CNS 2019 SAN FRANCISCO

March 23 – 26, 2019

Cognitive Neuroscience Society

26th Annual Meeting, March 23-26, 2019
Hyatt Regency Hotel, San Francisco, California

Contents

A Supplement of the Journal of Cognitive Neuroscience
Cognitive Neuroscience Society
c/o Center for the Mind and Brain
267 Cousteau Place, Davis, CA 95616
ISSN 1096-8857 © CNS
www.cogneurosociety.org

2019 Committees & Staff

Governing Board

Marie Banich, Ph.D., University of Colorado at Boulder
Roberto Cabeza, Ph.D., Duke University
Marta Kutas, Ph.D., University of California, San Diego
George R. Mangun, Ph.D., University of California, Davis (ex officio)
Patti Reuter-Lorenz, Ph.D., University of Michigan (ex officio)
Daniel Schacter, Ph.D., Harvard University

Program Committee

Elizabeth Kensinger, Ph.D., Boston College (Chair)
Michael Anderson, Ph.D., University of Cambridge
Michael Chee, M.B.B.S., Duke University -NUS Graduate Medical School, Singapore
Tobias Egner, Ph.D., Duke University
Kia Nobre, Ph.D., University of Oxford
Uta Noppeney, Ph.D., University of Birmingham
Sharon Thompson-Schill, Ph.D., University of Pennsylvania

Poster Committee

Marian Berryhill, Ph.D. University of Nevada, Reno (Chair)
Evangelia Chrysikou, Ph.D., University of Kansas
Michele Diaz, Ph.D., Pennsylvania State University
Jeffrey Johnson, Ph.D., University of Missouri
Vishnu Murty, Ph.D., University of Pittsburgh
Lorna C. Quandt, Ph.D., Gallaudet University
Matthias Wieser, Ph.D., Erasmus University, Rotterdam, Netherlands
Rebecca Spencer, Ph.D., University of Massachusetts Amherst

Symposium Committee

Kelly Giovanello, Ph.D., University of North Carolina, Chapel Hill (Chair)
Michael Cole, Ph.D., Rutgers University
Micah Murray, Ph.D., University of Lausanne
Jonas Obleser, Ph.D., University of Lübeck, Germany
Ingrid Olson, Ph.D., Temple University
Corianne Rogalsky, Ph.D., Arizona State University

Young Investigator Award Committee

Cindy Lustig, Ph.D., University of Michigan (Chair)
Marvin Chun, Ph.D., Yale University
Kara Federmeier, Ph.D., University of Illinois
Michael Frank, Ph.D., Brown University
Kevin Oschner, Ph.D., Columbia University

Founding Committee (1994)

Michael S. Gazzaniga, Ph.D., University of California, Santa Barbara
George R. Mangun, Ph.D., University of California, Davis
Steve Pinker, Ph.D., Harvard University
Patti Reuter-Lorenz, Ph.D., University of Michigan
Daniel Schacter, Ph.D., Harvard University
Art Shimamura, Ph.D., University of California, Berkeley

CNS Trainee Association (CNSTA)

Sarah Kark, Boston College - President
Audreyana Jagger, Southern Illinois University - Vice President
Alexandra (Lesya) Gaynor, CUNY Graduate Center
Jacob Westerberg, Vanderbilt University
Marty Fiati, Anglia Ruskin University
Merage Ghane, Virginia Polytechnic Institute
Samantha Cohen, CUNY Graduate Center

CNS Diversity, Outreach and Training Committee (DOT)

Richard Prather, Ph.D., University of Maryland (Chair)
Amy Belfi, Ph.D., New York University
Bhismadev Chakrabarti, Ph.D., University of Reading
Audrey Duarte, Ph.D., Georgia Institute of Technology
Christopher Madan, Ph.D., University of Nottingham
Noa Ofen, Ph.D., Wayne State University
Aleksandra Sherman, Ph.D., Occidental College
Bradley Voytek, Ph.D., UCSD

CNS Public Information Officer

Lisa M.P. Munoz

Administrative Staff

Kate Tretheway, Executive Director
Sangay Wangmo, Administrative Assistant

TM Events, Inc. Meeting Staff

Tara Miller, Event Director
Kerry Bosch, Meeting Planner
Amy Miller, Registration Manager
Melissa Copeland, Exhibits Manager
Dustin Miller, Monitoring Manager
Becky Gazzaniga, Event Associate
Nikki Smith, Event Associate

Volunteers

Ryan Bottary, Boston College
Kathryn Bousquet, University of California, Davis
Mehar Durah, University of California, Davis
Samika Kumar, UC Berkeley
Salahadin Lotfi, University of Wisconsin-Milwaukee
Hayley O'Donnell, Drexel University
Sriparna Sen, Rice University / Baylor College of Medicine
Maria Stacy, Southern Illinois University
Mirta Stantic, University of Oxford
Kathryn Kern, Boston University School of Medicine

Schedule Overview

Saturday, March 23, 2019

11:00 am - 1:30 pm	Exhibitor Check In, *Pacific Concourse*
11:00 am - 6:00 pm	On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*
12:00 - 1:30 pm	**DATA BLITZ SESSION 1**, *Bayview Room* CC
	DATA BLITZ SESSION 2, Grand *Ballroom A* CC
	DATA BLITZ SESSION 3, Grand *Ballroom B/C*
1:00 - 1:30 pm	Poster Session A Set-Up, *Pacific Concourse*
1:30 - 3:30 pm	**POSTER SESSION A**, *Pacific Concourse*
1:30 - 5:30 pm	Exhibits Open, *Pacific Concourse*
2:30 - 3:00 pm	Coffee Service, *Pacific Concourse*
3:30 - 4:30 pm	**OPENING CEREMONIES & KEYNOTE ADDRESS — Why Sleep?,** Matthew Walker, University of California, Berkeley, OPEN TO THE PUBLIC (Q&A to follow), *Grand Ballroom* CC
4:30 - 4:45 pm	Short Break
4:45 - 6:30 pm	**SPECIAL SESSION — The Relation Between Psychology and Neuroscience**, David Poeppel, Organizer, *Grand Ballroom* CC
5:00 - 5:30 pm	Poster Session A Take-Down, *Pacific Concourse*
5:30 pm	Exhibit Hall Closed for the Day – No Entry
6:30 - 7:30 pm	Welcome Reception, *Atrium*

Sunday, March 24, 2019

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session B Set-up Only, *Pacific Concourse*
7:30 am - 6:30 pm	On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*
8:00 - 8:30 am	Continental Breakfast, *Pacific Concourse*
8:00 - 10:00 am	**POSTER SESSION B**, *Pacific Concourse*
8:00 am - 7:00 pm	Exhibits Open, *Pacific Concourse*
8:30 - 10:00 am	Communications Open House, Press Room, *Marina Room*
10:00 am - 12:00 pm	**INVITED SYMPOSIUM 1 — Imaging the Immediate and Long-Term Effects of Exercise in Humans**, Wendy Suzuki, Chair, *Grand Ballroom A*
▶ 10:00 - 10:08 am	Introduction
▶ 10:08 - 10:36 am	**TALK 1: Impact of Acute Mild Exercise Interventions on Hippocampal Memory**, Michael Yassa
▶ 10:36 - 11:04 am	**TALK 2: Bridging Acute and Chronic Effects of Aerobic Exercise on Memory Systems**, Michelle Voss
▶ 11:04 - 11:32 am	**TALK 3**: **Neurovascular Plasticity Induced by Exercise Interventions Shows High Levels of Interindividual Variability in Humans**, Emrah Duzel
▶ 11:32 - 12:00 pm	**TALK 4: Designing and Evaluating Real-World Interventions to Promote Activity and Neurocognitive Functions**, Michelle Carlson
10:00 am - 12:00 pm	**INVITED SYMPOSIUM 2 — Mesoscale Cognition: High-Field Imaging and Laminar Analysis of Data**, Charles Schroeder, Chair, *Grand Ballroom B/C*
▶ 10:00 - 10:08 am	Introduction
▶ 10:08 - 10:36 am	**TALK 1: Knowns and Unknowns of Predictive Computations in the Human Brain**, Lucia Melloni
▶ 10:36 - 11:04 am	**TALK 2: Layer-Specific fMRI: A New Frontier for Mapping Human Brain Activity and Connectivity**, Peter Bandettini
▶ 11:04 - 11:32 am	**TALK 3: Decoding Memory in Health and Alzheimer's Disease**, Anabelle Singer
▶ 11:32 - 12:00 pm	**TALK 4: Mapping the Human Auditory Pathway: Computational Models and UHF MRI**, Federico de Martino
11:30 - 11:45 am	Poster B Take-Down, *Pacific Concourse*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	**WORKSHOP — Wearable Sensor Solutions for Integrated Mobile EEG/EXG, Motion Capture & Eye Tracking in the Real and Virtual Worlds**, *Grand Ballroom A* CC
1:30 - 2:00 pm	Poster C Set-Up, *Pacific Concourse*

1:30 - 3:30 pm **SYMPOSIUM 1 — Causal Inference Applied to Cognitive Neuroscience: from Brain Connectivity to Neurocognition**, Romy Lorenz, Chair, *Grand Ballroom A*

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: The Centrality of Causal Inference to Cognitive and Network Neuroscience**, Michael W. Cole
- 2:04 - 2:30 pm **TALK 2: Transcranial Brain Stimulation to Study the Function of Neuronal Oscillations**, Til Ole Bergmann
- 2:30 - 2:56 pm **TALK 3: Causal Approaches to Testing the Role of Awake Reactivation in Associative Memory Retention**, Arielle Tambini
- 2:56 - 3:22 pm **TALK 4: Active Inference in Gaming Environments for Computational Psychiatry**, Rosalyn Moran
- 3:22 - 3:30 pm Q&A with the Audience

1:30 - 3:30 pm **SYMPOSIUM 2 — Deconstructing the Contents of Episodic Memory Retrieval: Pattern Reactivation as a Marker of Memory Quality and Fidelity**, Maureen Ritchey, Chair, *Grand Ballroom B/C*

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: Convergence of Objective and Subjective Indices of Episodic Memory**, Bradley Buchsbaum
- 2:04 - 2:30 pm **TALK 2: Reactivation in Parietal Cortex Predicts Costs and Benefits of Memory Retrieval**, Brice Kuhl
- 2:30 - 2:56 pm **TALK 3: Network Interactions Supporting the Precision of Item and Context Information in Episodic Memory**, Maureen Ritchey
- 2:56 - 3:22 pm **TALK 4: Representation of Complex Events in the Anterior Temporal and Posterior Medial Brain Systems: Effects of Retention Delay and Prior Knowledge**, Chris Bird
- 3:22 - 3:30 pm Q&A with the Audience

1:30 - 3:30 pm **SYMPOSIUM 3 — Beyond the Attentional Spotlight: The Role of Inhibition in Selective Attention**, Heleen Slagter, *Bayview Room* CC

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: Combined Electrophysiological and Behavioral Evidence for the Suppression of Salient Distractors**, Nick Gaspelin
- 2:04 - 2:30 pm **TALK 2**: **Passive Suppression of Distractors in Visual Search**, Bo-Yeong Won
- 2:30 - 2:56 pm **TALK 3: Facilitation and Inhibition in Selective Attention: Two Sides of the Same Coin?,** Heleen A Slagter
- 2:56 - 3:22 pm **TALK 4: A Theta-Rhythmic Theory of Attention: Alternating States that Promote either Sampling or Shifting**, Ian C. Fiebelkorn
- 3:22 - 3:30 pm Q&A with the Audience

3:30 - 4:00 pm Coffee Break, *Ballroom Foyer*

4:00 - 5:00 pm **25TH ANNUAL GEORGE A. MILLER PRIZE IN COGNITIVE NEUROSCIENCE LECTURE — Working Memory 2.0**, Earl K. Miller, *Grand Ballroom* CC

5:00 - 7:00 pm **POSTER SESSION C**, *Pacific Concourse*

7:00 - 7:15 pm Poster Session C Take-Down, *Pacific Concourse*

7:15 pm Exhibit Hall Closed for the Day – No Entry

Monday, March 25, 2019

7:30 - 8:00 am Exhibit Hall Access for Exhibitors/Poster Session D Set-Up Only, *Pacific Concourse*

8:00 am - 5:30 pm On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*

8:00 - 8:30 am Continental Breakfast, *Pacific Concourse*

8:00 - 10:00 am **POSTER SESSION D**, *Pacific Concourse*

8:00 am - 5:30 pm Exhibits Open, *Pacific Concourse*

8:30 - 10:00 am Communications Open House, Press Room, *Marina Room*

10:00 am - 12:00 pm **SYMPOSIUM 4 — Mental Models of Time**, Virginie van Wassenhove, Chair, *Bayview Room* CC

- 10:00 - 10:08 am Introduction
- 10:08 - 10:34 am **TALK 1: Mental and Neural Representations of the Past and the Future**, Marc Howard
- 10:34 - 11:00 am **TALK 2: Temporal Structure is the Key to Understanding Episodic Memory**, Charan Ranganath
- 11:00 - 11:26 am **TALK 3: Structuring Time in the Hippocampal-Entorhinal System**, Christian Doeller
- 11:26 - 11:52 am **TALK 4**: **Ordering Events in Time and Space: Similar Algorithms, Different Implementations?**, Virginie van Wassenhove

▶ 11:52 - 12:00 pm	Q&A with the Audience
10:00 am - 12:00 pm	**SYMPOSIUM 5 — Individual Differences in Age-Related Episodic Memory Decline: Mechanisms, Challenges, and Opportunities**, Alexandra Trelle, Chair, Elizabeth Mormino, Co-Chair, *Grand Ballroom B/C*
▶ 10:00 - 10:08 am	Introduction
▶ 10:08 - 10:34 am	**TALK 1**: **The Impact of Aβ and Tau on Prospective Cognitive Decline in Older Individuals**, Elizabeth C. Mormino
▶ 10:34 - 11:00 am	**TALK 2**: **The Contribution of Hippocampal Integrity and Amyloid Burden to Individual Differences in Episodic Memory with Age**, Alexandra N. Trelle
▶ 11:00 - 11:26 am	**TALK 3: Reverse Translation Links Memory Performance to Neural Compensation in a Rodent Model of Cognitive Aging**, Sarah A. Johnson
▶ 11:26 - 11:52 am	**TALK 4**: **Amyloid Interacts with Multiple Factors to Predict Longitudinal Memory Change in Cognitively Normal Older Adults**, Trey Hedden
▶ 11:52 - 12:00 pm	Q&A with the Audience
10:00 am - 12:00 pm	**SYMPOSIUM 6 — Cognitive Networks: Trends in Multimodal Approaches and Connectomics**, Arseny Sokolov, Chair, Aron K Barbey, Co-Chair, *Grand Ballroom A*
▶ 10:00 - 10:08 am	Introduction
▶ 10:08 - 10:34 am	**TALK 1: Brain Networks Underpinning Cognitive Control Support Flexible Behavior in Situ**, David Lydon-Staley
▶ 10:34 - 11:00 am	**TALK 2: Network Neuroscience Theory of Human Intelligence**, Aron K. Barbey
▶ 11:00 - 11:26 am	**TALK 3: Reconfiguration of the Language Network after Brain Damage**, Vitoria Piai
▶ 11:26 - 11:52 am	**TALK 4: Integrated Effective and Structural Connectivity Underlying Body Language Reading**, Arseny A. Sokolov
▶ 11:52 - 12:00 pm	Q&A with the Audience
11:30 - 11:45 am	Poster Session D Take-Down, *Pacific Concourse*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	**WORKSHOP — Latest Need to Know Re: NIH Funding Plus Training**, Career and Research Grant Opportunities, *Grand Ballroom A* CC
12:15 - 1:15 pm	**WORKSHOP — New Methods for Analyzing Periodic Oscillations and Aperiodic 1/f in Electrophysiology**, *Grand Ballroom B/C*
1:30 - 2:00 pm	Poster Session E Set-Up, *Pacific Concourse*
1:30 - 2:00 pm	**YIA 1 — Rethinking the Episodic-Semantic Distinction: New Insights from the Dementias**, Muireann Irish, *Grand Ballroom A* CC
2:00 - 2:30 pm	**YIA 2 — Brain Network Organization as the Computational Architecture of Cognition**, Michael W. Cole, *Grand Ballroom A* CC
2:30 - 4:30 pm	**POSTER SESSION E**, *Pacific Concourse*
3:30 - 4:00 pm	Coffee Service, *Pacific Concourse*
4:30 - 5:30 pm	**THE FRED KAVLI DISTINGUISHED CAREER CONTRIBUTIONS IN COGNITIVE NEUROSCIENCE LECTURED — Adaptive Constructive Processes in Memory and Imagination**, Daniel L Schacter, Harvard University, *Grand Ballroom* CC
5:30 - 5:45 pm	Poster Session E Take-Down, *Pacific Concourse*
5:45 - 7:15 pm	**CNS TRAINEE PROFESSIONAL DEVELOPMENT PANEL**, *Bayview Room* CC
5:45 pm	Exhibit Hall Closed for the Day – No Entry
7:30 - 10:00 pm	CNS Student Trainee Social Night, *Monroe's*

Tuesday, March 26, 2019

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session F Set-Up Only, *Pacific Concourse*
8:00 am - 3:00 pm	On-site Registration & Pre-Registration Check In. *Grand Ballroom Foyer*
8:00 - 8:30 am	Continental Breakfast, *Pacific Concourse*
8:00 - 10:00 am	**POSTER SESSION F**, *Pacific Concourse*
8:00 am - 12:00 pm	Exhibits Open, *Pacific Concourse*

10:00 am - 12:00 pm **INVITED SYMPOSIUM 3 — An Emerging Neuroscience of Social Connectedness**, Thalia Wheatley, Chair, *Grand Ballroom A*

- 10:00 - 10:08 am Introduction
- 10:08 - 10:36 am **TALK 1: Monkey Business: Modeling the Neurobiology of Strategic Human Social Interactions**, Michael Platt
- 10:36 - 11:04 am **TALK 2: Parent-Infant Neural Connectedness Underpins Early Social Learning**, Victoria Leong
- 11:04 - 11:32 am **TALK 3: The Brain in the Social World: Integrating Approaches from Cognitive Neuroscience, Social Psychology and Social Network Analysis**, Carolyn Parkinson
- 11:32 - 12:00 pm **TALK 4**: **Communication and Social Interactions in Fruit Flies: Genes, Networks and Behavior**, Giovanni Bosco

10:00 am - 12:00 pm **INVITED SYMPOISUM 4 —Making Decisions in a Structured World**, David Badre, Chair, *Grand Ballroom B/C*

- 10:00 - 10:08 am Introduction
- 10:08 - 10:36 am **TALK 1: Structuring Experience in Cognitive Spaces**, Christian Doeller
- 10:36 - 11:04 am **TALK 2: Using Structured Task Complexity to Seek Explanatory Simplicity**, Alla Karpova
- 11:04 - 11:32 am **TALK 3**: **Hierarchical Reinforcement Learning Supports Generalization**, Anne Collins

11:32 - 12:00 pm **TALK 4: Learning and Transfer of Structured Task Knowledge**, David Badre

11:45 am - 12:00 pm Poster Session F Take-Down, *Pacific Concourse*

12:00 pm Exhibit Hall Closed for the Day – No Entry

12:00 - 1:30 pm Lunch Break (On your own)

1:30 - 3:30 pm **SYMPOSIUM 7 — Towards Understanding Individual Variability with Functional Neuroimaging: Big Data and Deep Data Perspectives**, Colin Hawco, Chair, Caterina Gratton, Co-Chair, *Grand Ballroom A*

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: Factors Influencing the Test-Retest Reliability of Functional Connectivity**, Stephanie Noble
- 2:04 - 2:30 pm **TALK 2: Precision Measurements Reveal Stability and Individual Differences in Human Functional Brain Networks**, Caterina Gratton
- 2:30 - 2:56 pm **TALK 3: Clustering Task-fMRI Activity Reveals Patterns of Individually-Variable Activity**, Colin Hawco
- 2:56 - 3:22 pm **TALK 4: The Dynamic Basis of Cognition: An Integrative Core Under the Control of the Ascending Neuromodulatory System**, Mac Shine
- 3:22 - 3:30 pm Q&A with the Audience

1:30 - 3:30 pm **SYMPOSIUM 8 — From Knowing to Re-Experiencing: The Semantic-Episodic Distinction 47 years on**, Louis Renoult, Chair, Muireann Irish, Discussant, *Grand Ballroom B/C*

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: Interactions Between Semantic and Episodic Memory: Neuropsychological Insights**, Matthew Lambon Ralph
- 2:04 - 2:30 pm **TALK 2: Contributions of Semantic Memory to the Recollection of Unique Episodes**, Michael D. Rugg
- 2:30 - 2:56 pm **TALK 3: Episodic- and Semantic-Like Interactions in Spatial Memory**, R. Shayna Rosenbaum
- 2:56- 3:22 pm **TALK 4: Individual Differences in Trait Episodic and Semantic Abilities: Relation to Strategic Processes and Aging Outcomes**, Brian Levine
- 3:22 - 3:30 pm Q&A with the Audience

1:30 - 3:30 pm **Symposium 9 — Relational Thinking: How are Mental Relations Represented in the Brain?** Silvia Bunge, Chair, Wei-Chun Wang, Co-Chair, *Bayview Room*

- 1:30 - 1:38 pm Introduction
- 1:38 - 2:04 pm **TALK 1: In Search of the Neural Substrate for Abstract Semantic Relations: Computational Models as Guides**, Keith Holyoak
- 2:04 - 2:30 pm **TALK 2: Why Items that are Semantically Related are More Likely to be Remembered**, Wei-Chun Wang
- 2:30 - 2:56 pm **TALK 3: Putting the Pieces Together: Generating a Novel Representational Space through Deductive Reasoning**, David Kraemer
- 2:56 - 3:22 pm **TALK 4: Neurocognitive Effects of Real-World Spatial STEM Education on Relational Reasoning**, Adam Green
- 3:22 - 3:30 pm Q&A with the Audience

Statement on Principles of Community and Code of Conduct

An open exchange of ideas, the freedom of thought and expression, and respectful scientific debate are central to the aims and goals of the Cognitive Neuroscience Society (CNS). CNS stands firmly for an environment that recognizes the inherent worth of every person and group, that fosters dignity, understanding, and mutual respect, and that celebrates diversity. The Governing Board and committee members of CNS endorse a safe, respectful and harassment-free experience for members, speakers/presenters and staff of the CNS.

Harassment and hostile behavior are unwelcome at CNS before, during and after organized lectures and poster sessions. We stand against harassment based on race, gender, religion, age, appearance, national origin, ancestry, disability, sexual orientation, and gender identity, or any other category. Harassment includes degrading verbal comments, deliberate intimidation, stalking, harassing photography or recording, inappropriate physical contact, and unwelcome sexual attention. The policy is not intended to inhibit challenging scientific debate, but rather to promote it by ensuring that all are welcome to participate in a shared spirit of scientific inquiry. These principles apply equally to scientific and social events organized by CNS.

Any concerns should be conveyed to a member of our Diversity, Outreach and Training Committee:

Richard Prather, (Chair) prather1@umd.edu
Amy Belfi. amybelfi@mst.edu
Bhismadev Chakrabarti, b.chakrabarti@reading.ac.uk
Audrey Duarte, audrey.duarte@psych.gatech.edu
Christopher Madan, christopher.madan@nottingham.ac.uk
Noa Ofen, noa.ofen@wayne.edu
Aleksandra Sherman, asherman@oxy.edu;
Bradley Voytek, bradley.voytek@gmail.com

Keynote

Matthew Walker

University of California, Berkeley

Keynote Address, Open to the Public

Saturday, March 23, 2019, 3:30 - 4:30 pm, Grand Ballroom

Why Sleep?

Can you recall the last time you woke up without an alarm clock feeling refreshed, not needing caffeine? If the answer is “no,” you are not alone. Two-thirds of adults fail to obtain the recommended 8 hours of nightly sleep. I doubt you are surprised by the answer to this question, but you may be surprised by the consequences. This talk will describe not only the good things that happen when you get sleep, but the alarmingly bad things that happen when you don’t get enough. The presentation will focus on the brain (learning, memory aging, Alzheimer’s disease, education), but further highlight disease-related consequences in the body (cancer, diabetes, cardiovascular disease). The take-home: sleep is the single most effective thing we can do to reset the health of our brains and bodies.

George A Miller Prize

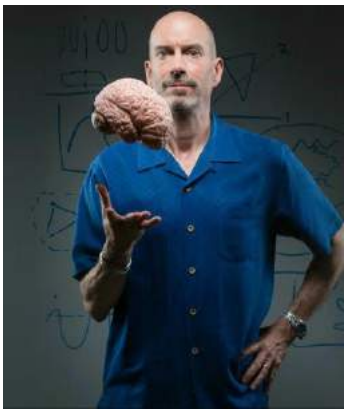
Congratulations to Earl K. Miller for being awarded this honor!

Early K. Miller will accept this prestigious award and deliver his lecture on Sunday, March 24, 2019, 4:00 – 5:00 pm, in the Grand Ballroom.

Working Memory 2.0

Earl K. Miller

Picower Professor of Neuroscience, The Picower Institute for Learning and Memory, Massachusetts Institute of Technology



Working memory is the fundamental function by which we break free from reflexive input-output reactions to gain control over our own thoughts. It has two types of mechanisms: online maintenance of information and its volitional or executive control. Classic models proposed persistent spiking for maintenance but have not explicitly addressed executive control. I will review recent theoretical and empirical studies that suggest updates/additions to the classic model. Synaptic weight changes between sparse bursts of spiking strengthen working memory maintenance. Executive control acts via interplay between network oscillations in gamma (30-100 Hz) in superficial cortical layers (layers 2 & 3) and alpha/beta (10-30 Hz) in deep cortical layers (layers 5 & 6). Deep-layer alpha/beta is associated with top-down information and inhibition. It regulates the flow of bottom-up sensory information associated with superficial layer gamma. We propose that interactions between different rhythms in distinct cortical layers underlie working memory maintenance and its volitional control.

About the George A. Miller Prize in Cognitive Neuroscience

The George A. Miller Prize in Cognitive Neuroscience was established in 1995 by the Cognitive Neuroscience Society to honor the innovative scholarship of George A. Miller, whose many theoretical advances have greatly influenced the discipline of cognitive neuroscience. The first ten years of the prize were funded by generous support from the James S. McDonnell Foundation.

Each year the Prize shall recognize an individual whose distinguished research is at the cutting-edge of their discipline with realized or future potential, to revolutionize cognitive neuroscience. Extraordinary innovation and high impact on international scientific thinking should be a hallmark of the recipient's work.

An annual call for nominations for the George A. Miller Prize will be made to the membership of the society. The recipient of the prize will attend the annual meeting of the Cognitive Neuroscience Society and deliver the George A. Miller lecture.

Previous Winners of the George A. Miller Lectureship

2018	Elizabeth Spelke, Harvard University
2017	Dr. David Van Essen, Washington University in St Louis
2016	Brian Wandell, Isaac and Madeline Stein Family Professor
2015	Patricia Kuhl, Ph.D., University of Washington
2014	Jon Kaas, Ph.D., Vanderbilt University
2013	Fred Gage, Ph.D., The Salk Institute
2012	Eve Marder, Ph.D., Brandeis University
2011	Mortimer Mishkin, Ph.D., NIMH
2010	Steven Pinker, Ph.D., Harvard University
2009	Marcus Raichle, Ph.D., Washington University School of Medicine
2008	Anne Treisman, Ph.D., Princeton University
2007	Joaquin M. Fuster, Ph.D., University of California Los Angeles
2006	Steven A. Hillyard, Ph.D., University of California San Diego
2005	Leslie Ungerleider, Ph.D., National Institute of Mental Health
2004	Michael Posner, Ph.D., University of Oregon
2003	Michael Gazzaniga, Ph.D., Dartmouth College
2002	Daniel Kahneman, Ph.D., Princeton University
2001	William Newsome, Ph.D., Stanford University
2000	Patricia Churchland, Ph.D., University of California, San Diego
1999	Giacommo Rizzolatti, Ph.D., University of Parma, Italy
1998	Susan Carey, Ph.D., New York University
1997	Roger Shepard, Ph.D., Stanford University
1996	David Premack, Ph.D., CNRS, France
1995	David H. Hubel, Ph.D., Harvard Medical School

The Fred Kavli Distinguished Career Contributions Award

Congratulations to Daniel L. Schacter for being awarded this honor!

Daniel L. Schacter will accept this prestigious award and deliver her lecture on Monday, March 25, 2019, 4:30 – 5:30 pm, in the Grand Ballroom.

Adaptive Constructive Processes in Memory and Imagination

Daniel L. Schacter

Department of Psychology, Harvard University

Adaptive constructive processes play a functional role in cognition but can also produce distortions, errors, or illusions as a consequence of doing so. Insights into the cognitive and neural features of such processes have been provided by neuroimaging, neuropsychological, and behavioral studies of functionally beneficial constructive processes in memory, imagination, future thinking, and related domains, as well as by studies of associated memory distortions. This talk will consider the development of cognitive neuroscience approaches to understanding adaptive constructive processes that have emerged during the past two decades.

About the Distinguished Career Contributions Award

The Distinguished Career Contributions Award (DCC) was established in 2012 and it has been sponsored by the Fred Kavli Foundation since 2016. This award honors senior cognitive neuroscientists for their sustained and distinguished career, including outstanding scientific contributions, leadership and mentoring in the field of cognitive neuroscience.

An annual call for nominations for the Fred Kavli Distinguished Career Contributions Award will be made to the membership of the society. The recipient of the prize will attend the annual meeting of the Cognitive Neuroscience Society and deliver the Fred Kavli Distinguished Career Contributions lecture.

Previous Winners of the Distinguished Career Contributions Award

2018	Alfonso Caramazza, Harvard University
2017	Marcia K. Johnson, Yale University
2016	James Haxby, University of Trento
2015	Marta Kutas, Ph.D., University of California, San Diego
2014	Marsel Mesulam, M.D., Northwestern University
2013	Robert T. Knight, M.D., University of California, Berkeley
2012	Morris Moscovitch, Ph.D., University of Toronto

THE KAVLI FOUNDATION

Young Investigator Award

Congratulations to the 2019 Young Investigator Award Winners!

Muireann Irish, Associate Professor, Brain & Mind Centre and School of Psychology, The University of Sydney, Australia

Michael W. Cole, Assistant Professor, Center for Molecular and Behavioral Neuroscience (CMBN), Rutgers University – Newark

YIA special lectures take place on Monday, March 25, 2019, 1:30 – 2:30 pm, in the Grand Ballroom A at the Hyatt Regency San Francisco.

The purpose of the awards is to recognize outstanding contributions by scientists early in their careers. Two awardees, one male and one female, are named by the Awards Committee, and are honored at the CNS annual meeting. Each award includes $500 US to be used by the winners toward travel costs to the meeting, or for any other purpose.

Rethinking the Episodic-Semantic Distinction: New Insights from the Dementias

Monday, March 25, 2019, 1:30 –2:00 pm, Grand Ballroom A

Muireann Irish

Associate Professor, Brain & Mind Centre and School of Psychology, The University of Sydney, Australia

Our memories are our most prized possessions, enabling us to revisit defining events from the past and guiding us towards adaptive behaviours in the future. The relative ease with which we mentally navigate back and forth through subjective time belies the incredible complexity of these processes. It is only when memory begins to fail that we can truly appreciate its intricacy and inherent vulnerability. Neurodegenerative disorders provide compelling insights into the cognitive architecture of human memory systems in the face of progressive and coordinated neural insult. In this lecture, I will provide an overview of my work exploring past- and future-oriented expressions of memory in Alzheimer's disease and semantic dementia; neurodegenerative disorders characterised by progressive deterioration of the episodic and semantic memory systems, respectively. These syndromes have provided unique insights into the functional organisation of autobiographical memory and future thinking, highlighting the necessary interplay between episodic and semantic processes in supporting cognitively sophisticated endeavours. As such, I hope to provide a refined understanding of the fundamental neurocognitive mechanisms which support past and future thinking, as well as highlighting the continued importance of conducting patient work in the era of neuroimaging.

Brain Network Organization as the Computational Architecture of Cognition

Monday, March 25, 2019, 2:00 –2:30 pm, Grand Ballroom A

Michael W. Cole

Assistant Professor, Center for Molecular and Behavioral Neuroscience (CMBN), Rutgers University – Newark

Understanding neurocognitive computations will require not just localizing cognitive information distributed throughout the brain but also determining how that information got there. Brain connectivity clearly has something to do with it, and decades of "connectionist" (and recent "deep learning") theory suggests connectivity patterns specify distributed neural computations. I will share my laboratory's efforts to map the human brain's large-scale functional network organization and to determine how that organization shapes distributed cognitive processes. Central to these efforts is the estimation of activity flow – the movement of evoked activity through brain network connections. Estimating activity flow quantifies the likely contribution of a network organization (such as one estimated using resting-state functional connectivity) to function-specific activity patterns (such as fMRI responses to cognitive events). This is accomplished via a predictive algorithm based on neural network modeling but parameterized using empirical data. I will cover application of activity flow mapping to predict whole-brain activation patterns across a variety of tasks, such as tasks involving working memory, rapid instructed task learning, and natural vision (movies), as well as in the context of pre-clinical Alzheimer's disease. I will also emphasize related methods combining theoretical and empirical approaches to better understand neurocognitive computation. As we advance the activity flow framework – improving functional connectivity estimation and algorithmic details – we are getting closer to the long-term goal of producing empirically-derived task-performing computational models of brain function. These developments promise to better integrate theoretical/computational neuroscience and empirical neuroscience with mutual benefits across both fields.

Workshops & Special Events

Title	Date	Time	Location
Wearable Sensor Solutions for Integrated Mobile EEG/EXG, Motion Capture & Eye Tracking in the Real and Virtual Worlds	**Sunday, March 24**	**12:15 – 1:15 pm**	**Grand Ballroom A**
Latest Need to Know Re: NIH Funding Plus Training, Career and Research Grant Opportunities	**Monday, March 25**	**12:15 – 1:15 pm**	**Grand Ballroom A**
New Methods for Analyzing Periodic Oscillations and Aperiodic 1/f in Electrophysiology	**Monday, March 25**	**12:15 – 1:15 pm**	**Grand Ballroom B/C**
CNS Trainee Professional Development Panel	**Monday, March 25**	**5:45 - 7:15 pm**	**Bayview Room**
CNS Trainee Association Student Social Night	**Monday, March 25**	**7:00 - 10:00 pm**	**Monroe Bar**

WEARABLE SENSOR SOLUTIONS FOR INTEGRATED MOBILE EEG/EXG, MOTION CAPTURE & EYE TRACKING IN THE REAL AND VIRTUAL WORLDS

Sunday, March 24, 12:15 - 1:15 pm, Grand Ballroom A

This workshop will explore mobile and wearable solutions for cognitive neuroscience research geared toward real-world and VR environments. Presentations will include dry and mobile EEG, fNIR, physiological monitoring, as well as approaches for multi-modal signal synchronization. Time will be allotted for interactive demonstration of these sensors and their enabling platforms.

LATEST NEED TO KNOW RE: NIH FUNDING PLUS TRAINING, CAREER AND RESEARCH GRANT OPPORTUNITIES

Monday, March 25, 12:15 - 1:15 pm, Grand Ballroom A

NIH Program Directors present news you need to find your best research fit for training, career, or research grants plus guidance contacts at NIH; overview grant application, review, funding processes. UPDATE! NEED TO KNOW: new FOAs & Notices, Basic Experimental Studies with Humans (BESH) research and clinical trials. Also find us throughout the meeting.

NEW METHODS FOR ANALYZING PERIODIC OSCILLATIONS AND APERIODIC 1/F IN ELECTROPHYSIOLOGY

Monday, March 25, 12:15 - 1:15 pm, Grand Ballroom B/C

This will be a hands-on tutorial for working with new analysis tools for electrophysiological field recordings (EEG, MEG, ECoG), including task based analyses. Participants will learn to apply novel tools for analyzing neural oscillations, waveform shape, and aperiodic 1/f signals in their data.

CNS TRAINEE PROFESSIONAL DEVELOPMENT PANEL

Monday, March 25, 5:45 – 7:15 pm, Bayview Room

CNSTA Professional Development Panel Organizers: Sarah Kark (Boston College), Audreyana Cleo Jagger (Southern Illinois University) and the CNSTA Committee Officers.

Panelists: Dr. Laura Libby (Data Scientist at Uber), Dr. Maureen Ritchey (Boston College), Dr. Christopher Madan (University of Nottingham), Dr. Erika Nyhus (Bowdoin College), and Dr. David Ziegler (UCSF).

Join the CNS Trainee Association (CNSTA) for the fourth annual Trainee Professional Development Panel! Hear from some of the foremost experts in the field of cognitive neuroscience as they detail their career trajectories, discuss factors that influenced their development, and reveal what they wish they had known as Trainees. Part of the session time will be reserved for an open Q & A. Appropriate for trainees of all levels!

CNS TRAINEE ASSOCIATION STUDENT SOCIAL NIGHT

Monday, March 25, 7:30 – 10:00 pm, at Monroe located at *473 Broadway, San Francisco, CA 94133*

This event is open to all students and post docs of the Cognitive Neuroscience Society.

CNSTA Social Organizers: *Sarah Kark (Boston College), Amy Belfi (NYU) and Tony Cunningham (University of Notre Dame)*

Come and join us for the annual CNS Trainee Association (CNSTA) Student Social Night, Monday, March 25th, after the CNS Trainee Professional Development Panel. We will meet at 7:15 PM in the conference hotel reception area (look for signs), and walk out to a nearby bar/restaurant around 7:20. There will be no cover charge, appetizers will be provided for the first 150 Trainees (cash bar).

More information will be posted on the CNS Trainee Association Facebook page (https://www.facebook.com/CNSTrainees/). We look forward to meeting you!

HOW TO GET THERE:

From the Hyatt:

- Go West on Sacramento St (away from the waterfront)
- Turn Right on Battery St
- Turn Left onto Broadway
- Destination will be on your left, 473 Broadway, San Francisco, CA

Special Session —The Relation Between Psychology and Neuroscience

The Relation Between Psychology and Neuroscience

Saturday, March 23, 2019, 4:45 - 6:30pm, Grand Ballroom

Organizer: David Poeppel, Max-Planck-Institute & NYU
Discussants: Lila Davachi, Jennifer Groh, Catherine Hartley and Sharon L. Thompson-Schill

Whether we study single cells, measure populations of neurons, characterize anatomical structure, or quantify BOLD, whether we collect reaction times or construct computational models, it is a presupposition of our field that we strive to bridge the neurosciences and the psychological/cognitive sciences. Our tools provide us with ever-greater spatial resolution and ideal temporal resolution. But do we have the right conceptual resolution? This conversation focuses on how we are doing with this challenge, whether we have examples of successful linking hypotheses between psychological and neurobiological accounts, whether we are missing important ideas or tools, and where we might go or should go, if all goes well. The conversation, in other words, examines the very core of cognitive neuroscience.

Lila Davachi, *Columbia University, Department of Psychology*

Jennifer Groh, *Duke University, Department of Psychology and Neuroscience, Department of Neurobiology*

Catherine Hartley, *New York University, Department of Psychology and Center for Neural Science*

Sharon L. Thompson-Schill, *University of Pennsylvania, Department of Psychology*

Data Blitz

Session #	Date	Time	Location	Chair
Data Blitz Session 1	Saturday, March 23	Noon – 1:30 pm	Bayview Room	Marian Berryhill
Data Blitz Session 2	Saturday, March 23	Noon – 1:30 pm	Ballroom A	Lorna C. Quandt
Data Blitz Session 3	Saturday, March 23	Noon – 1:30 pm	Ballroom B/C	Evangelia Chrysikou

Data Blitz Sessions

A Data Blitz is a series of 5-minute talks, each covering just a bite-sized bit of research. It will offer a fast-paced overview of some of the most exciting research presented at this year's poster sessions.

Data Blitz Session 1

Saturday, March 23, Noon - 1:30 pm, Bayview Room
Chair: Marian Berryhill, University of Nevada
Speakers: Irene van de Vijver, Hio-Been Han, Dongwei Li, Michael Freund, Joshua J. Volponi, Florian Fiebig, Rita Loiotile, Joshua D. Koen, Julia W. Y. Kam, Arianna N. LaCroix, Tanya Wen, Aaron Kucyi, Eriko Matsumoto, Phil Witkowski, Kristen Warren

TALK 1: CORTICOSTRIATAL WHITE-MATTER TRACTS SUPPORTING HABITUAL BEHAVIOR IN THE LAB AND IN REAL LIFE
Irene van de Vijver[1], Aukje Verhoeven[1], Sanne de Wit[1]; [1]University of Amsterdam, the Netherlands

TALK 2: FUNCTIONAL DISSOCIATION OF EEG THETA RHYTHMS BETWEEN PREFRONTAL AND VISUAL CORTICES AND THEIR SYNCHRONIZATION DURING SUSTAINED ATTENTION
Hio-Been Han[1,2], Ka Eun Lee[1,3], Jee Hyun Choi[1,4]; [1]Korea Institute of Science and Technology, [2]Korea Advanced Institute of Science and Technology, [2]Seoul National University, [2]Korea University of Science and Technology

TALK 3: INTERACTION BETWEEN SPATIAL ATTENTION AND VISUAL WORKING MEMORY FROM ALPHA OSCILLATION AND SUSTAINED POTENTIALS
Dongwei Li[1], Chenguang Zhao[1], Jialiang Guo[1], Bingkun Li[1], Qinyuan Chang[1], Yulong Ding[2], Yan Song[1]; [1]Beijing Normal University, Beijing 100875, China, [2]Sun Yat-Sen University, Guangzhou 510275, China

TALK 4: A PATTERN-SIMILARITY ANALYSIS APPROACH TO COGNITIVE CONTROL IN COLOR-WORD STROOP.
Michael Freund[1], Todd Braver[1]; [1]Washington University in St. Louis

TALK 5: NEURAL AND BEHAVIORAL TRANSFER OF A SIMULTANEOUS COGNITIVE-PHYSICAL VIDEO GAME INTERVENTION IN AN OLDER ADULT POPULATION
Joshua J. Volponi[1], Alexander J. Simon[1], Alana B. Colville[1], Samirah V. Javed[1], Brigid J. Larkin[2], Karam K. Samplay[1], Soo M. Park[1], Jessica N. Schachtner[1], Roger Anguera[1], Christian J. Thompson[2], Joaquin A. Anguera[1], Adam Gazzaley[1]; [1]UCSF, [2]USF

TALK 6: AN INDEXING THEORY FOR WORKING MEMORY BASED ON FAST HEBBIAN PLASTICITY
Florian Fiebig[1], Pawel Herman[1], Anders Lansner[1,2]; [1]Lansner Laboratory, Department of Computational Science and Technology, KTH Royal Institute of Technology, 10044 Stockholm, Sweden, [2]Department of Mathematics, Stockholm University, 10691 Stockholm, Sweden

TALK 7: VISUAL CORTEX ACTIVITY DURING NON-VISUAL TASKS IS "CROSS-MODAL" IN LATE BUT NOT CONGENITAL BLINDNESS
Rita Loiotile[1], Marina Bedny[1]; [1]Johns Hopkins University

TALK 8: AN OWN-AGE BIAS IN THE HIPPOCAMPUS IN YOUNG AND OLDER ADULTS
Joshua D. Koen[1], Nedra Hauck[2], Michael D. Rugg[2]; [1]University of Notre Dame, [2]University of Texas at Dallas

TALK 9: HUMAN FRONTAL CORTEX MODULATES EXTERNAL AND INTERNAL ATTENTION
Julia W. Y. Kam[1], Randolph F. Helfrich[1], Jack J. Lin[2], Anne-Kristin Solbakk[3,4], Tor Endestad[3], Pal G. Larsson[4], Robert T. Knight[1]; [1]University of California – Berkeley, [2]University of California – Irvine, [2]University of Oslo, [2]Oslo University Hospital

TALK 10: ALERTING, ORIENTING, AND EXECUTIVE CONTROL: POST-STROKE EFFECTS OF ATTENTION ABILITIES ON SPEECH COMPREHENSION
Arianna N. LaCroix[1], Corianne Rogalsky[1]; [1]Arizona State University

TALK 11: THE TIME-COURSE OF COMPONENT PROCESSES OF SELECTIVE ATTENTION
Tanya Wen[1,2], John Duncan[1,2], Daniel Mitchell[1,2]; [1]MRC Cognition and Brain Sciences Unit, [2]University of Cambridge

TALK 12: ATTENTIONAL STATE DEPENDENCE OF TIME-RESOLVED INTER-NETWORK ANTICORRELATED BRAIN ACTIVITY

Aaron Kucyi[1], Josef Parvizi[1]; [1]Stanford University

TALK 13: THE INVOLUNTARY CAPTURE OF VISUAL ATTENTION BY TASK-IRRELEVANT UGLY-BEAUTY ARTIFICIAL FACES: AN ERP STUDY

Eriko Matsumoto[1], Tomoya Kawashima[1], Tomoyuki Naito[2]; [1]Graduate School of Intercultural Studies, Kobe University, [2]Graduate School of Medicine, Osaka University

TALK 14: LEARNED FEATURE DISTRIBUTIONS PREDICT VISUAL SEARCH AND WORKING MEMORY PRECISION

Phil Witkowski[1,2], Joy Geng[1,2]; [1]University of California, Davis, [2]Center for Mind and Brain, University of California, Davis

TALK 15: FUNCTIONALLY SPECIFIC EFFECTS OF TARGETED NONINVASIVE STIMULATION ON HIPPOCAMPAL-CORTICAL NETWORK CONNECTIVITY

Kristen Warren[1], Molly Hermiller[1], Steven VanHaerents[1], Joel Voss[1]; [1]Northwestern University

Data Blitz Session 2

Saturday, March 23, Noon - 1:30 pm, Ballroom A

Chair: Lorna C. Quandt, Ph.D., Gallaudet University

Speakers: Melissa Thye, Alina Leminen, Julien Dirani, Garret Kurteff, Bingjiang Lyu, Ben Maassen, Jie Lisa Ji, Suzanne Dikker, Yuan Tao, Sophia Vinci-booher, Erez Freud, Emily Kubicek, Lawrence Appelbaum, Delphine Oudiette, Eti Ben Simon

TALK 1: AN INTRACRANIAL EEG STUDY OF TAXONOMIC AND THEMATIC RELATIONS

Melissa Thye[1], Jason Geller[1], Diana Pizarro[1], Jerzy P. Szaflarski[1], Daniel Mirman[1]; [1]University of Alabama at Birmingham

TALK 2: ONLINE BUILD-UP OF NEOCORTICAL MEMORY TRACES FOR SPOKEN WORDS: SPECIFIC FACILITATORY EFFECTS OF NOVEL SEMANTIC ASSOCIATIONS

Alina Leminen[1,2], Eino Partanen[1,2], Andreas Højlund Nielsen[2], Mikkel Wallentin[2], Yury Shtyrov[2,3]; [1]University of Helsinki, Finland, [2]Aarhus University, Denmark, [2]Saint Petersburg University, Russia

TALK 3: LEXICAL ACCESS IN COMPREHENSION VS. PRODUCTION: SPATIOTEMPORAL LOCALIZATION OF SEMANTIC FACILITATION AND INTERFERENCE

Julien Dirani[1], Liina Pylkkänen[1,2]; [1]New York University Abu Dhabi, [2]New York University

TALK 4: BEHAVIORAL AND NEUROANATOMICAL CHARACTERISTICS OF STIMULATION-INDUCED SPEECH ARREST

Garret Kurteff[1,2], Neal Fox[1], Maansi Desai[1,2], Alia Shafi[1], Edward Chang[1]; [1]University of California, San Francisco, [2]University of Texas, Austin

TALK 5: THE SPATIOTEMPORAL DYNAMICS OF FLEXIBLE MEANING: NEUROMODULATION OF NOUN MEANING BY THE PRECEDING VERB

Bingjiang Lyu[1], Alex Clarke[1], Hun Choi[1], William Marslen-Wilson[1], Lorraine Tyler[1]; [1]Centre for Speech, Language, and the Brain, Department of Psychology, University of Cambridge

TALK 6: 'PRINT TUNING' AS NEUROPHYSIOLOGICAL MARKER OF EARLY TYPICAL AND DELAYED READING ACQUISITION.

Ben Maassen[1,2], Toivo Glatz[3]; [1]University of Groningen, The Netherlands, [2]University Medical Center Groningen, The Netherlands, [2]Catholic University Leuven, Belgium

TALK 7: CHARACTERIZING INDIVIDUAL VARIATION IN MULTIVARIATE CONNECTIVITY AND BEHAVIOR ALONG THE PSYCHOSIS SPECTRUM

Jie Lisa Ji[1], Joshua Burt[1], Katrin Preller[1,2], Brendan Adkinson[1], Antonija Kolobaric[1], Morgan Flynn[1], Rick Adams[3], Aleksandar Savic[1,4], John Murray[1], Alan Anticevic[1]; [1]Yale University, [2]University of Zurich, [2]University College London, [2]University of Zagreb

TALK 8: mindHIVE: AN ACCESSIBLE COGNITIVE NEUROSCIENCE RESEARCH PLATFORM FOR STUDENTS AND RESEARCHERS

Suzanne Dikker[1], Henry Valk[1], Dano Morrison, Kimberly Burgas, Steven Azeka[1], Teon Brooks, Wendy Suzuki[1], Ido Davidesco[1], David Poeppel[1]; [1]New York University

TALK 9: THE EFFECTS OF LESIONS ON THE MODULAR ORGANIZATION OF THE BRAIN: A COMPARISON OF SIMULATED AND REAL LESIONS

Yuan Tao[1], Brenda Rapp[1]; [1]Johns Hopkins University

TALK 10: SENSORIMOTOR CONTINGENCY LEADS TO DEVELOPMENTAL CHANGES IN THE NEURAL MECHANISMS SUPPORTING VISUAL RECOGNITION

Sophia Vinci-booher[1], Anastasia Nikoulina[1], Thomas W. James[1], Karin H. James[1]; [1]Indiana University, Bloomington

TALK 11: PRESERVED SHAPE SENSITIVITY IN THE DORSAL PATHWAY OF A VISUAL AGNOSIA PATIENT

Erez Freud[1], Marlene Behrmann[2]; [1]York University, Toronto, ON, Canada, [2]Carnegie Mellon University, Pittsburgh, PA, USA

TALK 12: NEURAL CORRELATES OF BIOLOGICAL MOTION PERCEPTION IN SIGN LANGUAGE USERS

Emily Kubicek[1], Lorna C. Quandt[1]; [1]Gallaudet University

TALK 13: TRANSCRANIAL DIRECT CURRENT STIMULATION TO ENHANCE LAPAROSCOPIC TECHNICAL SKILL LEARNING: A PREREGISTERED RANDOMIZED CONTROLLED TRIAL

Lawrence Appelbaum[1], Hannah Palmer[1], Zhi-De Deng[2], Lysianne Beynel[1], Amanda Watts[1], Jonathan Young[1], Sarah Lisanby[2], John Migaly[1], Morgan Cox[1]; [1]Duke University, [2]National Institute of Mental Health

TALK 14: REM SLEEP RESPIRATORY BEHAVIOURS MATCH MENTAL CONTENT IN NARCOLEPTIC LUCID DREAMERS

Delphine Oudiette[1,2,3], Pauline Dodet[2], Thomas Similowski[2,3], Isabelle Arnulf[1,2,3]; [1]Brain and Spine Institute, [2]Sorbonne Universités, [2]Pitie-Salpetriere Hospital

TALK 15: UNDER SLEPT AND OVERANXIOUS: THE NEURAL CORRELATES OF SLEEP-LOSS INDUCED ANXIETY IN THE HUMAN BRAIN

Eti Ben Simon[1], Matthew Walker[1,2]; [1]Department of Psychology, University of California, Berkeley, USA., [2]Helen Wills Neuroscience Institute, Berkeley, University of California, USA.

Data Blitz Session 3

Saturday, March 23, Noon - 1:30 pm, Ballroom B/C

Chair: Evangelia Chrysikou, University of Kansas

Speakers: Erhan Genc, Celia Lacaux, Andrew Gordon, Muireann Irish, Rachel G. Pizzie, James H. Kryklywy, Joanna E. Witkin, Debbie Yee, Adam Krause, Milou Sep, Myrthe G. Rijpma, Anne S. Berry, Chris Martin, Jessica A. Collins, David Clewett

TALK 1: DIFFUSION MARKERS OF DENDRITIC DENSITY AND ARBORIZATION IN GRAY MATTER PREDICT DIFFERENCES IN INTELLIGENCE

Erhan Genc[1], Christoph Fraenz[1], Onur Güntürkün[1], Rex Jung[2]; [1]Biopsychology, Department of Psychology, Ruhr University Bochum, Germany, [2]Department of Psychology, University of New Mexico, Albuquerque, New Mexico, USA

TALK 2: INCREASED CREATIVE THINKING IN NARCOLEPSY

Celia Lacaux[1,2], Giuseppe Plazzi[3], Isabelle Arnulf[1,2], Delphine Oudiette[1,2]; [1]Sorbonne University, IHU@ICM, INSERM, CNRS UMR7225, F-75013 Paris, France, [2]AP-HP, Hôpital Pitié-Salpêtrière, Service des Pathologies du Sommeil, F-75013 Paris, France, [2]University of Bologna, Bologna, Italy

TALK 3: KEEPING TRACK OF 'ALTERNATIVE FACTS': THE NEURAL CORRELATES OF PROCESSING MISINFORMATION CORRECTIONS

Andrew Gordon[1,2], Susanne Quadflieg[2], Jonathan Brooks[2,3], Ullrich Ecker[4], Stephan Lewandowsky[2,4]; [1]University of California, Davis, MIND Institute, [2]University of Bristol, [2]Clinical Research and Imaging Centre, University of Bristol, [2]University of Western Australia

TALK 4: ELEVATION OF EPISODIC-BASED MIND-WANDERING IN SEMANTIC DEMENTIA – EVIDENCE FOR FUNCTIONAL REORGANISATION OF THE BRAIN'S DEFAULT NETWORK

Muireann Irish[1,2], Daniel Roquet[1,2], Zoë-Lee Goldberg[1], Jessica Andrews-Hanna[3], John Hodges[2,4]; [1]The University of Sydney, Brain and Mind Centre and School of Psychology, Sydney, Australia, [2]Australian Research Council Centre of Excellence in Cognition and its Disorders, Sydney, Australia, [2]Department of Psychology, University of Arizona, Tucson, Arizona, USA, [2]The University of Sydney, Central Clinical School, Sydney, Australia

TALK 5: NEURAL EVIDENCE FOR COGNITIVE REAPPRAISAL AS A STRATEGY TO ALLEVIATE THE EFFECTS OF MATH ANXIETY

Rachel G. Pizzie[1,2], Cassidy L. McDermott[3,2], Tyler G. Salem[2], David J.M. Kraemer[2]; [1]Georgetown University, [2]Dartmouth College, [2]National Institutes of Health

TALK 6: DISSOCIATING THE NEURAL REPRESENTATIONS OF TACTILE AND HEDONIC INFORMATION

James H. Kryklywy[1], Mana R. Ehlers[1], Andre O. Beukers[2], Sarah M. Moore[1], Rebecca M. Todd[1], Adam K. Anderson[3]; [1]University of British Columbia, [2]Princeton University, [2]Cornell University

TALK 7: NEURAL AND BEHAVIORAL MECHANISMS UNDERLYING THE RELATIONSHIP BETWEEN EVERYDAY PAIN AND COGNITIVE PERFORMANCE

Joanna E. Witkin[1], Steven R. Anderson[1], Taylor Bolt[2], Maria M. Llabre[1], Elizabeth A. Reynolds Losin[1]; [1]University of Miami, [2]Emory University

TALK 8: NEURAL MECHANISMS OF MOTIVATIONAL INCENTIVE INTEGRATION AND COGNITIVE CONTROL

Debbie Yee[1], Todd Braver[1]; [1]Washington University in St. Louis

TALK 9: THE PAIN OF SLEEP LOSS: A BRAIN CHARACTERIZATION IN HUMANS.

Adam Krause[1], Aric Prather[2], Tor Wager[3], Martin Lindquist[4], Matthew Walker[1]; [1]University of California, Berkeley, [2]University of California, San Francisco, [2]University of Colorado, Boulder, [2]Johns Hopkins University

TALK 10: COGNITIVE FUNCTIONING IN POST-TRAUMATIC STRESS DISORDER: A META-ANALYSIS OF EVIDENCE FROM ANIMAL MODELS & CLINICAL STUDIES

Milou Sep[1,2], Elbert Geuze[1,2], Marian Joëls[2,3]; [1]Military Mental Healthcare, Dutch Ministry of Defence, [2]University Medical Center Utrecht, the Netherlands, [2]University Medical Center Groningen, the Netherlands

TALK 11: SALIENCE-DRIVEN ATTENTION IS PIVOTAL TO UNDERSTANDING OTHERS' INTENTIONS

Myrthe G. Rijpma[1], Suzanne M. Shdo[1], Gianina Toller[1], Joel H. Kramer[1], Bruce L. Miller[1], Katherine P. Rankin[1]; [1]Memory and Aging Center, University of California, San Francisco

TALK 12: THE INFLUENCE OF CATECHOLAMINE FUNCTION ON REWARD-RELATED MEMORY IN AGING

Anne S. Berry[1], Theresa M. Harrison[1], A.J. Whitman[1], Kaitlin N. Swinnerton[1], Ming Hsu[1], William J. Jagust[1], Anne Berry; [1]UC Berkeley

TALK 13: REVIEWING AUTOBIOGRAPHICAL MEMORY CUES PROMOTES DISTINCTIVE NEURAL CODING IN OLDER ADULTS

Chris Martin[1], Rachel Newsome[1], Bryan Hong[1], Andrew Xia[1], Christopher Honey[2], Morgan Barense[1,3]; [1]University of Toronto, [2]Johns Hopkins University, [2]Rotman Research Institute

TALK 14: DATA-DRIVEN ANALYSIS OF WHOLE-BRAIN CONNECTIVITY REVEALS POST-ENCODING NETWORK DYNAMICS

Jessica A. Collins[1], Bradford C. Dickerson[1], J. Benjamin Hutchinson[2]; [1]Massachusetts General Hospital and Harvard Medical School, [2]University of Oregon

TALK 15: AROUSAL MODULATES THE TEMPORAL STRUCTURE OF EPISODIC MEMORY

David Clewett[1], Camille Gasser[2], Lila Davachi[2,3]; [1]New York University, [2]Columbia University, [2]Nathan Kline Institute

General Information

Abstracts
Poster abstracts can be found on the CNS website and downloadable: https://www.cogneurosociety.org/cns-2019-program/

ATM
An ATM is located on the Atrium level of the hotel for your convenience.

Audiovisual Equipment for Talks
LCD projectors (e.g., for PowerPoint presentations) will be provided in all rooms where spoken sessions are scheduled; however, computers will NOT be provided. Presenters must bring their own computers and set them up BEFORE the start of the session in which they are presenting. Facilities will be provided to allow several computers to be connected to the LCD projector in a room. Presenters are strongly encouraged to arrive in their scheduled symposium room a minimum of 30 minutes before their talks so that they know how to set up their equipment.

Baggage Check
The Bell Desk Assistance with luggage, packages and other carry-on's, is located with the Concierge, next to the front desk.

