montreal Children's Hospital, Montreal Neurological Institute, McGill University, Montreal, Canada, [2]Montreal Children's Hospital, McGill University, Montreal, Canada, [3]Holland Bloorview Kids Rehabilitation Hospital, Toronto, Canada, [4]Montreal Neurological Institute, McGill University, Montreal, Canada, [5]Glenrose Rehabilitation Hospital, Edmonton, Canada, [6]http://www.neurodevnet.ca/research/asd, Vancouver, Canada

**3962 The invisible hand illusion: Multisensory integration leads to the embodiment of empty space**
Arvid Guterstam[1], Giovanni Gentile[1], H. Henrik Ehrsson[2]
[1]Karolinska Institutet, Stockholm, Sweden, [2]Karolinska Institute, Stockholm, Sweden

**3963 Visuotactile object representations in the human ventral stream**
Misun Kim[1], Dae-Shik Kim[1]
[1]Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

**3964 Visuo-vestibular convergence in the retroinsular cortex: a 7T fMRI study**
Roberto Martuzzi[1], Joachim Forget[1], Tsimpanouli Maria-Efstratia[1], Wietske van der Zwaag[1], Rolf Gruetter[2], Christophe Lopez[3], Olaf Blanke[1]
[1]EPFL, Lausanne, Switzerland, [2]EPFL, UNIL and HUG, Lausanne, Switzerland, [3]CNRS and Aix-Marseille Université, Marseille, France


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## Perception and Attention

### Perception: Pain and Visceral

**3965 Acupuncture evoked response in prefrontal cortex predicts pain reduction in carpal tunnel syndrome**
Yumi Maeda[1,2], Norman Kettner[2], Jieun Kim[1], Stephen Cina[1], Cristina Malatesta[3], Jessica Gerber[1], Claire McManus[3], Pia Mezzacappa[1], Leslie Morse[4], Joseph Audette[5], Vitaly Napadow[1,2]
[1]MGH/MIT/HMS Martinos Center for Biomedical Imaging, Department of Radiology, Boston, MA, [2]Logan College of Chiropractic/University Programs, Department of Radiology, Chesterfield, MO, [3]Spaulding Rehabilitation Hospital, Medford, MA, [4]Harvard Medical School, Spaulding Rehabilitation Hospital, Boston, MA, [5]Harvard Vanguard Medical Associates, Atrium Health, Boston, MA

**3966 Altered Activity of the Periaqueductal Gray in Patients with Fibromyalgia**
Marco Loggia[1], Chantal Berna[1], Jieun Kim[1], Christine Cahalan[2], Randy Gollub[1], Ajay Wasan[2], Richard Harris[3], Robert Edwards[2], Vitaly Napadow[1]
[1]Massachusetts General Hospital, Boston, MA, [2]Brigham and Women's Hospital, Boston, MA, [3]University of Michigan, Ann Arbor, MI

**3967 An fMRI study of expectancy on acupuncture and placebo analgesia in knee osteoarthr**
Jian Kong[1], Spaeth Rosa[1], Xiaoyan Chen[1], Rongjun Yu[1], Irving Kirsch[2], Ted Kaptchuk[3], Randy Gollub[1]
[1]Massachusetts General Hospital, Charlestown, United States, [2]Hull University / Beth Israel Deaconess Medical Center / Harvard Medical School, Hull / Boston, United Kingdom, [3]Beth Israel Deaconess Medical Center / Harvard Medical School, Boston, United States

**3968 Brain Mechanisms Supporting Violated Expectations for Pain**
Fadel Zeidan[1], Robert Coghill[2], Robert Kraft[2], Oleg Lobanov[2]
[1]Wake Forest School of Medicine, Winston-Salem, United States, [2]Wake Forest School of Medicine, Winston-Salem, NC

**3969 Changes of Functional Connectivity in Patients with Cervical Myelopathy**
Chen-Te Wu[1,2], Chieh-Tsai Wu[3], Tun-Wei Hsu[1], Ching-Po Lin[4]
[1]Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan, [2]Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Linkou, Taipei, Taiwan, [3]Dept. of Neurosurgery, Chang Gung Memorial Hospital, Linkou, Taoyuan, Taiwan, [4]National Yang-Ming University, Taipei, Chinese Taipei

**3970 Combined fMRI of the human brain and the cervical spinal cord to study the CNS processing of pain**
Christian Sprenger[1], Jürgen Finsterbusch[1], Christian Büchel[1]
[1]Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

**3971 Complex regional pain syndrome is associated with increased grey matter in the nucleus accumbens**
Florence Pomares[1], Jenny Lewis[2], Petra Schweinhardt[1]
[1]Faculty of Dentistry, McGill University, Montreal, Canada, [2]The Royal National Hospital for Rheumatic Diseases NHS Foundation Trust, Bath, United Kingdom

**3972 Conditioning and Extinction Learning of Visceral Pain in Healthy Subjects - an fMRI Study**
Michiko Kano[1,2], Steven Coen[2], Adam Farmer[2], Vincent Gampietro[3], Michael Brammer[3], Shin Fukudo[1], Qasim Aziz[2]
[1]Behavioral Medicine, Tohoku University, Graduate School of Medicine, Sendai, Japan, [2]The Wingate Institute of Neurogastroenterology, QMUL, London, UK, [3]King's College London, Institute of Psychiatry, Department of Neuroimaging, London, UK

**3973 Different regional brain activity during continuous nutrient infusion and gastric balloon distension**
Huynh Giao Ly[1], Patrick Dupont[1], Koen Van Laere[1,2], Guy Bormans[1], Jan Tack[1,2], Lukas Van Oudenhove[1,2]
[1]KU Leuven, Leuven, Belgium, [2]University Hospital Gasthuisberg, Leuven, Belgium

**3974 Disrupted amygdala connectivity in chronic back pain reflects spontaneous pain perception**
Alex Baria[1], Marwan Baliki[2], A. Vania Apkarian[1]
[1]Northwestern University, Chicago, IL, [2]Northwestern University, Chicago, United States

**3975 Dissociable Cortical and Ventral Striatal Responses to Painful Somatosensory Stimulation**
Julius Bourke[1], Rexford Newbould[2], Jonathan Howard[2], Laurence Reed[3], Peter White[1]
[1]Barts and The London School of Medicine and Dentistry, London, United Kingdom, [2]Imanova, London, United Kingdom, [3]Imperial College London, London, United Kingdom

**3976 Electroconvulsive Therapy Augments Descending Pain Inhibitory and Reward Systems: A PET Study**
Jiro Kurata[1], Toshihiko Aso[2], Koichi Ishizu[3], Taizo Hisano[4], Masahiro Kakuyama[4], Koshi Makita[1], Hidenao Fukuyama[2]
[1]Tokyo Medical and Dental University, Tokyo, Japan, [2]Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, [3]Kyoto University Graduate School of Medicine, Kyoto, Japan, [4]Kyoto University Hospital, Kyoto, Japan

**3977 Executive and salience network disruptions in low back pain revealed in resting state fMRI**
Pamela Ng[1], Michael Greicius[2], Heidi Jiang[3], Sean Mackey[2]
[1]Stanford University, Palo Alto, United States, [2]Stanford University, Palo Alto, CA, [3]Stanford University School of Medicine, Stanford, CA

**3978** **Facilitating endogenous pain processes: Cortical thickness influences placebo analgesia**
Jason Craggs[1], Andrew O'Shea[1], William Perlstein[1], Don Price[2], Roland Staud[3], Michael Robinson[1]
[1]Department of Clinical and Health Psychology, University of Florida, Gainesville, FL, [2]College of Dentistry, University of Florida, Gainesville, FL, [3]College of Medicine, University of Florida, Gainesville, FL

**3979** **Functional connectivity of pain-related networks: The DMN mediates endogenous pain processes**
Jason Craggs[1], Janelle Letzen[1], Donald Price[1], Michael Robinson[1]
[1]University of Florida, Gainesville, FL

**3980** **Functional Resting-State Connectivity of the Habenula in Pediatric CRPS**
Nathalie Erpelding[1,2], Simona Sava[1], Alyssa Lebel[1], Lino Becerra[1,2,3,4], David Borsook[1,2,3,4]
[1]Boston Children's Hospital, Waltham, MA, [2]Harvard Medical School, Boston, MA, [3]McLean Hospital, Belmont, MA, [4]Massachusetts General Hospital, Boston, MA

**3981** **Global Brain Networks Predict Placebo Analgesia in Osteoarthritis Patients and in Healthy Subjects**
Javeria Hashmi[1], Jian Kong[1], Spaeth Rosa[1], Randy Gollub[1]
[1]Massachusetts General Hospital, Charlestown, MA

**3982** **Gray matter volume changes in chronic pain disorders: a voxel-based morphometry meta-analysis**
Rachel Smallwood[1], Daniel Clauw[2], Michael Farrell[3], Jeffrey Lewis[4], Tobias Schmidt-Wilcke[5], David Williams[2], Angela Laird[6], Amy Ramage[7], Amy Parkinson[8], Simon Eickhoff[9], Donald Robin[10]
[1]University of Texas Health Science Center San Antonio, San Antonio, United States, [2]University of Michigan Ann Arbor, Ann Arbor, United States, [3]University of Melbourne, Melbourne, Australia, [4]National Institute of Neurological Disorders and Stroke, Bethesda, United States, [5]University of Bochum, Bochum, Germany, [6]Florida International University, Miami, FL, [7]University of Texas Health Science Center at San Anotnio, San Antonio, United States, [8]University of Texas Health Science Center, San Antonio, United States, [9]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany, [10]University of Texas Health Science Center at San Antonio, San Antonio, United States

**3983** **ICA of Resting Brain Networks Reveals Cingulate-Insula Network during Persistent Pain**
Timothy Meeker[1], Shariq Kahn[2], Michael Keaser[2], Rao Gullapalli[3], Joel Greenspan[2], David Seminowicz[4]
[1]University of Maryland, Baltimore, Baltimore, United States, [2]University of Maryland Dental School, Baltimore, MD, [3]University of Maryland School of Medicine, Baltimore, United States, [4]University of Maryland Dental School, Baltimore, United States

**3984** **Imaging the periaqueductal gray during pain processing at 3 and 7 Tesla functional MRI**
Andreas Hahn[1], Georg Kranz[1], Eva-Maria Seidel[2], Ronald Sladky[3], Christoph Kraus[1], Martin Kueblboeck[3], Daniela M. Pfabigan[2], Allan Hummer[3], Arvina Grahl[2], Sebastian Ganger[1], Christian Windischberger[3], Claus Lamm[2], Rupert Lanzenberger[1]
[1]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [2]Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology, University of Vienna, Vienna, Austria, [3]MR Centre Of Excellence, Medical University Of Vienna, Vienna, Austria

**3985** **Men in Pain: Gender, Stereotypes, and the Processing of Pain**
Katharina Schwarz[1], Christian Büchel[1]
[1]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany

**3986** **Menstrual Pain Alters the Early Perceptual Processing of Emotional Prosody: An MEG Study**
Ian-Ting Chu[1], Cheng-Hao Tu[2], Hsiang-Tai Chao[3], Li-Fen Chen[1], Jen-Chuen Hsieh[1]
[1]Institute of Brain Science, National Yang-Ming University, Taipei, Chinese Taipei, [2]Institute of Brain Science, School of Medicine, National Yang-Ming University, TAIPEI, Taiwan, [3]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Chinese Taipei

**3987** **Modulation of Pain Processing by Chronic Endurance Exercise**
Henning Boecker[1], Ahmed Othman[1], Marcel Daamen[1], Max Pensel[1], Sandra Rojas Vega[2], Helge Knigge[2], Heiko Strüder[2], Lukas Scheef[1]
[1]Functional Neuroimaging Group, Dept. of Radiology, University Hospital Bonn, Germany, Bonn, Germany, [2]Institute of Movement and Neurosciences, German Sport University Cologne, Cologne, Germany

**3988** **Neural correlates to nonconscious activation of conditioned placebo and nocebo responses**
Karin Jensen[1], Ted Kaptchuk[2], Xiaoyan Chen[3], Irving Kirsch[4], Martin Ingvar[5], Randy Gollub[6], Jian Kong[7]
[1]Harvard / Partners, Boston, United States, [2]Beth Israel Deaconess Medical Center / Harvard Medical School, Boston, United States, [3]Massachusetts General Hospital, Charlestown, United States, [4]Hull University / Beth Israel Deaconess Medical Center / Harvard Medical School, Hull / Boston, United Kingdom, [5]Karolinska Institutet, Stockholm, Sweden, [6]Department of Psychiatry, Massachusetts General Hospital, Charlestown, MA, [7]Massachusetts General Hospital

**3989** **Neural Dissociation of Somatosensory Stimulation and Needling Credibility in Acupuncture for LBP**
Jeungchan Lee[1], Jun-Hwan Lee[2], Vitaly Napadow[3], Kyungmo Park[4]
[1]Kyung Hee University, Yong-in, Korea, Republic of, [2]Korea Institute of Oriental Medicine, Daejeon, Korea, Republic of, [3]Martinos center, MGH, MA, United States, [4]Kyung Hee University, Yongin, Korea, Republic of


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**3990 Physical and observed pain are represented by distinct neural patterns**
Anjali Krishnan[1], Jin Fan[2], Xiaosi Gu[3], Luke Chang[1], Tor Wager[4]
[1]University of Colorado Boulder, Boulder, CO, [2]Department of Psychology, Queens College, City University of New York, New York, NY, [3]University College London, London, United Kingdom, [4]Department of Psychology and Neuroscience, University of Colorado at Boulder, Boulder, CO

**3991 Regional reproducibility of cerebral blood flow measurements in a clinical model of ongoing pain**
Duncan Hodkinson[1], Kristina Krause[1,2], Nadine Khawaja[3,1], Fernando Zelaya[1], Tara Renton[3], Steven Williams[1], Matthew Howard[1]
[1]Centre for Neuroimaging, Institute of Psychiatry, King's College London, London, UK, [2]MRC Social, Genetic and Developmental Psychiatry Centre, Kings College London, London, UK, [3]Kings College London Dental Institute, London, UK

**3992 Withdrawn**

**3993 Sex Differences in Functional Connectivity of the Subgenual ACC: Implications for Pain Habituation**
Gang Wang[1,2], Nathalie Erpelding[2], Karen Davis[2,1,3]
[1]Institute of Medical Science, University of Toronto, Toronto, Canada, [2]Division of Brain, Imaging and Behaviour - Systems Neuroscience, Toronto Western Research Institute, Toronto, Canada, [3]Department of Surgery, University of Toronto, Toronto, Canada

**3994 The Vulvosensation "Matrix": A network-based differentiation of vulvar touch versus pain**
Melissa Farmer[1], Marwan Baliki[1], Alex Baria[1], Lejian Huang[1], A. Vania Apkarian[1], Petra Schweinhardt[2]
[1]Northwestern University, Chicago, IL United States, [2]Faculty of Dentistry, McGill University, Montreal, Canada

**3995 Treating chronic low back pain restores insula resting state functional connectivity**
David Seminowicz[1], Marta Ceko[2], Yoram Shir[3], Jean Ouellet[4], Laura Stone[2]
[1]University of Maryland School of Dentistry, Baltimore, MD, [2]Alan Edwards Centre for Research on Pain, McGill University, Montreal, Quebec, [3]Alan Edwards Pain Management Unit, McGill University Health Centre, Montreal, Quebec, [4]Division of Orthopaedics, McGill University Health Centre, Montreal, Quebec

**3996 Uncertainty during pain anticipation — An fMRI and EEG experiment**
Eva-Maria Seidel[1], Daniela M. Pfabigan[1], Andreas Hahn[2], Ronald Sladky[3,4], Arvina Grahl[1], Christoph Kraus[2], Martin Kueblboeck[3,4], Georg Kranz[2], Allan Hummer[3,4], Rupert Lanzenberger[2], Christian Windischberger[3,4], Claus Lamm[1]
[1]Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology, University of Vienna, Vienna, Austria, [2]Department of Psychiatry and Psychotherapy, Medical University of Vienna, Vienna, Austria, [3]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria, [4]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria

**3997 White matter alterations in the brain associated with primary dysmenorrhea: a DTI study**
Cheng-Hao Tu[1,2], David Meier Niddam[3,4,2], Tzu-Chen Yeh[5,2,4], Jiing-Feng Lirng[6,7], Chou-Ming Cheng[8], Chih-Che Chou[9], Hsiang-Tai Chao[10,11], Jen-Chuen Hsieh[4,2]
[1]Institute of Brain Science, School of Medicine, National Yang-Ming University, Taipei, Taiwan, [2]Integrated Brain Research Unit, Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan, [3]Brain Research Center, National Yang-Ming University, Taipei, Taiwan, [4]Institute of Brain Science, National Yang-Ming University, Taipei, Taiwan, [5]Department of Radiology, Taipei Veterans General Hospital, Taipei, Taiwan, [6]Department of Radiology, School of Medicine, National Yang-Ming University, Taipei, Taiwan, [7]d Department of Radiology, Taipei Veterans General Hospital, Taipei, Taiwan, [8]Integrated Brain Research Unit, Department of Medical Research and Education, Taipei Veterans Gener, Taipei, Taiwan, [9]Integrated Brain Research Unit, Department of Medical Research and Education, Taipei Veterans Genera, Taipei, Taiwan, [10]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Taiwan, [11]Department of Obstetrics and Gynecology, School of Medicine, National Yang-Ming University, Taipei, Taiwan

**3998 Chronic back pain intensity is associated with hub disruption of small world brain networks**
Marwan Baliki[1], Ali Mansour[1], Lejian Huang[1], A. Vania Apkarian[1]
[1]Northwestern University, Chicago, IL

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Perception and Attention

### Perception: Tactile/Somatosensory

**3999 An fMRI Study on Different Brain Responses between Normal and Local Sensory Interruption Acupuncture**
Lingmin Jin[1], Wei Qin[2], Jinbo Sun[1], Jie Tian[3]
[1]School of Life Sciences and Technology, Xidian University, Xi'an, China, [2]School of Life Sciences and Technology, Xidian University, xi'an, China, [3]Institute of Automation,, Chinese Academy of Sciences, Beijing, Shaanxi

**4000 An fMRI study on the correlation of somatosensory cortical activity with vibrotactile frequency**
Yoon Gi Chung[1], Junsuk Kim[1], Sang Woo Han[1], Hyung-Sik Kim[2], Soon-Cheol Chung[2], Jang-Yeon Park[2], Sung-Phil Kim[1]
[1]Korea University, Seoul, Korea, Republic of, [2]Konkuk University, Chungju, Korea, Republic of

**4001 Changes in Resting-state Functional Network is associated with Altered Body Image in Transsexuals**
Chia-Shu Lin[1], Hsiao-Lun Ku[2], Yong Liu[3], Hsiang-Tai Chao[4], Chou-Ming Cheng[1], Ying-Chiao Lee[5], Jen-Chuen Hsieh[6]
[1]Integrated Brain Research Unit, Dept. Medical Research & Education, Taipei Veterans General Hospital, Taipei, Chinese Taipei, [2]Shuang Ho Hospital, New Taipei City, Chinese Taipei, [3]Institute of Automation, the Chinese Academy of Sciences, Beijing, China, [4]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Chinese Taipei, [5]Department of Psychiatry, Taipei Veterans General Hospital, Taipei, Chinese Taipei, [6]Institute of Brain Science, National Yang-Ming University, Taipei, Chinese Taipei

**4002 Combined intraneural microstimulation and high resolution fMRI at 7T**
Rosa Maria Sanchez Panchuelo[1], Rochelle Ackerley[2], Paul Glover[1], Bader Al Debasi[1], Richard Bowtell[1], Johan Wessberg[2], Sue Francis[1], Francis McGlone[3]
[1]University of Nottingham, Nottingham, United Kingdom, [2]University of Gothenburg, Gothenburg, Sweden, [3]Liverpool John Moores University, Liverpool, United Kingdom

**4003 Moved to 1646**

**4004 Imaging Tactile Imagery: Changes in Functional Connectivity Characterize Perceptual Grounding**
Timo Torsten Schmidt[1,2], Dirk Ostwald[2], Felix Blankenburg[1,2,3]
[1]Bernstein Center for Computational Neuroscience Berlin, Berlin, Germany, [2]Max Planck Institute for Human Development, Center for Adaptive Rationality (ARC), Berlin, Germany, [3]Dahlem Institute for Neuroimaging of Emotion (D.I.N.E.), Freie Universität Berlin, Berlin, Germany

**4005 Imperceptible Somatosensory Stimulation Functionally Disconnects Primary Somatosensory Cortex**
Till Nierhaus[1], Johannes Stelzer[2], Xiangyu Long[2], Jens Steinbrink[1], Daniel Margulies[2], Arno Villringer[2]
[1]Charité Universitätsmedizin, Berlin, Germany, [2]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**4006 Limb somatotopy in human primary somatosensory cortex: a 7 Tesla fMRI study**
Michel Akselrod[1], Roberto Martuzzi[1], Wietske van der Zwaag[1], James Sulzer[2], Roger Gassert[2], Olaf Blanke[1]
[1]EPFL, Lausanne, Switzerland, [2]Swiss Federal Institute of Technology, Zurich (ETHZ), Zurich, Switzerland

**4007 Negative BOLD in Somatosensory Cortex during Simple Finger Tapping**
Robert Trampel[1], Andreas Schaefer[1], Laurentius Huber[1], Robin Heidemann[2], Gabriele Lohmann[1], Robert Turner[1]
[1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Siemens AG Healthcare Sector, Erlangen, Germany

**4008 Neural correlates of haptic pop-out of shape discrimination in the human brain**
Andrea Leo[1,2], Matteo Feurra[3], Simone Rossi[3], Astrid Kappers[4], Antonio Bicchi[5], Domenico Prattichizzo[6], Ioana Cristea[7], Daniel David[8], Pietro Pietrini[9,2], Emiliano Ricciardi[1]
[1]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Pisa, Italy, [2]Clinical Psychology Branch, Pisa University Hospital, Pisa, Italy, [3]Department of Neurological and Sensorial Sciences, University of Siena, Siena, Italy, [4]Department of Physics and Astronomy, Faculty of Science, Utrecht University, Utrecht, Netherlands, [5]Research Center "E.Piaggio", Faculty of Engineering, University of Pisa, Pisa, Italy, [6]Department of Information Engineering, University of Siena, Siena, Italy, [7]Babes-Bolyai University, Cluj-Napoca, Romania, [8]Clinical Psychology Chair, Department of Psychiatry, Neurobiology, Pharmacology and Biotechnologies,, Cluj-Napoca, Romania, [9]University of Pisa Medical School, Pisa, Italy

**4009 Non-invasive detection of cortical population spikes: pre- vs. postsynaptic components at 1 kHz**
tommaso fedele[1,2], Martin Burghoff[2], Gabriel Curio[1], Vadim Nikulin[1], Hans Juergen Scheer[2], Gunnar Waterstraat[1]
[1]Neurophysics Group, Department of Neurology, Campus Benjamin Franklin, Charite - University Medicine, Berlin, Germany, [2]Physikalisch-Technische Bundesanstalt, Berlin, Germany

**4010 Prestimulus alpha power influences temporal tactile perception and confidence of decisions**
Thomas Baumgarten[1], Alfons Schnitzler[2], Joachim Lange[2]
[1]Institute of Clinical Neuroscience and Medical Psychology, Medical Faculty,Heinrich-Heine-University, Duesseldorf, Germany, [2]Institute of Clinical Neuroscience and Medical Psychology, Heinrich-Heine-University, Duesseldorf, Germany


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**4011** **Relationship between somatosensory function and the spinothalamocortical pathway in stroke patients**
Jiheon Hong[1], Su Min Son[2], Sung Ho Jang[2]
[1]Department of Physical Therapy, Sun Moon University, Asan-si, Chungnam, Korea, Republic of, [2]Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University, Daegu, Korea, Republic of

**4012** **Slow and fast adaptive processes in tactile perceptual decision making: behavioral and MEG evidence**
Gaëtan Sanchez[1,2], Johnathan Partouche[2], Emmanuel Maby[1,2], Olivier Bertrand[1,2], Jérémie Mattout[1,2]
[1]Lyon Neuroscience Research Center, DYCOG Team; INSERM U1028; CNRS UMR5292, Lyon, France, [2]University Lyon 1, Lyon, France

**4013** **Structural Brain Changes in Patients with Chronic Obstructive Pulmonary Disease**
Roland Esser[1], Cornelia Stöckel[1], Christian Büchel[1], Karin Taube[2], Kirsten Lehmann[2], Anne Kirsten[3], Henrik Watz[3], Helgo Magnussen[3], Andreas von Leupoldt[4]
[1]University Medical Center Hamburg-Eppendorf, Department of Systems Neuroscience, Hamburg, Germany, [2]Atem-Reha GmbH, Hamburg, Germany, [3]Pulmonary Research Institute at Hospital Grosshansdorf, Grosshansdorf, Germany, [4]University of Hamburg, Department of Psychology, Hamburg, Germany

## Perception and Attention

### Perception: Visual

**4014** **Automatic categorization of letter identity in extrastriate visual cortex**
Yune-Sang Lee[1,2], Gary Lupyan[3], Doron Roberts-Kedes[1], Marcelo Mattar[1,2], Geoffrey Aguirre[4,2], Sharon Thompson-Schill[1,2]
[1]Department of Psychology, University of Pennsylvania, Philadelphia, PA, United States, [2]Center for Cognitive Neuroscience, University of Pennsylvania, Philadelphia, PA, United States, [3]Department of Psychology, University of Wisconsin, Madison, WI, United States, [4]Department of Neurology, University of Pennsylvania, Philadelphia, PA, United States

***4015** **Broadly Tuned Face and Hand Representations in Human Ventral Temporal Cortex, (O-W1)**
Nicolas Davidenko[1], Kevin Weiner[2], Kalanit Grill-Spector[3]
[1]UC Santa Cruz, Santa Cruz, United States, [2]Stanford University, Stanford, CA, [3]Stanford University

**4016** **Categorical Effect in Color Perception Studied Through fMRI**
Seyma Koc[1], Emre Ozgen[2], Didem Gokcay[1]
[1]Middle East Technical University, Ankara, Turkey, [2]Yasar University, Izmir, Turkey

**4017** **Children Temperament and Color Visual Evoked Potential**
Kang-Ming Chang[1], Sih-Huei Chen[1], Ching-Jung Lin[2]
[1]Asia University, Taichung, Chinese Taipei, [2]Chang He Elementary Preschool, Nantou, Chinese Taipei

**4018** **Common Neural Mechanisms for Scene-based and Within-object Location Processing**
Valentinos Zachariou[1], Christine Nikas[1], John Ingeholm[1], Leslie Ungerleider[1]
[1]Laboratory of Brain & Cognition, NIMH, Bethesda, MD

**4019** **Contextual information transfer across hemispheres in V1**
Grace Edwards[1], Judith Okely[1], Fraser Smith[2], Lars Muckli[3]
[1]The University of Glasgow, Glasgow, United Kingdom, [2]University of Glasgow, Glasgow, United Kingdom, [3]The University of Glasgow, Centre of Cognitive Neuroimaging, Glasgow, United Kingdom

**4020** **Cortical Surface Structure Predicts Extrastriate Retinotopic Function**
Noah Benson[1], Omar Butt[1], Sandeep Jain[1], David Brainard[1], Geoffrey Aguirre[1]
[1]University of Pennsylvania, Philadelphia, PA

