CNS2024 TORONTO

April 13–16 | 2024

Cognitive Neuroscience Society

31st Annual Meeting, April 13-16, 2024
Sheraton Centre Toronto Hotel, Toronto, ON, Canada

2024 Annual Meeting Program

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

2024 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
Patti Reuter-Lorenz, Ph.D., University of Michigan
Daniel Schacter, Ph.D., Harvard University

Program Committee

Michael Anderson, Ph.D., University of Cambridge (Chair)
David Badre, Ph.D., Brown University
Kelly Giovanello, Ph.D., University of North Carolina, Chapel Hill
Kevin LaBar, Ph.D., Duke University
Sabine Kastner, Ph.D., Princeton University
Alison Preston, Ph.D., UT Austin
Gaia Scerif, Ph.D., Oxford University

Poster Committee

Vishnu Murty, Ph.D., Temple University (Chair)
Elisabetta Ambron, Ph.D., University of Pennsylvania
James Antony, Ph.D., California Polytechnic State University
Ian Ballard, Ph.D., UC Berkley
Simon Davis, Ph.D., Duke University
Chelsea Helion, Ph.D., Temple University
Hossein Karimi, Ph.D., Mississippi State University
Anastasia Kiyonaga, Ph.D., UCSD
Aaron Kucyi, Ph.D., Drexel University
Ian M. McDonough, Ph.D., Binghampton University

Symposium Committee

Micah Murray, Ph.D., Lausanne University Hospital and University of Lausanne, Switzerland (Chair)
Evangelia G. Chrysikou, Ph.D., Drexel University
Olivier Collignon, Ph.D., UCLouvain
Lucia Melloni, Ph.D., Max-Planck-Institute
Amy Overman, Ph.D., Elon University
Marcela Pena Garay, Ph.D., Pontifical Catholic University of Chile
Sepideh Sadaghiani, Ph.D., University of Illinois at Urbana-Champaign
Juha Silvanto, Ph.D., University of Surrey
Mark Wallace, Ph.D., Vanderbilt University

Young Investigator Award Committee

Kara Federmeier, Ph.D., University of Illinois (Chair)
Samuel Gershman, Ph.D., Harvard University
Catherine Hartley, Ph.D., New York University
Joel Voss, Ph.D., University of Chicago
Tor Wager, Ph.D., Dartmouth College

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

Diversity, Equity and Inclusion Committee

Audrey Duarte, Ph.D., University of Texas, Austin (Co-Chair)
Brad Postle, Ph.D., University of Wisconsin, (Co-Chair)
Taraz Lee, Ph.D., University of Michigan
Lorna Quandt, Ph.D., Gallaudet University
Aleksandra Sherman, Ph.D., Occidental College

Outreach and Training Committee

Bradley Voytek, Ph.D, University of California, San Diego (Chair)
Amy Belfi Ph.D., Missouri University of Science and Technology
Bhismadev Chakrabarti, Ph.D., University of Reading
Julian Keenan Ph.D., Montclair State University
Christopher Madan, Ph.D., University of Nottingham

Administrative Staff

Kate Tretheway, Executive Director
Sangay Wangmo, Administrative Assistant
Lisa Munoz, Public Information Officer for the Society

Meeting Perfect Staff

Shauney Wilson, Event Director
Kerry Miller, Event Planner
Jeff Wilson, Event Associate
Shawna Lampkin, Event Associate
Lynn Flannery, Event Associate
Linda Hacker, Event Associate
Dustin Miller, Event Associate
Janeen Fabulae, Event Associate

Schedule Overview

Saturday, April 13, 2024

11:00 - 6:00 pm	On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*
11:30 am - 12:30 pm	Workshop — Embracing high-dimensional data with XR-based experiments, *Ballroom Center*
11:30 am - 12:30 pm	Workshop — Getting it done at a non-R1: Succeeding in Cognitive Neuroscience in a Resource-Limited Environment, *Ballroom West*
12:00 - 2:00 pm	Exhibitor Check In, *Grand Ballroom Foyer*
12:30 - 1:00 pm	Poster Session A Set-Up, *Sheraton Hall ABC*
1:00 - 2:30 pm	Data Blitz Session 1, *Ballroom East* Data Blitz Session 2, *Ballroom Center* Data Blitz Session 3, *Ballroom West* Data Blitz Session 4, *Sheraton Hall EF*
2:30 - 4:30 pm	Poster Session A, *Sheraton Hall ABC*
2:30 - 4:45 pm	Exhibits Open, *Sheraton Hall ABC*
3:30 - 4:00 pm	Coffee Service, *Sheraton Hall ABC*
4:30 - 4:45 pm	Poster Session A Take-Down, *Sheraton Hall ABC*
4:30 - 5:30 pm	Opening Ceremonies & Keynote Address - Making Memories in Mice, Sheena Josselyn, *Hospital for Sick Children (SickKids) and University of Toronto*, *Ballroom Center + West*
4:45 pm	Exhibit Hall Closed for the Day – No Entry
5:30 - 6:30 pm	Welcome Reception, *Provincial Ballroom / Waterfall Garden*
7:00 - 10:00 pm	Joint SANS & CNS Social, *Rec Room Toronto Roundhouse, 255 Bremner Blvd, Toronto, ON M5V 3M9, Canada*