Business Center
The Business Center is located on the Bay Level adjacent to the Drum Street windows. The following services are available: Copy Services, Facsimile Services, On-Site Computers, Internet Access, Typing Services, and Shipping Services (UPS and FedEx). After staffed hours, the business center can be accessed with your room key to access computers with internet and printing capabilities

Catering
Catering will be available during the conference and is included in the registration fee. Please refer to the table below for the catering times.

Saturday, March 23

Coffee Break, 2:30 – 3:00 pm, *Exhibit Hall*
Welcome Reception, 6:30 – 7:30 pm, *Atrium*

Sunday, March 24

Continental Breakfast, 8:00 – 8:30 am, *Exhibit Hall*
Coffee Break, 3:30 – 4:00 pm, *Ballroom Foyer*

Monday, March 25

Continental Breakfast, 8:00 – 8:30 am, *Exhibit Hall*
Coffee Break, 3:30 – 4:00 pm, *Exhibit Hall*

Tuesday, March 26

Continental Breakfast, 8:00 – 8:30 am, *Exhibit Hall*

Certificate of Attendance
To receive a Certificate of Attendance please visit the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel at the end of meeting. If you require any changes, we will be happy to email/mail a copy after the meeting. See also Receipts.

Chair People
Please ensure that you are available in your presentation room at least thirty minutes before the start of the session. Persons chairing sessions are asked to keep the talks on time.

Closed Captioning CC / CART Captioning
CART captioning is a speech-to-text interpreting service. Live event captioning benefits attendees who have a hearing loss, are deafened or deaf. Streaming text can be viewed on many smart phones, tablets or on the web via laptop. To view the streaming text provided, please visit us at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel to obtain the direct link to view the streaming text. * No special software is required.

Code of Conduct
The Cognitive Neuroscience Society is committed to providing a safe and professional environment during our annual meeting. All CNS members are expected to conduct themselves in a business-like and professional manner. It is unlawful to harass a person or employee because of that person's sex or race. Harassment is defined by hostile or offensive behavior towards another.

Communications Open House
CNS Public Information Officer Lisa Munoz will answer your questions, give advice, and talk about the communication and press services CNS offers. No appointment needed. Just grab some breakfast and drop in.

Sunday March 24, 8:30 am - 10:00 am, *Marina Room*
Monday March 25, 8:30 am - 10:00 am, *Marina Room*

Contact Us
To contact us onsite, visit the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel or send an email to meeting@cogneurosociety.org We will respond to your email at our soonest opportunity.

Disclaimer
The Program Committee reserves the right to change the meeting program at any time without notice. Please note this program is correct at time of print.

Exhibit Hall
The conference exhibit is located in Pacific Concourse Exhibit Hall of the San Francisco Hyatt Regency Hotel. Located in this room are the

posters, exhibit booths, and catering. The Exhibit Hall is open to all attendees at the following times:

Saturday, March 23	1:30 pm – 5:30 pm
Sunday, March 24	8:00 am – 7:00 pm
Monday, March 25	8:00 am – 5:30 pm
Tuesday, March 26	8:00 am – 12:00 pm

Facebook
Find us on Facebook search for "*Cognitive Neuroscience Society*" and like us!

Hotel
The San Francisco Hyatt Regency Hotel is our exclusive Hotel for the CNS 2019 Annual Meeting and where all CNS 2019 meeting events will be held. Hyatt Regency San Francisco, 5 Embarcadero Center, San Francisco CA 94111

Hotel Restaurants
Eclipse Restaurant & Lounge. Whether you are in the mood for quick refreshment or a full meal, the culinary offerings at Eclipse will satiate you with an unforgettable interpretation of global dining.

Internet Access
CNS attendees will receive complimentary wireless internet in their guest room. We are pleased to offer free basic wireless internet in all meeting rooms. Ideal for web browsing, social networking, app usage, and checking emails only. **NOT FOR DOWNLOADING OR STREAMING.** Doing so will cause the system to slow down for everyone. Please be courteous.

Look for SSID: CNS 2019 **PASSWORD:** Cogneuro

LinkedIn
Join our LinkedIn Group: Cognitive Neuroscience Society (CNS).

Lost & Found
The meeting Lost and Found is located at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel.

Member Services
The member services desk is located at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel. The member services desk will be open at the following times:

Saturday, March 23	11:00 am – 5:00 pm
Sunday, March 24	7:30 am – 4:30 pm
Monday, March 25	8:00 am – 5:00 pm
Tuesday, March 26	8:00 am – 12:00 pm

Message Center
Messages for meeting registrants can be left and retrieved at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel. A bulletin board will be available for announcements and job postings.

Mobile Phones
Attendees are asked to silence their mobile phones when in sessions.

Name Badges
The San Francisco Hyatt Regency Hotel and Convention Center is open to public access. For security purposes, attendees, speakers and exhibitors are asked to wear their name badges to all sessions and social functions.

Entrance into sessions is restricted to registered attendees only. Entrance to the Exhibition will be limited to badge holders only. If you misplace your name badge, please go to the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel for a replacement.

Parking
The San Francisco Hyatt Regency Hotel offers secured and covered Valet parking. Parking rates are currently $64 + tax per day ($73.00 inclusive of tax) with in and out privileges for guests and non-guests. (Please note this information was correct at time of print.)

Personal Belongings
The San Francisco Hyatt Regency Hotel and Convention Center is open to public access. For security purposes, keep your personal belongings secure at all times. Do not leave anything in meeting rooms or the exhibit hall.

Phone Charging Station
There will be a small phone charging station located at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel.

Photo Disclaimer
Registration and attendance at, or participation in, the Cognitive Neuroscience Society meetings and other activities constitute an agreement by the registrant/attendee to CNS's use and distribution (both now and in the future) of the registrant's or attendee's image in photographs of such events and activities.

Poster Sessions
Poster sessions are scheduled on Saturday, March 23, Sunday, March 24, Monday, March 25, and Tuesday, March 26. The presenting author must be present during the assigned session and other authors may be present to answer questions. The poster sessions are in the Pacific Concourse Exhibit Hall of the San Francisco Hyatt Regency Hotel. Badges are required at all times. Do not leave personal items in the poster room.

Printed Program Booklet
One copy of the printed program booklet is available to each attendee who requested one. If you would like a second copy please check in

at the Registration Counter on the Ballroom floor of the San Francisco Hyatt Regency Hotel on the last day of the event. Every effort has been made to produce an accurate program. If you are presenting at the conference, please confirm your presentation times as listed in this program. Attendees will also have the option to view the program by downloading it from our website after the meeting has concluded.

Receipts

You received two receipts via email, one at the time of purchase and a second with your registration confirmation. Please email the registration desk if you require an additional copy. See also Certificate of Attendance.

Reception

The Welcome Reception will be held in the Atrium, from 6:30-7:30 pm on Saturday, March 23. You must wear your badge to gain entrance.

Registration

The Registration Counter is located on the Ballroom floor of the San Francisco Hyatt Regency Hotel. The Registration Counter will be open at the following times:

Saturday, March 23	11:00 am – 6:00 pm
Sunday, March 24	7:30 am – 6:30 pm
Monday, March 25	8:00 am – 5:30 pm
Tuesday, March 26	8:00 am – 3:00 pm

Smoking

Smoking is not permitted in or outside any of the meeting rooms or the exhibition hall.

Speakers

All speakers must register and wear name badge to present. Please ensure that you are available in your presentation room at least thirty minutes before the start of the session. See also Audiovisual equipment for Talks.

Student Lounge

CNS will be providing a student lounge in the Seacliff Room with comfortable seating for relaxing and visiting with your colleagues. Meeting internet available in the room, See *Internet Access.*

Transportation

Taxis - There is a taxi stand at the front of the Hotel. A Taxi to or from SFO is about 20-30 minutes and is approximately $50-55.

BART (Bay Area Rapid Transit) -Please visit www.bart.gov for fares and schedules. Station is located within steps of the hotel's front entrance. Approximate one-way fare from San Francisco International Airport $8.65 each way.

Lorrie's Shuttle - Offers service to the Hyatt Regency San Francisco. Shuttles depart every 20 minutes. Board shuttles just outside of the luggage carousels on the lower level of SFO. Fare is $17 from the airport to the hotel.

**Fares subject to change without notice.*

Twitter

Follow CNS Annual Meeting (@CNSmtg). Our Hashtag this year is #CNS2019

Website

https://www.cogneurosociety.org

SAVE THE DATE

CNS 2020 Annual Meeting
March 14-17, 2020
Boston, MA.

Invited-Symposium Sessions

#	Title	Date	Time	Location
1	Imaging the Immediate and Long-Term Effects of Exercise in Humans	Sunday, March 24	10:00 am - Noon	Ballroom A
2	Mesoscale Cognition: High-Field Imaging and Laminar Analysis of Data	Sunday, March 24	10:00 am - Noon	Ballroom B/C
3	An Emerging Neuroscience of Social Connectedness	Tuesday, March 26	10:00 am - Noon	Ballroom A
4	Making Decisions in a Structured World	Tuesday, March 26	10:00 am - Noon	Ballroom B/C

Invited Symposium Session 1

IMAGING THE IMMEDIATE AND LONG-TERM EFFECTS OF EXERCISE IN HUMANS

Sunday, March 24, 10:00 am - Noon, Ballroom A

Chair: Wendy Suzuki, New York University

Speakers: Michael Yassa, Michelle Voss, Emrah Duzel, Michelle Carlson

Strong evidence from animal studies has shown that long-term increases in physical activity have positive effects on a range of brain and cognitive functions though particular emphasis has focused on its cellular, molecular and behavioral effects on the hippocampus. Less is known about the immediate effects of physical activity on brain function in animal model systems. Studies in humans are consistent with the findings in animals through many behavioral and mechanistic details of these exercise induced brain changes have yet to be detailed. Recently, substantial progress has been made in understanding both the immediate and long-term effects of exercise in humans. This session will highlight these new findings. Yassa will present evidence for the minimal amount of exercise needed to see hippocampal brain changes after just a single bout of exercise in young adults. Voss will examine the relationship between the immediate and long-term effects of exercise in an older population of subjects. Duzel will describe the vascular effects of long-term exercise in both older and younger subjects and Carlson will address the practical question of how to motivate some of our most vulnerable elderly populations to exercise so that they might benefit from its effects. In summary, this session will highlight our growing understanding of the impact of both the immediate and long-term effects of physical exercise to enhance cognitive function and brain morphology in both younger and older populations.

TALK 1: IMPACT OF ACUTE MILD EXERCISE INTERVENTIONS ON HIPPOCAMPAL MEMORY

Michael Yassa[1]; [1]Center for the Neurobiology of Learning and Memory UC Irvine

Physical activity is known to have beneficial effects on cognition and brain function, including hippocampus-dependent episodic memory. Exercise intensity level is associated with a dose-response curve where higher levels of exercise are capable of inducing a stress response, however efficacy of exercise at the lower intensity levels is unclear. Prior work using a treadmill running model in animals has shown that stress-free mild exercise increases hippocampal neuronal activity and promotes adult neurogenesis in the dentate gyrus (DG) of the hippocampus, improving spatial memory performance. However, impact of mild exercise on rapidly modifying hippocampal memory function and plasticity and the exact mechanisms for these changes are not clear. In particular, the impact of low-intensity exercise on hippocampal pattern separation has only been alluded to in behavioral work in the past, but not with brain studies. To this end, we adopted an acute-exercise design in humans, coupled with high-resolution functional MRI techniques, capable of resolving hippocampal subfields. A single 10-min bout of very light-intensity exercise (30%VO2max) resulted in rapid enhancement in pattern separation and an increase in functional connectivity between hippocampal DG/CA3 and cortical regions (i.e., parahippocampal, angular, and fusiform gyri). Importantly, the magnitude of the enhanced functional connectivity predicted the extent of memory improvement at an individual subject level. These results suggest that brief, very light exercise rapidly enhances hippocampal memory function, possibly by increasing DG/CA3-neocortical functional connectivity. Implications for more chronic interventions and applications to older adults will also be discussed.

TALK 2: BRIDGING ACUTE AND CHRONIC EFFECTS OF AEROBIC EXERCISE ON MEMORY SYSTEMS

Michelle Voss[1]; [1]Department of Psychological and Brain Sciences University of Iowa

Although regular exercise benefits aspects of brain health that decline with aging, training benefits are highly variable in older adults. Factors behind this variability are not well-understood, but could illustrate how to enhance benefits for a broader population. The immediate physiological response to exercise in the brain may hold clues to why or how some people respond more than others. Indeed, a single aerobic exercise session induces cellular and molecular modifications in pathways modified by training. Many overlapping effects involve hippocampal-cortical systems critical for episodic and working memory, which are known to deteriorate with advanced age. However, immediate and accumulated exercise training effects on the brain and memory have been studied in separate samples, with mostly young

adults, and under different theoretical frameworks. In this talk I will present data testing the proof-of-concept that, in older adults, the acute exercise response in episodic and working memory brain systems, and working memory performance, is predictive of training benefits in the same individuals. Results support further development of the acute exercise paradigm as a tool to understand how initial effects on brain physiology and performance predict successive neurobiological and behavioral outcomes associated with exercise training.

TALK 3: NEUROVASCULAR PLASTICITY INDUCED BY EXERCISE INTERVENTIONS SHOWS HIGH LEVELS OF INTERINDIVIDUAL VARIABILITY IN HUMANS

Emrah Duzel[1]; [1]German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Germany

Although the long-term health-promoting and protective effects of exercise are encouraging, its potential to induce neuronal and vascular plasticity in the human brain is still poorly understood. Animal studies indicate that the plasticity-related effects of physical exercise also enhance hippocampal perfusion by inducing angiogenesis. This effect is particularly prominent in the dentate gyrus, a region that shows exercise-induced neurogenesis and that is important for the mnemonic discrimination of similar memories (akin to pattern separation). Gadolinium perfusion and arterial spin labelling data from our lab show that physical exercise interventions lasting 3-4 months can improve hippocampal perfusion in young and older human adults, although the effect shows high interindividual variability with some participants actually showing a decrease in perfusion after exercise. The memory benefits of improved perfusion consistently occur in complex figure recall and recognition memory, a hippocampally dependent memory task. However, mnemonic discrimination tasks that are known to functionally engage the dentate gyrus, do not show a consistent benefit of physical exercise. In conclusion, although the neurovascular benefits of physical exercise in humans show some convergence with animal models, the effects are variable and do not clearly improve tasks that tap on mnemonic discrimination.

TALK 4: DESIGNING AND EVALUATING REAL-WORLD INTERVENTIONS TO PROMOTE ACTIVITY AND NEUROCOGNITIVE FUNCTIONS

Michelle Carlson[1]; [1]Department of Mental Health, Johns Hopkins Bloomberg School of Public Health

Although evidence demonstrates the effectiveness of increasing physical activity on cognitive health, older adults often have difficulty initiating and adhering to exercise programs. These challenges appear to be magnified by socioeconomic disadvantage, attributable in part to neighborhood factors that may restrict opportunities for regular activity. The Experience Corps Program was designed to respond to these challenges by embedding social, physical and cognitive activity into generative volunteer service with children in neighboring elementary schools. Results of multiple studies of Experience Corps® conducted in Baltimore City, Maryland revealed:1) increased rates of walking activity; 2) improved physical, lower-limb strength; 3) improved memory and executive functions, and; 4) changes to prefrontal cortical pathways that regulate executive function that mirror those seen following 6 months of exercise, among cognitively at-risk older adults. A larger randomized controlled trial, entitled the Baltimore Experience Corps® Trial (BECT; N=702), and a nested Brain Health Substudy (BHS; N=120), again demonstrated increased rates of cognitive, physical and social activity, and over 2 years in women, increases in objectively measured daily physical activity. Increases in cortical brain volumes and in processing speed accrued over 2 years and were stronger in men, particularly for hippocampal volume; male volunteers also showed substantial benefits in both executive function and memory. These data provide a real-world example of how high-intensity volunteer activity can lead to dose-dependent cognitive and brain benefits over two years. This work has resulted in the design of a 3-D interactive game to simulate real-world engagement we are currently evaluating for enjoyment and efficacy.

Invited Symposium Session 2

MESOSCALE COGNITION: HIGH-FIELD IMAGING AND LAMINAR ANALYSIS OF DATA

Sunday, March 24, 10:00 am - Noon, Ballroom B/C

Chair: Charles Schroeder, Nathan Kline Institute, Departments of Neurosurgery and Psychiatry, Columbia University College of Physicians and Surgeons

Speakers: Lucia Melloni, Peter Bandettini, Anabelle Singer, Federico de Martino

Recent advances in neuroimaging and electrophysiological recording technologies have led to the widespread ability to investigate neurophysiology as well as anatomy at the level of the single cortical layer. This opens up opportunities to address a host of critical questions concerning hierarchal relationships between cortical areas, as well as those between cortical and subcortical structures, many of which were initially raised by findings in traditional studies of anatomical connectivity. This symposium brings together speakers from several disciplines to discuss findings and conceptual advances that build on these new capabilities.

TALK 1: KNOWNS AND UNKNOWNS OF PREDICTIVE COMPUTATIONS IN THE HUMAN BRAIN

Lucia Melloni[1,2]; [1]Max Planck Institute, Fankfurt, [2]New York University

Predictive Coding – a novel information coding framework that rests upon predictive computations - has become increasingly popular in recent years, partly because it aims to explain brain function as a whole on the basis of a small number of coding principles. Despite its appeal, direct experimental evidence for Predictive Coding…

computations in the human brain is scarce, even more so for the putative "canonical microcircuit" implementing Predictive Coding. Moreover, while predictions play a crucial role in Predictive Coding, it is puzzling how and via which mechanism they affect perception in light of the fact that some priors stabilize perception, while others have the opposite, repulsive effect. We have used a unique combination of functional magnetic resonance imaging, invasive electrocorticographic and intralaminar recordings, as well as lesion studies and modelling to understand how predictions are implemented and tested in the human brain. We have found two distinct brain networks that stabilize or reverse perception, respectively. The former localizes to a network of higher-order visual and fronto-parietal areas, while the latter is confined to early sensory areas. This areal and hierarchical segregation may explain how the brain maintains the balance between exploiting redundancies and staying sensitive to new information. Electrocorticographic and intralaminar recordings in epilepsy patients have revealed that detecting deviations from predicted patterns arises from two distinct but interacting processes: i) differential adaptation of sensory responses, and ii) an explicit deviance detection system. These two processes cooperate, and in functional terms, fit well with Predictive Coding. However, contrary to most existing models that assume a hierarchical organization, our data reveal an anatomical interdigitation of the two systems. At the laminar scale, deviance signals are largest in superficial cortical layers. Together, our findings provide important evidence for the mechanistic implementation of Predictive Coding, but they also call for a radical reassessment of current models to accommodate our novel results.

TALK 2: LAYER-SPECIFIC FMRI: A NEW FRONTIER FOR MAPPING HUMAN BRAIN ACTIVITY AND CONNECTIVITY

Peter Bandettini[1]; [1]Section on Functional Imaging Methods, Laboratory of Brain and Cognition, NIMH

Functional MRI has recently shown promise in resolving layer specific activity. The implications of this achievement extend beyond more precise delineation of activation. Because of the unique organization of cortical layers, the potential exists to inform network models with directional information as much is known about layer specific feedforward and feedback connections. In this presentation, I discuss the requirements for layer-specific fMRI mapping. I then compare the specificity and sensitivity of a range of fMRI acquisition approaches. Our group currently uses vascular space occupancy (VASO) contrast for our layer fMRI studies as, in spite of spatial coverage limitations, it has shown the most favorable tradeoff in sensitivity vs specificity. In the remainder of my presentation, I will discuss several of our recent findings in layer specific mapping, including the mapping of motor cortex layer modulation with a sensory-motor task modulation, novel results in mapping individual digit representations in sensory and motor cortex, layer specific prefrontal cortex activation during a working memory and memory manipulation task, and finally, results from layer-specific resting state connectivity mapping in the sensory-motor system, visual system, and across the entire cortex.

TALK 3: DECODING MEMORY IN HEALTH AND ALZHEIMER'S DISEASE

Anabelle Singer[1]; [1]Department of Biomedical Engineering, Georgia Tech

In this talk I will discuss how neural activity goes awry in Alzheimer's disease, driving specific frequencies of neural activity recruits the brain's immune system, and new methods to drive rhythmic activity non-invasively. Spatial navigation deficits are one of the earliest symptoms of AD and the hippocampus is one of the areas first affected by the disease. First, I will describe how neural codes underlying memory-based spatial decisions fail in animal models Alzheimer's disease (AD). Using a virtual reality behavior paradigm to record and manipulate neural activity in transgenic mice, the primary animal model of AD, we found deficits in hippocampal neural activity early in the progression of the disease. These deficits occurred in the same patterns of activity that we have found inform memory-guided decisions in a spatial navigation task. Next, I will discuss the effects of driving these patterns of activity in AD model mice. We found that driving gamma activity, the activity lacking in AD mice, mobilized the immune system to remove pathogenic proteins. Specifically, driving gamma recruited the primary immune cells of the brain, microglia, to alter their morphology and increase engulfment of beta amyloid. Finally, I will discuss new non-invasive methods we are developing to drive rhythmic neural activity non-invasively. Ultimately, these discoveries could lead to new therapies for Alzheimer's disease by driving specific patterns of neural activity to impact the disease at the cognitive, cellular, and molecular levels.

TALK 4: MAPPING THE HUMAN AUDITORY PATHWAY: COMPUTATIONAL MODELS AND UHF MRI

Federico de Martino[1]; [1]Audition and Cognitive Neuroscience Departments, Faculty of Psychology and Neuroscience, Maastricht University

Since its introduction, functional MRI (fMRI) has been used to investigate sound processing throughout cortical and sub-cortical areas of the human brain. Compared to conventional magnetic field strengths (3 Tesla), ultra-high field scanners (7 and 9.4 Tesla) allow the acquisition of functional responses with a submillimeter spatial resolution and large coverage. In this talk I highlight how we have leveraged these techniques to investigate the organization of the human auditory pathway at an unprecedented level of detail. We reliably measure fMRI responses to natural sounds from the cochlear nucleus, superior olive, inferior colliculus and medial geniculate body in single subjects. Using computational models of sound processing, we map the functional characteristics (e.g., tonotopic, spectrotemporal modulation preferences) throughout these sub-cortical auditory nuclei. Through high spatial resolution diffusion weighted MRI, we were also

able to characterise the anatomical connections between these nuclei and their relation to resting state functional connectivity. We combine functional and anatomical information to parcellate the cortex in auditory fields. With submillimeter data we explore layer-specific processing. We show relatively stable "columnar" tuning for frequency and temporal modulations, but not spectral modulations, in human primary auditory cortex (PAC). Columnarity is lower in non-primary auditory regions. These results, in accordance with previous findings, support the idea that a transformation in spectral modulation processing takes place in the PAC. We observe that the frequency tuning in superficial layers of tonotopic columns sharpens depending on task demands, suggesting that the columnar architecture may play a specific role in the processing of task relevant information. Ongoing work is extending the investigation of layer-specific processing outside primary and secondary auditory cortex. Preliminary data in the lateral superior temporal gyrus and sulcus show that, while acoustic content in natural stimuli may be processed similarly for both synthetic and natural stimuli in middle and deep cortical layers, the semantic information of natural stimuli emerges in superficial cortical layers. To summarise by combining computational modeling with ultra-high field anatomical MRI, we investigate the auditory pathway (and its connectivity) from the cochlea to the auditory cortical subfields. Sub-millimeter fMRI allows us to investigate the nature of the tuning to acoustic features throughout subcortical relays, sound transformations in - and the influence of attention on - the cortical microcircuit of the primary auditory cortex, and finally the emergence of categorical responses beyond sound acoustics in superficial layers of higher order auditory regions.

Invited Symposium Session 3

AN EMERGING NEUROSCIENCE OF SOCIAL CONNECTEDNESS

Tuesday, March 26, 10:00 am - Noon, Ballroom A

Chair: Thalia Wheatley, Dartmouth College

Speakers: Michael Platt, Victoria Leong, Carolyn Parkinson, Giovanni Bosco

Social interaction is the medium through which we share ideas and experiences, forge social ties, align mental models and leverage expertise. Despite the social nature of many animals, scientific understanding of the brain rests near-exclusively on an isolated brain model. We have learned a lot about many neural systems yet little about how these systems achieve, support and benefit from the collective contexts the brain evolved to solve. In this symposium, we highlight recent approaches that investigate how brains shape each other and the consequences of this influence on learning, behavior, and the structure of our social networks. Speakers will address this question from multiple perspectives that span species and scales. After an 8 min Introduction (Wheatley), each of the four talks in this symposium will last 23 minutes and will be followed by 5 min of Q&A.

TALK 1: MONKEY BUSINESS: MODELING THE NEUROBIOLOGY OF STRATEGIC HUMAN SOCIAL INTERACTIONS

Michael Platt[1]; [1]University of Pennsylvania

Social factors both complicate and enable our economic behavior. Despite its importance, our understanding of the fundamental neural mechanisms mediating strategic social interaction remains incomplete, due in part to the difficulty of modeling these behaviors in animal models. In this talk I will discuss our recent work modeling complex strategic social interactions in monkeys. Both monkeys and humans played two different games—one based on the classic economic game "chicken" and a second based on penalty kicks in soccer—while we monitored behavior, tracked gaze, and measured pupil size. In monkeys, we recorded neuronal activity in two brain areas, the temporo-parietal junction (TPJ) and anterior cingulate gyrus (ACCg) which have been implicated in theory of mind and empathy, respectively. Despite the multidimensional nature of both games, humans and monkeys played in a remarkably similar fashion, and their patterns of gaze and pupillary responses—a measure of arousal and attention—were virtually indistinguishable. These data suggest similar underlying mechanisms mediate these strategic social interactions in both species. We found that neurons in the primate homolog of TPJ signaled information about social context, goals and intentions, reward outcomes for self and other, strategy, and predictions about whether the other player would cooperate based on prior interactions. By contrast, neurons in ACCg only signaled information about payoffs for self and other. Together, these findings indicate neurons in TPJ multiplex information underlying complex strategic social interactions. The presence of these neurons in monkeys belies the notion that these processes that are so fundamental to human behavior and economics are uniquely human.

TALK 2: PARENT-INFANT NEURAL CONNECTEDNESS UNDERPINS EARLY SOCIAL LEARNING

Victoria Leong[1,2]; [1]Nanyang Technological University, [2]University of Cambridge, UK

Social learning is the ability to learn vicariously through observation of others' behaviour and via social interactions without requiring direct experience. Human mastery of such "second-personal social relations" has propelled the rise of our species through cultural intelligence. However, the social transmission of knowledge is challenging – information may be incomplete, irrelevant or misleading, requiring the recipient to weight the relevance of the source as well as the message. Despite its importance, very little is known about the neural mechanisms that support our ability to learn selectively from others. Here, I examine the neural processes that underpin (1) what infants (subjectively) learn from their parents, and (2) whether social learning occurs during a given encounter. Forty-seven mother-infant dyads (aged 10.7 months) participated in a social learning task whilst their neural signals were concurrently measured using dual-EEG.

Mothers demonstrated positive or negative emotion toward novel toys and infants' learning over 16 trials was measured. Results revealed that dissociable interpersonal and intra-infant neural circuits differentially underpinned whether infants showed learning, as distinct from what infants learned. Stronger mother-infant interpersonal connectivity predicted a higher likelihood of social learning, whereas higher intra-personal connectivity predicted positively-valenced learning by infants. Further, increased dyadic (interpersonal) connectivity across consecutive trials triggered successful corrections in learning, whereas decreased dyadic connectivity was associated with learning reversal. Finally, greater use of ostensive signals (eye contact and prolonged speech) increased dyadic connectivity and pedagogical success. These results demonstrate that neural connectedness between parents and their children crucially supports social learning during early life.

TALK 3: THE BRAIN IN THE SOCIAL WORLD: INTEGRATING APPROACHES FROM COGNITIVE NEUROSCIENCE, SOCIAL PSYCHOLOGY AND SOCIAL NETWORK ANALYSIS

Carolyn Parkinson[1]; [1]University of California, Los Angeles

The cognitive demands of navigating large groups comprised of many varied, intense, and enduring social bonds are thought to have significantly shaped human brain evolution. Yet, much remains to be understood about how the human brain tracks, encodes, and is influenced by the structure of the social networks in which it is embedded. This talk will cover recent work integrating theory and methods from psychology, cognitive neuroscience, and social network analysis, as well as the motivation for combining these lines of inquiry. One set of studies tests if, when, and how the human brain retrieves knowledge of familiar others' positions in one's social network when encountering them. Related research tests how this knowledge, once retrieved, shapes downstream processing and behavior. An additional set of studies tests if human social networks exhibit assortativity in how their members perceive, interpret, and respond to their environment. Consistent with this possibility, inter-subject similarities of fMRI responses to naturalistic stimuli accurately predict the distance between individuals in their shared social network, such that friends have exceptionally similar neural responses to the world around them. All human cognition is embedded within social networks, but research on neural information processing within individuals has progressed largely separately from research on the social networks that those individuals inhabit. The set of findings to be reviewed in this talk suggests that integrating approaches from social network analysis and cognitive neuroscience can provide new insights into how individuals perceive, shape, and are shaped by the structure of their social world.

TALK 4: COMMUNICATION AND SOCIAL INTERACTIONS IN FRUIT FLIES: GENES, NETWORKS AND BEHAVIOR

Giovanni Bosco[1]; [1]Dartmouth College

Many animal species are able to communicate information benefitting others in a group. It is not clear, however, how those providing information gain from such social interactions, raising important questions about how communication evolves in different species or whether social interactions are important for communication. Furthermore, understanding the basic principles of social behavior and the neurogenetic networks that make social behavior possible is often confounded by our inability to control genetic and environmental variables. Therefore, we take advantage of innate social behaviors in simple insects in order to understand emergent properties of social groups and the genetic and environmental factors that modify such behavior. We use a variety of Drosophila fruit fly species to ask (1) how intra- and inter-species communication occurs, (2) how socialization of individuals changes the efficiency of communication, and (3) what cues and corresponding neuronal networks are required for socialization to have subsequent effects on communication. We show that although inter-species communication occurs the efficiency of communication decays as a function of evolutionary distance. Remarkably, distant species that can only partially communicate or not communicate at all can be made to communicate efficiently after a prolonged socialization period. Visual and olfactory cues are necessary during the cohabitation period as are genes previously known to be important for learning/memory and genes implicated in human autism spectrum disorders. This model promises to reveal how simple social behaviors evolve and are encoded in neurogenetic networks.

Invited Symposium Session 4

MAKING DECISIONS IN A STRUCTURED WORLD

Tuesday, March 26, 10:00 am - Noon, Ballroom B/C

Chair: David Badre, Brown University

Speakers: Christian Doeller, Alla Karpova, Anne Collins, David Badre

The world is complex, and so humans and other species must leverage structure in their environment in order to make good decisions and choose adaptive behaviors. Recently, cognitive neuroscientists have begun to ask how the brain links known structure in a complex environment to choice, value, and behavior. The talks in this symposium will consider this question from multiple different perspectives and approaches. They will consider different forms of structure, including spatial and hierarchical, and they will address this problem at different levels of analysis and across species.

TALK 1: STRUCTURING EXPERIENCE IN COGNITIVE SPACES

Christian Doeller[1,2]; [1]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway

The hippocampal formation has traditionally been suggested to underlie both wayfinding and memory formation. Here, we discuss

The idea that neural coding mechanisms identified in spatial navigation research generalize across information domains to support a wide spectrum of cognitive functions. More specifically, the mapping of variable dimensions of cognitive spaces at different resolutions and hierarchical levels enables the rapid reorganization of codes across behavioral contexts. Furthermore, simulations and read-out of trajectories through cognitive spaces might facilitate flexible decision making. In sum, spatial processing principles of the hippocampal-entorhinal system may provide a geometric code for high-level cognition.

TALK 2: USING STRUCTURED TASK COMPLEXITY TO SEEK EXPLANATORY SIMPLICITY

Alla Karpova[1]; [1]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

Our work over the past five years has laid the technical, behavioral and conceptual foundation for identifying simplifying principles underlying higher cognition using rats as a model system. Recent evidence suggests that rats' reliance on abstraction of environmental structure may share fundamental principles with hierarchical reasoning central to human cognition. Building on the intuition that animals approach complex environments by attempting to create models of the environment's latent structure, we record and perturb ensemble activity in tasks with carefully engineered complexity. Our behavioral framework permits us to tune task complexity up and down, to build in hierarchical structured relationships and to ascertain whether an animal's solution captures the added complexity and latent structure. Our early explorations within this framework of the neural dynamics in the anterior cingulate cortex (ACC) — an area implicated in keeping track of higher order abstractions, but with what previously seemed like only modestly task-related responses — have revealed surprisingly interpretable activity patterns. Using novel circuit dissection tools that we have developed with our colleagues at Janelia, we have been able to provide causal evidence for the behavioral relevance of these dynamics, and have begun to map them onto specific interacting sub-circuits within the ACC. Our findings support the notion that stronger and more organized dynamics are likely to emerge in challenging behavioral environments and suggest that it will be possible to ground even abstract cognitive computations in mechanistic insight. Going forward, we will continue to examine, in a systematic fashion, how task complexity constrains neural dynamics in the frontal cortical areas, with a particular emphasis on the neural dynamics that accompany the learning and use of structured relationships in behavioral tasks.

TALK 3: HIERARCHICAL REINFORCEMENT LEARNING SUPPORTS GENERALIZATION

Anne Collins[1,2]; [1]Department of Psychology, University of California, Berkeley, CA 94720, [2]Helen Wills Neuroscience Institute, University of California, Berkeley, CA

Human behavior in everyday situations is often hierarchically structured, in at least two ways. First, choices can often be decomposed into a temporal hierarchy, with decisions at multiple time scales, where more extended choices (making tea) represent policies over temporally more restricted actions (boiling water, …). Second, choices can also be decomposed into an abstraction hierarchy, where more abstract choices (speaking French vs. English) constrain simultaneous, more concrete ones (saying "bonjour" vs. "hello"). In this talk, I will show that we can reconcile the two types of hierarchical structure – temporal and abstraction – into a single theoretical framework, and I will explore how we learn such structure. Computational models suggest that this can be achieved by multiplexing reinforcement learning computations operating over different state and action spaces in parallel. They predict that humans can track multiple value functions in parallel, and that subcomponents of behavioral policies can be flexibly transferred to enable fast exploration in new contexts, and consequently faster learning and generalization. In a series of experiments, I will show results that support these predictions. This work highlights the fact that very simple computations can lead to sophisticated, hierarchically structured behavior that characterizes human flexible cognition.

TALK 4: LEARNING AND TRANSFER OF STRUCTURED TASK KNOWLEDGE

David Badre[1,2]; [1]Cognitive, Linguistic, and Psychological Sciences, Brown University, [2]Carney Institute for Brain Science, Brown University

Rapid adaptation to novel tasks requires abstract task knowledge that can apply across multiple circumstances. Traditionally, investigation of task knowledge has focused on how people acquire and leverage the shared structure in stimulus-response (S-R) relationships across task contexts. In this talk, I will focus on a line of studies that test how gating policies that govern internal control over working memory can also be learned as a form of abstract, transferable task knowledge. I will first provide behavioral evidence for the transfer of WM gating policies across changes of task context, as distinct from shared S-R structure. I will then provide behavioral and neuroimaging evidence that learning gating policies occurs over two timescales: a rapid adjustment of gating policies, supported by cortico-striatal circuits, accompanied by a slower process of adaptation that is driven by changes in cortical representations. Overall, these studies highlight the importance of control policies, such as those related to working memory gating, as a key component of the structured task knowledge required for rapid, flexible behavior in novel environments.

Symposium Sessions

#	Title	Date	Time	Location
1	Causal Inference Applied to Cognitive Neuroscience: From Brain Connectivity to Neurocognition	Sunday, March 24	1:30 - 3:30 pm	Ballroom A
2	Deconstructing the Contents of Episodic Memory Retrieval: Pattern Reactivation as a Marker of Memory Quality and Fidelity	Sunday, March 24	1:30 - 3:30 pm	Ballroom B/C
3	Beyond the Attentional Spotlight: The Role of Inhibition in Selective Attention	Sunday, March 24	1:30 - 3:30 pm	Bayview Room
4	Mental Models of Time	Monday, March 25	10:00 am - Noon	Bayview Room
5	Individual Differences in Age-Related Episodic Memory Decline: Mechanisms, Challenges, and Opportunities	Monday, March 25	10:00 am - Noon	Ballroom B/C
6	Cognitive Networks: Trends in Multimodal Approaches and Connectomics	Monday, March 25	10:00 am - Noon	Ballroom A
7	Towards Understanding Individual Variability with Functional Neuroimaging: Big Data and Deep Data Perspectives	Tuesday, March 26	1:30 - 3:30 pm	Ballroom A
8	From Knowing to Re-Experiencing: The Semantic-Episodic Distinction 47 Years On	Tuesday, March 26	1:30 - 3:30 pm	Ballroom B/C
9	Relational Thinking: How are Mental Relations Represented in the Brain?	Tuesday, March 26	1:30 - 3:30 pm	Bayview Room

Symposium Session 1

CAUSAL INFERENCE APPLIED TO COGNITIVE NEUROSCIENCE: FROM BRAIN CONNECTIVITY TO NEUROCOGNITION

Sunday, March 24, 1:30 - 3:30 pm, Ballroom A

Chair: Romy Lorenz, University of Cambridge

Speakers: Michael W. Cole, Til Ole Bergmann, Arielle Tambini, Rosalyn Moran

Understanding how neural tissue causes the human mind is the ultimate goal of cognitive neuroscience. With the advent of human functional neuroimaging, the initial focus was on mapping associations between cognitive processes and dedicated brain regions. Following this modular approach to cognition, cognitive processes are increasingly understood as resulting from dynamic interactions of brain regions and networks of regions. Despite these developments, the main efforts in the field have been limited to descriptive mappings between cognitive processes and brain networks. To date, we are still lacking explanatory insights into the causal network mechanisms that underlie cognition. Identifying the mechanistic role of brain networks and elucidating how these networks compute cognitive processes is an essential step to advance our understanding of the human brain. The rationale of this symposium is to present novel efforts to identify causal mechanism in the brain. The four speakers address this question from multiple perspectives and cover both neural-to-neural (i.e., connectivity analyses techniques) and neural-to-cognition (e.g., brain stimulation) causal inference approaches. The symposium highlights the need for an integrative neuroscience framework by leveraging the complementary strengths of different neuroimaging modalities (fMRI and MEG/EEG), non-invasive brain stimulation techniques, careful experimental manipulations, new analytic approaches (e.g., machine learning) as well as computational modelling. With this symposium we hope to stimulate the CNS community to advance mechanistic discovery in network neuroscience and causally link these discoveries to cognition. The four talks are followed by a 25 min Q&A including a discussion among the speakers and the audience.

TALK 1: THE CENTRALITY OF CAUSAL INFERENCE TO COGNITIVE AND NETWORK NEUROSCIENCE

Michael W. Cole[1], Ravi D. Mill[1], Takuya Ito[1], Ruben Sanchez-Romero[2]; [1]Rutgers University, [2]Carnegie Mellon University

Cognitive neuroscience is dominated by methods described as "correlational" rather than "causal". Yet causal inference is the ultimate goal of most scientific endeavors, allowing for mechanistic understanding and interventions to solve real-world problems. While correlation does not necessarily imply causation, it is suggestive (probabilistically) of causation. We propose that reframing correlational approaches as weak causal inferences would benefit neuroscience by putting correlation on a continuum with causation to encourage switching to better causal inferences whenever possible. In network neuroscience, correlation-based functional connectivity measures could be improved upon by using multiple regression (or partial correlation) to reduce the confounds that make correlations provide such weak causal inferences. Using a predictive "activity flow" framework, we find that multiple regression with resting-state fMRI substantially improves task-evoked fMRI activation pattern predictions relative to correlations. This quantifies the superiority of multiple regression over correlations for modeling causal processes. Despite this success, multiple issues with such methods remain, such as overly sparse connectivity estimates. Validation (simulated and empirical) will therefore be critical for justifying the use of more causally refined

methods to map brain network processes to cognition. In the context of mapping brain network processes to cognition, correlation-based approaches (e.g., individual difference correlations) could be made more causal by using experimenter-controlled task manipulations with task-state functional connectivity. However, we found that task activations produce spurious (i.e., non-causal) task-state functional connectivity estimates. Further, common approaches to correct for these spurious estimates were found to be ineffective. We identified an approach that is effective in correcting the spurious estimates (involving flexible removal of the mean task-evoked activation), advancing functional connectivity research toward the goal of strong causal inference. Ultimately, we suggest that increased utilization of recent advances in causal inference will have a substantial positive impact on cognitive and network neuroscience.

TALK 2: TRANSCRANIAL BRAIN STIMULATION TO STUDY THE FUNCTION OF NEURONAL OSCILLATIONS

Til Ole Bergmann[1,2]; [1]Deutsches Resilienz Zentrum (DRZ) gGmbH, Mainz, Germany, [2]Eberhard Karls University of Tübingen

Neuronal oscillations are a ubiquitous feature of brain activity, observed across species, neuronal structures, and behavioral states. They are thought to rhythmically organize neural activity across multiple temporal and spatial scales and thereby orchestrate local information processing as well as communication between brain structures. The hierarchical nesting of specific oscillatory frequencies in large-scale neuronal networks may therefore provide the basic computational principles mediating a plethora of cognitive functions. Consequently, aberrant oscillatory activity is frequently associated with neuropsychiatric and neurological conditions. Electrophysiological recording methods, such as electro- and magnetoencephalography (EEG/MEG), serve well to non-invasively study neuronal oscillations in humans with excellent temporal and good spatial resolution. However, the information obtained with these techniques remains correlative, while direct manipulation of neural activity is needed to reveal the actual relevance and causal contribution of neuronal oscillations for cognition. Transcranial magnetic stimulation (TMS) and transcranial current stimulation (TCS) can be combined with EEG and MEG, either concurrently (online) or consecutively (offline), to non-invasively manipulate and measure neuronal oscillations in the human brain. Online approaches, assessing the immediate neural response to stimulation, can be used to (i) quantify neuronal network properties such as excitation, inhibition, or connectivity in a phase and amplitude specific manner, (ii) interfere with ongoing spontaneous or task-related oscillatory activity, or (iii) modulate the level and timing of neuronal oscillations, e.g. to rhythmically entrain neuronal activity. In contrast, offline approaches can be utilized to either (iv) inhibit or (v) facilitate local neuronal excitability via the induction of synaptic plasticity, also in a phase-dependent manner, and to assess its subsequent effects on neuronal oscillations. I will illustrate these different approaches by examples from studying oscillatory activity in the motor cortex during wakefulness and sleep, as well as visual cortex during spatial attention. I will also introduce the novel approach of brain state-dependent brain stimulation, which allows to trigger brain stimulation in real-time by the expression of specific oscillatory brain states of interest and thereby provides a unique opportunity to unravel the role of neuronal oscillations for information processing and synaptic plasticity.

TALK 3: CAUSAL APPROACHES TO TESTING THE ROLE OF AWAKE REACTIVATION IN ASSOCIATIVE MEMORY RETENTION

Arielle Tambini[1]; [1]University of California, Berkeley

After events are initially encoded into memory, post-encoding processes are thought to stabilize and consolidate representations in memory. The spontaneous reactivation of representations of prior experience is a leading mechanism thought to support memory consolidation. A growing body of work in both humans and animal models has found correlational links between post-encoding reactivation and behavioral measures of later memory. However, correlational links do not speak to the unique contribution of such processes to long-term memory retention (e.g. above and beyond encoding mechanisms). In this talk, I will present work using causal manipulations to directly test the role of post-encoding reactivation during awake time periods to human memory consolidation. I will first describe a behavioral study using sensory cueing approaches to induce awake reactivation. We found that cued reactivation enhanced the stability of associations in memory, providing evidence that awake reactivation benefits memory stability. I will then present combined Transcranial Magnetic Stimulation (TMS) and fMRI approaches to test the causal role of reactivation in consolidation. To target reactivation, we applied theta-burst TMS to a region that represents recently encoded stimuli. We found that theta-burst TMS applied after encoding impaired associative memory retention, reduced reactivation of recently encoded stimuli during post-encoding rest periods, and disrupted relationships between hippocampal-cortical resting connectivity and subsequent memory retention. Finally, I will present alternative approaches to modulate and assess the influence of TMS on hippocampal-cortical networks during isolated time periods. These findings demonstrate a clear contribution of awake post-encoding reactivation to memory retention and provide novel tools for manipulating memory reactivation during distinct post-encoding time periods. Together, this work highlights the utility of causal manipulations to our understanding of memory consolidation processes.

TALK 4: ACTIVE INFERENCE IN GAMING ENVIRONMENTS FOR COMPUTATIONAL PSYCHIATRY

Rosalyn Moran[1], Maell Cullen[1,2]; [1]King's College London, [2]University of Bristol

The normative rules by which brains make decisions, act and interact with their environments can be formally expressed by mathematical and computational principles. This supports neuroscience efforts, for example in neuroimaging, by providing detailed and latent descriptions of behaviour. It further supports the understanding of abnormal behaviour and its treatment e.g. in the context of psychiatric disorders. Under Active Inference (Friston 2009), a decision – such as that to move ones' eyes - is driven by the imperative to minimise a bound on surprise known as the Free Energy. In the context of partially observable Markov decision processes (POMDPs), a model-based framework in which we can cast naturalistic decision-making tasks; the Free Energy of a policy (a sequence of actions) can be understood as a drive to both minimize cost (maximise the likelihood of achieving a goal) while maximising the information return from a given set of actions. This scheme has been used to model decision making in tasks such as 'the urn task' and also in reading. In my talk I will introduce the technical framework of Free Energy minimization in the context of online gaming environments (designed to test artificial intelligence algorithms) and present data from decision-making simulations. Specifically, I will present the game 'Doom' and compare agents trained under Active Inference to agents trained to maximise reward. Linking these simulations to putative neurobiological substrates I will describe the potential links from brain to computation. Here I will focus on two results from our simulated agents that describe normative rules to understand aging and anhedonia.

Symposium Session 2

DECONSTRUCTING THE CONTENTS OF EPISODIC MEMORY RETRIEVAL: PATTERN REACTIVATION AS A MARKER OF MEMORY QUALITY AND FIDELITY

Sunday, March 24, 1:30 - 3:30 pm, Ballroom B/C

Chair: Maureen Ritchey, Boston College

Speakers: Bradley Buchsbaum, Brice Kuhl, Maureen Ritchey, Chris Bird

Episodic memories are characterized by the coordinated reactivation of details composing the remembered event, including its high-level semantic features, item-specific details, and spatial context, as well as how these details are organized relative to one another. Functional neuroimaging methods have been valuable in revealing the process of memory reactivation, wherein neural patterns from encoding are reinstated in representational cortical areas during retrieval. Yet much remains to be learned about how neural reactivation relates to the contents and quality of episodic memory. In the first talk, Bradley Buchsbaum will present evidence that objective measures of neural reinstatement are related to subjective ratings of memory vividness, and that different feature levels are reactivated across large-scale networks at retrieval. Brice Kuhl will argue that in parietal cortex, reactivating different feature levels, such as category-level or item-specific information, has different consequences for memory outcomes. Maureen Ritchey will show that precise reactivation of event features is associated with changes in network dynamics, and that these changes vary according to the contents of memory. Finally, Chris Bird will discuss the role of event models and prior schematic knowledge in organizing episodic memory details and their reactivation during retrieval. In sum, the complexity of episodic memory is matched by the complexity of its reactivation. Deconstructing memory reactivation into its component features, which vary in quality and neural instantiation, will aid future efforts to understand and predict memory success.

TALK 1: CONVERGENCE OF OBJECTIVE AND SUBJECTIVE INDICES OF EPISODIC MEMORY

Bradley Buchsbaum[1,2]; [1]Rotman Research Institute, Baycrest, [2]University of Toronto

A vivid memory for a prior event is the mental reconstruction of a conscious experience from the past. Much evidence from neuroscience suggests that such memories may be understood as the brain's effort to revisit or otherwise reactivate a previous state of neural activity. At the limit, the principle of reactivation implies that a perfect memory entails a perfect reinstatement of a prior pattern of brain activation. With modern neuroimaging tools and pattern analysis methods we can now explore, quantify, and test the limits of this principle with unprecedented precision. In this talk we will present evidence from human episodic memory experiments that explore the relationship between brain states evoked during the perception of complex stimulus events (multimodal videos and photographs) and subsequent attempts to mentally revisit those events. In a series of human fMRI experiments we show that 1) subjective ratings of memory vividness are correlated with the accuracy of neural reinstatement; 2) that a person's ability to accurately reinstate a prior pattern of brain activity is related to behavioral memory performance and concomitantly measured eye-movement patterns; and 3) that episodic memories can be finely modeled using an encoding approach that describes the content of neural patterns in terms of feature representations—from from edges to semantic categories—derived from deep neural networks trained on large corpuses of natural images. With this approach, we show that large-scale networks, spanning low-level visual cortex to the prefrontal cortex—show a broad correlated reactivation of specific feature levels during episodic memory retrieval.

TALK 2: REACTIVATION IN PARIETAL CORTEX PREDICTS COSTS AND BENEFITS OF MEMORY RETRIEVAL

Brice Kuhl[1]; [1]University of Oregon

The act of remembering can strengthen, but also distort memories. Parietal cortex is a candidate region involved in retrieval-induced memory changes given that it reflects retrieval success and represents retrieved content. We conducted an fMRI experiment to test whether

different forms of reactivation in parietal cortex predict distinct consequences of memory retrieval. Subjects first studied associations between words and pictures of faces, scenes, or objects. Then, during 'retrieval practice', subjects repeatedly retrieved half of the previously learned pictures and reported the vividness of their memories. On the following day, subjects completed a recognition memory test for individual pictures. Critically, the recognition memory test included pictures that were highly similar to studied pictures ('similar lures'). Behavioral results indicated that retrieval practice increased both the hit rate and false alarm rate to similar lures, confirming a causal influence of retrieval practice on subsequent memory. Using pattern similarity analyses, we measured two different levels of reactivation during retrieval practice: 1) generic 'category-level' reactivation and 2) idiosyncratic 'item-level' reactivation. Vivid remembering during retrieval practice was associated with stronger category- and item-level reactivation in parietal cortex. However, these two measures predicted distinct outcomes on the subsequent recognition memory test: whereas higher category-level reactivation tended to predict false alarms to lures (consistent with strengthening of gist-level representations), item-level reactivation predicted correct rejections (consistent with strengthening of idiosyncratic representations). These findings indicate that parietal reactivation can be decomposed to tease apart distinct consequences of memory retrieval.

TALK 3: NETWORK INTERACTIONS SUPPORTING THE PRECISION OF ITEM AND CONTEXT INFORMATION IN EPISODIC MEMORY

Maureen Ritchey[1]; [1]Boston College

Episodic memory retrieval involves the integration of multimodal sensory details into a single recollective experience. Perhaps not surprisingly, integration of such disparate details is supported by functional interactions within and between widespread networks of brain regions. Yet little is known about how these network interactions are affected by the quality and contents of memory-- for instance, the precision with which different details can be reconstructed from memory. To this end, we developed a novel memory paradigm using complex multimodal events that allowed us to test the precision of item and contextual memory details. Participants studied a series of unique objects embedded in a 360-degree panorama scene and in a color sampled from a continuous color spectrum. At test, the participants were asked to first remember everything that they could about each object cue, then they were probed to reconstruct its original color and spatial context. FMRI data collected during the remember period revealed that activity and functional connectivity in anterior temporal and posterior medial networks was correlated with overall memory quality, a composite measure of the precision of reactivated event details. Importantly, distinct patterns of network dynamics emerged when memory quality was broken down by specific memory details. Precise reactivation of spatial context was associated with functional connectivity in the posterior medial network alone, whereas precise reactivation of item color involved interactions among the angular gyrus, hippocampus, and anterior temporal regions. The results reveal the processes by which brain networks dynamically support qualitative aspects of memory reactivation.

TALK 4: REPRESENTATION OF COMPLEX EVENTS IN THE ANTERIOR TEMPORAL AND POSTERIOR MEDIAL BRAIN SYSTEMS: EFFECTS OF RETENTION DELAY AND PRIOR KNOWLEDGE

Chris Bird[1]; [1]University of Sussex, UK

In everyday situations we are confronted by a wealth of sensory information, yet humans have a remarkable ability to extract the elements of our experience that are of most relevance. These elements may change rapidly, such as the flow of speech, but some elements change much more slowly, such as the location, the people present and their current actions and goals. These slowly changing elements are thought to be represented by overarching "event models" that describe the current situation. Recalling our experiences involves the reactivation of the event model as well as more specific, rapidly changing elements. To investigate the processing and retrieval of events, we asked participants to watch and then recall short movie clips while in an MRI scanner. We observe movie-specific reactivation of patterns of brain activity during memory recall, consistent with the notion of event models representing the stable, overarching features of an event. These movie-specific patterns of brain activity not only observed within-individuals but are also correlated across individuals both when watching and recalling the movies. These reinstatement effects are found throughout the brain's posterior midline (PM) system and are stable over periods of at least a week. Furthermore, prior “schematic” knowledge about the characters in movie clips boosts reinstatement effects in the anterior temporal (AT) system. In sum, the overarching contents of events are represented across the PM and AT systems in a manner that is stable across time, similar across individuals and is shaped by our prior knowledge.

Symposium Session 3

BEYOND THE ATTENTIONAL SPOTLIGHT: THE ROLE OF INHIBITION IN SELECTIVE ATTENTION

Sunday, March 24, 1:30 - 3:30 pm, Bayview Room

Chair: Heleen Slagter, University of Amsterdam

Speakers: Nick Gaspelin, Bo-Yeong Won, Heleen A Slagter, Ian C Fiebelkorn

Selective attention is thought to facilitate performance both through enhancement and inhibition of sensory processing of goal-relevant and irrelevant (or distracting) information. While much insight has been gained over the past few decades into the neural mechanisms underlying facilitatory effects of attention, much less is known about inhibitory mechanisms in attention. This symposium will highlight recent work aimed at understanding inhibition in attention, spanning

from cognition to human electrophysiology to intra-cortical recordings in non-human primates. First, Gaspelin and Luck will show that salient distractors can be proactively inhibited to prevent visual distraction, as measured by the P_D ERP component. Won will then discuss recent evidence that indicates a critical role for habituation in distractor suppression and potential underlying neural mechanisms. Next, Slagter will present results from behavioral and EEG studies that suggest that distractor suppression may only emerge through experience, consistent with predictive processing notions of expectation-based suppression. EEG findings based on state-of-the-art decoding and encoding analyses that can reveal the representational content of brain activity, furthermore raise the question as to whether voluntary preparatory inhibition is possible at all. Finally, Fiebelkorn will demonstrate the importance of inhibition in cortical and subcortical hubs of the attention network using electrophysiological recordings in both humans and monkeys by showing how theta-rhythmic sampling prevents us from being overly focused on any given location. In summary, this symposium will highlight recent research on the neural and cognitive mechanisms underlying inhibition in attentional allocation.

TALK 1: COMBINED ELECTROPHYSIOLOGICAL AND BEHAVIORAL EVIDENCE FOR THE SUPPRESSION OF SALIENT DISTRACTORS

Nick Gaspelin[1], Steve J Luck[2]; [1]Binghamton University, State University of New York, [2]University of California Davis

Researchers have long debated how salient-but-irrelevant features guide visual attention. Recent studies have suggested a hybrid model in which salient stimuli attract visual attention but can be proactively suppressed by attentional mechanisms. Support for this model has primarily come from event-related potential (ERP) studies demonstrating that salient stimuli which fail to capture attention also elicit a distractor positivity (PD) component, a putative neural index of suppression. Other support comes from behavioral studies which show that processing of salient items is inhibited compared to other search items. The current study was designed to link the behavioral and neural evidence by combining ERP recordings with an experimental paradigm that provides a behavioral measure of suppression. We found that, under conditions that eliminated attentional capture, the salient item elicited a PD component. Moreover, the magnitude of the PD component was correlated with behavioral indices of suppression. These findings provide a crucial connection between the behavioral and neural measures of suppression, which opens the door to using the PD component to assess the timing and neural substrates of the behaviorally observed suppression.

TALK 2: PASSIVE SUPPRESSION OF DISTRACTORS IN VISUAL SEARCH

Bo-Yeong Won[1], Joy Geng[1,2];[1]Center for Mind and Brain, University of California, Davis, [2]Department of Psychology, University of California, Davis

The ability to suppress distractors that appear repeatedly during visual search improves over time. For example, we previously asked participants to locate a gray square among three colored distractor squares (e.g., pink, orange, magenta) in a visual search task. After a "training" period, the three distractors sometimes changed to different sets of colors (e.g., blue, green, cyan). We found that the appearance of new (and very different) distractor colors slowed down search compared to "trained" distractors (Won & Geng, 2018). Although it was clear that experience with specific distractors improved suppression, it was unknown whether the enhanced suppression for "trained" colors was due to repeated active suppression of specific colors, or the passive viewing of those non-target colors during visual search (i.e., the habituation model; Turatto). Here, we address this question by adapting our previous paradigm to include a "habituation display" that was interleaved with visual search trials. The habituation display contained four colored circles and occurred briefly before each search display. Participants were instructed to ignore the circles but only focus on the search task. A control group experienced the same trial sequence, but was shown black circles during the "habituation display". Consistent with the habituation model, search RT in the control group was slowed when new dissimilar distractors appeared, but no cost was found for the color-habituation group. This suggests that passive color exposure from the habituation displays led to equivalent suppression for new dissimilar distractors and trained distractors. We also tested the specificity of habitation by manipulating the color range of circles in the habitation display. We found that distractor suppression only occurred for new distractor colors that were seen on habituation displays. These findings indicate that distractor suppression may improve over time as a consequence of passive mechanisms of perceptual habituation and not "active" attentional mechanisms. Finally, we speculate on where in the brain these habituation effects might occur and provide preliminary fMRI data suggesting lower stimulus-evoked responses to repeated distractors in visual cortex.

TALK 3: FACILITATION AND INHIBITION IN SELECTIVE ATTENTION: TWO SIDES OF THE SAME COIN?

Heleen A Slagter[1,2], Dirk van Moorselaar[1]; [1]University of Amsterdam, the Netherlands, [2]Free University of Amsterdam, the Netherlands

Over the past few decades, much insight has been gained into how selective attention may filter information processing at the neural level, by directly boosting relevant information (target facilitation), and/or by suppressing irrelevant information (distractor inhibition). Yet, there is

still debate as to whether target facilitation and distractor inhibition are simply different sides of the same coin or whether they are controlled by distinct neural mechanisms. Moreover, recent work indicates that distractor suppression only emerges when information about the distractor can be derived directly from experience, suggesting that suppression of distracting information is expectation dependent. This also raises the question as to how attention and expectation interact to bias information processing. In my talk, I will discuss recent findings from several behavioral and EEG studies that examined how expectations about upcoming target or distractor locations and/or features influence facilitatory and inhibitory effects of attention on visual information processing and representation using ERPs, multivariate decoding analyses, and inverted encoding models. Collectively, these confirm an important role for alpha oscillatory activity in town-down biasing of attention to, and sharpening of representations of target locations. Yet, they also show that target facilitation and distractor suppression are differentially influenced by expectation, and rely at least in part on different neural mechanisms, with distractor suppression selectively occurring after stimulus presentation. Collectively, these findings shed novel light on how attention and expectation interact to bias perception and indicate that target facilitation and distractor inhibition are subserved by distinct neural mechanisms.