**4021** **Decoding representations of actions of other species using multivariate pattern analysis**
Andrew Connolly[1], James Haxby[2]
[1]Dartmouth College, Hanover, NH, [2]Department of Psychological & Brain Sciences, Dartmouth College, Dartmouth, NH

**4022** **Direct, not V1 mediated, motion processing in hMT+ is modulated by speed**
Anna Gaglianese[1,2], Mauro Costagli[2,3,1], Emiliano Ricciardi[1], Kenichi Ueno[4], Pietro Pietrini[1], Kang Cheng[2,4]
[1]Laboratory of Clinical Biochemistry and Molecular Biology, University of Pisa, Medical School, Pisa, Italy, [2]Laboratory for Cognitive Brain Mapping, RIKEN Brain Science Institute, Wakoshi, Japan, [3]Fondazione IMAGO7, Calambrone, Pisa, Italy, [4]RIKEN Brain Science Institute, Wakoshi, Japan

**4023** **Dissociable pathways for dynamic and static faces begin in early visual cortex: a TMS/fMRI study**
David Pitcher[1], Brad Duchaine[2], Vincent Walsh[3]
[1]NIMH, Bethesda, United States, [2]Dartmouth College, Hanover, NH, [3]University College London, London, United Kingdom

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**4024 Dynamics of categorization and exemplar discrimination in human face-related cortex**
Ido Davidesco[1], Elana Zion-Golumbic[2], David Groppe[3,4], Corey Keller[3,5], Stephan Bickel[3], Michal Harel[6], Catherine Schevon[7], Gadi Goelman[8], Charles Schroeder[9,10], Ashesh Mehta[3,4], Rafael Malach[6]
[1]Edmond and Lily Safra Center for Brain Sciences, Hebrew University of Jerusalem, Jerusalem, Israel, [2]Department of Psychiatry, Columbia University College of Physicians and Surgeons, New york, NY, [3]Dept. of Neurosurgery, Hofstra North Shore LIJ School of Medicine, Manhasset, NY, [4]Feinstein Institute for Medical Research, Manhasset, NY, [5]Dept. of Neuroscience, Albert Einstein College of Medicine, New York, NY, [6]Department of Neurobiology, Weizmann Institute of Science, Rehovot, Israel, [7]Department of Neurology, Columbia University College of Physicians and Surgeons, New york, NY, [8]Hadassah Hebrew University Medical Center, Jerusalem, Israel, [9]Department of Psychiatry, Columbia University College of Physicians and Surgeons, New York, NY, [10]Cognitive Neuroscience and Schizophrenia Program, Nathan Kline Institute, Orangeburg, NY

**4025 EEG phase-coupling dynamics in apparent motion perception**
Francisco Parada[1], Artemy Kolchinsky[1], Alejandra Rossi[1], Thomas Busey[1], Olaf Sporns[1], Aina Puce[1]
[1]Indiana University, Bloomington, IN, United States

**4026 Effect of the cognitive fatigue evoked by stereoscopic 3D videos in human brain**
Dongchan Kim[1], HyunWook Park[1], Yong Man Ro[1], Yong Ju Jung[1]
[1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of

****4027 Electrocorticography of the Face and Place Network Connectivity**
Mehmet Kadipasaoglu[1], Christopher Conner[1], Vatche Baboyan[2], Nitin Tandon[1]
[1]UT Houston, Houston, United States, [2]UT Houston, Houston, TX

**4028 Face processing in the superior temporal sulcus**
Anne-Kathrin Schobert[1], Patrik Vuilleumier[1]
[1]University of Geneva, Geneva, Switzerland

**4029 FMRI Activation of Global Motion Coherence in the Absence of Unilateral Primary Visual Cortex**
Sara Ajina[1], Christopher Kennard[1], Geraint Rees[2], Holly Bridge[1]
[1]University of Oxford, Oxford, United Kingdom, [2]Institute of Cognitive Neuroscience, University College London., London, United Kingdom

****4030 Functional cross-subject mapping reveals common dimensions of visually evoked brain activity**
Natalia Bilenko[1], Tolga Cukur[1], Alexander Huth[1], Shinji Nishimoto[1], Jack Gallant[1]
[1]University of California, Berkeley, Berkeley, United States

**4031 Functional MRI of awake non-human primates: using eye-tracking to improve imaging quality**
Xun Zhu[1], Jane Joseph[2], Christine Corbly[3], Faraday Davies[1], Eric Forman[3], April Evans[3], Ashley Kangas[3], Anders Andersen[3], Zhiming Zhang[3], Lee Blonder[3], Ramesh Bhatt[3], Peter Hardy[3]
[1]Medical University of South Carolina, Charleston, SC, [2]Medical University of South Carolina, Charleston, United States, [3]University of Kentucky, Lexington, KY

**4032 Functional Subdomains within Human Scene-Selective Cortex**
Tolga Cukur[1], Shinji Nishimoto[1], Alexander Huth[1], Jack Gallant[1]
[1]University of California, Berkeley, United States

**4033 High resolution population receptive field mapping using multiband imaging**
Allan Hummer[1], Ronald Sladky[1], Martin Kueblboeck[1], Christian Windischberger[1]
[1]MR Centre Of Excellence, Medical University Of Vienna, Vienna, Austria

**4034 Integration of visual motion information of point-light walker and background motion coherence**
Tamaki Miyamoto[1]
[1]Psychiatry, Graduate School of Medicine Hokkaido University, Sapporo, Japan

**4035 Investigating scene gist information content of feedback signals using fMRI**
Andrew Morgan[1], Lucy Petro[1], Lars Muckli[1]
[1]University of Glasgow, Glasgow, United Kingdom

**4036 Investigating the Representation of Crossmodal Illusory States in Early Visual Cortex Using fMRI**
Fiona McGruer[1], Lucy Petro[1], Luca Vizioli[2], Jakob Hohwy[3], Fraser Smith[1], Lars Muckli[4]
[1]University of Glasgow, Glasgow, United Kingdom, [2]University of Glasgow, Centre for Cognitive Neuroimaging, Institute of Neuroscience & Psychology, Glasgow, United Kingdom, [3]Department of Philosophy, Monash University, Melbourne, VIC, [4]The University of Glasgow, Centre of Cognitive Neuroimaging, Glasgow, United Kingdom

**4037 Investigating the spatial frequency content of cortical feedback using fMRI**
Yulia Revina[1], Lucy Petro[2], Fraser Smith[2], Lars Muckli[3]
[1]CCNi, University of Glasgow, Glasgow, United Kingdom, [2]University of Glasgow, Glasgow, United Kingdom, [3]The University of Glasgow, Centre of Cognitive Neuroimaging, Glasgow, United Kingdom

**4038 Mapping the neural signature of subjective time expansion of a visual oddball by frequency tagging**
Yong-Jun Lin[1], Elisa Carrus[1], Shinsuke Shimojo[1]
[1]California Institute of Technology, Pasadena, CA, United States


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**4039** **Mortality salience modulates the neurocognitive processing of visual art**
Sarita Silveira[1], Evgeny Gutyrchik[2], Yan Bao[3], Ernst Pöppel[1], Janusch Blautzik, Dr.[4], Maximilian Reiser[5], Dieter Frey[6], Verena Graupmann[7]
[1]Human Science Center, Munich, Germany, [2]Human Science Center, LMU Munich, Munich, Germany, [3]Department of Psychology, Peking, China, [4]Department of Clinical Radiology, LMU Munich, Munich, Germany, [5]Ludwig Maximilians University Munich, Institute of Clinical Radiology, Munich, Germany, [6]Department of Psychology, Ludwig-Maximilian-University, Munich, Germany, [7]Ludwig-Maximilian_ University, Munich, Germany

**4040** **Neural dissimilarities of scene categories map onto low-level contrast statistics**
Iris Groen[1], Sennay Ghebreab[1], Victor Lamme[1], H. Steven Scholte[1]
[1]University of Amsterdam, Amsterdam, Netherlands

**4041** **Neural responses to learned monetary value of objects in extrastriate cortex during passive viewing**
Andrew Persichetti[1], Sharon Thompson-Schill[2], Geoffrey Aguirre[2]
[1]University of Pennsylvania, Philadelphia, United States, [2]University of Pennsylvania, Philadelphia, PA

**4042** **Neuroimaging of functional connectivity during binocular and monocular rivalry**
David Benrimoh[1], Athena Buckthought[1], Debra Dawson[1], Amir Shmuel[2], Janine Mendola[1]
[1]McGill University, Montreal, Canada, [2]Montreal Neurological Institute, Montreal, Canada

**4043** **Predictive codes of context and familiarity during the perceptual learning of facial identities**
Matthew Apps[1], Manos Tsakiris[1]
[1]Royal Holloway, University of london, Egham, United Kingdom

**4044** **Regional development of face selectivity in the fusiform gyrus is modulated by the age of the face**
Golijeh Golarai[1], Alina Liberman[1], Kalanit Grill-Spector[2]
[1]Stanford University, Stanford, CA, [2]Stanford University

**4045** **Simultaneous Learning for natural image identification from fMRI signals of human brain activity**
Dai Zhang[1], Yong Fan[1]
[1]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**4046** **Spatiotemporal interplay between synchronization and desynchronization effects**
Vasily Vakorin[1], Bratislav Misic[1], Gleb Bezgin[1], Kazuhito Takenaka[2], Olga Krakovska[3], Naotaka Fujii[2], Randy McIntosh[1]
[1]Rotman Research Institute, Baycrest Centre, Toronto, Canada, [2]Brain Science Institute, RIKEN, Tokyo, Japan, [3]York University, Toronto, Canada

**4047** **Symmetric negative BOLD signal in extrastriate visual cortex during intermittent photic stimulation**
Filippo Arrigoni[1], Eleonora Maggioni[2,3], Claudio Zucca[4], Anna Bianchi[3], Gianluigi Reni[2], Fabio Triulzi[5,1]
[1]CeSNE - Neuroimaging Unit, Scientific Institute IRCCS Eugenio Medea, Bosisio Parini, Italy, [2]Bioengineering Lab, Scientific Institute IRCCS Eugenio Medea, Bosisio Parini, Italy, [3]Department of Electronics Information and Bioengineering (DEIB), Politecnico di Milano, Milano, Italy, [4]Clinical Neurophysiology Unit, Scientific Institute IRCCS Eugenio Medea, Bosisio Parini, Italy, [5]Neuroimaging Unit, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Milano, Italy

**4048** **The Impact of Movements to the Quality of Steady-state Visual-evoked Potential**
Yuan-Pin Lin[1], Yijun Wang[1], Tzyy-Ping Jung[1]
[1]University of California, San Diego, La Jolla, United States

**4049** **The integrity of the inferior longitudinal fasciculus and face recognition ability**
Jun Li[1], Hongyong Wang[1], Xinxiu Xu[1], Sen Yuan[1], Wei Qin[1], Jie Tian[1,2]
[1]School of Life Sciences and Technology, Xidian University, Xi'an, China, [2]Institute of Automation, Chinese Academy of Sciences, Beijing, China

**4050** **The lateral occipital complex analyses the spatial correlation structure of a scene**
H. Steven Scholte[1], Ilja Sligte[1], Iris Groen[1], Victor Lamme[1], Sennay Ghebreab[1]
[1]University of Amsterdam, Amsterdam, Netherlands

**4051** **The spatial precision of top-down signals to non-stimulated V1**
Lucy Petro[1], Fraser Smith[1], Lars Muckli[1]
[1]University of Glasgow, Glasgow, United Kingdom

**4052** **Time and Direction Modulation in Saccade Task: fMRI Study in Children and Adults**
Katerina Lukasova[1,2], Mariana Nucci-da-Silva[3], Gilson Vieira[4], João Sato[5], Edson Amaro Junior[4]
[1]NIF/LIM44, University of Sao Paulo, Sao Paulo, Brazil, [2]Faculty of Psychology, Unicsul, Sao Paulo, Brazil, [3]NIF-HCFMUSP, São Paulo, Brazil, [4]University of São Paulo, São Paulo, Brazil, [5]ABC Federal University, Santo André, Brazil

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Perception and Attention

### Sleep and Wakefulness

**4053 A nap to recap: Reward strengthens relational memory during daytime sleep**
Kinga Igloi[1,2], Giulia Gaggioni[1], Christoph Hofstetter[1], Hamdi Eryilmaz[1], Virginie Sterpenich[1,2], Sophie Schwartz[1,2]
[1]University of Geneva, Geneva, Switzerland, [2]Swiss Center for Affective Sciences, Geneva, Switzerland

**4054 Auditory evoked potential (AEP) amplitude is coupled to slow wave phase during human slow wave sleep**
Sarang Dalal[1], Jonathan Lilje[2], Simon Hanslmayr[1], Nathan Weisz[3]
[1]University of Konstanz, Konstanz, Germany, [2]University of Freiburg, Freiburg, Germany, [3]Università degli Studi di Trento, Mattarello, Italy

**4055 Brainstem regulation of sleep and waking: a PET/MRI perspective**
Linda Larson-Prior[1], Young Don Son[2], Eun-Jung Choi[2], Jeong-Hee Kim[2], Seok_Il Hwang[2], Sang-Yoon Lee[2], Young-Bo Kim[2], Seong-Ki Mun[3], Zang-Hee Cho[2]
[1]WASHINGTON UNIVERSITY MEDICAL SCHOOL, Saint Louis, MO, United States, [2]Neuroscience Research Institute, Gachon University, Incheon, Korea, Republic of, [3]Virginia Polytechic Institute & State University, Arlington, VA

**4056 Declined Low-Frequency BOLD Fluctuations Reveal Alleviation of Sleep Pressure upon Awakening**
Shang-Hua Lin[1], Pei-Jung Tsai[2], Sharon Chia-Ju Chen[3], Chung-yao Hsu[4], Ching-Po Lin[5], Changwei Wu[6]
[1]Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan, [2]Institute of Brain Science, National Yang-Ming University, Hsinchu, Taiwan, [3]Kaohsiung Medical University, Kaohsiung, Taiwan, [4]Institute of Neuroscience, NYMU, kaohsiung, Taiwan, [5]National Yang-Ming University, Taipei, Taiwan, [6]National Central University, Taoyuan, Taiwan

**4057 Dynamics in BOLD amplitude variance asymmetry characterize progression to deep sleep**
Ben Davis[1], Jorge Jovicich Jovicich[1], Helmut Laufs[2], Enzo Tagliazucchi[2], Uri Hasson[1]
[1]Center for Mind/Brain Sciences (CIMeC), University of Trento, Trento, Italy, [2]Department of Neurology and Brain Imaging Center, Goethe University, Frankfurt am Main, Germany

**4058 Emergence of sensory patterns during sleep highlights differential dynamics of REM and Non-REM sleep**
Michal Ramot[1], Lior Fisch[2], Ido Davidesco[3], Michal Harel[2], Svetlana Kipervasser[4], Fani Andelman[5], Miri Neufeld[4], Uri Kramer[4], Itzhak Fried[5], Rafael Malach[2]
[1]Hebrew University of Jerusalem, Jerusalem, Israel, [2]Weizmann Institute of Science, Rehovot, Israel, [3]Hebrew university of jerusalem, Jerusalem, Israel, [4]Tel Aviv University, Tel Aviv, Israel, [5]Tel Aviv Sourasky Medical Center, Tel Aviv, Israel

**4059 Reduced thalamus spectral power comes with enhanced thalamo-cortical connectivity on awakening**
Pei-Jung Tsai[1], Po-Yu Liu[2], Yu-Chin Wu[3], Chung-Yao Hsu[4], Sharon Chia-Ju Chen[5], Ching-Po Lin[6], Changwei Wu[7]
[1]Institute of biomedical imaging and radiological sciences, National Yang-Ming University, Chinese Taipei, [2]Biologiacl imaging and rradiological sciences, Taipei, Taiwan, [3]NTHU MIPL, Hsinchu, Chinese Taipei, [4]Kaohsiung Medical University Chung-Ho Memorial Hospital, Kaohsiuung, Taiwan, [5]Kaohsiung Medical University, Kaohsiung, Chinese Taipei, [6]National Yang-Ming University, Taipei, Chinese Taipei, [7]National Central University, Taoyuan, Taiwan

## Social Neuroscience

### Self Processes

***4060 A penny for your thoughts — Revealing the valence of spontaneous self-generated thoughts during rest, (O-Th4)**
Anita Tusche[1], Jonathan Smallwood[1], Tania Singer[2]
[1]Max Planck Institute for Human Cognitive Brain Sciences, Department of Social Neuroscience, Leipzig, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Department of Social Neuroscience, Leipzig, Germany

**4061 Decreased coherence of gamma-band EEG activity in MBSR meditation states**
Junling Gao[1,2], Ao Tan[3], Hinhung Sik[1], Chunqi Chang[3], Yeung Sam Hung[3], Raymond Cheung[2], Zhiguo Zhang[3]
[1]Centre of Buddhism Studies, The University of Hong Kong, Hong Kong, China, [2]Dept. of Medicine, The University of Hong Kong, Hong Kong, China, [3]Dept. of EEE, The University of Hong Kong, Hong Kong, China

**4062 I am what I am — The interaction of musical mood induction and self-perception**
Sarah Oetken[1,2], Katharina Pauly[1,2], Ruben Gur[3], Frank Schneider[1,2,3], Ute Habel[1,2], Anna Pohl[1,2,4]
[1]Department of Psychiatry, Psychotherapy and Psychosomatics, Medical School, RWTH Aachen University, Aachen, Germany, [2]JARA - Translational Brain Medicine, Germany, [3]Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, [4]Department of Neurology, Medical School, RWTH Aachen University, Aachen, Germany

**4063 Individual difference in self-concept and pro-social behavior in the aftermath of tsunami disaster**
Motoaki Sugiura[1], Yuka Kotozaki[1], Atsushi Sekiguchi[2], Carlos Miyauchi[2], Sugiko Hanawa[2], Seishu Nakagawa[1], Tsuyoshi Araki[2], Ryuta Kawashima[1]
[1]Tohoku University, Sendai, Japan, [2]Tohoku university, Sendai, Japan


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**4064** **Neural Basis of Seeking for Therapeutic Effect of Photograph Taking an fMRI Study**
Masumi Ishihara[1], Motoki Sugiura[2], Hyeonjeong Jeong[3], Tsuyoshi Araki[4], Yuka Kotozaki[4], Sugiko Hanawa[4], Ryoichi Yokoyama[5], Carlos Makoto Miyauchi[4], Takayuki Nozawa[4], Fumi Takeda[6], Ryuta Kawashima[4]
[1]Institute of Development, Aging and Cancer(IDAC),Tohoku University; Graduate School of Comprehensiv, Sendai, Japan, [2]Institute of Development, Aging and Cancer(IDAC),Tohoku University; International Research Institute, Sendai, Japan, [3]Department of Functional Brain Imaging, IDAC, Tohoku University, Sendai, Japan, [4]Institute of Development, Aging and Cancer(IDAC),Tohoku University, Sendai, Japan, [5]Institute of Development, Aging and Cancer(IDAC),Tohoku University; Japan Society for the Promotion, Sendai, Japan, [6]Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan

**4065** **Neural responses to attractively morphed self face in generalized social phobia**
JungEun Shin[1], Hyung-Jun Yoon[2], Kiwan Han[3], Yu-Bin Shin[4], Jae-Jin Kim[5,4,3]
[1]Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [5]Department of Psychiatry and Institute of Behavioral Science in Medicine, Yonsei University College, Seoul, Korea, Republic of

**4066** **Self or other? Neural correlates of auditory agent identification as revealed by electrotomography**
Christoph Justen[1], Markus Raab[2], Alexander Sack[3]
[1]German Sport University Cologne, Institute of Psychology, Department of Performance Psychology, Cologne, Germany, [2]German Sport University Cologne, Institute of Psychology, Department of Performance Psychology, Cologne, Germany, [3]Department of Cognitive Neuroscience, Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, Netherlands

**4067** **The influence of the perspective-taking on the neural processing of personality trait terms**
Ji-Won Chun[1], Shin-ae Yoon[2], Gyeongyong Kim[3], Changwon Jang[1], Hae-Jeong Park[4]
[1]Department of Nuclear Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Department of Radiology and Division of Nuclear Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Dept. of English Language and Literature, College of Humanities, Graduate School Myongji University, Seoul, Korea, Republic of, [4]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**4068** **Understanding human implicit intention while reading self-relevant sentences: An fMRI Study**
Suh-Yeon Dong[1], Soo-Young Lee[1]
[1]KAIST, Daejeon, Korea, Republic of

**4069** **Unimodal and multimodal plasticity reflects multisensory driven changes in self-recognition**
Matthew Apps[1], Ana Tajadura-Jiménez[2], Marty Sereno[3], Olaf Blanke[4], Manos Tsakiris[1]
[1]Royal Holloway, University of london, Egham, United Kingdom, [2]UCL, London, United Kingdom, [3]Birkbeck-UCL Centre for Neuroimaging, LONDON, United Kingdom, [4]EPFL, Lasuanne, Switzerland

## Social Neuroscience

### Social Cognition

**4070** **Activation Likelihood Estimation Meta-analysis of Social Brain in Autism**
Lauren Libero[1], Michelle Patriquin[2], Rajesh Kana[3]
[1]University of Alabama at Birmingham, Birmingham, United States, [2]University of Alabama at Birmingham, Birmingham, AL, [3]Department of Psychology, University of Alabama, Birmingham, AL

***4071** **Brain Activity during Empathy Tasks Predicts Prosocial Behavior in the Dictator Game, (O-Th4)**
Leonardo Christov-Moore[1], Marco Iacoboni[2]
[1]UCLA, Los Angeles, United States, [2]UCLA, Los Angeles, CA

**4072** **Can't Keep Your Face and Voice Out of My Head: Evaluating the Perceptual Dominance of Nonverbal cues**
Heike Jacob[1], Carolin Brück[2], martin lotze[3], Dirk Wildgruber[4]
[1]Dpt. of Psychiatry, University of Tuebingen, Tübingen, Germany, [2]Eberhard- Karls- University, Tübingen -Department of Psychiatry and Psychotherapy, Tübingen, Germany, [3]University of Greifswald, Greifswald, Germany, [4]Dpt. of Psychiatry, University of Tuebingen, Tuebingen, Germany

**4073** **Correlates of individual personality and brain network properties**
Bumhee Park[1,2,3], Shin-ae Yoon[1], Tak Youn[4], Eun Kyung Ji[5], Joohan Kim[6], Eun-joo Kim[7], Dae-Shik Kim[8], Hae-Jeong Park[1,2,3]
[1]Department of Nuclear Medicine and Radiology, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]BK21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Dongguk University Medical School, Goyang city, Korea, Republic of, [5]Dongnam Inst. of Radiological & Medical Sciences, Busan, Korea, Republic of, [6]Department of Communication, Yonsei University, Seoul, Korea, Republic of, [7]Department of Education, Yonsei University, Seoul, Korea, Republic of, [8]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

**4074** **Dorsomedial prefrontal cortex activity predicts the accuracy in estimating others' preferences**
Pyungwon Kang[1], Jongbin Lee[2], Sunhae Sul[2], Hackjin Kim[3]
[1]Korea university, Seoul, Korea, Republic of, [2]Korea University, Seoul, Korea, Republic of, [3]Korea University, SEOUL, Korea, Republic of

**4075** **Event-related alpha oscillations in understanding other's belief: an EEG study**
Jianqiao Ge[1,2], Shihui Han[3]
[1]MRI Research Center, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [2]Beijing City Key Lab for Medical Physics and Engineering, School of Physics, Peking University, Beijing, China, [3]Department of Psychology, Peking University, Beijing, China

**4076** **Exploring mentalizing from the perspective of irony: a meta-analysis of neuroimaging studies**
Marie-Audrey Lavoie[1], Laura Monetta[2], Philip Jackson[3], Amelie Achim[4]
[1]École de psychologie, Université Laval, Québec, Canada, [2]Département de réadaptation, Université Laval, Québec, Canada, [3]Centre interdisciplinaire de recherche en réadaptation et intégration sociale, Québec, Canada, [4]Département de psychiatrie et neurosciences, Université Laval, Québec, Canada

**4077** **Gender differences in the neurostructural bases of empathy**
Alessandra Dodich[1], Chiara Crespi[2], Nicola Canessa[2], Giuseppe Pantaleo[2], Stefano Cappa[2]
[1]San Raffaele university, Milan, Italy, [2]San Raffaele University, Milan, Italy

**4078** **Laugh or cringe? Distinction of reward-related "Schadenfreude" from empathy-related "Fremdscham"**
Soeren Krach[1], Laura Müller-Pinzler[1], Jens Sommer[1], Andreas Jansen[1], Stefan Westermann[1], Frieder Paulus[2]
[1]Psychiatry, Philipps University Marburg, Marburg, Germany, [2]Psychiatry/Child- and Adolescent Psychiatry, Philipps University Marburg, Germany, Marburg, Germany

**4079** **Neural basis of the effects of intimacy and social hierarchy on the social decision**
Sunyoung Park[1], JungEun Shin[2], Kiwan Han[3], Yu-Bin Shin[4], Jae-Jin Kim[5,4,3]
[1]Department of Psychiatry, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Institute of Behavioral Science in Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [5]Department of Psychiatry and Institute of Behavioral Science in Medicine, Yonsei University College, Seoul, Korea, Republic of

**4080** **Neural correlates of deception in social contexts in normally developing children**
Susumu Yokota[1], Yasuyuki Taki[2], Hiroshi Hashizume[2], Yuko Sassa[2], Benjamin Thyreau[2], Mari Tanaka[1], Ryuta Kawashima[2]
[1]Tohoku University, Sendai, Miyagi, [2]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**4081** **Neural Correlates of Self-Reference and Reference to Others as Deactivation Effects**
Joram Soch[1,2,3], Lorenz Deserno[2,4], Björn Schott[2,1,3]
[1]Leibniz Institute for Neurobiology, Magdeburg, Germany, [2]Charité Universitätsmedizin, Berlin, Germany, [3]Otto von Guericke University, Magdeburg, Germany, [4]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

**4082** **Neurofunctional correlates of moral judgments in first- and third-person perspective**
Mihai Avram[1], Kristina Hennig-Fast, Dr.[2], Yan Bao[3], Ernst Pöppel[1], Maximilian Reiser[4], Janusch Blautzik, Dr.[5], Evgeny Gutyrchik[6]
[1]Human Science Center, Munich, Germany, [2]Department of Psychiatry and Psychotherapy, LMU Munich, Munich, Germany, [3]Department of Psychology, Peking, China, [4]Ludwig Maximilians University Munich, Institute of Clinical Radiology, Munich, Germany, [5]Department of Clinical Radiology, LMU Munich, Munich, Germany, [6]Human Science Center, LMU Munich, Munich, Germany

***4083** **Neuronal coding of assessing another person's knowledge based on nonverbal cues, (O-Th4)**
Carsten Bogler[1], Anna Kuhlen[1], Marc Swerts[2], John-Dylan Haynes[1]
[1]Bernstein Center for Computational Neuroscience Berlin and Charité, Berlin, Germany, [2]Faculty of Arts Communication and Cognition, Tilburg University, Tilburg, Netherlands

**4084** **Observation Learning of Reward Contingency — A Preliminary fMRI Study**
Hsiang Yun Chien[1], Jyh-Horng Chen[1], Chia-Wei Li[1], Keng-Chen Liang[2]
[1]Interdisciplinary MRI/MRS Lab, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, [2]Department of Psychology, National Taiwan University, Taipei, Taiwan