Sunday, April 14, 2024

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session B Set-up Only, *Sheraton Hall ABC*
7:30 am - 6:30 pm	On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*
8:00 - 8:30 am	Continental Breakfast, *Sheraton Hall ABC*
8:00 - 10:00 am	Poster Session B, *Sheraton Hall ABC*
8:00 am - 7:15 pm	Exhibits Open, *Sheraton Hall ABC*
10:00 am - 12:00 pm	Invited Symposium 1 — Advancing knowledge through open science adversarial collaboration, Lucia Melloni, Chair, *Ballroom East* o Talk 1: Advancing science and theory development through open science adversarial collaboration, Lucia Melloni o Talk 2: Adversarial collaboration to evaluate Global Neuronal Workspace Theory and Integrated Information Theory: results and challenges part 1, Aya Khalaf o Talk 3: Adversarial collaboration to evaluate Global Neuronal Workspace Theory and Integrated Information Theory: results and challenges part 2, Ole Jensen o Talk 4: Open science adversarial collaboration to advance theory: A debate, Melanie Boly, Fanis Panagioraropoulos,Ole Jensen, Lucia Melloni
10:00 am - 12:00 pm	Invited Symposium 2 — Memory engrams and their implications for human memory, Denise Cai, Chair, *Ballroom Center + West* o Talk 1: Stability and flexibility of memory engrams across a lifetime, Denise Cai o Talk 2: Contextual modulation of memory retrieval, Paul Frankland o Talk 3: Astrocytes control memory strength by affecting the engrams, Inbal Goshen o Talk 4: Forget the Engram - Memory Expression Across Development, Tomás Ryan

11:30 - 11:45 am	Poster B Take-Down, *Sheraton Hall ABC*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	NIH Workshop — Putting the 'fun' in funding: Roundtable with NIH Staff, *Sheraton Hall EF*
1:30 - 3:30 pm	Symposium 1 — Into the night: The cognitive neuroscience of dreaming, Remington Mallett, Chair, *Ballroom East* o Talk 1: Dreaming as evidence that recent experience triggers reactivation of semantically related remote memory during sleep, Erin Wamsley o Talk 2: Targeted dream incubation increases subsequent content-related creativity, Kathleen Esfahany o Talk 3: How does closing one's 'dream' eyes affect alpha power and visual content in lucid REM sleep?, Saba Al-Youssef o Talk 4: Sleep depth, dream immersion, and the neural architecture of sleep, Claudia Picard-Deland o Q&A with the Audience
1:30 - 3:30 pm	Symposium 2 — Hippocampal predictions link perception and memory, Peter Kok, Chair, Morgan Barense, Co-Chair, *Ballroom Center* o Talk 1: Statistical learning drives predictive shifts in object memory, Dhairyya Singh o Talk 2: Learning and communication of perceptual predictions by the hippocampus, Oliver Warrington o Talk 3: Hippocampal memories enable preparation for anticipated attentional goals, Mariam Aly o Talk 4: Building event models: how hippocampal subfields differentially segment events through learning, and how anxiety alters event segmentation, Oded Bein o Q&A with the Audience
1:30 - 3:30 pm	Symposium 3 — Multisensory Development Across the Neurotypical and Neurodivergent Lifespan: The Birth of a Research Consortium, Mark Wallace, Chair, Micah Murray Co-Chair, *Ballroom West* o Talk 1: Multisensory Temporal Development in Autism: Contributions to the Broader Phenotype, Mark Wallace o Talk 2: Low-level multisensory processes: from the impact of early life experience to the prediction of higher-order cognition, Micah Murray o Talk 3: Multisensory integration and sensory interaction during the development, Monica Gori o Talk 4: The Multisensory Cocktail Party Problem (MCPP): Perceptual Segregation and Integration of Multisensory Inputs Develops Gradually, David Lewkowicz o Q&A with the Audience
1:30 - 3:30 pm	Symposium 4 — Reconciling the Impact of Emotion on Episodic Relational Memory, Florin Dolcos, Chair, Deborah Talmi, Co-Chair, *Sheraton Hall EF* o Talk 1: Reconciling Opposing Effects of Emotion on Relational Memory: Behavioral, Eye-Tracking, and Brain Imaging Evidence, Florin Dolcos o Talk 2: No Evidence that Emotion Decreases Hippocampally-based Associative Binding: Results of an Emotional Variant of the Weather-Prediction Task, Deborah Talmi o Talk 3: Effects of Emotion and Stress on Item vs. Contextual Memory: Brain Dynamics and Neural Substrates, Mathias Weymar o Talk 4: The Temporal Tapestry of Emotional Memory: Untangling the Threads, Daniela Palombo o Q&A with the Audience
3:30 - 4:00 pm	Poster Session C Set-Up, *Sheraton Hall ABC*
3:30 - 4:00 pm	Coffee Service, *Sheraton Hall ABC*
4:00 - 5:00 pm	The 30th Annual George A. Miller Prize in Cognitive Neuroscience Lecture, Hippocampus: Action at a Distance, Lynn Nadel, Ph.D., University of Arizona, *Ballroom Center + West*
5:00 - 7:00 pm	Poster Session C and Social Hour, *Sheraton Hall ABC*
7:00 - 7:15 pm	Poster Session C Take-Down, *Sheraton Hall ABC*
7:15 pm	Exhibit Hall Closed for the Day – No Entry
9:00 pm - 10:00 pm	Pavlov's Dogz, *Adelaide Hall, 250 Adelaide St W Second Floor, Toronto, ON M5H 1X6, Canada*