TALK 4: A THETA-RHYTHMIC THEORY OF ATTENTION: ALTERNATING STATES THAT PROMOTE EITHER SAMPLING OR SHIFTING

Ian C Fiebelkorn[1], Sabine Kastner[1]; [1]Princeton University

Spatial attention is the process through which a behaviorally relevant location receives preferential processing. Classic studies largely assumed that its neural and behavioral effects were continuous over time. Recent studies, however, have instead shown that spatial attention samples the visual environment in theta-rhythmic cycles (3–8 Hz), leading to alternating periods of either enhanced or diminished perceptual sensitivity. We used electrophysiological recordings in both humans and monkeys to link rhythmic sampling during spatial attention to intrinsic theta rhythms in cortical and subcortical hubs of the attention network. This network directs both attention-related boosts in sensory processing (i.e., spatial attention) and exploratory movements (i.e., saccadic eye movements). Recent studies have also linked the likelihood of exploratory movements to theta rhythms. Environmental sampling is thus a fundamentally rhythmic process. We propose that theta rhythms in the attention network temporally resolve functional conflicts between the sensory (i.e., attention-related boosts in sensory processing) and motor (i.e., exploratory movements) aspects of environmental sampling, organizing neural activity into alternating states that promote either sampling at the presently attended location (i.e., sensory functions) or shifting to another location (i.e., motor functions). Approximately four times per second, there is a pulsed inhibition of sensory processing at the presently attended location, while other locations are re-assessed (based on stimulus properties and behavioral goals) to determine whether the presently attended location is still the most important location. Theta-rhythmic sampling thus provides critical flexibility, preventing us from being overly focused on any given location.

Symposium Session 4

MENTAL MODELS OF TIME

Monday, March 25, 10:00 am - Noon, Bayview Room

Chair: Virginie van Wassenhove, CEA NeuroSpin, INSERM Cognitive Neuroimaging Unit

Speakers: Marc Howard, Charan Ranganath, Christian Doeller, Virginie van Wassenhove

Our symposium will focus on current working hypotheses suggesting that the construction of ordinal sequences and temporal reasoning may be necessary for an intelligible and conscious representation of time. Recent neuroscientific work suggests that algorithms dedicated to the mapping of space may also serve the mapping of time (Buzsáki & Moser, Nat Neurosci 2013). However, a great majority of studies focuses on the individual physically or virtually moving in its environment, so that the traversed spatial and temporal dimensions of the world fully correlate (as a function of the animal's speed). As part of a dedicated navigational system, time and speed cells may contribute to the mapping of time (Kropff et al, 2015; Tsao et al, 2018), but what happens to our mental representation of time when the body does not move? Is memory retrieval sufficient to build the psychological arrow of time, past, present and future? To which extent ordering information along the time dimension may, or not, require dedicated operations as compared to imagining spatial representations? In this symposium, we will discuss recent empirical work focus on how memorized events and their temporal structure are endogenously manipulated, and ordered to build conscious narratives possibly feeding a mental model of time.

TALK 1: MENTAL AND NEURAL REPRESENTATIONS OF THE PAST AND THE FUTURE

Marc Howard[1]; [1], Dept of Psychological and Brain Sciences, Dept of Physics, Boston University, USA

Cognitive psychologists have long hypothesized that our internal estimates of timing rely on a scale-invariant internal representation of the past. Others have proposed that many different ``forms of memory'' rely on the same kind of representation. Recent years have seen an explosion of work on the neurophysiology of temporal representations in rodents and monkeys. Neurons in many brain regions show firing properties consistent with a compressed neural timeline of recent experience. It has been argued that the function of memory is to predict the future. Recent behavioral work from my lab (Singh and Howard, 2017) that suggests that predictions for the future have a very similar form to memory for the past, suggesting that future events are

also represented along a compressed timeline. I will review theoretical proposals for neurally-plausible mechanisms to construct a timeline of future events. The view that emerges from this work is that memory for the past and predictions of the future are closely related.

TALK 2: TEMPORAL STRUCTURE IS THE KEY TO UNDERSTANDING EPISODIC MEMORY

Charan Ranganath[1]; [1]Center for Neuroscience and Department of Psychology, University of California at Davis, USA

Research in cognitive psychology and neuroscience has almost exclusively relied on studies of recall or recognition of lists of items in order to understand memory for events. Although these studies have yielded valuable insights, the ability to remember specific items really does not contribute much to how we remember events in real life. We understand and reconstruct events in large part through their temporal structure, but temporal structure is poorly understood--the dark matter in episodic memory research. I will present evidence showing that the hippocampus plays a central role in representing specific items within the temporal structure of an event, and that a network of posterior medial cortical regions (also known as the "default network" plays a central role in representing abstract temporal structure in a manner that generalizes across classes of events. These results, combined with results from other labs, provide support for a new framework for understanding how we remember and represent memories for real-life events.

TALK 3: STRUCTURING TIME IN THE HIPPOCAMPAL-ENTORHINAL SYSTEM

Christian Doeller[1,2]; [1]Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway

Episodic memories consist of event information linked to spatio-temporal context. Notably, the hippocampus is involved in the encoding, representation and retrieval of temporal relations that comprise a context, but it remains largely unclear how coding for elapsed time arises in the hippocampal-entorhinal region. The entorhinal cortex (EC), the main cortical input structure of the hippocampus, has been hypothesized to provide temporal tags for memories via contextual drift and recent evidence demonstrates that time can be decoded from population activity in the rodent lateral EC. Here, we use fMRI to show that the anterior-lateral EC (alEC), the human homologue region of rodent lateral EC, maps the temporal structure of events. Participants acquired knowledge about temporal and spatial relationships between object positions—dissociated via teleporters—along a fixed route through a virtual city. Multi-voxel pattern similarity in alEC changed through learning to reflect elapsed time between event memories. Furthermore, we reconstructed the temporal structure of object relationships from alEC pattern similarity change. In contrast to the hippocampus, which maps the subjective time between event memories in this task, the temporal map in alEC reflected the objective time elapsed between events. Our findings provide evidence for the notion that alEC represents the temporal structure of memories, putatively derived from slowly-varying population signals during learning. Further, our findings suggest a dissociation between objective and subjective temporal maps in EC and hippocampus; thereby providing novel evidence for the role of the hippocampal-entorhinal region in representing time for episodic memory.

TALK 4: ORDERING EVENTS IN TIME AND SPACE: SIMILAR ALGORITHMS, DIFFERENT IMPLEMENTATIONS?

Virginie van Wassenhove[1], Baptiste Gauthier[2], Pooja Prabhu[3]; [1]CEA DRF/Joliot NeuroSpin, INSERM Cognitive Neuroimaging Unit, France, [2]Laboratory of Cognitive Neuroscience, Brain Mind Institute Ecole, Polytechnique Fédérale de Lausanne, Campus Biotech, Genève, Switzerland, [3]Department of Computer Applications, Manipal Insititute of Technology, Manipal Academy of Higher Education, India

When moving, the spatiotemporal unfolding of events is bound to our physical trajectory, and time and space become entangled in episodic memory. When imagining past or future events, or being in different geographical locations, the temporal and spatial dimensions of mental events can be independently accessed and manipulated. How the human brain represents time and space is essential to understand the conscious mind. Using psychophysics (Gauthier & van Wassenhove, Cognition, 2016), fMRI (Gauthier & van Wassenhove, J Neurosci, 2016) and magnetoencephalograhy (MEG; Gauthier, Petske & van Wassenhove, bioRxiv, 2017), we characterized chronometry, performance, and brain activity while participants ordered historical events from different mental perspectives in time (i.e. from a past or future imagined viewpoint) or in space (i.e. from a western or eastern imagined viewpoint). We report similar behavioral patterns for ordering events in time and space, but substantial differences in the neuroanatomical and dynamic implementations of the cognitive operations implicated in this task. In addition to the convergence of behavioral, fMRI and MEG results indicating distance effects between an imagined self position (in time and space) and the ordering of retrieved events, we also report signed distance effects in MEG results enabling to dissociate the reconstruction of events in the past from those in the future, including their distances to self. Preliminary reconstructions of deep brain sources using MEG suggests the implication of hippocampal structures during the conscious representation of ordinality notably in time, i.e. in the elaboration of a mental time arrow. The directionality of the psychological time arrow thus appears to rely on distinct neural implementations dissociable from spatial directionalities.

Symposium Session 5

INDIVIDUAL DIFFERENCES IN AGE-RELATED EPISODIC MEMORY DECLINE: MECHANISMS, CHALLENGES, AND OPPORTUNITIES

Monday, March 25, 10:00 am - Noon, Ballroom B/C

Chair: Alexandra Trelle, Stanford University

Co-Chair: Elizabeth Mormino, Stanford University

Speakers: Elizabeth C. Mormino, Alexandra N. Trelle, Sarah A. Johnson, Trey Hedden

Age-related memory decline varies considerably across individuals, even among putatively healthy older adults. Recent evidence suggests that Alzheimer's disease (AD) pathology is present in the brain decades before the onset of cognitive symptoms, prompting cognitive aging research to investigate the contribution of disease processes to age-related memory decline, and identify methods for early detection of AD risk in cognitively normal individuals. This symposium features work in aged humans and rodents adopting complementary methodological approaches to examine this question. Collectively, this research seeks to understand the mechanisms underlying individual differences in episodic memory with age, the degree to which these are linked to the early disease processes in the brain, and their ability to successfully predict future memory decline. Elizabeth Mormino will describe work using PET imaging to investigate the role of amyloid and tau protein accumulation in age-related cognitive decline. Alexandra Trelle will describe work combining structural and functional MRI with CSF markers of AD to predict episodic memory in older adults. Sarah Johnson will present data from aged rodents exploring how altered activity across the medial temporal lobe and hippocampus contributes to impaired mnemonic discrimination. Trey Hedden will present multimodal neuroimaging evidence demonstrating the interaction between multiple brain markers, amyloid burden, and prospective memory decline. The presentations and subsequent discussion will also highlight current challenges associated with characterizing age-related changes in the brain and cognition, and the opportunities that this research holds for early detection of AD and the promotion of brain health and memory function across the lifespan.

TALK 1: THE IMPACT OF Aβ AND TAU ON PROSPECTIVE COGNITIVE DECLINE IN OLDER INDIVIDUALS

Elizabeth C. Mormino[1], Reisa A. Sperling[2], Kathryn V. Papp[2], Dorene M. Rentz[2], Keith A. Johnson[2]; [1]Stanford University, [2]Massachusetts General Hospital

Although Amyloid-beta (Aβ) and tau pathologies are central features of Alzheimer's disease, these protein aggregates are commonly observed among clinically normal older individuals at post-mortem and can now be detected with in vivo neuroimaging. We sought to determine the association and interaction of these proteinopathies with prospective cognitive decline in normal aging. One hundred and thirty-seven older individuals (age=76.3±6.22 years) participating in the Harvard Aging Brain Study underwent Aβ (11C-Pittsburgh Compound B) and tau (18F-Flortaucipir) positron emission tomography (PET) with prospective annual neuropsychological assessments following PET imaging (mean number of cognitive visits = 2.8±1.1). Tau and Aβ PET measures were assessed in regions of interest (ROI) as well as vertex-wise map analyses. Cognitive change was evaluated with Memory and Executive Function composites. Higher levels of Aβ and tau were both associated with greater memory decline, but not with change in executive function. Higher cortical Aβ was associated with higher tau levels in all ROI, independent of age, and very elevated levels of tau were observed primarily in CN with elevated Aβ. A significant interaction between tau and Aβ was observed, such that rapid prospective memory decline was observed in participants who had high levels of both pathologies. Our results are consistent with the supposition that both Aβ and tau are necessary for memory decline in the early stages of AD.

TALK 2: THE CONTRIBUTION OF HIPPOCAMPAL INTEGRITY AND AMYLOID BURDEN TO INDIVIDUAL DIFFERENCES IN EPISODIC MEMORY WITH AGE

Alexandra N. Trelle[1], Valerie A. Carr[2], Carolyn Fredericks[1], Wanjia Guo[3], Marc Harrison[1], Manasi Jayakumar[4], Geoff Kerchner[1], Anna Khazenzon[1], Elizabeth C. Mormino[1], Ayesha Nadiadwala[1], Monica Thieu[4], Anthony D. Wagner[1]; [1]Stanford University, [2]San Jose State University, [3]University of Oregon, [4]Columbia University

A central goal of cognitive aging research is to understand the mechanisms that support the maintenance versus decline of memory function across the lifespan. Emerging evidence suggests that the mechanisms influencing this trajectory are complex, and may involve the interaction of multiple factors, including changes in brain structure and function, and the early accumulation of Alzheimer's disease (AD) pathology. The Stanford Aging and Memory study explores this question by examining individual differences in episodic memory among cognitively normal older adults (aged 60-88 years), using a combination of 7T structural MRI, 3T functional MRI, and CSF protein markers of AD pathology (phospho-tau, Aβ42). During high-resolution fMRI, participants engaged in encoding and retrieval phases of an associative memory task, yielding univariate measures of regional BOLD activity and multivariate measures of cortical reinstatement during memory retrieval. Results indicate that individual differences in associative memory are linked to the fidelity of cortical reinstatement during memory retrieval, which itself is predicted by hippocampal retrieval phase activity and hippocampal volume. Amyloid burden was also related to both hippocampal volume and memory performance. These data point to contributions of hippocampal-mediated retrieval processes, hippocampal structure, and AD pathology to variability in episodic memory performance with age. Ongoing analyses will further examine the relationships between age-related changes in the functional and structural integrity of the hippocampus and surrounding cortex, continuous levels of CSF Aβ42 and phospho-tau, and their

unique or combined contributions to individual differences in episodic memory in cognitively normal older adults.

TALK 3: REVERSE TRANSLATION LINKS MEMORY PERFORMANCE TO NEURAL COMPENSATION IN A RODENT MODEL OF COGNITIVE AGING

Sarah A. Johnson[1]; [1]University of Florida

A challenge in studying memory across the lifespan is retaining participants for longitudinal assessment, from the point of 'early detection' to emergence of Alzheimer's disease (AD). Animal models circumvent this difficulty and afford tools for monitoring neural activity with high spatiotemporal precision. Using a rodent version of the mnemonic similarity task (MST), we have shown aged rats are selectively impaired in distinguishing a learned target object from similar lures (Johnson et al. 2017). Based on this success in reverse translating behavioral MST deficits observed in aging and early AD (Bakker et al. 2015; Stark et al. 2013), our more recent studies examined mnemonic discrimination-induced activity across the medial temporal lobe (MTL). Young and older adult rats were behaviorally characterized on object discrimination abilities, then completed the rodent MST. Neural ensembles active during MST epochs were identified based on sub-cellular distribution of Arc mRNA. This molecular imaging approach allowed mapping of activity across cell layers of the lateral entorhinal cortex (LEC), perirhinal cortex (PRC), CA3, and CA1. Consistent with human imaging, aged rats showed a reduced proportion of neurons active in LEC and PRC; however, analyses confirmed this effect was restricted to hippocampal-projecting layers II/III. In addition, aged rats with superior discrimination abilities in earlier adulthood showed greater activation in proximal CA1, relative to poor-discriminating aged and younger rats. Our results suggest compensatory plasticity in hippocampal sub-regions of 'successful' ageing rats accounts for decreased MTL input. Ongoing studies are investigating molecular and neurophysiological mechanisms that support circuit-wide compensation.

TALK 4: AMYLOID INTERACTS WITH MULTIPLE FACTORS TO PREDICT LONGITUDINAL MEMORY CHANGE IN COGNITIVELY NORMAL OLDER ADULTS

Trey Hedden[1]; [1]Icahn School of Medicine at Mount Sinai

Although memory decline is characteristic of aging in the aggregate, the rate of memory change varies widely across individual older adults. This variability may be partially due to the presence of preclinical Alzheimer's disease measured by elevated amyloid burden, which impacts approximately 30% of cognitively normal older adults above age 65. It may also be partially due to different brain systems expressing vulnerability in different older adults. The present analysis explores how amyloid in conjunction with other vulnerable brain systems leads to individual differences in memory change. Baseline multi-modal imaging data from the Harvard Aging Brain Study were used to predict longitudinal change in memory performance over a period of up to 7 years. Across a series of analyses, change in memory performance was predicted by the interaction of amyloid with multiple different factors, including functional network connectivity, diffusion characteristics of the fornix, and vascular risk. In an analysis focused on multiple factors impacting age-related memory change, the vast majority of age-related variation was associated with amyloid in conjunction with other markers of preclinical disease, including hippocampal volume. Collectively, these results imply that individual differences in memory change can be viewed as a multi-factorial process in which the specific brain changes in addition to amyloid burden that are expressed for a particular person lead to different rates of memory change, even for individuals of a similar age.

Symposium Session 6

COGNITIVE NETWORKS: TRENDS IN MULTIMODAL APPROACHES AND CONNECTOMICS

Monday, March 25, 10:00 am - Noon, Ballroom A

Chair: Arseny Sokolov, University College London, Centre Hospitalier Universitaire Vaudois Lausanne, University of California San Francisco

Co-Chair: Aron K. Barbey, University of Illinois at Urbana-Champaign

Speakers: David Lydon-Staley, Aron K. Barbey, Vitória Piai, Arseny A. Sokolov

Growing evidence indicates the value of connectivity analyses in understanding cognitive function and development. Recent methodological advances have laid ground for further harnessing this potential, also by facilitating accessibility and usability. This symposium presents some cutting-edge techniques for assessment of brain networks including resting-state functional, structural and task-related effective connectivity, and their application to cognitive neuroscience. David Lydon-Staleywill discuss the network dynamics underlying cognitive control and flexibility. Next, Aron Barbey will outline how general intelligence may depend on network topology, dynamics and reorganization. Vitória Piai will continue showing how electrophysiological measures and multimodal analyses can contribute to better understand network plasticity after brain damage. Finally, Arseny Sokolov will present integrative analyses of structural and effective connectivity, and the novel insights they provide on the social networks for body language reading. As conclusions on brain function drawn from neuroimaging critically depend on the available information, multimodal integration will represent a significant focus of the symposium. Most important, the presentations will also illustrate whether and how these network analyses can be routinely implemented by non-expert researchers. In summary, the speakers aim to present trends and state-of-the-art in connectomics and network analyses in cognitive neuroscience, but also to foster discussion on current limitations and future research directions. Along these lines,

the symposium should be of substantial interest to the community. implemented by non-expert researchers. In summary, the speakers aim to present trends and state-of-the-art in connectomics and network.

TALK 1: BRAIN NETWORKS UNDERPINNING COGNITIVE CONTROL SUPPORT FLEXIBLE BEHAVIOR IN SITU

David Lydon-Staley[1]; [1]University of Pennsylvania

Behavior in psychopathology is characterized by rigidity rather than flexibility, manifesting as a contextually inappropriate persistence in behavior across time. We present findings from studies merging the intensive sampling of behavior during daily life with network analysis to demonstrate associations between rigidity in behavior and the experience of depression. We then turn to a multimodal dataset consisting of both intensively sampled behavior in situ and neuroimaging to show that functional and dynamic functional connectivity among key cognitive control systems is associated with flexible behavior during daily life. To further probe the network dynamics underpinning cognitive control and flexible behavior, we present a holistic account of how regional activity, functional connections, and structural linkages among frontoparietal and default mode systems support individual differences in working memory, a core component of cognitive control.

TALK 2: NETWORK NEUROSCIENCE THEORY OF HUMAN INTELLIGENCE

Aron K. Barbey[1]; [1]University of Illinois Urbana-Champaign

An enduring aim of research in the psychological and brain sciences is to understand the nature of individual differences in human intelligence, examining the stunning breadth and diversity of intellectual abilities and the remarkable neurobiological mechanisms from which they arise. In this presentation, I survey recent neuroscience evidence to elucidate how general intelligence (g) emerges from individual differences in the network architecture of the human brain. The reviewed findings motivate new insights about how network topology and dynamics account for individual differences in g, represented by the Network Neuroscience Theory. According to this framework, g emerges from the small-world topology of brain networks and the dynamic reorganization of its community structure in the service of system-wide flexibility and adaptation. Rather than attribute individual differences in general intelligence to a single brain region, network, or the overlap among specific networks, the proposed theory instead suggests that general intelligence depends on the dynamic reorganization of brain networks – modifying their topology and community structure in the service of system-wide flexibility and adaptation. This framework sets the stage for new approaches to understanding individual differences in general intelligence, examining the global network topology and dynamics of the human brain – from the level of molecules and synapses to neural circuits, networks, and systems. By investigating the foundations of general intelligence in global network dynamics, the burgeoning field of network neuroscience will continue to advance our understanding of the cognitive and neural architecture from which the remarkable constellation of individual differences in human intelligence emerge.

TALK 3: RECONFIGURATION OF THE LANGUAGE NETWORK AFTER BRAIN DAMAGE

Vitória Piai[1],[2]; [1]Radboud University, [2]Radboudumc Nijmegen

Neuroplasticity, the brain's ability to change, is paramount for recovering functions that are lost due to brain damage. In this talk, I will review recent work on language-related neuroplasticity revealed by analyses of structural connectivity, as well as electroencephalography (EEG) and magnetencephalography (MEG). I will argue that electrophysiological measures, being direct markers of neuronal activity on a subsecond time scale, can provide unique information about network function and reconfiguration. Multimodal connectivity analyses integrating these measures will enable a better understanding of neuroplasticity..

TALK 4: INTEGRATED EFFECTIVE AND STRUCTURAL CONNECTIVITY UNDERLYING BODY LANGUAGE READING

Arseny A. Sokolov[1,2,3], Peter Zeidman[1], Marina A. Pavlova[4], Karl J. Friston[1]; [1]University College London, [2]Centre Hospitalier Universitaire Vaudois Lausanne, [3]University of California San Francisco, [4]University of Tübingen

Understanding of cognitive brain network architecture and function may substantially benefit from considering the breadth of multimodal information afforded by neuroimaging, such as diffusion and functional MRI. However, integration is not straightforward and has not yet been widely implemented. We use measures of structural connectivity derived from high angular resolution diffusion imaging to inform probabilistic Dynamic Causal Modelling analyses of task-related effective connectivity. Models of effective connectivity that include structural information have stronger evidence than those not informed by structural connectivity. When applied to the network for detection of point-light body motion, the method suggests detectability of structural pathways and strength of effective connectivity between the fusiform gyrus and superior temporal sulcus best predict visual sensitivity to body motion. Moreover, the network-level analysis reveals parallel rather than hierarchical communication between temporal and fronto-insular components. This may explain why body language reading is rather resilient to focal brain damage but severely affected in neuropsychiatric conditions with more global alterations in connectivity, such as autistic spectrum disorders. In visual processing of emotional body language, Dynamic Causal Modelling indicates different regulatory roles for the anterior insula, cerebellar uvula and amygdala. As a caveat, inherent differences between structural, functional and effective connectivity require study-by-study evaluation of the potential benefits of multimodal connectivity analyses. Taken

together, integrative connectivity analyses may offer substantial potential for better conceptualization of perception and cognition, both in normalcy and pathology.

Symposium Session 7

TOWARDS UNDERSTANDING INDIVIDUAL VARIABILITY WITH FUNCTIONAL NEUROIMAGING: BIG DATA AND DEEP DATA PERSPECTIVES

Tuesday, March 26, 1:30 – 3:30 pm, Ballroom A

Chair: Colin Hawco, Centre for Addiction and Mental Health, University of Toronto

Co-Chair: Caterina Gratton, Northwestern University

Speakers: Stephanie Noble, Caterina Gratton, Colin Hawco, Mac Shine

Neuroimaging research in cognitive neuroscience has traditionally relied on aggregate group analyses to relate patterns of neural activity to behavioral and cognitive processes. While this has been fruitful in advancing our understanding of brain systems associated with cognition, there has been a growing awareness that these approaches may mask substantial and meaningful differences between individuals (i.e. a pattern of neural activity exhibited by a group may not map well onto many individuals, even those within the group). This, in turn, has stimulated greater research into individual variability in cognitive neuroscience, which is critical for a deeper understanding of human brain function. Here, we consider distinct but complementary approaches for examining the range of individual variability in human brain function, using both large sample 'big data' studies as well as repeated sample 'deep data' precision research, with smaller numbers of repeatedly sampled individuals. We will provide perspectives on characterizing individual variability in a variety of contexts—rest as well as task, clinical as well as typical populations—and relate findings to lower-level neurobiological mechanisms, higher-level behavior, and neuroimaging methodology.

TALK 1: FACTORS INFLUENCING THE TEST-RETEST RELIABILITY OF FUNCTIONAL CONNECTIVITY

Stephanie Noble[1], Dustin Scheinost[1], Todd Constable[1]; [1]Yale Univerity

Once considered mere noise, functional connectivity has become a major neuroscience tool in part due to early studies demonstrating its reliability. These fundamental studies revealed only the tip of the iceberg; over the past decade, many test-retest studies have continued to add nuance to our understanding of this complex topic. Diverse and contradictory perspectives now exist, with almost as many recommendations for study design and analysis. Here, we address open questions using 1) an empirical study and 2) a comprehensive meta-analytic review of the literature. The empirical study uses a small dataset of extensively sampled individuals (Yale Test-Retest) and a large dataset of twice-sampled individuals (Human Connectome Project). Overall, both empirical and meta-analytic results suggest that the historical 5-min scan produces poor reliability at the level of individual connections. However, reliability is dependent on many factors. Within-network cortical connectivity, particularly within frontoparietal and default mode networks, is typically most reliable, whereas subcortical connectivity is typically least reliable. Notably, there is disagreement about the effect of certain analytical strategies (e.g., global signal regression) on reliability, complicated by the fact that some strategies that improve reliability may reduce validity. We will discuss the prevailing consensus and/or disagreement regarding the data needed for reliability, multivariate reliability, acquisition strategies, preprocessing strategies, and recommendations based on these findings.

TALK 2: PRECISION MEASUREMENTS REVEAL STABILITY AND INDIVIDUAL DIFFERENCES IN HUMAN FUNCTIONAL BRAIN NETWORKS

Caterina Gratton[1], Benjamin Seitzman[2], Steven Petersen[2]; [1]Northwestern University, [2]Washington University in St. Louis

Over the last decade, large advances have been made in our ability to measure human functional brain networks and use them to address cognitive and clinical neuroscience questions. Most of this work has focused on group measurements, based on data averaged across large samples of individuals. However, recent work utilizing repeated "precision" measurements has highlighted that single individuals differ reliably from this group description. Motivated by these findings, we asked to what extent functional networks are sensitive to differences across individuals, relative to daily or task variation. To address these questions, we took advantage of the precision Midnight Scan Club dataset, which contains rest and task fMRI data from 10 individuals across 10 days and 5 task contexts. Our findings indicate that functional networks are largely stable, with high group consistency as well as large individual differences. Task contexts also moderately influenced brain networks, but in a largely individually-specific manner. Thus, these findings suggest that functional network measurements are suited to measuring stable individual differences that may be important for interpreting task-based effects. Recently, we extended these findings to delineate the nature of individual differences in functional networks. Our results indicate that individual differences appear in characteristic brain locations with systematic patterns across participants. Thus, individual differences in functional brain networks may be trait-like characteristics of the human brain. This work opens an exciting new window into the study of functional brain networks and their variation, relevant for understanding network contributions to variability cognition and clinical deficits.

TALK 3: CLUSTERING TASK-FMRI ACTIVITY REVEALS PATTERNS OF INDIVIDUALLY-VARIABLE ACTIVITY

Colin Hawco[1,2], Robert Buchanan[3], Anil Malhotra[4], Erin Dickie[1], Aristotle Voineskos[1,2]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]Maryland Psychiatric Research, [4]Zucker Hillside Hospital

Group statistical analysis remains the main-stay of neuroimaging research in healthy populations and patients groups. This approach considers group-mean patterns of brain activity, and includes the fundamental assumptions of within-group homogeneity and consistent between group heterogeneity (i.e. groups being considered differ systematically in specific way which are common across group members). However, substantial variability exists between individuals. To better capture variable spatial patterns of fMRI task-activity between participants, a clustering based approach was explored. In a first study (Hawco et al., American Journal of Psychiatry, Accepted), 179 individuals (mixed schizophrenia spectrum and controls) performed a social cognitive fMRI facial Imitate/Observe task. Hierarchical clustering based on patterns of brain activity revealed three distinct sub-groups: 1) typical activators, showing the expected pattern of activity; 2) hyper-activators with widespread activity; 3) deactivators who minimally activated the appropriate cognitive network while suppressing activity in other social processing regions. This pattern of deactivation was considered an 'efficient' pattern of activity, and was associated with better out-of-scanner cognitive scores. In a follow-up study, data were examined from the Human Connectome Project, including six fMRI cognitive tasks, using hierarchical and k-means clustering. Similar to the first study, clustering identified sub-groups of participants with distinctive patterns of activity, which tended to fall along a 'positive-to-negative' axis of brain activation. Interesting, cluster membership was not strongly related between tasks (e.g. participants did not tend to fall into the same clusters across the six tasks), though clustering was strongly related to cognition for most tasks. Cluster stability was assessed via a permuted-bootstrap approach, rerunning the clustering on a random subsample of 75% of participants across 1000 iterations: kmeans achieved high stability when outlier cases were removed, while hierarchical clustering stability suggested participants fall along a spectrum as opposed to distinct cluster groupings. These results demonstrate that the standard approaches collapsing all participants into a single group may work well to extract a 'common-core' of regions involved in a given task, but may miss important variation across individuals. This variation may be driven on a scaffolding of functional/structural variability, or related to different task performance strategies.

TALK 4: THE DYNAMIC BASIS OF COGNITION: AN INTEGRATIVE CORE UNDER THE CONTROL OF THE ASCENDING NEUROMODULATORY SYSTEM

Mac Shine[1], Russell Poldrack[2], Michael Breakspear[3], Olaf Sporns[4]; [1]The University of Sydney, [2]Stanford University, [3]QIMR Berghofer Medical Research Institute, [4]Indiana University Bloomington

The human brain integrates diverse cognitive processes into a coherent whole, shifting fluidly as a function of changing environmental demands. Despite recent progress, the neurobiological mechanisms responsible for this dynamic system-level integration remain poorly understood. Here, we used multi-task fMRI data from the Human Connectome Project to examine the spatiotemporal architecture of cognition in the human brain. By investigating the spatial, dynamic and molecular signatures of system-wide neural activity across a range of cognitive tasks, we show that large-scale neuronal activity converges onto a low dimensional manifold that facilitates the dynamic execution of diverse task states. Flow within this attractor space is associated with dissociable cognitive functions, unique patterns of network-level topology, differential information processing complexity, and individual differences in fluid intelligence. Finally, the axes of the low-dimensional neurocognitive architecture align with regional differences in the density of neuromodulatory receptors, which in turn relate to distinct signatures of network controllability estimated from the structural connectome. In a separate dataset, we show that cognitive load, behavioural performance, and fluid intelligence also map onto the same low-dimensional axes. Further investigation revealed that the spatiotemporal neural dynamics in thalamic and brainstem systems were related to behaviorally relevant low-dimensional functional network patterns. These results advance our understanding of functional brain organization by emphasizing the interface between low dimensional neural activity, network topology, neuromodulatory systems and cognitive function.

Symposium Session 8

FROM KNOWING TO RE-EXPERIENCING: THE SEMANTIC-EPISODIC DISTINCTION 47 YEARS ON

Tuesday, March 26, 1:30 – 3:30 pm, Ballroom B/C

Chair: Louis Renoult, University of East Anglia

Discussant: Muireann Irish

Speakers: Matthew Lambon Ralph, Michael D. Rugg, R. Shayna Rosenbaum, Brian Levine

The distinction between semantic and episodic memory was proposed in 1972 by Endel Tulving and is still of central importance in Cognitive Neuroscience today. It is supported by a vast amount of behavioural, functional neuroimaging, and neuropsychological research. However, even though there are notable exceptions, the cognitive neuroscience of declarative memory has largely been driven by separate research traditions, namely episodic-autobiographical and semantic-language

comprehension studies. Nonetheless, in recent years, data from various subfields of Cognitive Neuroscience have accumulated and allows for a better understanding of areas of overlap and interaction between the two types of declarative memory. In this symposium, we will review recent research on semantic and episodic memory highlighting similarities and divergences between the two systems. Taken together, these data support the idea that the frontiers between perception and knowledge and between semantic and episodic memory are more complex than previously thought, opening the door to a rethinking of the semantic-episodic dichotomy.

TALK 1: INTERACTIONS BETWEEN SEMANTIC AND EPISODIC MEMORY: NEUROPSYCHOLOGICAL INSIGHTS

Matthew Lambon Ralph[1]; [1]MRC Cognition and Brain Sciences Unit, Cambridge, UK

Semantic and episodic memory functions formally dissociate in neuropsychological studies. There is growing evidence, however, that there is no absolute boundary between the two "types" of memory system. This can be observed in at least two sources of information from neuropsychological studies. The first is that long-term autobiographical memory often patterns with semantic memory function rather than newly-encoded episodic information, whilst new 'semantic' information can be dependent on MTL 'episodic' systems at least until it has been consolidated into the semantic database. The second is that the functioning of each impaired memory system is influenced by the remaining memory function – pointing to important interactions between the two memory systems. Thus episodic function in amnesic patients is boosted by semantic representations and, in reverse, semantic function especially for everyday items and words is influenced by episodic memory in patients with semantic dementia. Furthermore, when attempting to relearn vocabulary, SD patients show evidence of their degraded semantic representations in the association formed between picture and name.

TALK 2: CONTRIBUTIONS OF SEMANTIC MEMORY TO THE RECOLLECTION OF UNIQUE EPISODES

Michael D. Rugg[1]; [1]Center for Vital Longevity, University of Texas at Dallas

While arguing that episodic and semantic memory are distinct memory systems, Endel Tulving also proposed that the two systems closely interact, to the extent that episodic memory was considered to operate 'downstream' from, and to be critically dependent on, semantic memory. I will examine this proposal in light of evidence from functional neuroimaging studies investigating the neural regions and networks active during the retrieval of semantic and episodic memories, in conjunction with theoretical ideas about the role of hippocampal-cortical interactions in the formation, consolidation and retrieval of episodic memories. I will argue that Tulving's proposal that semantic memory provides the foundation for episodic recollection is largely correct, although requiring modification to accommodate how contextual and temporal information gets incorporated into episodic memory representations. I will present data suggesting that retrieval-related activity in at least some, if not most, of the regions comprising the 'core recollection network' (also known as the 'core network' or the 'autobiographical memory network') does not reflect engagement of processes underpinning retrieval of episodic information in general, but rather, the reactivation ('reinstatement') of semantic and conceptual representations that were active when the retrieved event was initially experienced, a process envisioned by Tulving more than three decades ago.

TALK 3: EPISODIC- AND SEMANTIC-LIKE INTERACTIONS IN SPATIAL MEMORY

R. Shayna Rosenbaum[1]; [1]Department of Psychology, York University, Toronto, Ontario, Canada

The hippocampus is the structure most implicated in memory disorders and is correspondingly central to memory theory. However, the specific types of memories affected by hippocampal damage have been the subject of considerable debate. Some believe that the hippocampus is always necessary for finding one's way in an environment based on allocentric (viewer-independent) spatial memory, whereas others view this structure as necessary for re-experiencing details of personal life events (episodic memory). Still, others believe that it plays a time-limited role in all sorts of declarative memories, including context-free world and personal facts (semantic memory). In this talk, I will revisit competing theories of hippocampal function that make different predictions about the role of the hippocampus in supporting remote spatial memories of environments experienced since long ago. Converging evidence from lesion, aging, rodent, and fMRI studies suggests that the hippocampus is not needed for gist-like, schematic representations of old environments, much as it is not needed for remote semantic memory, but that it is always needed for representing spatial details contained within environments, resembling its role in episodic memory. Recent research suggests that episodic-like and semantic-like representations of environments interact when information contained within spatial memory needs to be used flexibly and when highly similar or overlapping information needs to be distinguished. These interactions further underscore a more fundamental role of the hippocampus in processing fine-grained details.

TALK 4: INDIVIDUAL DIFFERENCES IN TRAIT EPISODIC AND SEMANTIC ABILITIES: RELATION TO STRATEGIC PROCESSES AND AGING OUTCOMES

Brian Levine[1], Carina Fan[1], Dhawal Selarka[1]; [1]Rotman Research Institute, Baycrest Centre, Toronto, Ontario, Canada

The presence of Highly Superior and Severely Deficient Autobiographical Memory (HSAM; SDAM), two syndromes of extreme

individual differences in healthy people, present challenges for our understanding of memory and behavior. Among these is the fact that individuals with SDAM are not necessarily functionally impaired by their lack of episodic memory, and individuals with HSAM do not necessarily derive significant functional benefit from their superior episodic memory. We have studied individual differences in AM abilities using the Survey of Autobiographical Memory (SAM; Palombo et al., 2013). Item endorsement on the SAM Episodic subscale is related to increased medial temporal lobe (MTL) – posterior connectivity at rest, while endorsement of items on the SAM Semantic subscale is related to MTL – prefrontal connectivity (Sheldon et al., 2016), suggesting opposing modes of neural organization at the trait level. Individuals endorsing SDAM are more likely than those not endorsing SDAM to have occupations in management, suggesting an advantage for strategic-conceptual operations. In a sample of 1000 older adults, we found that everyday age-related functional impairment (as measured by the Cognitive Failures Questionnaire) is modulated by individual differences in episodic memory as measured by the SAM such that those endorsing higher episodic memory are more likely to experience everyday functioning problems as they age, suggesting that those with congenitally lower episodic memory abilities develop compensatory strategies that may confer protection against age-related changes. Together, these findings suggest that individual differences in episodic and semantic abilities may have unexpected effects on non-mnemonic operations.

Symposium Session 9

RELATIONAL THINKING: HOW ARE MENTAL RELATIONS REPRESENTED IN THE BRAIN?

Tuesday, March 26, 1:30 – 3:30 pm, Bayview Room

Chair: Silvia Bunge, University of California at Berkeley
Co-Chair: Wei-Chun Wang, University of California at Berkeley
Speakers: Keith Holyoak, Wei-Chun Wang, David Kraemer, Adam Green

Reasoning is central to our capacity for abstract thought. This high-level ability rests on the ability to identify correspondences between, and integrate, the structures of distinct mental representations. Various forms of reasoning, including analogical reasoning and transitive inference, draw on mental representations of relations between objects or concepts. Recent work has focused on the process of reasoning - i.e., the mechanisms by which we can integrate multiple mental representations to draw a conclusion. However, to better understand reasoning mechanisms, it behooves us to explore the very nature of the representations of these relations. The researchers in this symposium are tackling this problem with complementary approaches, integrating behavioral, computational, and neuroimaging methods to investigate how abstract relations - both semantic and visuospatial - are represented in the brain. The first speaker will provide a computational model of how semantic relations between words (e.g., synonym, cause-effect) can be learned from non-relational feature vectors. The model combines deep learning of feature vectors from big data with fast learning of relations from small data. The second speaker will examine how the encoding of semantically congruent and incongruent relations is reactivated during memory retrieval. The third speaker will provide evidence for the mental models theory that the process of transitive inference draws on spatial relations. The final speaker will demonstrate that taking a year-long geoscience class transfers to both near and far measures of spatial reasoning, indicating that it is possible to hone the ability to represent abstract spatial relations. These talks provide fresh perspectives on an important problem.

TALK 1: IN SEARCH OF THE NEURAL SUBSTRATE FOR ABSTRACT SEMANTIC RELATIONS: COMPUTATIONAL MODELS AS GUIDES

Keith Holyoak[1], Hongjing Lu[1]; [1]UCLA

Computational models of semantic representations can play an important role in identifying the neural substrates of semantic concepts. Deep-learning models (e.g., Word2vec, GloVe) can generate feature vectors (word embeddings) representing the meanings of individual words, but to date have had limited success in coding abstract relations between words (e.g., synonym, antonym, cause-effect). We describe a new model of relation learning, Bayesian Analogy with Relational Transformations (BART). BART takes word embeddings created by Word2vec as inputs, and uses a small number of labeled examples (word pairs) to learn weight distributions representing abstract relations (79 relations of 10 general types, drawn from a linguistic taxonomy). The specific relation between any two words can then be coded as a distributed pattern across the learned relations. BART outperforms Word2vec in predicting human typicality gradients for individual relations and in solving verbal analogy problems based on abstract semantic relations. Theory-based representations can potentially predict patterns of similarity among neural signals triggered by a variety of semantic relations.

TALK 2: WHY ITEMS THAT ARE SEMANTICALLY RELATED ARE MORE LIKELY TO BE REMEMBERED

Wei-Chun Wang[1], Simona Ghetti[2], Garvin Brod[3], Silvia Bunge[4]; [1]UC Berkeley, [2]UC Davis, [3]Goethe University in Frankfurt, [4]UC Berkeley

Previous work indicates that semantically congruent relations are remembered better than semantically incongruent relations. While there is evidence that this congruency benefit improves with age, little is known regarding neurodevelopmental differences that account for how congruency enhances learning. To better understand the congruency benefit, the current study explores how meaningfully associated entities are encoded and represented in the brain in a sample of 64 younger children (8-9), 52 older children (10-12), and 25

young adults (18-25). In the scanner, participants encoded items and scene context pairs by judging whether each pair belonged together (i.e., congruent) or not (i.e., incongruent). Then, episodic memory was tested with a source memory test (i.e., which scene was this item paired with?). Consistent with prior work, source memory accuracy was greater for congruent than incongruent pairs and, critically, this congruency benefit was greater in adults than both younger and older children. Importantly, developmental differences in the neural substrates of the congruency benefit were also observed. First, right anterior PFC exhibited greater activity for source correct congruent than incongruent responses in adults but not younger or older children, suggesting a role for this region in encoding meaningful relations. Moreover, right ventrolateral PFC exhibited significant pattern similarity between encoding and retrieval trials in adults but not younger or older children. Both of these effects significantly correlated with memory performance across participants, suggesting a role for right PFC regions in encoding and representing meaningful relations.

TALK 3: PUTTING THE PIECES TOGETHER: GENERATING A NOVEL REPRESENTATIONAL SPACE THROUGH DEDUCTIVE REASONING

David Kraemer[1], Katherine Alfred[1], Andrew Connolly[1]; [1]Dartmouth College

How does the brain represent a newly-learned mental model? In two studies, we used representational similarity analysis (RSA) to examine the neural implementation of a newly-learned mental model—a representational space created through deductive reasoning—and to test the information present in parietal activity during such reasoning tasks. Specifically, our tasks were designed such that the relationships in each mental model could only be inferred through abstract transitive reasoning, as there were no predictive differences between observable features in the stimuli, and stimuli were counterbalanced across participants. In one study, participants were shown unfamiliar face portraits paired with names and asked to learn about the height of each person pictured in the portraits through comparison to other individuals in the set. Participants learned the relative heights only of adjacent pairs in the set and then used transitive reasoning to generate a linear ranking of heights (e.g., "Matthew is taller than Thomas; Thomas is taller than Andrew; therefore Matthew is taller than Andrew"). During fMRI, participants recalled the approximate height of each individual based on these inferences. Using a predictive model based on the relative heights of the set of individuals, RSA revealed three brain regions in the right hemisphere that encoded this newly-learned representational space, located within the intraparietal sulcus, precuneus, and inferior frontal gyrus. A second study extends these findings to other types of stimuli. These results demonstrate the value of RSA for analyzing newly-learned knowledge structures and support the assertion that logical reasoning recruits spatial processing mechanisms.

TALK 4: NEUROCOGNITIVE EFFECTS OF REAL-WORLD SPATIAL STEM EDUCATION ON RELATIONAL REASONING

Adam Green[1], Emily Peterson[1], Robert Cortes[1], Adam Weinberger[1], Nhi Dinh[1], Daniel Goldman[1], David Uttal[1], Robert Kolvoord[1]; [1]Georgetown University

A substantial gap remains between the way we study learning in the cognitive neuroscience lab and the way we study learning where we care about it most: in the real-world classroom. Closing this gap requires treating an in-school curriculum as the intervention and measuring longitudinal neural and cognitive changes associated with what is being taught. To address this gap, we designed a longitudinal study of the effects of a spatially-focused STEM curriculum on the activity and connectivity of "spatial" brain regions and on near, intermediate, and far transfer tasks in a sample of 191 behavioral (61 MRI) public high school student participants. A quasi-experimental design compared students enrolled in the spatially-focused course with selected control students taking other science courses. Behavioral results indicate that that the spatially-focused curriculum lead to increased spatial habits of mind (near transfer), improved visuo-spatial figure identification (intermediate transfer), and improved deductive relational reasoning (far transfer). Convergently, the spatially-focused curriculum was associated with greater increase in recruitment of posterior parietal "spatial" regions during reasoning, and this activity predicted reasoning performance. Students in the spatially-focused curriculum also showed increased connectivity of "spatial" regions to prefrontal regions associated with reasoning. These and other neural data indicate a "spatial" shift in both performance and underlying neural strategy for reasoning. These results were observed despite the use of verbal (rather than visuo-spatial) reasoning stimuli, even when verbal stimuli contained non-spatial relations (e.g., "happier"). Implications for spatially-based accounts of relational reasoning, and for adoption of spatially-focused STEM education are discussed.

Exhibits

Exhibitors

Visit our exhibitors in Pacific Concourse.

ANT North America
BIOPAC Systems, Inc
Brain Vision, LLC
Compumedics Neuroscan
Cortech Solutions Inc
gTec Medical Engineering GmbH
I Motions A/S
MIT Press
NIRx Medical Technologies, LLC
Oxford University Press
Phillips Neuro
Psychology Software Tools
Rogue Research Inc
SR Research Ltd
TCG/NITRC
TMSi
Wearable Sensing and Neuracle Technologies

Exhibit Hours

The conference exhibits are located in Pacific Concourse of the Hyatt Regency San Francisco Hotel. Located in this room are the posters, exhibit booths, and catering. The Exhibit Hall is open to all attendees at the following times:

Saturday, March 23	1:30 pm – 5:30 pm
Sunday, March 24	8:00 am – 7:00 pm
Monday, March 25	8:00 am – 5:30 pm
Tuesday, March 26	8:00 pm – 12:00 pm

Personal Belongings

The San Francisco Hyatt Regency Hotel and Convention Center is open to public access. For security purposes, keep your personal belongings secure at all times. Do not leave anything in meeting rooms or the exhibit hall.

GSA/PFA Awards

Congratulations to the 2019 winners of the Graduate Student Awards and the Post-Doctoral Fellow Awards.

Graduate Student Award Winners

Ce Mo, Peking University
Irem Undeger, Karolinska Institute
Christina Bejjani, Duke University
Anya Yu, Pennsylvania State University
Sarah Kark, Boston College
Jacob Williams, University of Nebraska, Lincoln
Poortata Lalwani, University of Michigan, Ann Arbor
Maria Eckstein, UC Berkeley
Corey Loo, University of Toronto

Post-Doctoral Fellow Award Winners

Juha Salmi, University of Turku
Stefania Conte, University of South Carolina
Megan deBettencourt, University of Chicago
Jixing Li, New York University Abu Dhabi
Sungshin Kim, Institute of Basic Sciences (IBS)
Kamalini Ranasinghe, UCSF
Matthew Lowe, Massachusetts Institute of Technology
Seongmin Park, University of California, Davis
Shipra Kanjlia, Johns Hopkins University

Poster Schedule

Poster sessions are scheduled for Saturday-Tuesday in Pacific Concourse Exhibition Hall of the San Francisco Hyatt Regency. All attendees must present their CNS 2019 name badge to enter the exhibit hall. Do not leave personal items in the poster room. The presenting author must be present during the assigned session. You may post your materials on the board assigned to you at any time after the "Set-up Begins" time (listed below), but before the beginning of the assigned poster session. You must remove your poster promptly no later than the time listed above in "Take-down Complete." Any posters left up after the "Take-down Complete" time may be discarded. Note that presenters are asked to set up poster in advance of their session and to leave their poster up for a period following their session (see your specific session for hours). This is to allow attendees to view posters outside the formal session times. Only registered poster presenters, wearing a CNS 2019 meeting badge, for the current session and exhibitors will be allowed in the exhibit hall during set up and take-down hours. All other attendees will be turned away at the door. No attendee or exhibitor will be allowed to enter the exhibit hall after the Closed for the Day- No Entry hours.

Poster Session	Date	Setup Begins	Session Begins	Tear-Down	Take-Down Completed
A	Saturday, March 23	1:00 pm – 1:30 pm	1:30 pm – 3:30 pm	5:00 pm – 5:30 pm	5:30 pm
B	Sunday, March 24	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
C	Sunday, March 24	1:30 pm – 2:00 pm	5:00 pm – 7:00 pm	7:00 pm – 7:15 pm	7:15 pm
D	Monday, March 25	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
E	Monday, March 25	1:30 pm – 2:00 pm	2:30 pm – 4:30 pm	5:30 pm – 5:45 pm	5:45 pm
F	Tuesday, March 26	7:30 am – 8:00 am	8:00 am – 10:00 am	11:45 am - Noon	Noon

* Please note that only scheduled registered poster presenters may enter the exhibit hall during the half hour set-up time. **Note**: Please remove your poster promptly at take down complete time, so that the next presenter may set up their poster.

Session A

Saturday, March 23, 1:30–3:30 pm, Pacific Concourse

A1 Alerting, orienting, and executive control: post-stroke effects of attention abilities on speech comprehension
Arianna N. LaCroix[1], Corianne Rogalsky[1]; [1]Arizona State University
Topic Area: ATTENTION: Auditory

A2 Cognitive temporal map aids detection of future auditory events and modulates alpha oscillation
Xiangbin Teng[1], Matthias Grabenhorst[1], David Poeppel[1,2]; [1]Max-Planck-Institute for Empirical Aesthetics, [2]New York University
Topic Area: ATTENTION: Auditory

A3 Perceived Speaker Size Drives the Laurel/Yanny Illusion
Psyche Loui[1,2], Melisa Olgun[2], Chris Lucas[3]; [1]Northeastern University, [2]Wesleyan University, [3]University of Edinburgh
Topic Area: ATTENTION: Auditory

A4 Preliminary evidence of P3a response from unresponsive palliative patients
Lizzy Blundon[1], Lawrence Ward[1,2]; [1]University of British Columbia, [2]Brain Research Center
Topic Area: ATTENTION: Auditory

A5 Repeated Tactile Brain-Computer Interface Improves Behavioural Responses of Patients with Disorder of Consciousness
Ren Xu[1], Alexander Heilinger[2], Nensi Murovec[2], Rossella Spataro[3], Woosang Cho[2], Fan Cao[4], Christoph Guger[1,2,4]; [1]Guger Technologies OG, Graz, Austria, [2]g.tec medical engineering GmbH, Schiedlberg, Austria, [3]ALS Clinical Research Center, BioNeC, University of Palermo, Palermo, Italy, [4]g.tec neurotechnology USA, Inc.
Topic Area: ATTENTION: Auditory

A6 Temporal foreknowledge enhances modulation of lateralized alpha oscillations during spatial attention
Malte Wöstmann[1], Burkhard Maess[2], Jonas Obleser[1]; [1]Department of Psychology, University of Lübeck, Germany, [2]Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
Topic Area: ATTENTION: Auditory

A7 A Cellular and Attentional Network Approach to the Neuroscience of Consciousness
Gonzalo Munevar[1]; [1]Lawrence Technological University
Topic Area: ATTENTION: Other

A8 A technique for evaluating interest in dynamic stimuli using eye-fixation related brain potential.
Kohei Fuseda[1], Jun'ichi Katayama[1]; [1]Department of Psychological Science, Kwansei Gakuin University
Topic Area: ATTENTION: Other

A9 Individual differences in alpha lateralization and behavioral performance during probabilistic and fully instructional spatial-cueing attention task
Jiaqi Wang[1], Jianan Wang[1], Junfeng Sun[1], Shanbao Tong[1], Xiangfei Hong[2,3]; [1]School of Biomedical Engineering and Med-X Research Institute, Shanghai Jiao Tong University, Shanghai, China, [2]Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China, [3]J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, USA
Topic Area: ATTENTION: Spatial

A10 Prior knowledge of distractor cancels the effect of TMS over dorsolateral prefrontal cortex in visual search
Zhenlan Jin[1], Xuejin Ni[1], Ling Li[1]; [1]University of Electronic Science and Technology of China
Topic Area: ATTENTION: Spatial

A11 Reorientation of Spatial Attention is Independent of the Visual Field's Meridians
Simon R. Steinkamp[1], Ralph Weidner[1], Simone Vossel[1,2], Gereon R. Fink[1,3]; [1]Research Centre Jülich, Germany, [2]University of Cologne, Germany, [3]University Hospital Cologne, Germany
Topic Area: ATTENTION: Spatial

A12 Spatial Attention in Healthy Cognitive Ageing
Monika Harvey[1], Gesine Maerker[1], Gemma Learmonth[1,2], Gregor Thut[1,2]; [1]School of Psychology, University of Glasgow, UK, [2]Institute of Neuroscience & Psychology, University of Glasgow, UK
Topic Area: ATTENTION: Spatial

A13 Temporal dynamics of salience information processing: a MEG study
Jianrong Jia[1], Fang Fang[1], Huan Luo[1]; [1]Peking University
Topic Area: ATTENTION: Spatial

A14 The time-course of component processes of selective attention
Tanya Wen[1,2], John Duncan[1,2], Daniel Mitchell[1,2]; [1]MRC Cognition and Brain Sciences Unit, [2]University of Cambridge
Topic Area: ATTENTION: Spatial

A15 Mesostriatal White Matter Integrity Predicts Impulsivity in Adolescents with ADHD
Blake Elliott[1], Prerona Mukherjee[2], Julie Schweitzer[2], Samuel McClure[1];
Topic Area: EMOTION & SOCIAL: Development & aging

A16 Neural Responses to Faces in the First Year of Life
Stefania Conte[1,2], John E. Richards[1,2]; [1]University of South Carolina, [2]Institute for Mind and Brain
Topic Area: EMOTION & SOCIAL: Development & aging

A17 Neurobehavioral Responses to Novelty are Altered as a Function of Youth Depression Severity
Emily K. Leiker[1], Harma Meffert[1], Brittany K. Taylor[2], Laura C. Thornton[1], Heba Abdel-Rahim[1], Niraj Shah[1], Stuart F. White[1], Karina Blair[1], Matthew D. Dobbertin[1], Patrick M. Tyler[1], R. James R. Blair[1]; [1]Boys Town National Research Hospital, Boys Town, NE, [2]University of Nebraska Medical Center, Omaha, NE
Topic Area: EMOTION & SOCIAL: Development & aging

A18 Older adults' positive memory biases related to neural activity during the encoding of subsequently forgotten negative information
Ryan Daley[1], Holly Bowen[2], Eric Fields[1,3], Katelyn Parisi[1,3], Angela Gutchess[3], Elizabeth Kensinger[1]; [1]Boston College, [2]Southern Methodist University, [3]Brandeis University
Topic Area: EMOTION & SOCIAL: Development & aging

A19 The neural correlates of psychological well-being in older adults
Marcie King[1,2], Joel Bruss[2], Timothy Koscik[2], Natalie Denburg[1,2]; [1]University of Iowa, [2]University of Iowa Carver College of Medicine
Topic Area: EMOTION & SOCIAL: Development & aging

A20 Brain Activation in Processing Emotional Expression of Voice Utterance: An fMRI-DCM approach
Shih-Tseng T. Huang[1,2], Ya-yun Chen[1], Yu Song Haw[1], Chi-Chuan Chen[3], Joshua O. S. Goh[3], Gary C.-W. Shyi[1,2]; [1]Center for Research in Cognitive Science, National Chung-Cheng University, Taiwan, [2]Department of Psychology, National Chung-Cheng University, Taiwan, [3]Graduate Institute of Brain and Mind Sciences, College of Medicine, National Taiwan University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A21 Difference between the recognition of macroexpressions and microexpressions: An EEG study
Gaojie Fan[1], Xunbing Shen[2], Robin Thomas[1]; [1]Miami University, [2]Jiangxi University of Traditional Chinese Medicine
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A22 Early reactivation of emotional valence in ERPs to neutral retrieval cues
Holly J. Bowen[1], Eric C. Fields[2,3], Elizabeth A. Kensinger[2]; [1]Southern Methodist University, [2]Boston College, [3]Brandeis University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A23 Effects of Face-Sentence Valence and Event-Sentence Incongruence on Sentence Processing: An ERP Study
Katja Münster[1], Johanna Kissler[2], Pia Knoeferle[1,3,4]; [1]Humboldt-Universität zu Berlin, [2]Universität Bielefeld, [3]Berlin School of Mind and Brain, [4]Einstein Center for Neurosciences Berlin
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A24 Executive networks under emotional stress
Alana Campbell[1,2], Mae Nicopolis Yefimov[1,2], Louis Murphy[1], Adelaide Zhao[1], Carina Guerra[1], Andrea Pelletier-Baldelli[1,2], Hannah Waltz[1], Aysenil Belger[1,2]; [1]University of North Carolina at Chapel Hill, [2]Carolina Institute for Developmental Disabilities
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A25 I ncreased functional connectivity of the right amygdala can interfere with reading and affect emotional state and cognitive control
Tzipi Horowitz-Kraus[1,2], Ohad Nachshon[1]; [1]Educational Neuroimaging Center, Faculty of Biomedical Engineering and Faculty of Education in Science and Technology, Technion, Israel, [2]Reading and Literacy Discovery Center, Division of General and Community Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, USA
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A26 Neural Signature Connecting Tempo of Negatively Valenced Music to Episodic Autobiographical Memory
Christine Rapadas Jimenez[1], Mark Warren Geisler[1]; [1]San Francisco State University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A27 Two components or one? An examination of the relationship between the P300 and emotion-related late positive potential (LPP)
Eric C. Fields[1,2,3], Hannah J. Levin[1], Nathaniel Delaney-Busch[1], Gina R. Kuperberg[1,4]; [1]Tufts University, [2]Boston College, [3]Brandeis University, [4]Massachusetts General Hospital
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A28 Using representational similarity analysis to assess the development of novel affective associations over time
Mana Ehlers[1], James Kryklywy[1], Andre Beukers[2], Sarah Moore[1], Adam Anderson[3], Rebecca Todd[1]; [1]University of British Columbia, [2]Princeton University, [3]Cornell University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A29 Within-Subject Reliability and between-Subject Variability of tACS effects: A multi-session EEG-tACS study and simultaneous EEG-fMRI-tACS study
Kevin Clancy[1], Melissa Meynadasy[1], Nika Kartvelishvili[1], Wen Li[1]; [1]Florida State University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A30 Age Differences in Second-Order Rule Learning: an fMRI Study of the Cerebellum in Advanced Age
T. Bryan Jackson[1], Joseph M. Orr[1], Sydney M. Eakin[1], James R.M. Goen[1], Jessica A. Bernard[1]; [1]Texas A&M University
Topic Area: EXECUTIVE PROCESSES: Development & aging

A31 Alpha Klotho Protein correlates with Hippocampal Volume related cognitive changes induced by aerobic exercise in older adults
Andreas Becke[1,2], Anne Maass[1,2], Michael Kreuz[3], Emrah Düzel[1,2]; [1]German Center for Neurodegenerative Diseases, Magdeburg, Germany, [2]Institute of Cognitive Neurology and Dementia Research, Otto-von-Guericke University, Magdeburg, [3]Leibniz Institute for Neurobiology, Magdeburg, Germany
Topic Area: EXECUTIVE PROCESSES: Development & aging