**4085** **Pants on fire: Electrophysiological effects of telling a lie**
Roland Pfister[1], Anna Foerster[2], Wilfried Kunde[2]
[1]University of Würzburg, [2]University of Würzburg, Würzburg, Germany

**4086** **Racial bias in neural empathic responses to pain**
Ross Cunnington[1], Luis Contreras[1], Yuan Cao[1]
[1]University of Queensland, Brisbane, Australia

**4087 Reduced Anterior Insula Connectivity is Associated with Alexithymia**
Frieder Paulus[1,2], Laura Müller-Pinzler[3], Stefan Westermann[4], Jens Sommer[5], Andreas Jansen[5], Soeren Krach[5]
[1]Department of Psychiatry, Philipps University Marburg, Germany, Marburg, Germany, [2]Department of Child and Adolescent Psychiatry, Philipps-University Marburg, Marburg, Germany, [3]Psychiatry, University of Marburg, Marburg, Germany, [4]Philipps-University Marburg, Marburg, Germany, [5]Philipps-University, Marburg, Germany

**4088 Segregation of the human medial prefrontal cortex in social cognition**
Danilo Bzdok[1], Angela Laird[2], Peter Fox[3], Simon Eickhoff[4]
[1]Research Center Jülich, Jülich, Germany, [2]Florida International University, Miami, FL, [3]Research Imaging Institute, San Antonio, TX, [4]Institute of Clinical Neuroscience and Medical Psychology, Heinrich Heine University, Duesseldorf, Germany

**4089 Social conformity in adopting a fashion trend: an fmri study**
Keiko Kunitoki[1], Hikaru Takeuchi[2], Yuka Kotozaki[1], Yuki Yamamoto[3], Ryoichi Yokoyama[1], Motoaki Sugiura[4], Ryuta Kawashima[5]
[1]Tohoku University, Sendai, Japan, [2]IDAC Tohoku University, Miyagi Sendai city , Japan, [3]IDAC, Tohoku University, Sendai, Japan, [4]IDAC, Tohoku University, Okazaki, Japan, [5]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Miyagi

**4090 Temporal modulation of acute alcohol intoxication on pain-related empathy: An ERP study**
Yang Hu[1], Lijun Yu[1], Delin Sun[2], Zhaoxin Wang[3]
[1]Institute of Cognitive Neuroscience, East China Normal University, Shanghai, China, [2]Laboratory of Neuropsychology, The University of Hong Kong, Hong Kong, Hong Kong, [3]Institute of Cognitive Neuroscience, Shanghai Key Laboratory of MRI, East China Normal University, Shanghai, China

**4091 The Causal Dependence of Human Altruism on the Functional Integrity of the Right TPJ**
Chaohui Guo[1], Sunhae Sul[2], Christian Ruff[3], Ernst Fehr[3]
[1]Zurich University, Zurich, Switzerland, [2]Korea University, Seoul, Korea, Republic of, [3]University of Zurich, Zurich, Switzerland

**4092 The electrophysiological responses to monetary outcomes are modulated by social contexts**
Yi Luo[1], Chunliang Feng[1], Ruolei Gu[2], Tingting Wu[1], Yue-jia Luo[1]
[1]Institute of Brain and Cognitive Science, Beijing Normal University, Beijing, China, [2]Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing, China

**4093 The impact of kinematics and eye contact on action perception in a social context**
Emily Cross[1,2], Louise Kirsch[1], Emily Butler[1], Julia Scaife[1], Alexis Sweetman[1]
[1]Bangor University, Bangor, United Kingdom, [2]Radboud University Nijmegen / Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands

**4094 The neural correlates of stress regulation in healthy females and males**
Lydia Kogler[1], Ruben Gur[2], Birgit Derntl[1,3]
[1]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany, [2]Neuropsychiatry Division, Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, [3]JARA - Translational Brain Medicine, Germany

**4095 The role of self-inhibition in the understanding of others**
Christina Bajer[1,2], Margrit Mainusch[1,2], Susanne Neufang[1,2,3]
[1]Department of diagnostic and interventional Neuroradiology, Klinikum rechts der Isar, TU München, Munich, Germany, [2]TUM-Neuroimaging Center, TU München, Munich, Germany, [3]Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, University Hospital, Würzburg, Germany

**4096 The Role of the Medial Prefrontal Cortex in Social Categorization**
Pascal Molenberghs[1], Samantha Morrison[2]
[1]University of Queensland, Brisbane, Australia, [2]The University of Queensland, Brisbane, Australia

**4097 The Ugly Truth: Why People Enjoy Negative Gossip of Celebrities and Positive Gossip of Themselves**
XiaoZhe Peng[1,2], Qi Chen[2], Ling Wang[2], You Li[2]
[1]Shenzhen University, Shenzhen, China, [2]Department of Psychology, South China Normal University, Guangzhou, China

***4098 Using social immersion to induce embarrassment in real-life person-group interactions, (O-Th4)**
Laura Müller-Pinzler[1], Stefan Westermann[1], Jens Sommer[1], Andreas Jansen[1], Frieder Paulus[2], Soeren Krach[1]
[1]Department of Psychiatry, Philipps-University Marburg, Marburg, Germany, [2]Department of Psychiatry/Child- and Adolescent Psychiatry, Philipps-University Marburg, Marburg, Germany

**4099 What will he do next? Imaging of mentalizing in an observed iterated trust game**
Christoph Mathys[1], Tony Williams[2], Lars Kasper[1], Lilian Weber[1], Ernst Fehr[2], Klaas Enno Stephan[1]
[1]Translational Neuromodeling Unit (TNU), University of Zurich & ETH Zurich, Zurich, Switzerland, [2]Laboratory for Social and Neural Systems Research, Department of Economics, University of Zurich, Zurich, Switzerland

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

## Social Neuroscience

### Social Interaction

**4100 An accurate audiovisual MEG-to-MEG link for dual MEG recordings**

Andrey Zhdanov[1,2,3], Jussi Nurminen[1], Pamela Baess[1], Lotta Hirvenkari[1], Veikko Jousmäki[1], Jyrki Mäkelä[2], Anne Mandel[1], Riitta Hari[1], Lauri Parkkonen[1,3]
[1]Brain Research Unit, O.V. Lounasmaa Laboratory and MEG Core, Aalto Neuroimaging, Aalto University, Espoo, Finland, [2]BioMag Laboratory, Helsinki University Central Hospital, Helsinki, Finland, [3]Department of Biomedical Engineering and Computational Science, Aalto University School of Science, Espoo, Finland

**4101 Brain activity and prosocial behavior in a simulated life-threatening situation**

Marco Zanon[1], Giovanni Novembre[1], Luca Chittaro[2], Giorgia Silani[1]
[1]Neuroscience Sector, International School for Advanced Studies (SISSA-ISAS), Trieste, Italy, [2]Human-Computer Interaction Lab (HCI Lab), Dept of Math and Computer Science, University of Udine, Udine, Italy

**4102 Causal roles of dorsal anterior cingulate and insula on peer-influenced decision making under risk**

Dongil Chung[1], Shuai Xu[2], Xiaosi Gu[3], Zhixian Gao[4], Xingchao Wang[4], Pearl Chiu[5]
[1]Virginia Tech Carilion Research Institute, Roanoke, VA, [2]Department of Neurosurgery, Beijing Tiantan Hospital affiliated to Capital Medical University, Beijing, China, [3]UCL, London, United Kingdom, [4]Beijing Tiantan Hospital of Capital University of Medical Sciences, Beijing, China, [5]Virginia Tech Carilion Research Institute, Roanoke, United States

**4103 Cerebral Lateral Asymmetry Induced by Social Eye Contact**

Ray Lee[1]
[1]Princeton University, Princeton, United States

**4104 Do you know what I mean? Brain oscillations and the understanding of communicative intentions**

Marcella Brunetti[1,2], Filippo Zappasodi[1,2], Laura Marzetti[1,2], Mauro Perrucci[1,2], Simona Cirillo[1], Gian Luca Romani[1,2], Vittorio Pizzella[1,2], Tiziana Aureli[1]
[1]Department of Neuroscience and Imaging, Gabriele d'Annunzio University, Chieti, Italy, [2]Institute for Advanced Biomedical Technologies, Gabriele d'Annunzio University Foundation, Chieti, Italy

**4105 Gender differences in response to achievement vs. social stressors**

Eva-Maria Seidel[1,2], Roland Boubela[3,4], Hannah Metzler[1], Hanna Thaler[1], Ruben Gur[5], Ilse Kryspin-Exner[2], Christian Windischberger[3,4], Ewald Moser[3,4,5], Ute Habel[6], Birgit Derntl[6,2]
[1]Social, Cognitive and Affective Neuroscience Unit, Faculty of Psychology, University of Vienna, Vienna, Austria, [2]Department of Psychological Intervention, Faculty of Psychology, University of Vienna, Vienna, Austria, [3]Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria, [4]MR Centre of Excellence, Medical University of Vienna, Vienna, Austria, [5]Neuropsychiatry Division, Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, [6]Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany

**4106 I like to do it with you: Activation of the ventral striatum during real-time social interaction**

Ulrich Pfeiffer[1,2], Leonhard Schilbach[3,4], Bert Timmermans[5], Bojana Kuzmanovic[6], Alexandra Georgescu[1], Gary Bente[7], Kai Vogeley[1]
[1]Department of Psychiatry, University Hospital Cologne, Cologne, Germany, [2]Institute of Neuroscience and Medicine (INM-3), Cognitive Neuroscience, Research Center Juelich, Juelich, Germany, [3]Department of Psychiatry, University of Cologne, Cologne, Germany, [4]Max-Planck Institute For Neurological Research, Cologne, Germany, [5]School of Psychology, University of Aberdeen, Aberdeen, United Kingdom, [6]Institute of Neuroscience and Medicine (INM-8), Ethics in the Neurosciences, Research Center Juelich, Juelich, Germany, [7]Institute of Media and Social Psychology, University of Cologne, Cologne, Germany

**4107 Increased neural reactivity to socio-emotional stimuli links social exclusion and aggression**

Frederike Beyer[1], Ulrike Krämer[1], Thomas Münte[1]
[1]University of Lübeck, Lübeck, Germany

***4108 Increasing honesty by stimulation of the right DLPFC, (O-Th4)**

Giuseppe Ugazio[1], Alain Cohn[2], Michel Maréchal[2], Christian Ruff[1]
[1]University of Zurich, Zurich, Switzerland, [2]Universiy of Zurich, Zurich, Switzerland

**4109 Mapping the neural correlates of the "Language Familiarity Effect": A Similarity Analysis approach**

David Fleming[1], Bruno Giordano[1], Phil McAleer[1], Roberto Caldara[2], Pascal Belin[1,3,4]
[1]Institute of Neuroscience and Psychology, University of Glasgow, Glasgow, United Kingdom, [2]Department of Psychology, University of Fribourg, Fribourg, Switzerland, [3]Département de Psychologie, Université de Montréal, Montreal, Canada, [4]Institut des Neurosciences de La Timone, UMR 7289, CNRS & Aix-Marseille Université, Marseille, France



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***4110 Model-based neurogenetic characterization of social information processing in an interactive game, (O-T3)**
Andreea Oliviana Diaconescu[1], Christoph Mathys[1], Lilian Weber[1], Klaas Enno Stephan[1]
[1]Translational Neuromodeling Unit (TNU), University & ETH Zurich, Zurich, Switzerland

**4111 Neural correlates of attachment-style dependent schema-activation**
Anna Krause[1], Bernhard Strauss[2], Deepthi Varikuti[1], Joerg Stadler[3], Marie-José van Tol[3], Coraline Metzger[1,3,4], Bernhard Bogerts[4], Hans-Jochen Heinze[5], Helmut Kirchmann[2], Tobias Nolte[6,7], Martin Walter[1,3,4]
[1]Clinical Affective Neuroimaging Laboratory, Magdeburg, Germany, [2]Institute for Psychosocial Medicine and Psychotherapy, Jena, Germany, [3]Leibniz Institute for Neurobiology, Magdeburg, Germany, [4]Department of Psychiatry and Psychotherapy, Otto-von-Guericke University, Magdeburg, Germany, [5]Department of Neurology, University of Magdeburg, Magdeburg, Germany, [6]Anna Freud Centre, London, United Kingdom, [7]Wellcome Trust Centre for Neuroimaging, University College of London, London, United Kingdom

**4112 Neural correlates of social interactions derived from autobiographical experiences: an fMRI study**
Yulia Zaytseva[1,2,3], Evgeny Gutyrchik[4], Caroline Szymanski[5], Ernst Poeppel[6]
[1]Moscow Research Institute of Psychiatry, MOSCOW, Russian Federation, [2]Human Science Center, Institute of Medical Psychology, Ludwig-Maximilians-University, Munich, Germany, [3]Parmenides Center for Art and Science, Pullach, Germany, [4]Human Science Center, Institute of Medical Psychology, Ludwig-Maximilians-University, Munich, Germany, [5]Humboldt University, Berlin, Germany, [6]Ludwig Maximilian University, Institute of Medical Psychology, Munich, Germany

**4113 Neural mechanisms of reference-dependent altruistic behavior**
Yosuke Morishima[1], Friederike Meyer[1], Christian Ruff[1], Ernst Fehr[1]
[1]University of Zurich, Zurich, Switzerland

**4114 PERSONALITY INFLUENCE PROCESSING OF SOCIAL NORMS JUDGMENTS**
Micaela Zucchelli[1], Sara Morlini[1], Elisabetta Ferrari[2], Maria Angela Molinari[3], Paolo Nichelli[1], Francesca Benuzzi[1]
[1]Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy, [2]IIT Genova, Genova, Italy, [3]A.U.S.L. Modena, Modena, Italy

**4115 Right temporoparietal junction controls automatic imitation based on cues to human animacy**
Richard Ramsey[1], Andre Klapper[2], Daniel Wigboldus[2], Emily Cross[1,3]
[1]Bangor University, Bangor, United Kingdom, [2]Radboud University Nijmegen, Nijmegen, Netherlands, [3]Radbound University Nijmegen, Nijmegen, Netherlands

**4116 Spatial gradient of value representation for self vs. other-regarding choices within MPFC**
Sunhae Sul[1], Philippe Tobler[2], Susanne Leiberg[2], Grit Hein[2], Daehyun Jung[1], Ernst Fehr[2], Hackjin Kim[1]
[1]Korea University, Seoul, Korea, Republic of, [2]University of Zurich, Zurich, Switzerland

**4117 The neural mechanisms underlying the observation of human and machine errors**
Charlotte Desmet[1], Eliane Deschrijver[1], Marcel Brass[1]
[1]Department of Experimental Psychology, Ghent University, Ghent, Belgium

**4118 Theta oscillations correlate with variation of strategic behavior in social negotiation**
Pablo Billeke[1], Francisco Zamorano[1], Tamara López[2], Carlos Rodriguez-Sickert[3], Diego Cosmelli[4], Francisco Aboitiz[4]
[1]Pontificia Universidad Católica and Universidad del Desarrollo, Santiago, Chile, [2]Instituto Psiquiátrico Horwitz, Santiago, Chile, [3]Universidad del Desarrollo, Santiago, Chile, [4]Pontificia Universidad Católica, Santiago, Chile

**4119 Within brain connectivity and between brain connectivity during watching a movie**
Changwon Jang[1], Dongha Lee[2], Shin-ae Yoon[3], Ji-Won Chun[4], Hae-Jeong Park[5]
[1]BK21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [2]Brain Korea 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, Republic of, [3]Department of Radiology and Division of Nuclear Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of, [4]Yonsei University College of Medicine, Seoul, Korea, Republic of, [5]Department of Diagnostic Radiology and Research Institute of Radiological Science, Nuclear Medicine, Seoul, Korea, Republic of

**Wednesday, June 19: 13:30 – 15:30 (even numbers)**
**Thursday, June 20: 10:45 – 12:45 (odd numbers)**

***Bold poster numbers indicate first author.***

# B

Biswal, Bharat - 1831 MT, 1847 MT, 1879 MT, 3413 WTh, 3028 WTh, 3265 WTh
Biundo, Roberta - 1186 MT
Bizzi, Alberto - 3476 WTh
Bjork, James - 3791 WTh
Björnsdotter, Malin - **1667 MT**
Bjornson, Bruce - 1507 MT
Black, Jennifer - 1581 MT
Blackwood, Nigel - 3843 WTh
Blaha, Charles - 1000 MT
Blakely, Tim - 1489 MT, 2082 MT
Blangero, John - 1284 MT, 1285 MT
Blanke, Olaf - 2081 MT, 3964 WTh, 4006 WTh, 4069 WTh
Blankenburg, Felix - 3747 WTh, 3947 WTh, 4004 WTh
Blaschek, Astrid - 3519 WTh
Blasi, Giuseppe - 1270 MT, 3335 WTh, 3468 WTh
Blasi, Valeria - 3377 WTh
Blatow, Maria - 3770 WTh
Blautzik, Dr., Janusch - 4039 WTh, 4082 WTh, 1022 MT
Blazey, Tyler - 3727 WTh
Blechert, Jens - 3331 WTh
Bleichner, Martin - 2051 MT
Blin, Oliver - 1958 MT
Bloch, Jeffrey - 3543 WTh
Bloch, Michael - 1614 MT
Blokland, Gabriella - 1289 MT, 1610 MT
Blomeyer, Dorothea - 1265 MT, 1269 MT
Blonder, Lee - 3307 WTh, 4031 WTh
Blood, Anne - 1365 MT
Bloss, Cinnamon - 3718 WTh
Bludau, Sebastian - 1787 MT, **3755 WTh**
Blüher, Matthias - 1575 MT
Blumenfeld, Hal - 2102 MT, 2115 MT
Blumensath, Thomas - 3408 WTh
Boardman, James - 3735 WTh
Boas, David - 1452 MT, 2107 MT, 3639 WTh, 3657 WTh
Bock, Elizabeth - 1711 MT
Bock, Nicholas - 3384 WTh
Boddaert, Nathalie - 1044 MT
Bode, Stefan - **1342 MT**
Bodi, Istvan - 3522 WTh, 3851 WTh, 3855 WTh
Bodurka, Jerzy - 1907 MT, 1908 MT, 2037 MT, 3140 WTh, 3150 WTh, 3151 WTh, 3154 WTh, 3171 WTh, 3196 WTh, 3197 WTh, 3336 WTh, 3396 WTh, 3434 WTh, 3439 WTh, 3488 WTh
Boecker, Henning - 3824 WTh, **3987 WTh**
Boecker, Regina - 1102 MT, **1265 MT**, 1269 MT, 3609 WTh
Boehler, Carsten - 1372 MT
Boehringer, Andreas - 1014 MT
Bogart, Stephanie - 3749 WTh
Bogert, Brigitte - **1403 MT**
Bogerts, Berhard - 1906 MT
Bogerts, Bernhard - 3370 WTh, 4111 WTh
Bogler, Carsten - **4083 WTh**
Bogomolov, Marina - 1288 MT
Bogorodzki, Piotr - 3279 WTh, 3294 WTh
Bohbot, Veronique - 3748 WTh
Bohlken, Marc - **3826 WTh**
Bohus, Martin - 3145 WTh
Boix, Cristina - 1096 MT
Bokde, Arun - 1274 MT, 1279 MT, 3428 WTh
Bolding, Mark - 3257 WTh, 3268 WTh
Bolster, Bruce - 3870 WTh
Boly, Melanie - 1391 MT, 3911 WTh, 1649 MT
Bonafé, Alain - 3379 WTh
Bongiovanni, Luigi - 3477 WTh
Bonmassar, Giorgio - 3608 WTh
Bonzano, Laura - **1162 MT**
Boogerd, Willem - 1138 MT, 1157 MT
Book, Gregory - **1447 MT**
Bookheimer, Susan - 1564 MT, 3033 WTh, 3100 WTh, 3175 WTh
Boomsma, Dorret - 3394 WTh, 3712 WTh, 3729 WTh, 3826 WTh, 3924 WTh
Boon, Paul - 3113 WTh
Boonstra, Tjeerd - **1017 MT**
Boord, Peter - 1200 MT, **1869 MT,** 2065 MT
Boorman, Erie - **1328 MT**
Booth, James - 1502 MT, 1512 MT, 1608 MT, 3303 WTh
Borchardt, Viola - **1854 MT**
Bordessoules, Martine - 3688 WTh
Bordet, Regis - 1958 MT
Boré, Arnaud - 1588 MT
Borghi, Anna - 3762 WTh
Borgonovi, Arthur - 3877 WTh
Borgwardt, Stefan - 1873 MT
Borich, Michael - 1037 MT, 1230 MT, 1234 MT, 1241 MT, **1245 MT**, 1252 MT
Bormans, Guy - 3973 WTh
Born, Alfred Peter - 3524 WTh
Borreggine, Kristin - 1184 MT
Borsboom, Denny - 1841 MT
Borsook, David - 3980 WTh
Bortel, Aleksandra - 2104 MT
Bos, Dienke - **1063 MT**
Bosch, Beatriz - 1958 MT
Bosch, Sander - **1547 MT**
Boscolo Galazzo, Ilaria - 3477 WTh, 3562 WTh, 3599 WTh
Bosma, Rachael - 1176 MT
Bossier, Han - 1946 MT
Botteron, Kelly - 3157 WTh, 3163 WTh, 3176 WTh, 3207 WTh
Böttger, Joachim - **3812 WTh**
Botvinik, Rotem - 1580 MT
Boubela, Roland - **1283 MT**, **1459 MT**, 1748 MT, 3152 WTh, 3711 WTh, 4105 WTh
Bouffet, Eric - 3578 WTh, 3858 WTh, 3533 WTh
Boukrina, Olga - **1503 MT**
Boulanouar, Abdel-Kader - 3667 WTh
Bourgeois, Alexia - 3753 WTh
Bourguignon, Mathieu - **1519 MT**, 1521 MT, 3798 WTh
Bourke, Julius - **3975 WTh**
Bourlon, Clémence - 3837 WTh
Bourque, Josiane - 3222 WTh
Boutte, David - 1936 MT, 3036 WTh, 3586 WTh
Bove, Marco - 1162 MT
Boveroux, Pierre - 3911 WTh
Bowman, F. DuBois - 1622 MT, 1964 MT
Bowtell, Richard - 1698 MT, 1735 MT, 1750 MT, 3618 WTh, 4002 WTh
Boxer, Adam - 3689 WTh
Boyacioglu, Rasim - 2011 MT
Boyd, Lara - 1037 MT, 1048 MT, 1230 MT, 1234 MT, 1241 MT, 1245 MT, 1252 MT
Boyle, Christina - 1136 MT, 3149 WTh, **3696 WTh**
Boytsova, Julia - **3553 WTh**
Bozzacchi, Chiara - **2067 MT**
Bozzali, Marco - 3912 WTh
Braadbaart, Lieke - **2084 MT**
Braakman, Hilde - 3108 WTh
Bracewell, Martyn - 1862 MT
Bradley, Catherine - 1526 MT
Bradley, Kailyn - 3301 WTh
Braga, Lucia - 3759 WTh
Braga, Rodrigo - **3876 WTh**
Brainard, David - 4020 WTh
Bramati, Ivanei - 3793 WTh, 3483 WTh
Brambilla, Paolo - 1682 MT, 2083 MT
Bramen, Jennifer - 1151 MT
Bramham, Jessica - 1127 MT, 1300 MT
Brammer, Michael - 3972 WTh
Brandeis, Daniel - 1102 MT, 1265 MT, 1269 MT, 3609 WTh
Brandl, Felix - 3179 WTh
Brandt, David - 1560 MT
Brans, Rachel - 3826 WTh
Brass, Marcel - 4117 WTh
Brattico, Elvira - 1403 MT, 3335 WTh
Braud, Jacquelyn - 3029 WTh
Brauer, Jens - 1375 MT, 1472 MT
Braun, Adam - 2008 MT
Braun, Christoph - 3582 WTh
Braun, Erin Kendall - 1314 MT
Braun, Mario - 1508 MT
Bray, Iliana - 1029 MT
Bray, Signe - 1424 MT
Brázdil, Milan - 1722 MT, 3550 WTh, 3567 WTh, 3624 WTh
Brazo, Perrine - 3262 WTh
Breakspear, Michael - 1017 MT, 3487 WTh, 3606 WTh, 1716 MT, 1752 MT, 3232 WTh
Breeden, Andrew - **2022 MT**
Breedlove, Evan - 3280 WTh
Breedlove, Katherine - 3280 WTh
Breier, Marion - 3364 WTh
Breiter, Hans - 1365 MT, 1944 MT
Brennan, Katie - 1127 MT, 1300 MT, **3041 WTh**
Brenowitz, Noah - 3456 WTh
Bresnahan, Rebecca - 1030 MT
Bressler, Steven - 1374 MT
Brethel, Kristin - 1584 MT
Breuer, Lukas - 1955 MT
Brewer, Judson - 3473 WTh
Breznitz, Zvia - 1504 MT
Brice, MARTY - 1519 MT, 1521 MT, 3798 WTh
Brichetto, Giampaolo - 1162 MT
Bridge, Holly - 3085 WTh, 3589 WTh, 3954 WTh, 4029 WTh
Bridwell, David - 1380 MT, **3610 WTh**
Briere, Marie-Eve - 3533 WTh
Brindley, Lisa - 3123 WTh
Brinkmann, Benjamin - 3126 WTh
Broce, Iris - 1526 MT
Brock, Jon - 3576 WTh
Brocke, Burkhard - 3187 WTh
Brockhaus, Wolf-R. - 1582 MT
Brodbeck, Christian - 1728 MT
Brodersen, Kay H. - 1312 MT, 1624 MT
Brodersen, Paul - 2019 MT
Brodie, Sonia - 1234 MT, 1241 MT, 1252 MT, **1037 MT**
Brodmann, Katja - **1315 MT**
Broeckel, Ulrich - 1515 MT
Broersma, Marja - **1190 MT**
Bron, Esther - **1663 MT**
Brookes, Matthew - 1698 MT, 1706 MT, 1714 MT, 1778 MT, 1880 MT, 2019 MT, 2025 MT, 2112 MT, 3266 WTh, 3571 WTh, **3572 WTh**
Brooks, Brian - 3130 WTh
Brooks, Dana - 1015 MT, 3311 WTh, 1019 MT
Brooks, Jonathan - 2043 MT
Brooks, William - 1235 MT
Broster, Lucas - **3061 WTh**
Brouwer, Rachel - 1284 MT, 3712 WTh, **3729 WTh**, 3826 WTh