Monday, April 15, 2024

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session D Set-Up Only, *Sheraton Hall ABC*
8:00 - 8:30 am	Continental Breakfast, *Sheraton Hall ABC*
8:00 - 10:00 am	Poster Session D, *Sheraton Hall ABC*
8:00 - 5:00 pm	Exhibits Open, *Sheraton Hall ABC*
8:00 am - 5:30 pm	On-site Registration & Pre-Registration Check In, *Grand Ballroom Foyer*
8:30 - 10:00 am	Communications Open House, Press Room, *Peel Room*
10:00 am - 12:00 pm	Symposium 5 — Subjectivity: Who cares?, Brian Levine, Chair, Brad Buchsbaum, Co-Chair, *Ballroom East* o Talk 1: Visual Perspective Biases Autobiographical Remembering, Peggy L. St. Jacques o Talk 2: Grounding introspective episodic memory judgements with neural readouts, Brad Buchsbaum o Talk 3: Individual differences in subjective memory: brain imaging, cognition, and psychopathology, Brian Levine o Talk 4: Is a lack of visual imagery subjective or objective (or both)?, Wilma Bainbridge o Q&A with the Audience
10:00 am - 12:00 pm	Symposium 6 — Insights into flexible cognition: Structure learning, inference, and abstraction based on cognitive maps, Stephanie Theves, Chair, *Ballroom Center* o Talk 1: The role of cognitive maps in concept updating and prototype abstraction, Stephanie Theves o Talk 2: Hippocampal and frontoparietal development enhance knowledge of specifics and generalities, Alison R. Preston o Talk 3: Cognitive maps, cognitive demands, and inference, Erie D. Boorman o Talk 4: Hippocampal ripple trigged brain-wide activation underlies learning and inference, Yunzhe Liu o Q&A with the Audience
10:00 am - 12:00 pm	Symposium 7 — Neurocognitive Mechanisms of Mindfulness: Insights from Basic Research and Translational Science, Erika Nyhus, Chair, *Ballroom West* o Talk 1: Highly Experienced Meditators Display Enhanced Stability in Sustained Attention Processes and Altered Resting-State Connectivity, Kathryn Devaney o Talk 2: Closed-loop Digital Meditation as a Tool for Enhancing Cognition and Bolstering Neural Network Efficiency and Modularity Across the Lifespan, David Ziegler o Talk 3: Mindful Emotion Regulation: Neural Mechanisms of Depression Vulnerability and Prophylaxis, Norman Farb o Talk 4: Increases in Theta Oscillatory Activity During Episodic Memory Retrieval Following Mindfulness Meditation Training, Erika Nyhus o Q&A with the Audience
10:00 am - 12:00 pm	Symposium 8 — A hands-on technical workshop for cognitive neuroscientists, Bradley Voytek, Chair, *Sheraton Hall EF*
11:30 - 11:45 am	Poster Session D Take-Down, *Sheraton Hall ABC*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	DEI Workshop — Visibility and Networking: What does it mean and how do you do it?, *Sheraton Hall EF*
1:30 – 2:00 pm	Poster Session E Set-Up, *Sheraton Hall ABC*
1:30 - 2:00 pm	YIA 1 — The neural circuit underlying subjective perception, Peter Kok, *Ballroom Center + West*
2:00 - 2:30 pm	YIA 2 — Insights from studying people with congenital sensorimotor deprivation, Ella Striem-Amit, *Ballroom Center + West*
2:30 - 4:30 pm	Poster Session E, *Sheraton Hall ABC*
3:30 - 4:00 pm	Coffee Service, *Sheraton Hall ABC*
4:30 - 4:45 pm	Poster Session E Take-Down, *Sheraton Hall ABC*
4:30 - 5:30 pm	The 13th Annual Distinguished Career Contributions in Cognitive Neuroscience Lecture, Focus through Time, Kia Nobre, Wu Tsai Institute and Department of Psychology, Yale University, *Grand Ballroom Center + West*