A32 Classification of age by default mode network connectivity
Mason Price[1], Michael Rezich[1], Tony Wilson[1]; [1]University of Nebraska Medical Center
Topic Area: EXECUTIVE PROCESSES: Development & aging

A33 Functional connectivity profiles for cognitive control over the adult lifespan
Jenny Rieck[1], Giulia Baracchini[1,2], Daniel Nichol[1], Hervé Abdi[3], Cheryl Grady[1,4]; [1]Rotman Research Institute at Baycrest, [2]University of Padova, [3]University of Texas at Dallas, [4]University of Toronto
Topic Area: EXECUTIVE PROCESSES: Development & aging

A34 Functional differences in a cognitive control network in older adults with exceptional memory
Ian Kahrilas[1], Emma Sims[1], Nicole Dosamantes[1], Shana Ward[1], Rebecca L. Silton[1], Robert G. Morrison[1]; [1]Loyola University Chicago
Topic Area: EXECUTIVE PROCESSES: Development & aging

A35 Individual aging effects on white matter integrity and time-varying network connectivity: A combined EEG and DTI study.
Thomas Hinault[1], Travis Kroeker[1], Eda Incekara[1], Arnold Bakker[2], Alain Dagher[3], Susan Courtney[1]; [1]Johns Hopkins University, [2]Johns Hopkins School of Medicine, [3]McGill University
Topic Area: EXECUTIVE PROCESSES: Development & aging

A36 Socioeconomic status, minority status, and neighborhood deprivation effects on brain structure and cognitive function: A multivariate analysis of the ABCD study dataset
Carlos Cardenas-Iniguez[1], Marc Berman[1]; [1]The University of Chicago
Topic Area: EXECUTIVE PROCESSES: Development & aging

A37 The Impact of Ageing on the Characteristics of and Interaction between Voluntary and Involuntary Inhibition
Erik Chang[1], Condro Wati[1], Tzu-Ling Li[1]; [1]National Central University, Taiwan
Topic Area: EXECUTIVE PROCESSES: Development & aging

A38 The impact of working memory training on theta power and reasoning in the group of elderly people.
Wanda Zarzycka[1], Aleksandra Bramorska[1,2], Natalia Jakubowska[1,2], Olga Alicja Matysiak[1,2], Aneta Brzezicka[1,3]; [1]University of Social Sciences and Humanities, Warsaw, Poland, [2]2Polish-Japanese Academy of Information Technology, Warsaw, Poland, [3]Cedars-Sinai Medical Center, Los Angeles, USA
Topic Area: EXECUTIVE PROCESSES: Development & aging

A39 Visual cortex activity during non-visual tasks is "cross-modal" in late but not congenital blindness.
Rita Loiotile[1], Marina Bedny[1]; [1]Johns Hopkins University
Topic Area: EXECUTIVE PROCESSES: Development & aging

A40 We all make mistakes: Consistent error-related activity across children and adolescents
Mary Abbe Roe[1], Laura E. Engelhardt[1], Tehila Nugiel[1], Mackenzie E. Mitchell[1], Jenifer Juranek[2], K. Paige Harden[1], Elliot M. Tucker-Drob[1], Jessica A. Church[1]; [1]The University of Texas at Austin, [2]The University of Texas Health Science Center at Houston
Topic Area: EXECUTIVE PROCESSES: Development & aging

A41 White Matter Correlates of Musical Training and Verbal Ability in Children
Lauren Raine[1], Laura Chaddock-Heyman[2], Arthur Kramer[1], Charles Hillman[1], Psyche Loui[1]; [1]Northeastern University, [2]University of Illinois at Urbana-
Topic Area: EXECUTIVE PROCESSES: Development & aging

A42 Effect of comorbid learning and neurodevelopmental disorders on resting-state functional and effective connectivity in adolescents.
Audreyana Jagger-Rickels[1], Gregory Rose[1], Michelle Kibby[1]; [1]Southern Illinois University
Topic Area: EXECUTIVE PROCESSES: Other

A43 Examining the Role of Learning in Cognitive Flexibility
Hayley E. O'Donnell[1], Evangelia G. Chrysikou[1]; [1]Drexel University
Topic Area: EXECUTIVE PROCESSES: Other

A44 P3b as a function of visibility, accuracy, decision, and confidence
Lara Krisst[1], Steven J. Luck[1]; [1]Center for Mind & Brain, University of California, Davis
Topic Area: EXECUTIVE PROCESSES: Other

A45 Relationship Between Media Multitasking and Executive Function Growth
John David Lorentz[1], Jessica Younger[1], Adam Gazzaley[1], Anthony Wagner[2], Melina Uncapher[1,2]; [1]University of California, San Francisco, [2]Stanford University
Topic Area: EXECUTIVE PROCESSES: Other

A46 Resting State Clustering Analysis of Insular Cortex in Experienced Meditators
Brittany Strauss[1], Shahmeer Hashmat[2], Biao Ciao[2], Jeremy Cohen[1], Jeffrey Rouse[2], Yu-Ping Wang2[2]; [1]Xavier University of Louisiana, [2]Tulane University
Topic Area: EXECUTIVE PROCESSES: Other

A47 Studying executive functions during mental fatigue using functional near infrared spectroscopy (fNIRS)
Hans-Georg Kuhn[1], Simon Skau[1], Birgitta Johansson[1], Ingibjörg Jonsdottir[2], Lina Bunketorp-Käll[3]; [1]Department of Neuroscience & Physiology, University of Gothenburg, Sweden, [2]Institute of Stress Medicine, Gothenburg, Sweden, [3]Center for Advanced Reconstruction of Extremities, Sahlgrenska University
Topic Area: EXECUTIVE PROCESSES: Other

A48 Feature segregation or integration in visual working memory?
Elena Galeano Weber[1], Haley Keglowits[2], Arin Fisher[2], Silvia A. Bunge[1,2]; [1]Helen Wills Neuroscience Institute, University of California, Berkeley, USA, [2]Department of Psychology, University of California, Berkeley, USA
Topic Area: EXECUTIVE PROCESSES: Working memory

A49 How neural representational similarity between categorical visual stimuli affects working memory in young and older adults
Carolyn Guay[1,2], Bradley Buchsbaum[1,2]; [1]University of Toronto, [2]Baycrest Hospital
Topic Area: EXECUTIVE PROCESSES: Working memory

A50 Real-time triggering reveals that sustained attention and working memory lapse together
Megan T. deBettencourt[1], Paul A. Keene[1], Edward Awh[1], Edward K. Vogel[1]; [1]University of Chicago
Topic Area: EXECUTIVE PROCESSES: Working memory

A51 The Developmental Trajectory of Musical Working Memory in Children with Neurodevelopmental Disorders
Gwenaëlle Philibert-Lignières[1], Barbara Tillmann[2], Armando Bertone[1], Eve-Marie Quintin[1]; [1]McGill University, Canada, [2]Université Lyon 1, France
Topic Area: EXECUTIVE PROCESSES: Working memory

A52 EEG power differs in toddlers with versus without autism during natural social interaction with their parent
Elizabeth Norton[1], Brittany Manning[1], Silvia Lam[1], Sean McWeeny[1], Maranda Jones[1], Alexandra Abowd[1], Lauren Wakschlag[1], Megan Roberts[1]; [1]Northwestern University
Topic Area: LANGUAGE: Development & aging

A53 Exploring event-related potentials by subjective report as insight into explicit and implicit second language grammatical knowledge
Kara Morgan-Short[1], Alicia Luque[1], Irene Finestrat[1], David Abugaber[1]; [1]University of Illinois at Chicago
Topic Area: LANGUAGE: Development & aging

A54 Infant modulation of cortical mapping, discriminatory abilities and speech processing efficiency as a function of non-speech early acoustic intervention
Silvia Ortiz-Mantilla[1], Teresa Realpe-Bonilla[1], April A. Benasich[1]; [1]Rutgers University-Newark NJ
Topic Area: LANGUAGE: Development & aging

A55 Morpholexical processes in visual word recognition across the adult life span: Major cross-sectional changes
William D. Marslen-Wilson[1], Melek Karadag[1], Alex Clarke[1], Lorraine Tyler[1],
Topic Area: LANGUAGE: Development & aging

A56 Speech encoding in background noise is related to receptive language skills in infants 7-9 months of age
Cynthia Roesler[1], Silvia Ortiz-Mantilla[1], Julie Morgan-Byrne[1], Gabriella Musacchia[2,3], April Benasich[1]; [1]Rutgers University, [2]University of the Pacific, [3]Stanford University Medical School
Topic Area: LANGUAGE: Development & aging

A57 Effect of Cognate Status on Lexical Selection Competition: A Theta-Based Study
Jamie Renna[1], Yazmin Medina[1], Katherine J. Midgley[1], Phillip J. Holcomb[1], Ksenija Marinkovic[1,2]; [1]San Diego State University, USA, [2]University of California, San Diego, USA
Topic Area: LANGUAGE: Lexicon

A58 Language Development in Deaf Children with Cochlear Implants
Kurt Winsler[1], Laurie Lawyer[2], Sharon Coffey-Corina[3], Kristina Backer[4], Lee Miller[3], David Corina[3]; [1]Department of Psychology, University of California, Davis, [2]University of Essex, U.K., [3]Center for Mind and Brain, University of California, Davis, [4]Dept. of Cognitive and Information Sciences University of California, Merced
Topic Area: LANGUAGE: Lexicon

A59 Re-Learning to Be Different: Neural Differentiation Supports Post-stroke Language Recovery
Jeremy Purcell[1,2], Robert Wiley[1], Brenda Rapp[1]; [1]Department of Cognitive Science, Johns Hopkins University, USA, [2]Maryland Neuroimaging Center, University of Maryland, USA
Topic Area: LANGUAGE: Lexicon

A60 Relationships between attention, cognitive control, and within- and between-language control in bilingual persons with aphasia
Teresa Gray[1], Sarah Villard[2], Chaleece Sandberg[3]; [1]San Francisco State University, [2]Boston University, [3]Penn State University
Topic Area: LANGUAGE: Lexicon

A61 Transforming acoustic input into a hierarchy of linguistic representations
Laura Gwilliams[1,2], Jean-Remi King[3], David Poeppel[1,4]; [1]New York University,
Topic Area: LANGUAGE: Lexicon

A62 Comparing embodiment of action verbs in first and second language: a chronometric TMS study
Elisa Monaco[1], Monica Lancheros Pompeyo[1], Sylvain Harquel[2,3], Eric Schmidlin[4], Jean-Marie Annoni[1,5]; [1]Laboratory for Cognitive and Neurological Sciences, University of Fribourg, Switzerland, [2]Laboratory of Psychology and NeuroCognition, National Center for Scientific Research, University of Grenoble Alpes, France, [3]IRMAGE Neuroimaging facility, National Center for Scientific Research, University of Grenoble Alpes, France, [4]Laboratory Of Neurophysiology Of Action And Hearing, University of Fribourg, Switzerland, [5]Neurological Unit, Fribourg cantonal Hospital, Switzerland
Topic Area: LANGUAGE: Other

A63 Testing the perceptual locus of the word superiority effect
Micha Heilbron[1,2], David Richter[1], Matthias Ekman[1], Floris de Lange[1], Peter Hagoort[1,2]; [1]Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, The Netherlands, [2]Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands
Topic Area: LANGUAGE: Other

A64 Left frontal lobe and propositional language
Adithya Chandregowda[1], Joseph Duffy[1], Mary Machulda[1], Val Lowe[1], Jennifer Whitwell[1], Keith Josephs[1]; [1]Mayo Clinic
Topic Area: LANGUAGE: Other

A65 The "Cost-free" Code-mixing in Trilinguals: A Revision to the Adaptive Control Hypothesis
Mingyu Yuan[1, 3], Nga Yan Hui[2, 3], Manson Cheuk-Man Fong[2,3], William Shi-Yuan Wang[2, 3]; [1]Department of English, The Chinese University of Hong Kong, [2]Department of Chinese and Bilingual Studies, The Hong Kong Polytechnic University, [3]Research Centre for Language, Cognition, and Neuroscience, The Hong Kong Polytechnic University
Topic Area: LANGUAGE: Other

A66 The Foreign Language Effect on Social Attitudes: An ERP study of Emotional Processes of Chinese-English Bilinguals
Yi-Lin Chen[1], A. K. Tzeng[1]; [1]Chung Yuan Christian University
Topic Area: LANGUAGE: Other

A67 Tracking the subprocesses of pronoun resolution during naturalistic comprehension
Jixing Li[1], John Hale[2]; [1]New York University Abu Dhabi, [2]University of Georgia
Topic Area: LANGUAGE: Other

A68 Colored by language? The role of latent decision processes and left anterior temporal cortex in categorical color perception
Seda Akbıyık[1,2], Şerife Leman Runyun[2], Egemen Genç[2], Tilbe Göksun[2], Fuat Balcı[2]; [1]Harvard University, [2]Koç University
Topic Area: LANGUAGE: Semantic

A69 Common neural system for sentence comprehension across languages: A Chinese-Japanese bilingual study
Zhengfei Hu[1], Shuhei Nishida[1], Yuxiang Yang[1], Carol Madden-Lombardi[2], Jocelyne Ventre-Dominey[2], Peter Ford Dominey[2], Kenji Ogawa[1]; [1]Hokkaido University, [2]INSERM
Topic Area: LANGUAGE: Semantic

A70 Lexical-semantic and executive deficits revealed by computational modelling: a drift diffusion model perspective
Lara Todorova[1], David Neville[1], Vitoria Piai[1,2]; [1]Radboud University, Donders Institute for Brain, Cognition and Behaviour, Donders Center for Cognition, Nijmegen, [2]Department of Medical Psychology, Radboud University Medical Center, Nijmegen
Topic Area: LANGUAGE: Semantic

A71 Neural specialization of reading in young children
Avantika Mathur[1], Fatima Sibaii[1,2], Yingying Wang[1,2]; [1]Neuroimaging for Language, Literacy and Learning Lab, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, NE 68583, [2]Biomedical Engineering, University of Nebraska-Lincoln, NE 68503
Topic Area: LANGUAGE: Semantic

A72 The dynamic construction of narrative structure
Claire Hui-Chuan Chang[1], Christina Lazaridi[1], Yaara Yeshurun[2], Kenneth A. Norman[1], Uri Hasson[1]; [1]Princeton University, [2]Tel-Aviv University
Topic Area: LANGUAGE: Semantic

A73 Age-related changes in neural event processing and segmentation
Zachariah Reagh[1,2,5], Charan Ranganath[2,3,4,5]; [1]Department of Neurology, [2]Center for Neuroscience, [3]Department of Psychology, [4]Memory and Plasticity Program, [5]University of California, Davis
Topic Area: LONG-TERM MEMORY: Development & aging

A74 Age-related impairments for memory updating in healthy older adults
Branden Kolarik[1], Shauna Stark[1], Craig Stark[1]; [1]University of California, Irvine
Topic Area: LONG-TERM MEMORY: Development & aging

A75 Age-related modulation of functional connectivity along the long-axis of the hippocampus
Shauna Stark[1], Amy Frithsen[1], Craig Stark[1]; [1]University of California, Irvine
Topic Area: LONG-TERM MEMORY: Development & aging

A76 Compensatory Neural Networks for Object Memory Recognition in Early Parkinson's Disease
Brenda Hanna-Pladdy[1], Li Jiang[1], Samantha Williams[1], Paul Fishman[1], Rao Gullapalli[1]; [1]University of Maryland School of Medicine, Baltimore
Topic Area: LONG-TERM MEMORY: Development & aging

A77 Early-life stress and habitual responding in instrumental learning
Alexander Gordon[1], Tara Patterson[1], Barbara Knowlton[1]; [1]University of California, Los Angeles
Topic Area: LONG-TERM MEMORY: Development & aging

A78 Nonverbal declarative memory in older adults: effects of age, sex, and education
Jana Reifegerste[1,2], João Veríssimo[3], Michael D. Rugg[4], Mariel Y. Pullman[5], Laura Babcock[6], Dana A. Glei[7], Maxine Weinstein[7], Noreen Goldman[8], Michael T. Ullman[1]; [1]Department of Neuroscience, Georgetown University, Washington DC, USA, [2]Institute for Psychology, Westfälische Wilhelms-Universität Münster, Germany, [3]Potsdam Research Institute for Multilingualism, University of Potsdam, Germany, [4]University of Texas Southwestern Medical Center, TX, USA, [5]New York-Presbyterian/Columbia University Medical Center, USA, [6]Department of Neuroscience, Karolinska Institutet, Sweden, [7]Center for Population and Health, Georgetown University, Washington DC, USA, [8]Office of Population Research, Princeton University, New Jersey, USA
Topic Area: LONG-TERM MEMORY: Development & aging

A79 Relationship between aerobic capacity and mnemonic discrimination in older adults
Lluvia A. Gonzalez[1], Nicole M. Henderson[1], Michael S. Ricasa[1], Lucy K. Khuu[1], Valerie A. Carr[1]; [1]San Jose State University
Topic Area: LONG-TERM MEMORY: Development & aging

A80 Scene complexity visual alpha modulations facilitate memory development
Qin Yin[1], Elizabeth L. Johnson[1,2], Lingfei Tang[1], Eishi Asano[1], Noa Ofen[1,3]; [1]Wayne State University, [2]University of California, Berkeley, [3]Weizmann Institute of Science, Rehovot, Israel
Topic Area: LONG-TERM MEMORY: Development & aging

A81 The influence of catecholamine function on reward-related memory in aging
Anne S. Berry[1], Theresa M. Harrison[1], A.J. Whitman[1], Kaitlin N. Swinnerton[1], Ming Hsu[1], William J. Jagust[1], Anne Berry; [1]UC Berkeley
Topic Area: LONG-TERM MEMORY: Development & aging

A82 An electroencephalographic investigation of trial-by-trial updating of knowledge structures
Franziska Richter[1]; [1]Leiden University
Topic Area: LONG-TERM MEMORY: Episodic

A83 Assessing the reliability of fMRI measures in characterizing memory development
Lingfei Tang[1], John France[1], Qijing Yu[1], Qin Yin[1], Homayouni Roya[1], Bryn Thompson[1], Sruthi Ramesh[1], Noa Ofen[1]; [1]Wayne State University
Topic Area: LONG-TERM MEMORY: Episodic

A84 Creating false memories: Investigating visual recall of multiple exemplars in a single category
Elizabeth H Hall[1,2], Wilma A Bainbridge[2], Chris I Baker[2]; [1]University of California, Davis, [2]National Institute of Mental Health
Topic Area: LONG-TERM MEMORY: Episodic

A85 Data-driven analysis of whole-brain connectivity reveals post-encoding network dynamics.
Jessica A. Collins[1], Bradford C. Dickerson[1], J. Benjamin Hutchinson[2]; [1]Massachusetts General Hospital and Harvard Medical School, [2]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

A86 Decoding biases between memory encoding and retrieval induced by recent experience
Alexandra G. Tremblay-McGaw[1], Brice A. Kuhl[1], Nicole M. Long[2]; [1]University of Oregon, Department of Psychology, [2]University of Virginia, Department of Psychology
Topic Area: LONG-TERM MEMORY: Episodic

A87 Differential consolidation of detail and sequence structure in memory for a one-shot real-world event
Nicholas B. Diamond[1,2], Brian Levine[1,2]; [1]University of Toronto, [2]Rotman Research Institute, Baycrest Health Sciences
Topic Area: LONG-TERM MEMORY: Episodic

A88 Expectations modulate shifts between memory encoding and retrieval states
Darya Frank[1], Alex Kafkas[1], Marcelo Montemurro[1], Daniela Montladi[1]; [1]Division of Neuroscience and Experimental Psychology, University of Manchester
Topic Area: LONG-TERM MEMORY: Episodic

A89 How do we optimize learning of episodes?
Rachel Newsome[1], Chris Martin[1], Morgan Barense[1,2]; [1]Department of Psychology, University of Toronto, [2]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

A90 Individual differences of self-report spatial memory are associated with theta rhythm during the encoding of source memory
Ulises Caballero Sanchez[1], Talia Vianney Roman Lopez[1], Monica Mendez Diaz[1], Oscar Prospero Garcia[1], Alejandra Evelyn Ruiz Contreras[1]; [1]UNAM
Topic Area: LONG-TERM MEMORY: Episodic

A91 Memory for decision outcomes increases throughout childhood
Matthew Fain[1], Christina Hlutkowsky[2], Susan Perlman[2], Vishnu Murty[1]; [1]Temple University, [2]University of Pittsburgh
Topic Area: LONG-TERM MEMORY: Episodic

A92 Neural activity associated with counterfactual thinking and perspective shift of autobiographical memories
Leonard Faul[1], Peggy St. Jacques[2], Jacqueline DeRosa[1], Natasha Parikh[1], Felipe De Brigard[1]; [1]Duke University, [2]University of Alberta
Topic Area: LONG-TERM MEMORY: Episodic

A93 Spontaneous generalization following paired-associate training
Stefania Ashby[1], Caitlin Bowman[1], Dagmar Zeithamova[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

A94 Testing the causal role of theta rhythms in hippocampal memory processing using simultaneous theta-burst TMS and fMRI
Molly S. Hermiller[1], Rachael A. Young[1], Zhi-De Deng[2], Yu Fen Chen[1], Todd B. Parrish[1], Joel L. Voss[1]; [1]Northwestern University Feinberg School of Medicine, [2]National Institutes of Mental Health
Topic Area: LONG-TERM MEMORY: Episodic

A95 Arousal Modulates the Temporal Structure of Episodic Memory
David Clewett[1], Camille Gasser[2], Lila Davachi[2,3]; [1]New York University, [2]Columbia University, [3]Nathan Kline Institute
Topic Area: LONG-TERM MEMORY: Episodic

A96 Choice-induced preference predicts delayed but not immediate decision-related memory benefits
Elizabeth Eberts[1], Sarah DuBrow[2], Vishnu Murty[1]; [1]Temple University, [2]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

A97 Cholinergic modulation enhances hippocampally-dependent spatial relational attention
Nicholas Ruiz[1], Mariam Aly[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

A98 Investigating the role of the striatum in stimulus-response learning during priming: Evidence from Parkinson's Disease
Elizabeth Race[1], Hope Tobin[1], Mieke Verfaellie[2]; [1]Tufts University, [2]VA Boston Healthcare System and Boston University
Topic Area: LONG-TERM MEMORY: Priming

A99 Degree of Feature Overlap Modulates Subsequent Memory Effects in Medial and Anterior Temporal Lobe Structures in the Fast Mapping Paradigm
Ann-Kathrin Zaiser[1], Regine Bader[1], Patric Meyer[2,3]; [1]Saarland University, Saarbrücken, Germany, [2]Central Institute of Mental Health, Heidelberg University, Mannheim, Germany, [3]SRH University of Applied Sciences, Heidelberg, Germany
Topic Area: LONG-TERM MEMORY: Semantic

A100 A universal biomarker predicting sleep-loss vulnerability across the human brain and body
Samika Kumar[1], Eti Ben Simon[1], Adam Krause[1], Rachel Mak-Mccully[1], Liang-Tien Hsieh[1], Matthew P. Walker[1]; [1]University of California, Berkeley
Topic Area: METHODS: Electrophysiology

A101 How to test for a modulation of perception and behaviour by the phase of neural oscillations
Benedikt Zoefel[1], Matthew H Davis[1], Lars Riecke[2]; [1]MRC Cognition and Brain Sciences Unit, University of Cambridge, UK, [2]University of Maastricht, The Netherlands
Topic Area: METHODS: Electrophysiology

A102 mindHIVE: An accessible cognitive neuroscience research platform for students and researchers
Suzanne Dikker[1], Henry Valk[1], Dano Morrison, Kimberly Burgas, Steven Azeka[1], Teon Brooks, Wendy Suzuki[1], Ido Davidesco[1], David Poeppel[1]; [1]New York University
Topic Area: METHODS: Electrophysiology

A103 Modulation of auditory gamma-band responses using transcranial electrical stimulation
Kevin Jones[1], Zoë Tauxe[1], Elizabeth Johnson[2,3], Donald Rojas[1]; [1]Colorado State University, [2]University of California, Berkeley, [3]Wayne State University
Topic Area: METHODS: Electrophysiology

A104 Relationship between phonology, semantics and past tense inflection in post-stroke aphasia
Aneta Kielar[1], Sara Mohr[1], Leah Rice[1], Phoebe Lughes[1], Katie McConville[1], Aneta Kielar; [1]University of Arizona
Topic Area: METHODS: Electrophysiology

A105 A functional near-infrared spectroscopic investigation of the hemodynamic response function across resting and listening conditions
Joel Skaria[1], Ronald Gillam[1]; [1]Utah State University
Topic Area: METHODS: Neuroimaging

A106 Activity or Connectivity? Comparing neurofeedback training approaches in Huntington's disease
Marina Papoutsi[1], Joerg Magerkurth[1,2], Oliver Josephs[1], Sophia Pepes[3], Temi Ibitoye[1], Ralf Reilmann[4,5], Nikolaus Weiskopf[1,6], Doug Langbehn[7], Geraint Rees[1], Sarah Tabrizi[1]; [1]University College London, UK, [2]Birkbeck, UK, [3]University of Oxford, UK, [4]George Huntington Institute, Germany, [5]University of Tuebingen, Germany, [6]Max Planck Institute for Human Cognitive and Brain Sciences, Germany, [7]University of Iowa, USA
Topic Area: METHODS: Neuroimaging

A107 Characterizing Individual Variation in Multivariate Connectivity and Behavior Along the Psychosis Spectrum
Jie Lisa Ji[1], Joshua Burt[1], Katrin Preller[1,2], Brendan Adkinson[1], Antonija Kolobaric[1], Morgan Flynn[1], Rick Adams[3], Aleksandar Savic[1,4], John Murray[1], Alan Anticevic[1]; [1]Yale University, [2]University of Zurich, [3]University College London, [4]University of Zagreb
Topic Area: METHODS: Neuroimaging

A108 Extensions of Multivariate Dynamical Systems for Simultaneous Explanations of Neural and Behavioral Data
Qingfang Liu[1], Alexander A. Petrov[1], Zhong-Lin Lu[1], Brandon M. Turner[1]; [1]The Ohio State University
Topic Area: METHODS: Neuroimaging

A109 Within- and Between-Network Connectivity in Aging: How Correlation Direction Affects Discovery of Age Effects
Eleanna Varangis[1], Christian G. Habeck[1], Qolamreza Razlighi[1], Yaakov Stern[1]; [1]Columbia University
Topic Area: METHODS: Neuroimaging

A110 Neural correlates of aesthetic judgment on Chinese calligraphy and scenery photos in nonreaders of Chinese
Joyce Cheng[1], Makayla Chen[1], Leo Dong[1], Diana Shih[1], Denise Wu[1]; [1]National Central University, Taiwan
Topic Area: OTHER

A111 Characterization of hyperbrain networks during joint piano playing
Hector Orozco Perez[1], Debanjan Borthakur[1], Laurel J Trainor[1]; [1]McMaster University
Topic Area: PERCEPTION & ACTION: Audition

A112 Directional brain-to-brain coupling of music ensemble performance
Andrew Chang[1], Philip Chrapka[1], Dan Bosnyak[1], Laurel Trainor[1,2]; [1]McMaster University, [2]Baycrest Hospital
Topic Area: PERCEPTION & ACTION: Audition

A113 Dysregulation of auditory object representations in prematurely born children
Chrysa Retsa[1], Hélène Turpin[2], François Ansermet[3], Carole Müller-Nix[2], Sebastien Urben[2], Ayala Borghini[2], Micah Murray[1,4,5,6]; [1]The LINE (Laboratory for Investigative Neurophysiology), University Hospital Center and University of Lausanne, Switzerland, [2]Department of Child and Adolescent Psychiatry, University Hospital Center and University of Lausanne, Switzerland, [3]Department of Child and Adolescent Psychiatry, University Hospital of Geneva, Switzerland, [4]EEG Brain Mapping Core, Center for Biomedical Imaging (CIBM), Lausanne, Switzerland, [5]Department of Ophthalmology, Fondation Asile des Aveugles, Lausanne, Switzerland, [6]Department of Hearing and Speech Sciences, Vanderbilt University, Nashville, TN, USA
Topic Area: PERCEPTION & ACTION: Audition

A114 Engaging the dorsal stream in the processing of new words
Keith Doelling[1], Wy Ming Lin[2], Bijan Pesaran[1], David Poeppel[1,3]; [1]New York University, [2]Universität Tubingen, [3]Max Planck Institute for Empirical Aesthetics
Topic Area: PERCEPTION & ACTION: Audition

A115 The Dynamic and Task-dependent Representational Transformation Between the Motor and Sensory Systems
Xing Tian[1], Wenjia Zhang[1]; [1]New York University Shanghai, China
Topic Area: PERCEPTION & ACTION: Audition

A116 Top-down Inhibitory Mechanisms Underlying Auditory-motor Integration For Speech Production: Evidence by TMS
Dongxu Liu[1], Guangyan Dai[1], Yichen Chang[1], Hanjun Liu[1]; [1]Department of Rehabilitation Medicine, The First Affiliated Hospital of Sun Yat-sen University, China.
Topic Area: PERCEPTION & ACTION: Audition

A117 Complexity of sequence learning: a mathematical insight into cognitive science
Yuri Dabaghian[1], Andrey Tsvetkov[2]; [1]Department of Neurology, The University of Texas in Houston, McGovern Medical School, Houston, TX 77030, [2]Department of Neurobiology and Anatomy, The University of Texas in Houston, McGovern Medical School, Houston, TX 77030
Topic Area: PERCEPTION & ACTION: Multisensory

A118 Differentiating Effects of Improvisational and Non-Improvisational Musical Training on Functional Connectivity
Alexander Belden[1], Tima Zeng[1], Emily Przysinda[1], Psyche Loui[1,2]; [1]Wesleyan University, [2]Northeastern University
Topic Area: PERCEPTION & ACTION: Multisensory

A119 Feed-forward mechanisms of audiovisual integration in primary visual cortex
Jessica Green[1], Allison Pierce[1], Spencer Mac Adams[1]; [1]University of South Carolina
Topic Area: PERCEPTION & ACTION: Multisensory

A120 Neural correlates of biological motion perception in sign language users
Emily Kubicek[1], Lorna C. Quandt[1]; [1]Gallaudet University
Topic Area: PERCEPTION & ACTION: Multisensory

A121 Tactile agnosia after white matter disconnection due to stroke
Krista Schendel[1], Timothy J. Herron[1], Brian Curran[1], Nina Dronkers[2], Juliana Baldo[1]; [1]VA Northern California Health Care System, [2]University of California, Berkeley
Topic Area: PERCEPTION & ACTION: Multisensory

A122 Integration of object color and shape takes place in early visual cortex
Xiaoying Wang[1], Jiasi Shen[1], Tonghe Zhuang[1], Yanchao Bi[1]; [1]Beijing Normal University
Topic Area: PERCEPTION & ACTION: Vision

A123 When Cross-Modal Information is Redundant: Auditory feedback does not impact visuo-motor sequence learning or transfer
Aleksandra Sherman[1], Daniel J. Sanchez[2], Carmel A. Levitan[1]; [1]Occidental College, [2]SRI International
Topic Area: PERCEPTION & ACTION: Multisensory

A124 Effects of stimulus processing on event-related potentials of close others
Anca Vochin[1], Amanda Tardif[1], Ashley Chau-Morris[1], Hicham El Fouladi[2], J. Bruno Debruille[1]; [1]McGill University, [2]University of Montreal
Topic Area: PERCEPTION & ACTION: Vision

A125 Magnocellular and parvocellular contributions to reading
Maddi Ibarbia[1], Pedro M. Paz-Alonso[1]; [1]BCBL - Basque Center on Cognition, Brain and Language
Topic Area: PERCEPTION & ACTION: Vision

A126 Preserved shape sensitivity in the dorsal pathway of a visual agnosia patient
Erez Freud[1], Marlene Behrmann[2]; [1]York University, Toronto, ON, Canada, [2]Carnegie Mellon University, Pittsburgh, PA, USA
Topic Area: PERCEPTION & ACTION: Vision

A127 Representational Origins of Visual Expertise: A Perceptual Training Study
Elliot Collins[1,2], Marlene Behrmann[1]; [1]Carnegie Mellon University, [2]University of Pittsburgh
Topic Area: PERCEPTION & ACTION: Vision

A128 The indispensable role of object formation in perceptual organization
Junjun Zhang[1]; [1]MOE Key Lab for Neuroinformation, The Clinical Hospital of Chengdu Brain Science Institute, University of Electronic Science and Technology of China
Topic Area: PERCEPTION & ACTION: Vision

A129 The Neural Sources of N170: Understanding Timing of Activation in Face-Selective Areas
Chuanji Gao[1], Stefania Conte[1], John Richards[1], Wanze Xie[1], Taylor Hanayik[1]; [1]University of South Carolina
Topic Area: PERCEPTION & ACTION: Vision

A130 A latent-cause inference account of event segmentation under perceptual ambiguity
Yeon Soon Shin[1], Yael Niv[1,2], Sarah DuBrow[1,3]; [1]Princeton Neuroscience Institute, Princeton University, [2]Department of Psychology, Princeton University, [3]Department of Psychology, University of Oregon
Topic Area: THINKING: Decision making

A131 Decisions to explore are preceded by neural interruption and response conflict
Cameron Hassall[1], Craig McDonald[2], Olave Krigolson[1]; [1]University of Victoria, [2]George Mason University
Topic Area: THINKING: Decision making

A132 Development of cortical and sub-cortical components of learning: A computational analysis
Maria Eckstein[1], Sarah Master[1], Ronald Dahl[1], Linda Wilbrecht[1], Anne Collins[1]; [1]University of California, Berkeley
Topic Area: THINKING: Decision making

A133 DRD4-521T Genotypes Differentially Modulate Reward Positivity Amplitude During Reinforcement Learning
Trevor C. J. Jackson[1], James F. Cavanagh[1]; [1]University of New Mexico
Topic Area: THINKING: Decision making

A134 Emotion Primes Influence Decision Making
Brandy Tiernan[1], Andrew Dyar[1], Caroline Martin[1], Clara Davis[1], Julian Wright[1]; [1]University of the South
Topic Area: THINKING: Decision making

A135 Investigating the impulsive choice of young adults in delay discounting, probabilistic discounting, and risk preference task
Nai-Shing Yen[1], Tsung-Han Yang[1], Yu-Chi Lin[1], Fan-Ying Liu[1], Yun-Fan Fang[1], Chi Wang[1], Ruey-Ming Liao[1], Nai-Shing Yen; [1]National Chengchi University
Topic Area: THINKING: Decision making

A136 Dance experience predicts improvement from movement therapy in Parkinson's Disease
Anna Krotinger[1], Psyche Loui1,[2]; [1]Wesleyan University, [2]Northeastern University
Topic Area: PERCEPTION & ACTION: Motor control

Session B

Sunday, March 24, 8:00–10:00 am, Pacific Concourse

B1 Active tracking of speech in a complex auditory scene in children
Sun Meirong[1,2], Han Qiming[1,2,3], Zou Jiajie[4], Ding Nai[4], Luo Huan[1,2,3]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]PKU-IDG/McGovern Institute for Brain Research, Peking University, [3]Peking-Tsinghua Center for Life Sciences, Peking University, [4]College of Biomedical Engineering and Instrument Sciences, Zhejiang University
Topic Area: ATTENTION: Auditory

B2 Childhood leukemia survivors exhibit chronic deficiencies in sensory and cognitive processes, as reflected by event-related brain potentials: A preliminary investigation
Kelin Brace[1], Wei wei Lee[1], Peter D. Cole[2], Elyse S. Sussman[1]; [1]Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461, United States, [2]Rutgers Cancer Institute of New Jersey, 195 Little Albany Street, New Brunswick, NJ 08901, United States
Topic Area: ATTENTION: Auditory

B3 Enhancement of speech-in-noise perception in children with autism spectrum disorder using an assistive listening device
Sara Nataletti[1,2], Eleonora Vagnoni[1], Fabrizio Leo[1], Elena Cocchi[3], Laura Scafa[3], Simonetta Lumachi[4], Luca Giuliani[1,2], Luca Brayda[1]; [1]Istituto Italiano di Tecnologia, [2]University of Genoa, [3]Fondazione David Chiossone Onlus, [4]Philos – Accademia Pedagogica
Topic Area: ATTENTION: Auditory

B4 Modulation of Phase Synchronization across Fronto-Parietal and Temporal Cortices during Auditory Attention
Fahimeh Mamashli[1,2], Samantha Huang[1,2], Sheraz Khan[1,2], Matti Hämäläinen[1,2,3], Jyrki Ahveninen[1,2]; [1]Athinoula A. Martinos Center for Biomedical Imaging, MGH/HST, Charlestown, MA, USA, [2]Department of Radiology, MGH, Harvard Medical School, Boston, MA, USA, [3]Department of Neuroscience and Biomedical Engineering, Aalto University School of Science, Espoo, Finland
Many studies have documented modulations of auditory cortex (AC) when a
Topic Area: ATTENTION: Auditory

B5 Neural markers of mind wandering during online learning sessions
Colin Conrad[1], Aaron Newman[1]; [1]Dalhousie University
Attention-related constructs such as mind wandering are often used to describe user experiences that are detrimental to the efficacy of education
Topic Area: ATTENTION: Auditory

B6 Rhythm violation releases auditory neural responses from adaptation
Melisa Menceloglu[1], Marcia Grabowecky[1], Satoru Suzuki[1]; [1]Northwestern University
Topic Area: ATTENTION: Auditory

B7 The Effect of Noise on the Selective Attention
Emina Alickovic[1,2], Carina Graversen[1], Dorothea Wendt[1,3], Patrycja Książek[1], Renskje Hietkamp[1], Thomas Lunner[1,3,4,5]; [1]Eriksholm Research Center, Oticon A/S, Denmark, [2]Department of Electrical Engineering, Linkoping University, Sweden, [3]Department of Electrical Engineering, Technical University of Denmark, Denmark, [4]Department of Behavioral Sciences and Learning, Linkoping University, Sweden, [5]Linnaeus Centre HEAD, The Swedish Institute for Disability Research, Linkoping and Orebro Universities, Sweden
Topic Area: ATTENTION: Auditory

B8 Towards defining listening demand: stream segregation performance for multi-speaker auditory scenes under various conditions
Lars Hausfeld[1,2], Lars Riecke[1,2], Martha Shiell[1,2], Formisano Elia[1,2]; [1]Maastricht University, The Netherlands, [2]Maastricht Brain Imaging Centre (M-BIC), The Netherlands
Topic Area: ATTENTION: Auditory

B9 An EEG Investigation of Temporal and Spatial Reproduction
Eva Marie Robinson[1], Martin Wiener[1]; [1]George Mason University
Topic Area: ATTENTION: Spatial

B10 Attentional facilitation and inhibition in V1 during spatial long-term memory encoding
Haley A. Fritch[1], Scott D. Slotnick[1]; [1]Boston College
Topic Area: ATTENTION: Spatial

B11 Disruption of multiple versus single nodes in the dorsal attention network with TMS leads to stronger attention impairments
Stefano Gallotto[1,2], Tom A. de Graaf[1,2], Teresa Schuhmann[1,2], Alexander T. Sack[1,2]; [1]Maastricht University, The Netherlands, [2]Maastricht Brain Imaging Centre, The Netherlands
Topic Area: ATTENTION: Spatial

B12 Inhibition of return in visual search: Disentangling overlapping processes with event-related potentials
Allison M. Pierce[1], Jessica J. Green[1]; [1]University of South Carolina
Topic Area: ATTENTION: Spatial

B13 The N1pc prioritizes to-be-rejected items in visual search
Sarah Donohue[1,2], Mandy Bartsch[2], Hans-Jochen Heinze[1,2], Mircea Ariel Schoenfeld[1,2,3], Jens-Max Hopf[1,2]; [1]Otto-von-Guericke University, Magdeburg, Germany, [2]Leibniz Institute for Neurobiology, Magdeburg, Germany, [3]Kliniken Schmieder Heidelberg, Heidelberg, Germany
Topic Area: ATTENTION: Spatial

B14 Adverse childhood experiences modulate the effect of emotional arousal on visual working memory consolidation
weiwei zhang[1], Weizhen Xie[1,2], JC Lynne Lu Sing[1], Ana Martinez-Flores[1]; [1]Department of Psychology, University of California, Riverside, [2]Functional and Restorative Neurosurgery Unit, Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B15 Associative learning via intentional and unintentional actions
Irem Undeger[1], Reneé M. Visser[2], Andreas Olsson[1]; [1]Karolinska Institutet, [2]University of Amsterdam
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B16 Brain activity in processing emotional prime-target judgement task: An fMRI study
Yen-Ju Lu[1], Shih-tseng Tina Huang[1,2], Sing-Rong Sie[1]; [1]Department of Psychology, National Chung-Cheng University, Taiwan, [2]Center for Research in Cognitive Science, National Chung-Cheng University, Taiwan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B17 Creativity Anxiety
Richard Daker[1], Robert Cortes[1], Ian Lyons[1], Adam Green[1]; [1]Georgetown University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B18 Differential Neural Networks of Distraction, Reappraisal and Expressive Suppression during Emotion Regulation: A fMRI Investigation
Wenjuan Li[1], Ling Li[1]; [1]University of Electronics Science and Technology of China, Chengdu, China
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B19 Enhanced empathic state caused by reading fiction promotes detection of and attention to task-irrelevant facial expressions
Natsuka Katayama[1], Motoyuki Sanada[1], Jun'ichi Katayama[1]; [1]Kwansei Gakuin University, Japan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B20 From hurricanes to homecomings: A database of news broadcast videos for investigating the dynamics of emotional memory
Rosalie Samide[1], Rose Cooper[1], Maureen Ritchey[1]; [1]Boston College
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B21 Interactions Between Media Use, Depression, and Trait Rumination
Jesus J. Lopez[1], Joseph M. Orr[1]; [1]Texas A&M University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B22 Neural Evidence for Cognitive Reappraisal as a Strategy to Alleviate the Effects of Math Anxiety
Rachel G. Pizzie[1,2], Cassidy L. McDermott[3,2], Tyler G. Salem[2], David J.M. Kraemer[2]; [1]Georgetown University, [2]Dartmouth College, [3]National Institutes of Health
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B23 Neural Mechanisms of Motivational Incentive Integration and Cognitive Control
Debbie Yee[1], Todd Braver[1]; [1]Washington University in St. Louis
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B24 Reading faces better: Using short term training to evaluate trait empathy and micro-expression trainability
Michael Pflanzer[1], Elizabeth Schroeder[1], Ferrinne Spector[1]; [1]Edgewood College
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B25 Reinstatement of mental context facilitates retrieval of extinction memories
Augustin C. Hennings[1], Mason McClay[1], Jarrod A. Lewis-Peacock[1], Joseph E. Dunsmoor[1]; [1]The University of Texas at Austin
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B26 The Association among Fluid Intelligence, Emotional Intelligence and Emotion Regulation: Based on the Voxel-based Morphometry Analyses
Tongran Liu[1]; [1]Institute of Psychology, Chinese Academy of Science
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B27 The effect of mouth opening in emotional faces on subjective experience and the early posterior negativity amplitude
Sandra J.E. Langeslag[1], Liselotte Gootjes[2], Jan W. Van Strien[2]; [1]University of Missouri - St. Louis, [2]Erasmus University Rotterdam

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B28 The relation between emotion and semantic priming: Evidence from N400 and reaction time
Dorothee J. Chwilla[1]; [1]Donders Institute for Brain, Cognition, and Behaviour; Radboud University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B29 Volitional Recall of Affective Stimuli Reproduces Brain States that Mediate Perceived Affect
Keith Bush[1], Emily Hahn[2], Kayla Wilson[1], G. Andrew James[1], Clinton Kilts[1]; [1]Brain Imaging Research Center, University of Arkansas for Medical Sciences, [2]A.A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B30 A meta-analytic brain map of age-related and individual differences in neurocognitive performance
Tsung Chi Chen[1], Hsu-Wen Huang[2], Ovid Jyh-Lang Tzeng[1,3,4,5,6], Chih-Mao Huang[1,3]; [1]Department of Biological Science and Technology, National Chiao Tung University, Taiwan, [2]Department of Linguistics and Translation, City University of Hong Kong, Hong Kong, [3]Cognitive Neuroscience Laboratory, Institute of Linguistics, Academia Sinica, Taiwan, [4]College of Humanities and Social Sciences, Taipei Medical University, Taiwan, [5]Department of Educational Psychology and Counseling, National Taiwan Normal University, Taiwan, [6]Institute of Advanced Studies, City University of Hong Kong, Hong Kong
Topic Area: EXECUTIVE PROCESSES: Development & aging

B31 Brain activity during a cognitive flexibility task relates to IQ and reading ability in children
Mackenzie E. Mitchell[1], Tehila Nugiel[1], Mary Abbe Roe[1], Jessica A. Church[1]; [1]The University of Texas at Austin
Topic Area: EXECUTIVE PROCESSES: Development & aging

B32 Elevated slope of the EEG power spectrum: a novel biomarker for ADHD in childhood
Madeline M. Robertson[1], Sarah Furlong[1], Bradley Voytek[2], Charlotte A. Boettiger[1], Margaret A. Sheridan[1]; [1]University of North Carolina Chapel Hill, [2]University of California San Diego
Topic Area: EXECUTIVE PROCESSES: Development & aging

B33 Integrative Functional Network Interactions Underlie the Association between Physical Activity and Cognition in Neurodegenerative Diseases
Chia-Hao Shih[1], Miriam Sklerov[1], Nina Browner[1], Eran Dayan[1]; [1]University of North Carolina at Chapel Hill
Topic Area: EXECUTIVE PROCESSES: Development & aging

B34 Multimodal neuroimaging data are associated with common and discrete cognitive control constructs
Zai-Fu Yao[1], Meng-Heng Yang[2], Shulan Hsieh[2]; [1]University of Amsterdam, [2]National Cheng Kung University
Topic Area: EXECUTIVE PROCESSES: Development & aging

B35 Neural and behavioral transfer of a simultaneous cognitive-physical video game intervention in an older adult population
Joshua J. Volponi[1], Alexander J. Simon[1], Alana B. Colville[1], Samirah V. Javed[1], Brigid J. Larkin[2], Karam K. Samplay[1], Soo M. Park[1], Jessica N. Schachtner[1], Roger Anguera[1], Christian J. Thompson[2], Joaquin A. Anguera[1], Adam Gazzaley[1]; [1]UCSF, [2]USF
Topic Area: EXECUTIVE PROCESSES: Development & aging

B36 Relationship between event-related brain potentials during Go/NoGo task and parental characteristics or attention-deficit/hyperactivity disorder tendency: The Hokkaido study
Keiko Yamazaki[1], Sachiko Itoh[1], Atsuko Araki[1], Reiko Kishi[1]; [1]Center for Environmental and Health Sciences, Hokkaido University
Topic Area: EXECUTIVE PROCESSES: Development & aging

B37 Relationship between Growth Mindset, Executive Function, and Academic Achievement in Middle Childhood
Zoe D'Esposito[1], Jessica Younger[1], Bruce McCandliss[3], Fumiko Hoeft[5], Joaquin Anguera[1], Jyoti Mishra[2], Miriam Rosenberg-Lee[4], Adam Gazzaley[1], Melina Uncapher[1]; [1]University of California, San Francisco, [2]University of California, San Diego, [3]Stanford University, [4]Rutgers University, [5]University of Connecticut
Topic Area: EXECUTIVE PROCESSES: Development & aging

B38 Role of Domain-general Cognitive Skills in Reading Fluency Skill in Middle Childhood
Jessica Younger[1], Bruce McCandliss[2], Fumiko Hoeft[3], Joaquin Anguera[1], Jyoti Mishra[4], Adam Gazzaley[1], Melina Uncapher[1]; [1]University of California at San Francisco, [2]Stanford University, [3]University of Connecticut, [4]University of California, San Diego
Topic Area: EXECUTIVE PROCESSES: Development & aging

B39 Studies on Measurement and Classification of Restricted and Repetitive Behaviors in Autism Spectrum Disorders
Zixuan Zhang[1]; [1]Sparkzone Institute
Topic Area: EXECUTIVE PROCESSES: Development & aging

B40 The Effects of Occupational Complexity on Brain Activity and Cognitive Reserve
Katharine Casario[1], Molly Arnold[1], Nicole Mangels[1], Jessica Fleck[1]; [1]Stockton University
Topic Area: EXECUTIVE PROCESSES: Development & aging

B41 Consent appreciation and reasoning in patients with impaired executive functions and normal healthy adults
Katrina Okerstrom-Jezewski[1], Daniel Tranel[1], Steven Anderson[1]; [1]The University of Iowa
Topic Area: EXECUTIVE PROCESSES: Other

B42 Explicating the Learning Benefits Bestowed by Transcranial Direct Current Simulation of the Right Inferior Frontal Gyrus
Benjamin Gibson[1], Teagan Mullins[1], Jacob Spinks[1], Denicia Aragon[1], Leslie Bauchman[1], Hannah Cunningham[1], Savannah Salazar[1], Evan Klein[1], Melissa Heinrich[1], Alfred Yu[2], Vincent Clark[1,3]; [1]University of New Mexico, [2]Army Research Laboratory, [3]The Mind Research Network
Topic Area: EXECUTIVE PROCESSES: Other

B43 Mobile based EEG assessment of fatigue in clinical practitioners
Robert Trska[1], Thomas Ferguson[1], Alison Walzak[1], Bruce Wright[1], Olave Krigolson[1]; [1]University of Victoria
Topic Area: EXECUTIVE PROCESSES: Other

B44 Reliability of the Cogstate™ Cognigram in assessing cognitive changes following mild traumatic brain injury
Joseph Weiler[1], Nathan Rose[1]; [1]University of Notre Dame
Topic Area: EXECUTIVE PROCESSES: Other

B45 The Influence of Agency and Self-control on the Processing of Gains and Losses
Robert West[1], Ellason Freeman[1], Anna Munoz[1], Emily Budde[2]; [1]DePauw University, [2]University of Dayton

Topic Area: EXECUTIVE PROCESSES: Other

B46 The Influence of Socioeconomic Status on the Neural Correlates of Feedback Processing
Anna Munoz[1], Ellason Freeman[1], Emily Budde[2], Robert West[1]; [1]DePauw University, [2]University of Dayton
Topic Area: EXECUTIVE PROCESSES: Other

B47 Behavioral and neural signatures of working memory in childhood
Steven Martinez[1], May I. Conley[1], Richard Watts[1], BJ Casey[1], Monica D. Rosenberg[1,2]; [1]Yale University, [2]The University of Chicago
Topic Area: EXECUTIVE PROCESSES: Working memory

B48 Electo-corticography(ECoG) activity induced by stimulation of the Superior temporal gyrus
Noboru Mimura[1], Kota Tanaka[2], Eishi Asano[3], Ayaka Sugiura[4], Yasuo Nakai[5], Hiro Motoi[6]; [1]Wayne University, [2]Yokohama City University
Topic Area: EXECUTIVE PROCESSES: Working memory

B49 Exploring brain-behavior relationships in the N-back task
Bidhan Lamichhane[1], Andrew Westbrook[1], Todd Braver[1]; [1]Washington University in Saint Louis, Saint Louis, MO, USA.
Topic Area: EXECUTIVE PROCESSES: Working memory

B50 Object-location association binding is transiently impaired during post-traumatic amnesia
Emma-Jane Mallas[1], Gregory Scott[1], Rituja Kamble[1], David J. Sharp[1], Nikos Gorgoraptis[1]; [1]Imperial College London
Topic Area: EXECUTIVE PROCESSES: Working memory

B51 Different Methods of Communication in Two Groups of Children with Autism Spectrum Disorder during a Dyadic Social Interaction
Philip Lai[1]; [1]University of Nebraska Kearney
Topic Area: LANGUAGE: Development & aging

B52 Early cortical processes underlying the development of whole-word perception.
Tomoki Uno[1,2], Ayumi Seki[1]; [1]Hokkaido University, [2]Research Fellow of the Japan Society for the Promotion of Science
Topic Area: LANGUAGE: Development & aging

B53 Emotional Language in Healthy Aging
Li-Chuan Ku[1], Vicky Tzuyin Lai[1]; [1]University of Arizona
Topic Area: LANGUAGE: Development & aging

B54 Neural mechanisms underlying audio-visual integration in Chinese young children
Zhichao Xia[1], Ting Yang[1], Xin Cui[1], Hua Shu[1], Xiangping Liu[1]; [1]Beijing Normal University
Topic Area: LANGUAGE: Development & aging

B55 Younger and Older Adults Adapt Differently to Animacy Violations in Fictional Narratives: Electrophysiological Evidence
Kathryn Bousquet[1], Megan Boudewyn[1], Debra Long[1], Fernanda Ferreira[1], John Henderson[1], Tamara Swaab[1]; [1]University of California, Davis
Topic Area: LANGUAGE: Development & aging

B56 Neural Coding for Word Frequency in Fusiform and Occipital Cortex
Oscar Woolnough[1], Cristian Donos[1], Patrick Rollo[1], Nitin Tandon[1,2]; [1]UTHealth, Houston, TX, [2]Memorial Hermann, Houston, TX
Topic Area: LANGUAGE: Lexicon

B57 Online build-up of neocortical memory traces for spoken words: specific facilitatory effects of novel semantic associations.
Alina Leminen[1,2], Eino Partanen[1,2], Andreas Højlund Nielsen[2], Mikkel Wallentin[2], Yury Shtyrov[2,3]; [1]University of Helsinki, Finland, [2]Aarhus University, Denmark, [3]Saint Petersburg University, Russia
Topic Area: LANGUAGE: Lexicon

B58 Picture-naming in American Sign Language: an ERP study of the effects of iconicity and alignment
Meghan McGarry[1,2], Megan Mott[1], Katherine J. Midgley[1], Phillip J. Holcomb[1], Karen Emmorey[1]; [1]San Diego State University, [2]University of California, San Diego
Topic Area: LANGUAGE: Lexicon

B59 The lexical categorization model: A computational model of left ventral occipito-temporal cortex activation in visual word recognition
Benjamin Gagl[1], Fabio Richlan[2], Philipp Ludersdorfer[3], Jona Sassenhagen[1], Susanne Eisenhauer[1], Christian J. Fiebach[1]; [1]Department of Psychology, Goethe University Frankfurt, Theodor-W.-Adorno-Platz 6, 60323 Frankfurt/Main, Germany, [2]Centre for Cognitive Neuroscience, University of Salzburg, Hellbrunnerstrasse 34, 5020 Salzburg, Austria, [3]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, 12 Queen Square, WC1N 3BG London, UK
Topic Area: LANGUAGE: Lexicon

B60 Words in speech decompose to their roots even when the root is interrupted: a study on Emirati Arabic
Samantha Wray[1], Alec Marantz[1,2]; [1]New York University Abu Dhabi, [2]New York University
Topic Area: LANGUAGE: Lexicon

B61 Delayed N1 suppression effect for self-generated speeches in patients with aphasia
Chia-Ju Chou[1], Edward W. Wlotko[2]; [1]Institute of Neuroscience, National Yang-Ming University, Taiwan, [2]Moss Rehabilitation Research Institute, Elkins Park, PA USA
Topic Area: LANGUAGE: Other

B62 Neural components of reading revealed by distributed and symbolic computational models
Ryan Staples[1], William W. Graves[1]; [1]Rutgers University - Newark
Topic Area: LANGUAGE: Other

B63 Phonological STM Versus STM for Meaningful Material: A Case Study Approach in ADHD
Genni Newsham[1], Hannah Travis[1], Sarah Vadnais[1], Audreyana Jagger-Rickels[1], Emily Caminiti[1], Jennifer Schlak[1], Maria Stacy[1], Zsofie Imre[1], Michelle Y. Kibby[1]; [1]Southern Illinois University
Topic Area: LANGUAGE: Other

B64 Relating Individual Differences in Beta Oscillations Recorded at Rest to Second Language Aptitude and Basal Ganglia Signal Routing
Chantel Prat[1], Margarita Zeitlin[1], Malayka Mottarella[1], Brianna Yamasaki[2], Tara Madhyastha[1]; [1]University of Washington, Seattle, [2]Vanderbilt University
Topic Area: LANGUAGE: Other

B65 The Moderating Effect of White Matter Tract Integrity on Phonemic Decoding After Transcranial Magnetic Stimulation
C Nikki Arrington[1,2], Sean Rogers[1], Emilio Acosta[1], Robin Morris[1,2]; [1]Georgia State University, [2]GSU/GT Center for Advanced Brain Imaging
Topic Area: LANGUAGE: Other

B66 An Intracranial EEG Study of Taxonomic and Thematic Relations
Melissa Thye[1], Jason Geller[1], Diana Pizarro[1], Jerzy P. Szaflarski[1], Daniel Mirman[1]; [1]University of Alabama at Birmingham
Topic Area: LANGUAGE: Semantic

B67 Semantic training affects online formation of memory traces for novel morphology
Viktória Roxána Balla[1], Yury Shtyrov[1,2,3,4], Miika Leminen[1,3], Alina Leminen[1,3]; [1]University of Helsinki, [2]Higher School of Economics, [3]Aarhus University, [4]Saint Petersburg State University
Topic Area: LANGUAGE: Semantic

B68 The incremental effect of conceptual specificity in minimal sentence composition: MEG evidence
Songhee Kim[1], Liina Pylkkänen[1]; [1]New York University
Topic Area: LANGUAGE: Semantic

B69 The semantic timescales of speech prediction unfold along an auditory dorsal processing hierarchy
Lea-Maria Schmitt[1], Sarah Tune[1], Julia Erb[1], Anna Rysop[2], Gesa Hartwigsen[2], Jonas Obleser[1]; [1]University of Lübeck, Lübeck, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
Topic Area: LANGUAGE: Semantic

B70 The spatiotemporal dynamics of flexible meaning: Neuromodulation of noun meaning by the preceding verb
Bingjiang Lyu[1], Alex Clarke[1], Hun Choi[1], William Marslen-Wilson[1], Lorraine Tyler[1]; [1]Centre for Speech, Language, and the Brain, Department of Psychology, University of Cambridge
Topic Area: LANGUAGE: Semantic

B71 Top-down influence of semantic similarity on low-level encoding of continuous speech
Michael Broderick[1], Andrew J. Anderson[2], Edmund C. Lalor[1,2]; [1]Trinity College Dublin, [2]University of Rochester
Topic Area: LANGUAGE: Semantic

B72 Age differences in hippocampal glutamate modulation during object-location encoding: evidence from proton functional magnetic resonance spectroscopy ('H-fMRS).
Chaitali Anand[1], Dalal Khatib[1], Cheryl Dahle[2], Jeffrey Stanley[1], Naftali Raz[2]; [1]Department of Psychiatry and Behavioral Neuroscience, Wayne State University, Detroit MI, USA, [2]Institute of Gerontology, Wayne State University, Detroit MI, USA
Topic Area: LONG-TERM MEMORY: Development & aging

B73 Children process multiplication problems for meaning regardless of format: An event-related potential study of spoken number words and digits
Amandine E. Grenier[1], Danielle S. Dickson[1], Nicole Y.Y. Wicha[1,2]; [1]The University of Texas at San Antonio, [2]UT Health San Antonio
Topic Area: LONG-TERM MEMORY: Development & aging