# C

Catani, Marco - 1490 MT, 2867 MT, 3744 WTh, **3745 WTh**, 3758 WTh, 3760 WTh, **3761 WTh**, 3776 WTh, 3843 WTh, 3851 WTh, 3855 WTh, 3863 WTh
Catheline, Gwénaëlle - 3676 WTh, 3688 WTh
Cauda, Franco - **1054 MT**
Cauley, Steven - 3511 WTh
Cavalleri, Gianpiero - 3111 WTh
Cavanagh, Lamont - 3292 WTh
Caverzasi, Eduardo - **3857 WTh**
Cavinato, Marianna - 3554 WTh
Cayrol, Olivier - 1437 MT
Cebron, Shannon - **1987 MT**
Ceccaldi, Mathieu - 3057 WTh
Cecchetti, Luca - 1498 MT, **3054 WTh**, 3204 WTh
Cecchi, Guillermo - 3355 WTh
CECCHIN, Thierry - 1719 MT
Cecconi, Pietro - 3607 WTh
Ceko, Marta - 3995 WTh
Celsis, Pierre - 3667 WTh
Cendes, Fernando - 1153 MT, 3117 WTh, 3135 WTh, 3484 WTh
Cerini, Roberto - 3477 WTh
Cerliani, Leonardo - 3228 WTh
Ceroni, Mauro - 3058 WTh
Cetingul, Hasan - **3527 WTh**, 3535 WTh, 1635 MT
Cha, Jiook - **3193 WTh**
Chabane, Nadia - 1044 MT
Chaddock-Heyman, Lura - 3697 WTh
Chae, Jeong-Ho - 1316 MT
Chai, Yuhui - 1753 MT
Chakrabarti, Chayan - 1436 MT, 1443 MT
Chakravarty, Mallar - 1404 MT, 1677 MT, 1970 MT, 1986 MT, 3098 WTh, 3105 WTh, 3382 WTh, 3402 WTh, 3748 WTh
Chambers, Micah - 3860 WTh
Chambers, Micah - 1129 MT, **1867 MT**
Chan, Chetwyn - 3878 WTh
Chan, Shing-Chow - 1879 MT
Chan, Yee Cheun - 1360 MT
Chander, Bankim - 1013 MT
Chandramohan, Dharshan - 1671 MT, 3543 WTh
Chandresekaran, Bharath - 1524 MT, 3936 WTh
Chang, Catie - 1796 MT, 3615 WTh
Chang, Che-Wei - **2034 MT**
Chang, Chun-Yen - 1422 MT
Chang, Chunqi - 4061 WTh
Chang, Edward - 1529 MT, 1729 MT, 3763 WTh
Chang, Jae Seung - 3159 WTh, 3198 WTh
Chang, Jin Woo - 1206 MT, 3109 WTh
Chang, Jui-Yang - 1391 MT
Chang, Kang-Ming - **4017 WTh**
Chang, Linda - 3718 WTh
Chang, Luke - 3990 WTh
Chang, Min Cheol - **3274 WTh**
Chang, Won Hyuk - 1021 MT, 1033 MT, 1047 MT, 1387 MT, 1393 MT
Chang, Won Seok - 1206 MT, **3109 WTh**
Chang, Yi-Hao - 3656 WTh
Chang, Yu-Chen - **1493 MT**
Chang, Yu-Teng - **1846 MT**, 3948 WTh
Chanoine, Valérie - 1958 MT, 3057 WTh
Chanraud, Sandra - 3676 WTh
Chao, Hsiang-Tai - 1156 MT, 3986 WTh, 3997 WTh, 4001 WTh
Chaovalitwongse, Wanpracha - 1476 MT, 1668 MT
Chappidi, Meera - 2073 MT
Charil, Arnaud - 3402 WTh
Charlet, Katrin - 3020 WTh, **3030 WTh**
Chase, Henry - 3367 WTh
Chatterjee, Neil - 1995 MT
Chaudhri, Asim - 1578 MT
Chauvel, Patrick - 1724 MT, 3120 WTh
Chavarriaga, Ricardo - 1335 MT
Chee, M W.L. - 1807 MT
Chee, Michael - 3679 WTh
Chee, Michael W.L. - 1834 MT, 3261 WTh, 3894 WTh, 3665 WTh
Chella, Federico - **1699 MT**
Chen, Annabel - 1360 MT, 3170 WTh
chen, chiaoyun - **3560 WTh**
Chen, Chun-Chuan - 1612 MT
Chen, Colleen - **1064 MT**
Chen, Gang - 1364 MT, **1926 MT**, 2016 MT, 3924 WTh
Chen, Gang - 1177 MT
Chen, Gang - 3088 WTh
Chen, Guangyu - 3088 WTh
chen, hanbo - 1435 MT, 3869 WTh
Chen, Hanbo - **3795 WTh**, **3797 WTh**
Chen, Hsin-Chin - 3656 WTh, **1480 MT**
Chen, Huafu - 1853 MT
Chen, J. Jean - 2044 MT, 3690 WTh
Chen, Jean - 3478 WTh
Chen, Jian - 3182 WTh
Chen, Jiayu - 1919 MT, **1931 MT**, 1936 MT
Chen, Jingyuan - **2040 MT**
Chen, Jyh-Horng - 1839 MT, 1781 MT, 4084 WTh, 2034 MT
Chen, Laigao - 1962 MT
Chen, Li-Fen - 1156 MT, 3139 WTh, 3986 WTh
Chen, Lizhou - 1128 MT
Chen, Min-Tsuei - 1612 MT
Chen, Ning - 3161 WTh
Chen, Pin-Jane - 1083 MT
Chen, Qi - 4097 WTh
Chen, Qiang - 3267 WTh
Chen, Qin - 3161 WTh
Chen, Raphaël - 1434 MT
Chen, S.H. Annabel - 3457 WTh, **3686 WTh**
Chen, Shanguang - 1577 MT
Chen, Sharon Chia-Ju - 4056 WTh, 4059 WTh
Chen, Sheng-Hua - 3563 WTh
Chen, Shi-An - 1651 MT
Chen, Shuzhong - 2109 MT
Chen, Sih-Huei - 4017 WTh
Chen, Tianwen - 1336 MT, 1554 MT, 1881 MT, **2032 MT**
Chen, Xiaoyan - 3967 WTh, 3988 WTh
Chen, Xu - **1289 MT**
Chen, Yaojing - 3094 WTh
Chen, Yasheng - 1695 MT
Chen, Ying - **1128 MT**
Chen, Yong-Sheng - 1156 MT, 3139 WTh
Chen, Yu-Hsin - 3308 WTh
Chen, Yu-Lin - 3656 WTh
Chen, Yu-Wei - 1231 MT
Chen, Yun-Ju - **1068 MT**
Chen, Zhang - **3529 WTh**
Chen, Zhaolin - 3474 WTh
chen, zikuan - **1742 MT**, **1934 MT**
Cheng, Chou-Ming - 3997 WTh, 4001 WTh
Cheng, Hewei - **3037 WTh**
Cheng, Hu - **3008 WTh**, **3447 WTh**
Cheng, John Y.S. - **1422 MT**
Cheng, Kang - 4022 WTh
Cheng, Katherine - 1051 MT
Cheng, Philip - 2027 MT
Cheng, Philip - 1713 MT
Cheng, Philip E. - 1917 MT
Cheng, Rebecca Wing-yi - 1321 MT
Cheng, Sheung-Tak - 1321 MT
Cheng, Wei-Chen - **1917 MT**
Cheng, Xi - 2111 MT
Cheng, Xi - **3743 WTh**
Cheng, Yawei - 1068 MT
Cheng, Yawei - 3234 WTh, 3339 WTh
Cheng, Yawei - 3324 WTh
Cherbuin, Nicolas - 3381 WTh, **3699 WTh**
Cheung, Bing Leung - 1391 MT
Cheung, Brian - 1465 MT, 1912 MT
Cheung, Charlton - 1183 MT
Cheung, Connie - **1529 MT**, **3763 WTh**
Cheung, Raymond - 4061 WTh
Cheung, Richard - 1183 MT
Chew, Effie - 1238 MT, 1360 MT
Chia, Yvonne Y. - 1358 MT, **3261 WTh**
Chia, Yvonne Yiwen - 1609 MT
Chiang, Ming-Chang - 1594 MT, **1597 MT**
Chiappelli, Joshua - **3260 WTh**
Chiaravalloti, Nancy - 1601 MT, 3648 WTh
Chiarelli, Antonio - **3644 WTh**
Chien, Hsiang Yun - **4084 WTh**
Chien, Vincent - 1713 MT
Chierchia, Gabriele - 1330 MT
Chiew, Mark - 1821 MT, **3408 WTh**
Ching, Christopher - **1281 MT**
Chittaro, Luca - 4101 WTh
Chiu, Carlton - 1451 MT
Chiu, Pearl - 1299 MT, 1333 MT, **1650 MT**, 4102 WTh
Chiu, Wan - 1212 MT
Chládek, Jan - 3550 WTh, **3567 WTh**
Cho, Jae-Hyun - 3107 WTh
Cho, Raymond - 3245 WTh, 3713 WTh
cho, sang soo - **1034 MT,** 1382 MT
Cho, Zang-Hee - 4055 WTh
Chohan, Muhammad - 3421 WTh
Choi, Eun-Jung - 4055 WTh
Choi, Jeewook - 1118 MT
Choi, Jeong Woo - **3555 WTh**
Choi, Ki Sueng - 1005 MT
Choi, Kyung-mook - 1316 MT
Choi, seungjin - **2029 MT**
Choi, SoonHo - 3507 WTh
Choi, Soyoung - 1688 MT, **3781 WTh**
Choi, Sun Young - 3853 WTh
Choi, Yeonsun - 3393 WTh
Chokhani, Ritika - 1407 MT
Chorley, Paul - 1823 MT
Chou, Chih-Che - 3997 WTh
Chou, Chun-An - 1476 MT, 1668 MT
Chou, Kun-Hsien - **1133 MT**, 1185 MT, 1262 MT, 3076 WTh, 1261 MT
Chou, Tai-Li - **1083 MT**
Choufani, Georges - 1521 MT
Chouinard, Francois - 1451 MT
Chow, Carolyn - 1295 MT
Chow, Nicole - **3078 WTh**
Chowdhury, Muhammad Enamul Hoque - **1735 MT**, **3618 WTh**
Chowdhury, Rumana - 3666 WTh
Christensen, Andrea - 3651 WTh
Christensen, Mark - 2074 MT
Christov-Moore, Leonardo - **4071 WTh**
Chrobok, Agnieszka - 3462 WTh, 3548 WTh
Chu, Chia-Yueh Carlton - 1927 MT
Chu, Congying - **1755 MT**
Chu, Congying - 1956 MT, 3822 WTh
Chu, Ian-Ting - **3986 WTh**
Chu, Jonathan - 1219 MT
Chu, King-Wai - 2099 MT
Chu, Shufang - 3435 WTh

Curtis, Jackie - 3242 WTh
Cusack, Rhodri - 3915 WTh
Custo, Anna - **3552 WTh**
Cutter, Gary - 1660 MT
Cutting, Laurie - 1477 MT, 3852 WTh
Cyckowski, Laura - 3865 WTh
Cygan, Hanna - **1076 MT**
Cyprien, Fabienne - 3379 WTh
Cyr, Abigail - 1516 MT
Czerniak, Suzanne - **1994 MT**, 3181 WTh
Czisch, Michael - 1661 MT, 3256 WTh, 3596 WTh

# D

D'Abreu, Anelyssa - 1207 MT
D'Angelo, Egidio - 3058 WTh
D'Esposito, Mark - 1874 MT
D'hooge, Mieke - 3565 WTh
D'hooghe, Marie Bie - 3565 WTh
D'Incerti, Ludovico - 3415 WTh, 3470 WTh
d'Onofrio, Paolo - 3317 WTh
D'Souza, Deepak - 1614 MT
D'Souza, Warren - 1150 MT
Da Costa, Sandra - 1652 MT, **3946 WTh**
Da Mota, Benoit - **1275 MT**, 2049 MT
da Silva, Rafael Emídio - **3399 WTh**
Daamen, Marcel - 3824 WTh, 3987 WTh
Daar, Eric - 1136 MT
Dager, Stephen - 1058 MT
Dagher, Alain - 1400 MT, 2006 MT
Dahl, Ronald - 3190 WTh, 3736 WTh
Dahnke, Robert - 1897 MT, **1983 MT**, **1984 MT**
Dai, Li - 1119 MT
Dai, Rui - 1408 MT
Dai, Rui-na - **1641 MT**, 2056 MT
Dai, Zhengjia - 1803 MT, 1818 MT, 1832 MT, 1950 MT, **3059 WTh**, 3060 WTh, 3691 WTh
Daianu, Madelaine - **3504 WTh**
Dalal, Sarang - 3579 WTh, **4054 WTh**
Dalboni da Rocha, Josué - 3038 WTh
Dale, Anders - 3718 WTh
Dale, Anders - 1074 MT
Dale, Corby - **3224 WTh**, **3284 WTh**
Dalenberg, Jelle - 3900 WTh
Dalley, Rachel - 3215 WTh, 3757 WTh
Dalrymple-Alford, John - 1146 MT, 1209 MT
Dalton, Marshall - **1557 MT**
Daly, Eileen - 2867 MT
Damaraju, Eswar - 1380 MT, 1765 MT, 1804 MT, 1998 MT, 2042 MT
Damasceno, Benito - 1153 MT, 3117 WTh, 3135 WTh
Damasio, Hanna - 1542 MT, 1688 MT, 1883 MT, 3781 WTh
Damen, Frederick - 3788 WTh
Damien, Marie - **3756 WTh**
Damme, Katherine - 3543 WTh
Dammers, Jürgen - 1955 MT
Damoiseaux, Jessica - **3172 WTh**, 3792 WTh
Damsted, Sara - 3524 WTh
Dan, Ippeita - 3649 WTh
Danek, Adrian - 3863 WTh
Danielmeier, Claudia - **1367 MT**
Danko, Sergey - 3553 WTh
Dannhauer, Moritz - 1015 MT, **1019 MT**
Darcey, Valerie - **1584 MT**
Darki, Fahimeh - **1598 MT**
Darqué, Alexandra - 3906 WTh
Darst, Burcu - 3718 WTh
Dartigues, Jean-François - 3676 WTh, 3688 WTh
Darulova, Jana - 2081 MT, 3426 WTh
Darvas, Felix - 1006 MT, 2082 MT, 2103 MT
Darzi, Professor Ara - 1305 MT, 3641 WTh
Das, Samir - 3716 WTh
Das, Saumitra - 1737 MT
Dasari, Deepika - 1715 MT
Dasgupta, Samhita - 3888 WTh
Dassanayake, Maya - 3726 WTh
Datko, Mike - 1064 MT
Datta, Ritobrato - 3752 WTh
Daunizeau, Jean - 1773 MT
Dauvermann, Maria - **1845 MT**
Dauwels, Justin - 1667 MT
Davatzikos, Christos - 1352 MT, 1923 MT, 3730 WTh
Davey, Colin - 1384 MT
David, Anthony - 1174 MT
David, Daniel - 4008 WTh
David, Isabel - 3329 WTh
Davidenko, Nicolas - **4015 WTh**
Davidesco, Ido - 3908 WTh, **4024 WTh**, 4058 WTh, 1010 MT
Davies, Faraday - 3307 WTh, 4031 WTh
Davies-Thompson, Jodie - **1509 MT**
Davis, Ben - **4057 WTh**
Davis, John - 3548 WTh
Davis, Karen - 3993 WTh
Davis, Karen D - 1802 MT
Davis, Nick - 1862 MT
Davis, Nicole - 1477 MT, **3852 WTh**
Davis, Tyler - 1942 MT
Daw, Nathaniel - 3302 WTh, 1314 MT
Dawes, Helen - 1249 MT
Dawson, Debra - 4042 WTh
Dayan, Michael - 1211 MT
de Bode, Stella - 3100 WTh
de Borst, Aline - **1392 MT**
de Cheveigné, Alain - 3939 WTh
de deyne, simon - 1485 MT
De Ferria, Anna - 1526 MT
de Geus, Eco - 3394 WTh, 3826 WTh, 3924 WTh
de Graaf, Cees - 3900 WTh
de Grauw, Hendrik - 2084 MT
De Guio, François - 1097 MT
de Haan, Michelle - 3725 WTh
de Haan, Willem - 3803 WTh
de Jong, Bauke - 1214 MT
De Keyser, Jacques - 3565 WTh
de los Angeles, Christine Paula - **3904 WTh**
de Louw, Anton - 3108 WTh
De Luca, Alberto - **1682 MT**
De Lucia, Marzia - 1335 MT, 3922 WTh
De Martino, Federico - **3945 WTh**
De Munck, Jan - 1810 MT, 1640 MT
de Oliveira-Souza, Ricardo - 3793 WTh
de Pasquale, Francesco - 1710 MT, 3583 WTh
de Pasquale, Francesco - 1463 MT
de Ribaupierre, Anik - 3680 WTh
de Ribaupierre, Sandrine - 3680 WTh
de Ruiter, Michiel - 1138 MT, 1157 MT
De Sanctis, Teresa - **2063 MT**
De Schepper, Mélanie - 3565 WTh
De Smedt, Bert - 1418 MT
De Tiège, Xavier - 1519 MT, 1521 MT, 3798 WTh
de Vos, Maarten - 1732 MT
De Weer, An-Sofie - 1855 MT
de Zubicaray, Greig - 1281 MT, 1284 MT, 3005 WTh, 1278 MT, 1287 MT
de Zwart, Jacco - **1989 MT**, 3615 WTh
Dean, Matthew - 1002 MT
Deary, Ian - 1284 MT
Debernard, Laetitia - **1146 MT**, **1147 MT**
Debowska, Weronika - **1593 MT**
Dechent, Peter - 1045 MT, 1315 MT, 3166 WTh, 3203 WTh
Declerck, Jerome - 3046 WTh
Deen, Ben - **1816 MT**
DeFina, Phillip - **3293 WTh**
Degroot, Clotilde - 1210 MT
Dehaene, Stanislas - 3759 WTh
Dehaene-Lambertz, Ghislaine - 1470 MT, 1627 MT, 3616 WTh, 3749 WTh
Dehnhardt, Guido - 3844 WTh, 3861 WTh
Deibele, Anna - 3350 WTh
Del Felice, Alessandra - 3599 WTh
Delamillieure, Pascal - 3262 WTh
Delanty, Norman - 3111 WTh
DelBello, Melissa - 3184 WTh
Delcroix, Nicolas - 3262 WTh
Deldin, Patricia - 3178 WTh
Delemarre-van de Waal, Henriette - 1175 MT
DeLeo, Nicholas - 3730 WTh
Delgado, Mauricio - 1311 MT
Dell'Acqua, Flavio - 1458 MT, 1490 MT, 2867 MT, 3522 WTh, 3744 WTh, 3745 WTh, 3758 WTh, 3760 WTh, 3761 WTh, 3776 WTh, **3851 WTh**, **3855 WTh**, 3863 WTh
Dell'Acqua, Flavio - 3843 WTh
Della Penna, Stefania - 1463 MT, 1710 MT, 3489 WTh, 3583 WTh
Della-Justina, Hellen - **3931 WTh**
Delorme, Arnaud - 1452 MT
DeLuca, John - 1601 MT, 3648 WTh
Demertzi, Athena - 2021 MT
Demir, Ali - 3527 WTh, **3535 WTh**
Demirakca, Traute - **3372 WTh**
den Braber, Anouk - 3394 WTh, 3924 WTh
den Ouden, Hanneke - 2090 MT
Denckla, Martha - 1092 MT
Denison, Fiona - 1953 MT
Denney, Thomas - 3409 WTh
Dennis, Emily - **1258 MT,** 1674 MT
Dennis, Laura - **3013 WTh**, 3019 WTh, 3443 WTh
Dentico, Daniela - **1391 MT**
Deppe, Michael - 3129 WTh, 3389 WTh
Derado, Gordana - 1964 MT
Derntl, Birgit - 3202 WTh, 3331 WTh, 4094 WTh, 4105 WTh
DeRosse, Pamela - 3710 WTh
Derrfuss, Jan - **1603 MT**, 3891 WTh
Dery, Sebastien - **1711 MT**
Desai, Rutvik - 1497 MT
Desai, Shivani - 1088 MT
DeSalvo, Matthew - **3103 WTh**, 3789 WTh
Desbordes, Gaelle - 3473 WTh
Deschrijver, Eliane - 4117 WTh
Desco, M - 3741 WTh
Deserno, Lorenz - 1372 MT, 4081 WTh
Deshpande, Aniruddha - **1499 MT**
Deshpande, Gopikrishna - 3304 WTh, 3409 WTh
Deshpande, Hrishikesh - 1052 MT
Deshpande, Vibhas - 1250 MT, 3391 WTh
DeSimone, Kevin - **3467 WTh**
Desjardins-Crépeau, Laurence - 3687 WTh
Desmet, Charlotte - **4117 WTh**
Desseilles, Martin - 3222 WTh
Dessens, Arianne - 1159 MT
Deufel, Thomas - 3253 WTh
Deuschl, Christine - 3055 WTh
Deutsch, Georg - 1132 MT
Devous, Sr, Michael - 3029 WTh, 3674 WTh
Dewanjee, Pritha - 1246 MT

# E

# F

# G

Gaser, Christian - 1062 MT, **1897 MT**, 1945 MT, 1983 MT, 1984 MT, 2015 MT, 3092 WTh, 3237 WTh, 3709 WTh, 3830 WTh
Gasparovic, Chuck - 3586 WTh
Gassert, Roger - 4006 WTh
Gates, Kathleen - **1793 MT**, 1865 MT
Gatt, Justine M - 1277 MT, 1282 MT
Gattringer, Thomas - 1236 MT
Gau, Susan Shur-Fen - 1083 MT, 1094 MT
Gaubitz, Markus - 1647 MT
Gautam, Prapti - **1110 MT**
Gauthier, Claudine - **2096 MT**, 3427 WTh, **3687 WTh**
Gauthier, Susan - 1173 MT
GAVARET, Martine - 1724 MT, 3116 WTh
Gayda, Jessica - 3303 WTh
Gaymard, Bertrand - 1204 MT
Gaynor, Alexandra - 1620 MT, 3321 WTh
Gazea, Mary - 3551 WTh
Gazes, Yunglin - 3481 WTh, 3678 WTh, **3701 WTh**
Ge, Haitao - **3897 WTh**
Ge, Jianqiao - 1753 MT, **4075 WTh**
Ge, Sheng - 2053 MT
Ge, Shuzhi Sam - 3650 WTh
Ge, Tian - **1623 MT**
Gebhardt, Helge - 3677 WTh
Gee, James - 3865 WTh
Geerligs, Linda - **1798 MT**, 3671 WTh, **3685 WTh**
Geerts, Liesbeth - 1692 MT, **3474 WTh**
Geha, Paul - **3355 WTh**
Gehrig, Johannes - **2080 MT**
Geier, Charles - 1344 MT
Geiger, Lena - 1583 MT
Geisel, Olga - 3020 WTh
Geisler, Daniel - 3258 WTh, 3364 WTh
Geissler, Alexander - 1570 MT, **3425 WTh**, 3450 WTh, 3495 WTh
Gelao, Barbara - 1270 MT, 3468 WTh
Geminiani, Giuliano - 1054 MT
Gendelman, Howard - 1178 MT
Gennatas, Stathis - 1352 MT
Gentile, Giovanni - **3949 WTh**, 3962 WTh
Gentili, Claudio - **3204 WTh**
George, David - 3023 WTh
George, John - 3405 WTh, **3595 WTh**
Georgescu, Alexandra - 4106 WTh
Geraci, Joseph - **1829 MT**, 3156 WTh
Gerber, Jessica - 3965 WTh
Gerber, Wolf-Dieter - 1123 MT
Gerchen, Martin Fungisai - **1797 MT**
Gerig, Guido - 1050 MT, 1119 MT, 3506 WTh
Germain, Anne - 3155 WTh
Germann, Jurgen - 3748 WTh
Geroin, Christian - 3562 WTh
Gerraty, Raphael - 1914 MT
Gerstenberg, Miriam - 3212 WTh
Gerstner, Elizabeth - 3398 WTh
Gervai, Patricia - 3870 WTh
Gess, Jennifer - **1363 MT**, 1616 MT
Gessaroli, Erica - 1026 MT
Geurts, Jeroen - 1810 MT
Geva, Sharon - 1941 MT
Geyer, Alexandra - 1384 MT
Geyer, Stefan - 3384 WTh, 3810 WTh, 3811 WTh, 3816 WTh, 3819 WTh, 3820 WTh
Ghahremani, Dara - 3011 WTh, 3034 WTh, **3040 WTh**
Ghajar, Jamshid - 3283 WTh
Ghanaati, Hossein - 1856 MT
Ghazaleh, Naghmeh - 1290 MT
Ghebreab, Sennay - 4040 WTh, 4050 WTh
Ghesquière, Pol - 1418 MT
Gheysen, Freja - **1585 MT**
Ghosh, Boyd - 1199 MT, 1203 MT, 3093 WTh
Ghosh, Pia - 1785 MT
Ghosh, Satra - 1465 MT, 3195 WTh
Ghosh, Satrajit - 1445 MT, 1453 MT, 1466 MT, 1932 MT
Ghuman, Avniel - 1733 MT, 3612 WTh, 3739 WTh, 3800 WTh
Giacobbe, Peter - 1004 MT, 3156 WTh
Giacosa, Chiara - **1586 MT**, 1589 MT
Giaschi, Deborah - 1507 MT
Gibbard, Clare - **3503 WTh**
Gibbs, Richard - 3955 WTh
Giedd, Jay - 3397 WTh
Giedd, Jay - 1291 MT, 3252 WTh, 3723 WTh
Giel, Katrin - 1353 MT
Giese, Martin - 3651 WTh
Gilam, Avital - 3137 WTh
Gilam, Gadi - 3315 WTh
Gilbert, Guillaume - 1569 MT
Gill, Michael - 3233 WTh, 3244 WTh
Gillette, Robert - 3409 WTh
Gilman, Jodi - **1365 MT**, 1944 MT
Gilmore, John - 3724 WTh
Ginestet, Cedric - 3807 WTh
Giordano, Bruno - **3939 WTh**, 4109 WTh
Gitelman, Darren - 1167 MT, 3303 WTh
Giusti, Maria Assunta - 2067 MT
Gjedde, Albert - 2092 MT, 2098 MT
Glahn, David - 1284 MT, 1285 MT, 3184 WTh, 3211 WTh, 3250 WTh
Glass, John - 3839 WTh, 3848 WTh, **3850 WTh**
Glasser, Matthew - 1891 MT, 3788 WTh
GLAUNES, Joan - 1885 MT
Glauser, Tracy - 3118 WTh
Glehn, Felipe - 1153 MT
Gleich, Tobias - **3675 WTh**
Glen, Daniel - **1431 MT**, 1892 MT
Glerean, Enrico - 1877 MT
Globinsky, Ronen - 2092 MT, 2098 MT, 2100 MT, 2101 MT
Glodzik, Lidia - 3049 WTh
Glover, Gary - 2040 MT, 3454 WTh
Glover, Paul - 1735 MT, 4002 WTh
Gockel, Hedwig - 3093 WTh
Goebel, Rainer - 1893 MT, 3945 WTh
Goelman, Gadi - 4024 WTh
Goelz, Rangmar - 1109 MT, 1945 MT
Gog, Tamara - 1549 MT
Goghari, Vina - 1359 MT
Gogtay, Nitin - 3236 WTh, 3252 WTh
Goh, Matt - 3278 WTh, **3282 WTh**
Gohel, Suril - **3265 WTh**
Gohel, Suril - 3028 WTh, 3413 WTh
Gokcay, Didem - 1991 MT, 4016 WTh
Gola, Mateusz - **3886 WTh**
Golan, Tal - **3908 WTh**
Golarai, Golijeh - 3774 WTh, **4044 WTh**
Goldin-Meadow, Susan - 1481 MT
Goldman, Robin - 3597 WTh
Goldman, Serge - 1519 MT, 1521 MT, 3798 WTh
Goldsmith, Timothy - 1124 MT
Goldstein, Evan - 3300 WTh
Golestani, Ali - 2036 MT
Golkar, Armita - 3422 WTh
Golland, Polina - 1894 MT, 1932 MT
Gollub, Randy - 1452 MT, 3258 WTh, 3598 WTh, 3981 WTh, 3988 WTh, **1446 MT**, 3966 WTh, 3967 WTh
Gomez, Christopher - 3842 WTh
Gómez, Francisco - **2021 MT**
Gonçalves-Pereira, Pedro - 1458 MT
Gonen, Tal - 3315 WTh
Gong, Gaolang - 1491 MT, 1694 MT, 1950 MT, 3077 WTh, 3790 WTh
Gong, Qiyong - 1128 MT, 3221 WTh, 3161 WTh
Gong, Ruobin - 1790 MT
Gong, Yu - 3782 WTh
Gongvatana, Assawin - 1136 MT
Gonzales, Mitzi - **3419 WTh**, 3695 WTh
Gonzalez, Nadia - **1086 MT**
Gonzalez-Castillo, Javier - 1408 MT, 1645 MT, 3424 WTh, **3446 WTh**
González-Frankenberger, Berta - 1121 MT
González-Santos, Leopoldo - 3328 WTh
Goodwin, Brian - **1043 MT**
Goodyear, Bradley - 1163 MT, 1857 MT, 2036 MT
Goodyer, Ian - 3185 WTh
Gopal, Shruti - **1152 MT**
Gopinath, Kaundinya - **1860 MT**
Gorbach, Nico - 1973 MT
Gordon, Brian - 1581 MT
Gordon, Evan - 2022 MT
Gordon, Karen - 3927 WTh
Gore, John - 1112 MT, 3497 WTh, 3619 WTh
Gorges, Martin - **1202 MT**
Gorgolewski, Krzysztof - **1445 MT**, **1628 MT**, 3809 WTh, 3918 WTh
Gori, Pietro - **1898 MT**
Gorno-Tempini, Maria - 1785 MT
Goschke, Thomas - 1376 MT
Gößling-Arnold, Christina - 3327 WTh
Gossen, Anna - 3354 WTh
Gothe, Neha - 3697 WTh
Gotman, Jean - 1774 MT
Goto, Ryoi - 3766 WTh
Gottfried, Jay - 3904 WTh
Gotts, Stephen - 2016 MT
Goulas, Alexandros - 1549 MT
Goulden, Nia - **1862 MT**
Gouldthorp, Bethanie - 1475 MT
Gour, Natalina - **3057 WTh**
Goveas, Joseph - 1177 MT, 3088 WTh
Govind, Varan - 1669 MT
Govyadinov, Pavel - 1701 MT
Gowland, Penny - 1274 MT, 1279 MT, 1553 MT, 1778 MT, 1880 MT, 3428 WTh
Goya-Maldonado, Roberto - 3174 WTh, 3202 WTh, **3203 WTh**
Graber, Harry - 1900 MT
Grabner, Guenther - 3425 WTh
Grabowska, Anna - **2068 MT**
Grabowski, Thomas - 1200 MT, 1453 MT, 1476 MT, 1489 MT, 1505 MT, 1668 MT, 1679 MT, 1744 MT, 1758 MT, 1869 MT, 1976 MT, 1980 MT, 2103 MT, 3444 WTh
Gradin, Victoria - 1666 MT
Grady, Cheryl - 1766 MT, 1809 MT, 1849 MT, 3702 WTh
Graessel, David - 3844 WTh
Graham, Charlotte - 1146 MT, 1147 MT
Graham, Julia - 3185 WTh
Graham, Richard - 1184 MT
Graham, Simon - 1821 MT
Grahl, Arvina - 3984 WTh, 3996 WTh
Gram, Mikkel - 3570 WTh
Gramann, Klaus - 3563 WTh
Gramfort, Alexandre - **1728 MT**
Graner, John - 3272 WTh, 3281 WTh
Graner, John - **1824 MT**
Granger, Richard - 1487 MT