5:00 pm	Exhibit Hall Closed for the Day – No Entry
6:30 - 9:30 pm	CNS Student Trainee Social Night, Craft Beer Market 1 Adelaide Street E, Toronto, ON

Tuesday, April 16, 2024

7:30 am - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session F Set-Up Only, *Sheraton Hall ABC*
8:00 - 8:30 am	Continental Breakfast, *Sheraton Hall ABC*
8:00 - 10:00 am	Poster Session F, *Sheraton Hall ABC*
8:00 am - 10:00 am	Exhibits Open, *Sheraton Hall ABC*
8:00 am - 3:00 pm	On-site Registration & Pre-Registration Check In. *Grand Ballroom Foyer*
10:00 am - 10:15 am	Poster Session F Take-Down, *Sheraton Hall ABC*
10:00 am - 12:00 pm	Invited Symposium 3 — The Science and Engineering of the Speaking Brain, Gopala Anumanchipalli, Chair, *Ballroom East* o Talk 1: Beyond Broca: Neural architecture and evolution of a dual motor speech coordination system, Greg Hickock o Talk 2: Modulation of neural responses during self-generated speech using intracranial recordings in children and adults, Liberty Hamilton o Talk 3: Brain Dynamics of Cognitive Control Mechanisms in Language Production, Stephanie Ries o Talk 4: Current state of Communication Neuroprostheses, Gopala Anumanchipalli
10:00 am - 12:00 pm	Invited Symposium 4 — The Geometry of Neural Representations of Tasks: What Does it Mean for Cognition and Behavior?, Tim Buschman, Chair, *Ballroom West + Center* o Talk 1: The dynamics and geometry of choice in premotor cortex, Tatiana Engel o Talk 2: Comparing task-performing models by their predictions of representational geometries and topologies, Nikolaus Kriegeskorte o Talk 3: Hyperbolic geometry of neural responses expands in maximally informative way, Tatyana Sharpee o Talk 4: The geometry of cognitive control, Tim Buschman
10:15 am	Exhibit Hall Closed for the Day – No Entry
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	Workshop — Horizon-scanning for new ELSIs in Cognitive Neuroscience, *Pine Room*
1:30 - 3:30 pm	Symposium 9 — Cortical mechanisms for transsaccadic memory and perception, John Douglas Crawford, Chair, Bianca Baltaretu, Co-Chair, *Ballroom East* o Talk 1: Dissociable roles of human frontal eye fields and early visual cortex in presaccadic and covert attention Marisa Carrasco o Talk 2: The relationship between transsaccadic visual stability and visual working memory: an fNIRS study, A. Caglar Tas o Talk 3: Understanding remapping and its consequences for perception, Julie Golomb o Talk 4: Cortical mechanisms for transsaccadic perception of low-level object features, Bianca Baltaretu o Q&A with the Audience
1:30 - 3:30 pm	Symposium 10 — Endel Tulving and the Modern Science of Memory, Daniel L. Schacter, Chair, Donna Rose Addis, Co-Chair, *Ballroom Center* o Talk 1: Endel Tulving: An Introduction, Daniel L. Schacter o Talk 2: Endel Tulving's Cognitive Psychology, Fergus Craik o Talk 3: Do complex neuropsychological cases advance memory theory? The legacy of K.C., R. Shayna Rosenbaum o Talk 4: Tulving's contributions to frontal and hippocampal theories in cognitive neuroscience, Robert Cabeza o Talk 5: Memory, Consciousness, and the Self, Donna Rose Addis o Talk 6: Episodic Future Thinking: From Mind to Society, Karl K. Szpunar

1:30 - 3:30 pm Symposium 11 — Advances in speech prosody perception research: Integrating behavioral, neuroimaging, (neuro)genomics, and clinical techniques, Tamar Regev, Chair, Srishti Nayak, Co-Chair, *Ballroom West*

- Talk 1: Intonation Units in spontaneous speech evoke a neural response, Maya Inbar
- Talk 2: Effects of stroke on emotional prosody processing, Anna Greenwald
- Talk 3: A network of brain areas is sensitive to prosody and distinct from language and auditory areas, Tamar Regev
- Talk 4 Genetic individual differences in speech rhythm sensitivity: implications for the cognitive neuroscience of language and learning, Srishti Nayak
- Q&A with the Audience

1:30 - 3:30 pm Symposium 12 — Leveraging social cognitive neuroscience tools to characterize heterogeneity in Autism Spectrum Disorder, Dorit Kliemann, Chair, Gabriela Rosenblau, Co-Chair, *Sheraton Hall EF*