B74 Developmental trajectories and brain correlates of Directed Forgetting in Velo-cardio-facial syndrome
Céline Souchay[1], Maria Paluda[2,3], Maude Schneider[3], Martin Debbané[3], Christopher Moulin[1], Stephan Eliez[3]; [1]Laboratoire de Psychologie et Neurocognition, University of Grenoble, Grenoble, France, [2]Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland, Developmental Imaging and Psychopathology Laboratory, Office Médico-Pédagogique, Department of Psychiatry, University of Geneva, Geneva, Switzerland, [3]Developmental Imaging and Psychopathology Laboratory, Office Médico-Pédagogique, Department of Psychiatry, University of Geneva, Geneva, Switzerland
Topic Area: LONG-TERM MEMORY: Development & aging

B75 Increased reconfiguration of frontal connectivity during episodic memory retrieval in older adults
Lifu Deng[1], Benjamin Geib[1], Zachary A. Monge[1], Matthew Stanley[1], Olga Lucía Gamboa Arana[1], Erik Wing[2], Roberto Cabeza[1]; [1]Duke University, [2]University of Toronto
Topic Area: LONG-TERM MEMORY: Development & aging

B76 Lower episodic memory abilities are associated with less age-related impairment in daily life
Carina Fan[1,2], Laryssa Levesque[1], Laura Oliva[1], Terry Yu[1], Kristoffer Romero[1], Brian Levine[1,2]; [1]Rotman Research Institute, Baycrest, [2]University of Toronto
Topic Area: LONG-TERM MEMORY: Development & aging

B77 Neural correlates of elaborative encoding strategy use in younger and older adults
Samantha Williams[1], Robyn Husa[1], Madison Cochran[1], Madison Bertolin[1], Danielle Bond[1], Danielle Kelly[2], Phoebe Novack[2], Deanna Barch[2], Brenda Kirchhoff[1]; [1]Saint Louis University, [2]Washington University in St. Louis
Topic Area: LONG-TERM MEMORY: Development & aging

B78 Neural mechanisms of age-related decline in episodic memory precision
Saana Korkki[1], Franziska Richter[2], Jon Simons[1]; [1]University of Cambridge, UK, [2]University of Leiden, Netherlands
Topic Area: LONG-TERM MEMORY: Development & aging

B79 Self-Reference Enhances Memory for Multi-Element Events Judged Likely to Happen in Young and Older Adults
Mingzhu Hou[1,3], Matthew D Grilli[1,2], Elizabeth L Glisky[1,2]; [1]Department of Psychology, University of Arizona, USA, [2]McKnight Brain Institute, University of Arizona, USA, [3]Center for Vital Longevity and the School of Behavioral and Brain Sciences, University of Texas at Dallas, USA
Topic Area: LONG-TERM MEMORY: Development & aging

B80 T1rho in Hippocampal-Cortical Systems Predicts Spatial Navigation and Associative Learning Performance in Older Adults
Matt Sodoma[1], Rachel Cole[1], James Kent[1], Vincent Magnotta[1], Michelle Voss[1]; [1]University of Iowa
Topic Area: LONG-TERM MEMORY: Development & aging

B81 Transcranial direct current stimulation enhances episodic memory in healthy older adults by modulating retrieval-specific activation and resting functional connectivity
Juan Li[1], Lijuan Huo[1], Rui Li[1]; [1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China
Topic Area: LONG-TERM MEMORY: Development & aging

B82 Competitive remembering shapes memory along diagnostic feature dimensions
Maxwell L. Drascher[1], Brice A. Kuhl[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

B83 Distinct Connectivity Patterns of Anterior and Posterior Hippocampus
Lea E. Frank[1], Caitlin R. Bowman[1], Dagmar Zeithamova[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

B84 Effects of cortisol reactivity and REM theta activity on emotional memory consolidation
Sara Y. Kim[1], Elizabeth A. Kensinger[2], Jessica D. Payne[1]; [1]University of Notre Dame, [2]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

B85 Fixating on a memory: The role of encoding and retrieval eye movements in detailed remembering
Azara Lalla[1], Caterina Agostino[1], Signy Sheldon[1]; [1]McGill University
Topic Area: LONG-TERM MEMORY: Episodic

B86 How mnemonic integration and structured knowledge contribute to goal-directed virtual navigation
Corey Fernandez[1], Jiefeng Jiang[2], Anthony D. Wagner[2,3]; [1]Neurosciences Program, Stanford University, [2]Department of Psychology, Stanford University, [3]Wu Tsai Neurosciences Institute, Stanford University
Topic Area: LONG-TERM MEMORY: Episodic

B87 How neural representations during encoding predict recall success and failure for dynamic episodes
Griffin E. Koch[1,2,3], John P. Paulus[1,2], Marc N. Coutanche[1,2,3]; [1]University of Pittsburgh, [2]Learning Research and Development Center, University of Pittsburgh, [3]Center for the Neural Basis of Cognition, Pittsburgh, PA
Topic Area: LONG-TERM MEMORY: Episodic

B88 Individual variability in reward-related memory enhancements relate to white matter microstructure
Vera Dehmelt[1], Ashvanti Valji[1], Matthias Gruber[1]; [1]Cardiff University Brain Research Imaging Centre (CUBRIC), School of Psychology, Cardiff University, UK.
Topic Area: LONG-TERM MEMORY: Episodic

B89 Navigational demand modulates representational gradients along the human hippocampal longitudinal axis
Nichole R. Bouffard[1,2,5], Iva K. Brunec[1,2,5], Buddhika Bellana[4], Ali Golestani[1], Jason D. Ozubko[3], Jessica Robin[2], Morgan D. Barense[1,2,6], Morris Moscovitch[1,2,6]; [1]University of Toronto, [2]Rotman Research Institute, Baycrest, [3]SUNY Geneseo, [4]Johns Hopkins University, [5]These authors contributed equally, [6]Signifies joint senior authorship
Topic Area: LONG-TERM MEMORY: Episodic

B90 Switching between attention and memory in the hippocampus and medial prefrontal cortex
Eren Günseli[1], Mariam Aly[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

B91 Temporal context and memory consolidation mediate the boundary between retrieval induced forgetting and facilitation
Xiaonan L. Liu[1], Charan Ranganath[1]; [1]University of California, Davis
Topic Area: LONG-TERM MEMORY: Episodic

B92 The human hippocampus is necessary for remembering durations within a sequence of events but not durations of individual events
Daniela Palombo[1,2,3], Allison Reid[1], Sathesan Thavabalasingam[4], Renee Hunsberger[1], Andy Lee[4,5], Mieke Verfaellie[1,2]; [1]VA Boston Healthcare System, [2]Boston University School of Medicine, [3]University of British Columbia, [4]University of Toronto (Scarborough), [5]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

B93 The Influence of Memory Performance on Neural Representations supporting Associative Retrieval
Courtney R. Gray[1], Jordan D. Chamberlain[1], Kayla E. McGraw[2], Harini Babu[1], Amy A. Overman[2], Nancy A. Dennis[1]; [1]The Pennsylvania State University, [2]Elon University
Topic Area: LONG-TERM MEMORY: Episodic

B94 A Comparison of Conditioning Methodologies on Formation of Methamphetamine Associated Memories Using Conditioned Place Preference
Michael Hanna[1], Megan Jeske[1], Taylor Underwood[1]; [1]Vanguard University of Southern California
Topic Area: LONG-TERM MEMORY: Other

B95 Characterizing aphantasia through memory drawings of real-world images
Wilma A. Bainbridge[1], Zöe Pounder[2], Alison Eardley[2], Chris I. Baker[1]; [1]National Institute of Mental Health, USA, [2]University of Westminster, UK
Topic Area: LONG-TERM MEMORY: Other

B96 Hexadirectional modulation of human entorhinal theta osciallations during human navigation and spatial memory
Shachar Maidenbaum[1], Jonathan Miller[1], Joshua Jacobs[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

B97 Does the fMRI scanning environment weaken criterion shift stability?
Evan Layher[1], Courtney Durdle[1], Sara Leslie[1], Michael B. Miller[1]; [1]University of California, Santa Barbara
Topic Area: LONG-TERM MEMORY: Other

B98 The Impact of Video Game Mechanics on hippocampal GABA and glutamate: a MRS study
Vilesha Waller[1], Deanna Molina[1], Kelsey Prena[2], David Raymond[1], Hu Cheng[1,3], Sharlene Newman[1,3]; [1]Department of Psychological and Brain Sciences, Indiana University, [2]Media School, Indiana University, [3]Program in Neuroscience, Indiana University
Topic Area: LONG-TERM MEMORY: Other

B99 The Impact of Video Game Mechanics on Learning and Memory: an fMRI study
Deanna Molina[1], Kelsey Prena[2], David Raymond[1], Sharlene Newman[1,3]; [1]Department of Psychological and Brain Sciences, Indiana University, [2]Media School, Indiana University, [3]Program in Neuroscience, Indiana University
Topic Area: LONG-TERM MEMORY: Other

B100 Classification As Bad Epoch Rejection (CABER): An advanced technique for "tossing" low-quality trials from EEG datasets
Phui Cheng Lim[1], Karl Kuntzelman[1], Matthew R Johnson[1]; [1]University of Nebraska-Lincoln
Topic Area: METHODS: Electrophysiology

B101 Electrophysiological Frequency Band-Ratio Measures Conflate Changes in Periodic and Aperiodic Features
Julio Dominguez[1], Thomas Donoghue[1], Bradley Voytek[1]; [1]UC San Diego
Topic Area: METHODS: Electrophysiology

B102 Paired Trial Classification: A Novel Deep Learning Technique for MVPA
Jacob Williams[1], Ashok Samal[1], Prahalada Rao[1], Matthew Johnson[1]; [1]University of Nebraska - Lincoln
Topic Area: METHODS: Electrophysiology

B103 Reliability of resting-state EEG spectral power - advantage of normalization is not guaranteed
Matthew King-Hang Ma[1], Tan Lee[1], Manson Cheuk-Man Fong[2], Nga Yan Hui[2], William Shiyuan Wang[2]; [1]The Chinese University of Hong Kong, [2]The Hong Kong Polytechnic University
Topic Area: METHODS: Electrophysiology

B104 Separating Aperiodic Stochastic Neural Dynamics from Neural Oscillations via Spectral Power Variation
Richard Gao[1], Lauren Liao[1], Bradley Voytek[1]; [1]University of California, San Diego
Topic Area: METHODS: Electrophysiology

B105 DeLINEATE: A deep learning toolbox for neuroimaging data analysis
Karl Kuntzelman[1], Jacob M. Williams[1], Ashok Samal[1], Prahalada K. Rao[1], Matthew R. Johnson[1]; [1]University of Nebraska-Lincoln
Topic Area: METHODS: Neuroimaging

B106 Electo-corticography (ECoG) activity induced by stimulation of the Inferior
Kota Tanaka[1], Ayaka Sugiura[1], Noboru Mimura[1], Yasuo Nakai[1], Hirotaka Motoi[1], Eishi Asano[1,2]; [1]Department of Pediatrics, Children's Hospital of Michigan, Wayne State University, Detroit, MI, 48201, USA, [2]Department of Neurology, Children's Hospital of Michigan, Wayne State University, Detroit, MI, 48201, USA
Topic Area: METHODS: Neuroimaging

B107 Mutli-Scale Plasticity in an Embodied Simulation of the Human Brain
Jessica Dafflon[1], Federico Turkheimer[1], Robert Leech[1,2], Peter Hellyer; [1]King's College London, UK, [2]Imperial College London, UK
Topic Area: METHODS: Neuroimaging

B108 Network Analysis Comparing Structural and Functional Neuroimaging Data
Han Yang Tay[1], Saray Shai[1], Psyche Loui[1,2]; [1]Wesleyan University, [2]Northeastern University
Topic Area: METHODS: Neuroimaging

B109 Separating Task and Individual Differences: A Bilinear Model of Functional Connectivity
Matthew Galdo[1], Xiangrui Li[1], Zhong-Lin Lu[1], Mark Steyvers[2], Brandon Turner[1]; [1]Ohio State University, [2]University of California, Irvine
Topic Area: METHODS: Neuroimaging

B110 Sub-specialization of "visual" cortex for multiple higher-cognitive functions in congenital blindness
Shipra Kanjlia[1], Rita Loiotile[1], Nora Harhen[1], Marina Bedny[1]; [1]Johns Hopkins University
Topic Area: OTHER

B111 Action-Perception Coupling and Near Transfer of Motor Sequences in the Dorsal Premotor Region in Response to Piano Practice
Örjan de Manzano[1], Karin Ström[1], Karen Kuckelkorn[1], Fredrik Ullén[1]; [1]Karolinska Institutet
Topic Area: PERCEPTION & ACTION: Audition

B112 Behavioral correlates of Zwicker tone percepts in rodents
Achim Schilling[1], Konstantin Tziridis[1], Holger Schulze[1], Patrick Krauss[1]; [1]Experimental Otolaryngology, Neuroscience Group, University Hospital Erlangen, University of Erlangen-Nuremberg
Topic Area: PERCEPTION & ACTION: Audition

B113 Bringing groups of people into greater temporal and psychological synchrony using a multi-person adaptive metronome
Lauren Fink[1], Prescott Alexander[1], Petr Janata[1]; [1]University of California,.
Topic Area: PERCEPTION & ACTION: Audition

B114 Neural correlates of auditory perception
Patrick Krauss[1], Achim Schilling[1], Holger Schulze[1]; [1]University Hospital Erlangen
Topic Area: PERCEPTION & ACTION: Audition

B115 Prefrontal cortex aids adaptation to accented speech
Esti Blanco-Elorrieta[1,2], Laura Gwilliams[1,2], Alec Marantz[1,2], Liina Pylkkänen[1,2]; [1]New York University, [2]NYU Abu Dhabi Institute
Topic Area: PERCEPTION & ACTION: Audition

B116 Speech production rate modulates syllable perception
Johanna Rimmele[2], Florencia Assaneo[1], David Poeppel[1,2]; [1]New York University, [2]Max Planck Institute for Empirical Aesthetics, Frankfurt/Main
Topic Area: PERCEPTION & ACTION: Audition

B117 The Developmental Course of Multisensory Speech Integration in Autism
Michael Crosse[1], Aida Davila[1], John Foxe[1,2], Sophie Molholm[1,2]; [1]Albert Einstein College of Medicine, [2]University of Rochester
Topic Area: PERCEPTION & ACTION: Multisensory

B118 Atypical sensory responsiveness as an endophenotype in individuals with autism spectrum disorder (ASD)
Yang-Teng Fan[1,2], Ling Chu[3], Hui-Fang Chen[1], Yawei Cheng[3], Ching-Ching Wong[4], Chih-Mao Huang[1,2], Ovid J. L. Tzeng[1,2,5,6]; [1]National Chiao Tung University, [2]Academia Sinica, [3]National Yang-Ming University, [4]Child Developmental Assessment & Intervention Center, [5]Taipei Medical University, [6]National Taiwan Normal University
Topic Area: PERCEPTION & ACTION: Multisensory

B119 Does your hand fit your body? The developmental trajectory of the body model.
Lara Coelho[1], Claudia LR Gonzalez[1]; [1]University of Lethbridge
Topic Area: PERCEPTION & ACTION: Multisensory

B120 Drawing Sounds: Translational features across domains
Sara Hill[1], Ferrinne Spector[2]; [1]Edgewood College
Topic Area: PERCEPTION & ACTION: Multisensory

B121 Dynamical neural similarity tracks shifts of stimulus features and memory fluctuations
Yi Zhu[1], Qun Ye[1], Yi Hu[1]; [1]East China Normal University
Topic Area: PERCEPTION & ACTION: Multisensory

B122 Silent lip reading generates speech signals in auditory areas: Evidence from intracranially implanted electrodes in humans
Karthikeyan Ganesan[1], Eunseon Ahn[1], John Plass[1], William Stacey[1], David Brang[1]; [1]University of Michigan- Ann Arbor
Topic Area: PERCEPTION & ACTION: Multisensory

B123 Similar Motor Learning Performance with a Single Modality Preference in Individuals with High and Low Autistic Traits
Maria G. Daly[1], Alexandra L. Mastrangelo[1], Noah C. Yeagley[1], Jennifer L. Stevenson[1]; [1]Ursinus College
Topic Area: PERCEPTION & ACTION: Multisensory

B124 Comparing object identity and viewpoint gradients in the dorsal and ventral streams
Carol A. Jew[1], Rajeev D. S. Raizada[1]; [1]University of Rochester
Topic Area: PERCEPTION & ACTION: Vision

B125 Could different attended features modulate the degree in which we embody the same stimuli? Investigating the specificity of sensorimotor encoding of body-related stimuli.
Sonia Abad Hernando[1], Beatriz Calvo-Merino[1], Alejandro Galvez-Pol[1,2], Bettina Forster[1]; [1]Cognitive Neuroscience Research Unit, City, University of London, [2]Institute of Neurology, University College London
Topic Area: PERCEPTION & ACTION: Vision

B126 How to separate extraction of numerical and non-numerical magnitude information in the visual stream with a frequency-tagging approach?
Amandine Van Rinsveld[1], Mathieu Guillaume[1], Christine Schiltz[2], Wim Gevers[1], Alain Content[1]; [1]Université Libre de Bruxelles, [2]University of Luxembourg
Topic Area: PERCEPTION & ACTION: Vision

B127 Impact of Emotional Salience on Evidence Accumulation and Moment of Recognition
Mickella Hardy[1], Daniel Levitas[1], Thomas James[1]; [1]Indiana University, Bloomington
Topic Area: PERCEPTION & ACTION: Vision

B128 Intermediate visual features convey affective content
Amanda Del Giacco[1], Valentinos Zachariou[1], Merage Ghane[1], Xiaomin Yue[1], Leslie Ungerleider[1]; [1]National Institutes of Health
Topic Area: PERCEPTION & ACTION: Vision

B129 Modulating Visual Perception with Trans-cranial Alternating Current Stimulation
Jorge Delgado[1], Guillaume Reisen[1], Anthony Norcia[1]; [1]Stanford University
Topic Area: PERCEPTION & ACTION: Vision

B130 Numerous comparisons of numerical comparison tasks: A meta-analysis of the heterogeneity of the Weber Fraction.
Mathieu Guillaume[1], Amandine Van Rinsveld[1]; [1]Université Libre de Bruxelles
Topic Area: PERCEPTION & ACTION: Vision

B131 The Role of Memory in Interval Timing
Franklenin Sierra[1], David Poeppel[1,2], Alessandro Tavano[1]; [1]Max Planck Institute for Empirical Aesthetics, [2]NYU
Topic Area: PERCEPTION & ACTION: Vision

B132 Aesthetics in Motion: The Beauty of Action Paintings in Parkinson's Disease.
Stacey Humphries[1], Jacqui Rick[1], Daniel Weintraub[1], Anjan Chatterjee[1]; [1]University of Pennsylvania
Topic Area: THINKING: Decision making

B133 Don't Pop the Balloon! The Impact of Impulsivity on Risky Decision Making and Reward Processing
Taryn Berman[1], Brianna Turner[1], Clay Holroyd[1], Olav E. Krigolson[1]; [1]University of Victoria
Topic Area: THINKING: Decision making

B134 Effective connectivity during risk-taking in heavy cannabis users
David Raymond[1], Adrian Paneto[1], Joshua Brown[1], Sharlene Newman[1]; [1]Indiana University
Topic Area: THINKING: Decision making

B135 Emotional episodic future simulation reduces delay discounting but does not affect risk-taking
Adam Bulley[1], Beyon Miloyan[2], Gillian Pepper[3], Matthew J. Gullo[4], Julie D. Henry[4], Thomas Suddendorf[4]; [1]Harvard University, [2]Federation University, Australia, [3]Newcastle University, UK, [4]The University of Queensland, Australia
Topic Area: THINKING: Decision making

B136 Independent manipulation of the N2 and P2 components demonstrate boundary conditions of the Reward Positivity
Darin Brown[1], James Cavanagh[1]; [1]University of New Mexico
Topic Area: THINKING: Decision making

B137 Stress attenuates model-based learning in adolescents with high working-memory capacity
Raihyung Lee[1], Heyeon Park[1], Harim Park[1], Woo-Young Ahn[1], Seyul Kwak[1], Jeanyung Chey[1]; [1]Seoul National University
Topic Area: THINKING: Decision making

B138 The role of alpha power as a stimulus-specific updating signal in sensory cortex post feedback in a reinforcement learning task
Khoi Vo[1], Berry van den Berg[1,2], Benjamin Geib[1], Rene San Martin[3], Marty Woldorff[1]; [1]Duke University, [2]University of Groningen, [3]Centrode Neuroeconomia Universidad Diego Portales
Topic Area: THINKING: Decision making

B139 Tonic frontal theta as an assessment of medical decision making in the context of medical education
Jordan Middleton[1], Chad Williams[1], Bruce Wright[2], Olave E. Krigolson[1]; [1]University of Victoria, Centre for Biomedical Research, [2]University of Victoria, Division of Medical Science
Topic Area: THINKING: Decision making

B140 Uncertainty-based arbitration between incremental and episodic control over decisions
Jonathan Nicholas[1], Daphna Shohamy[1]; [1]Columbia University
Topic Area: THINKING: Decision making

Session C

Sunday, March 24, 5:00–7:00 pm, Pacific Concourse

C1 ADHD Symptoms are Associated with the Modular Structure of Intrinsic Brain Networks in a Representative Sample of Healthy Adults
Kirsten Hilger[1,2], Fiebach Christian[1,2,3]; [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]Brain Imaging Center, Goethe University Frankfurt, Frankfurt am Main, Germany
Topic Area: ATTENTION: Development & aging

C2 An Empirical Investigation of Age-Related Differences in Mind-Wandering using Triangulation of Subjective, Behavioural and Electrophysiological Measures
Catherine Moran[1], Greta Warren[1], Rónán Ó Grálaigh[1], Joanne Kenney[1], David McGovern[1], Alan Smeaton[2], Paul Dockree[1]; [1]Trinity College Dublin, The University of Dublin, [2]Dublin City University
Topic Area: ATTENTION: Development & aging

C3 An own-age bias in the hippocampus in young and older adults
Joshua D. Koen[1], Nedra Hauck[2], Michael D. Rugg[2]; [1]University of Notre Dame, [2]University of Texas at Dallas
Topic Area: ATTENTION: Development & aging

C4 Effects of working memory load on selective attention in school-age children
So-Yeon Kim[1], Hyojin Park[1], Kwanguk (Kenny) Kim[2]; [1]Department of Psychology, Duksung Women's University, [2]Department of Computer Science, Hanyang University
Topic Area: ATTENTION: Development & aging

C5 Failing to Ignore: the declined functional connection between salience network and locus coeruleus in older adults
Tae-Ho Lee[1], Sunhyung Kim[2], Mara Mather[3]; [1]Virginia Tech, [2]University of North Carolina, Chapel Hill, [3]University of Southern California
Topic Area: ATTENTION: Development & aging

C6 Losing money and motivation: Younger and older adults' response to loss incentive in a working memory task
Hyesue Jang[1], Cindy Lustig[1]; [1]University of Michigan
Topic Area: ATTENTION: Development & aging

C7 Neurodevelopmental differences of attention mechanisms in children with Type 1 diabetes: an ERP study
Geisa Gallardo-Moreno[1], Vanessa Ruiz-Stovel[1], Andrés A. González-Garrido[1,2], Fabiola R. Gómez-Velázquez[1], Nayeli Contreras-Piña[3], Miriam Jiménez-Maldonado[2,3], Teresita Villaseñor-Cabrera[2,3]; [1]Instituto de Neurociencias, CUCBA, Universidad de Guadalajara, Mexico, [2]O.P.D. Hospital Civil de Guadalajara, Mexico, [3]Departamento de Neurociencias, CUCS, Universidad de Guadalajara, Mexico
Topic Area: ATTENTION: Development & aging

C8 Using fNIRS to Investigate the Neural Processes of Dimensional Label Learning
Rachel Eddings[1], Bhoomika Nikam[1], Kara N. Lowery[1], Aaron T. Buss[1]; [1]University of Tennessee, Knoxville
Topic Area: ATTENTION: Development & aging

C9 High-definition tDCS of the prefrontal cortices modulates performance and neural activity during visuo-spatial processing
Yasra Arif[1], Rachel Spooner[1], Alex Wiesman[1], Michael Rezich[1], Elizabeth Heinrichs-Graham[1], Tony Wilson[1]; [1]University of Nebraska Medical center
Topic Area: ATTENTION: Spatial

C10 Sex differences on visuospatial tasks, solving the puzzle
Daniela E. Aguilar Ramírez[1], Kurt Robertson[1], Claudia L. R. Gonzalez[1]; [1]University of Lethbridge
Topic Area: ATTENTION: Spatial

C11 Shifting the Visual Field Leftward or Rightward Differentially Modulates Resting State Functional Connectivity
Selene Schintu[1,2], Michael Freedberg[1,3], Steve Gotts[4], Catherine A. Cunningham[1], Sarah Shomstein[2], Eric M. Wassermann[1]; [1]National Institute for Neurological Disorders and Stroke, Bethesda, USA, [2]George Washington University, Washington DC, USA, [3]Henry M. Jackson Foundation for the Advancement of Military Medicine, Maryland, USA, [4]National Institute of Mental Health, Bethesda, USA.
Topic Area: ATTENTION: Spatial

C12 Voluntary saccadic eye movements modulate visual cortex excitability through phase reset of perceptually relevant oscillations
Domenica Veniero[1], Joachim Gross[1], Gregor Thut[1]; [1]Institute of Neuroscience and Psychology, University of Glasgow
Topic Area: ATTENTION: Spatial

C13 Cognitive functioning in post-traumatic stress disorder: a meta-analysis of evidence from animal models & clinical studies
Milou Sep[1,2], Elbert Geuze[1,2], Marian Joëls[2,3]; [1]Military Mental Healthcare, Dutch Ministry of Defence, [2]University Medical Center Utrecht, the Netherlands, [3]University Medical Center Groningen, the Netherlands
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C14 Dissociable processing of emotional and neutral body movements revealed by μ-alpha and beta rhythms
Audrey Siqi-Liu[1,2], Alison Harris[1], Anthony Atkinson[3], Catherine Reed[1]; [1]Claremont McKenna College, [2]Duke University, [3]Durham University, UK
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C15 Dopaminergic effects on PTSD-associated mnemonic overgeneralization
Andrew Westphal[1,2,3], Nicholas Rodriguez[1,2,3], Andrew Kayser[1,2,3]; [1]University of California, San Francisco, [2]United States Department of Veterans Affairs, [3]University of California, Berkeley
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C16 Event Related Potentials of Negative-Valanced Visual Distractors on Visual Working Memory
Lauren Dacorro[1,2], Alan Leggit[1], Alexander Simon[1], Ken Rauen[2], Peter Wais[1], Mark Geisler[2]; [1]University of California, San Francisco, [2]San Francisco State University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C17 Executive functioning predicts positive preferences in false recognition memory in older adults
Zhiwei Zheng[1], Juan Li[1]; [1]Chinese Academy of Sciences
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C18 Exploring the Facial Feedback Hypothesis in Moebius Syndrome
Jessica Jordan[1], Chris Baker[1], Leslie Ungerleider[1], Shruti Japee[1]; [1]Laboratory of Brain and Cognition, NIMH, NIH
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C19 Growth mindset supports cognitive performance and learning in children: Behavioral and neural evidence
Jeremy Rudoler[1], Lang Chen[1], Hyesang Chang[1], Miram Rosenberg-Lee[2,1], Emma Adair[1], Vinod Menon[1]; [1]Department of Psychiatry and Behavioral Sciences, Stanford University, Stanford, CA, [2]Department of Psychology, Rutgers University, Newark, NJ 07102, United States
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C20 Neural and Behavioral Mechanisms Underlying the Relationship between Everyday Pain and Cognitive Performance
Joanna E. Witkin[1], Steven R. Anderson[1], Taylor Bolt[2], Maria M. Llabre[1], Elizabeth A. Reynolds Losin[1]; [1]University of Miami, [2]Emory University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C21 Neural responses of love: a meta-analysis of functional neuroimaging studies in maternal and passionate love
Hsuan-Chu Shih[1], Chih-Mao Huang[1,2]; [1]Department of Biological Science and Technology, National Chiao-Tung University, Taiwan, [2]Cognitive Neuroscience Laboratory, Institute of Linguistics, Academia Sinica, Taiwan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C22 Predicting whole-head brain activity with traits related to empathy in healthy subjects
Anna Aksiuto[1], Janne Kauttonen[1], Iiro Jääskeläinen[1], Mikko Sams[1]; [1]Aalto University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C23 Prefrontal and visual representations during encoding of emotional information
Doyoung Park[1], Sue-Hyun Lee[1]; [1]Korea Advanced Institute of Science and Technology
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C24 Reduced working memory capacity under threatening context
Richard Ward[1], Hannah Sallman[1], Carter Ginter[1], Salahadin Lotfi[1], Han-Joo Lee[1], Christine L. Larson[1]; [1]University of Wisconsin - Milwaukee
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C25 The Effect of Working Memory Span on Resolving Emotional Conflicts
Sertuğ Gürel[1], Şule Taşlıyurt[1], Zeynep Başgöze[1,2]; [1]Başkent University, [2]University of California, Berkeley
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C26 Stopping natural desires: defining the hypersexuality network in impulse control disorders in Parkinson's disease
Ignacio Obeso[1], José Ángel Pineda-Pardo[1], Lydia Vela[1], Fernando Alonso[1], Jose A. Obeso[1]; [1]CINAC
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

C27 The impact of depressive rumination on the course of depressive symptoms and cognitive performance in time
Martin Pastrnak[1,2], Gabriela Vechetova[1,3], Magdalena Bartoskova[1], Marcela Sevcikova[1,3], Jiri Stipl[1,4], Marek Vranka[1,4], Marek Preiss[1]; [1]National Institute of Mental Health, Czech Republic, [2]Third Faculty of Medicine, Charles University, Czech Republic, [3]First Faculty of Medicine, Charles University, Czech Republic, [4]Faculty of Arts, Charles University, Czech Republic
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C28 The Influence of Media Violence Exposure on the Neural Correlates of Explicit Emotional Face Processing and Subsequent Response Inhibition
Zoa Glab[1], Laura A. Stockdale[1,2], Sylena Wilson[1], Marley Hornewer[3], Sara Temelkova[1], Rebecca L. Silton[1], Robert G. Morrison[1]; [1]Loyola University Chicago, [2]Brigham Young University, [3]University of Michigan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C29 Validity and response of neural biomarkers for pain response and cognitive modulation in the context of mindfulness-based intervention
Joseph Wielgosz[1,2,3], David Perlman[3], Jeanette Mumford[3], Tor Wager[4], Richard Davidson[3]; [1]Stanford University, [2]VA Palo Alto Healthcare System, [3]University of Wisconsin-Madison, [4]University of Colorado Boulder
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

C30 Task Related Brain Connectivity Decreases After Cognitive Training
James Kent[1], Hyun Kyu Lee[2], Chris Wendel[1], Fred Wolinsky[1], Eric Foster[1], Michael Merzenich[2], Michelle Voss[1]; [1]University of Iowa, [2]Posit Sciences
Cognitive training remains a controversial figure in the world of interventions.
Topic Area: EXECUTIVE PROCESSES: Development & aging

C31 The effects of CBT-I on Cognitive Functioning in individuals with Insomnia and Mild Cognitive Impairment
Kathleen O'Hora[1], Clara Lee[1], Alison Buchanan[1], Beatriz Hernandez[1,2], Jamie M. Zeitzer[1,2], Leah Friedman[1,2], Donn Posner[1,2], Clete Kushida[1], Jerome A. Yesavage[1,2], Andrea N. Goldstein-Piekarski[1,2]; [1]Mental Illness Research Education and Clinical Center, VA Palo Alto Health Care System, Palo Alto, CA, USA., [2]Stanford University, Stanford, CA, USA.
Topic Area: EXECUTIVE PROCESSES: Development & aging

C32 Acute Pain Disrupts Sustained Attention
Gene Brewer[1], Mattew Robison[1], Derek Ellis[1], Chris Blais[1], Paul Karoly[1]; [1]Arizona State University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C33 Assessing causal contributions of parietal cortex to learned cognitive flexibility
Christina Bejjani[1], Peter Whitehead[1], Anthony Sali[2], Yu-Chin Chiu[3], Tobias Egner[1]; [1]Duke University, [2]Wake Forest University, [3]Purdue University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C34 Behavioral and Functional Magnetic Resonance Imaging Evidence of Flow State Dynamics During Naturalistic Gameplay
Richard Huskey[1], Justin Robert Keene[2], Shelby Wilcox[1], Robyn Adams[3], Christina J. Najera[2], Natalie Petit[1]; [1]The Ohio State University, [2]Texas Tech University, [3]Michigan State University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C35 Connectivity of cognitive control networks at rest and task switching performance
Pauline Baniqued[1], Joseph Schenker[1], Mark D'Esposito[1]; [1]University of California, Berkeley
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C36 Corticostriatal white-matter tracts supporting habitual behavior in the lab and in real life
Irene van de Vijver[1], Aukje Verhoeven[1], Sanne de Wit[1]; [1]University of Amsterdam, the Netherlands
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C37 Disentangling the roles of cue visibility and knowledge in learning cognitive control
Christina Bejjani[1], Ziwei Zhang[1], Jack Dolgin[1], Tobias Egner[1]; [1]Duke University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C38 EEG reveals different mechanisms for cognitive control retention, based on trait working memory ability
Jacqueline R. Janowich[1], James F. Cavanagh[1]; [1]University of New Mexico
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C39 Impaired cognitive flexibility and brain network of obsessive-compulsive disorder.
Hirofumi Tomiyama[1], Keitaro Murayama[1], Tomihiro Nakao[1]; [1]Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C40 On the Relationships Between Autistic Traits, Executive Functioning, Self-Control, and Exercise
Lauren Mason[1], Brandon Zimiga[1], Regina Anders-Jefferson[1], Katerinne Alvarado[1], Lesley Primero[1], Matthew Frost[1], Jessica Gohil[1], Melissa Gonzalez[1], Celeste Lopez[1], Yocelyne Silva[1], Kenneth Paap[1]; [1]San Francisco State University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C41 The effects of task switching on alpha and gamma oscillations predict behavioral switch costs
Amy L. Proskovec[1,2], Alex I. Wiesman[2], Tony W. Wilson[1,2]; [1]University of Nebraska - Omaha, [2]University of Nebraska Medical Center
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

C42 Characterizing the relationship between working memory capacity and load-related increases in fMRI activity
Catherine R. Walsh[1], Jean-Baptiste Pochon[1], Kristen D. Enriquez[1], Holly Truong[1], Agatha Lenartowicz[1], Sandra K. Loo[1], Catherine A. Sugar[1], Carrie E. Bearden[1], Robert M. Bilder[1], Jesse Rissman[1]; [1]University of California, Los Angeles
Topic Area: EXECUTIVE PROCESSES: Working memory

C43 Concurrent alpha and gamma band synchronization coordinates the maintenance of visual features and object representation in working memory
Hamed Haque[1], Sheng H. Wang[1], J. Matias Palva[2], Satu Palva[2]; [1]Helsinki Institute of Life Sciences, Neuroscience Center, University of Helsinki, Finland, [2]Helsinki Institute of Life Sciences Neuroscience Center, University of Helsinki, Finland, Center for Cognitive Neuroimaging , Institute of Neuroscience and Psychology University of Glasgow, UK
Visual working memory (VWM) sustains visual information online for future
Topic Area: EXECUTIVE PROCESSES: Working memory

C44 Independent representation of active and latent decision boundaries in working-memory-guided behavior
Paul Muhle-Karbe[1,2], Mark G. Stokes[1,2], Nicholas E. Myers[1,2,3]; [1]Department of Experimental Psychology, University of Oxford, [2]Oxford Centre for Human Brain Activity, Wellcome Centre for Integrative Neuroimaging, University of Oxford, [3]Helen Wills Neuroscience Institute, UC Berkeley
Topic Area: EXECUTIVE PROCESSES: Working memory

C45 Individuals with autism exhibit atypical pupillary responses under cognitive load
Michael C. Granovetter[1,2], Charlie S. Burlingham[3], David J. Heeger[3], Marlene Behrmann[1]; [1]Carnegie Mellon University, [2]University of Pittsburgh, [3]New York University
Topic Area: EXECUTIVE PROCESSES: Working memory

C46 Neural Underpinnings of Orthographic Working Memory: Inferences from Lesion Data
Venu Balasubramanian[1,2]; [1]Seton Hall University, [2]Johns Hopkins University School of Medicine
Topic Area: EXECUTIVE PROCESSES: Working memory

C47 Prefrontal Control of Cross-Frequency Coupling in Posterior Regions
Elizabeth Johnson[1,2], Mohsen Dezfouli[3], Saeideh Davoodi[3], Robert Knight[1], Mohammad Daliri[3]; [1]University of California, Berkeley, [2]Wayne State University, [3]Iran University of Science and Technology
Topic Area: EXECUTIVE PROCESSES: Working memory

C48 Top-down modulation of delayed response for visual short-term memory
Bo-Cheng Kuo[1]; [1]National Taiwan University
Topic Area: EXECUTIVE PROCESSES: Working memory

C49 Transcranial direct current stimulation over bilateral anterior temporal lobes modulates hippocampal-occipital functional connectivity and visual working memory precision
Weizhen Xie[1,2], Lilian Azer[1], Hyung-bum Park[1], Marcus Cappiello[1], Weiwei Zhang[1]; [1]University of California, Riverside, [2]National Institutes of Health
Topic Area: EXECUTIVE PROCESSES: Working memory

C50 Conflict Monitoring and Resolving Lexical-Prosodic Incongruence of Emotion Prosody Identification in Children with High-Functioning Autism
Feng-Ming Tsao[1], Wei-Chin Hsu[2], Huei-Mei Liu[3]; [1]National Taiwan University, [2]National Taiwan University of Science and Technology, [3]National Taiwan Normal University
Topic Area: LANGUAGE: Development & aging

C51 Electrophysiological correlates of auditory discourse processing in bilinguals across the lifespan
Angela Grant[1,2], P. Tristin Best[1], Natalie Phillips[1,2]; [1]Concordia University, [2]Centre for Research on Brain, Language, and Music
Topic Area: LANGUAGE: Development & aging

C52 Parental Reflective Functioning and Children's Emergent Reading Skills: ERP and longitudinal behavioral measures
Airey Lau[1,2], Karen Froud[2], Kenneth Pugh[1,3]; [1]Haskins Laboratories, Yale University, [2]Teachers College, Columbia University, [3]University of Connecticut
Topic Area: LANGUAGE: Development & aging

C53 Segmentation of the Frontal Aslant Tract (FAT) and its relation to verbal fluency development in children
Dea Garic[1], Diana P. Behar[1], Hector Borges[1], Valentina Lino[1], Armando Torres[1], Anthony S. Dick[1]; [1]Florida International University
Topic Area: LANGUAGE: Development & aging

C54 Bilingual Language Processing: An ERP Study of Cognate Status
Yazmin E. Medina[1], Jamie Renna[1], Phillip J. Holcomb[1], Katherine J. Midgley[1]; [1]San Diego State University
Topic Area: LANGUAGE: Lexicon

C55 Distinct effects of intensive perceptual and articulatory rehearsal in neural learning of novel word-forms with familiar and unfamiliar phonology
Lilli Kimppa[1], Teija Kujala[1], Taru Käkönen[1], Mira Roikonen[1], Mika Koverola[1], Ilari Kousa[1], Lari Linden[1], Yury Shtyrov[2]; [1]University of Helsinki, [2]Aarhus University
Topic Area: LANGUAGE: Lexicon

C56 Interactions between transposed-letter ERP priming effects and orthographic neighborhood density
Cecile Mahnich[1], Jonathan Grainger[2], Phillip Holcomb[1], Gabriela Meade[1,3]; [1]San Diego State University Research Foundation, [2]Laboratoire de Psychologie Cognitive, Aix-Marseille Université & CNRS, [3]University of California, San Diego
Topic Area: LANGUAGE: Lexicon

C57 The critical connection: How damage of the arcuate fasciculus impacts language processing in aphasia
Maria V. Ivanova[1,2,3], Allison Zhong[1], And Turken[2], Brian Curran[2], Nina F. Dronkers[1,2,4]; [1]University of California, Berkeley, CA, USA, [2]Center for Aphasia and Related Disorders, VA Northern California Health Care System, Martinez, CA, USA, [3]National Research University Higher School of Economics, Center for Language and Brain, Moscow, Russia, [4]University of California, Davis, CA, USA
Topic Area: LANGUAGE: Lexicon

C58 Tracking the time-course of visual word recognition using different types of word-like stimuli
Natasja Massa[1], Karen Emmorey[1], Katherine J. Midgley[1], Phillip J. Holcomb[1]; [1]San Diego State University
Topic Area: LANGUAGE: Lexicon

C59 A concurrent investigation of relationships between language production and comprehension in schizophrenia
Eric J Tan[1,2], Susan L Rossell[1,2]; [1]Centre for Mental Health, Swinburne University of Technology, Melbourne, Australia, [2]Department of Psychiatry, St Vincent's Hospital, Melbourne, Australia
Topic Area: LANGUAGE: Other

C60 The Supplementary Use of Praat in order to Effectively Train Phonemic Awareness
Rebekah Tozier[1], Ethan Torpy[2], Kytja Voeller[3]; [1]Western Institute for Neurodevelopmental Studies and Interventions
Topic Area: LANGUAGE: Other

C61 Benefits of semantic predictability to the on-line building of linguistic structures
Yayue Gao[1]; [1]Zhejiang University
Topic Area: LANGUAGE: Semantic

C62 Delta-gamma phase-locking indexes composition of predicates
Jonathan R. Brennan[1], Andrea E. Martin[2]; [1]University of Michigan, [2]Max Planck Institute for Psycholinguistics
Topic Area: LANGUAGE: Semantic

C63 Influence of event knowledge on semantic expectation and integration: An ERP study
Elisabeth Rabs[1], Francesca Delogu[1], Heiner Drenhaus[1], Matthew W. Crocker[1]; [1]Saarland University
Topic Area: LANGUAGE: Semantic

C64 N400, dispositional affect and sentence processing
Veena Dwivedi[1], Janahan Selvanayagam[2]; [1]Brock University, [2]Western University
Topic Area: LANGUAGE: Semantic

C65 Native language affects visual processing by activating categorical template of objects via the modulation of alpha oscillations
Piermatteo Morucci[1], Francesco Giannelli[2], Nicola Molinaro[1]; [1]Basque Center on Cognition Brain and Language, [2]University of Barcelona
Topic Area: LANGUAGE: Semantic

C66 Neural correlates for comprehending perspective-independent and perspective-dependent spatial expressions in ASL and English
Stephen McCullough[1], Christopher Brozdowski[1], Karen Emmorey[1]; [1]San Diego State University
Topic Area: LANGUAGE: Semantic

C67 Preliminary ERP evidence for different rapid feedforward orthographic and phonological masked-priming effects
Hana Zimman[1], Stephanie Osmond[1], Karen Emmorey[1], Katherine J. Midgley[1], Phillip J. Holcomb[1]; [1]San Diego State University
Topic Area: LANGUAGE: Semantic

C68 Temporal Dynamics of lexical and semantic features of spoken words: an MEG study.
Lorenzo Vignali[1,2], Yangwen Xu[1,2], Jacopo Turini[3], Olivier Collignon[1,4], Davide Crepaldi[2], Roberto Bottini[1,2]; [1]University of Trento, [2]International School for Advanced Studies, [3]Goethe University, [4]University of Louvain
Topic Area: LANGUAGE: Semantic

C69 The language of arithmetic in children: solution correctness and problem size influence N400 amplitude
Danielle S. Dickson[1], Amandine E. Grenier[1], Nicole Y. Y. Wicha[1]; [1]The University of Texas at San Antonio
Topic Area: LANGUAGE: Semantic

C70 Paragrammatism: a lesion-symptom mapping study
William Matchin[1], Alexandra Basilakos[1], Dirk den Ouden[1], Brielle Stark[2], Julius Fridriksson[1], Gregory Hickok[3]; [1]University of South Carolina, [2]Indiana University, [3]University of California, Irvine
Topic Area: LANGUAGE: Syntax

C71 Age differences in the neural underpinnings of voluntary vs involuntary memory retrieval.
Sarah E. Henderson[1], Jessica Callegari[1], James A. Desjardins[1], Sidney J. Segalowitz[1], Karen L. Campbell[1]; [1]Brock University
Topic Area: LONG-TERM MEMORY: Development & aging

C72 Autobiographically significant concepts within older and younger adults
Rachel Lambert[1], Anne-Marie Minihane[2], Saber Sami[2], Michael Hornberger[2], Louis Renoult[1]; [1]School of Psychology, University of East Anglia, [2]Norwich Medical School, University of East Anglia
Topic Area: LONG-TERM MEMORY: Development & aging

C73 Effect of Aging Stereotype Activation on Older Adults' Memory and Neural Activity
Yung-Tsen Chen[1], Kelly E. Faig[1], Ian M. McDonough[2], Greg J. Norman[1], David A. Gallo[1]; [1]The University of Chicago, [2]The University of Alabama
Topic Area: LONG-TERM MEMORY: Development & aging

C74 Micro and macro sleep changes associated with tau and β-amyloid pathology in the aging human brain
Joseph Winer[1], Bryce Mander[1,2], Randolph Helfrich[1,3], Anne Maass[1,4], Theresa Harrison[1], Suzanne Baker[5], Robert Knight[1], William Jagust[1,5], Matthew Walker[1]; [1]University of California Berkeley, [2]University of California Irvine, [3]University of Oslo, [4]German Center for Neurodegenerative Diseases, [5]Lawrence Berkeley National Laboratory
Topic Area: LONG-TERM MEMORY: Development & aging

C75 Predictors of individual differences in recognition memory in healthy ageing
Helena Gellersen[1], Ben G. Farrar[1], Alexandra N. Trelle[2], Richard N. Henson[1], Jon S. Simons[1]; [1]University of Cambridge, [2]Stanford University
Topic Area: LONG-TERM MEMORY: Development & aging

C76 The effects of rTMS on source memory and underlying neurocognitive mechanism in normal older adults
Xiaoyu Cui[1], Weicong Ren[1,2], Juan Li[1]; [1]Institute of Psychology, Chinese Academy of Sciences, Beijing, China, [2]Hebei Normal University, China
Topic Area: LONG-TERM MEMORY: Development & aging

C77 Verbal and Visual Memory in Metabolic Versus Control Participants Across the Adult Lifespan
Tracey Slonim[1], Andres Fiello[1], Lori Haase-Alasantro[2], Claire Murphy[1,2]; [1]San Diego State University, [2]University of California, San Diego
Topic Area: LONG-TERM MEMORY: Development & aging

C78 An ERP study of dream lucidity and reality monitoring
SHIH-KUEN CHENG[1], Moo-Rung Loo[1]; [1]Institute of Cognitive Neuroscience, National Central University, Taiwan
Topic Area: LONG-TERM MEMORY: Episodic

C79 Close, but not quite: Memory precision across spatial frames of reference over the lifespan
Natalia Ladyka-Wojcik[1], Iva K. Brunec[1], Nathanael Shing[2], Jackson Liang[1], Jennifer D. Ryan[1,2], Rosanna K. Olsen[1,2], Morgan D. Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute

Topic Area: LONG-TERM MEMORY: Episodic

C80 Configuration Manipulation Impacts Neural Patterns in Medial Temporal Lobe in Associative Memory Retrieval
Jordan Chamberlain[1], Chloe Hultman[2], Valeria Martinez[1], Catherine Carpenter[1], Amy Overman[2], Nancy Dennis[1]; [1]The Pennsylvania State University, [2]Elon University
Topic Area: LONG-TERM MEMORY: Episodic

C81 Dynamic Integration of the Hippocampus during Episodic Counterfactual Thinking
Christopher Camp[1], Benjamin Geib[1], Matthew Stanley[1], Natasha Parikh[1], Felipe De Brigard[1]; [1]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

C82 High Ruminators Use Different Neural Processes During a Recognition Memory Task
Nicole A Forner[1], Robert S Ross[1]; [1]University of New Hampshire
Topic Area: LONG-TERM MEMORY: Episodic

C83 Memory benefits of sleep reactivation depend on the size of the targeted group
Eitan Schechtman[1], James W. Antony[2], Anna Lampe[1], Kenneth A. Norman[2], Ken A. Paller[1]; [1]Department of Psychology, Northwestern University, Evanston, IL 60208, USA, [2]Princeton Neuroscience Institute, Princeton University, Princeton, NJ 08544, USA
Topic Area: LONG-TERM MEMORY: Episodic

C84 Neural entrainment to naturalistic rhythm: Effects on memory
Paige Hickey[1], Hannah Merseal[2], Catherine Gross[1], Annie Barnett-Young[1], Alexandra Cohen[1], Aniruddh Patel[1], Elizabeth Race[1]; [1]Tufts University, [2]Wheaton College
Topic Area: LONG-TERM MEMORY: Episodic

C85 Predictors of sleep-dependent memory consolidation
Dan Denis[1,2], Verda Bursal[1], Craig Poskanzer[1], Lily Charron[1], Robert Stickgold[1,2]; [1]Beth Israel Deaconess Medical Center, [2]Harvard Medical School
Topic Area: LONG-TERM MEMORY: Episodic

C86 Structural and Functional MRI Evidence for Distinct Medial Temporal and Prefrontal Roles in Context-Dependent Relational Memory
Hillary Schwarb[1], Curtis L. Johnson[2], Michael R. Dulas[1], Bradley P. Sutton[1], Joel L. Voss[3], Neal J. Cohen[1]; [1]University of Illinois at Urbana Champaign, [2]University of Delaware, [3]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

C87 Successful Encoding of Item and Source Information is Predicted by Graded Neural Activity
Eleanor Liu[1], Joshua Koen[2], Christopher Hawkins[1], Michael Rugg[1]; [1]Center for Vital Longevity and School of Behavioral and Brain Sciences, University of
Topic Area: LONG-TERM MEMORY: Episodic

C88 The core episodic simulation network dissociates as a function of subjective experience and objective content
Preston P. Thakral[1], Kevin P. Madore[2], Daniel L. Schacter[1]; [1]Department of Psychology, Harvard University, [2]Department of Psychology, Stanford University
Episodic simulation – the mental construction of a possible future event – has
Topic Area: LONG-TERM MEMORY: Episodic

C89 Theta entrainment after learning enhances episodic memory
Nathan Whitmore[1], Ken A. Paller[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

C90 Under Pressure: The Null Effects of Psychosocial-Stress on Episodic Memory Consolidation
Elizabeth McManus[1], Deborah Talmi[1], Hamied Haroon[1], Nils Muhlert[1]; [1]The University of Manchester
Topic Area: LONG-TERM MEMORY: Episodic

C91 An ERP analysis comparing visual and verbal long-term memory mechanisms through access-based forgetting.
Shelby Smith[1], Scott Wittman[2], Caleb Robinson[2], Jada Johnson[2], Joshua Grzywana[2], Alaina Myers[2], Amber Seaman[2], April Taylor[2], Krista Price[2], Austin Tatum[2], Richard Ward[3], Stephanie Simon-Dack[2]; [1]University of New Hampshire, [2]Ball State University, [3]University of Wisconsin - Milwaukee
Topic Area: LONG-TERM MEMORY: Other

C92 Associative Information in the Hippocampus and the Visual Cortex during Cued Recall
Joonyoung Kang[1], Sue-Hyun Lee[1]; [1]Korea Advanced Institute of Science and Technology
Topic Area: LONG-TERM MEMORY: Other

C93 Neural correlates of judgments of learning: an EEG study
Beatriz Martin-Luengo[1], Seungah Lee[1], Lylia Mikhailova[1,2], Andriy Myachykov[1,3], Yury Shtyrov[1,4,5]; [1]Institute of Cognitive Neuroscience, National Research University - Higher School of Economics, Russia, [2]Faculty of Biology, Nizhny Novgorod State University, Russia, [3]Northumbria University, United Kingdom, [4]Aarhus University, Denmark, [5]Saint Petersburg State University, Russia
Topic Area: LONG-TERM MEMORY: Other

C94 The Effects of Target-lure Similarity to False Alarms on Memory Specificity: An fMRI Study
Emily R. Maxwell[1], Whitney D. Allen[1], Daniel K. Bjornn[1], Nathan M. Muncy[1], Michael J. Larson[1], C. Brock Kirwan[1]; [1]Brigham Young University
Topic Area: LONG-TERM MEMORY: Other

C95 Transformation of event representations along middle temporal gyrus
Anna Leshinskaya[1], Sharon L. Thompson-Schill[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Other

C96 Mnemonic Constraints on Value-Based Decision Making
Zhihao Zhang[1], Shichun Wang[1], Andrew Kayser[2,3,4], Ming Hsu[1,2]; [1]Haas School of Business, University of California, Berkeley, [2]Helen Wills Neuroscience Institute, University of California, Berkeley, [3]Department of Neurology, University of California, San Francisco, [4]Department of Neurology, VA Northern California Health Care System
Topic Area: LONG-TERM MEMORY: Semantic

C97 Using fMRI to explore the effects of task instructions and response strategy
Sebastien Helie[1], Farzin Shamloo[1], Madison Fansher[2], Shawn Ell[3]; [1]Purdue University, [2]University of Michigan, [3]University of Maine
Topic Area: LONG-TERM MEMORY: Skill learning

C98 'Print tuning' as neurophysiological marker of early typical and delayed reading acquisition
Ben Maassen[1,2], Toivo Glatz[3]; [1]University of Groningen, The Netherlands, [2]University Medical Center Groningen, The Netherlands, [3]Catholic University Leuven, Belgium
Topic Area: METHODS: Electrophysiology

C99 A Wearable Heart Monitor For Measuring Changes Of The Sympathetic Nervous System
Viktoriya Babenko[1], Neil Dundon[1], Matthew Cieslak[2], Alan Macy[3], Richard Scott[3], Alexandra Stump[1], Morgan Fitzgerald[1], Shefali Verma[1], Cepideh Razavi[1], Scott T. Grafton[1]; [1]University of California, Santa Barbara, [2]University of Pennsylvania, [3]Biopac Systems, Inc.
Topic Area: METHODS: Electrophysiology

C100 Complexity Matching to EEG Response of Speech and Music
Adolfo G. Ramirez-Aristizabal[1], Daniel C. Comstock[1], Christopher T. Kello[1]; [1]University of California Merced
Topic Area: METHODS: Electrophysiology

C101 Is it possible to distinguish true and spurious cross-frequency coupling?
Felix Siebenhühner[1], Sheng H Wang[1], Gabriele Arnulfo[1,2], Lino Nobili[1,2], Matias Palva[1,3], Satu Palva[1,3]; [1]University of Helsinki, Finland, [2]University of Genoa, Italy, [3]University of Glasgow, United Kingdom
Topic Area: METHODS: Electrophysiology

C102 Measuring Operator Understanding of ADAS via the P3
Steven Chong[1], Dean Cisler[1], Stephanie Tulk-Jesso[1], Carryl Baldwin[1]; [1]George Mason University
Topic Area: METHODS: Electrophysiology

C103 Brainstem atrophy in Gulf War Illness
Yu Zhang[1], Timothy Avery[1,2], Andrei Vakhtin[1,2], Danielle Mathersul[1,2], J. Wesson Ashford[1,2], Peter Bayley[1,2], Ansgar Furst[1,2]; [1]War Related Illness and Injury Study Center (WRIISC), VA Palo Alto Health Care System, [2]Stanford University
Topic Area: METHODS: Neuroimaging

C104 fMRI pattern similarity analyses reveal working memory and perceptual coding at both regional and brain-network level
Maria Z. Gehred[1], Joset A. Etzel[1], Todd S. Braver[1]; [1]Washington University in St. Louis
Topic Area: METHODS: Neuroimaging

C105 Hierarchical Bayesian Analyses for Modeling BOLD Time Series Data
M. Fiona Molloy[1], Giwon Bahg[1], Xiangrui Li[1], Mark Steyvers[2], Zhong-Lin Lu[1], Brandon M. Turner[1]; [1]The Ohio State University, [2]University of California, Irvine
Topic Area: METHODS: Neuroimaging

C106 Influence of genetic relatedness on fMRI activation pattern similarity during the HCP working memory task
Joset A. Etzel[1], Maria Z. Gehred[1], Arpana Agrawal[1], Todd S. Braver[1]; [1]Washington University in St. Louis
Topic Area: METHODS: Neuroimaging

C107 Structural brain network topologies associate with aspects of value-based decision-making
Cristina Bañuelos[1], Alexis Porter[1], Kirk I Erickson[2,3], Timothy Verstynen[1,3]; [1]Carnegie Mellon University, [2]University of Pittsburgh School of Medicine, [3]Center for the Neural Basis of Cognition, Carnegie Mellon University and University of Pittsburgh
Topic Area: METHODS: Neuroimaging

C108 Adaptive Design Optimization of Real-time fMRI Experiments using a Joint Modeling Framework
Giwon Bahg[1], Per Sederberg[2], Jay Myung[1], Xiangrui Li[1], Mark Pitt[1], Zhong-Lin Lu[1], Brandon Turner[1]; [1]The Ohio State University, [2]University of Virginia
Topic Area: METHODS: Neuroimaging

C109 Short-term meditation training increases inter-network connections in the triple networks
Winson Fu Zun Yang[1], Yiyuan Tang[1,2]; [1]Department of Psychological Sciences, Texas Tech University, [2]Center for Advanced Study in the Behavioral Sciences, Stanford University
Topic Area: OTHER

C110 Defining Sensory Subtypes in Young Children with Autism or Typical Development Using Loudness-Dependent Auditory ERPs
Patrick Dwyer[1], Xiaodong Wang[1], Rosanna De Meo-Monteil[1], Fushing Hsieh[1], Clifford Saron[1], Susan M. Rivera[1]; [1]UC Davis
Topic Area: PERCEPTION & ACTION: Audition

C111 Evoked activity plays a very substantial role in the cortical tracking of natural speech.
Edmund Lalor[1,2]; [1]University of Rochester, [2]Trinity College Dublin
Topic Area: PERCEPTION & ACTION: Audition

C112 Neural Correlates of Familiarity in Music Listening: A Systematic Review and a Neuroimaging Meta-Analysis
Carina Freitas[1,2], Enrica Manzato[3], Alessandra Burini[3], Margot J. Talyor[1,4,5,6], Jason P. Lerch[6,7,8], Evdokia Anagnostou[1,2,6,9]; [1]Faculty of Medicine, Institute of Medical Science, University of Toronto, Toronto, ON, Canada, [2]Bloorview Research Institute, Holland Bloorview Kids Rehabilitation Hospital, Toronto, ON, Canada, [3]Sant'Anna School of Advanced Studies, Pisa, Italy, [4]Department of Diagnostic Imaging, Hospital for Sick Children, Toronto, ON, Canada, [5]Department of Psychology, University of Toronto, Toronto, ON, Canada, [6]Neuroscience & Mental Health Program, Hospital for Sick Children Research Institute, Toronto, ON, Canada, [7]Mouse Imaging Centre, Hospital for Sick Children, Toronto, ON, Canada, [8]Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada, [9]Department of Pediatrics, University of Toronto, Toronto, ON, Canada
Topic Area: PERCEPTION & ACTION: Audition