# H

Han, Kiwan - 1613 MT, 2029 MT, 4065 WTh, 4079 WTh
Han, Sang Woo - 4000 WTh
Han, Seongrok - 1003 MT
Han, Shihui - 4075 WTh
Han, Zaizhu - **1491 MT**
Hanawa, Sugiko - 1412 MT, 3200 WTh, 4063 WTh, 4064 WTh
Handjaras, Giacomo - **1498 MT**, 3054 WTh
Handwerker, Daniel - **1645 MT**, 3446 WTh
Hanganu, Alexandru - **1210 MT**
Hanke, Michael - **1466 MT**
Hansen, Leslie - 3896 WTh
Hansen, Mads - 1404 MT
Hansen, Tine - **3570 WTh**
Hanslmayr, Simon - 4054 WTh
Hanson, Catherine - 3028 WTh
Hanson, Erik - **1757 MT**
Hanson, Stephen - 3028 WTh
Hantke, Nathan - 3047 WTh
Hantschk, Irmgard - 3561 WTh
Hao, Xuejun - 1882 MT
Hao, Ying - 1024 MT
Hara, Kazuhiro - 1135 MT
Harding, Ian - **3232 WTh**
Hardwick, Robert - **1848 MT**
Hardy, Peter - 3307 WTh, 4031 WTh
Hare, Todd - 1307 MT
Harel, Michal - 4024 WTh, 4058 WTh
Harezlak, Jaroslaw - 1136 MT, **3414 WTh**
Hari, Riitta - 1704 MT, 1736 MT, 2062 MT, 3498 WTh, 4003 WTh, 4100 WTh
Häring, Hans-Ulrich - 3814 WTh
Harmony-Baillet, Thalia - 1121 MT
Harms, Michael - 1891 MT, **3448 WTh**
Harrington, Deborah - 1201 MT, 3283 WTh
Harrington, Gloria - 3205 WTh
Harris, Julia - 1088 MT
Harris, Richard - 1132 MT, 3966 WTh
Harrison, Ben J - 3232 WTh
Harrison, Sam - 1727 MT, **1772 MT**
Hart, Kimberly - 1544 MT
Hart, Susan - 3275 WTh
Hartanto, Tadeus - 1350 MT
Hartman, Catharina - 1115 MT, 2010 MT, 1091 MT, 1100 MT
Hartman, David - 1864 MT
Hartmann, Andreas - 1898 MT
Hartmann, Thomas - **1709 MT**
Hartmann, Yumi - 3359 WTh
Hartwig, Isabella - 1566 MT
Harvey, Simon - 3106 WTh
Hasan, Alkomiet - 1045 MT
Hasan, Khader - 1675 MT
Hasboun, Dominique - 1450 MT
Haselgrove, Christian - 1438 MT, 1452 MT
Hasher, Lynn - 3702 WTh
Hashim, Eyesha - 3384 WTh
Hashizume, Hiroshi - 1473 MT, **1532 MT**, 1981 MT, 3600 WTh, 4080 WTh
Hashmi, Javeria - **3981 WTh**
Haslacher, Helmuth - 3711 WTh
Hass, Johanna - 3211 WTh, 3258 WTh
Hassan, Sonia - 3726 WTh
Hassanpour, Mahlega - 3637 WTh, 3645 WTh, **3652 WTh**
Hasson, Uri - 4057 WTh
Haswell, Courtney - 3275 WTh, 3289 WTh
Hatch, Michelle - 3459 WTh
Hattingen, Elke - 1007 MT, 3476 WTh
Hauk, Olaf - 1414 MT
Haukvik, Unn Kristin - 3184 WTh, 3211 WTh
Hauser, Till-Karsten - 1109 MT, 1945 MT
Haut, Kristen - **3231 WTh**
Havermans, Remco - 3360 WTh
Havlicek, Martin - 1626 MT, **1800 MT**
Hawelka, Stefan - 1508 MT
Hawkey, Elizabeth - 1116 MT
Hawkins, Keith - 1338 MT
Hawrylycz, Michael - 1426 MT, 3215 WTh, 3757 WTh
Haxby, James - 1921 MT, 4021 WTh
Hayashi, Takuya - **3514 WTh**
Haynes, John-Dylan - 1381 MT, 1918 MT, 1933 MT, 4083 WTh
Haynor, David - 1976 MT, 1980 MT
Hayward, William - **1541 MT**, 1584 MT
Hazlett, Kathleen - 3047 WTh
He, Bin - 1023 MT, 3126 WTh, 3373 WTh, 3568 WTh
He, Chengqi - 1227 MT
He, Fangfang - 3435 WTh
He, George - 1614 MT
He, Hao - 1919 MT
He, Huiguang - 3441 WTh, 3505 WTh, 3780 WTh
He, Jianghong - 3910 WTh
He, Lili - **1982 MT**
He, Ning - 1128 MT
He, Qinghua - **1332 MT**
He, Wei - **3576 WTh**, 3731 WTh
He, Xiaofu - **1882 MT**
He, Ye - **3136 WTh**
He, Yong - 1491 MT, 1694 MT, 1803 MT, 1805 MT, 1818 MT, 1832 MT, 1950 MT, 3010 WTh, 3059 WTh, 3060 WTh, 3238 WTh, 3654 WTh, 3691 WTh, 3790 WTh, 2006 MT, 3077 WTh
Healy, Kaitlin - 1737 MT
Hebb, Adam - **1006 MT**
Hebenstreit, Felix - 3531 WTh
Heberlein, Keith - 1250 MT
Heekeren, Hauke - 3363 WTh
Heekeren, Karsten - 3212 WTh
Heflin, McKinley - 3061 WTh
Hegarty, Catherine - 1216 MT
Hege, Maike - 1827 MT
Hege, Maike - **1353 MT**, 3899 WTh
Heib, Dominik - 1552 MT
Heidemann, Robin - 3511 WTh, 3827 WTh, 4007 WTh
Heilig, Markus - 3006 WTh
Heilman, Kenneth - 1660 MT
Hein, Grit - 4116 WTh
Heinen, Florian - 3519 WTh
Heinen, Klaartje - 1786 MT
Heinrichs-Graham, Elizabeth - **1178 MT**, 3079 WTh
Heinz, Andreas - 1274 MT, 1279 MT, 1582 MT, 3012 WTh, 3018 WTh, 3020 WTh, 3030 WTh, 3032 WTh, 3177 WTh, 3213 WTh, 3428 WTh, 3438 WTh, 3461 WTh, 3675 WTh
Heinze, Hans-Jochen - 1372 MT, 1556 MT, 1906 MT, 4111 WTh
Heinzel, Sebastian - 3643 WTh
Heinzel, Stephan - **1582 MT**
Heinzle, Jakob - **2090 MT**, 3465 WTh
Heismann, Björn - 1895 MT
Heithoff, Sheila - 1178 MT
Heitzeg, Mary - 3164 WTh
Helbig, Juliane - 3021 WTh
Helbling, Saskia - **1721 MT**
Helfinstein, Sarah - **1304 MT**
Helland, Turid - 1514 MT
Helle, Liisa - **1910 MT**
Hellerbach, Alexandra - 3531 WTh, **3532 WTh**
Hellyer, Peter - **3767 WTh**
Helm, Lindsay - **3717 WTh**
Helmer, Catherine - 3676 WTh
Helmer, Karl - 1453 MT
Helton, Kathleen - 1164 MT, 3459 WTh
Hemrajani, Anshu - 3303 WTh
Henaff, Marie-Anne - 1061 MT
Henderson, James - **1791 MT**
Hendler, Talma - 1558 MT, 3137 WTh, 3315 WTh
Hengartner, Michael - 3235 WTh
Heni, Martin - 1827 MT, 3814 WTh
Henkel, Karsten - 3660 WTh
Henkin, Yael - 3937 WTh
Hennig, Jürgen - 1368 MT, 1743 MT, 1811 MT, 3112 WTh, 3603 WTh
Hennig-Fast, Dr., Kristina - 4082 WTh
Henry, Alex - 3215 WTh
Henry, Katy - 1267 MT
Henry, Roland - 3857 WTh
Hensch, Tilmann - 1958 MT
Henseler, Ilona - **1534 MT**
Hentrich, Anika - 3370 WTh
Hepburn, Susan - 1070 MT
Her, Ju Young - 3159 WTh, 3198 WTh
Herbert, Joseph - 1149 MT, 1168 MT
Herbst, Michael - 3471 WTh
Herdman, Anthony - 1090 MT
Herman, Alexander - 3224 WTh
Herman, Peter - **2102 MT**, **2115 MT**
Hermann, Bruce - 3705 WTh
Hermes, Dora - 2114 MT, 3416 WTh
Hernandez, Arturo - 1801 MT
Hernandez, Zachery - **1439 MT**, 1787 MT, 1838 MT
Hernandez Castillo, Carlos Roberto - **1198 MT**
Hernandez-Andrade, Edgar - 3726 WTh
Hernandez-Garcia, Luis - 1637 MT, 2094 MT
Hernández-García, Luis - 1825 MT
Herringa, Ryan - 3155 WTh
Herron, Timothy - **3285 WTh**
Herting, Megan - **3736 WTh**
Herz, Damian - **2074 MT**
Heskes, Tom - 1868 MT
Hess, Aaron - 1143 MT
Hess, Christian - 1242 MT, 1243 MT
Hesse, Maike - 2070 MT
Hester, Robert - 1379 MT, 3022 WTh
Hetrick, William - 3008 WTh
Heuft, Gereon - 1647 MT
Heuser, Isabella - 3183 WTh
Hevner, Robert - 3757 WTh
Hey, Silke - 3474 WTh
Hiba, Bassem - 3688 WTh
Hibar, Derrek - **1263 MT**, 1281 MT, **3184 WTh,** 1287 MT, 3005 WTh, 3050 WTh, 3211 WTh
Hibbard, Kate - 3118 WTh
Hickey, Clayton - **3892 WTh**
Hickie, Ian - 3510 WTh
Hickok, Gregory - 1542 MT
Hida, Akiko - 3361 WTh
Higgins, Nathan - 3928 WTh
Higo, Noriyuki - 3514 WTh
Hildebrandt, Maria - 3323 WTh
Hill, Kevin - **1308 MT**
Hill, Susanna - 1088 MT
Hillis, Argye - 1987 MT
Himmer, Lea - **1552 MT**
Hinkley, Leighton - **3223 WTh**, 3224 WTh, 3284 WTh
Hinne, Max - **1868 MT**

# I



# J

# K

Kupers, Ron - 3835 WTh
Kupka, Michael - 1022 MT
Kuplicki, Rayus - **1907 MT**, 3292 WTh
Kurata, Jiro - **3976 WTh**
Kurkowski, Zdzisław - 3872 WTh
Kurth, Florian - **3751 WTh,** 3830 WTh
Küsters, Benno - 3815 WTh
Kutas, Marta - 3558 WTh
Kutscha, Martha - 1046 MT
Kuusikko-Gauffin, Sanna - 1081 MT
Kuzmanovic, Bojana - 4106 WTh, **1298 MT**
Kwak, Kichang - 1969 MT, **3375 WTh**
Kwok, Kenneth - 3873 WTh
Kwok, Young - 1150 MT
Kwon, Gyu-Hyun - 1387 MT, 1393 MT
Kwon, Hunki - **3534 WTh**
Kwon, Hyeok Gyu - 1233 MT, 3502 WTh, 3507 WTh
Kwon, Hyuk Chan - 1206 MT, 3109 WTh
Kwon, JaeHyung - **1316 MT**
Kwon, Jiyeon - 3577 WTh
Kwon, Oh-Hun - **3080 WTh**
kwon, soonwook - 1222 MT
Kwon, Tae-Gun - 1033 MT
Kwon, Yong Hyun - **3502 WTh**
Kwon, Yong Hyun - **1233 MT**
Kwon, Yong-Ju - 1406 MT
Kyong, Jeong-Sug - 1397 MT, **3796 WTh**

# L

L Dansereau, Christian - **1756 MT**, **1913 MT**
Labra, Nicole - **1690 MT**
Labus, Jennifer - **1129 MT**, 1132 MT, 1267 MT, 2008 MT
Lacerda, Luis - **1458 MT**
Lacey, Simon - 1860 MT
LaConte, Stephen - 1650 MT, 3291 WTh, 3295 WTh
Ladda, Marie - **1568 MT**
Lado, Fred - 1010 MT
Ladouceur, Cecile - 3190 WTh
LaFleur, Karl - 1023 MT
Lafontaine, Anne-Louise - 1210 MT
LaFrance, W - 1763 MT
Lagae, Lieven - 1084 MT, 1418 MT
Laganà, Maria Marcella - 3607 WTh
Lagarrigue, Aurélie - 1513 MT
Lagopoulos, Jim - 3242 WTh, 3510 WTh
Lahti, Adrienne - 3229 WTh, 3257 WTh, 1660 MT, 3268 WTh
LaHue, Sara - 3284 WTh
Lai, Janie - 1074 MT
Laidlaw, David - 1672 MT, 1676 MT
Laine, Andrew - 3627 WTh
Lainhart, Janet - 1082 MT
Laird, Angela - 1077 MT, 1436 MT, 1439 MT, 1443 MT, 1525 MT, 1784 MT, 1787 MT, 1814 MT, 1838 MT, 1842 MT, 1938 MT, 3754 WTh, 3764 WTh, 3958 WTh, 3982 WTh, 4088 WTh, 3055 WTh, 2003 MT
Laistler, Elmar - 1027 MT
Lajoie, Isabelle - **3629 WTh**
Lakshmanan, Balaji - 2071 MT
Lalancette, Marc - 1720 MT
Laliberte, Christianne - 3130 WTh
Lalonde, Francois - 3397 WTh
Lam, Nietzsche - 1486 MT, 1495 MT
Lambalk, Cornelis - 1378 MT
Lambert, Christian - **3666 WTh**
Lamm, Claus - 3346 WTh, 3482 WTh, 3984 WTh, 3996 WTh
Lamme, Victor - 4040 WTh, 4050 WTh
Lamont, Ashley - 3699 WTh
Lancaster, Jack - 1938 MT, 3131 WTh
Lancaster, Melissa - 3047 WTh
Landen, Mikael - 3184 WTh
Landgraf, Steffen - **3269 WTh**
Landgrebe, Michael - 3259 WTh, 3374 WTh
Landim, Ricardo - **3591 WTh**
Landis, Drew - 1441 MT
Landis, Theodor - 3884 WTh
Landman, Bennett - 1284 MT, 1285 MT
Laneri, Davide - 3442 WTh
Lanfer, Benjamin - **1968 MT**
Lang, Donna - 3383 WTh
Langbehn, Marian - 1324 MT, 3358 WTh, 3359 WTh
Langbein, Kerstin - 2015 MT, 3237 WTh
Lange, Joachim - 4010 WTh
Lange, Nicholas - 1082 MT
Langemak, Shari - 3561 WTh
Langen, Marieke - 3721 WTh
Langenecker, Scott - 3158 WTh, 3164 WTh, 3205 WTh
Länger, Anna - **3462 WTh**, 3548 WTh
Langer, Nicolas - **1104 MT,** 1516 MT
Langguth, Berthold - 3259 WTh, 3374 WTh
Langkammer, Christian - 1236 MT, 3453 WTh
Langner, Robert - **1842 MT**, 1938 MT, 3326 WTh, 3669 WTh, 3958 WTh
Langs, Georg - **1932 MT**
Lanzenberger, Rupert - 1997 MT, 3165 WTh, 3346 WTh, 3429 WTh, 3482 WTh, 3661 WTh, 3984 WTh, 3996 WTh
Lao, Yi - 3273 WTh
Laperriere, Normand - 3533 WTh
Laplante, David - 3402 WTh
LaPrate, Leah - 3009 WTh
Larsen, Bart - **3632 WTh**
Larson, Charles - 1001 MT, 1520 MT, 1525 MT
Larson, Eric - 1728 MT
Larson-Prior, Linda - **1463 MT**, 1701 MT, **4055 WTh**
LaRue, Asenath - 3705 WTh
LaSasso, Carol - 3929 WTh
Lassonde, Maryse - 1523 MT
Latinus, Marianne - 3959 WTh
Lau, Gary - 1183 MT
Laucht, Manfred - 1265 MT, 1269 MT
Laufs, Helmut - 2080 MT
Laufs, Helmut - 4057 WTh
Laughlin, Suzanne - 3533 WTh, 3578 WTh, 3858 WTh
Laughton, Barabara - 1143 MT, 1144 MT, 3523 WTh, 1904 MT
Laumann, Timothy - 1861 MT, **3818 WTh**
Launer, Lenore - 1428 MT
laure, Zago - 3756 WTh
Laureys, Steven - 1762 MT, 2021 MT, 3420 WTh, 3911 WTh
Lauzon, Michel - 1857 MT
Laventure, Samuel - 1590 MT
Lavigne, Katie - **3241 WTh**
Lavoie, Marie-Audrey - **4076 WTh**
Lavrador, Rui - **1689 MT**, 3525 WTh
Lavretsky, Helen - 1151 MT
Law, Meng - 1271 MT, 3273 WTh, 3868 WTh
Law, Nicole - 3533 WTh, **3858 WTh**
Lawrence, Andrew - **3805 WTh**
Lawrence, Claire - 1279 MT, 3012 WTh, 3428 WTh, 3461 WTh
Lawrence, Natalia - 3379 WTh
Lawrie, Stephen - 1845 MT
Lawson, Adam - 3692 WTh
Lazar, Tiffany - **3870 WTh**
Lazeyras, François - 3124 WTh, 3906 WTh
Le, Vu - 1248 MT
le Bars, Emmanuelle - 3379 WTh
Le BIhan, Denis - 1885 MT
Le Troter, Arnaud - 3120 WTh
Le Troter, Arnaud - 1456 MT, 1579 MT, 3605 WTh
Leahy, Richard M. - 1688 MT, 1711 MT, 1723 MT, 3781 WTh, 1883 MT
Leal, Suzanne - 3955 WTh
Leavitt, Victoria - 1161 MT
Lebed, Evgeniy - **1887 MT**
Lebel, Alyssa - 3980 WTh
Leboyer, Marion - 1690 MT
Lecce, Francesca - **3753 WTh**, 3775 WTh
Lecomte, Sophie - 1898 MT
Lee, Ah Young - **3536 WTh**
Lee, Ahee - 1021 MT, 1033 MT, 1387 MT, 1393 MT
Lee, Annie - 3170 WTh
Lee, Chany - **3127 WTh**
Lee, Dong Soo - 1098 MT, 1130 MT, 1140 MT, 1551 MT, 1954 MT, 1182 MT
Lee, Dong-Kyun - **1969 MT**
Lee, Dongha - **1642 MT**, 4119 WTh
Lee, Eun Bong - 1171 MT
Lee, Grace - 3190 WTh
Lee, Gregory - 1637 MT, 2094 MT, 3512 WTh, 3720 WTh
Lee, Gwan-Taek - 3555 WTh
Lee, Hana - 3284 WTh
Lee, Hando - **3508 WTh**
Lee, Hsu-Lei - **1811 MT**
Lee, Hun - 3507 WTh
Lee, Hyekyoung - 1551 MT, **1954 MT**
Lee, Hyo-Jeong - 1130 MT, 1140 MT
Lee, Il-Sun - 1406 MT
Lee, Jae Sung - 1182 MT
Lee, Jaehyuk - 3289 WTh
Lee, Jason - 2085 MT
Lee, Jee Young - 1182 MT
Lee, Jee-Hyun - 1226 MT, 1254 MT
Lee, Jeungchan - **3989 WTh**
Lee, Jimmy - 3261 WTh
Lee, Joel - 3808 WTh
Lee, Jong Doo - 1040 MT, 1134 MT, 1965 MT, 2005 MT
Lee, Jong-Hwan - **1413 MT**, 1527 MT
Lee, Jong-Min - 1169 MT, 1963 MT, 1969 MT, 3080 WTh, 3375 WTh, 3534 WTh, 3601 WTh, 3716 WTh
Lee, Jongbin - 4074 WTh
Lee, Jongho - 3376 WTh, 3392 WTh
Lee, Joseph - **2072 MT**
Lee, Jun-Hwan - 3989 WTh
Lee, Jung Hwa - 1388 MT
Lee, Jung Suk - 3460 WTh
Lee, Jung-Hyun - 1131 MT
Lee, Jungsoo - **1878 MT**
Lee, Kangjoo - **1774 MT**
Lee, Kendall - 1000 MT
Lee, Kendall - 1003 MT
Lee, Kyoung-Uk - 3141 WTh
Lee, Kyung Hwa - 3024 WTh, **3190 WTh**
Lee, Mi Young - 3508 WTh
Lee, Mi Young - 1233 MT, 3540 WTh, **3655 WTh**
Lee, Min Ji - 1033 MT, **1387 MT**, **1393 MT**
Lee, Myung Joo - 1365 MT
Lee, Pei-Lin - **1185 MT**