- Talk 1: Individual differences in autism-like traits are associated with reduced goal emulation in a computational model of observational learning, Caroline J. Charpentier
- Talk 2: Social knowledge representations for learning in autistic adolescents, Gabriela Rosenblau
- Talk 3: Functional connectivity of the amygdala: testing three leading neurobiological hypotheses of ASD, Dorit Kliemann
- Talk 4: Autistic adults show increased variability in cortical selectivity across social and non-social domains, Marlene Anila M. D'Mello
- Q&A with the Audience

Keynote

Sheena Josselyn

Hospital for Sick Children (SickKids) and University of Toronto

Keynote Address, Open to the Public

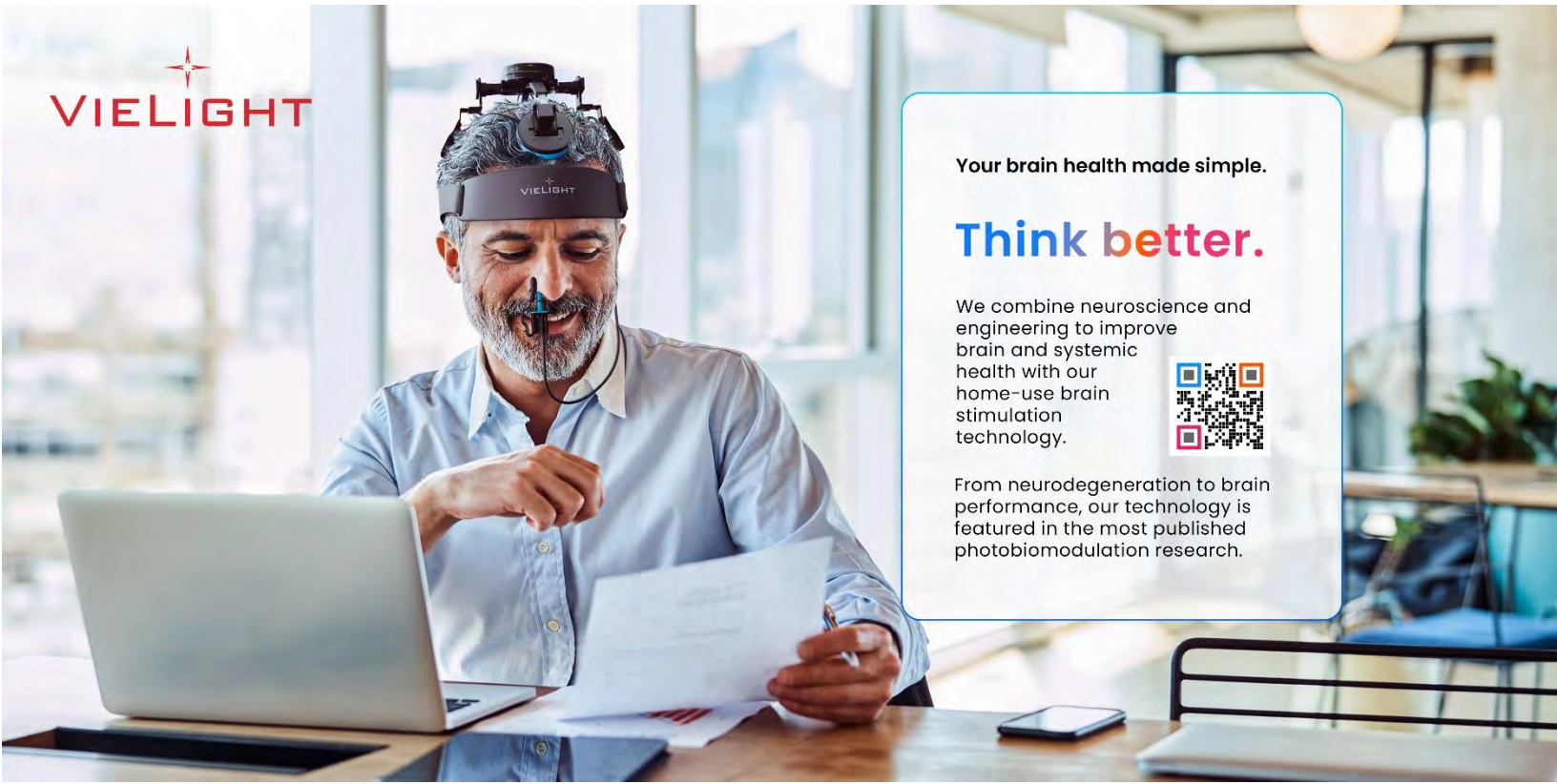
Saturday, April 13, 2024, 4:30PM - 5:30PM, Ballroom Center + West

Making Memories in Mice

Understanding how the brain uses information is a fundamental goal of neuroscience. Several human disorders (ranging from autism spectrum disorder to PTSD to Alzheimer's disease) may stem from disrupted information processing. Therefore, this basic knowledge is not only critical for understanding normal brain function, but also vital for the development of new treatment strategies for these disorders. Memory may be defined as the retention over time of internal representations gained through experience, and the capacity to reconstruct these representations at later times. Long-lasting physical brain changes ('engrams') are thought to encode these internal representations. The concept of a physical memory trace likely originated in ancient Greece, although it wasn't until 1904 that Richard Semon first coined the term 'engram'. Despite its long history, finding a specific engram has been challenging, likely because an engram is encoded at multiple levels (epigenetic, synaptic, cell assembly). My lab is interested in understanding how specific neurons are recruited or allocated to an engram, and how neuronal membership in an engram may change over time or with new experience. Here I will describe data in our efforts to understand memories in mice.