C113 Neural dynamics of human auditory perception across space and time
Matthew Lowe[1], Yalda Mohsenzadeh[1], Benjamin Lahner[1], Santani Teng[1,2], Ian Charest[3], Aude Oliva[1]; [1]Massachusetts Institute of Technology, [2]Smith-Kettlewell Eye Research Institute, [3]University of Birmingham
Topic Area: PERCEPTION & ACTION: Audition

C114 Speech in noise versus simulated cochlear implant (CI) speech: Assessing co-activation between temporal and frontal cortices during an event-related, speech perception task
Jessica Defenderfer[1], Mark Hedrick[1], Patrick Plyler[1], Sobanawartiny Wijeakumar[2], Aaron Buss[3]; [1]University of Tennessee Health Science Center, [2]University of Stirling, UK, [3]University of Tennessee, Knoxville
Topic Area: PERCEPTION & ACTION: Audition

C115 Testing the neural entrainment hypothesis by dissociating periodic stimulation from temporal predictions.
Luca Iemi[1], Charles E. Schroeder[1,2], Saskia Haegens[1,3]; [1]Department of Neurological Surgery, Columbia University College of Physicians and Surgeons, New York, NY 10032, USA, [2]Cognitive Neuroscience and Schizophrenia Program, Nathan Kline Institute, Orangeburg, New York 10962, [3]Centre for Cognitive Neuroimaging, Donders Institute for Brain, Cognition and Behaviour, Radboud University Nijmegen, Nijmegen, 6500 HB, the Netherlands
Topic Area: PERCEPTION & ACTION: Audition

C116 Audiovisual Associations: The role of auditory stimulus properties in predicting visual image choice
Keith McCarthy[1], Kaya G. Mondry[1], Ferrinne Spector[1]; [1]Edgewood College
Topic Area: PERCEPTION & ACTION: Multisensory

C117 Double-Blind Study of Visual Imagery in Grapheme-Color Synesthesia
EunSeon Ahn[1], David Brang[1]; [1]University of Michigan
Topic Area: PERCEPTION & ACTION: Multisensory

C118 Lesion-symptom mapping analysis of interdependence of motor and language systems
Analia Arevalo[1], Guilherme Lepski[1,2], Timothy Herron[3], Nina Dronkers[3,4], Juliana Baldo[3]; [1]University of Sao Paulo School of Medicine, Brazil, [2]University of Tuebingen, Germany, [3]VA Northern California Health Care System, [4]University of California, Berkeley
Topic Area: PERCEPTION & ACTION: Multisensory

C119 Music perception as a multisensory experience
Simon Lacey[1], James Nguyen[1], K. Sathian[1]; [1]Penn State College of Medicine
Topic Area: PERCEPTION & ACTION: Multisensory

C120 Neurobiology of self-agency during reality monitoring and speech monitoring
Karuna Subramaniam[1], Leighton Hinkley[1], Hardik Kothare[1], Danielle Mizuiri[1], John Houde[1], Srikantan Nagarajan[1]; [1]University of California San Francisco
Topic Area: PERCEPTION & ACTION: Multisensory

C121 Spatiotemporal information conveyed by crossmodal phase-reset: An electrocorticography approach
John Plass[1], EunSeon Ahn[1], Aleksandra Sherman[2], Vernon Towle[3], William Stacey[1], Vibhangini Wasade[4], James Tao[3], Shasha Wu[3], Naoum Issa[3], Marcia Grabowecky[5], Satoru Suzuki[5], David Brang[1]; [1]University of Michigan, [2]Occidental College, [3]University of Chicago, [4]Henry Ford Hospital, [5]Northwestern University
Topic Area: PERCEPTION & ACTION: Multisensory

C122 Visual optimization of auditory stream segregation in a 'cocktail party'
Niti Jaha[1], Antoine Shahin[1]; [1]University of California, Davis
Topic Area: PERCEPTION & ACTION: Multisensory

C123 When speech disagrees with your reach, grasping with your right and left hands differ from each
Nicole A. van Rootselaar[1], Bailey Way[1], Claudia L.R. Gonzalez[1]; [1]University of Lethbridge
Topic Area: PERCEPTION & ACTION: Multisensory

C124 Anticipation shapes consciousness: The neural dynamics of temporal prediction in visual awareness
Mathieu Landry[1], Jason Da Silva Castanheira[1], Sylvain Baillet[1], Amir Raz[1,2]; [1]McGill University, [2]Chapman University
Topic Area: PERCEPTION & ACTION: Vision

C125 Can Processing Of Face Trustworthiness Bypass Early Visual Cortex? A Transcranial Magnetic Stimulation Masking Study
Shanice E. W. Janssens[1,2], Alexander T. Sack[1,2], Sarah Jessen[3], Tom A. De Graaf[1,2]; [1]Maastricht University, Maastricht, The Netherlands, [2]Maastricht Brain Imaging Centre, Maastricht, The Netherlands, [3]University of Lübeck, Lübeck, Germany
Topic Area: PERCEPTION & ACTION: Vision

C126 Development of an ERP-based Cognitive Assessment
Mayuko Takehara[1], Ryohei Hasegawa[2]; [1]University of Tsukuba, [2]National Institute of Advanced Industrial Science and Technology
Topic Area: PERCEPTION & ACTION: Vision

C127 Embodied emotion correlates with personality traits- A study with somatosensory- evoked potentials
Vasiliki Meletaki[1], Beatriz Calvo-Merino[1], Irena Arslanova[1], Bettina Forster[1]; [1]City, University of London
Topic Area: PERCEPTION & ACTION: Vision

C128 Statistical expectations about target identity impact early orientation by interacting with the encoding of target location
Uri Hasson[1], Giuseppe Notaro[1]; [1]The University of Trento
Topic Area: PERCEPTION & ACTION: Vision

C129 A cognitive map of social network space
Douglas Miller[1], Seongmin Park[1], Hamed Nili[2], Erie Boorman[1]; [1]Center for Mind and Brain, University of California, Davis, [2]FMRIB, University of Oxford
Topic Area: THINKING: Decision making

C130 Age-related and individual differences in neural substrates of moral decision making
Ting-Yu Liu[1,2], Hsu-Wen Huang[3], Chih-Mao Huang[1,4]; [1]Department of Biological Science and Technology, National Chiao Tung University, Taiwan, [2]Institute of Bioinformatics and Systems Biology, National Chiao Tung University, Taiwan, [3]Department of Linguistics and Translation, City University of Hong Kong, Hong Kong, [4]Cognitive Neuroscience Laboratory, Institute of Linguistics, Academia Sinica, Taiwan
Topic Area: THINKING: Decision making

C131 Behavioral and Neural Signatures of the Subjective Value of Pain and Exercise
Allison Shapiro[1], Gold Okafor[2], Viktoriya Babenko[1], Tom Bullock[1], Neil Dundon[1], Barry Giesbrecht[1], Scott T. Grafton[1]; [1]University of California, Santa
Topic Area: THINKING: Decision making

C132 Electrophysiological Activity Underlying Optimism Biases during Belief Updating
Ziqing Yao[1], Xiaoqing Hu[1,2]; [1]Department of Psychology, The University of Hong Kong, Hong Kong, China, [2]The State Key Laboratory of Brain and Cognitive Science, The University of Hong Kong, Hong Kong, China
Topic Area: THINKING: Decision making

C133 Hexadirectional coding in human entorhinal cortex represents the trajectory through social networks during decision-making
Seongmin Park[1], Douglas Miller[1], Erie Boorman[1]; [1]Center for Mind and Brain, University of California, Davis
Topic Area: THINKING: Decision making

C134 Hierarchical Reinforcement Learning enables flexible transfer in humans
Liyu Xia[1], Anne Collins[1]; [1]University of California, Berkeley
Topic Area: THINKING: Decision making

C135 Processing the non-occurrence of expected outcomes in deterministic and probabilistic reversal learning
Selim Habiby Alaoui[1], Alexandra Adam-Darqué[1], Armin Schnider[1]; [1]Laboratory of Cognitive Neurorehabilitation, Division of Neurorehabilitation, Department of Clinical Neurosciences, University Hospital of Geneva and University of Geneva, Switzerland
Topic Area: THINKING: Decision making

C136 The development of the variance discounting task to investigate the impulsivity with delay discounting task and probabilistic discounting task
Yu-Chi Lin[1], Nai-Shing Yen[1], Fan-Ying Liu[1], Yun-Fan Fang[1], Tsung-Han Yang[1], Chi Wang[1], Wen-Hsi Huang[1], Nai-Shing Yen; [1]National Chengchi University
Topic Area: THINKING: Decision making

C137 The effects of age on neural reward responses in the monetary incentive delay task
Isha Dhingra[1], Sheng Zhang[1], Herta H. Chao[1,2], Simon Zhornitsky[1], Wuyi Wang[1], Thang Le[1], Chiang-shan Ray Li[1,3]; [1]Yale University School of Medicine, [2]VA Connecticut Healthcare System, [3]Yale University Interdepartmental Neuroscience Program
Topic Area: THINKING: Decision making

C138 Predictive processing in changing environments in autism: Electrophysiological, pupillometric and behavioral assays
SEYDANUR TIKIR[1], MICHAEL J. CROSSE[1], SOPHIE MOLHOLM[1]; [1]Albert Einstein College of Medicine
Topic Area: THINKING: Other

C139 If only I had chosen differently! EEG manifestations of comparison between received and alternative outcomes
Deborah Marciano[1], Sacha Bourgeois Gironde[2,3], Leon Y. Deouell[1]; [1]The Hebrew University of Jerusalem, Israel, [2]Institut d'Etude de la Cognition, France, [3]Institut Jean-Nicod, École Normale Supérieure, France
Topic Area: THINKING: Decision making

Session D

Monday, March 25, 8:00–10:00 am, Pacific Concourse

D1 Does sound-shape correspondence modulate a neuronal signature of visual shape processing for attended shapes?
Erinda Morina[1], Hiu Mei Chow[2], Vivian M. Ciaramitaro[1]; [1]University of Massachusetts Boston, [2]University of British Columbia
Topic Area: ATTENTION: Multisensory

D2 Rhythmic attentional sampling of visual and auditory objects is reflected in theta-modulated neural activity
Michael Plöchl[1], Ian Fiebelkorn[2], Sabine Kastner[2], Jonas Obleser[1]; [1]University of Luebeck, Germany, [2]Princeton University, NJ
Topic Area: ATTENTION: Multisensory

D3 Supramodal and Modality-Specific Oscillatory Activity during Attention to Memory
Kristina C. Backer[1,2,3], Bernhard Ross[2,3], Guillaume Cheung[2], Claude Alain[2,3]; [1]University of California, Merced, [2]Rotman Research Institute at Baycrest Centre, [3]University of Toronto
Topic Area: ATTENTION: Multisensory

D4 Visual cortex activity varies with sound intensity: Electrophysiological evidence of inverse effectiveness
Spencer Mac Adams[1], Jessica Green[1]; [1]University of South Carolina
Topic Area: ATTENTION: Multisensory

D5 A neural assessment of reward-associated distraction upon sustained attention
Matthew D. Bachman[1], Madison N. Hunter[1], Scott A. Huettel[1], Marty G. Woldorff[1]; [1]Duke Univeristy
Topic Area: ATTENTION: Nonspatial

D6 Behavioral Rhythms in Saliency-based Figure-ground Segregation
Ying Fan[1,2,3,5], Jianrong Jia[4,5], Huan Luo[1,2,3]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]PKU-IDG/McGovern Institute for Brain Research, Peking University, [3]Beijing Key Laboratory of Behavior and Mental Health, Peking University, [4]Peking-Tsinghua Center for Life Sciences, Peking University, [5]These authors contributed equally to the work
Topic Area: ATTENTION: Nonspatial

D7 Characterizing the timecourse and mechanisms of the attentional selection of object representations in working memory
Charlie Giattino[1], Saikiran Gudla[2], Mariana Feingold[1], Marty Woldorff[1]; [1]Duke University, [2]University of Cincinnati
Topic Area: ATTENTION: Nonspatial

D8 Learned Feature Distributions Predict Visual Search and Working Memory Precision
Phil Witkowski[1,2], Joy Geng[1,2]; [1]University of California, Davis, [2]Center for Mind and Brain, University of California, Davis
Topic Area: ATTENTION: Nonspatial

D9 Neurophysiological Correlates of Trait Mindfulness
Ana Navarro Cebrian[1], Jessica Cooperman[1], Donna Wilcox[1], Ximena Mendez Schagar[1], Keisharely Perez[1]; [1]Loyola University Maryland
Topic Area: ATTENTION: Nonspatial

D10 Object-based Attention Modulates EEG Alpha Activity
Sean Noah[1], Travis Powell[1], Natalia Khodayari[1], Diana Olivan[1], Mingzhou Ding[2], George R. Mangun[1]; [1]University of California, Davis, Davis, CA, [2]University of Florida, Gainesville, FL
Topic Area: ATTENTION: Nonspatial

D11 Rhythmic sampling of orientation features in feature-based attention
Ce Mo[1,2,3,4], Junshi Lu[1,3,4], Bichan Wu[1], Huan Luo[1,2,3], Fang Fang[1,2,3,4,5]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]Peking-Tsinghua Center for Life Sciences, Peking University, [3]IDG/McGovern Institute for Brain Research, Peking University, [4]Key Laboratory for Machine Perception (Ministry of Education), Peking University, [5]Beijing Key Laboratory of Behavior and Mental Health, Peking University
Topic Area: ATTENTION: Nonspatial

D12 Targeted brain stimulation to ameliorate vigilance in stroke: a combined tDCS-fMRI approach
Elena Olgiati[1,2], Ines Violante[3], Lucia Li[1,2], Korina Li[1], Ara Faraj[1], Toby Sinclair[1], Jennifer Crow[2], Richard Wise[4], Paresh Malhotra[1,2]; [1]Imperial College London, [2]Imperial College Healthcare NHS Trust, [3]University of Surrey, [4]Deceased
Topic Area: ATTENTION: Nonspatial

D13 Human attentional capacity is predicted by spectral and anatomical patterns of large-scale synchronization
Satu Palva[1,2], Santeri Rouhinen[1,3], Felix Siebenhühner[1], J.Matias Palva[1,2]; [1]Neuroscience Center, Helsinki Institute of Life Science, University of Helsinki, Finland, [2]Centre for Cognitive Neuroscience, Institute of Neuroscience and Psychology, University of Glasgow, UK, [3]BioMag laboratory, HUS Medical Imaging Centre, Finland
Topic Area: ATTENTION: Other

D14 Human Frontal Cortex Modulates External and Internal Attention
Julia W. Y. Kam[1], Randolph F. Helfrich[1], Jack J. Lin[2], Anne-Kristin Solbakk[3,4], Tor Endestad[3], Pal G. Larsson[4], Robert T. Knight[1]; [1]University of California – Berkeley, [2]University of California – Irvine, [3]University of Oslo, [4]Oslo University Hospital
Topic Area: ATTENTION: Other

D15 Behavioural and genetic associations between internalising and externalising behaviours and executive function during adolescence
Georgina Donati[1], Emma Meaburn[1], Iroise Dumontheil[1]; [1]Birkbeck College, University of London
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D16 Brain Mechanisms for Processing Static and Dynamic Facial Expressions
Sing-Rong Sie[1], Shih-Tseng T. Huang[1,2], Yen-Ju Lu[1]; [1]Department of Psychology, National Chung-Cheng University, Taiwan, [2]Center for Research in Cognitive Science, National Chung-Cheng University, Taiwan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D17 Caffeine-induced physiological arousal impacts affective responses to ambiguity
Carlene Horner[1], Grace Giles[1,2], Caroline Davis[1,2], Benjamin Avanzato[1], Eric Anderson[1], Joseph Moran[1,2], Caroline Mahoney[1,2]; [1]Tufts University, Center for Applied Brain and Cognitive Sciences, [2]US Army Natick Soldier, Research, Development, and Engineering Center
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D18 Distinct regions within the macaque face-selective system are differentially tuned to changes in head orientation and facial expression.
Jessica Taubert[1], Clarissa James[1], Shruti Japee[1], Aidan Murphy[2], Elissa Koele[1], Susheel Kumar[1], David A. Leopold[2], Leslie G. Ungerleider[1]; [1]The Laboratory of Brain and Cognition, NIMH, [2]The Laboratory of Neuropsychology, NIMH
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D19 Does Face Identity Matter in the Face Flanker Task?
Victoria Ashley[1], Diane Swick[1,2]; [1]VA Northern California Health Care System, [2]University of California, Davis
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D20 Frontal Activities While Recognizing Microexpression: An fNIRS Study
Xunbing Shen[1], Gaojie Fan[2], Lei Chen[1], Huajie Sui[1]; [1]Jiangxi University of
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D21 Perceived uncontrollability of life stress is associated with gray matter morphometry in youth
Alyssa Fassett-Carman[1], Harry Smolker[2], Hannah Snyder[1], Benjamin Hankin[3], Marie Banich[2]; [1]Brandeis University, [2]University of Colorado Boulder, [3]University of Illinois Champagne Urbana
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D22 Reappraisal regulates the emotional arousal and increases the utilitarian choices
Wen-Hsi Huang[1], Nai-Shing Yen[1], I-Cheng Weng[1], Ning Tai[1]; [1]National Chengchi University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D23 Rethinking affective vocalizations
Natalie Holz[1], Pauline Larrouy-Maestri[1], David Poeppel[1,2]; [1]Max-Planck Institute for Empirical Aesthetics, Frankfurt, Germany, [2]New York University, New York, New York, USA
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D24 Sisters' brains view a drama movie more similarly than friends' brains and friends' more similarly than acquaintances' brains
Gokce Ertas Yorulmaz[1], Mareike Bacha-Trams[1], Enrico Glerean[1], Elisa Ryyppö[1], Iiro P. Jääskeläinen*[1,2], Mikko Sams[1]; [1]Brain and Mind Laboratory, Aalto University, Espoo, Finland, [2]Advanced Magnetic Imaging (AMI) Centre, Aalto NeuroImaging, Aalto University, Espoo, Finland
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D25 The Effectiveness of Downward Counterfactual Thinking as an Emotion Regulation Strategy
Sarah Haurin[1], Natasha Parikh[1], Jason Zhang[1], Felipe De Brigard[1], Kevin LaBar[1]; [1]Duke University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D26 Unravelling neurocognitive processes underlying the suppression of unwanted emotional memories
Xuanyi Lin[1], Ziqing Yao[1], Xiaoqing Hu[1,2]; [1]The University of Hong Kong, Hong Kong, China, [2]The State Key Laboratory of Brain and Cognitive Science, The University of Hong Kong, Hong Kong, China
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D27 Beyond valence: differences in brain response to unpleasant and upsetting sounds.
Vaida Rimeikyte[1], Janis L. Whitlock[1], Adam K. Anderson[1]; [1]Cornell University
Topic Area: EMOTION & SOCIAL: Emotional responding

D28 Functional Connectivity Associated With Intensity of Positive Affect
Lauren Goodes[1], Yush Kukreja[2], Jeffery Rouse M.D[2], Jeremy D. Cohen Ph.D.[1]; [1]Xavier University of Louisiana, New Orelans, LA, USA, [2]Tulane University, New Orleans, LA, USA
Topic Area: EMOTION & SOCIAL: Emotional responding

D29 Neuroaesthetics: the emerging neuroscience of the nexus of art and philosophy, with implications for the economics of the visual arts
Martin Goldstein[1], Kelly Adams, Jonsara Ruth[2]; [1]Icahn School of Medicine at Mount Sinai, [2]Parsons School of Design
Topic Area: EMOTION & SOCIAL: Emotional responding

D30 Orbitofrontal lesion patients show an implicit approach bias towards angry faces
Macià Buades-Rotger[1], Matthias Liebrand[1], Anne-Kristin Solbakk[2,3], Ingrid Funderud[2], Dorien Enter[5,6,7], Karin Roelofs[5,6], Ulrike M. Krämer[1]; [1]University of Lübeck, Lübeck, Germany, [2]University of Oslo, Oslo, Norway, [3]Oslo University Hospital, Rikshospitalet, Oslo, Norway, [4]Helgeland Hospital, Mosjøen, Norway, [5]Radboud University Nijmegen, Nijmegen, The Netherlands, [6]Donders Institute for Brain, Cognition and Behaviour, Nijmegen, The Netherlands, [7]Leiden University, Leiden, The Netherlands
Topic Area: EMOTION & SOCIAL: Emotional responding

D31 'Working harder together': Distributed surges in activity & connectivity during task-switching.
Richard E. Daws[1], Eyal Soreq[1], Robert Leech[2], Peter Hellyer[2], Adam Hampshire[1]; [1]The Computational, Cognitive & Clinical Neuroimaging Laboratory (C3NL), Division of Brain Sciences, Imperial College London, UK., [2]Department of Neuroimaging, Institute of Psychiatry, Psychology and Neurosciences, King's College London, London, UK.
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D32 Adolescent Intermittent Ethanol Impairs Behavioral Flexibility in a Rat Foraging Task
Nancy Y.A Sey[1], Alexander Gomez-A[1], Aric C. Madayag[2], Charlotte A. Boettiger[1], Donita L. Robinson[1]; [1]University of North Carolina at Chapel Hill, [2]Marquette University, Milwaukee, WI
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D33 EEG correlates of working memory gating: link to reinforcement learning?
Rachel Rac-Lubashevsky[1], Yoav Kessler[2], Michael Frank[3]; [1]Brown University, [2]Ben-Gurion University of the Negev, [3]Brown University
Computational models of frontostriatal circuitry propose that the content of
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D34 Exploring non-linguistic codeswitching in bilingual aphasia
Lesley Peng[1], Mitchell Peck[1], Teresa Gray[1]; [1]San Francisco State University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D35 Global Functional Network Modularity Facilitates Responding in Threat-Valenced Spatial Cueing
Marisa Ross[1], Josh Cisler[1]; [1]University of Wisconsin-Madison
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D36 Isolating Attentional Mechanisms Behind Stereotype Threat Effects: Knocking Out Proactive Attention
Alice Kathmandu[1], Geoffrey L. Cohen[2], Bruce McCandliss[3]; [1]Stanford University, [2]Stanford University, [3]Stanford University
A multitude of studies document robust performance changes associated with
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D37 The effect of partial sleep deprivation on cognitive control functioning: The SLEEPIC study
Ingvild Saksvik-Lehouillier[1], Simen Berg Saksvik[1,2], Håvard Karlsen[1], Eva Langvik[1], Torhild Anita Sørengaard[1], Alexander Olsen[1,2]; [1]Norwegian University of Science and Technology, [2]St. Olavs Hospital, Trondheim University Hospital
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

D38 Disrupted executive control in schizophrenia: neural mechanisms revealed by event-related potentials and frontal midline theta oscillations
Xiangfei Hong[1,2], Wei Li[1], Jiangling Jiang[1], Hongyan Wang[1], Jiaqi Wang[3], Jianan Wang[3], Wenzheng Wang[1], Jianhua Sheng[1], Jijun Wang[1], Chunbo Li[1]; [1]Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China, [2]J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, USA, [3]School of Biomedical Engineering and Med-X Research Institute, Shanghai Jiao Tong University, Shanghai, China
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

D39 How does Stopping an Action Affect Action-Relevant Representations?
Atsushi Kikumoto[1], Tesufuai Sameshima[1], Ulrich Mayr[1]; [1]University of Oregon
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

D40 Human intracranial recordings during a stroop task reveal parallel conflict processing across widespread frontal and insular cortices
Colin Hoy[1], Kris Anderson[2], Vitoria Piai[3], Jack Lin[4], Robert Knight[1]; [1]University of California, Berkeley, [2]Kernel, Venice, CA, [3]Radboud University Medical Center, Donders Institute for Brain, Cognition, & Behavior, Nijmegen, Netherlands, [4]University of California, Irvine
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

D41 Onsets of pre-SMA predict successful stopping in a stop-signal task
Hsin-Ju Lee[1,2], Fa-Hsuan Lin[3,4], Wen-Jui Kuo[2]; [1]National Taiwan University, Taipei, Taiwan, [2]National Yang-Ming University, Taipei, Taiwan, [3]University of Toronto, Toronto, ON, Canada, [4]Aalto University, Espoo, Finland
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

D42 Parkinson's Disease and susceptibility to distraction from task-irrelevant auditory and visual oddballs
Rachel C. Cole[1], Arun Singh[1], Arturo Espinoza[1], Nandakumar S. Narayanan[1]; [1]University of Iowa
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

D43 Decoding the content of the focus of attention in a working memory task: Electrophysiological evidence for refreshing
Evie Vergauwe[1], Mason Price[2], Kim Uittenhove[1], Nelson Cowan[3], Jeffrey D. Johnson[3]; [1]University of Geneva, [2]University of Nebraska Medical Center, [3]University of Missouri
Topic Area: EXECUTIVE PROCESSES: Working memory

D44 Deficits in Executive Function persist years after mild traumatic brain injury
Hector Arciniega[1], Marian E. Berryhill[1]; [1]University of Nevada, Reno
Topic Area: EXECUTIVE PROCESSES: Working memory

D45 Does irrelevant speech suppress subvocal rehearsal?
Lisa Payne[1], Christina Labows[2], Morgan Purcell[2]; [1]Rutgers University, [2]Swarthmore College
Topic Area: EXECUTIVE PROCESSES: Working memory

D46 Evaluating the Optimal Timing of Transcranial Direct Current Stimulation to Augment Cognitive Training
Jacky Au[1], Seung Min Moon[1], Benjamin Katz[2], Tessa Abagis[3], John Jonides[3], Susanne M. Jaeggi[1]; [1]University of California, Irvine, [2]Virginia Tech, [3]University of Michigan
Topic Area: EXECUTIVE PROCESSES: Working memory

D47 From cleats to cognition: Does playing soccer improve visuospatial working memory and physiological stress recovery?
Emily Burns[1], Princy Quadros-Mennella[1]; [1]Neuroscience Program, Bay Path University, Longmeadow, MA
Working memory is a storage system where visuospatial information for goal-
Topic Area: EXECUTIVE PROCESSES: Working memory

D48 Interaction between spatial attention and visual working memory from alpha oscillation and sustained potentials
Dongwei Li[1], Chenguang Zhao[1], Jialiang Guo[1], Bingkun Li[1], Qinyuan Chang[1], Yulong Ding[2], Yan Song[1]; [1]Beijing Normal University, Beijing 100875, China, [2]Sun Yat-Sen University, Guangzhou 510275, China
Topic Area: EXECUTIVE PROCESSES: Working memory

D49 Interference on neural mechanisms for working memory maintenance
Julia C. Beck[1], Peter S. Whitehead[1], Marty G. Woldorff[1]; [1]Duke University
Topic Area: EXECUTIVE PROCESSES: Working memory

D50 Persistent neural activity in parietal cortex tracks attractor dynamics in visual working memory
Qing Yu[1], Matthew Panichello[2], Bradley Postle[1], Timothy Buschman[2]; [1]University of Wisconsin-Madison, [2]Princeton University
Topic Area: EXECUTIVE PROCESSES: Working memory

D51 The Neural Basis of Working Memory Load: Within vs. Between-Subjects Variation
Peeta Li[1], Todd Braver[1]; [1]Washington University in St.Louis
Topic Area: EXECUTIVE PROCESSES: Working memory

D52 Visual-Spatial Working Memory Deficits in an Adolescent with ADHD using ERP, MRI and Neuropsychological Data
Jennifer Schlak[1], Audreyana Jagger-Rickels[1], Sarah Vadnais[1], Hannah Travis[1], Zsofia Imre[1], Maria Stacy[1], Emily Caminiti[1], Genni Newsham[1], Michelle Y. Kibby[1]; [1]Southern Illinois University-Carbondale
Topic Area: EXECUTIVE PROCESSES: Working memory

D53 Association between maternal reading ability and fluency and child diffusion properties of language white matter tracts in pre-school age children
Rola Farah[1], Hagai Tzafrir[1], Tzipi Horowitz-Kraus[1]; [1]Technion- Israel Institute of Technology
Topic Area: LANGUAGE: Development & aging

D54 Bilinguals engage similar processes when verifying multiplication facts in each of their languages: ERPs evidence from children and adults
Vanessa Cerda[1], Nicole Wicha[1,2]; [1]University of Texas at San Antonio, [2]University of Texas Health San Antonio
Topic Area: LANGUAGE: Development & aging

D55 Differential neuroplasticity of language systems in adult language acquisition
Kshipra Gurunandan[1], Manuel Carreiras[1,2], Pedro M. Paz-Alonso[1]; [1]Basque Center on Cognition, Brain and Language, [2]Ikerbasque - Basque Foundation for Science
Topic Area: LANGUAGE: Development & aging

D56 Examining the role of Discrepant IQ and Reading Ability in left hemisphere Reading Network Activation
Rita Barakat[1,2], Stephen Gonzalez[2], Maya Rajan[2], Anisa Azad[2], Anthony Krafnick[2], Max Orozco[2], Hadley McGregor[2], Jason Zevin[1], Frank Manis[1], Kristi Clark[1,2]; [1]University of Southern California Neuroscience Graduate Program and Psychology Program, [2]Connectivity and Network Development Laboratory (CANDL) Group, Laboratory of Neuro Imaging and USC Mark and Mary Stevens Neuro Imaging and Informatics Institute
Topic Area: LANGUAGE: Development & aging

D57 Incorporating Strategy Training into Tablet-Based Anomia Therapy for People with Aphasia
Jeanne Gallée[1,2], Sofia Vallila-Rohter[1,2]; [1]Harvard University, [2]MGH Institute of Health Professions
Topic Area: LANGUAGE: Development & aging

D58 Brain Activations of Categorical Tone Perception in Children with Specific Language Impairment
Huei-Mei Liu[1], Feng-Ming Tsao[2], Wei-Chin Hsu[3], Li-Chun Kuo[1]; [1]National Taiwan Normal University, [2]National Taiwan University, [3]National Taiwan University of Science and Technology
Topic Area: LANGUAGE: Other

D59 Neural characteristics of acoustic prosody during continuous real-life speech
Satu Saalasti[1,2], Enrico Glerean[2], Antti Suni[1], Jussi Alho[2], Juraj Simko[1], Iiro P. Jääskeläinen[2], Martti Vainio[1], Mikko Sams[2]; [1]University of Helsinki, [2]Aalto University
Topic Area: LANGUAGE: Other

D60 Neural substrates of lexical embedding in Arabic speech processing
Sami Boudelaa[1,2], Francesca Carota[2,3], Mirjana Bozic[2], William Marslen-Wilson[2]; [1]United Arab Emirates University, Linguistics Department, PO. Box: 15551 Al Ain, UAE, [2]University of Cambridge, Department of Psychology Downing St, Cambridge CB2 3EB, UK, [3]Max Planck Institute for Psycholinguistics, Wundtlaan 1, 6525 XD Nijmegen, The Netherlands
Topic Area: LANGUAGE: Other

D61 Relevant Variables Affecting Training of Phonemic Awareness in Students with Dyslexia
Ethan Torpy[1], Rebekah Tozier[2], Kytja Voeller[3]; [1]Western Institute for Neurodevelopmental Studies & Interventions (WINSi)
Topic Area: LANGUAGE: Other

D62 Spontaneous speech synchronization predicts the engagement of a fronto-parietal network that supports word-learning and reflects individual differences
M Florencia Assaneo[1], Joan Orpella[2,3], Pablo Ripolles[1], Ruth de Diego Balaguer[2,3], David Poeppel[1,4]; [1]Department of Psychology, New York University, [2]Department of Cognition, Development and Educational Psychology, University of Barcelona, [3]ICREA, Barcelona, [4]Neuroscience Department, Max-Planck Institute for Empirical Aesthetics, Frankfurt
Topic Area: LANGUAGE: Other

D63 Changes in the neural representations of abstract science concepts after metaphoric reasoning
Vicky Tzuyin Lai[1], Nyssa Bulkes[1]; [1]University of Arizona
Topic Area: LANGUAGE: Semantic

D64 Context matters: Brain activations to metaphor comprehension with and without meaningful context
Franziska Hartung[1], Eileen Cardillo[1], Stacey Humphries[1], Nathaniel Klooster[1,2], Anjan Chatterjee[1]; [1]Penn Center for Neuroaesthetics, University of Pennsylvania, [2]Moss Rehabilitation Institute
Topic Area: LANGUAGE: Semantic

D65 Different neural networks for conceptual retrieval in sighted and blind
Roberto Bottini[1,2], Stefania Ferraro[3], Anna Nigri[3], Valeria Cuccarini[3], Maria-Grazia Bruzzone[3], Olivier Collignon[1,4]; [1]University of Trento, Italy, [2]International School for Advanced Studies (SISSA), Trieste, Italy, [3]Neuroradiology Department, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy., [4]University of Louvain (UCL), Louvain, Belgium
Topic Area: LANGUAGE: Semantic

D66 Neuronal correlates of label facilitated tactile perception
Tally McCormick Miller[1,2], Timo Torsten Schmidt[1], Felix Blankenburg[1,2], Friedemann Pulvermüller[1,2]; [1]Freie Universität Berli, [2]Humboldt Universität zu Berlin
Topic Area: LANGUAGE: Semantic

D67 Recruitment of visual cortex for language processing in blind individuals: A neurobiological model
Rosario Tomasello[1,2], Thomas Wennekers[4], Max Garagnani[1,3], Friedemann Pulvermüller[1,2]; [1]Brain Language Laboratory, Freie Universität Berlin, [2]Berlin School of Mind and Brain, Humboldt Universität zu Berlin, [3]Goldsmiths - University of London, [4]Centre for Robotics and Neural Systems (CRNS), University of Plymouth
Topic Area: LANGUAGE: Semantic

D68 Distributional Changes in P600 Variants as a Result of Natural Aging
Michelle Leckey[1], Kara D. Federmeier[1]; [1]University of Illinois at Urbana-Champaign
Topic Area: LANGUAGE: Syntax

D69 Genetic topology of the language network
Roeland Hancock[1]; [1]University of Connecticut
Topic Area: LANGUAGE: Syntax

D70 Individual differences in electrophysiological correlates of non-native language comprehension
Sarah Grey[1], Annalise Caviasco[1], Kathryn Parker[1]; [1]Fordham University
Topic Area: LANGUAGE: Syntax

D71 Intra-operative stimulation of the left Frontal Aslant Tract disrupts sentence planning but does not affect articulation
Benjamin Chernoff[1], Max Sims[2], Susan Smith[3], Webster Pilcher[3], Bradford Mahon[1,2,3]; [1]Carnegie Mellon University, [2]University of Rochester, [3]University of Rochester Medical Center
Topic Area: LANGUAGE: Syntax

D72 Sentence processing in pars opercularis adapts rapidly with short-term experience
Kelly Sharer[1], Malathi Thothathiri[1]; [1]The George Washington University
Topic Area: LANGUAGE: Syntax

D73 The role of speaker identity on listeners' processing of foreign-accented and native-accented speech
Carla Fernandez[1], Janet van Hell[1]; [1]The Pennsylvania State University
Topic Area: LANGUAGE: Syntax

D74 A Rodent Model of Memory Facilitation by Stimulation of Cortical-Hippocampal Networks
Schnaude Dorizan[1], Craig Weiss[1], Joel Voss[1], John Disterhoft[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

D75 Age-related changes in repetition suppression of neural activity during emotional future imagination
Aleea Devitt[1], Preston Thakral[1], Karl Szpunar[2], Donna Rose Addis[3], Daniel Schacter[1]; [1]Harvard University, [2]University of Illinois at Chicago, [3]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

D76 Behavioral and electrophysiological correlates of the memory search process during continuous recognition
John E. Scofield[1], Mason H. Price[2], Angelica Flores[3], Edgar C. Merkle[1], Jeffrey D. Johnson[1]; [1]University of Missouri, [2]University of Nebraska Medical Center, [3]Universidad de las Américas Puebla
Topic Area: LONG-TERM MEMORY: Episodic

D77 Competition Induces Exaggeration in Color Memory
Yufei Zhao[1], Avi. J. H. Chanales[2], Brice. A. Kuhl[1]; [1]University of Oregon, [2]New York University
Topic Area: LONG-TERM MEMORY: Episodic

D78 Concept generalization in young and older adults
Caitlin Bowman[1], Dagmar Zeithamova[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

D79 Damage to temporoparietal regions disrupts autobiographical memory – evidence from neurodegenerative disorders
Siddharth Ramanan[1,2,3], David Foxe[1,2,3], John Hodges[1,3,4], Olivier Piguet[1,2,3], Muireann Irish[1,2,3]; [1]The University of Sydney, Brain and Mind Centre, Sydney, NSW, Australia, [2]The University of Sydney, School of Psychology, Sydney, NSW, Australia, [3]Australian Research Council Centre of Excellence in Cognition and its Disorders, NSW, Australia, [4]The University of Sydney, Central Clinical School, Sydney, NSW, Australia
Topic Area: LONG-TERM MEMORY: Episodic

D80 Examining immediate and long-term effects of sleep vs. sleep deprivation on emotional memory: Behavioral and electrophysiological evidence
Shengzi Zeng[1], Xuanyi Lin[1], Xiaoqing Hu[1,2]; [1]The University of Hong Kong, Hong Kong, China, [2]The State Key Lab of Brain and Cognitive Science, The University of Hong Kong, Hong Kong, China
Topic Area: LONG-TERM MEMORY: Episodic

D81 Hippocampal epileptic activity during sleep disrupts memory consolidation
Jessica Creery[1], David Brang[2], Mallika Patel[1], Vernon L. Towle[3], James Tao[3], Shasha Wu[3], Ken A. Paller[1]; [1]Northwestern University, [2]University of Michigan, [3]The University of Chicago
Topic Area: LONG-TERM MEMORY: Episodic

D82 Hippocampal reactivation predicts confidence in gist-based false memories
Surya Rajan Selvam[1], Ryan P. Coleman[1], William B. Corley[1], Mazura Ibragimova[1], Kathryn M. Mattingly[1], Nicholas C. Hindy[1]; [1]University of Louisville
Topic Area: LONG-TERM MEMORY: Episodic

D83 Identifying biomarkers to predict behavioral responses to stress in criterion shifting during recognition memory
Tyler Santander[1], Mary MacLean[1], Thomas Bullock[1], Alexander Boone[1], Jamie Raymer[1], Liann Jimmons[1], Alexander Stuber[1], Gold Okafor[1], Scott Grafton[1], Barry Giesbrecht[1], Michael Miller[1]; [1]University of California, Santa Barbara
Topic Area: LONG-TERM MEMORY: Episodic

D84 Improving associative memory and inference via a shared spatial context
Jessica Robin[1], Nahid Iseyas[1,2], Keisha Joseph[1,2], Rosanna Olsen[1,2]; [1]Rotman Research Institute, Baycrest, [2]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

D85 Network abnormalities rather than hippocampal atrophy predict remote memory impairment in hippocampal amnesia
Georgios P.D. Argyropoulos[1], Clare Loane[1,2], Adriana Roca-Fernandez[1], Carmen Lage-Martinez[3], Christopher R. Butler[1]; [1]University of Oxford, [2]University College London, [3]University Hospital Marqués de Valdecilla
Topic Area: LONG-TERM MEMORY: Episodic

D86 Population code for time on the scale of tens of minutes in mice hippocampus
Yue Liu[1], Sam Levy[1], William Mau[1], Marc Howard[1]; [1]Boston University
Topic Area: LONG-TERM MEMORY: Episodic

D87 Primary visual cortex activity is associated with confidence in memory for spatial locations
Michael Cohen[1], Larry Cheng[1], Ken Paller[1], Paul Reber[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

D88 Reconstructing real-life event sequences with schema-based knowledge
Xinming Xu[1], Sze Chai Kwok[1,2]; [1]East China Normal University, [2]NYU Shanghai
Topic Area: LONG-TERM MEMORY: Episodic

D89 Reviewing autobiographical memory cues promotes distinctive neural coding in older adults
Chris Martin[1], Rachel Newsome[1], Bryan Hong[1], Andrew Xia[1], Christopher Honey[2], Morgan Barense[1,3]; [1]University of Toronto, [2]Johns Hopkins University, [3]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

D90 Semantic influences on episodic memory distortions
Alexa Tompary[1], Sharon L. Thompson-Schill[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

D91 Targeted memory reactivation of competing memories during sleep induces forgetting
Bardur H Joensen[1], Sam C Berens[1], Scott A Cairney[1], M Gareth Gaskell[1], Aidan J Horner[1]; [1]University of York
Topic Area: LONG-TERM MEMORY: Episodic

D92 Task-independent abstraction of episodic context in parietal cortices
Qun Ye[1], Emiliano Macaluso[2], Sze Chai Kwok[1,3]; [1]East China Normal University, [2]Lyon Neuroscience Research Center, [3]NYU Shanghai
Topic Area: LONG-TERM MEMORY: Episodic

D93 The effect of a dual task manipulation on the neural correlates of recollection and post-retrieval monitoring in young and older adults
Erin D. Horne[1,2], Marianne de Chastelaine[1,2], Michael D. Rugg[1,2]; [1]University of Texas at Dallas, [2]Center for Vital Longevity
Topic Area: LONG-TERM MEMORY: Episodic

D94 Active Learning on Brain: Constructive, Motivational, Emotional, Goal-oriented and Self-Regulated Integrative Learning Theory
Kazuhisa Niki[1,2], Makoto Yururi[3], Shoka Utsumi[1], Takayuki Iwano[2], Kie Fujiwara[1]; [1]Ochanomizu Univ., [2]National Institute of Advanced Industrial Science and Technology, [3]Showa Woman's Univ.
Topic Area: LONG-TERM MEMORY: Other

D95 Distortion of Memory Drawings for Real-World Scenes by the Presence of Incongruent Objects
Wan Kwok[1], Wilma Bainbridge[1], Christopher Baker[1]; [1]Laboratory of Brain and Cognition, National Institute of Mental Health, National Institutes of Health
Topic Area: LONG-TERM MEMORY: Other

D96 Making confident navigators better: Revealing the mechanisms of cognitive mapping through virtual reality interventions
Qiliang He[1], Timothy McNamara[2], Thackery Brown[1]; [1]Georgia Institute of Technology, [2]Vanderbilt University
Topic Area: LONG-TERM MEMORY: Other

D97 Musical prodigies exhibit better atonal melody recall and greater sensorimotor brain connectivity than equally trained musicians
Michael Weiss[1,2], Megha Sharda[1,2], Isabelle Peretz[1,2]; [1]International Laboratory for Brain, Music, and Sound Research, [2]University of Montreal
Topic Area: LONG-TERM MEMORY: Other

D98 The human dentate gyrus is critical for statistical learning and associative inference
Zorry Belchev[1,2], Hannah Marlatte[1,2], Asaf Gilboa[1,2]; [1]University of Toronto, Department of Psychology, [2]Rotman Research Institute at Baycrest
Topic Area: LONG-TERM MEMORY: Other

D99 Interhemispheric premotor interaction during motor learning is modulated by practice conditions
Chien-Ho Lin[1], Ching-En Lin[1], Ho-Ching Yang[1], Shin-Leh Huang[1], Barbara Knowlton[2], Allan Wu[2], Ming-Chang Chiang[1]; [1]National Yang-Ming University, Taiwan, [2]UCLA
Topic Area: LONG-TERM MEMORY: Skill learning

D100 Motivation does not increase plateau performance with continued practice of the motor sequence task
Mollie Bayda[1], Olivia P. Manickas-Hill[1], Alexandra Morgan[1], Robert Stickgold[1,2]; [1]Beth Israel Deaconess Medical Center, [2]Harvard Medical School
Topic Area: LONG-TERM MEMORY: Skill learning

D101 Revealing the neural basis of rest spacing effects in music sequence learning
Tyson Oyler[1], Dmitrii Paniukov[2], Ze Zhang[3], Ekaterina Paniukov[3], Carla Cash[1], Gregory Brookes[1], Changzhi Li[1], Tyler Davis[1]; [1]Texas Tech University, [2]University of Calgary, [3]Independent
Many musicians have stressed the importance of practice, but can too much
Topic Area: LONG-TERM MEMORY: Skill learning

D102 A Network diffusion model for combining MEG and Diffusion MRI data
Chang Cai[1], Ashish Raj[1], Xihe Xie[2], Eva Palacios[1], Julia Owen[3], Pratik Mukherjee[1], Srikantan Nagarajan[1]; [1]Department of Radiology and Biomedical Imaging, University of California at San Francisco, CA, [2]Department of Neuroscience, Weill Graduate School of Medicine, Weill Cornell Medicine, New York, NY, [3]Department of Radiology, University of Washington, Seattle, WA
Topic Area: METHODS: Neuroimaging

D103 Assessing the relationship between reading ability and dyslexia: A Behavioral and fMRI study
Stephen Gonzalez[1,2], Rita Barakat[2,3], Maya Rajan[2,4], Kristi Clark[1,2,3]; [1]University of Southern California Neuroimaging and Informatics Masters Program, [2]Connectivity and Network Development Laboratory (CANDL) Groups, Laboratory of Neuro Imaging and USC Mark and Mary Stevens Neuro Imaging and Informatics Institute, [3]University of Southern California Neuroscience Graduate Program, [4]University of Southern California Psychology Program
Topic Area: METHODS: Neuroimaging

D104 Deep learning classifiers of visual cortex activity can identify which moment of a video is represented by a single fMRI volume during naturalistic movie viewing
Matthew Johnson[1], Jacob Williams[1], Rafay Khan[2], Karl Kuntzelman[1]; [1]University of Nebraska-Lincoln, [2]University of Illinois at Urbana-Champaign
Topic Area: METHODS: Neuroimaging

D105 Evaluation of Neural Oscillation Burst Detection Algorithms
Sashaank Pasumarthi[1], Scott Cole[1], Andrew Washington[1], Bradley Voytek[1,2]; [1]University of California, San Diego, [2]Halıcıoğlu Data Science Institute
Topic Area: METHODS: Neuroimaging

D106 Fictional or Functional Connectivity? Validating and improving functional connectivity analyses for EEG
Anthony Herdman[1], Alex Moiseev[2]; [1]University of British Columbia, [2]Simon Fraser University
Topic Area: METHODS: Neuroimaging

D107 Frequency specific neural oscillation abnormalities distinctly associated with amyloid-beta and tau in Alzheimer's disease
Kamalini Ranasinghe[1], Jungho Cha[1], Leighton Hinkley[2], Danielle Mizuiri[2], Susanne Honma[2], Viktoriya Bourakova[1], William Jagust[3], Bruce Miller[1], Gil Rabinovici[1], Keith Vossel[1,4], Srikantan Nagarajan[2]; [1]Memory and Aging Center, Department of Neurology, University of California San Francisco, [2]Biomagnetic Imaging Laboratory, Department of Radiology and Biomedical Imaging, University of California San Francisco, [3]Helen Wills Neuroscience Institute, UC Berkeley, Berkeley, [4]N. Bud Grossman Center for Memory Research and Care, Institute for Translational Neuroscience, and Department of Neurology, University of Minnesota
Topic Area: METHODS: Neuroimaging

D108 Investigating individual variation in cognitive function through Mesoscale Individualized Neurodynamic (MINDy) models
Matthew F. Singh[1], ShiNung Ching[1], Todd S. Braver[1]; [1]Washington University in St. Louis
Topic Area: METHODS: Neuroimaging

D109 Optimizing preprocessing and confound regression procedures for rapid single-trial multivoxel pattern analysis
Tyler Davis[1], Sean O'Bryan[1], Timothy Kelley[1]; [1]Texas Tech University
Topic Area: METHODS: Neuroimaging

D110 Univariate versus Multivariate Lesion Symptom Mapping Approaches
Juliana Baldo[1], Maria Ivanova[1,2], Brian Curran[1,3], Nina Dronkers[1,2], Timothy Herron[1]; [1]VA Northern California Health Care System, [2]University of California, Berkeley, [3]University of California, San Francisco
Topic Area: METHODS: Neuroimaging

D111 Investigating Pattern Separation in the Medial Temporal Lobe through the Parametric Manipulation of Item Similarity
Corey Loo[1,2], Bradley Buchsbaum[1,2]; [1]University of Toronto, [2]Baycrest Hospital
Topic Area: OTHER

D112 Early-life auditory experience modulates resting state functional connectivity networks: A functional near-infrared spectroscopy study
Bradley E. White[1], Lauren Berger[1], Clifton Langdon[1]; [1]Gallaudet University
Topic Area: PERCEPTION & ACTION: Audition

D113 Hemispheric differences in parietal contributions to auditory beat perception
Shannon Proksch[1], Jessica Ross[1], John Iversen[2], Ramesh Balasubramaniam[1]; [1]University of California, Merced, University of California, San Diego
Topic Area: PERCEPTION & ACTION: Audition

D114 Multiple timescale sensitivity of EEG components to statistical features in unattended tone sequences
Tamar I Regev[1], Geffen Markusfeld[1], Israel Nelken[1], Leon Y Deouell[1]; [1]The Hebrew University of Jerusalem
Topic Area: PERCEPTION & ACTION: Audition

D115 Predictive signals in temporal and frontal cortex reflect sensitivity to regularities at different scales
Stefan Dürschmid[1,2], Christoph Reichert[1,5], Hermann Hinrichs[1,2,4,5,6], Hans-Jochen Heinze[1,2,4,5,6], Heidi Kirsch[7], Robert T. Knight[8], Leon Deouell[9]; [1]Department of Behavioral Neurology, Leibniz Institute for Neurobiology, Brenneckestr. 6, 39120 Magdeburg, Germany;, [2]Department of Neurology, Otto-von-Guericke University, Leipziger Str. 44, 39120 Magdeburg, Germany;, [3]Stereotactic Neurosurgery, Otto-von-Guericke University, Leipziger Str. 44, 39120 Magdeburg, Germany,, [4]German Center for Neurodegenerative Diseases (DZNE), Leipziger Str. 44, 39120 Magdeburg;, [5]Forschungscampus STIMULATE, Otto-von-Guericke University, Universitätsplatz 2, 39106 Magdeburg, [6]CBBS - center of behavioral brain sciences, Otto-von-Guericke University, Universitätsplatz 2, 39106 Magdeburg, [7]Department of Neurology, University of California, 400 Parnassus Avenue, San Francisco, CA 94122, [8]9 Helen Wills Neuroscience Institute and Department of Psychology, University of California, Berkeley, CA 94720;, [9]10 Edmond and Lily Safra Center for brain sciences and Department of Psychology, The Hebrew University of Jerusalem, Mount Scopus, Jerusalem 91904
Topic Area: PERCEPTION & ACTION: Audition

D116 Relationship between speech motor adaptation and relevance of auditory errors
Ayoub Daliri[1], Jonathan Dittman[1]; [1]Arizona State University
Topic Area: PERCEPTION & ACTION: Audition

D117 Morning brain: Real-world neural evidence that high school class times matter
Dana Bevilacqua[1], Suzanne Dikker[1], Saskia Haegens[2,3], Lu Wan[4], Ido Davidesco[1], Lisa Kaggen[1], James McClintock, Kim Chaloner, Mingzhou Ding[4], Tessa West[1], David Poeppel[1]; [1]New York University, [2]Columbia University Medical Center, [3]Donders Institute for Brain, Cognition and Behaviour, [4]University of Florida
Topic Area: PERCEPTION & ACTION: Development & aging

D118 Olfactory Recognition Memory in Non-Demented, Elderly Apolipoprotein E4 Carriers and Non-Carriers
Eleni Kapoulea[1], Claire Murphy[1,2]; [1]San Diego State University, [2]University of California, San Diego
Topic Area: PERCEPTION & ACTION: Development & aging

D119 Sensorimotor contingency leads to developmental changes in the neural mechanisms supporting visual recognition
Sophia Vinci-booher[1], Anastasia Nikoulina[1], Thomas W. James[1], Karin H. James[1]; [1]Indiana University, Bloomington
Topic Area: PERCEPTION & ACTION: Development & aging

D120 Embedding beat in auditory streams suppresses auditory response: an MEG study
Yuanye Wang[1,2,3], Huan Luo[1,2,3]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]PKU-IDG/McGovern Institute for Brain Research, Peking University, [3]Beijing Key Laboratory of Behavior and Mental Health, Peking University
Topic Area: PERCEPTION & ACTION: Audition

D121 Assessing Parietal Contributions to Abstract Numerosity with Steady State Visual Evoked Potentials (SSVEPs)
Peter J. Kohler[1], Anthony M. Norcia[1], Bruce McCandliss[1,2]; [1]Department of Psychology, Stanford University, CA, [2]Graduate School of Education, Stanford University, CA
Topic Area: PERCEPTION & ACTION: Other

D122 Body representation distortions at a higher resolution: the role of the spatial acuity in length and width estimation of body parts.
Valeria Peviani[1,2], Lucia Melloni[1,3], Gabriella Bottini[1,2,4,5]; [1]Department of Neuroscience, Max Planck Institute for Empirical Aesthetics, Grüneburgweg 14, 60322, Frankfurt am Main, Germany, [2]Department of Brain and Behavioural Sciences, University of Pavia, Via Bassi, 21, 27100, Pavia, Italy, [3]Department of Neurology, New York University School of Medicine, 240 East 38th St 10016, New York, NY, USA., [4]Cognitive Neuropsychology Center, ASST Grande Ospedale Metropolitano Niguarda, Piazza dell'Ospedale Maggiore 3, 20162, Milan, Italy, [5]NeuroMi, Milan Center for Neuroscience, Milan, Italy
Topic Area: PERCEPTION & ACTION: Other

D123 Does it Add Up? Comparing Arithmetic Processing in Bilinguals and Monolinguals
Mona Anchan[1], Jongjin Kim[1], Firat Soylu[1]; [1]The University of Alabama
With more than 25% of school students coming from immigrant households
Topic Area: LANGUAGE: Other

D124 Does over-reliance on auditory feedback cause dysfluency? An fMRI study of induced fluency in people who stutter.
Sophie Meekings[1,2], Kyle Jasmin[3], Cesar Lima[4], Nimalesh Yogarajah[2], Efe Carswell Niven[2], Sophie Scott[2]; [1]Newcastle University, [2]University College London, [3]Birkbeck University of London, [4]ISCTE – University Institute of Lisbon
Topic Area: PERCEPTION & ACTION: Other

D125 Local sleep in the awake human brain
Filip Van Opstal[1], Helen Scott[1], Wim Gevers[2], Esperanza Jubera-Garcia[1,2]; [1]University of Amsterdam, [2]Universite Libre de Bruxelles
Topic Area: PERCEPTION & ACTION: Other

D126 Scene context realigns category representations during processing of tools
Heath Matheson[1], Frank Garcea[2], Laurel Buxbaum[2]; [1]University of Northern British Columbia, [2]Moss Rehabilitation Research Institute
Topic Area: PERCEPTION & ACTION: Other

D127 Sign language experience increases motor resonance during imitation of signs
Athena Willis[1], Lorna Quandt[1]; [1]Gallaudet University
Topic Area: PERCEPTION & ACTION: Other

D128 The role of GABA in modulating brain signal variability
Poortata Lalwani[1], Kaitlin Cassady[1], Molly Simmonite[1], Douglas Garrett[2], Thad Polk[1]; [1]University of Michigan, Ann Arbor, MI, USA, [2]Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany
Topic Area: PERCEPTION & ACTION: Other

D129 Use of Bayesian Priors in Perceptual Decision-Making in Clinical Subtypes of Parkinson's Disease
Barbara Knowlton[1], Vaibhav Thakur[1], Alessandra Perugini[1], Aasef Shaikh[2], Michele Basso[1]; [1]UCLA, [2]Case Western Reserve University
Topic Area: PERCEPTION & ACTION: Other

D130 White matter predictors of spelling ability following left hemisphere stroke
Celia Litovsky[1], Nomongo Dorjsuren[1], David Delijani[1], Brenda Rapp[1]; [1]Johns Hopkins University
Topic Area: PERCEPTION & ACTION: Other

D131 Creativity and Machine Learning: Divergent Thinking EEG Analysis and Classification
Carl Stevens[1], Darya Zabelina[1]; [1]University of Arkansas
Topic Area: THINKING: Other

D132 Thinking about Beauty vs. Function Using FMRI
Erick Guzman[1], Franziska Hartung[2], John Pyles[3], Julia Sienkewicz[4], Anjan Chatterjee[2], Alexander Kranjec[1,3]; [1]Duquesne University, [2]University of Pennsylvania, [3]Carnegie Mellon University, [4]Roanoke College
Topic Area: THINKING: Other

D133 Arithmetic word problem solving is more than text comprehension: Neurocognitive evidence from fMRI in 3rd and 4th graders
Chan-Tat Ng[1], Ting-Ting Chang[1]; [1]National Chengchi University, Taiwan
Topic Area: THINKING: Problem solving

D134 Brain Activity Patterns During Creative Idea Generation In Eminent and Non-Eminent Thinkers
Evangelia G. Chrysikou[1], Constanza Jacial[1], David B. Yaden[2], Andrew B. Newberg[3]; [1]Drexel University, [2]University of Pennsylvania, [3]Thomas Jefferson University Hospital
Topic Area: THINKING: Problem solving

D135 Brain Functional Connectivity of Creativity: Psychophysiological Interaction of Convergent and Divergent Thinking
Abhishek Uday Patil[1,2], Deepa Madathil[2], De-Jung Tseng[1], Daisy Lan Hung[3,4], Ovid Jyh-Lang Tzeng[1,4,5,6,7], Hsu-Wen Huang[8], Chih-Mao Huang[1,5]; [1]Department of Biological Science and Technology, National Chiao Tung University, Taiwan, [2]Department of Biomedical Engineering, School of Electronics Engineering, Vellore Institute of Technology, India, [3]Institute of Cognitive Neuroscience, National Central University, Taiwan, [4]College of Humanities and Social Sciences, Taipei Medical University, Taiwan, [5]Cognitive Neuroscience Laboratory, Institute of Linguistics, Academia Sinica, Taiwan, [6]Department of Educational Psychology and Counseling, National Taiwan Normal University, Taiwan, [7]Institute of Advanced Studies, City University of Hong Kong, Hong Kong, [8]Department of Linguistics and Translation, City University of Hong Kong, Hong Kong
Topic Area: THINKING: Problem solving

D136 Inferior frontal gyrus involvement during search and solution in verbal creative problem solving: A parametric fMRI study
Maxi Becker[1], Tobias Sommer[2], Simone Kühn[1,3]; [1]University Medical Centre Hamburg-Eppendorf, Clinic and Policlinic for Psychiatry and Psychotherapy, Martinistraße 52, 20246 Hamburg, Germany, [2]University Medical Centre Hamburg-Eppendorf, Department of Systems Neuroscience, NeuroImage Nord, Martinistraße 52, 20246 Hamburg, Germany, [3]Max Planck Institute for Human Development, Center for Lifespan Psychology, Berlin, Germany
Topic Area: THINKING: Problem solving

D137 Neural dynamics of generating and evaluating creative and non-creative thoughts
Yoed N. Kenett[1], Evangelia G. Chrysikou[2], Danielle S. Bassett[1], Sharon L. Thompson-Schill1[1]; [1]University of Pennsylvania, [2]Drexel University
Topic Area: THINKING: Problem solving

D138 Neural Representations of Physics Learning in Hands-on versus Computer-based Training
Joshua Cetron[1], Justin Hayes[2], Andrew Connolly[2], Solomon Diamon[2], Vicki May[2], James Haxby[2], David Kraemer[2]; [1]Harvard University, [2]Dartmouth College
Topic Area: THINKING: Problem solving