# M

McAleer, Phil - 4109 WTh
McAlonan, Grainne - 1183 MT
McAndrews, Mary Pat - 1004 MT, 3105 WTh
McAuley, Edward - 3697 WTh
McAuley, James - 1041 MT
McAvoy, Mark - 1562 MT
McCarthy, Gregory - 3289 WTh
McCarthy, Kevin - **3397 WTh**
McCarthy, Timothy J. - 1962 MT
McConnell, Dina - 3533 WTh
McCormick, David - 2102 MT
McCullough, Stephen - **3380 WTh**
McCurry, Katherine - 1299 MT, 1333 MT
McDonald, Brenna - 1137 MT
McDonald, Colm - 3184 WTh
McEwen, Sarah - 2042 MT
McGinnis, Menton - 3334 WTh
McGlade, Erin - 3271 WTh
McGlennen, Kristine - 1329 MT
McGlone, Francis - 4002 WTh
McGrath, Callie - **1005 MT**
McGregor, Heather - **2061 MT**
McGregor, Keith - 3862 WTh
McGruer, Fiona - **4036 WTh**
McGuffin, Peter - 3149 WTh
McGuire, Joseph - **1334 MT**
McGuire, Philip - 3807 WTh
McHugh, Meredith - **3029 WTh**
McHugh, Robert - 2116 MT
McIlhany, Dennis - 3273 WTh
MCINTOSH, Andrew - 1284 MT, 1845 MT, 3184 WTh
McIntosh, Anthony - 1396 MT, 1506 MT, 1961 MT, 3178 WTh, 1858 MT
McIntosh, Randy - 1400 MT, 4046 WTh
McKenzie, Alison - 1248 MT
McKindles, Ryan - **2079 MT**
McKinstry, Robert - 3163 WTh
McLaughlin, Susan - **3928 WTh**
McMahon, Katie - 1258 MT, 1284 MT, 1287 MT, 1610 MT, 1674 MT, 3005 WTh, 1281 MT, 1492 MT, 1278 MT
McMains, Stephanie - **3412 WTh**
McManus, Claire - 3965 WTh
McMillan, Corey - **3096 WTh**
McMurray, Bergen - 1426 MT, 3757 WTh
McNab, Fiona - **1349 MT**
McNamara, Robert - 1299 MT, 1333 MT
McNorgan, Chris - **1512 MT**
Meaney, Jim - 3111 WTh
Mechelli, Andrea - 3807 WTh
Medland, S - 1284 MT
Medvedev, Andrei V. - **2017 MT**
Meeker, Timothy - **3983 WTh**
Meens, PHF - 3144 WTh
Mehnert, Jan - 2108 MT
Mehta, Ashesh - 1010 MT, 3908 WTh, 4024 WTh
Mehta, Mitul - 3758 WTh, 3776 WTh
Mehta, Sonya - 1869 MT, **3444 WTh, 1476 MT**, 1668 MT, 1976 MT
Meindl, Thomas - 1370 MT, 3854 WTh
Meintjes, Ernesta M. - 1087 MT, 1097 MT, 1112 MT, 1114 MT, 1605 MT, 1678 MT, 1904 MT, 3523 WTh, 1899 MT, 1143 MT, 1144 MT, 3538 WTh
Meinzer, Marcus - 1011 MT
Mejia-Constain, Beatriz - 1210 MT
Mejias, Sandrine - **1419 MT**
Mekary, Said - 3687 WTh
Melcher, Tobias - 3243 WTh, **3347 WTh**
Melchert, Uwe - 3587 WTh
Meletti, Stefano - 3121 WTh
Melhorn, Susan - 3444 WTh
Mella, Nathalie - **3680 WTh**
Mellet, Emmanuel - 3756 WTh
Mellinger, Juergen - 3582 WTh
Melloni, Lucia - 3908 WTh
Melmed, Calvin - 1188 MT
Meltzer-Asscher, Aya - 1488 MT
Melzer, Corina - **1973 MT**
Melzer, Tracy - 1146 MT, 1147 MT, **1209 MT**
Memarian, Negar - 1720 MT
Mendola, Janine - 4042 WTh
Mendrek, Adrianna - 3222 WTh
Meng, Chun - 3179 WTh
Mennes, Maarten - 1091 MT, 1465 MT, **2010 MT**, 2014 MT, **3466 WTh**
Mennigen, Eva - **1377 MT**
Menning, Sanne - **1138 MT**
Menon, David - 1993 MT, 3286 WTh
Menon, Vinod - 1051 MT, 1069 MT, 1078 MT, 1194 MT, 1336 MT, 1407 MT, 1415 MT, 1554 MT, 1881 MT, 2032 MT, 3823 WTh
Menz, Mareike - 3762 WTh
Menzel, Antonia - **3112 WTh**
Mercadillo, Roberto - 3328 WTh
Mercier, Catherine - 1012 MT
Meredith Jr., Jere - 3689 WTh
Merhof, Dorit - 3046 WTh
Merillat, Susan - 1679 MT, 1758 MT, 3404 WTh
Merla, Arcangelo - 3644 WTh
Merlo Pich, Emilio - 1756 MT
Mervis, Carolyn - 3543 WTh
Mesgarani, Nima - 1529 MT
Mesmoudi, Salma - 1432 MT, **1448 MT**, 1449 MT, **1450 MT**
Messe, Arnaud - 1448 MT, 1449 MT, 1450 MT
Mesulam, Marsel - 3745 WTh
Metcalf, Nicholas - 3283 WTh
Metcalfe, Arron - 1554 MT
Metzak, Paul - **3220 WTh**, 3241 WTh
Metzger, Coraline - **3370 WTh**, 4111 WTh
Metzger, Coraline - 1906 MT
Metzler, Hannah - 4105 WTh
Meunier, Sabine - 1044 MT, 1585 MT
Mevorach, Carmel - 1031 MT
Meyer, Bernhard - 3152 WTh, 3187 WTh, **3711 WTh**
Meyer, Friederike - 4113 WTh
Meyer, Lars - 1471 MT
Meyer, Martin - 3777 WTh, 3938 WTh
Meyer, Patric - 2969 MT
Meyer-Lindenberg, Andreas - 1265 MT, 1269 MT, 3213 WTh, 3609 WTh, 1102 MT, 1583 MT, 3177 WTh
Meyerand, Mary - 1826 MT
Meyers, Kortni - 3164 WTh
Meza, Jane - 1178 MT
Mezer, Aviv - 1680 MT, 3509 WTh, 3737 WTh, **3849 WTh**
Mezzacappa, Pia - 3965 WTh
Mhembere, Disa - 1686 MT, 1985 MT, **1925 MT**
Miall, Chris - 1469 MT
Miao, Wen - **3505 WTh**, 3780 WTh
Miao, Xinyuan - **3633 WTh**
Miceli, Michael - 3903 WTh
Michael, Andrew - 1152 MT, 1754 MT, **1777 MT**
Michalareas, Giorgos - 1463 MT
Michel, Christoph - 3552 WTh, 3884 WTh
Michel, Vincent - **1437 MT**
Micheli, Cristiano - **3584 WTh**
Michels, Lars - 2075 MT, 3212 WTh
Michely, Jochen - **1195 MT**
Michie, Patricia - 1362 MT
Mickey, Brian - 3164 WTh, 3318 WTh
Miedl, Stephan - **1309 MT**
Miettunen, Jouko - 3071 WTh
Migliaccio, Raffaella - 3837 WTh
Mignogna, Valeria - 1562 MT
Miikkulainen, Risto - 1639 MT
Mijovic, Bogdan - 1732 MT
Mikl, Michal - 1626 MT, 1741 MT, **1911 MT**, 3053 WTh, 3624 WTh
Mikulis, David - 1176 MT, 3801 WTh
Milazzo, Anna-Clare - 1320 MT, **2113 MT**
Milham, Michael - 1457 MT, 1465 MT, 1912 MT, 1996 MT, 3136 WTh, 3691 WTh, 3778 WTh, 1451 MT, 2038 MT, 1080 MT
Miller, Amanda - 1477 MT
Miller, Bruce - 1785 MT, 3065 WTh, 3689 WTh
Miller, David - 1146 MT, 1147 MT
Miller, Debra - 2116 MT
Miller, Kai - 2082 MT
Miller, Karen - 3033 WTh
Miller, Karla - 1740 MT, 3408 WTh
Miller, L. Stephen - 1435 MT, 1789 MT
Miller, Meghan - 1116 MT
Miller, Michael - 3163 WTh
Miller, Michael - 1960 MT
Miller, Robyn - **1754 MT**, 1777 MT
Miller, Steven - 1090 MT
Miller, Thomas - 1553 MT
Millington, Rebecca - **3085 WTh**
Mills, Brian - **1074 MT**
Milner, Rafal - 1501 MT, 3746 WTh
Min, Jung-a - 1316 MT
Min, Li - 1427 MT
Min, Paul - **1000 MT**, 1003 MT
Minas, Jennifer - 1104 MT
Mingoia, Gianluca - **2015 MT**, **3237 WTh**
Miotto, Diego - 2063 MT
Miotto, Eliane - 1126 MT, 3070 WTh
Miranda, Debora - 3662 WTh
MIRANDA, Ruben - 1274 MT
Miranda Dominguez, Oscar - **3452 WTh**
Mirandola, Laura - 3121 WTh
Misaki, Masaya - 1908 MT, 3140 WTh, **3151 WTh**, 3154 WTh, 3196 WTh, 3197 WTh, **3396 WTh**
Mishima, Kazuo - 3361 WTh, 3411 WTh, 3919 WTh
Misic, Bratislav - 1858 MT, **1961 MT**, 3178 WTh, 4046 WTh
Missimer, John - 1242 MT, 1243 MT
Mistry, Nilesh - 1150 MT
Mitchell, Braxton - 1284 MT
Mitchell, Suzanne - 3013 WTh, 3019 WTh, 3356 WTh, 3443 WTh
Mitchell, Tom - 3623 WTh
Mitolo, Micaela - 1026 MT
Mitterhauser, Markus - 3661 WTh
Miyamoto, Tamaki - **4034 WTh**
Miyauchi, Carlos - 3200 WTh, 4063 WTh
Miyauchi, Carlos Makoto - 4064 WTh
Mizuiri, Danielle - 3223 WTh, 3284 WTh
Mo, Jue - 3602 WTh
Mocaiber, Izabela - 3329 WTh
Mocanu, Victor - 2104 MT
Modai, Shira - 3137 WTh
Mödder, Ulrich - 3663 WTh, 3670 WTh
Modic, Michael - 3299 WTh
Modo, Michel - 3522 WTh, 3851 WTh
Moebus, Susanne - 3663 WTh, 3670 WTh
Moeller, Steen - 1740 MT, 3391 WTh
Moens, Sarah - 1223 MT
Moerel, Michelle - 3945 WTh

# N

Naliboff, Bruce - 2008 MT
Nam, Eui-Cheol - 3847 WTh
Nam, Seungkyu - **2052 MT**
Nan, Weizhi - 1351 MT
Nanetti, Luca - 3228 WTh, **3900 WTh**
Nangini, Cathy - 3498 WTh
Napadow, Vitaly - 1799 MT, 3965 WTh, 3966 WTh, 3989 WTh
Napoliello, Eileen - 1089 MT, 1467 MT
Narayan, Manjari - **1828 MT**, 3955 WTh
Narayana, Shalini - **1578 MT**
Narayanan, Sridar - 1158 MT
Nardini, Cicero - 1126 MT
Narr, Katherine - 1114 MT, 1514 MT, 3002 WTh, 3168 WTh, 3191 WTh, 3255 WTh, 3830 WTh
Nasrallah, Fatima Ali - 1238 MT
Nauman, Eric - 3277 WTh, 3280 WTh, 3296 WTh
Naumczyk, Patrycja - **3872 WTh**
Navarro de Lara, Lucia - **1027 MT**
Navarro Schroeder, Tobias - **1920 MT**
Navia, Bradford - 1136 MT
Nawijn, Laura - 3180 WTh
Nayar, Kritika - 1080 MT
Naylor, Bruce - 1639 MT
Nazarian, Bruno - 1513 MT
Nazeri, Arash - 1856 MT
Neale, Mike - 3723 WTh
Nees, Frauke - 1274 MT, 1279 MT, 3428 WTh
Neil, Jeffrey - 3727 WTh
Nelissen, Natalie - 1855 MT
Nellen, Alexa - 3354 WTh
Nelson, Cindy - 3126 WTh
Nemni, Raffaello - 3607 WTh
Nenadic, Igor - 2015 MT, 3237 WTh, 3253 WTh
Nenert, Rodolphe - 3268 WTh
Nerio, Christopher - 3292 WTh
Nestor, Liam - 3022 WTh, 3040 WTh
Neto Henriques, Rafael - 1458 MT, **3501 WTh**
Nettekoven, Charlotte - **1046 MT**, 1237 MT
Neufang, Susanne - 4095 WTh
Neufeld, Miri - 4058 WTh
Neumann, Jane - 1372 MT, 3055 WTh, 3366 WTh, 3921 WTh
Neuper, Christa - 2086 MT
Neuper, Christa - 3453 WTh
Neuringer, Martha - 2004 MT
Nevrly, Martin - 1215 MT
Newbould, Rexford - 3975 WTh
Newman, Sharlene - 3008 WTh
Newton, Allen - 3619 WTh
Ng, Bernard - **1833 MT**, 3086 WTh
Ng, Janet - **3000 WTh**
Ng, Lydi - 3757 WTh
Ng, Lydia - 1426 MT
Ng, Pamela - **3977 WTh**
Ng, Tommy Hock Beng - **1360 MT**
Ngeow, Mei Yi - 3679 WTh
Ngeow, Mei Yi - 3665 WTh
Nguyen, Dang Khoa - 1569 MT
Nguyen, Jenny - 3737 WTh
Nguyen, Thanh - 1173 MT
Nguyen, Tuong-Vi - **1276 MT**
Nguyen, Tuong-Vi - 3207 WTh
Nguyen, Vinh - **3606 WTh**
Ni, Huangjing - **3693 WTh**
Niazy, Rami - 1717 MT, 1718 MT
Nichelli, Paolo - 3121 WTh, 4114 WTh
Nichols, Nolan - **1453 MT,** 1744 MT
Nichols, Thomas - 1284 MT, 1285 MT, 1289 MT, 1623 MT, 1808 MT, 1929 MT, 1939 MT, 2046 MT, 2048 MT
Nicholson, Timothy - 1174 MT
Nickerson, Lisa - 3206 WTh
Nickl-Jockschat, Thomas - **1077 MT**, 3167 WTh
Niddam, David Meier - 3997 WTh
Niehusmann, Pitt - 3129 WTh
Nielsen, Jared - **1075 MT**, 1119 MT
Nielsen, Rasmus - 3345 WTh
Nielson, Kristy - 3047 WTh
Nierhaus, Till - **4005 WTh**
Niessen, Wiro - 1663 MT
Niethammer, Marc - 1889 MT
Nieto-Castanon, Alfonso - 1537 MT
Nigg, Joel - 1101 MT, 1106 MT, 1117 MT, 1793 MT, 3356 WTh, 3472 WTh, 1116 MT
Nigri, Anna - 3415 WTh, **3470 WTh**
Nikas, Christine - 4018 WTh
Niki, Kazuhisa - 3914 WTh
Nikkinen, Juha - 1081 MT, 3071 WTh, 3603 WTh
Nikonova, Evgenia - 1619 MT
Nikulin, Vadim - **2108 MT**, 4009 WTh
Nilsonne, Gustav - **3317 WTh**
Nimgaonkar, Vishwaijit - 3270 WTh
Ning, Xinbao - 3693 WTh
Nir, Talia - 1295 MT, 1648 MT, **3091 WTh**, 3100 WTh, 3504 WTh, 3836 WTh, 3845 WTh, 3859 WTh
Nishimoto, Shinji - 4030 WTh, 4032 WTh
Nishimura, Yukika - 3635 WTh
Nishino, Tomoyuki - 3157 WTh, 3163 WTh
Nitrini, Ricardo - 3070 WTh
Nitsche, Michael - 1018 MT
Niu, Haijing - 1818 MT, **3654 WTh**
Niu, Zhendong - 1871 MT
Niziolek, Caroline - **1536 MT**
Noack, Cornelia - 2108 MT
Nobili, Flavio - 1958 MT
Noble, Kimberly - 3742 WTh
Noirhomme, Quentin - 2021 MT
Noji, Nanae - 1228 MT
Nolan, Daniel - 3448 WTh
Nolden, Sophie - **3320 WTh**
Noll, Doug - 3158 WTh
Nolte, Guido - 1699 MT, 1710 MT
Nolte, Tobias - 4111 WTh
Nombela Otero, Cristina - 1189 MT
Noonan, Sarah - **3889 WTh**
Nordahl, Christine - 3401 WTh, 3841 WTh
Noriuchi, Madoka - 3343 WTh
Norman, Andria - 3047 WTh
Norman, Jane - 1953 MT, 3735 WTh
Noronha, Carol - **3236 WTh**
Norr, Megan - 1056 MT, 1057 MT, 2022 MT
Norris, David - 1920 MT, 2011 MT, 3511 WTh, 3815 WTh
Northoff, Georg - 1408 MT
Norton, Andrea - 1394 MT
Norton, Elizabeth - 1516 MT
Noseworthy, Michael - 3533 WTh
Notebaert, Karolien - 3014 WTh
Nöthen, Markus - 3253 WTh
Notturno, Francesca - 1020 MT
Nourski, Kirill - **3943 WTh**
Novak, Michael - 1581 MT
Novembre, Giovanni - 4101 WTh
Novotny, Edward - 3119 WTh
Nowicka, Anna - 1076 MT
Nozawa, Takayuki - 1412 MT
Nozawa, Takayuki - 4064 WTh
Nucci-da-Silva, Mariana - **3298 WTh**, **3437 WTh**, 3499 WTh, 4052 WTh
Nucifora, Paolo - **3517 WTh**
Nudo, Randolph - 1235 MT
Nuechterlein, Kieth - 3231 WTh, 3255 WTh
Nugent, Allison - 2106 MT, **3160 WTh**, 3184 WTh, 3209 WTh
Nummenmaa, Lauri - 1369 MT
Nunes, Rita - 1458 MT, 3501 WTh
Nuñez, S. Christopher - 1110 MT
Nurmikko, Turo - 1030 MT, 3385 WTh
Nurminen, Jussi - 4100 WTh
NUSBAUM, HOWARD - 1530 MT
Nusslock, Robin - 3362 WTh
Nutt, David - 3767 WTh
Nutt, John - 1187 MT
Nuutila, Pirjo - 1369 MT
Nuwanthi Heendeniya, Heendeniya - 1267 MT
Nwosu, Benjamin - 3181 WTh
Nyberg, Lars - 2028 MT
Nye, Matthew - 3726 WTh

# O

O'Boyle, Michael - 3882 WTh
O'Brien, Carol - 3233 WTh, 3244 WTh
O'Connell, Redmond - 1127 MT, 1300 MT, 3765 WTh
O'Connor, Mary - 3002 WTh
O'Daly, Owen - 1174 MT
O'Doherty, John - 1328 MT
O'donnell, Brian - 3008 WTh
O'Hanlon, Erik - 3111 WTh
O'Neill, George - 3572 WTh
O'Neill, George - **3571 WTh**
O'Neill, Jennifer - 3079 WTh
O'Neill, Joseph - 1154 MT, 3479 WTh
O'Reilly, Helen - 3725 WTh
O'Shea, Andrew - 3978 WTh
O'Sullivan, Katriona - 1300 MT, 3041 WTh
Oakes, Terrence - 3288 WTh, **3290 WTh**
Oakes, Terry - 1824 MT, 3272 WTh, 3281 WTh
Oba, Kentaro - 3361 WTh, **3411 WTh**, 3919 WTh
Oberlin, Brandon - 3414 WTh
Obermann, Caitriona - 3235 WTh
Obeso, Ignacio - **1346 MT**, 3016 WTh
Oboshi, Yumi - 3097 WTh
Obrig, Hellmuth - 1534 MT, 3636 WTh
Obuchowski, Nancy - 3299 WTh
Oddo, Mauro - 3922 WTh
Oedekoven, Christiane - **3684 WTh**
Oesingmann, Niels - 1168 MT
Oetken, Sarah - **4062 WTh**
Ofen, Noa - 1565 MT
Ogawa, Mikako - 3097 WTh
Ogg, Robert - 1148 MT, 1468 MT, 3459 WTh
Ogg, Robert - 1164 MT
Ogino, Takeshi - 1574 MT
Oguro, Keiji - 3649 WTh
Oh, Jooyoung - **3254 WTh**
Oh, Maeng-Keun - **1965 MT**
Oh, Sehong - **3376 WTh**
Oh, Seung-Ha - 1130 MT
Oh, Seung-Ha - 1140 MT
Ohgami, Yoshimi - **3883 WTh**, 3887 WTh
Oishi, Naoya - 1655 MT
Ojemann, Jeffrey - 1489 MT, 2082 MT, 3119 WTh
Oka, Noriyuki - 3642 WTh, 3653 WTh
Okazaki, Shinji - 1093 MT
Okazawa, Hidehiko - 3740 WTh
Okely, Judith - 4019 WTh
Okonkwo, Ozioma - 3705 WTh
Olafsson, Valur - 2110 MT
Olff, Miranda - 3180 WTh

# P

Peng, Xiaoling - 3895 WTh
Peng, XiaoZhe - **4097 WTh**
Peng, Yun - 3505 WTh
Peng, Ziwen - **1122 MT**
Penhune, Virginia - 1586 MT, 1589 MT, 1592 MT
Penney, Trevor - 1587 MT
Penninx, Brenda - 1223 MT
Penny, William - 1866 MT
Pensel, Max - 3824 WTh, 3987 WTh
Peraza, Jennifer - 1616 MT
Pereira, Fabricio - 3117 WTh, 3135 WTh
Pereira, Francisco - **1635 MT**
Pereira, Mirtes - 3194 WTh, **3329 WTh**
Pérès, Karine - 3688 WTh
Peretz, Isabelle - 3314 WTh, 3933 WTh
Pérez-Pàmies, Montserrat - 1096 MT
Perfetti, Charles - 1467 MT
Periot, Olivier - 3688 WTh
Perkmann, Thomas - 3711 WTh
Perlbarg, Vincent - **1432 MT**, 1450 MT, 2021 MT
Perlman, Eric - 1464 MT
Perlstein, William - 3978 WTh
Perneczky, Robert - 3073 WTh
Pernet, Cyril - 3809 WTh
Perrett, David - 2084 MT
Perron, Michel - 3098 WTh, 3382 WTh
Perrucci, Mauro - 4104 WTh
Perry, Gavin - 3123 WTh
Perry, Michael - 3737 WTh
Persichetti, Andrew - **4041 WTh**
Perugia, Emanuele - **1523 MT**
Peruzzo, Denis - 1673 MT
Pestilli, Franco - 1680 MT, **1685 MT**, 3509 WTh, 3866 WTh
Peters, Andrew - 1750 MT
Peters, Bart - 3710 WTh
Peters, Henning - **3225 WTh**
Peters, Jan - 1561 MT
Peters, Jan - 1309 MT
Peters, Jurriaan - 1696 MT
Petersen, Steven - 1085 MT, 3818 WTh
Peterson, Bradly - 1882 MT
Peterson, Charles - 1284 MT, 1285 MT
Peterson, Daniel - **1053 MT**, **1105 MT**
Petit, Laurent - 3756 WTh
Petracca, Maria - **1168 MT**
Petrella, Jeff - 3087 WTh
Petridou, Natalia - 2114 MT, 3416 WTh, 3451 WTh
Petro, Lucy - 4035 WTh, 4036 WTh, 4037 WTh, **4051 WTh**
Petrosyan, Petros - 3395 WTh
Petrovic, Aleksandar - 1895 MT
Petrovic, Aleksandra - 3243 WTh
Petrovic, Katja - 3453 WTh
Petrushevsky, Alexey - 1229 MT
Petti, Alexander - **3318 WTh**
Pettit, Lewis - 1172 MT
Pezawas, Lukas - 3152 WTh, 3187 WTh, 3711 WTh
Pfabigan, Daniela M. - **3346 WTh**, 3984 WTh, 3996 WTh, 3482 WTh
Pfeiffer, Ulrich - **4106 WTh**
Pfeil, Douglas - 1900 MT
Pfister, Roland - **4085 WTh**
Pfleiderer, Bettina - 1647 MT
Pham, Dzung - 1966 MT
Phelps, Elizabeth - 3302 WTh
Phillips, Christophe - 1221 MT, 1927 MT, 3840 WTh
Phillips, Mary - 3155 WTh, 3184 WTh, 3194 WTh, 3379 WTh
Phillips, Michael - 1142 MT, 1155 MT, 1884 MT, 1977 MT, 3846 WTh
Phillips, Micheal - 3299 WTh
Phillips, Owen - 1213 MT, **1218 MT**
Phillips, Raquel - 1908 MT, 3140 WTh, 3151 WTh, 3154 WTh, 3196 WTh, 3197 WTh, 3396 WTh
Phlypo, Ronald - 1922 MT
Phua, Kok Soon - 1238 MT
Piacentini, John - 3479 WTh
Piccione, Francesco - 3554 WTh
Pichler, Alexander - 3453 WTh
Pieperhoff, Peter - 1217 MT
Pierce, Jonathan - 3395 WTh
Pierson, Ronald - **3048 WTh**
Pieters, Thomas - **1009 MT**
Pietrini, Pietro - 1498 MT, 1500 MT, 3054 WTh, 3338 WTh, 4008 WTh, 4022 WTh, 3204 WTh
Pietrzyk, Uwe - 3861 WTh
PIETTE, Frederic - 3546 WTh
Piguet, Olivier - 1557 MT
Pihko, Elina - **2062 MT**
Pike, G. Bruce - 3098 WTh, 3382 WTh
Pilgramm, Sebastian - 2066 MT
Pilhatsch, Maximilian - 2119 MT
Pina Camacho, L - 3741 WTh
Pine, Daniel - 1926 MT
Pineda, Jaime - 1072 MT
Pinel, Philippe - 1437 MT
Pinkhardt, Elmar - 1202 MT
Pinsard, Basile - 1432 MT, 1450 MT
Pinter, Daniela - **1145 MT**, **1236 MT**, 3423 WTh
Piper, Sophie - 3636 WTh
Pipitone, Jon - **1970 MT**, 1986 MT, 3105 WTh, 3382 WTh, 3748 WTh
Pirnia, Tara - 3168 WTh, **3191 WTh**, **3255 WTh,** 1141 MT
Pitcher, David - **4023 WTh**
Pitcher, Toni - 1209 MT
Pitzalis, Sabrina - 2067 MT
Piven, Joseph - 1050 MT
Piyasena, Chinthika - 3735 WTh
Pizzagalli, Diego - 3206 WTh
Pizzella, Vittorio - 1020 MT, 1463 MT, 1699 MT, 1710 MT, 4104 WTh
Pizzini, Francesca Benedetta - 3436 WTh, 3599 WTh
Plaisant, Odile - 3760 WTh
Plant, Gordon - 3085 WTh
Plante, Elena - 2094 MT
Plate, Andre - 1650 MT
Platz, Thomas - 1568 MT
Pleger, Burkhard - 1014 MT, 1575 MT, 3353 WTh, 3366 WTh
Plichta, Michael - 1265 MT, 1269 MT, 3609 WTh, 1102 MT
Plis, Sergei - 1380 MT, 1765 MT, 1804 MT, 1916 MT, 1922 MT
Ploran, Elisabeth - 1416 MT
Pluta, Agnieszka - 3917 WTh
Podlipsky, Ilana - 1558 MT
Poeppel, Ernst - 4112 WTh
Poeppl, Timm - **3259 WTh**, 3374 WTh
Pogarell, Oliver - 1022 MT, 3462 WTh, 3548 WTh, 3561 WTh
Pogatzki-Zahn, Esther - 1647 MT
Pogue-Giele, Michael - 3270 WTh
Poh, Jia-Hou - **1358 MT**
Poh, Jiahou - 1609 MT
Poh, Joann S. - 3261 WTh, 3679 WTh
Pohl, Anna - 4062 WTh
Pöhland, Lydia - **3177 WTh**, 3213 WTh, 3675 WTh
Pojman, Nicholas - 1292 MT
Polanczyk, Guilherme - 1126 MT
Polania, Rafael - **1018 MT**, 1307 MT
Polanski, David - 3292 WTh
Poldrack, Russell - 1296 MT, 1304 MT, 1326 MT, 1357 MT, 1386 MT, 1445 MT, 1567 MT
Polejaeva, Elena - 3440 WTh
Poliachik, Sandra - 3119 WTh
Poliakov, Andrew - **3119 WTh**
Polimeni, Jonathan - 1886 MT, 2107 MT, 3371 WTh, **3463 WTh**
Poline, Jean-Baptiste - 1275 MT, 1437 MT, 1445 MT, 3461 WTh, 2049 MT
Polizzotto, Nicola - 3713 WTh
Pollack, Mark - 3195 WTh
Pollaro, James - 3704 WTh
Pollmann, Stefan - 3879 WTh
Polzehl, Joerg - 1455 MT, 1683 MT, 1687 MT
Pomares, Florence - **3971 WTh**
Pool, Eva-Maria - 1046 MT, 1237 MT, **2077 MT**
Poole, Victoria - 3280 WTh, **3296 WTh**
Popa, Traian - 1044 MT, 1585 MT
Popolizio, Teresa - 1270 MT, 3468 WTh
Popov, Tzvetan - **3579 WTh**
Popovic, Ana - 3152 WTh, 3187 WTh, 3711 WTh
Poppa, Tasha - **1542 MT**
Poppe, Andrew - 1780 MT
Pöppel, Ernst - 4039 WTh, 4082 WTh
Porro, Carlo - 3628 WTh, 3916 WTh
Portman, Nataliya - **1654 MT**
Porto, Claudia - 3070 WTh
Portugal, Liana - 1662 MT, **3194 WTh**, 3329 WTh
Poser, Benedikt - **3485 WTh**
Poskitt, Ken - 1090 MT
Posse, Stefan - **1852 MT**, **3421 WTh**
Postelnicu, Gheorghe - 3063 WTh
Posthuma, Danielle - 1099 MT
Postnova, Svetlana - 1708 MT
Poston, Kathleen - **1194 MT**, 1833 MT, 3823 WTh
Potenza, Marc - 1347 MT
Potes, Cristhian - 3556 WTh
Potkin, Steven - 1754 MT, 2042 MT, 3211 WTh
Potluru, Vamsi K. - 1922 MT
Potter, Alexandra - 1379 MT
Poulsen, Catherine - **3608 WTh**
Poupon, Cyril - 1690 MT, 1885 MT, 1898 MT
Pouratian, Nader - 3833 WTh
Powell, Tamara - 1017 MT
Powers, John - 3082 WTh
Prabhakaran, Karthik - 1352 MT
Pradat, Pierre-François - 1434 MT
Prasad, Gautam - **1648 MT**, **3836 WTh**, **3845 WTh**, **3859 WTh**
Prasad, Konasale - 3270 WTh
Praschak-Rieder, Nicole - 3152 WTh, 3187 WTh, 3711 WTh
Prastawa, Marcel - 1050 MT, 3506 WTh
Prattichizzo, Domenico - 4008 WTh
Prayer, Daniela - 2020 MT
Precup, Doina - 2104 MT
Preda, Adrian - 1754 MT
Preissl, Hubert - 1353 MT, 1827 MT, 3814 WTh, 3899 WTh
Prescott, Christian - 1440 MT
Prescott, Jeff - **3087 WTh**
Prestigiacomo, Charles - 3293 WTh
Preti, Maria Giulia - 3377 WTh, **3607 WTh**
Preuss, Todd - 3788 WTh
Price, Cathy - 1941 MT