About

Sheena Josselyn is a Canadian neuroscientist and a full professor of psychology and physiology at Hospital for Sick Children and The University of Toronto. Josselyn studies the neural basis of memory, specifically how the brain forms and stores memories in rodent models. She has made critical contributions to the field of Neuronal Memory Allocation and the study of engrams. After finishing her postdoctoral work, Josselyn moved back to Toronto to start her lab at SickKids Hospital at the University of Toronto. Her overall goal is to understand how humans learn and remember such that one day her work can impact translational research at her institute and in her community. Some of Josselyn's early discoveries include discovering that CREB over-expression in the auditory thalamus increases memory and fear, and further, that ablating neurons that highly expressed CREB after fear learning actually ablates fear memories in rodent. These were some of the first findings isolating specific neurons representing a specific memory in the brain. Josselyn's multidisciplinary approach to tackling questions regarding memories led her to several prestigious awards and recognitions including becoming a member of the Royal Society of Canada in 2018 for her research. Wikipedia®



George A. Miller Prize

Congratulations to Lynn Nadel for being awarded this honor!

Lynn Nadel will accept this prestigious award and deliver his lecture on Sunday, April 14, 2024, 4:00 – 5:00 pm, in the Ballroom Center + West.

Hippocampus: Action at a Distance

Lynn Nadel, Ph.D.

University of Arizona

The hippocampal formation provides the core of a context-based memory system that enables actions at both spatial and temporal removes. It does this by creating representations of context – what O'Keefe and I labelled 'cognitive maps', that are critical to acting at a distance. Most simply, these internal maps allow organisms to act on the basis of entities (objects, people, goals, etc) that are at some distance, and not within visible, audible or olfactory range. Context representations support environment re-identification, allowing animals to correctly link up information gathered in the same environment over multiple occasions separated by significant temporal gaps. They support, as well, retrieval of contextually-appropriate knowledge, bringing information gathered in the past to bear on present behavior and future planning. My talk will review evidence in support of these assertions about the hippocampus, and consider various implications of its role in action at a distance.

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 has so 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

2023	Sabine Kastner, M.D., Ph.D., Princeton University
2022	BJ Casey, Ph.D., Yale University
2021	Elizabeth Phelps, Ph.D., Harvard University
2020	Nancy Kanwisher, Ph.D, Massachusetts Institute of Technology
2019	Earl K. Miller, Ph.D., Massachusetts Institute of Technology
2018	Elizabeth Spelke, Ph.D., Harvard University
2017	Dr. David Van Essen, Ph.D., 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 Distinguished Career Contributions Award

Congratulations to Kia Nobre, Ph.D. for being awarded this honor!

Kia Nobre will accept this prestigious award and deliver her lecture on Monday, April 15, 2024, 4:30 – 5:30 pm, in Ballroom West + Center.

Focus Through Time

Kia Nobre, MD

Wu Tsai Institute and Department of Psychology, Yale University

The ability to focus on important and interesting signals is at the core of selective attention, driving its functions for anticipating, selecting, prioritizing, and gating information to support adaptive behavior. In my lecture, I will explore three notions of how the attentional focus has shifted through time over the recent decades, highlighting discoveries and contributions from our research group.

(1) From a static starting point, focus became highly dynamic. Attention functions, from proactive anticipation to action preparation, ebb and flow according to predictable and relevant timings of events. We have learned that a growing variety of temporal structures - based on associations, probabilities, rhythms, and sequences – extracted over short periods to long-term memories – can fuel the dynamics of attention.

(2) Focus transcended the present situation. In addition to modulating perception and action in the moment, focus applies internally to contents available only in the mind. Through focus, mental contents are selected, prioritized, and gated dynamically to enhance relevant retrieval and guide future-oriented behavior.

(3) Over time, focus has acquired more dimensions and perspectives. Embracing temporal dynamics and considering the past to future domains, the treatment of focus is breaking away from simple dichotomies. A much richer field of investigation lies ahead, allowing us to understand the nature and role of focus as a fundamental cornerstone across the gamut of cognition.

About the Distinguished Career Contributions Award

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 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 Distinguished Career Contributions lecture.