D139 The Effects of Multiple Mild Traumatic Brain Injuries and Task Difficulty on Cognitive Function
Joel Alexander[1], Josephina Rau[1,2], Jaime Cloud[1]; [1]Western Oregon University, [2]Texas A&M
Topic Area: THINKING: Problem solving

Session E

Monday, March 25, 2:30–4:30 pm, Pacific Concourse

E1 Attentional Bias Toward Threat in Adolescents with Different Anxiety Levels
Siqi Chen[1]; [1]Texas A&M University
Topic Area: ATTENTION: Other

E2 Attentional state dependence of time-resolved inter-network anticorrelated brain activity
Aaron Kucyi[1], Josef Parvizi[1]; [1]Stanford University
Topic Area: ATTENTION: Other

E3 Fronto-Visual Dynamic Functional Connectivity during a Selective Attention Task is Modulated by Prefrontal High-Definition Transcranial Direct Current Stimulation
Rachel Spooner[1], Michael Rezich[1], Boman Groff[1], Tony Wilson[1]; [1]University of Nebraska Medical Center
Topic Area: ATTENTION: Other

E4 Involvement of the Insula in Top-Down Attentional Processing: An Intracranial EEG Study
Daphné Citherlet[1,2], Olivier Boucher[1,2,3], Julie Tremblay[4], Manon Robert[1], Anne Gallagher[2,4], Alain Bouthillier[3], Franco Lepore[2], Dang Khoa Nguyen[1,2,3]; [1]Centre de Recherche du Centre Hospitalier de l'Université de Montréal, CRCHUM, [2]University of Montreal, [3]Centre Hospitalier de l'Université de Montréal, CHUM, [4]Centre de Recherche du CHU Sainte-Justine, Montréal
Topic Area: ATTENTION: Other

E5 Steady-state visual evoked potentials as an index of internally vs externally directed attention
Eva Gjorgieva[1], Benjamin R Geib[1], Roberto Cabeza[1], Marty G Woldorff[1]; [1]Duke University
Topic Area: ATTENTION: Other

E6 The involuntary capture of visual attention by task-irrelevant ugly-beauty artificial faces: An ERP study
Eriko Matsumoto[1], Tomoya Kawashima[1], Tomoyuki Naito[2]; [1]Graduate School of Intercultural Studies, Kobe University, [2]Graduate School of Medicine, Osaka University
Topic Area: ATTENTION: Other

E7 The neural basis of internal attention: characterizing attentional orienting along a memory array
Thomas Biba[1], Inder Singh[2], J. Benjamin Hutchinson[1]; [1]University of Oregon, [2]Northeastern University
Topic Area: ATTENTION: Other

E8 Threat reduces value-driven but not salience-driven attentional capture
Andy Jeesu Kim[1], Brian A. Anderson[1]; [1]Texas A&M University
Topic Area: ATTENTION: Other

E9 An Electrophysiological Study of the "Weapon Focus" Effect
Annabell Schulz[1], Mei-Ching Lien[2], Eric Ruthruff[3]; [1]Oregon State University, [2]Oregon State University, [3]University of New Mexico
Topic Area: ATTENTION: Other

E10 Using Multivariate EEG to Predict a Clinical Measure of Attention
Alexander J Simon[1], David A Ziegler[1], Jyoti Mishra[2], Joaquin A Anguera[1], Adam Gazzaley[1]; [1]University of California San Francisco, [2]University of California San Diego
Topic Area: ATTENTION: Other

E11 Visual search attention training minimizes task distraction in adults with and without ADHD
Tessa Abagis[1], John Jonides; [1]University of Michigan
Topic Area: ATTENTION: Other

E12 Anterior insula responses to emotional stimuli and mindfulness tendency
Hiroki Murakami[1], Nobuhiko Hoaki[2]; [1]Oita University, [2]Hoaki Hospital
Topic Area: EMOTION & SOCIAL: Emotional responding

E13 Oscillatory networks underlying music reward processing
Alberto Ara[1,2], Josep Marco-Pallarés[1,2]; [1]University of Barcelona, [2]Bellvitge Biomedical Institute (IDIBELL)
Topic Area: EMOTION & SOCIAL: Emotional responding

E14 Trait and State Anxiety Modulate Early (but not late) Fear Processing
Melissa A. Meynadasy[1], Kevin J. Clancy[1], Wen Li[1]; [1]Florida State University
Topic Area: EMOTION & SOCIAL: Emotional responding

E15 Using Concurrent fMRI to Measure the Effects of Transcranial Direct Current Stimulation Over Prefrontal Cortex for Emotion Regulation in Depressed and Non-depressed Participants
Wessel O. van Dam[1], Erik K. Wing[2], Amber Zafar[1], Evangelia G. Chrysikou[1]; [1]Drexel University, [2]University of Kansas
Topic Area: EMOTION & SOCIAL: Emotional responding

E16 Warm and sensitive parenting predicts adolescents' amygdala activity to angry faces during an emotional face processing task
Angelica F. Carranza[1], Annchen R. Knodt[2], Johnna R. Swartz[1]; [1]University of California, Davis, [2]Duke University
Topic Area: EMOTION & SOCIAL: Emotional responding

E17 An Independent Component Analysis Approach to Assessing the Integration of Faces and Voices in Multimodal Emotion Perception: An Electroencephalography Study
Katherine Becker[1], Donald Rojas[1]; [1]Colorado State University
Topic Area: EMOTION & SOCIAL: Other

E18 Collaboration between team-members is represented in their shared brain activity: A NIRS based hyperscanning study
Naama Mayseless[1], Grace Hawthorne[2], Allan Reiss[1]; [1]Center for Interdisciplinary Brain Sciences Research, Stanford University, School of Medicine, Stanford, [2]Hasso Plattner Institute of Design (d.school) Stanford
Topic Area: EMOTION & SOCIAL: Other

E19 Communicative Misalignment in Autism Spectrum Disorder
Arjen Stolk[1,5], Harshali Wadge[1], Rebecca Brewer[2], Geoff Bird[3,4], Ivan Toni[5]; [1]Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA, USA, [2]Department of Psychology, Royal Holloway University of London, London, UK, [3]Department of Experimental Psychology, University of Oxford, Oxford, UK, [4]Social, Genetic, and Developmental Psychiatry Centre, Institute of Psychiatry, Psychology, and Neuroscience, King's College London, London, UK, [5]Donders Institute for Brain, Cognition, and Behaviour, Radboud University, Nijmegen, The Netherlands
Topic Area: EMOTION & SOCIAL: Other

E20 Cooperation, but not competition, increases gamma band inter-brain synchronization
Paulo Barraza[1], Alejandro Perez[2], Eugenio Rodríguez[3]; [1]Centro de Investigación Avanzada en Educación, CIAE, Universidad de Chile, [2]University of Toronto, [3]Laboratorio de Neurodinámica, Escuela de Psicología, Pontificia Universidad Católica de Chile
Topic Area: EMOTION & SOCIAL: Other

E21 Event-related potential markers of empathy for pain are modulated by the ingroup/outgroup status of the victim and of the perpetrator of harm
Brian Gonsalves[1], Douglas Rosales[1], Cameron Ryczek[1]; [1]California State University, East Bay
Topic Area: EMOTION & SOCIAL: Other

E22 Functional Connectivity Analysis of Risk-Taking and Impulsivity
Jeffrey Rouse[1], Yush Kukreja[2], Jeremy Cohen[3]; [1]Tulane University School of Medicine, [2]Tulane University, [3]Xavier University of Louisiana
Topic Area: EMOTION & SOCIAL: Other

E23 WITHDRAWN

E24 MANY FACETS OF THE SOCIAL BRAIN IN PSYCHIATRIC CONDITIONSSORDERS
Marina Pavlova[1]; [1]Department of Psychiatry and Psychotherapy, Medical School, Eberhard Karls University of Tübingen, Tübingen, Germany
Topic Area: EMOTION & SOCIAL: Other

E25 Resting-state functional connectivity fails to exhibit neural homophily between friends
Carolyn McNabb[1], Laura Burgess[1], Amy Fancourt[2], Patricia Riddell[1], Kou Murayama[1,3]; [1]University of Reading, United Kingdom, [2]Queen Anne's School, United Kingdom, [3]Kochi University of Technology, Japan
Topic Area: EMOTION & SOCIAL: Other

E26 Social values modulate culture-related and individual differences in neural correlates of moral decision making: A cross-cultural functional MRI study
Yang Chen Lin[1], Robert Doole[1], Hsu-Wen Huang[2], Chih-Mao Huang[1,3]; [1]National Chiao Tung University, Hsinchu, Taiwan, [2]City University of Hong Kong, Hong Kong, [3]Cognitive Neuroscience Laboratory, Institute of Linguistics, Academia Sinica, Taiwan
Topic Area: EMOTION & SOCIAL: Other

E27 The pain of sleep loss: A brain characterization in humans.
Adam Krause[1], Aric Prather[2], Tor Wager[3], Martin Lindquist[4], Matthew Walker[1]; [1]University of California, Berkeley, [2]University of California, San Francisco, [3]University of Colorado, Boulder, [4]Johns Hopkins University
Topic Area: EMOTION & SOCIAL: Other

E28 Does maternal odor influence social perception in the infant brain?
Sarah Jessen[1]; [1]University of Luebeck
Topic Area: EMOTION & SOCIAL: Development & aging

E29 A pattern-similarity analysis approach to cognitive control in color-word Stroop.
Michael Freund[1], Todd Braver[1]; [1]Washington University in St. Louis
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E30 A role for the paravermis in the control of verbal interference: comparison of bilingual and monolingual adults
Roberto Filippi[1], Eva Periche-Tomas[1], Andria Papageorgiou[1], Peter Bright[2]; [1]University College London, Institute of Education, London, UK, [2]Anglia Ruskin University, Cambridge, UK
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E31 Delta and theta power indicators of inhibition to food: A time-frequency analysis of high- and low-calorie go/no-go tasks
Alex M. Muir[1], Rebekah E. Rodeback[1], Kaylie A. Carbine[1], Ariana Hedges-Muncy[1], Michael J. Larson[1]; [1]Brigham Young University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E32 EEG Correlates of Involuntary Cognitions from External Control
Alexander J. Cook[1], Wei Dou[1], Ezequiel Morsella[1,2], Mark W. Geisler[1]; [1]San Francisco State University, [2]University of California, San Francisco
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E33 EEG network coherence in the 40 Hz gamma band modulates attentional state and task performance
Ka Eun Lee[1,2], Hio-Been Han[1,3], Jee Hyun Choi[1,4]; [1]Korea Institute of Science and Technology, [2]Seoul National University, [3]Korea Advanced Institute of
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E34 Fronto-striatal contributions to the control of response interference: a functional magnetic resonance imaging study
Claudia C. Schmidt[1], David C. Timpert[1,2], Isabel Arend[3], Simone Vossel[1,4], Gereon R. Fink[1,2], Avishai Henik[3], Peter H. Weiss[1,2]; [1]Cognitive Neuroscience, Institute of Neuroscience and Medicine (INM-3), Research Centre Juelich, Juelich, Germany, [2]Department of Neurology, University Hospital Cologne, Cologne, Germany, [3]Department of Psychology and the Zlotowski Center for Neuroscience, Ben-Gurion University of the Negev, Beer-Sheva, Israel, [4]Department of Psychology, University of Cologne, Cologne, Germany
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E35 Functional dissociation of EEG theta rhythms between prefrontal and visual cortices and their synchronization during sustained attention
Hio-Been Han[1,2], Ka Eun Lee[1,3], Jee Hyun Choi[1,4]; [1]Korea Institute of Science and Technology, [2]Korea Advanced Institute of Science and Technology, [3]Seoul National University, [4]Korea University of Science and Technology
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E36 Impairments in Conscious Error Awareness are Associated With ADHD and Predict Symptom Change
Amber Schwartz[1], Jessica Tipsord[1], Brittany Alperin[1], Sarah Karalunas[1]; [1]Oregon Health & Sciences University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E37 Preserved performance monitoring and error detection in left hemisphere stroke
Eva Niessen[1], Jana Ant[2], Stefan Bode[3], Jochen Saliger[4], Hans Karbe[4], Gereon Fink[1,2], Jutta Stahl[5], Peter Weiss[1,2]; [1]Research Centre Juelich, Germany, [2]University Hospital Cologne, Germany, [3]University of Melbourne, [4]Neurological Rehabilitation Centre Godeshohe, Germany, [5]University of Cologne, Germany
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E38 Preventing a thought from coming to mind elicits increased right frontal beta just as stopping action does
Anna Castiglione[1], Johanna Wagner[1], Michael Anderson[2], Adam Aron[1]; [1]University of California, San Diego, [2]University of Cambridge, UK
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E39 Proactive versus Reactive Distraction Filtering: Evidence from a Combined EEG and Eye-tracking Study
Salahadin Lotfi[1], Caed Burdis[1], Madeline Rech[1], Lukas Dommer[1], Caitlin Michalski[1], Emily Anhalt[1], Richard Ward[1], Christine Larson[1], Han-Joo Lee[1]; [1]Unviersity of Wisconsin-Milwaukee
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E40 To Play or Not to Play: Do Active Video Games Improve Electrophysiological Indices of Food-Related Inhibitory Control in Adolescents?
Kaylie A. Carbine[1], Joshua L. Smith[1], Hanel Watkins[1], Bruce Bailey[1], Michael J. Larson[1]; [1]Brigham Young University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

E41 A multilevel modelling approach to quantify channel based neural variability during postural-working memory dual tasking in young and old adults using fNIRS
Sushma Alphonsa[1], Carla Orellana[1], Sarah Schwartz[1], Ron Gillam[1]; [1]Utah State University
Topic Area: EXECUTIVE PROCESSES: Working memory

E42 A neural architecture for working memory, evidence accumulation and cognitive control
Zoran Tiganj[1], Nathanael Cruzado[1], Marc W. Howard[1]; [1]Boston University
Topic Area: EXECUTIVE PROCESSES: Working memory

E43 An Indexing Theory for Working Memory based on Fast Hebbian Plasticity
Florian Fiebig[1], Pawel Herman[1], Anders Lansner[1,2]; [1]Lansner Laboratory, Department of Computational Science and Technology, KTH Royal Institute of Technology, 10044 Stockholm, Sweden, [2]Department of Mathematics, Stockholm University, 10691 Stockholm, Sweden
Topic Area: EXECUTIVE PROCESSES: Working memory

E44 Brain electrical differences along working memory retrieval are related with the processes: maintenance or manipulation and the difficulty
Talía V. Román-López[1], Carlos Sánchez-Gachuz[1], Ulises Caballero-Sánchez[1], Silvia A. Cisneros-Luna[1], Jesus A. Franco-Rodríguez[1], Mónica Méndez-Diaz[2], Oscar Prospéro-García[2], Alejandra Ruiz-Contreras[1]; [1]Facultad de Psicología, Universidad Nacional Autónoma de México, [2]Facultad de Medicina, Universidad Nacional Autónoma de México
Topic Area: EXECUTIVE PROCESSES: Working memory

E45 Connectome-based predictive modeling of working memory in multiple sclerosis
Heena Manglani[1], Stephanie Fountain-Zaragoza[1], Ruchika Shaurya Prakash[1]; [1]The Ohio State University
Topic Area: EXECUTIVE PROCESSES: Working memory

E46 Decoding verbal short-term memory in non-perceptual parietal and frontal regions: Evidence for a buffer account
Qiuhai Yue[1], Randi C. Martin[1]; [1]Rice University
Topic Area: EXECUTIVE PROCESSES: Working memory

E47 Enhanced working-memory performance by cross-frequency coupled transcranial alternative current stimulation
Byoung-Kyong Min[1,2], Kyung Mook Choi[3], Hyun-Seok Kim[3], Min-Hee Ahn[3]; [1]Department of Brain and Cognitive Engineering, Korea University, Seoul 02841, Korea, [2]McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA 02139, USA, [3]Institute for Brain and Cognitive Engineering, Korea University, Seoul 02841, Korea
Topic Area: EXECUTIVE PROCESSES: Working memory

E48 The effect of cerebellar HD-tDCS on higher order cognition
Ted Maldonado[1], Jessica A. Bernard[1]; [1]Texas A&M University
Topic Area: EXECUTIVE PROCESSES: Working memory

E49 The N2pc and Individual Differences in Working Memory
Sally Borgatti[1], Juniper Hollis[1], Kirsten Lydic[1], Zoe Pestana[1], Amy Lowe[1], Heather Welty[1], Chynna Aming[1], Cindy Bukach[2], Catherine Reed[3], Jane Couperus[1]; [1]Hampshire College, [2]University of Richmond, [3]Claremont McKenna College
Topic Area: EXECUTIVE PROCESSES: Working memory

E50 The strength of alpha-beta oscillatory coupling predicts motor timing precision
Tadeusz Kononowicz[1], Laetitia Grabot[1], Tom Dupre La Tour[2], Alex Gramfort[3], Valerie Doyere[4], Virginie van Wassenhove[1]; [1]1Cognitive Neuroimaging Unit, CEA DRF/Joliot, INSERM, NeuroSpin center, 91191 Gif-sur-Yvette, [2]LTCI, Telecom ParisTech, Université Paris-Saclay, [3]Inria, Université Paris-Saclay, Saclay, France, [4]5Neuro-PSI, Université Paris-Sud, Université Paris-Saclay, CNRS, Orsay, France
Topic Area: EXECUTIVE PROCESSES: Working memory

E51 Bilingualism modulates L1 word processing in the developing brain
Olga Kepinska[1], Myriam Oliver[1], Zhichao Xia[1,2], Rebecca Marks[3], Leo Zekelman[1,4], Jocelyn Caballero[1], Roeland Hancock[1,5], Stephanie L. Haft[1,6], Priscilla Duong[1,7], Yuuko Uchikoshi[8], Ioulia Kovelman[3], Fumiko Hoeft[1,5,9]; [1]University of California, San Francisco, [2]Beijing Normal University, [3]University of Michigan, [4]Harvard University, [5]University of Connecticut, [6]University of California, Berkeley, [7]Palo Alto University, [8]University of California, Davis, [9]Haskins Laboratories
Topic Area: LANGUAGE: Development & aging

E52 Feedback-Related ERPs Predict Learning Speed
Isabelle Moore[1], Calais Larson[1], Annie Fox[1], Yael Arbel[1]; [1]Massachusetts General Hospital Institute of Health Professions
Topic Area: LANGUAGE: Development & aging

E53 Natural Semantic, Syntactic, and Phonological Processing in Adults and 5-year-old Children
Margaret Ugolini[1], Neda Tountouchi Shabestari[1], Lisa D. Sanders[1]; [1]University of Massachusetts, Amherst
Topic Area: LANGUAGE: Development & aging

E54 Rapid Automatized Naming Speed in Hearing and Deaf Skilled Readers Reveals Language Modality Independent Relationship
Diana Andriola[1], Clifton Langdon[1]; [1]Gallaudet University
Topic Area: LANGUAGE: Development & aging

E55 Reaction Time Variability in Lexical Decision Task Performance and Reading Network Activation in Children with Dyslexia
Maya Rajan[1,2], Rita Barakat[1,2], Stephen Gonzales[2], Anisa Azad[2], Max Orozco[2], Jason Zevin[1], Frank Manis[1], Kristi Clark[1,2]; [1]University of Southern California Neuroscience Graduate Program and Psychology Program, [2]Connectivity and Network Development Laboratory (CANDL) Group, Laboratory of Neuro Imaging and USC Mark and Mary Stevens Neuro Imaging
Topic Area: LANGUAGE: Development & aging

E56 Working memory 'Brain Training' for Older Adults – does it work?
Olga Matysiak[1], Aleksandra Bramorska[1], Aneta Brzezicka[1,2], Natalia Jakubowska[1], Wanda Zarzycka[1]; [1]University of Social Sciences and Humanities, Warsaw, Poland, [2]Cedar-Sinai Medical Centre, Los angeles, USA
Topic Area: LANGUAGE: Development & aging

E57 ERP evidence for phonological priming in American Sign Language in a semantic task
Brittany Lee[1,2], Katherine J. Midgley[1], Phillip J. Holcomb[1], Karen Emmorey[1], Gabriela Meade[1,2]; [1]San Diego State University, [2]University of California, San Diego
Topic Area: LANGUAGE: Other

E58 Somatotopic phonological priming and prediction in the motor system
Luigi Grisoni[1], Friedemann Pulvermüller[1,2,3]; [1]Freie Universität Berlin, Brain Language Laboratory, Department of Philosophy and Humanities, 14195 Berlin, Germany, [2]Berlin School of Mind and Brain, Humboldt Universität zu Berlin, 10099 Berlin, Germany, [3]Einstein Center for Neurosciences, 10117, Berlin, Germany
Topic Area: LANGUAGE: Other

E59 Stability of phonological neural codes covaries with word predictability: Evidence for cross-level predictions in language processing
Jona Sassenhagen[1], Benjamin Gagl[1], Christian J. Fiebach[1,2]; [1]University of Frankfurt, Germany, [2]Brain Imaging Center, Frankfurt, Germany
Topic Area: LANGUAGE: Other

E60 The Reading Brain Project: An Open Science Data-Sharing Initiative
Anya Yu[1], Benjamin Schloss[1], Chun-Ting Hsu[2], Lindsey Ma[1], Chih-Ting Chang[3], Marissa Scotto[1], Ping Li[1]; [1]The Pennsylvania State University, USA, [2]Kokoro Research Center, Kyoto University, Japan, [3]Institute of Linguistics, Academia Sinica, Taiwan
Topic Area: LANGUAGE: Other

E61 White-matter connectivity of left occipitotemporal regions for reading music and words: the impact of musical expertise
Florence Bouhali[1,2], Valeria Mongelli[3,4], Michel Thiebaut de Schotten[2], Laurent Cohen[2]; [1]UCSF, [2]Institut du Cerveau et de la Moelle épinière (ICM), Paris, France, [3]Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands, [4]University of Amsterdam, Netherlands
Topic Area: LANGUAGE: Other

E62 A functional role for primary motor cortex in memory for manipulable and handwritten words
Chelsea Gordon[1], Alexandria Pabst[1], Ramesh Balasubramaniam[1]; [1]University of California, Merced
Topic Area: LANGUAGE: Semantic

E63 How are abstract concepts neurally represented across languages?
Robert Vargas[1], Marcel Just[1]; [1]Carnegie Mellon University
Topic Area: LANGUAGE: Semantic

E64 Learning an artificial sign language: An ERP study
Tania Delgado[1], Jared Gordon[1], Seana Coulson[1]; [1]University of California, San Diego
Topic Area: LANGUAGE: Semantic

E65 The frontal post-N400 positivity is elicited to unexpected-plausible words in low, but not weak, constraining contexts
Patrick Ledwidge[1], Adam Ramsey[1], Chloe Huston[1]; [1]Baldwin Wallace University
Topic Area: LANGUAGE: Semantic

E66 The Linguistic-Gestural Processing of Self-Adaptors, Emblems, and Iconic Gestures: An fMRI study
Kawai Chui[1], Kanyu Yeh[1], Ting-Ting Chang[1]; [1]National Chengchi University, Taiwan
Topic Area: LANGUAGE: Semantic

E67 Left inferior frontal gyrus less active for greater syntactic complexity: Magnetoencephalography evidence from minimal Arabic phrases and sentences
Suhail Matar[1,2], Julien Dirani[2], Alec Marantz[1,2], Liina Pylkkänen[1,2]; [1]New York University, [2]New York University Abu Dhabi Research Institute
Topic Area: LANGUAGE: Syntax

E68 Shared neural representations of syntax during an online dyadic communication
Wenda Liu[1], Holly P. Branigan[2], Lifen Zheng[1], Yuhang Long[1], Martin J. Pickering[2], Chunming Lu[1,3]; [1]State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, [2]Department of Psychology, University of Edinburgh, [3]IDG/McGovern Institute for Brain Research, Beijing Normal University
Topic Area: LANGUAGE: Syntax

E69 Tool-use triggers improvements in syntactic abilities
Simon Thibault[1,2,4], Véronique Boulenger[3,5], Alice Catherine Roy[3,5], Claudio Brozzoli[1,2,4,6]; [1]ImpAct Team, INSERM U1028, CNRS UMR5292, Lyon, France, [2]Lyon Neuroscience Research Centre, [3]Dynamique Du Langage, CNRS UMR5596, Lyon, France, [4]University of Lyon 1, [5]University of Lyon 2,
Topic Area: LANGUAGE: Syntax

E70 Tracking grammatical dependencies through interference
Albert Kim[1], Shannon McKnight[1]; [1]University of Colorado, Boulder
Topic Area: LANGUAGE: Syntax

E71 Common cortical representations during episodic memory retrieval
Gayoung Kim[1], Sue-Hyun Lee[1,2]; [1]Department of Bio and Brain Engineering, College of Engineering, Korea Advanced Institute of Science and Technology (KAIST), [2]Program of Brain and Cognitive Engineering, College of Engineering, Korea Advanced Institute of Science and Technology (KAIST)
Topic Area: LONG-TERM MEMORY: Episodic

E72 Cortical reinstatement in young and older adults
Paul F. Hill[1], Danielle R. King[1], Joshua D. Koen[2], Michael D. Rugg[1]; [1]Center for Vital Longevity and School of Behavioral and Brain Sciences, University of Texas at Dallas, [2]Department of Psychology, University of Notre Dame
Topic Area: LONG-TERM MEMORY: Episodic

E73 Decoding power spectra in unimodal and multimodal episodic memory recollection
Megan Rudrum[1], Thomas H.B. FitzGerald[1], Heidi M. Bonnici[1]; [1]University of East Anglia
Topic Area: LONG-TERM MEMORY: Episodic

E74 Distinct regions of the human hippocampus are associated with memory for different spatial locations.
Brittany Jeye[1], Sean MacEvoy[1], Scott Slotnick[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

E75 Examination of the role of alpha oscillations and attention in the modulation of episodic memory by value
Jessica E Brown[1], Briana M Silck[1], Robert S Ross[1]; [1]University of New Hampshire
Topic Area: LONG-TERM MEMORY: Episodic

E76 How memory reinstatement changes over time
Camille Gasser[1], Alexa Tompary[2], Lila Davachi[1]; [1]Columbia University, [2]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

E77 Incentivizing visual search performance impairs incidental memory encoding.
Allison Neeson[1], Sarah DuBrow[2], Lena Skalaban[3], Lila Davachi[4], Vishnu Murty[1]; [1]Temple University, [2]University of Oregon, [3]Yale University, [4]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

E78 Mnemonic Similarity Task shows deficits in familiarity recognition in Parkinson's disease without cognitive impairment
Nessa Kim[1], Colin McDaniel[1], Christian La[1], Tanusree Das[1], Kathleen Poston[1]; [1]Stanford University
Topic Area: LONG-TERM MEMORY: Episodic

E79 Neural activity during episodic counterfactual thinking in anxious and non-anxious individuals
Natasha Parikh[1], Kevin S. LaBar[1], M. Zachary Rosenthal[1], Jacqueline DeRosa[1], Gregory W. Stewart[1], Felipe De Brigard[1]; [1]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

E80 Neural signatures of memory content and temporal distance identified using overt, in-scanner autobiographical memory retrieval
Adrian W. Gilmore[1], Alina Quach[1], Sarah E. Kalinowski[1], Stephen J. Gotts[1], Daniel L. Schacter[2], Alex Martin[1]; [1]National Institute of Mental Health, NIH, Bethesda, MD 20892, [2]Harvard University, Cambridge, MA 02138
Topic Area: LONG-TERM MEMORY: Episodic

E81 Post-Encoding Amygdala-Cortical Connectivity Is Related to Valence-Specific Emotional Memory Biases
Sarah Kark[1], Elizabeth Kensinger[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

E82 Pre-trial fluctuations in pupil diameter affect goal-state orienting and accuracy during episodic remembering
Kevin P. Madore[1], Anna M. Khazenzon[1], Cameron W. Backes[2], Anthony D. Wagner[1,3]; [1]Department of Psychology, Stanford University, [2]Symbolic Systems Program, Stanford University, [3]Wu Tsai Neurosciences Institute, Stanford University
Topic Area: LONG-TERM MEMORY: Episodic

E83 Strengthening structure: learning modulates event segmentation
Oded Bein[1], Lila Davachi[2]; [1]New York University, [2]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

E84 Testing frequency specificity of noninvasive brain stimulation effects on hippocampal network involvement in recollection success versus precision
Shruti Dave[1], Molly Hermiller[1], Aneesha Nilakantan[1], Melissa Gunlogson[1], Brennan Durr[1], Erica Karp[1], Stephen VanHaerants[1], Joel Voss[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

E85 The Effects of Age on Subjective and Objective Estimates of Recollection
Saad A. Alghamdi[1,2], Paul F. Hill[1], Michael D. Rugg[1,3]; [1]Center for Vital Longevity, University of Texas at Dallas., [2]King Saud University. Riyadh, Saudi Arabia., [3]University of Texas Southwestern Medical Center.
Topic Area: LONG-TERM MEMORY: Episodic

E86 The impact of semantic processing on memory encoding, brain oscillations and representational similarity in EEG
Marie-Christin Fellner[1], Martina Bauer[1], Nikolai Axmacher[1]; [1]Institute of Cognitive Neuroscience, Ruhr University Bochum
Topic Area: LONG-TERM MEMORY: Episodic

E87 Time course of encoding and delayed recognition in human memory
Domile Tautvydaite[1], Alexandra Adam-Darque[1], Aurélie L. Manuel[1], Armin Schnider[1]; [1]Laboratory of Cognitive Neurorehabilitation, University Hospital of Geneva and University of Geneva, Switzerland
Topic Area: LONG-TERM MEMORY: Episodic

E88 Composing Concepts: EEG oscillations during integration of visual, lexical, and auditory stimuli
Hannah M. Morrow[1], Jordan Barry[1], Eiling Yee[1]; [1]University of Connecticut
Topic Area: LONG-TERM MEMORY: Semantic

E89 Predicting Semantic Fluency Using Large-scale Language Corpora
Ming Hsu[1,2], Zhihao Zhang[1], Andrew Kayser[2,3,4]; [1]Haas School of Business, University of California, Berkeley, [2]Helen Wills Neuroscience Institute, University of California, Berkeley, [3]Department of Neurology, University of California, San Francisco, [4]Department of Neurology, VA Northern California Health Care System
Semantic memory – our acquired knowledge of the world – plays a central role
Topic Area: LONG-TERM MEMORY: Semantic

E90 Semantic Richness in Preclinical Alzheimer's disease
Nathaniel Klooster[1], Arun Pilania[1], David Wolk[1], Anjan Chatterjee[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Semantic

E91 The Influence of Exploratory Choice on Semantic Search
Nathan Tardiff[1], Sharon L. Thompson-Schill[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Semantic

E92 The organization of object concepts in modality specific brain association areas: A quantitative approach
skiker kaoutar[1], Maouene Mounir[1]; [1]Univerity of Abdelmalek Essaadi
Topic Area: LONG-TERM MEMORY: Semantic

E93 Learning-induced transition of mapping high-dimensional motor space in a complicated reward-based motor skill learning
Sungshin Kim[1,2], Yera Choi[1], Emily Yunha Shin[1]; [1]Center for Neuroscience Imaging Research, Institute of Basic Sciences, [2]Sungkyunkwan University
Topic Area: LONG-TERM MEMORY: Skill learning

E94 Practice in your sleep: sleep replay improves motor function
Larry Y. Cheng[1], Tiffanie Che[1], Goran Tomic[1], Marc W. Slutzky[1], Ken A. Paller[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Skill learning

E95 Decreased local functional brain connectivity can predict conversion to MCI or dementia
Eun Hyun Seo[1], Jinsick Park[2]; [1]Premedical science, College of Medicine, Chosun University, Gwangju, Korea, [2]Department of Biomedical Engineering, Hanyang University, Seoul, Korea
Topic Area: METHODS: Neuroimaging

E96 Revealing the Brain Network Structure of Individual Differences in Cognitive Control
Shelly R. Cooper[1], Joshua J. Jackson[1], Todd S. Braver[1]; [1]Washington University in St. Louis
Topic Area: METHODS: Neuroimaging

E97 The effects of lesions on the modular organization of the brain: A comparison of simulated and real lesions
Yuan Tao[1], Brenda Rapp[1]; [1]Johns Hopkins University
Topic Area: METHODS: Neuroimaging

E98 The relevance of resting-state functional connectivity to cognitive brain activations and behavior
Richard H. Chen[1], Takuya Ito[1], Ravi D. Mill[1], Michael W. Cole[1]; [1]Rutgers, the State University of New Jersey - Newark
Topic Area: METHODS: Neuroimaging

E99 The science of the singular: single-item decoding with multivariate analyses
Benjamin R. Geib[1], Simon W. Davis[1], Erik A. Wing[2], Marty G. Woldorff[1], Roberto Cabeza[1]; [1]Duke University, [2]Rotman Research Institute
Topic Area: METHODS: Neuroimaging

E100 Predictive validity of word reading tests for estimating premorbid IQ
Peter Bright[1,2], Izobel Clegg[1], Farah Hina[1], Ian van der Linde[2,3]; [1]Department of Psychology, Anglia Ruskin University, Cambridge, UK, [2]Vison & Eye Research Unit (VERU), School of Medicine, Anglia Ruskin University, [3]Department of Computing & Technology, Anglia Ruskin University
Topic Area: METHODS: Other

E101 tDCS Modulation of Dopamine Systems
Michael Imburgio[1], Hannah Ballard[2], Astin Cornwall[1], Darrell Worthy[1,2], Jessica Bernard[1,2], Joseph Orr[1,2]; [1]Department of Psychological and Brain Sciences, Texas A&M University, [2]Texas A&M Institute of Neuroscience
Topic Area: METHODS: Other

E102 The Face Image Meta-Database and ChatLab Disfigured Face Database: Tools to Facilitate Neuroscience Research on Face Perception and Social Stigma
Clifford Workman[1], Anja Jamrozik[1], Miriam Rosen[1], Anjan Chatterjee[1]; [1]The University of Pennsylvania, Philadelphia, PA, USA
Topic Area: METHODS: Other

E103 The Neuroimaging Informatics Tools and Resources Clearinghouse
Christian Haselgrove[1,3], Albert Crowley[2], David Kennedy[3], Abby Paulson[2], Nina Preuss[2], Matt Travers[2]; [1]Neuromorphometrics, Inc, [2]Turner Consulting Group, Inc, [3]University of Massachusetts Medical School
Topic Area: METHODS: Other

E104 Ultrasonic modulation of higher order visual pathways in humans
Verena Braun[1], Joseph Blackmore[1], Michele Veldsman[1], Robin Cleveland[1], Christopher Butler[1]; [1]University of Oxford
Topic Area: METHODS: Other

E105 Under slept and Overanxious: The neural correlates of sleep-loss induced anxiety in the human brain
Eti Ben Simon[1], Matthew Walker[1,2]; [1]Department of Psychology, University of California, Berkeley, USA., [2]Helen Wills Neuroscience Institute, Berkeley, University of California, USA.
Topic Area: OTHER

E106 Age-related differences on implicit and explicit motor sequence learning in children from 6 to 12 years of age
Jin Bo[1], Yu Xing[2], Bo Shen[3]; [1]Eastern Michigan University, [2]Central China Normal University, [3]Wayne State University
Topic Area: PERCEPTION & ACTION: Motor control

E107 Altered Motor Dynamics during Response Competition in Adults with Type 1 Diabetes
Christine M Embury[1,2], Grace H Lord[1], Andjela T Drincic[1], Cyrus V Desouza[1], Tony W Wilson[1]; [1]University of Nebraska Medical Center, [2]University of Nebraska Omaha
Topic Area: PERCEPTION & ACTION: Motor control

E108 Altered Speech Responses to Transient Mid- and Whole-Utterance and to Constant Formant Perturbations
Inez Raharjo[1,2], Hardik Kothare[1,2], John Houde[1], Srikantan Nagarajan[1]; [1]University of California, San Francisco, [2]University of California, Berkeley
Topic Area: PERCEPTION & ACTION: Motor control

E109 Changes in Functional Connectivity Seeded from M1 after a 12-week Aerobic Exercise Intervention
Keith McGregor[1,2], Bruce Crosson[1,2,3], Lisa Krishnamurthy[1,4], Venkatagiri Krishnamurthy[1,3], Javier Omar[1], Kyle Hortman[1], Kaundinya Gopinath[3], Joe Nocera[1,2,5]; [1]Atlanta VA Health Care System, Center for Visual and Neurocognitive Rehabilitation, [2]Emory University, Department of Neurology, [3]Emory University, Department of Radiology, [4]Georgia State University, Department of Physics and Astronomy, [5]Emory University, Department of Physical Therapy
Topic Area: PERCEPTION & ACTION: Motor control

E110 Effects of cognitive interference and priming on speech acoustics
Caroline Niziolek[1]; [1]University of Wisconsin–Madison
Topic Area: PERCEPTION & ACTION: Motor control

E111 Measuring Brain Complexity During Neural Motor Resonance
Brandon Hager[1], Albert Yang[2], Jennifer Gutsell[1,3]; [1]Department of Psychology, Brandeis University, Waltham, MA, United States, [2]Division of Interdisciplinary Medicine and Biotechnology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States, [3]Department of Psychology, Neuroscience Program, and Volen National Center for Complex Systems, Brandeis University, Waltham, MA, United States
Topic Area: PERCEPTION & ACTION: Motor control

E112 Neural correlates of aberrant vocal motor control in Adductor Spasmodic Dysphonia
Hardik Kothare[1,2], Sarah Schneider[1], Katherine Yung[3], Leighton Hinkley[1], Danielle Mizuiri[1], Susanne Honma[1], Coleman Garrett[1], Molly Naunheim[1], Mark Courey[4], Srikantan Nagarajan[1,2], John Houde[1]; [1]University of California, San Francisco, [2]UC Berkeley-UCSF Graduate Program in Bioengineering, [3]San Francisco Voice & Swallowing, [4]Mount Sinai Health System
Topic Area: PERCEPTION & ACTION: Motor control

E113 Stimulus-Elicited Involuntary Imagery in Semi-Automated Driving: Implications for Neuroscience
Anthony G. Velasquez[1], Adam Gazzaley[2], Heishiro Toyoda[3], Ezequiel Morsella[1,2]; [1]San Francisco State University, [2]University of California, San Francisco, [3]Toyota Collaborative Safety Research Center
Topic Area: PERCEPTION & ACTION: Motor control

E114 The FACTS model: using state estimation and task-based feedback control to model the speech motor system
John Houde[1], Benjamin Parrell[2], Vikram Ramanarayanan[1,3], Srikantan Nagarajan[1,4]; [1]University of California, San Francisco, Department of Otolaryngology - Head and Neck Surgery, San Francisco, CA, 94143, USA, [2]University of Wisconsin - Madison,Department of Communication Sciences and Disorders, Madison, WI, 53706, USA, [3]Educational Testing Service R&D, San Francisco, CA, 94105, USA, [4]University of California, San Francisco, Department of Radiology, San Francisco, CA, 94143, USA
Topic Area: PERCEPTION & ACTION: Motor control

E115 Time-frequency characteristics of neural responses to perturbations during sensorimotor synchronization to auditory and visual rhythms
Daniel Comstock[1], Ramesh Balasubramaniam[1]; [1]University of California Merced
Topic Area: PERCEPTION & ACTION: Motor control

E116 Transcranial Direct Current Stimulation to Enhance Laparoscopic Technical Skill Learning: A Preregistered Randomized Controlled Trial
Lawrence Appelbaum[1], Hannah Palmer[1], Zhi-De Deng[2], Lysianne Beynel[1], Amanda Watts[1], Jonathan Young[1], Sarah Lisanby[2], John Migaly[1], Morgan Cox[1]; [1]Duke University, [2]National Institute of Mental Health
Topic Area: PERCEPTION & ACTION: Motor control

E117 Bimanual perceptual interactions in the frequency domain differ for flutter and vibration cues
Sriparna Sen[1,2], Shoaibur Md. Rahman[2], Jeffrey M. Yau[2]; [1]Rice University, [2]Baylor College of Medicine
Topic Area: PERCEPTION & ACTION: Other

E118 Consciousness-specific interactions of neural complexity and integration - a spatial and temporal perspective
Andrea I. Luppi[1,2], Michael M. Craig[2], Ioannis Pappas[2], Paola Finoia[2], Guy B. Williams[2], Judith Allanson[3], John D. Pickard[2], Adrian M. Owen[4], Lorina Naci[5], David K. Menon[2], Emmanuel A. Stamatakis[2]; [1]Harvard University, [2]University of Cambridge, [3]Cambridge University Hospitals NHS Foundation,

Addenbrooke's Hospital, [4]University of Western Ontario, London, Ontario, Canada, [5]Trinity College Dublin, Dublin, Ireland
Topic Area: PERCEPTION & ACTION: Other

E119 Differential parietal activations following remapping in a visuospatial memory task
Jordan Pierce[1], Arnaud Saj[2], Patrik Vuilleumier[1]; [1]University of Geneva, [2]University Hospitals of Geneva
Topic Area: PERCEPTION & ACTION: Vision

E120 Evaluating the N170 ERP as an index of reading ability for typically developing and dyslexic students
Karen Froud[1], Lisa Levinson[1], Chaille Maddox[1], Trey Avery[2], Airey Lau[1], Sushma Narayan[1], SuWon Jung[1], Christina Wusinich[1], Deyrha Mills-Borbon[1], Camila Hasbun-Taveras[1], Sarah Ximena Rojas[1]; [1]Teachers College, Columbia University, [2]Haskins Laboratories, Yale University
Topic Area: PERCEPTION & ACTION: Vision

E121 Evidence for a hierarchy of prediction errors: Visual mismatch negativity (vMMN) in response to deviance and omission
Robert Woodry[1], Kate Yurgil[1]; [1]Loyola University New Orleans
Topic Area: PERCEPTION & ACTION: Vision

E122 Visually-evoked ERP response differences to motion and color in adults with and without developmental dyslexia.
Lisa Levinson[1], Lauren Shuffrey[2], Chaille Maddox[1], Heather Green[3], Trey Avery[4], Airey Lau[1], Sushma Narayan[1], SuWon Jung[1], Sarah Ximena-Rojas[1], Karen Froud[1]; [1]Teachers College, Columbia University, [2]Columbia University Medical Center, [3]Children's Hospital of Philadelphia, [4]Haskins Laboratories, Yale University
Topic Area: PERCEPTION & ACTION: Vision

E123 Examining neural representations of frequency value in decision-making
Hilary J. Don[1], Darrell A. Worthy[1], Astin C. Cornwall[1], Kimberly Ray[2], Tyler Davis[3], David M. Schnyer[2]; [1]Texas A&M University, [2]University of Texas at Austin, [3]Texas Tech University
Topic Area: THINKING: Decision making

E124 Keeping Track of 'Alternative Facts': The Neural Correlates of Processing Misinformation Corrections
Andrew Gordon[1,2], Susanne Quadflieg[2], Jonathan Brooks[2,3], Ullrich Ecker[4], Stephan Lewandowsky[2,4]; [1]University of California, Davis, MIND Institute, [2]University of Bristol, [3]Clinical Research and Imaging Centre, University of Bristol, [4]University of Western Australia
Topic Area: THINKING: Decision making

E125 Motor learning informs model-based computations of context-appropriate risk in the genesis of expertise
Neil Dundon[1], Allison Shapiro[1], Viktoriya Babenko[1], Scott Grafton[1]; [1]Department of Psychological and Brain Sciences, University of California, Santa Barbara
Topic Area: THINKING: Decision making

E126 Neural correlates of value-based decision making in a cost-benefit integration task
Rebecca Anik Mayer[1], Christian Fiebach[1], Ulrike Basten[1]; [1]Goethe University Frankfurt, Germany
Topic Area: THINKING: Decision making

E127 Uncertainty in choice policy explains reaction time: toward a unified account of set size, repetition, delay, and learning effects on choice reaction time
Samuel McDougle[1], Anne Collins[1]; [1]University of California, Berkeley
Topic Area: THINKING: Decision making

E128 Belief updating in younger and older adults: An ERP study
Bonnie Armstrong[1], Ben Dyson[2], Julia Spaniol[1]; [1]Ryerson University, [2]University of Alberta
Topic Area: THINKING: Development & aging

E129 Distinct locus coeruleus and precuneus responses in older adults with cognitive impairment or subjective complaints during value-based choice processing
Yu-Shiang Su[1,2], Peter Sheng Yao Hsu[3], Yen-Ling Chen[1], Chih-Yi Hsia[1], Ming-Jang Chiu[1,4], Isaac Wen-Yih Tseng[1,4], Pei-Fang Tang[1], Yu-Ling Chang[1], Charlene Chia-Lin Lee[1], Joshua Oon Soo Goh[1]; [1]National Taiwan University, Taipei, Taiwan, [2]Academia Sinica, Taipei, Taiwan, [3]National Health Research Institutes, Miaoli County, Taiwan, [4]National Taiwan University Hospital, Taipei, Taiwan
Topic Area: THINKING: Development & aging

E130 Elevation of episodic-based mind-wandering in semantic dementia – evidence for functional reorganisation of the brain's default network
Muireann Irish[1,2], Daniel Roquet[1,2], Zoë-Lee Goldberg[1], Jessica Andrews-Hanna[3], John Hodges[2,4]; [1]The University of Sydney, Brain and Mind Centre and School of Psychology, Sydney, Australia, [2]Australian Research Council Centre of Excellence in Cognition and its Disorders, Sydney, Australia, [3]Department of Psychology, University of Arizona, Tucson, Arizona, USA, [4]The University of Sydney, Central Clinical School, Sydney, Australia
Topic Area: THINKING: Development & aging

E131 The Role of Cognitive Reserve and Brain Connectivity in Cognitive Function
Benjamin Dykstra[1], Elizabeth Douglas[1], Brandy Morris[1], Vincent Bryant[1], Jessica Fleck[1]; [1]Stockton University
Topic Area: THINKING: Development & aging

E132 Increased creative thinking in narcolepsy
Celia Lacaux[1,2], Giuseppe Plazzi[3], Isabelle Arnulf[1,2], Delphine Oudiette[1,2]; [1]Sorbonne University, IHU@ICM, INSERM, CNRS UMR7225, F-75013 Paris, France, [2]AP-HP, Hôpital Pitié-Salpêtrière, Service des Pathologies du Sommeil, F-75013 Paris, France, [3]University of Bologna, Bologna, Italy
Topic Area: THINKING: Problem solving

E133 Neural basis of functional fixedness during creative ideas generation: an EEG study
Anaëlle Camarda[1], Émilie Salvia[2], Julie Vidal[2], Benoit Weil[1], Nicolas Poirel[2,3], Olivier Houdé[2,3], Grégoire Borst[2,3], Mathieu Cassotti[2,3]; [1]Mines ParisTech, CGS, [2]Paris Descartes University, LaPsyDÉ, [3]Institut universitaire de France
Topic Area: THINKING: Problem solving

E134 Neural Rule Based Systems
Dainius Kreivenas[1], Christian Huyck[1]; [1]Middlesex University
Topic Area: THINKING: Problem solving

E135 The Neural Underpinnings of Creative Design
Laura Hay[1], Alex Duffy[1], Sam Gilbert[2], Laura Lyall[3], Gerard Campbell[1], Damien Coyle[4], Madeleine Grealy[1]; [1]University of Strathclyde, [2]University College London, [3]University of Glasgow, [4]Ulster University
Topic Area: THINKING: Problem solving

E136 The shape of the ACC contributes to both inhibitory control efficiency and the ability to generate creative idea in adolescents
Mathieu Cassotti[1,4], Anaelle Camarda[2], Cloélia Tissier[1], Sylvain Charon[3], Catherine Oppenheim[3], Olivier Houdé[1,4], Grégoire Borst[1,4], Arnaud Cachia[1,3,4]; [1]Université Paris Descartes, [2]Mines ParisTech, [3]Center of Psychiatry and Neurosciences, [4]Institut Universitaire de France
Topic Area: THINKING: Problem solving

E137 Dynamic Functional Connectivity Measures Fail to Predict "Real World" Classroom Learning
Adam Weinberger[1], Robert Cortes[1], Adam Green[1]; [1]Georgetown University
Topic Area: THINKING: Reasoning

E138 Minding the eye: an Aphantasia case study
Natalie Halloran[1], Abigail Beck[1], Carole Scherling[1]; [1]Department of Psychological Science, Belmont University, Nashville, TN, USA
Topic Area: THINKING: Reasoning

E139 The Influence of Reasoning Ability and Relational Cueing in Solving Relational Match-to-Sample Problems
Matthew J. Kmiecik[1], Alex D. Martin[1], Lauren M. Kim[1], Rudy Perez[1], David M. Martinez[1], Ekarin E. Pongpipat[1], Daniel C. Krawczyk[1,2]; [1]The University of Texas at Dallas, [2]The University of Texas Southwestern Medical Center
Topic Area: THINKING: Reasoning

Session F

Tuesday, March 26, 8:00–10:00 am, Pacific Concourse

F1 Attention Control and Inhibition in ADHD Using a Comprehensive, Case Study Approach
Maria Stacy[1], Emily Caminiti[1], Zsofia Imre[1], Hannah Travis[1], Audreyana Jagger-Rickels[1], Sarah Vadnais[1], Jennifer Schlak[1], Genni Newsham[1], Michelle Y. Kibby[1]; [1]Southern Illinois University- Carbondale
Topic Area: ATTENTION: Other

F2 Brain imaging of ADHD with a real-world condition
Juha Salmi[1,2,3,4,5], Mostafa Metwaly[4], Kimmo Alho[4], Sami Leppämäki[6], Pekka Tani[6], Anniina Koski[6], Mika Määttä[6], Susanne Jaeggi[7,8], Jussi Tohka[9], Matti Laine[10]; [1]Department of Psychology and Speech-Language Pathology, University of Turku, Turku, Finland, [2]Turku Institute for Advanced Studies, University of Turku, Turku Finland, [3]Department of Psychology, Åbo Akademi University, Turku, Finland, [4]Department of Psychology and Logopedics, University of Helsinki, Helsinki, Finland, [5]AMI Centre, Aalto Neuroimaging, Aalto University, Espoo, Finland, [6]Department of Psychiatry, Helsinki University Hospital, Helsinki, Finland, [7]School of Education, University of California, Irvine, USA, [8]Department of Cognitive Sciences, University of California, Irvine, USA, [9]AI Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland, [10]Brain and Mind Center, University of Turku, Turku, Finland
Topic Area: ATTENTION: Other

F3 Fluctuations in pupil size reflect lack of external attention
Jaana Simola[1], Mahiko Konishi[2], Satu Palva[1,3], Jonathan Smallwood[2], Matias Palva[1,3]; [1]Helsinki Institute of Life Science (HiLIFE), Neuroscience Center, University of Helsinki, Finland, [2]Department of Psychology / York Neuroimaging Centre, University of York, UK, [3]Centre for Cognitive Neuroimaging, Institute of Neuroscience and Psychology University of Glasgow, UK
Topic Area: ATTENTION: Other

F4 Passive Implicit Learning in a Complex Task Environment
Gregory Gill[1], Stephen Luehr[1], Olave Krigolson[1]; [1]University of Victoria, Centre for Biomedical Research
Topic Area: ATTENTION: Other

F5 Separable attention processes constrain multidimensional reinforcement learning
Angela Radulescu[1,2], Yael Niv[1,2]; [1]Princeton University Department of Psychology, [2]Princeton Neuroscience Institute
Topic Area: ATTENTION: Other

F6 Signal Complexity of the Whole Brain Connectome is related to Fluctuations in Attention
Agnieszka Zuberer[1,2], Eve M. Valera[5,6], Aaron Kucyi[4,5,6], David Rothlein[1,2], Michael Esterman[1,2,3]; [1]Department of Psychiatry, Boston University School of Medicine, [2]Boston Attention and Learning Laboratory, Veterans Administration, Boston Healthcare System, Boston, MA 02130, [3]Neuroimaging Research for Veterans Center (NeRVe), Veterans Administration, Boston Healthcare System, Boston, MA 02130, [4]Department of Neurology & Neurological Sciences, Stanford University, Stanford, [5]Department of Psychiatry, Harvard Medical School, [6]Department of Psychiatry, Massachusetts General Hospital, Charlestown
Topic Area: ATTENTION: Other

F7 The Effects of Delta Transcranial Alternating Current Stimulation on Dynamic Attending are Phase and Context Dependent
Adam K. Shelp[1], Martin Wiener[1]; [1]George Mason University
Topic Area: ATTENTION: Other

F8 Brain and cognitive mechanisms of top-down attentional control in a naturalistic settings: Benefits of multi-variate electrical analyses
Pawel J. Matusz[1,2,3], Nora Turoman[2], Ruxandra I. Tivadar[2], Chrysa Retsa[2], Micah M. Murray[2,3,4,5]; [1]Information Systems Institute at the University of Applied Sciences Western Switzerland (HES-SO Valais), 3960 Sierre, Switzerland, [2]The LINE (Laboratory for Investigative Neurophysiology), Department of Radiology, University Hospital Centre and University of Lausanne, 1011 Lausanne, Switzerland, [3]Department of Hearing and Speech Sciences, Vanderbilt University, Nashville, TN 37203- 5721, USA, [4]The EEG Brain Mapping Core, Center for Biomedical Imaging (CIBM), University Hospital Center and University of Lausanne, 1011 Lausanne, Switzerland, [5]Department of Ophthalmology, University of Lausanne and Fondation Asile des Aveugles, Lausanne, Switzerland
Topic Area: ATTENTION: Spatial

F9 Dissociating retinal eccentricity and covert spatial attention effects on visual evoked potentials: a gaze-controlled ERP study
Juliane Britz[1], Doron Ariav[2], Pnina Rappel[2], Leon Y Deouell[2]; [1]University of Fribourg, Switzerland, [2]The Hebrew University of Jerusalem, Israel
Topic Area: ATTENTION: Spatial

F10 Hodological correlates of human visuo-spatial attention and its disorders based on coalitional game theory-derived contributions of white matter bundles
Melissa Zavaglia[1,2], Monica N. Toba[3,4], Tristan Moreau[3], Federica Rastelli[3,5], Anna Kaglik[3,5], Romain Valabregue[6], Pascale Pradat-Diehl[5,7], Claus C. Hilgetag[1,8], Antoni Valero-Cabré[3,5,9]; [1]Department of Computational Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany., [2]Jacobs University, Focus Area Health, Bremen, Germany, [3]Cerebral Dynamics, Plasticity and Rehabilitation Team, Frontlab, Brain and Spine Institute, ICM, Paris, France, Sorbonne Universités, UPMC Paris 06, Inserm UMR S 1127, CNRS UMR 7225, F-75013, & IHU-A-ICM, Paris, France., [4]Laboratory of Functional Neurosciences (EA 4559), University Hospital of Amiens and University of Picardy Jules Verne, Amiens, France., [5]AP-HP, HxU Pitié-Salpêtrière-Charles-Foix, service de Médecine Physique et de Réadaptation & PHRC Régional NEGLECT, Paris, France., [6]Centre for NeuroImaging Research - CENIR, Brain and Spine Institute, ICM, Paris,

France, Sorbonne Universités, Inserm UMR S 1127, CNRS UMR 7225, F-75013 Paris, France., [7]GRC-UPMC n° 18- Handicap cognitif et réadaptation, [8]Department of Health Sciences, Boston University, 635 Commonwealth Ave. Boston, MA 02215, USA., [9]Laboratory for Cerebral Dynamics, Plasticity & Rehabilitation, Boston University School of Medicine, Boston, MA 02118, USA.
Topic Area: ATTENTION: Spatial

F11 Hunger potentiates the unconscious capture of attention by food-related images
Arne Ilse[1], Mircea Ariel Schoenfeld[3], Sarah Donohue[1,2], Jens-Max Hopf[1,2], Hans-Jochen Heinze[1], Joseph Harris[1,2]; [1]Otto-von-Guericke University, Magdeburg, [2]Leibniz Institute for Neurobiology, Magdeburg, [3]Klinikum Schmieder Heidelberg, Heidelberg
Topic Area: ATTENTION: Spatial

F12 Inhibitory control training induces cortical thickness changes linked to global/local visual abilities in children
Nicolas Poirel[1,2], Arnaud Cachia[1,2], Marine Moyon[1], Lisa Delalande[1], Valérie Datin-Dorrière[1], Katell Mevel[1], Grégory Simon[3], François Orliac[1], Bernard Guillois[4], Olivier Houdé[1,2], Grégoire Borst[1,2]; [1]LaPsyDÉ, UMR 8240, CNRS, Université Paris Descartes, Université de Caen Normandie, France, [2]Institut Universitaire de France (IUF), Paris, [3]ISTS, UMR 6301, CNRS, CEA, Caen, France, [4]LPCN, Université de Caen Normandie, France
Topic Area: ATTENTION: Spatial

F13 Successful classification of attentional tasks by power modulations in the alpha frequency bandwidth
Jonathan Silas[1], Irene Varela Leniz[2], Eris Chinellato[1], Bettina Forster[3], Alexander Jones[1]; [1]Middlesex University London, UK, [2]Mondragon Unibertsitatea, Mondragón, Spain, [3]City University London, London, UK
Topic Area: ATTENTION: Spatial

F14 A Pilot Study on Mirror Neuron Functioning and the Social Impairments Observed in Depression
Michael Widdowson[1], Christina Kim[1], Yuzhou Tong[1], Crystal Inacay[1], Fiza Singh[2], Jaime A. Pineda[1]; [1]Department of Cognitive Science, University of California, San Diego, [2]Department of Psychiatry, University of California, San Diego
Topic Area: EMOTION & SOCIAL: Other

F15 Neural Synchronization in lovers
Yuhang Long[1], Lifen Zheng[1], Xialu Bai[1], Hui Zhao[1], Wenda Liu[1], Chunming Lu[1]; [1]Beijing Normal University
Topic Area: EMOTION & SOCIAL: Other

F16 Probability of Reward modulates Reward-related Activation and Sex differences in the medial Prefrontal Cortex and striatum in youth with ADHD
Prerona Mukherjee[1], Maria B. Menor[1], Shannon L. Hoffman[1], Tadeus A. Hartanto[1], J. Faye Dixon[1], Wouter van den Bos[2,3], Julie B. Schweitzer[1], Catherine Fassbender[1]; [1]MIND. Institute, UC Davis, CA, [2]Max-Planck-Institut fur Bildungsforschung, [3]The University of Amsterdam
Topic Area: EMOTION & SOCIAL: Other

F17 Revelation of a protagonist as homosexual causes divergence of neural synchrony among heterosexual and homosexual spectators
Afadila Mamdooh[1], Mikko Sams[1], Iiro Jääskeläinen[1], Janne Kauttonen[1,2]; [1]Brain and Mind Laboratory, Department of Neuroscience and Biomedical Engineering, Aalto University, Espoo, Finland, [2]Advanced Magnetic Imaging (AMI) Centre, Aalto NeuroImaging, Aalto University, Espoo, Finland
Topic Area: EMOTION & SOCIAL: Other

F18 The psychophysiology of guilt
Chloe A. Stewart[1], Penny A. MacDonald[1], R.W.J. Neufeld[1], Derek G.V. Mitchell[1], Elizabeth C. Finger[1]; [1]University of Western Ontario
Topic Area: EMOTION & SOCIAL: Other

F19 Acoustic Cues Used for Perceiving Race in the Human Voice
Tedra James[1], Psyche Loui[1,2]; [1]Wesleyan University, [2]Northeastern University
Topic Area: EMOTION & SOCIAL: Person perception