# Q



# R

Ress, David - 1639 MT, 2091 MT, 3813 WTh, 3880 WTh, **3936 WTh**
Reuillon, Romain - 1449 MT
Reutens, David - 3634 WTh
Reuter, Martin - **3398 WTh**
Reuter, Martin - 1894 MT, 3400 WTh, 3639 WTh
Reuter, Martin - 3072 WTh, 3388 WTh
Reuter-Lorenz, Patricia - 1858 MT
Reverberi, Carlo - 1381 MT
Revill, Kate - 3614 WTh
Revina, Yulia - **4037 WTh**
Reynolds, Chelsea - 1425 MT
Reynolds, Gretchen - 3195 WTh
Reynolds, James - 1165 MT
Reynolds, Rebecca - 1953 MT
Reynolds, Richard - 2016 MT
Rezek, Iead - 1706 MT, 1727 MT, 2019 MT
Rezende, Thiago - **1207 MT**
Reznik, Daniel - **3937 WTh**
Ribary, Urs - 1090 MT
Ribeiro, Fadua - 1153 MT
Ribeiro-do-Valle, Luiz Eduardo - 3499 WTh
Ricci, Cristian - 3377 WTh
Ricciardi, Emiliano - 1498 MT, 1500 MT, 3054 WTh, 3204 WTh, 3338 WTh, 4008 WTh, 4022 WTh
Richard, Briggs - 3029 WTh
Richards, Todd - **1505 MT**, 1744 MT, 2065 MT
Richards, Todd - 1058 MT, 1193 MT
Richardson, Jennifer - 1407 MT, 1415 MT
Richer, Louis - 3098 WTh, 3382 WTh
Richiardi, Jonas - **1652 MT**, 1851 MT, 1927 MT
Richlan, Fabio - **1508 MT**
Richman, David - 3882 WTh
Richter, Anne - 3030 WTh, 3044 WTh
Richter, Sylvia - 3350 WTh
Rico, Audrey - 3605 WTh
Ridderinkhof, K. Richard - 1325 MT, 1371 MT
Ridgway, Gerard - **1866 MT**
Rieck, Jennifer - 3674 WTh
Riedel, Michael - 1439 MT, 1787 MT, **1838 MT**
Riedl, Valentin - 3056 WTh, 3179 WTh, 3202 WTh, 3225 WTh, 3246 WTh, 3755 WTh
Riedy, Gerard - 1824 MT, 3272 WTh, 3281 WTh, 3288 WTh, 3290 WTh
Riegg, Florian - 3561 WTh
Riener, Robert - 2075 MT
Riese, H. - 3189 WTh
Rietschel, Marcella - 1265 MT, 1269 MT, 1274 MT, 1279 MT, 3012 WTh, 3253 WTh, 3428 WTh, 3442 WTh, 3461 WTh
Riffert, Till - 3810 WTh
Rigoulot, Simon - 1401 MT, **3314 WTh**, 3320 WTh
Rigoux, Lionel - **1773 MT**
RIKIR, Estelle - 3116 WTh
Riku, Yuichi - 1135 MT
Riley, David - 1184 MT
Riley, Ed - 1110 MT, 3002 WTh
Riley, Jeff - 1248 MT
Riley, Kristen - 3122 WTh
Rilling, James - 3788 WTh
Rimrodt, Sheryl - 1477 MT, 3852 WTh
Rinaldo, Alessandro - 1684 MT
Rio, Daniel - **1915 MT**
Ripke, Stephan - **3003 WTh**
Risacher, Shannon - 1653 MT
Rissman, Jesse - 1792 MT
Risterucci, Celine - 1756 MT
Ritschel, Franziska - 3364 WTh
Ritter, Jan - 3148 WTh
Rittman, Timothy - **1199 MT**, **1203 MT**
Rittman, Timothy - 1189 MT, 1337 MT
Riva-Posse, Patricio - 1005 MT
Rivera, Margarita - 3149 WTh
Rivière, Denis - 1456 MT
Riyahi Alam, Nader - 1856 MT
Riyahi Alam, Sajad - 1856 MT
Rizzoli, Antonio - 1086 MT
Ro, Yong Man - 4026 WTh
Roalf, David - 1352 MT, 1656 MT, **3270 WTh**
Roalf, David - 3730 WTh
Robbins, Trevor - 1189 MT, 1274 MT, 3012 WTh, 3461 WTh
Roberts, James - **1716 MT**
Roberts, Neil - 1845 MT, 1953 MT, 3735 WTh
Roberts-Kedes, Doron - 4014 WTh
Robertson, Edwin - 1590 MT, 3913 WTh
Robertson, Frances - **1114 MT**, **3538 WTh**
Robertson, Ian - 1600 MT, 3765 WTh
Robertson, Kevin - 3079 WTh
Robertson, Lynn - 3898 WTh
Robic, Suzanne - **1061 MT**
Robin, Donald - 1001 MT, 1520 MT, 1525 MT, 3982 WTh
Robineau, Fabien - 1786 MT
Robinet, Emmanuelle - **1579 MT**
Robinson, Emma - **1891 MT**
Robinson, Lucy - **1795 MT**
Robinson, Meghan - 3280 WTh
Robinson, Michael - 3978 WTh, 3979 WTh
Robinson, P. - 1752 MT
Robinson, Peter - 1708 MT, 1791 MT
Robinson, Simon - 3425 WTh, 3450 WTh, 3495 WTh
Robinson, Stephen - 1013 MT, 1025 MT, **2106 MT,** 2111 MT
Robles, Noemi - 1346 MT
Robles, Noemi - **3016 WTh**
Robrina, Walker - 3029 WTh
Roccatagliata, Luca - 1162 MT
Roccatagliata, Luca - 1958 MT
Rocha-Rego, Vanessa - **3075 WTh**
RODE, Gilles - 3837 WTh
Rodehacke, Sarah - 1377 MT
Rodic, Mathieu - 1448 MT
Rodrigue, Karen - 3674 WTh
Rodrigues, Erika - 3483 WTh
Rodrigues, João - **1767 MT**
Rodriguez, Cameron - **1700 MT**, **3594 WTh**
Rodriguez, Javi - **3871 WTh**
Rodriguez Gonzalez, David - 1433 MT
Rodríguez-Nieto, Geraldine - **3328 WTh**
Rodriguez-Sickert, Carlos - 4118 WTh
Roe, Katherine - 3543 WTh
Roebroeck, Alard - 1800 MT, 3360 WTh
Roefs, Anne - 3360 WTh
Roelofs, Karin - 3337 WTh
Roels, Sanne - **1946 MT**
Roessner, Veit - 3258 WTh, 3364 WTh
Rogalski, Emily - 3745 WTh
Rogalsky, Corianne - 1542 MT
Rogan, Ryan - 3181 WTh
Roggenhofer, Elisabeth - 2096 MT, 3051 WTh, 3427 WTh
Rogowska, Jadwiga - 3271 WTh, **3279 WTh**, **3294 WTh**
Roijals-Miras, Ivan J - 1096 MT
Rojas, Don - 1070 MT, 2064 MT
Rojas, Gonzalo - **1815 MT**
Rojas Vega, Sandra - 3824 WTh, 3987 WTh
Rokem, Ariel - **1680 MT**, 1685 MT, 1738 MT, 3509 WTh, 3849 WTh, 3866 WTh
Romagno, Domenica - **1500 MT**
Romani, Gian Luca - 1562 MT, 3644 WTh, 4104 WTh, 1463 MT, 1710 MT, 3489 WTh, 3583 WTh
Romaniuk, Liana - 1845 MT
Romano, Raffaella - 1270 MT, 3468 WTh
Romano, Russ - 3273 WTh
Romano-Silva, Marco - 3662 WTh
Rombouts, Serge - 1063 MT, 1806 MT, 3144 WTh, 3145 WTh, 3337 WTh
Romeo, Andrew - 3122 WTh
Romero, Lucinda - 3249 WTh
Romero, Roberto - 3726 WTh
Rommel, Nathalie - 1084 MT
Rondina, Jane - 1927 MT, 3117 WTh
Rondinoni, Carlo - **1429 MT**, 3102 WTh, 3115 WTh, **3486 WTh**
Rooney, Bill - 3472 WTh
Rooney, William - 3704 WTh
Roosink, Meyke - 1171 MT
Roostaei, Tina - 1856 MT
Ropele, Stefan - 3453 WTh
Rosa, Daniela - 3662 WTh
Rosa, Maria Joao - **1649 MT**, **1662 MT,** 1786 MT, 3194 WTh
Rosa, Spaeth - 3967 WTh, 3981 WTh
Rosas, H. Diana - 3690 WTh
Rosch, Keri - 1105 MT, **3349 WTh**
Roschka, Sybille - 1568 MT
Rose, Emma - **3004 WTh**
Rose, Emma - 3233 WTh, 3244 WTh
Rosen, Bruce - 2107 MT, 3388 WTh, 3598 WTh, 3659 WTh
Rosen, Howard - 3065 WTh, 3689 WTh
Rosenbaum, Simon - 3242 WTh
Rosenberg, Monica - 3889 WTh
Rosenberg-Lee, Miriam - 1415 MT
Rosenblatt, Jonathan - **1288 MT**
Rosengarth, Katharina - 3476 WTh
Rosenow, Felix - 1224 MT
Rosenthal, Clive - **1553 MT**
Roser, Patrik - 3235 WTh
Roskos, P. Tyler - 2111 MT, 3287 WTh
Rosoff, Cari - 1299 MT, 1333 MT
Ross, Erika - **1003 MT**
Ross, Paddy - **3714 WTh**
Ross, Robert - 1197 MT
Ross, Thomas - 3004 WTh
Rosseel, Yves - 2045 MT
Rossell, Susan - 1362 MT
Rossetti, Andrea - 3922 WTh
Rossi, Alejandra - 4025 WTh
Rossi, Simone - 4008 WTh
Rössler, Wulf - 3212 WTh
Rota, Giuseppina - 1500 MT
Roteneberg, David - **1677 MT**
Roth, Cullen - **1380 MT**
Rothman, Douglas - 2092 MT, 2093 MT, 2098 MT, 2100 MT, 2101 MT, 2105 MT, 2115 MT
Rothwell, John - 1038 MT
Rotondaro, Francesca - 3753 WTh
Rottschy, Claudia - 1077 MT, 1814 MT, 1842 MT, 1848 MT, 1938 MT, 3762 WTh
Rousseau, Celia - **3120 WTh**
Rousseau, François - 1901 MT
Roussotte, Florence - **3005 WTh**
Routhier, Camille - 1543 MT
Rowe, James - 1337 MT, 1356 MT
Rowland, Laura - 2117 MT, 3260 WTh
Roy, Abhrajeet - **1023 MT**
Royall, Josh - 1426 MT, 3215 WTh
Royall, Joshua - **3757 WTh**

# S

Schlagenhauf, Florian - 3030 WTh
Schlaggar, Bradley - 1085 MT
Schlaug, Gottfried - 1394 MT, 1399 MT, 1402 MT, 3944 WTh, 3956 WTh
Schleicher, Axel - 3831 WTh
Schlipf, Sarah - 3148 WTh
Schlösser, Ralf - 2015 MT, 3237 WTh, 3253 WTh
Schluep, Myriam - 1851 MT
Schmah, Tanya - **1247 MT**
Schmahl, Christian - 3145 WTh
Schmaljohann, Jörn - 1327 MT
Schmidhammer, Robert - 1570 MT
Schmidt, André - **1873 MT**
Schmidt, Andreas - 3564 WTh
Schmidt, Benjamin - **1733 MT**, 3612 WTh
Schmidt, Peter - 1276 MT
Schmidt, Regina - 1835 MT
Schmidt, Sara - **1990 MT**
Schmidt, Sebastian - 1895 MT
Schmidt, Timo Torsten - **4004 WTh**
Schmidt-Wilcke, Tobias - 3982 WTh
Schmierer, Phoebe - 3213 WTh
Schmit, Brian - 1693 MT, 2072 MT, 2079 MT
Schmithorst, Vincent - 1637 MT, **1691 MT**, **2094 MT**
Schmitt, Eric - **3723 WTh**
Schmitt, Frederick - 3061 WTh
Schmitter, Sebastian - 3373 WTh
Schmittmann, Verena - 1841 MT
Schmitz, Christina - 1061 MT
Schmitz, Christoph - **3636 WTh**
Schmueser, Lena - **3622 WTh**
Schnack, Hugo - 3729 WTh, 3741 WTh
Schneider, Else - 3055 WTh
Schneider, Frank - 3331 WTh, 4062 WTh
Schneider, Keith - 3467 WTh
Schneider, Peter - 3770 WTh, 3925 WTh
Schneider, Sabrina - **3651 WTh**
Schnell, Knut - 3213 WTh
Schnitker, Ralph - 1545 MT
Schnitzler, Alfons - 1217 MT, 4010 WTh
Schobert, Anne-Kathrin - **4028 WTh**
Schoene-Bake, Jan-Christoph - 1657 MT
Schoffelen, Jan-Mathijs - 1495 MT
Schoffelen, Jan-Mathijs - 1463 MT, **1486 MT**
Schofield, Peter - 1277 MT
Scholand-Engler, Harald - 3587 WTh
Scholte, H. Steven - 1325 MT, 1371 MT, 3306 WTh, 4040 WTh, **4050 WTh**
Schönauer, Monika - 1552 MT, **1566 MT,** 1731 MT
Schonberg, Tom - 1326 MT
Schonberg, Tom - **1296 MT**
Schöne-Bake, Jan-Christoph - 3129 WTh
Schönknecht, Peter - 1958 MT
Schoonheim, Menno - 1810 MT
Schöpf, Veronika - 2020 MT, 3495 WTh, 3905 WTh
Schott, Björn - 3213 WTh, 3350 WTh, 4081 WTh
Schriberg, Lawrence - 1535 MT
Schröder, Sebastian - 3519 WTh
Schroeder, Charles - 3908 WTh
Schroeder, Charles - 4024 WTh
Schroeder, Matthew - 1167 MT
Schroeter, Matthias - 1192 MT, 1208 MT, 1575 MT, 3046 WTh, 3051 WTh, **3055 WTh**, 3073 WTh, 3921 WTh
Schröter, Manuel Sebastian - 1661 MT
Schrouff, Jessica - **1927 MT**, 3840 WTh
Schubert, Torsten - 1370 MT
Schuchardt, Jan Philipp - 3683 WTh
Schuetze, Hartmut - 1556 MT
Schultz, Christoph - 3253 WTh
Schultz, Larry - 3405 WTh, 3595 WTh
Schulz, Jessica - **3471 WTh**
Schulz, Jörg - 1814 MT
Schulze-Bonhage, Andreas - 3112 WTh
Schumacher, Eric - 1835 MT
Schumacher, John - 3409 WTh
Schumann, Andy - 1747 MT
Schumann, Gunter - 1274 MT, 1279 MT, 3012 WTh, 3428 WTh, 3461 WTh, 3711 WTh
Schur, Ellen - 3444 WTh
Schurz, Matthias - 1508 MT, 1762 MT
Schuster, Verena - 3532 WTh
Schütz, Claudia - 3177 WTh
Schütz, Holger - 3663 WTh, 3670 WTh
Schütze, Hartmut - 1555 MT
Schutze, Manuel - **3662 WTh**
Schwabe, Lars - 1875 MT
Schwandt, Melanie - 3023 WTh
Schwarb, Hillary - 1835 MT
Schwartz, Daniel - 3013 WTh, 3019 WTh, 3443 WTh
Schwartz, Deborah - **3098 WTh**
Schwartz, Sophie - 4053 WTh
Schwartz, Yannick - 1437 MT, 1445 MT, **1629 MT**
Schwarz, Daniel - 2119 MT
Schwarz, Johanna - 3317 WTh
Schwarz, Katharina - **3985 WTh**
Schwarzbauer, Christian - 1256 MT, 3490 WTh
Schwarzbaum-Russo, Sharon - 3187 WTh
Schweinhardt, Petra - 3971 WTh, 3994 WTh
Schweisfurth, Meike Annika - **3874 WTh**
Schweitzer, Julie - 1350 MT, 3004 WTh
Schweitzer, Marc - 1901 MT
Schweizer, Renate - 2057 MT, 2058 MT, **2059 MT,** 3874 WTh
Schweizer, Tom - 1821 MT
Schwerthoffer, Dirk - 3225 WTh
Schwindt, Peter - **3581 WTh**
Schyns, Philippe - 1522 MT
Scoggins, Matthew - 1148 MT, **1468 MT**, 3459 WTh
Scott, Gregory - 3767 WTh
Seal, Marc - 3106 WTh, 3182 WTh
Sebastian, Alexandra - 3622 WTh
Sebold, Miriam - 3018 WTh
See, Jill - 1248 MT
Seeber, Martin - **1707 MT**
Seeck, Margitta - 2024 MT, 3124 WTh
Seeley, William - 3065 WTh, 1785 MT
Seghier, Mohamed - 1941 MT
Segmiller, Felix - 3561 WTh
Segura, Barbara - 1382 MT
Sehm, Bernhard - 3427 WTh
Seidel, Eva-Maria - 3346 WTh, 3482 WTh, 3984 WTh, **3996 WTh**, **4105 WTh**
Seidenbecher, Constanze - 3350 WTh, 3370 WTh
Seidenberg, Mark - 1497 MT
Seidenberg, Michael - 3047 WTh
Seidler, Isabelle - **2087 MT**
Seidler, Rachael - 3700 WTh
Seifert, Volker - 1007 MT, 2080 MT
Seiferth, Nina - **3032 WTh**, 3177 WTh, 3213 WTh
Seiler, Andrea - 1242 MT
Sein, Julien - 1204 MT
Seither-Preisler, Annemarie - **3925 WTh**
Sekiguchi, Atsushi - 1574 MT, **3200 WTh**, 4063 WTh
Selesnick, Ivan - **1900 MT**
Seligman, Sarah - 3251 WTh
Seligson, Erica - **1484 MT**
Selvadurai, Chindhuri - 3913 WTh
Selvaggi, Pierluigi - 1270 MT, 3468 WTh
Selzer, Audrey - 3704 WTh
Sembritzki, Klaus - **1895 MT**
Seminowicz, David - 3983 WTh, **3995 WTh**
Semple, Scott - 1953 MT, 3735 WTh
Senda, Joe - **1135 MT**
Seo, Han-Seok - 3566 WTh
Seo, Hyung Suk - 1222 MT
Seo, Sang Won - 1169 MT, 3080 WTh, 3375 WTh, 3534 WTh, 3601 WTh
Seok, Ji-Woo - 1819 MT, **3024 WTh**
Seol, Jaeho - 3577 WTh
Seppä, Mika - 1736 MT
Sepulchre, Rodolphe - 3420 WTh
Sercheli, Mauricio - 3117 WTh, 3135 WTh
Sereno, Marty - 3832 WTh, 4069 WTh
Sergio, Hassid - 1521 MT
Serota, Raphael - 1565 MT
Serra Grabulosa, Josep M - **1096 MT**
Servaas, M.N. - **3189 WTh**
Seshamani, Sharmishtaa - 3743 WTh
Sestieri, Carlo - **1562 MT**, 3489 WTh
Seth, Anil - **1823 MT**
Sethi, Arjun - **3843 WTh**
Setsompop, Kawin - 3463 WTh, 3511 WTh
Seubert, Janina - **3953 WTh**
Seurinck, Ruth - **1943 MT**, 2045 MT
Sha, Sharon - 3065 WTh
Shah, Nadim - 3663 WTh, 3670 WTh
Shah, Yashvi - 1986 MT
Shakourirad, Ali - 1856 MT
Shalev, Nir - 1031 MT
Shams, Nasim - **3621 WTh**
Shams, Seyed-Mohammad - **1766 MT**
Shanahan, Murray - 3767 WTh
Shane, Matthew - 3325 WTh
Shang, Liqing - 3526 WTh
Shanmuganathan, Kathirkamanthan - 3276 WTh
Shannon, Benjamin - **1355 MT**
Shapira-Lichter, Irit - **1558 MT**
Sharan, Ashwini - 3114 WTh, 3133 WTh
Shariff, Umar - 1246 MT
Sharma, Khema - 1669 MT
Sharon, Haggai - 3137 WTh
Sharp, David - 3767 WTh
Sharpe, Michael - 3533 WTh
Shastri, Rupal - 3726 WTh
Shattuck, David - **1688 MT**, 1883 MT, 3781 WTh
Shaw, Dennis - 1058 MT
Shaw, Dennis - 3119 WTh
She, Hsiao-Ching - 1410 MT
Shea, Colin - **1966 MT**
Shemyakina, Natalia - 1389 MT, **1411 MT**
Shen, Danlin - 3221 WTh
Shen, Dinggang - 1122 MT, 1435 MT, 1789 MT, 3869 WTh, 1695 MT, 1889 MT, 3797 WTh
Shen, Elaine - 3215 WTh
Shen, Hui - 3162 WTh
Shen, Hui - 3134 WTh
Shen, Li - 1452 MT, 1653 MT
Shen, Xiaobo - 1173 MT
Shen, Xilin - **1876 MT**, 2001 MT
Shenk, Trey - 3280 WTh
Shenkin, Susan - 1433 MT
Shenton, Martha - 3856 WTh
Shereen, Duke - 3842 WTh
Shergill, Sukhi - 3217 WTh
Sheriff, Sulaiman - 1669 MT
Sherman, Elisabeth - 3130 WTh
Sherr, Elliott - 1292 MT