Previous Winners of the Distinguished Career Contributions Award

2023	Mark D'Esposito, MD, University of California, Berkeley
2022	John Jonides, Ph.D., University of Michigan
2021	Robert Desimone, Ph.D., McGovern Institute for Brain Research at MIT
2020	Marlene Behrmann, Ph.D., Carnegie Mellon University
2019	Daniel L. Schacter, Ph.D., Harvard University
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

Young Investigator Award

Congratulations to the 2024 Young Investigator Award Winners

Peter Kok, Ph.D., University College London
Ella Striem-Amit, Ph.D., University Medical Center, Washington, DC.

YIA special lectures take place on Monday, April 15, 2024, 1:30 – 2:30 pm in Ballroom Center + West.

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. This award is supported by the Chen Institute

The Neural Circuit Underlying Subjective Perception

Monday, April 15, 2024, 1:30 –2:00 pm, Ballroom Center + West

Peter Kok, Ph.D.

Wellcome Centre for Human Neuroimaging, University College London Queen Square Institute of Neurology, University College London

The way we perceive the world is strongly influenced by our expectations about what we are likely to see at any given moment. However, the neural mechanisms by which the brain achieves this remarkable feat have yet to be established. To understand the neural mechanisms underlying the interplay between sensory inputs and prior expectations, we need to investigate the way these signals flow at the level of cortical circuits, e.g. through the different cortical layers. Until recently, it was not possible to do this in non-invasive studies of humans, because the typical voxel size in fMRI is bigger than the full thickness of the cortex. I will discuss recent work in which we met this challenge by using fMRI at ultra-high field (7T) to obtain BOLD signals at very high resolution to disambiguate signals from the different cortical layers. This approach has allowed us to probe the neural circuitry underlying effects of expectation and subjective perception. I will also discuss the role of the hippocampus as a potential generator of top-down expectation effects in visual cortex, focusing on predictive stimulus representations in hippocampal subfields and informational connectivity with the visual cortex. Together, this work aims to shed new light on the neural circuitry underlying our perception of the world.

Insights from Studying People with Congenital Sensorimotor Deprivation

Monday, April 15, 2024, 2:00 –2:30 pm, Ballroom Center + West

Ella Striem-Amit, Ph.D.

Department of Neuroscience, Georgetown University Medical Center, Washington, DC.

What is the balance between nature and nurture in determining the function of cortical areas? A key way to answer this question is by studying people with congenital deprivation. What plasticity is evident when a brain area is deprived from birth of its typical input or outputs, and what can this tell us about cognitive representations? Furthermore, does deprivation affect every deprived brain similarly, or are plasticity patterns diverse across individuals?

I will present a series of studies examining the role of sensory and motor experience and specific sensorimotor features in the neural representations of objects and actions. Combining evidence from studies of people born blind and people born without hands, I will show how plasticity in these individuals' brains allows us to infer the cognitive abstractness of neural representations along the cortical hierarchies.

Beyond broader patterns of plasticity, I will show evidence for a larger diversity of brain patterns in blindness and deafness, which opens new questions about differential developmental trajectories and functions for the deprived cortex, and how these may affect restoration of function on an individual level.

Throughout, I will highlight the different ways that studying congenital deprivation across domains can illuminate the cognitive neuroscience of the typically developed brain.

CHEN TIANQIAO & CHRISSY INSTITUTE

JoCN Travel Fellowship Award

Congratulations to the 2024 Award Winners

Esaú Sirius, Federal University of ABC (UFABC), São Paulo, Brazil
Emily Brooks, Monash University, Clayton, Australia
Vinsea A V Singh, National Brain Research Centre, India
İpek Çiftçi, Bilkent University, Ankara, Turkey

The annual meeting of the Cognitive Neuroscience Society typically enjoys robust attendance from individuals from institutions based in the US and Canada, Europe, and Northeast Asia. To help promote geographic diversity in our science, the Journal of Cognitive Neuroscience has teamed up with CNS to create the JoCN Travel Fellowship, which provides a travel stipend of $3000, plus waived conference registration and waived poster submission fee, to one trainee from each of four regions that have been underrepresented at the CNS conference: Oceania and Southeast Asia; South Asia; Africa and West Asia; and Western Hemisphere (minus US and Canada).

"Memory mechanisms associated with serial dependency in visuomotor integration**"**

Esaú Sirius, *Federal University of ABC (UFABC), São Paulo, Brazil*

"Micro-consolidation occurs during implicit motor sequence learning, but is not influenced by exercise**"**

Emily Brooks, *Monash University, Clayton, Australia*

"Predicting Response to McGurk Effect Based on Periodic and Aperiodic Prestimulus EEG Activity**"**

Vinsea A V Singh, *National Brain Research Centre, India*

"Task identity is widespread! Identical tasks in different lengths are decodable all over the brain on the first and last trials.**"**

İpek Çiftçi, *Bilkent University, Ankara, Turkey*

Previous Winners of JoCN Travel Award

2023

Christine A. Leonards, *The University of Melbourne, Parkville, Victoria, Australia*
Zeguo Qiu, *The University of Queensland*
Veena Kander, *University of Cape Town, South Africa*
Kenneth Oparaji, *Alex Ekwueme Federal University, Ndufu-Alike, Ikwo (AE-FUNAI), Nigeria*