F20 Cartoons, Animals, and Autistic Traits: An Eye Tracking Study
Nicole L. Dalasio[1], Jenifer Joseph[1], Jennifer L. Stevenson[1]; [1]Ursinus College
Topic Area: EMOTION & SOCIAL: Person perception

F21 Embodied emotions in Autism Spectrum Disorder: Somatosensory Evoked Potentials reveal atypical patterns of neural activity during perception of emotional expressions in ASD
Martina Fanghella[1,2], Sebastian Gaigg[2], Matteo Candidi[1], Bettina Forster[2], Beatriz Calvo-Merino[2]; [1]Sapienza, Rome, [2]City, University of London
Topic Area: EMOTION & SOCIAL: Person perception

F22 Emotional expression accounts for the effects of head posture on perceived personality.
David Perrett[1], Hongfei Lin[2], Dongyu Zhang[2]; [1]University of St Andrews, [2]Dalian University of Technology
Topic Area: EMOTION & SOCIAL: Person perception

F23 Experience influences hemisphere differences in approach-avoidance responses to the perception of race, gender and emotional expression
Paul Moes[1], Maame Adwoa Brantuo[1], Nathan LeFebre[1], Mikaela Hager[1], Kalyn Carley[1], Blake Riek[1]; [1]Calvin College
Topic Area: EMOTION & SOCIAL: Person perception

F24 Extracting actions associated with specific personality traits for modeling of the social knowledge
Masahiro Okamoto[1], Satoshi Eifuku[1]; [1]Fukushima Medical University
Topic Area: EMOTION & SOCIAL: Person perception

F25 Loneliness Modulates Automatic Attention to Warm and Competent People: Preliminary Evidence from an Eye-Tracking Study
Toshiki Saito[1], Kosuke Motoki[1,2], Rui Nouchi[1], Ryuta Kawashima[1], Motoaki Sugiura[1]; [1]Tohoku University, [2]Japan Society for the Promotion of Science
Topic Area: EMOTION & SOCIAL: Person perception

F26 Neural correlates of guilty feelings in young adults
Seishu Nakagawa[1,2], Hikaru Takeuchi[2], Yasuyuki Taki[2], Rui Nouchi[2], Yuka Kotozaki[2], Takamitsu Shinada[2], Tsukasa Maruyama[2], Atsushi Sekiguchi[2,3], Kunio Iizuka[2], Ryoichi Yokoyama[4], Yuki Yamamoto[2], Ryuta Kawashima[2]; [1]Tohoku Medical and Pharmaceutical University, Sendai, Japan, [2]Tohoku University, [3]National Center of Neurology and Psychiatry, Kodaira, Tokyo, Japan, [4]Kobe University
Topic Area: EMOTION & SOCIAL: Person perception

F27 Preconscious and conscious stages of stimulus processing depend on whom we are with: a within- and a between subject study
J. Bruno Debruille[1], Emma Pietri[1], Tarlan Daryoush[1], Natalie Frye[1], Louise Barlet[1]; [1]McGill University
Topic Area: EMOTION & SOCIAL: Person perception

F28 Salience-Driven Attention is Pivotal to Understanding Others' Intentions
Myrthe G. Rijpma[1], Suzanne M. Shdo[1], Gianina Toller[1], Joel H. Kramer[1], Bruce L. Miller[1], Katherine P. Rankin[1]; [1]Memory and Aging Center, University of California, San Francisco, 675 Nelson Rising Ln, Suite 190
Topic Area: EMOTION & SOCIAL: Person perception

F29 The Irony of Racial Colorblindness: Behavioral and Physiological Effects
Alejandro Heredia Cedillo[1], Javier Baltazar[1], Andre Oliver[1], Avi Ben-Zeev[1], Mark W. Geisler[1]; [1]San Francisco State University
Topic Area: EMOTION & SOCIAL: Person perception

F30 The Utility of the Dynamic Facial Expression Task in Real-Time fMRI Neurofeedback Training of Amygdala Signal
Tim Varkevisser[1,2,3], Jack van Honk[3,4], Elbert Geuze[1,2]; [1]University Medical Center, Utrecht, The Netherlands, [2]Expertise Center Military Mental Health Care, Utrecht, The Netherlands, [3]Utrecht University, Utrecht, The Netherlands, [4]University of Cape Town, Cape Town, South Africa
Topic Area: EMOTION & SOCIAL: Person perception

F31 Dissociating the neural representations of tactile and hedonic information.
James H. Kryklywy[1], Mana R. Ehlers[1], Andre O. Beukers[2], Sarah M. Moore[1], Rebecca M. Todd[1], Adam K. Anderson[3]; [1]University of British Columbia, [2]Princeton University, [3]Cornell University
Topic Area: EMOTION & SOCIAL: Self perception

F32 Emotional lability in focal hippocampal damage
Christopher Butler[1], Georgios P. D. Argyropoulos[1], Lauren Moore[1,2], Clare Loane[1,3], Adriana Roca-Fernandez[1], Carmen Lage-Martinez[1,4]; [1]University of Oxford, [2]University of Bath, [3]University College London, [4]University Hospital Marqués de Valdecilla
Topic Area: EMOTION & SOCIAL: Self perception

F33 Resting State Functional Connectivity Neural Correlates of Self-Reported Anxiety and Depression
Yush Kukreja[1], Lauren Goodes[2], Jeremy Cohen[2], Jeffrey Rouse[1]; [1]Tulane University of New Orleans, Louisiana, [2]Xavier University of Louisiana
Topic Area: EMOTION & SOCIAL: Self perception

F34 A better understanding of impulsivity in children with Attention Deficit Hyperactivity Disorder : an electromyographic approach
Aurélie Grandjean[1,2], Isabel Suarez[4], Elisa Diaz[4], Laure Spieser[1,2], Boris Burle[1,2], Agnès Blaye[1,3], Laurence Casini[1,2]; [1]Aix-Marseille Université, [2]Laboratoire de Neurosciences Cognitives, [3]Laboratoire de Psychologie Cognitives, [4]Universidad del Norte de Barranquilla
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F35 Cognitive Control Connectivity in Adolescents and Young Adults with Autism Spectrum Disorder
Rachel A. Wulff[1], Marie K. Krug[1], Cory C. Coleman[1], Matthew V. Elliott[2], Jeremy Hogeveen[3], Tyler A. Lesh[1], Tara A. Niendam[1], J. Daniel Ragland[1], Cameron S. Carter[1], Marjorie Solomon[1]; [1]University of California, Davis, [2]University of California, Berkeley, [3]The University of New Mexico
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F36 Developing a new behavioral paradigm for testing an executive stopping process over long term memory retrieval
Kelsey Sundby[1], Sumitash Jana[1], Adam R. Aron; [1]University of California San Diego
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F37 Exploring the association between the facets of NEO PI-3 and cognitive control functioning
Eva Langvik[1], Alexander Olsen[1,2], Simen Berg Saksvik[1,2], Håvard Karlsen[1], Torhild Anita Sørengaard[1], Ingvild Saksvik-Lehouilier[1]; [1]1. Department of Psychology, Norwegian University of Science and Technology, [2]2. Department of Physical Medicine and Rehabilitation, St. Olavs Hospital, Trondheim University Hospital
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F38 Learning under uncertainty: Confidence affects feedback processing
Michael Ben Yehuda[1], Robin A. Murphy[1], Nick Yeung[1]; [1]University of Oxford
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F39 Learning with confidence: Uncertainty is used strategically for information sampling
Naomi Carlebach[1], Nick Yeung[1]; [1]University of Oxford
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F40 Not So Automatic Imitation: Expectation of Incongruence Reduces Interference in both Autism Spectrum Disorder and Typical Development
Raphael Geddert[1], Andrew Gordon[1], Jeremy Hogeveen[2], Marie Krug[1], Marjorie Solomon[1]; [1]University of California, Davis, [2]University of New Mexico
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F41 The Cost of a Cell Phone: An Investigation of the Neural Correlates Related to Cognitive Control and Cellular Phone Distraction
Joshua Upshaw[1], Carl Stevens[1], Georgio Ganis[2], Darya Zabelina[1]; [1]University of Arkansas, [2]University of Plymouth
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

F42 Interpersonal neural synchronization tracks real-world dynamically competitive interaction
Nan Zhao[1], Yafeng Pan[1], Yi Hu[1]; [1]East China Normal University
Topic Area: THINKING: Other

F43 Aberrant processing of salience in first-episode psychosis patients during movie watching
Jussi Alho[1], Teemu Mäntylä[2], Tuula Kieseppä[3], Eva Rikandi[2], Jaana Suvisaari[2], Tuukka Raij[1,3]; [1]Aalto University School of Science, Espoo, Finland, [2]National Institute for Health and Welfare, Helsinki, Finland, [3]Helsinki University and Helsinki University Hospital, Helsinki, Finland
Topic Area: EXECUTIVE PROCESSES: Other

F44 Executive Dysfunction in Traumatic Brain Injury is Related to Chronic Symptom Status, Not Injury Severity
Keith Main[1,2,3], Anna-Clare Milazzo[2,3], Bernard Ng[3], Salil Soman[4], Jordan Nechvatal[2,3], Jennifer Kong[2], Stephanie Kolakowsky-Hayner[5], Ansgar Furst[2,3], J. Wesson Ashford[2,3], Maheen Adamson[1,3]; [1]Defense and Veterans Brain Injury Center, [2]War Related Illness and Injury Study Center, [3]Stanford University School of Medicine, [4]Harvard University Medical School, [5]Icahn School of Medicine at Mount Sinai
Topic Area: EXECUTIVE PROCESSES: Other

F45 Monolingual and bilingual processing differences on a Color-Word Stroop Task: Examining the adaptive control hypothesis
Vanessa Rainey[1], Valerie Flores-Lamb[2], Laura Stockdale[3], Eva Gjorgieva[4], Delaney Diehl[1], Rebecca L. Silton[5], Robert G. Morrison[5]; [1]University of West Florida, [2]Arizona State University, [3]Brigham Young University, [4]Duke University, [5]Loyola University Chicago
Topic Area: EXECUTIVE PROCESSES: Other

F46 White Matter Organization and Metacognitive Monitoring in Traumatic Brain Injury
Kathy S. Chiou[1], Jeremy A. Feiger[1], Mackenzie Cissne[1]; [1]University of Nebraska-Lincoln
Topic Area: EXECUTIVE PROCESSES: Other

F47 A Comparative Study of Event-related Potential Classification During Variations of N-back Task
Mahsa Alizadeh Shalchy[1], Valentina Pergher[2], Anja Pahor[1], Susanne Jaeggi[3], Marc M. Van Hulle[2], Aaron Seitz[1]; [1]University of California, Riverside, [2]KU Leuven - University of Leuven, [3]University of California, Irvine
Topic Area: EXECUTIVE PROCESSES: Working memory

F48 Active vs. passive learning – effects of age, handedness, and sex
Sangeeta Nair[1], Rodolphe Nenert[1], Jane B. Allendorfer[1], Jennifer Vannest[2], Daniel Mirman[1], Jerzy P. Szaflarski[1]; [1]University of Alabama at Birmingham, [2]Cincinnati Children's Hospital Medical Center
Topic Area: EXECUTIVE PROCESSES: Working memory

F49 Beyond g: Individual differences in visual and auditory working memory.
Ningcong Tong[1], Branton Shearer[2], David Somers[1], Abigail Noyce[1]; [1]Boston University, [2]Kent State University
Topic Area: EXECUTIVE PROCESSES: Working memory

F50 Quantifying the demands of value-based decision-making with short-term memory interference
Harrison Ritz[1], Carolyn Dean Wolf[1], Romy Frömer[1], Amitai Shenhav[1]; [1]Brown University
Topic Area: EXECUTIVE PROCESSES: Working memory

F51 The effects of cerebellar transcranial direct current stimulation on the cognitive stage of sequence learning
Hannah K. Ballard[1], James R.M. Goen[2], Ted Maldonado[2], Jessica A. Bernard[1,2]; [1]Texas A&M Institute for Neuroscience, Texas A&M University, [2]Psychological & Brain Sciences Department, Texas A&M University
Topic Area: EXECUTIVE PROCESSES: Working memory

F52 The Neural Underpinnings of Mental Attention Capacity in Healthy Young Adults
Mylann Guevara[1], Marie Arsalidou[2], Juan Pascual-Leone[1], W. Dale Stevens[1]; [1]York University, Toronto, [2]National Research University Higher School of Economics, Moscow
Working memory enables the online maintenance and manipulation of information to solve problems, and is constrained by a limited mental attention capacity (M-capacity). The Theory of Constructive Operators (TCO) describes.
Topic Area: EXECUTIVE PROCESSES: Working memory

F53 Working Memory Training with tDCS in Young Adults Induces Transfer at Follow Up
Jorja Shires[1], Carlos Carrasco[1,2], Marian Berryhill[1]; [1]University of Nevada, Reno, [2]University of California, Davis
Topic Area: EXECUTIVE PROCESSES: Working memory

F54 Are differences in year-to-year cerebellar white matter growth rates linked to growth in reading skills in K-3 children?
Trang Nguyen[1], Bruce McCandliss[1]; [1]Stanford University, Graduate School of Education
Topic Area: LANGUAGE: Development & aging

F55 Characterizing the Whole-Brain Functional Connectivity Signature of Bilingualism
Sara Sanchez-Alonso[1,2], Monica Rosenberg[2], Richard Aslin[1,2]; [1]Haskins Laboratories, [2]Yale University
Topic Area: LANGUAGE: Development & aging

F56 - WITHDRAWN

F57 Looking Ahead in Life and Language: An ERP study on prediction during sentence reading in older adults
Matthew Wood[1], Viridiana Estrada[2], Alondra Chaire[3], Nicole Y.Y. Wicha[1,4]; [1]The University of Texas at San Antonio, [2]The University of Texas Medical Branch, [3]Otto-von-Guericke-Universität Magdeburg, Germany, [4]UTSA Neurosciences Institute
Topic Area: LANGUAGE: Development & aging

F58 The effect of feedback validity on learning in children and adults: an electrophysiological study
Calais Larson[1], Isabelle Moore[1], Annie Fox[1], Yael Arbel[1]; [1]Massachusetts General Hospital Institute of Health Professions
Topic Area: LANGUAGE: Development & aging

F59 What neural processes support word learning in school-aged children?
Alyson Abel[1]; [1]San Diego State University
Topic Area: LANGUAGE: Development & aging

F60 Auditory and visual speech perception is predicted by distinct cortical encoding networks
Anne Keitel[1], Joachim Gross[2], Christoph Kayser[3]; [1]University of Glasgow, [2]University of Münster, [3]Bielefeld University
Topic Area: LANGUAGE: Other

F61 Behavioral and Neuroanatomical Characteristics of Stimulation-Induced Speech Arrest
Garret Kurteff[1,2], Neal Fox[1], Maansi Desai[1,2], Alia Shafi[1], Edward Chang[1]; [1]University of California, San Francisco, [2]University of Texas, Austin
Topic Area: LANGUAGE: Other

F62 Measuring the N400 during scripted conversation: An ERP hyperscanning study
Caitriona Douglas[1,2], Antoine Tremblay[1], Aaron Newman[1]; [1]Dalhousie University, [2]University of Saskatchewan
Topic Area: LANGUAGE: Other

F63 Neuropsychology In Temporal Lobe Epilepsy: A Machine Learning Approach
Elise Roger[1], Laurent Torlay[1], Jérémy Gardette[1], Chrystèle Mosca[2], Lorella Minotti[2], Philippe Kahane[2], Monica Baciu[1]; [1]Univ. Grenoble Alpes, CNRS LPNC UMR 5105, F-38000 Grenoble, France, [2]Univ. Grenoble Alpes, Grenoble Institute of Neuroscience & Neurology Department CHUGA, France
Topic Area: LANGUAGE: Other

F64 Unravelling Neural Profiles Sustaining Reading in the First and Second Language: Evidence from Chinese-English Bilinguals
Jia Zhang[1], Hehui Li[1], Guosheng Ding[1]; [1]Beijing Normal University
Topic Area: LANGUAGE: Other

F65 Context-dependent Recruitment of the Angular Gyrus in Speech Comprehension under Challenging Listening Conditions
Anna Rysop[1], Lea Schmitt[2], Jonas Obleser[2], Gesa Hartwigsen[1]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, [2]University of Lübeck
Topic Area: LANGUAGE: Semantic

F66 Cultural background shapes mental associations and brain activity elicited during listening to a narrative
Iiro Jaaskelainen[1], Maria Hakonen[1], Annika Hulten[1], Arsi Ikäheimonen[1], Fa-Hsuan Lin[2], Anastasia Lowe[1], Mikko Sams[1], Miika Koskinen[3]; [1]Aalto University School of Science, Espoo, Finland, [2]Taiwan National University, Taipei, Taiwan, [3]University of Helsinki, Helsinki, Finland
Topic Area: LANGUAGE: Semantic

F67 Discourse belief-updating in the right hemisphere
Maxime Tulling[1], Ailís Cournane[1], Liina Pylkkänen[1]; [1]New York University
Topic Area: LANGUAGE: Semantic

F68 Implicit versus Explicit Learning Assessment of Neuroscience Concepts in Undergraduates
Noah C. Yeagley[1], Sarah L. Wonsidler[1], Jennifer L. Stevenson[1]; [1]Ursinus College
Topic Area: LANGUAGE: Semantic

F69 Lexical Access in Comprehension vs. Production: Spatiotemporal localization of semantic facilitation and interference
Julien Dirani[1], Liina Pylkkänen[1,2]; [1]New York University Abu Dhabi, [2]New York University
Topic Area: LANGUAGE: Semantic

F70 Spoken language predicts print-speech spatial co-activation in 5-6 year old emerging readers
Rebecca Marks[1,2], Leo Zekelman[2,3], Ioulia Kovelman[1], Fumiko Hoeft[2,4,5]; [1]University of Michigan, [2]University of California, San Francisco, [3]Harvard University, [4]University of Connecticut, [5]Haskins Laboratories
Topic Area: LANGUAGE: Development & aging

F71 A timescale-specific hierarchy for linguistic representations in cortical oscillations
Greta Kaufeld[1], Hans Rutger Bosker[1,2], Phillip M. Alday[1], Antje S. Meyer[1,2], Andrea E. Martin[1]; [1]Max Planck Institute for Psycholinguistics, [2]Donders Institute for Brain, Cognition and Behaviour
Topic Area: LANGUAGE: Syntax

F72 Neural networks for sentence comprehension and production: an ALE-based meta-analysis of neuroimaging studies
Matthew Walenski[1], Eduardo Europa[2], David Caplan[3], Cynthia K. Thompson[1]; [1]Northwestern University, [2]University of California San Francisco, [3]Harvard Medical School
Topic Area: LANGUAGE: Syntax

F73 Neural Representation of Pragmatic Knowledge: Focusing on Japanese Honorific Expressions
Haining Cui[1], Hyeonjeong Jeong[1], Kiyo Okamoto[1], Daiko Takahashi[1], Ryuta Kawashima[1], Motoaki Sugiura[1]; [1]Tohoku University, Sendai, Japan
Topic Area: LANGUAGE: Syntax

F74 Syntactic Processing in Bilinguals and Monolinguals: Evidence from Functional Near-infrared Spectroscopy (fNIRS)
Guoqin Ding[1], Kathleen A. J. Mohr[1], Ron Gillam[1], Boyu Zhang[1], Carla Orellana[1], Allison Hancock[1]; [1]Utah State University
Topic Area: LANGUAGE: Syntax

F75 Tracking brain prediction based on associative representations in subject-verb agreement
Jane Aristia[1], Angèle Brunellière[1], Alec Marantz[2,3]; [1]Université de Lille, [2]New York University, [3]New York University Abu Dhabi
Previous electrophysiological studies in subject-verb agreement have usually
Topic Area: LANGUAGE: Syntax

F76 Amygdala and VTA differentially interact with hippocampus and cortical MTL during rest.
David F. Gregory[1], Maureen Ritchey[2], Vishnu P. Murty[1]; [1]Temple University, [2]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

F77 Developmental changes and neural correlates of associative, spatial and temporal relational memory
Jaione Arnaez-Telleria[1], Pedro M. Paz-Alonso[1]; [1]BCBL. Basque Center on Cognition, Brain and Language, Donostia-San Sebastián, Spain
Topic Area: LONG-TERM MEMORY: Episodic

F78 Functionally specific effects of targeted noninvasive stimulation on hippocampal-cortical network connectivity
Kristen Warren[1], Molly Hermiller[1], Steven VanHaerents[1], Joel Voss[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

F79 Integration of Event Order and Duration during Movie Watching
Saebyul Lee[1], Su Keun Jeong[1]; [1]Korea Brain Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

F80 Investigating contributions of memory systems to concept generalization using individual differences in cognitive abilities
Takako Iwashita[1], Caitlin R. Bowman[1], Dagmar Zeithamova[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

F81 Memory for outdoor scenes after sleep: Procedures for separately measuring specific scene learning and category learning
Sarah J. Witkowski[1], Victoria Lee[1], Max K. Smith[1], Paul J. Reber[1], Ken A. Paller[1]; [1]Northwestern University Psychology Department
Topic Area: LONG-TERM MEMORY: Episodic

F82 Modulation of Posterior Parietal Subregions by Prior Knowledge during Multimodal Episodic Retrieval
Marty Fiati[1,2], Peter Bright[2], Shanti Shankar[1], Peter Hills[1]; [1]Department of Psychology, Bournemouth University, UK, [2]Department of Psychology, Anglia Ruskin University, UK
Topic Area: LONG-TERM MEMORY: Episodic

F83 Neural Correlates of Emotional Episodic Memory Encoding and Retrieval: Activation Likelihood Estimation Meta-Analyses
Kristina Dahlgren[1], Charles Ferris[1], Stephan Hamann[1]; [1]Emory University
Topic Area: LONG-TERM MEMORY: Episodic

F84 Neural differentiation at encoding predicts subsequent source memory performance in young and older adults.
Sabina Srokova[1], Paul F. Hill[1], Joshua D. Koen[2], Danielle R. King[1], Michael D. Rugg[1]; [1]Center for Vital Longevity and School of Behavioral and Brain Sciences, University of Texas at Dallas, [2]Department of Psychology, University of Notre Dame
Topic Area: LONG-TERM MEMORY: Episodic

F85 Neural mechanisms of episodic memory reconsolidation: A critical role for prediction error
Alyssa Sinclair[1,2], Grace Manalili[1], Morgan Barense[1]; [1]University of Toronto, [2]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

F86 Neural pattern classification reveals the temporal dynamics of competitive memory retrieval
Inês Bramão[1], Jiefeng Jiang[2], Anthony D. Wagner[2,3], Mikael Johansson[1]; [1]Department of Psychology, Lund University, Sweden, [2]Department of Psychology, Stanford University, Stanford, [3]Wu Tsai Neurosciences Institute, Stanford University, Stanford
Topic Area: LONG-TERM MEMORY: Episodic

F87 Oscillatory Mechanisms for Hippocampal Memory Encoding Tested in Humans
Sarah Lurie[1], Joel Voss[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Episodic

F88 Rhythmic encoding improves recognition memory
Alexander Jones[1], Emma Ward[1]; [1]Middlesex University London
Topic Area: LONG-TERM MEMORY: Episodic

F89 Scanpath components reveal how eye movement reinstatements differentially contribute to episodic remembering
Roger Johansson[1], Marcus Nyström[2], Richard Dewhurst[3], Mikael Johansson[1]; [1]Department of Psychology, Lund University, [2]Humanities Laboratory, Lund University, [3]Interacting Minds Centre, Aarhus University
Topic Area: LONG-TERM MEMORY: Episodic

F90 Sex differences rather than individual differences account for differential brain activity between females and males during visual long-term memory
Dylan Spets[1], Scott Slotnick[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

F91 The impact of emphasizing contextual and conceptual details on neural activity during discrete phases of autobiographical memory retrieval
Lauri Gurguryan[1], Signy Sheldon[1]; [1]McGill University
Topic Area: LONG-TERM MEMORY: Episodic

F92 Threat impairs flexible use of a cognitive map
Brian Silston[1], Kevin Ochsner[1], Mariam Aly[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

F93 Tracking the neural signature of incidental and intentional memory retrieval
Gerd T. Waldhauser[1], Malte Kobelt[1], Marie-Christin Fellner[1], Nikolai Axmacher[1]; [1]Institute of Cognitive Neuroscience, Ruhr University Bochum
Topic Area: LONG-TERM MEMORY: Episodic

F94 Variability in episodic encoding: interactions between memory, attention, and media multitasking
Anna Khazenzon[1], Kevin Madore[1], Monica Thieu[2], Melina Uncapher[3], Anthony Wagner[1]; [1]Stanford University, [2]Columbia University, [3]University of California, San Francisco
Topic Area: LONG-TERM MEMORY: Episodic

F95 "Blurred lines" – 'Non-episodic' content of future thinking narratives challenges a strict episodic-semantic distinction
Cherie Strikwerda-Brown[1,2,3], John R. Hodges[1,2,4], Olivier Piguet[1,2,3], Muireann Irish[1,2,3]; [1]Brain and Mind Centre, the University of Sydney, Australia, [2]School of Psychology, the University of Sydney, Australia, [3]Australian Research Council Centre of Excellence in Cognition and its Disorders, Sydney, Australia, [4]Sydney Medical School, the University of Sydney, Australia
Topic Area: LONG-TERM MEMORY: Semantic

F96 Is arbitrary episodic context suppressed when processing abstract concepts?
Charles P. Davis[1,2], Pedro M. Paz-Alonso[3], Gerry T.M. Altmann[1,2], Eiling Yee[1,2]; [1]University of Connecticut, [2]Connecticut Institute for the Brain and Cognitive Sciences, [3]BCBL. Basque Center on Cognition, Brain and Language
Topic Area: LONG-TERM MEMORY: Semantic

F97 The relationships between age, fMRI correlates of familiarity and recognition memory performance: Effects of a dual task manipulation
Marianne de Chastelaine[1], Erin D Horne[1], Michael D Rugg[1]; [1]Center for Vital Longevity and the School of Behavioral and Brain Sciences, The University of Texas at Dallas, USA
Topic Area: LONG-TERM MEMORY: Development & aging

F98 Memory Reactivation During Rapid Eye Movement Sleep Facilitates Remote Associations
Anne C M Koopman[1], Nora Hennies[2], Karen Konkoly[1], Marleen Kempkes[2], Penny Lewis[1]; [1]Cardiff University, [2]The University of Manchester
Topic Area: LONG-TERM MEMORY: Semantic

F99 Neural pattern change during repeated memory encoding.
Minjae Kwon[1], Sue-Hyun Lee[1,2]; [1]Department of Bio and Brain Engineering, College of Engineering, Korea Advanced Institute of Science and Technology, [2]Program of Brain and Cognitive Engineering, College of Engineering, Korea Advanced Institute of Science and Technology
Topic Area: LONG-TERM MEMORY: Semantic

F100 The effect of sex hormones on sleep spindles and cognitive performance
Kerstin Hoedlmoser[1], Stefan Herzog[1], Hubert Kerschbaum[2]; [1]Laboratory for Sleep, Cognition and Consciousness Research, Centre for Cognitive Neuroscience, University of Salzburg, Salzburg, Austria, [2]Department of Cell Biology, Centre of Cognitive Neuroscience, University of Salzburg, Austria
Topic Area: LONG-TERM MEMORY: Semantic

F101 Implicit Associative Learning: Hippocampus and Striatal Involvement Over Time
Madeleine Mendoza[1], Jenna Klippenstein[1], Jessica Petok[2], Ilana Bennett[1]; [1]University of California, Riverside, [2]St. Olaf College
Topic Area: LONG-TERM MEMORY: Skill learning

F102 Relationships Between Striatal Gray Matter Integrity and Implicit Associative Learning
Corinna Franco[1], Jessica Petok[2], Ilana Bennett[1]; [1]University of California, Riverside, [2]St. Olaf College
Topic Area: LONG-TERM MEMORY: Skill learning

F103 The Power Curve of the Brain: Reward Prediction Errors Follow Learning Curves
Chad Williams[1], Olave Krigolson[1]; [1]University of Victoria
Topic Area: LONG-TERM MEMORY: Skill learning

F104 Association between change in microscopic white matter pathways and cardiorespiratory fitness in response to a behavioral weight loss intervention
AG. Porter[1], C. Bañuelos[1], RL. Leckie[2], KI. Erickson[3,4], RJ. Rogers[3,5], JM. Jakicic[3,5], TD. Verstynen[1,4]; [1]Carnegie Mellon University, [2]University of Pittsburgh School of Medicine, [3]University of Pittsburgh, [4]Center for the Neural Basis of Cognition, Carnegie Mellon University and University of Pittsburgh, [5]Healthy Lifestyle Institute, University of Pittsburgh
Topic Area: METHODS: Neuroimaging

F105 Decreases in Hemispheric Symmetry Levels of White Matter Tracts Following Mild Traumatic Brain Injury
Andrei Vakhtin[1,2], Yu Zhang[1], Wesson Ashford[1,2], Miguel Robinson[1], Dana Waltzman[3], Max Wintermark[2], Ansgar Furst[1,2]; [1]VA Palo Alto, [2]Stanford University, [3]Centers for Disease Control
Topic Area: METHODS: Neuroimaging

F106 Estimating latent brain connectivity underlying multiple brain states
Katelyn L. Arnemann[1], Takuya Ito[1], Stephen J. Hanson[1], Michael W. Cole[1]; [1]Rutgers University - Newark
Topic Area: METHODS: Neuroimaging

F107 Identification of first-episode psychosis from the brain activity of subjects viewing a naturalistic stimulus: Time-window-based neural network analysis
Vesa Vahermaa[1], Athanasios Gotsopoulos[1], Jussi Alho[1], Mikko Sams[1], Tuukka Raij[1]; [1]Aalto University, School of Science
Topic Area: METHODS: Neuroimaging

F108 The Neuroscience of Driving: An ecologically-relevant paradigm for MEG neuroimaging during simulated driving.
Elizabeth A. Walshe[1,2], William Gaetz[2], Chelsea Ward-McIntosh[2], Daniel Romer[1], Timothy Roberts[2], Flaura K. Winston[1,2]; [1]University of Pennsylvania, [2]Children's Hospital of Philadelphia
Topic Area: METHODS: Neuroimaging

F109 Dimensions of Psychopathology are Dissociably Linked to Brain Structure in Youth
Antonia Kaczkurkin[1], Sophia Seonyeong Park[2], Aristeidis Sotiras[1], Tyler M. Moore[1], Matthew Cieslak[1], Zaixu Cui[1], Daniel H. Wolf[1], Daniel S. Pine[3], Ruben C. Gur[1,4], Christos Davatzikos[1], Raquel E. Gur[1], Theodore D. Satterthwaite[1]; [1]University of Pennsylvania, [2]Temple University, [3]National Institute of Mental Health, [4]Philadelphia Veterans Administration Medical Center
Topic Area: NEUROANATOMY

F110 Insular Functionally Connected Sub-regions of Healthy Developing Youth
Aliyah Jones[1], Biao Cai[2], Yu-Ping Wang[2], Jeremy D. Cohen[1]; [1]Xavier University of Louisiana, [2]Tulane University
Topic Area: NEUROANATOMY

F111 The fruit below the rind: the importance of subcortical structures in cognition
Michael Ullman[1], Tanya M. Evans[2], Mariann Kiss[3], Leela Shah[2], Hal Blumenfeld[4], Karolina Janacsek[5,6]; [1]Georgetown University, [2]Curry School of Education and Human Development, and Brain Institute, University of Virginia, [3]Doctoral School of Psychology, Budapest Institute of Technology and Economics, Budapest, Hungary, [4]Yale School of Medicine, [5]Institute of Psychology, Eotvos Lorand University, Budapest, Hungary, [6]Institute of Cognitive Neuroscience and Psychology, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary
Topic Area: NEUROANATOMY

F112 Volumetric Differences of the Thalamus in Developmental Dyslexia
Mykayla Jeter[1], C. Nikki Arrington[1], Robin Morris[1]; [1]Georgia State University
Topic Area: NEUROANATOMY

F113 REM sleep respiratory behaviours match mental content in narcoleptic lucid dreamers
Delphine Oudiette[1,2,3], Pauline Dodet[2], Thomas Similowski[2,3], Isabelle Arnulf[1,2,3]; [1]Brain and Spine Institute, [2]Sorbonne Universités, [3]Pitie-Salpetriere Hospital
Topic Area: OTHER

F114 Awake reactivation in the primary sensorimotor cortex after visuomotor learning in humans
Kenji Ogawa[1], Huixiang Yang[1], Fumihito Imai[1], Hiroshi Imamizu[2]; [1]Hokkaido University, [2]The University of Tokyo
Topic Area: PERCEPTION & ACTION: Motor control

F115 Coordinating immediate and final action goals in grasping preparation: Evidence from ERP and EEG time-frequency analysis
Lin Yu[1], Thomas Schack[1], Dirk Koester[1]; [1]University of Bielefeld, Germany
Topic Area: PERCEPTION & ACTION: Motor control

F116 Cortical processing of prediction error and self-agency in patients with schizophrenia.
Koichi Abe[1], Motoaki Sugiura[1], Tatsuo Kikuchi[1], Atsushi Sakuma[1], Hiroo Matsuoka[1], Ryuta Kawashima[1], Kazunori Matsumoto[1]; [1]Tohoku University, Sendai, Japan
Topic Area: PERCEPTION & ACTION: Motor control

F117 WITHDRAWN

F118 Effect of aging on covert intentions and change of intentions
Ariel Furstenberg[1], Callum Dewar[2], Robert T. Knight[2], Haim Sompolinsky[1], Leon Y. Deouell[1]; [1]The Hebrew University of Jerusalem, [2]University of California, Berkeley
Topic Area: PERCEPTION & ACTION: Motor control

F119 Neural correlates of auditory re-afferences
Nina Heins[1], Jennifer Pomp[1], Daniel S. Kluger[1], Karen Zentgraf[2], Markus Raab[3,4], Ricarda I. Schubotz[1]; [1]University of Muenster, [2]Goethe University Frankfurt, [3]German Sport University Cologne, [4]London South Bank University
Topic Area: PERCEPTION & ACTION: Motor control

F120 Neurophysiological insights into the development of complex movement processing in children and adolescents
Elizabeth Heinrichs-Graham[1], Michaela R. Frenzel[1], Jacob A. Eastman[1], Alex I. Wiesman[1], Yu-Ping Wang[2], Vince D. Calhoun[3,4], Julia M. Stephen[3,4], Tony W. Wilson[1]; [1]University of Nebraska Medical Center, Omaha, NE USA, [2]Tulane University, New Orleans, LA USA, [3]University of New Mexico, Albuquerque, NM USA, [4]Mind Research Network, Albuquerque, NM USA
Topic Area: PERCEPTION & ACTION: Motor control

F121 Observations of Physiological Responses to Perceived Fatigability during an Isometric Exhausting Task in Lower Extremity
Liying Zheng[1], Xueyan Xu[1], Robert Carey[1], Erik Sinsel[1], Daniel Welcome[1], John Wu[1]; [1]Physical Effects Research Branch, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC)
Topic Area: PERCEPTION & ACTION: Motor control

F122 Perceptual Uncertainty Attentuates Implicit Motor Adaptation
Jonathan Tsay[1], Darius Parvin[1], Guy Avraham[1], Hyosub Kim[1], Zixuan Wang[1], Richard Ivry[1]; [1]University of California, Berkeley
Topic Area: PERCEPTION & ACTION: Motor control

F123 Speech Movements of Adults with Parkinson's Disease and with and without Deep Brain Stimulation
Ignatius Nip[1], Burke Mathes[1]; [1]San Diego State University
Topic Area: PERCEPTION & ACTION: Motor control

F124 The effect of passive sound attenuation in an altered auditory feedback paradigm
Matthias K. Franken[1], Robert J. Hartsuiker[1], Nicolas Bourguignon[1], Petter Johansson[2], Lars Hall[2], Andreas Lind[1,2]; [1]Ghent University, [2]Lund University
Topic Area: PERCEPTION & ACTION: Motor control

F125 Tracking Differential Activation of Primary and Supplementary Motor Cortex Across Timing Tasks: An fNIRS Validation Study
Ali Rahimpour[1], Daniel Comstock[1], Luca Pollonini[2], Ramesh Balasubramaniam[1], Heather Bortfeld[1]; [1]University of California, Merced, [2]University of Houston

Topic Area: PERCEPTION & ACTION: Motor control

F126 Competition-dependent ground activation in object perception: Evidence for inhibitory competition and/or predictive coding?
Laura Cacciamani[1], Rachel M. Skocypec[2], Colin Flowers[2], Diana Perez[2], Mary A. Peterson[2]; [1]California Polytechnic State University, San Luis Obispo, CA, [2]University of Arizona, Tucson, AZ
Topic Area: PERCEPTION & ACTION: Vision

F127 Learned social values modulate representations of faces in the fusiform face area
Ariana M. Familiar[1], Alice Xia[1], Sharon L. Thompson-Schill[1]; [1]University of Pennsylvania
Topic Area: PERCEPTION & ACTION: Vision

F128 Neural Processing of Abstract Art Paintings is Influenced by their Spatial Frequencies
Gregor Uwe Hayn-Leichsenring[1], Franziska Hartung[1], Anjan Chatterjee[1]; [1]University of Pennsylvania
Topic Area: PERCEPTION & ACTION: Vision

F129 Spatial receptive field of convolutional units in deep neural network reconstructed by spike-triggered covariance method
Yoshiyuki Shiraishi[1], Tatsuya Mori[1], Hiromichi Sato[1,2], Tomoyuki Naito[2]; [1]Graduate School of Frontier Biosciences, Osaka University, [2]Graduate School of Medicine, Osaka University
Topic Area: PERCEPTION & ACTION: Vision

F130 Spontaneous fluctuations of pupil size and brain rhythms co-vary at rest
Christian Keitel[1], Gregor Thut[1], Anne Keitel[1], Joachim Gross[1,2]; [1]University of Glasgow, [2]University of Münster
Topic Area: PERCEPTION & ACTION: Vision

F131 The human visual system spontaneously computes approximate number
Ché Lucero[1], Colin Quirk[2], Susan Goldin-Meadow[2], Edward Vogel[2], Daniel Casasanto[1]; [1]Cornell University, [2]University of Chicago
Topic Area: PERCEPTION & ACTION: Vision

F132 Topographical correspondences between deep neural network and human brain visual cortex
Yalda Mohsenzadeh[1], Caitlin Mullin[1], Benjamin Lahner[1], Aude Oliva[1]; [1]Massachusetts Institute of Technology
Topic Area: PERCEPTION & ACTION: Vision

F133 Cognitive and neural effects of real-world geospatial education on deductive reasoning
Robert Cortes[1], Dinh Nhi[1], Emily Peterson[2], Adam Weinberger[1], Richard Daker[1], Bob Kolvoord[3], David Uttal[4], Adam Green[1]; [1]Georgetown University, [2]American University, [3]James Madison University, [4]Northwestern University
Topic Area: THINKING: Reasoning

F134 Diffusion markers of dendritic density and arborization in gray matter predict differences in intelligence
Erhan Genc[1], Christoph Fraenz[1], Onur Güntürkün[1], Rex Jung[2]; [1]Biopsychology, Department of Psychology, Ruhr University Bochum, Germany, [2]Department of Psychology, University of New Mexico, Albuquerque, New Mexico, USA
Topic Area: THINKING: Reasoning

F135 Implicitly Negative Messages Weaken Social Cognitive Reasoning In Female Breast Cancer Patients
Alexander N. Sokolov[1], Marina A. Pavlova[1], Diethelm Wallwiener[1], Sara Y. Brucker[1], Elisabeth Simoes[1]; [1]Eberhard Karls University of Tübingen Medical School & University Hospital, Tübingen, Germany
Topic Area: THINKING: Reasoning

F136 Relational reasoning and the neural correlates of science and maths problem-solving during adolescence
Annie Brookman-Byrne[1,2], Denis Mareschal[1,2], Andy Tolmie[2,3], Iroise Dumontheil[1,2]; [1]Birkbeck, University of London, [2]Centre for Educational Neuroscience, [3]UCL Institute of Education
Topic Area: THINKING: Reasoning

F137 Sleep and creativity: differential effects on abstraction and analogical reasoning
Sofia Pereira[1], Natalie Gunasekara[1], Scott Lowe[2], Mark van Rossum[2], Penelope Lewis[1]; [1]Cardiff University, [2]University of Nottingham
Topic Area: THINKING: Reasoning

F138 The Similar Situations Task: Measuring Differing Levels of Reasoning Using Scene Analogies
Lauren M. Kim[1], Matthew J. Kmiecik[1], David M. Martinez[1], Alex D. Martin[1], Daniel C. Krawczyk[1,2]; [1]The University of Texas at Dallas, [2]University of Texas Southwestern Medical Center at Dallas
Topic Area: THINKING: Reasoning

CORTECH
SOLUTIONS

Eye Tracking

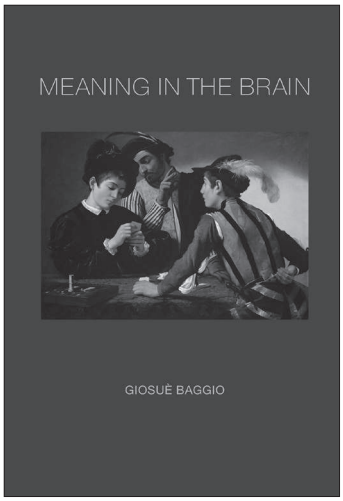
fMRI

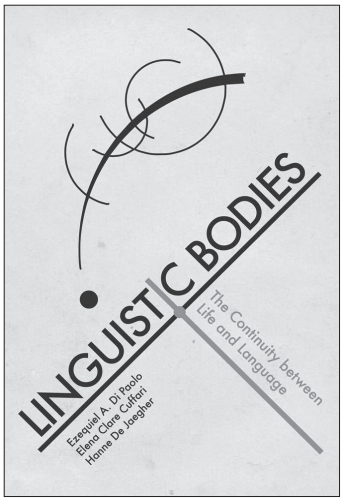
EEG

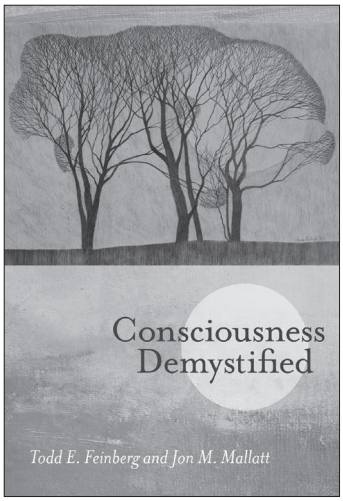
fNIRS

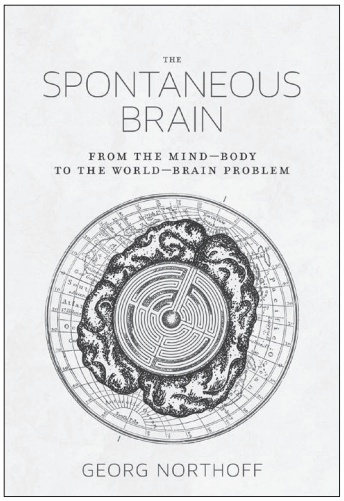
TMS

cortechsolutions.com









Meaning in the Brain

Giosuè Baggio

An argument that the meaning of written or auditory linguistic signals is not derived from the input but results from the brain's internal construction process.

$65.00 | £50.00 | cloth

Handbook of Embodied Cognition and Sport Psychology

edited by Massimiliano L. Cappuccio

The first systematic collaboration between cognitive scientists and sports psychologists considers the mind–body relationship from the perspective of athletic skill and sports practice.

$85.00 | £66.00 | cloth

Linguistic Bodies

The Continuity between Life and Language

Ezequiel A. Di Paolo, Elena Clare Cuffari, and Hanne De Jaegher

A novel theoretical framework for an embodied, non-representational approach to language that extends and deepens enactive theory, bridging the gap between sensorimotor skills and language.

$45.00 | £35.00 | cloth

Analyzing Memory

The Formation, Retention, and Measurement of Memory

Richard A. Chechile

An accessible synthesis of memory research that discusses the creation of memory representations, the processes of storage and retrieval, and the effectiveness of encoding information.

$65.00 | £50.00 | cloth

Consciousness Demystified

Todd E. Feinberg and Jon M. Mallatt

Demystifying consciousness: how subjective experience can be explained by natural brain and evolutionary processes.

$24.95 | £20.00 | cloth

Responsible Brains

Neuroscience, Law, and Human Culpability

William Hirstein, Katrina L. Sifferd, and Tyler K. Fagan

An examination of the relationship between the brain and culpability that offers a comprehensive neuroscientific theory of human responsibility.

$45.00 | £35.00 | cloth

The Spontaneous Brain

From the Mind–Body to the World–Brain Problem

Georg Northoff

An argument for a Copernican revolution in our consideration of mental features—a shift in which the world-brain problem supersedes the mind-body problem.

$50.00 | £40.00 | cloth

The Visual World of Shadows

Roberto Casati and Patrick Cavanagh

How the perception of shadows, studied by vision scientists and visual artists, reveals the inner workings of the visual system.

$45.00 | £35.00 | cloth

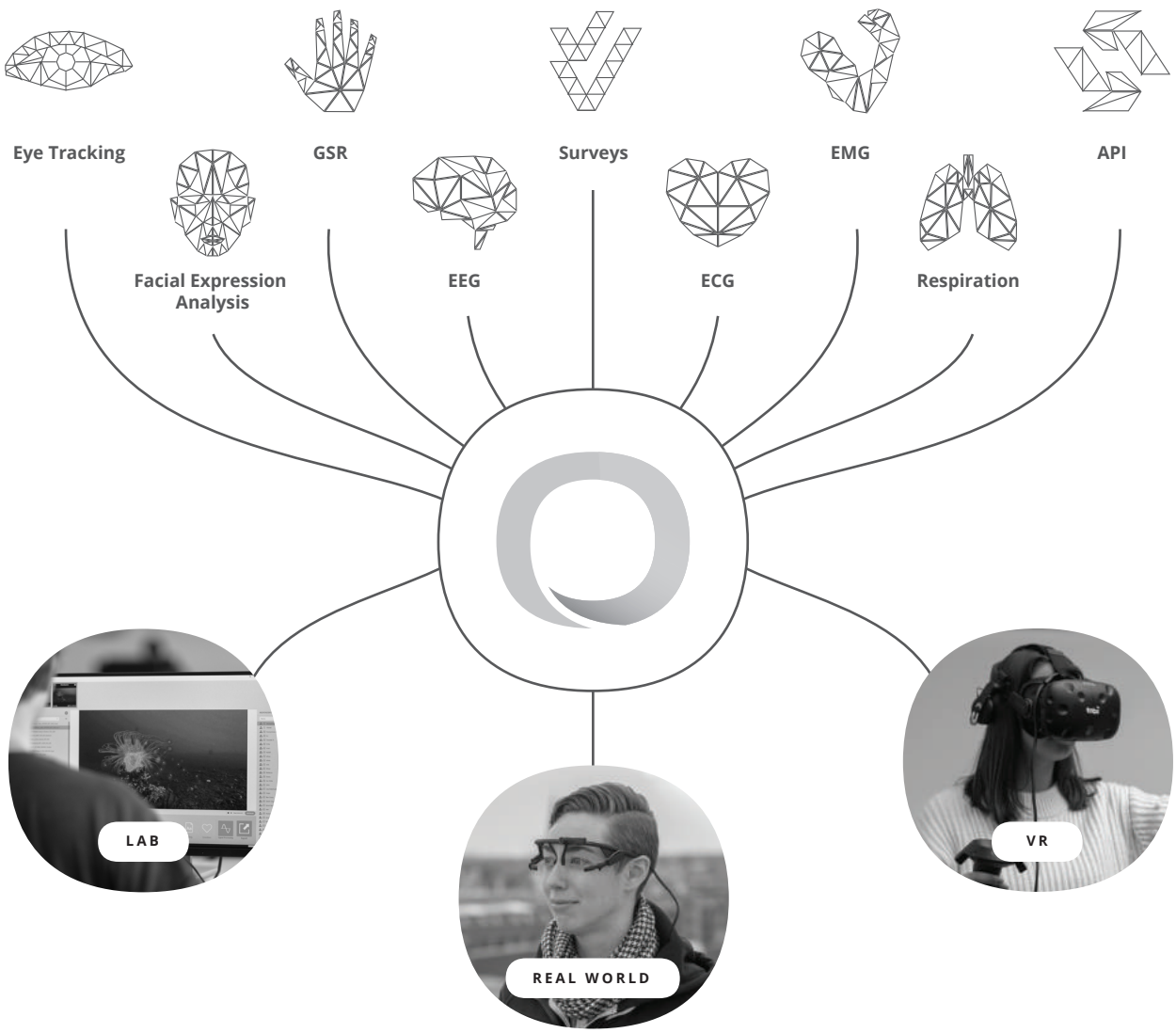
Stop by our booth to receive 30% off all titles

mitpress.mit.edu

IMOTIONS®

The complete **multimodal** research platform

Synchronize a range of biosensors with full experimental control



Rogue Research Inc.

A Tradition of
Innovation for Research

www.rogue-research.com
info@rogue-research.com

For almost 20 years, Rogue Research has been creating new and innovative tools that help you do your best in your research. We are proud to to have been participating on the CNS meeting for over a decade and grateful for the trust you have placed in us over these years. We are continuing our drive for innovation with the resealse of our new cTMS device which provides more control over the pulse shape and opens new doors for TMS research.

Lorem

Brainsight® TMS

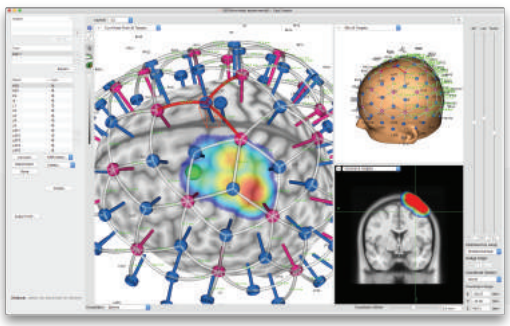
- Integrated 2-channel EMG for threshold and motor mapping
- Supports all TMS coils
- Define targets based on anatomy, MNI coordinates, functional overlay or previous coil locations
- Automatic 3D reconstruction
- Supports Axilum robot

ELEVATE TMS

- First new TMS design in years
- Variable pulse widths
- Controllable pulse shapes and width to reliably excite or inhibiot neuronal circuits
- Unidirectional and bi-phasic rTMS
- Quadripulse
- Unidirectional theta burst
- Built-in EMG
- External control via sequence file and network
- Modern touch screen UI

Brainsight® NIRS

- Brainsight controlled
- Modular design
- Up to 32 High sensitivity detectors to measure signals from the cortex
- Dedicated proximity detectors
- Up to 100 Hz sampling
- 8 aux channels with 8kHz sampling
- Low profile optodes compatible with TMS, EEG, MRI and MEG



Your World of Neuroscience
from Research to Clinical

COME SEE US AT CNS 2019, SAN FRANCISCO, March 23 to 26 - BOOTH 205

Ask about our upcoming **CLINICAL CURRY SCHOOL, Summit NJ,** May 31-June 2, 2019

www.compumedics.com

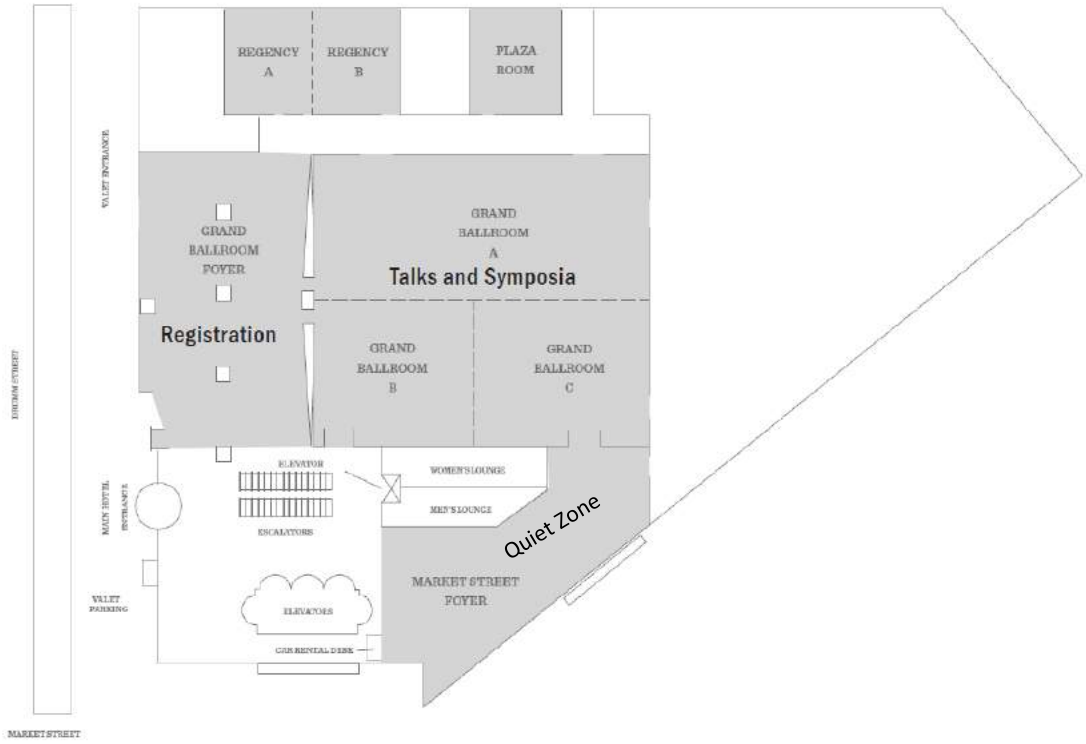
Compumedics USA, Inc.:
5015 West WT Harris Blvd, Suite E, Charlotte, NC 28269
Toll Free USA: +1 877 717 3975 Ph: +1 704 749 3200 Fax: +1 704 749 3299
Global Offices: Australia • USA • Germany • France

AH750-00

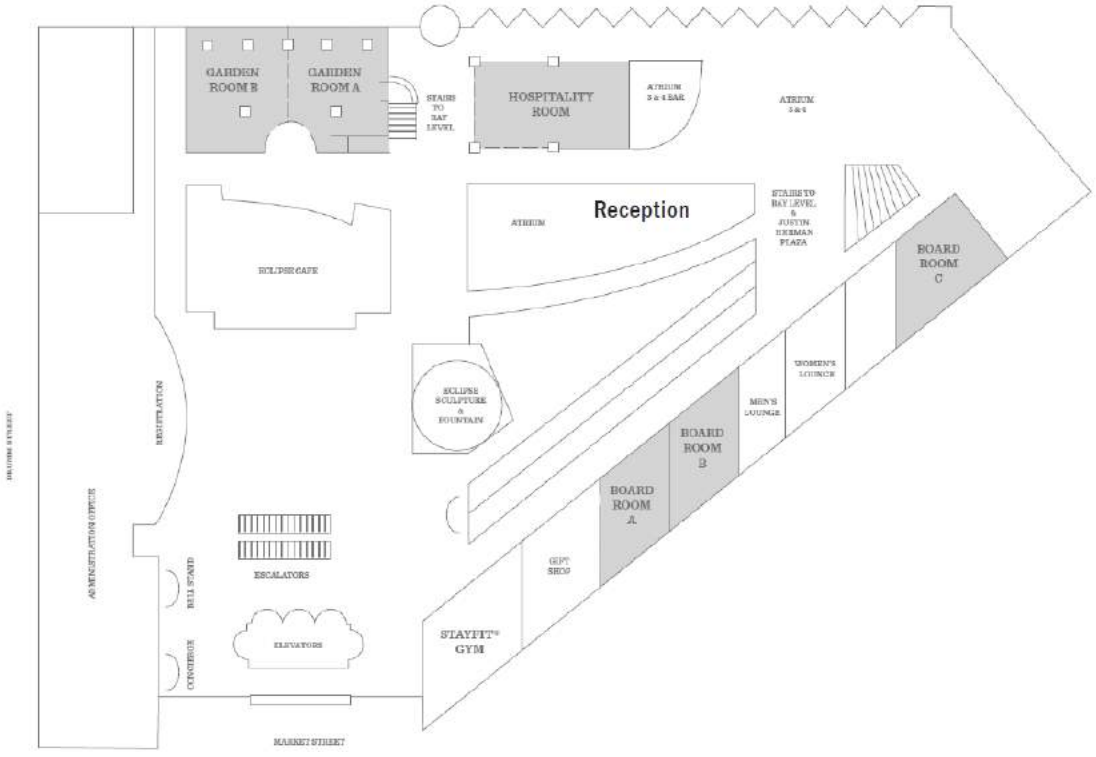
Notes

Hotel Floor Plan

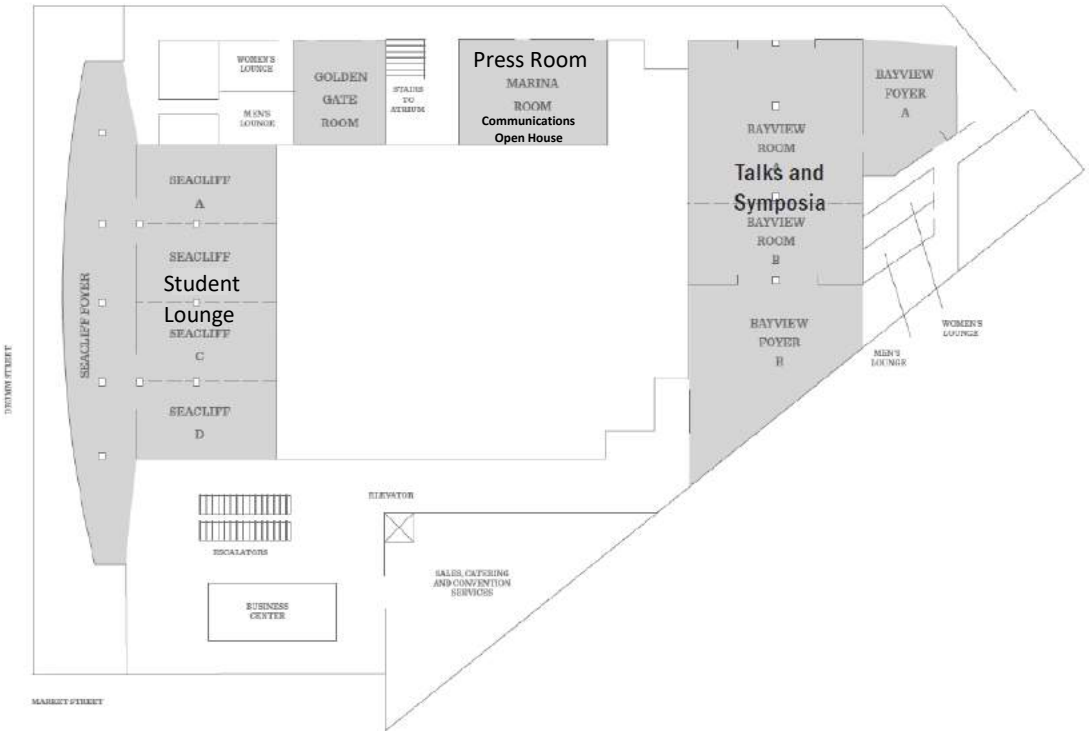
Street Level



Atrium Level



Bay Level



Pacific Concourse

Notes