Soong, Lillian - 3015 WTh
Sorg, Christian - 3056 WTh, 3179 WTh, 3225 WTh, 3246 WTh
Sorrentino, Alberto - **1702 MT**
Sotaro, Shimada - 2054 MT
Sottile, Melanie - 3543 WTh
Soulier, Elisabeth - 3605 WTh
Sours, Chandler - **1150 MT**, **3276 WTh**
Sowell, Elizabeth - 1110 MT, 3002 WTh, 3005 WTh, 3736 WTh, 3742 WTh, 3718 WTh
Spadone, Sara - **3489 WTh**
Spagnolo, Primavera - **3023 WTh**
Spanagel, Rainer - 3012 WTh, 3461 WTh
Sparing, Roland - 2070 MT
Sparto, Patrick - 3934 WTh
Specht, Karsten - 1514 MT
Speck, Oliver - 1556 MT, 3487 WTh, 3590 WTh
Spemann, Daniel - 3820 WTh
Spencer, Glyn - **1750 MT**
Spencer-Smith, Megan - 1107 MT, **1111 MT**
Sperdin, Holger - 3884 WTh
Sperling, Michael - 3114 WTh, 3133 WTh
Spetsieris, Phoebe - 1196 MT, 1660 MT
Spies, Marie - 1997 MT, 3661 WTh
Spinelli, Donatella - 2067 MT
Spinhoven, Philip - 3337 WTh
Sponheim, Scott - 1359 MT, 1446 MT, 3258 WTh
Spoormaker, Victor - 1661 MT, 3256 WTh, 3596 WTh
Sporns, Olaf - 1961 MT, 4025 WTh
Spottiswoode, Bruce - 1678 MT, 1250 MT
Spranger, Joachim - 3682 WTh
Spreckelmeyer, Katja - 3354 WTh
Spreng, R. Nathan - **3673 WTh**
Sprenger, Christian - **3970 WTh**
Spring, Robyn - 1454 MT, **1460 MT**
Sprooten, Emma - 1284 MT
Sprute, Lisa - **1421 MT**
Squarcina, Letizia - **1673 MT**, 1682 MT
Squitieri, Ferdinando - 1211 MT, 1213 MT, 1218 MT
Sreenivasan, Karthik - 3304 WTh
Srinivasan, Ramesh - 2069 MT
Sripada, Chandra - 3318 WTh
Sriskandarajah, Kumuthan - 1305 MT, 3641 WTh
St Lawrence, Keith - 3773 WTh
St-Laurent, Marie - **1559 MT**
Stadler, Joerg - 4111 WTh
Staelens, Steven - 3113 WTh
Staffaroni, Adam - 1601 MT
Stahl, Jutta - 1342 MT
Stains, Jean - 2008 MT, 2009 MT
Stam, Cornelis - 3803 WTh
Stamatakis, Emmanuel - 1993 MT, 3286 WTh
Stancak, Andrej - **3992 WTh**
Standaert, David - 1660 MT
Stanley, Jeffrey - 1103 MT, 1108 MT, 1120 MT
Stanton, Tasha - 1041 MT
Starck, Tuomo - **1081 MT**, 3603 WTh
Stark, Craig - 1635 MT
Stark, Rudolf - 2066 MT
Stark, Shauna - 1635 MT
Starr, Debra - 3181 WTh
Starr, John - 1284 MT
Staud, Roland - 3978 WTh
Stauffacher, Franziska - 1243 MT
Stecker, G. Christopher - 3928 WTh, 3960 WTh
Steele, Christopher - **1039 MT**, **1592 MT**, 3772 WTh
Steele, Douglas - 1666 MT
Steele, J. Scott - 3173 WTh
Steele, James - **3147 WTh**
Steffener, Jason - 1453 MT, 3481 WTh, **3664 WTh**, 3678 WTh, 3701 WTh
Steiger, Axel - 3551 WTh
Stein, Elliot - 2117 MT, 3010 WTh, 3029 WTh, 3004 WTh, 3009 WTh, 3017 WTh
Stein, Jason - 1288 MT
Stein, Mark - 3303 WTh, 1608 MT
Steinbrink, Jens - 2108 MT, 3636 WTh, 4005 WTh
Steiner, Johann - 1906 MT, 3370 WTh
Steinmann, Elisabeth - 1123 MT
Steinmann, Iris - 3935 WTh
Steinschneider, Mitchell - 3943 WTh
Steketee, Rebecca - 1663 MT
Stelzel, Christine - 1582 MT
Stelzer, Johannes - 4005 WTh
Stengel, Benjamin - **1859 MT**
Stenger, V Andrew - 3485 WTh
Stenroos, Matti - 3573 WTh
Stephan, Klaas Enno - 1312 MT, 1624 MT, 2090 MT, 3465 WTh, 4099 WTh, 4110 WTh
Stephani, Ulrich - 1123 MT
Stephen, Julia - 1124 MT, **1952 MT**, 3249 WTh
Stephens, Dai - 3012 WTh, 3461 WTh
Stephenson, Mary - **2112 MT**, 3266 WTh
Stern, Chantal - 1197 MT
Stern, Naftali - 3137 WTh
Stern, Yaakov - 3481 WTh, 3664 WTh, 3678 WTh, 3701 WTh
Sternberg, Lauren - 1737 MT
Sterpenich, Virginie - 4053 WTh
Sterzer, Philipp - 3438 WTh
Stevens, Allison - 3722 WTh
Stevens, Carl - **1052 MT**
Stevens, Corinne - 1116 MT, 3472 WTh
Stevens, Michael - 1338 MT, 3321 WTh, 1447 MT, 1620 MT
Stevenson, Claire - 1538 MT
Steward, Kayla - 3695 WTh
Stewart, Jill Campbell - **1246 MT**
Stickgold, Robert - 3913 WTh
Stiers, Peter - 1549 MT
Stilla, Randall - 1860 MT
Stingl, Krunoslav - 1353 MT
Stip, Emmanuel - 3222 WTh
Stippich, Christoph - 3770 WTh
Stirling, Mairi - 1666 MT
Stöckel, Cornelia - 4013 WTh
Stoffers, Diederick - **1223 MT**, 3394 WTh, **3924 WTh**
Stojanovic-Radic, Jelena - **3648 WTh**
Stoltman, Jonathan - 1565 MT
Stone, Adam - 1300 MT, 3041 WTh
Stone, David - 3249 WTh
Stone, James - 3440 WTh
Stone, Lael - 1142 MT, 1155 MT, 3846 WTh
Stone, Laura - 3995 WTh
Stoner, Rich - 1453 MT
Stoppelman, Nadav - **1511 MT**
Storkey, Amos - 1172 MT, 3809 WTh
Storms, Gerrit - 1485 MT
Storti, Silvia Francesca - **3436 WTh**, 3477 WTh, 3554 WTh, 3562 WTh, **3599 WTh**, **3613 WTh**
Stout, Jeffrey - 1463 MT, 2111 MT, **3287 WTh**
Stouten-Kemperman, Myrle - **1157 MT**
Stoy, Meline - 3438 WTh
Strafella, Antonio - 1034 MT, 1382 MT
Strakowski, Stephen - 3184 WTh
Stramaglia, Sebastiano - 1853 MT
Stramare, Roberto - 2063 MT
Straube, Thomas - **3322 WTh**, 3333 WTh
Strauss, Bernhard - 4111 WTh
Streicher, Markus - 3819 WTh
Streitbürger, Daniel-Paolo - 3073 WTh
Stringer, Michael - 1256 MT
Strobbe, Gregor - **1732 MT**
Ströhle, Andreas - 1279 MT, 3428 WTh, 3438 WTh
Strohmeier, Daniel - 1728 MT
Strohmer, Sven - 3844 WTh
Stroman, Patrick - 1176 MT
Strother, Douglas - 3533 WTh
Strother, Stephen - 1247 MT, 1454 MT, 1460 MT, 1745 MT, 3621 WTh, 1766 MT, 1809 MT, 1849 MT
Strotmann, Barbara - **3827 WTh**, **3828 WTh**
Strüder, Heiko - 3824 WTh, 3987 WTh
STRUVE, Maren - 3012 WTh, 3461 WTh
Stüber, Christoph - 1647 MT
Studholme, Colin - 1901 MT, 1953 MT, 3743 WTh
Stueber, Carsten - **3820 WTh**
Stufflebeam, Steven - 1712 MT, 3103 WTh, 3784 WTh, 3789 WTh
Stuke, Katharina - **3073 WTh**
Sturma, Dieter - 3663 WTh, 3670 WTh
Sturzbecher, Marcio - 3115 WTh, **3625 WTh**
Sturzenegger, Matthias - 1242 MT, 1243 MT
Su, Merina - **3802 WTh**
Su, Tung-Ping - 3139 WTh
Su, Wayne - 3383 WTh
Suardi, Francesca - 3186 WTh
Subotnik, Kenneth - 3231 WTh
Subramaniam, Karuna - 3224 WTh
Subramanian, Thyagarajan - 1219 MT
Suchan, Boris - 1045 MT
Suckling, John - 3185 WTh
Suckling, John - 3761 WTh
Sudre, Gustavo - 3623 WTh
Suedmeyer, Martin - 1217 MT
Sugarman, Michael - 3047 WTh
Sugiura, Motoaki - 1412 MT, 1532 MT, 3200 WTh, **4063 WTh**, 4089 WTh
Sugiura, Motoki - 4064 WTh
SUI, JING - **1919 MT**
Sui, Jing - 1822 MT
Sujazow, Olivia - 1973 MT
Sul, Sunhae - 4074 WTh, 4091 WTh, **4116 WTh**
Sulzer, James - 4006 WTh
Summers, Paul - **3628 WTh**, 3916 WTh
Sumowski, James - 1161 MT, 1601 MT
Sun, Delin - 4090 WTh
Sun, Hai - **2082 MT**
Sun, Jinbo - 3544 WTh, 3999 WTh
Sun, Ping - 3951 WTh
Sun, Qianqian - 3895 WTh
Sun, Wei - 1280 MT
Sun, Xiaoyu - 1219 MT, 3064 WTh, **3084 WTh**
Sun, Xuan - 3094 WTh
Sun, Yu-Hsuan - 1083 MT
Sunaert, Stefan - 1084 MT, 1855 MT
Sundermann, Benedikt - **1647 MT**
Sundermann, Erin - **1268 MT**, 3015 WTh
Sunkin, Susan - 1426 MT, 3757 WTh
Supekar, Kaustubh - 1051 MT, 1069 MT, **1078 MT**, 1407 MT
Surmeli, Tanju - 3548 WTh
Susanto, Thomas Adi Kurnia - **3052 WTh**
Suskin, Neville - 3773 WTh
Sussman, Daniel - **1686 MT,** 1925 MT
Sussmann, Jessika - 1284 MT
Suttner, Maria - 3225 WTh

# T

# U



# V

# W

Wandell, Brian - 1680 MT, 1685 MT, 1738 MT, 3509 WTh, 3737 WTh, 3841 WTh, 3849 WTh, 3866 WTh
Wander, Jeremiah - 1489 MT, 2082 MT
Wang, Anlin - **1440 MT**
Wang, Bin - 3230 WTh, 3435 WTh
Wang, Binquan - 1824 MT, 3272 WTh
Wang, Binquan - 3288 WTh
Wang, Chao - **1259 MT**, 1272 MT
Wang, Charlie - 1995 MT
Wang, Chuan-Yue Wang - 3210 WTh
Wang, Chunhui - 1577 MT
Wang, Danhong - 3227 WTh
Wang, Danny JJ - 3633 WTh
Wang, Dawei - 1260 MT
Wang, Dawei - 1272 MT
Wang, Defeng - 1321 MT
Wang, Dingxin - **1250 MT**, **3391 WTh**
Wang, Erzhuo - **1980 MT**
Wang, Frank - 3578 WTh
Wang, Gang - **3993 WTh**
Wang, Hongyong - 4049 WTh
Wang, Jian - 3095 WTh, 3698 WTh
Wang, Jian-Li - 1303 MT, 3903 WTh
Wang, Jianli - **1219 MT**, 3084 WTh, 3901 WTh
Wang, Jianli - 2002 MT, 2116 MT, 3064 WTh
Wang, Jiaojian - 3410 WTh
Wang, Jiaojian - 1028 MT, **3821 WTh**
Wang, Jiaping - 1280 MT
Wang, Jieqiong - **3441 WTh**, 3505 WTh
Wang, Jin - 1863 MT
Wang, Jin-Hui - 1264 MT
Wang, Jing - 3340 WTh
Wang, Jinhui - 1950 MT, 3059 WTh, 3691 WTh
Wang, Jiping - 1625 MT
Wang, John - 1333 MT
Wang, Jue - **1264 MT**
Wang, Junjing - 1805 MT, 3214 WTh, 1759 MT, 3435 WTh
Wang, Kai - **1351 MT**
Wang, Kuo-Wei - 1231 MT
Wang, Lei - **1167 MT**, 1887 MT
Wang, Lei - 3211 WTh
Wang, Lihong - 1789 MT
Wang, Lijuan - 1759 MT
Wang, Lijun - **1659 MT**
Wang, Ling - 4097 WTh
Wang, Pan - 3001 WTh
Wang, Pei-Ning - 3076 WTh
Wang, RuiMin - **2053 MT**
Wang, Runtang - 1441 MT
Wang, Ruopeng - 3063 WTh
Wang, Shengmin - **3141 WTh**
Wang, Shuu-Jiun - 1133 MT
Wang, Siqi - **1832 MT**
Wang, Xiaoying - 1024 MT, 3464 WTh
Wang, Xindi - **1909 MT**, 1950 MT
Wang, Xingchao - 4102 WTh
Wang, Xue - 1599 MT, 1602 MT, 1967 MT, 3904 WTh
Wang, Yalin - 3074 WTh, **3403 WTh**
Wang, Yang - 1137 MT
Wang, Yanjing - 1659 MT
Wang, Yanyan - **2109 MT**
Wang, Ye - **1024 MT**, **3464 WTh**
Wang, Yibo - 3895 WTh
Wang, Yijun - **1385 MT**
Wang, Yijun - 4048 WTh
Wang, Yingying - **3794 WTh**
Wang, Yingying - 1504 MT, 1517 MT
Wang, Yu - **1855 MT**
Wang, Yu-Kai - **1651 MT**
Wang, Yun - 1577 MT, 3216 WTh
Wang, Yunxia - 3089 WTh
Wang, Zengjian - 3895 WTh
Wang, Zhaoxin - 4090 WTh
Wang, Zhiqun - 3059 WTh, 3060 WTh
Wang, Zhishun - 1882 MT
Wang, Zijun - 1440 MT
Ward, B. Douglas - 1177 MT, 3088 WTh
Ward, David - 1539 MT
Ward, Pamela - 3242 WTh
Ward, Philip - **3242 WTh**
Wardlaw, Joanna - 1284 MT, 1433 MT
Warfield, Simon - 1790 MT
Warton, Fleur - 1087 MT
Wasan, Ajay - 3966 WTh
Washizawa, Yoshikazu - 3557 WTh
Wassermann, Demian - 1407 MT, **3856 WTh**
Wassermann, Eric - 3440 WTh
Wassink, Thomas - 3258 WTh
Wasuntapichaikul, Piyamate - 1305 MT
Watabe, Hiroshi - 3514 WTh
WATANABE, EIJU - **3649 WTh**
Watanabe, Hama - 1812 MT
Watanabe, Hazuki - 1135 MT
Watanabe, Hirohisa - 1135 MT
Watanabe, Keita - **3199 WTh**
Waterstraat, Gunnar - 4009 WTh
Watkins, Andrew - 3242 WTh
Watkins, Kate - 1539 MT, 3589 WTh, 3954 WTh
Watts, Richard - 1209 MT, 1633 MT
Watz, Henrik - 4013 WTh
Weaver, Chelan - 1356 MT
Weaver, Kurt - **1489 MT,** 1193 MT, 2103 MT
Webb, Mary - 3444 WTh
Weber, Bernd - 1657 MT, 3129 WTh
Weber, Kathleen - 1268 MT, 3015 WTh
Weber, Kristina - 3203 WTh, 3243 WTh
Weber, Lilian - **1302 MT,** 4099 WTh, 4110 WTh
Wedell, Douglas - 3340 WTh
Weder, Bruno - 1242 MT, 1243 MT
Wehrle, Renate - 1661 MT, 3256 WTh
Wei, Gaoxia - **1595 MT**
Wei, Maobin - **1646 MT**
Wei, Ping - **3879 WTh**
Wei, Qinling - 3230 WTh
Wei, Qinling - 3214 WTh
Weidner, Ralph - 3167 WTh
Weierstall, Karen - 1379 MT, **3461 WTh**
Weiland, Barbara - **3026 WTh**, 3035 WTh
Weiller, Cornelius - 1368 MT
Weinberger, Daniel - 1671 MT, 1737 MT, 1293 MT
Weiner, Kevin - **3774 WTh**, 4015 WTh
Weiner, Michael - 2118 MT, 3050 WTh, 3078 WTh, 3081 WTh, 3091 WTh, 3504 WTh, 1271 MT
Weintraub, Sandra - 3745 WTh
Weisenbach, Sara - 3158 WTh, 3205 WTh
Weisend, Michael - **1029 MT**, 3581 WTh
Weiskopf, Nikolaus - 1683 MT, 1687 MT, 1786 MT
Weiss, Jessica - 3364 WTh
Weiss, Marcel - 3819 WTh, 3828 WTh
Weiss, Peter - **2070 MT**
Weisz, Nathan - 1709 MT, 4054 WTh
Welbourne, Stephen - 1482 MT
Weldon, Anne - **3164 WTh**, 3205 WTh
Welker, Olivia - 1505 MT
Welsh, Robert - 1160 MT
Welsh, Robert - **1664 MT**, 3026 WTh, 3205 WTh, 3700 WTh
Welvaert, Marijke - **2045 MT**
Wen, Wei - 1286 MT
Wen, Zhibo - 1170 MT
Wenderoth, Nicole - 1073 MT, 1872 MT
Weng, Pei-yuan - 3234 WTh
Weng, Shih Jen - 1609 MT
Weng, Shih-Jen - 1358 MT
Wengenroth, Martina - 3770 WTh
Wens, Vincent - 1519 MT, 1521 MT, **3798 WTh**
Wersching, Heike - 3389 WTh
Wertheimer, Jürgen - 3327 WTh
Wessberg, Johan - 4002 WTh
Wessel, Jan R - **1345 MT**
Wessolleck, Erik - 1647 MT
West, John - 1137 MT
Westerhausen, Rene - **1528 MT**, 1531 MT, 3218 WTh
Westermann, Stefan - **1224 MT**, 4078 WTh, 4087 WTh, 4098 WTh
Westin, Carl-Fredrik - 3856 WTh
Westlye, Erling - 1757 MT
Westlye, Lars - 3184 WTh
Westphal, Andrew - **1792 MT**
Westphal, Luzie - 3354 WTh
Wey, Hsiao-Ying - **3598 WTh**
Whalen, Paul - 1379 MT, 3310 WTh
Whalley, Heather - 1045 MT, 3184 WTh
Wheeler-Kingshott, Claudia - 1147 MT
Wheelock, Muriah - **3304 WTh**
Wheelwright, Sally - 3761 WTh
Whelan, Christopher - **3111 WTh**
Whelan, Robert - 1127 MT, **1300 MT**, **1633 MT**, **3012 WTh**, 3041 WTh, 3461 WTh
Wheless, James - 1578 MT
Whitaker, Kirstie - **3185 WTh**
White, Brian - 3652 WTh
White, Corey - **1357 MT**
White, David - 3257 WTh
White, David - 3229 WTh, 3268 WTh
White, Keith - 1660 MT, 3862 WTh
White, Matthew - 3172 WTh
White, Peter - 3975 WTh
White, Richard - 1605 MT, 2083 MT, 3236 WTh, 3245 WTh, 1120 MT, 2089 MT, 1108 MT, 1103 MT
White, Thomas - **3217 WTh**
White, Tonya - 1099 MT, 1446 MT
Whitfield-Gabrieli, Susan - 1840 MT, **3195 WTh**
Whitford, Thomas - 3208 WTh
Whitman, Jen - **1620 MT**, 3241 WTh
Whitson, Diane - 2111 MT
Whittaker, Konrad - 1224 MT
Wibral, Michael - 1721 MT
Wiedermann, Dirk - 3815 WTh
Wieneke, Christina - 3745 WTh
Wiens, Stefan - 3566 WTh
Wierenga, Lara - **3721 WTh**
Wiese, Hendrik - 3861 WTh
Wiest, Roland - 1242 MT, 1243 MT
Wig, Gagan - 3818 WTh
Wigboldus, Daniel - 4115 WTh
Wiggins, Jillian - 3700 WTh
Wighton, Paul - 1365 MT, **1944 MT**
Wijtenburg, Andrea - 3260 WTh
Wilbertz, Tilmann - **1372 MT**
Wilbur, Ronnie - 1483 MT
Wilcock, Gordon - 2043 MT
Wilcox, Claire - **3027 WTh**
Wildemann, Briggitte - 1153 MT
Wildenberg, Joe - **1826 MT**
Wildey, Chester - 3409 WTh
Wildgruber, Dirk - 3148 WTh, 3327 WTh, 4072 WTh

# X



# Y

Yang, Albert C. - 1261 MT, 1749 MT, 1951 MT
Yang, Chia-Yen - **3575 WTh**
Yang, DongSeok - 3507 WTh
Yang, Fan-pei - **3226 WTh**, **3301 WTh**
Yang, Fan-pei - 1493 MT
Yang, Fu-Chi - 1133 MT
Yang, Han Hsuan - 1079 MT
Yang, Jeong-Hee - 3507 WTh
Yang, Jie - **1475 MT**
Yang, Jin-Ju - **3601 WTh**
Yang, Joseph Y M - **3106 WTh**
Yang, Po-Song - 1316 MT
Yang, Professor Guang-Zhong - 1305 MT, 3641 WTh
Yang, Qing - 2002 MT, **2116 MT**
Yang, Qing X - 1219 MT, 3064 WTh, 3084 WTh, 3901 WTh
Yang, Quin - 1303 MT, 3903 WTh
Yang, Shaolin - 3143 WTh
Yang, Wanqun - 3516 WTh
Yang, Wanqun - 1759 MT
Yang, Yaling - **3001 WTh**
Yang, Yee-Hong - 1959 MT
Yang, Yihong - 2117 MT, 3009 WTh, 3010 WTh, 3017 WTh, 3029 WTh, 3633 WTh
Yang, Yong - 1956 MT, 3822 WTh
Yang, Yong - **1978 MT**
Yang, Yufang - 1266 MT
Yang, Zhen - 3027 WTh
Yang, Zhen - **1996 MT**
Yang, Zhi - **1408 MT**, 1595 MT, 1999 MT, 2030 MT, **3240 WTh**
Yang, Zhi - 3136 WTh, 3778 WTh
Yang, Zhi - 1645 MT
Yang, Zih-Yun - **3656 WTh**
Yao, Li - 2056 MT
YAO, NAILIN - **1183 MT**
Yao, Zhijian - 1643 MT
Yap, Pew-Thian - **1695 MT**
Yap, Pew-Thian - 1889 MT
Yarkoni, Tal - 1448 MT, 1449 MT, 1445 MT
Yassa, Michael - 1635 MT
Yasuda, Clarissa - **1153 MT**
Yasunori, Nagase - 1228 MT
Yasuura, Shusuke - 3641 WTh
Yau, Wai-Ying - 3164 WTh
Ye, Jieping - 3403 WTh
Ye, Yu-Ling - 1594 MT, 1597 MT
Ye, Zheng - **1189 MT**
Yeatman, Jason - 1113 MT, 1680 MT, 1685 MT, **3509 WTh**, **3737 WTh**, 3841 WTh, 3849 WTh, 3866 WTh
Yeh, Chih-Chun - **2031 MT**
Yeh, Fang-Cheng - 1684 MT
Yeh, Henry - 1235 MT
Yeh, Ping-Hong - 1824 MT, 3272 WTh, **3288 WTh**
Yeh, Tzu-Chen - 3997 WTh
Yelnik, Jerome - 1204 MT
Yendiki, Anastasia - **3521 WTh**, 3657 WTh
Yeo, BT Thomas - 1775 MT, **1807 MT**, **1834 MT**
Yeo, Lami - 3726 WTh
Yeo, Sang Seok - 3502 WTh, **3540 WTh**, 3640 WTh, 3655 WTh
Yeom, Hong Gi - **2050 MT**
Yesavage, Jerome - 1320 MT
Yi, Han-Gyol - **1524 MT**
Yiannoutsos, Constantin - 1136 MT
Yin, Guangheng - 3505 WTh
Yin, Kaiming - 1953 MT
Yin, Xuntao - **3095 WTh**
Yin, Xuntao - 3783 WTh, 3897 WTh
Ying, Kui - 1405 MT
Yokota, Hidenori - 3649 WTh
Yokota, Susumu - 1981 MT, **4080 WTh**
Yokoyama, Jennifer - 3065 WTh
Yokoyama, Ryoichi - 1412 MT, 4064 WTh, 4089 WTh
Yonas, Howard - 3421 WTh
Yonelinas, Andy - 1556 MT
Yoo, Kwangsun - **1205 MT**, 1638 MT, 2023 MT, 2026 MT
Yoon, Hyung-Jun - **1613 MT**, 2029 MT, 4065 WTh
Yoon, Shin-ae - **3418 WTh**
Yoon, Shin-ae - 4067 WTh, 4073 WTh, 4119 WTh
Yoon, Uicheul - 1169 MT, 1963 MT, 1969 MT, 3080 WTh, 3375 WTh, 3534 WTh
YorkWilliams, Sophie - 1194 MT
Yoshida, Hélio - 3787 WTh
Yoshikawa, Etsuji - 3097 WTh
Yoshimura, Reiji - 3199 WTh
Yoshino, Kayoko - 3642 WTh, 3653 WTh
Yoshor, Daniel - 3951 WTh
Yosief, Sarah - 1051 MT
You, Sooyeoun - 1205 MT
You, Xiaozhen - **1057 MT**
Youn, Soyoung - 3393 WTh
Youn, Tak - 1830 MT, 4073 WTh
Young, Christina - **3362 WTh**
Young, Kymberly - 1908 MT, 3140 WTh, 3151 WTh, 3154 WTh, **3171 WTh**, 3196 WTh, 3197 WTh, 3396 WTh
Youngstom, Eric - 3194 WTh
Yourganov, Grigori - 1247 MT, 1506 MT
Yousry, Tarek - 1941 MT
Yu, Chunshui - 1272 MT, 1430 MT, 1260 MT, 1776 MT
Yu, Dahua - **3475 WTh**
Yu, DongChuan - 2053 MT
Yu, Kevin - 1183 MT
Yu, Lei - **1935 MT**
Yu, Lijun - 4090 WTh
Yu, Qingbao - **1822 MT**, 1919 MT
Yu, Ronghao - 3435 WTh
Yu, Rongjun - 3967 WTh
Yu, Tong - 3505 WTh
Yu, Xinfeng - 1181 MT
Yu, Yuguo - 2102 MT
Yuan, Binke - **2041 MT,** 2033 MT
Yuan, Han - **2037 MT**, **3140 WTh**, **3196 WTh**, 3396 WTh, 3151 WTh, 3154 WTh, 3197 WTh, 1908 MT
Yuan, Kai - **3042 WTh**, 3475 WTh
Yuan, Kai - 1576 MT
Yuan, Lei - 3403 WTh
Yuan, Lin - **1803 MT**
Yuan, Rui - **3413 WTh**
Yuan, Sen - 4049 WTh
Yuan, Weihong - **3297 WTh**, 3512 WTh, **3720 WTh**
Yuan, Ying - 3839 WTh, 3850 WTh
Yuan, Yixuan - 1435 MT, 3797 WTh
Yuanchao, Zhang - 1259 MT, 1956 MT
Yücel, Murat - 3232 WTh
Yufeng, Zang - 1457 MT, 2038 MT
Yuhaku, Atsushi - 1479 MT
Yun, Chang-Ho - 1222 MT
Yun, Hyuk Jin - 1963 MT
Yurgelun-Todd, Deborah - 3271 WTh, 3279 WTh, 3294 WTh

# Z

Zaaraoui, Wafaa - 1579 MT, 3605 WTh, 1149 MT
Zachariou, Valentinos - **4018 WTh**
Zaehle, Tino - 3777 WTh
Zahneisen, Benjamin - 3485 WTh
Zai, Alex - 1141 MT
Zaitsev, Maxim - 3471 WTh
Zakeri, Marjan - **1048 MT**
Zakrzewski, Christine - 3293 WTh
Zald, David - 1787 MT
Zalesky, Andrew - 3230 WTh
Zama, Takuro - **2054 MT**
Zamanyan, Alen - 3395 WTh
Zamboni, Giovanna - 2043 MT
Zamboni, Giovanni - 3046 WTh
Zamm, Anna - 3956 WTh
Zamorano, Francisco - **3569 WTh**, 4118 WTh
Zamoscik, Vera - **3142 WTh**
Zanette, Michela - 3377 WTh
Zang, Yu-Feng - 1264 MT, 1909 MT, 2043 MT, 3101 WTh
Zang, Yufeng - 1771 MT, 1818 MT, 1988 MT, 2033 MT, 2041 MT
Zangl, Maria - **1583 MT**
Zanon, Marco - **4101 WTh**
Zapletalová, Jana - 1232 MT
Zappasodi, Filippo - 1699 MT, 4104 WTh
Zappasodi, Filippo - **1020 MT**
Zarate, Jr, Carlos - 3160 WTh, 3209 WTh
Zareh, Elham - **1249 MT**
Zarei, Mojtaba - 1249 MT
Zatorre, Robert - 1400 MT
Zayed, Nourhan - 1163 MT
Zaytseva, Yulia - **4112 WTh**
Zeestraten, Eva - **2867 MT**
Zeidan, Fadel - **3968 WTh**
Zelaya, Fernando - 1174 MT, 3991 WTh
Zemel, Richard - 1247 MT
Zeng, Hongkui - 3215 WTh
Zeng, Ling-Li - **3162 WTh**
Zeng, Ling-Li - 3134 WTh
Zeng, Ying - 1659 MT
Zentgraf, Karen - 2066 MT
Zevin, Jason - 1475 MT
Zhan, Jinfeng - 3738 WTh
Zhan, Liang - 1278 MT, 1295 MT, **1674 MT**, 3091 WTh
Zhan, Liang - 1141 MT
Zhang, Bida - 3541 WTh
Zhang, Dai - **4045 WTh**
Zhang, Delong - 3435 WTh
Zhang, Delong - 3895 WTh
Zhang, Fengqing - **1625 MT**
Zhang, Gary - 3865 WTh
Zhang, Han - **1771 MT**, 1988 MT, **2002 MT**, 3901 WTh
Zhang, Hui - 3529 WTh, 3815 WTh
Zhang, Hui - 3464 WTh
Zhang, Huiran - 3216 WTh
ZHANG, HUISHI - **3568 WTh**
Zhang, Huishi - 3126 WTh
Zhang, Jiaxiang - **1180 MT**
Zhang, Jinbei - 3214 WTh, 3230 WTh
Zhang, Jing - **2099 MT**
Zhang, Jingjing - 3191 WTh
Zhang, Jiuquan - **3698 WTh**
Zhang, Jue - 1024 MT, 3464 WTh
Zhang, Jun - 1413 MT
Zhang, Junran - **3161 WTh**
Zhang, Junying - **3089 WTh**
Zhang, Kai - 3464 WTh

Organization for
Human Brain Mapping

5841 Cedar Lake Road, Suite 204
Minneapolis, MN 55416 USA

www.humanbrainmapping.org
Phone: 952.646.2029
Fax: 952.545.6073
Email: info@humanbrainmapping.org