2022

Sophie Smit, *Macquarie University, Sydney, Australia*

Prerna Dash, *University of Delhi*

Nursima Ünver, *Sabanci University, İstanbul, Türkiye*

Eduardo Gonzalez-Alemany, *Center for Neurosciences of Cuba, La Habana, Cuba*

Workshops, Socials & Special Events

#	Title	Date	Time	Location
1	Workshop – Embracing high-dimensional data with XR-based experiments	Saturday, April 13	11:30 am – 12:30 pm	Ballroom Center
2	Workshop - Getting it done at a non-R1: Succeeding in Cognitive Neuroscience in a Resource-Limited Environment	Saturday, April 13	11:30 am – 12:30 pm	Ballroom West
3	CNS 2024 Welcome Reception	Saturday, April 13	5:30 – 6:30 pm	Provincial Ballroom/ Waterfall Garden
4	Joint SANS & CNS Social	Saturday, April 13	7:00 pm	Rec Room Toronto Roundhouse (Offsite)
5	Workshop - Putting the 'fun' in funding: Roundtable with NIH Staff	Sunday, April 14	12:15 – 1:15 pm	Sheraton Hall EF
6	Poster Session C Social Hour!	Sunday, April 14	5:00 – 7:00 pm	Sheraton Hall ABC
7	Pavlov's Dogz	Sunday, April 14	9:00 pm	Adelaide Hall (Offsite)
8	DEI Workshop - Visibility and Networking: What does it mean and how do you do it?	Monday, April 15	12:15 – 1:15 pm	Sheraton Hall EF
9	CNS Trainee Association Student Social Night	Monday, April 15	6:30 – 9:30 pm	Craft Beer Market (Offsite)
10	Workshop: Horizon-scanning for new ELSIs in Cognitive Neuroscience	Tuesday, April 16	12:15 – 1:15 pm	Pine Room

Workshop - Embracing high-dimensional data with XR-based experiments.

Saturday, April 13, 11:30 am – 12:30 pm, Ballroom Center

Chair: Kyla Alsbury-Nealy, SilicoLabs

SilicoLabs' no-code software allows researchers to quickly and easily create interactive XR experiments at a fraction of the cost of existing methods. This workshop explores how the software records behaviour in virtual environments, along with mobile EEG, body, hand, and eye-tracking. Time will be allotted for an interactive demonstration.

Workshop - Getting it done at a non-R1: Succeeding in Cognitive Neuroscience in a Resource-Limited Environment

Saturday, April 13, 11:30 am – 12:30 pm, Ballroom West

Chair: Julian Keenan, Montclair State University

Speakers: Julian Keenan, Montclair State University, Victoria Heimer-McGinn, Ph.D., Roger Williams University, Assistant Professor of Psychology, Sukhvinder Obhi, Ph.D., McMaster University, Associate Vice President of Research

This workshop provides practical, 'how to' information on how to set-up, establish, and sustain a neuroscience program when resources are less than ideal. This top-heavy funding disparity limits research options for many principal investigators as well as students. Here we provide practical advice on how to succeed and flourish when resources are limited.

CNS 2024 Welcome Reception

Saturday, April 13, 5:30 – 6:30 pm, Provincial Ballroom/Waterfall Garden

The Opening Reception is always a highlight at CNS! Don't miss out — it's the perfect opportunity to reconnect with colleagues, as well as meet new people and broaden your academic network. Join us as we kick off the CNS 2024 Annual Meeting and enjoy some hors d'oeuvres and a cash bar (Have a free drink on us when you use your drink ticket!)

Joint SANS & CNS Social

Saturday, April 13, 7:00 pm onwards, Rec Room Toronto Roundhouse located at *255 Bremner Blvd, Toronto, ON M5V 3M9, Canada*

SANS & the Cognitive Neuroscience Society are pleased to announce a joint social. Join your colleagues from SANS & CNS at the Rec Room Toronto Roundhouse, for a casual "drop-in" style evening of fun and entertainment. This meet-up is open to both SANS and CNS attendees. Food, beverage, and gaming credits are available for -

purchase. Meet and share ideas with colleagues from both societies, while playing arcade games! Please wear your conference name badge to assist in finding your colleagues!

Workshop - Putting the 'fun' in funding: Roundtable with NIH Staff

Sunday, April 14, 12:15 – 1:15 pm, Sheraton Hall EF

Chair: Matt Sutterer, National Institutes of Health

Hear brief updates about current National Institutes of Health (NIH) priorities in cognitive neuroscience as well as time to ask questions of NIH program and scientific review staff.

Social - Poster Session C Social Hour!

Sunday, April 14, 5:00 – 7:00 pm, Sheraton Hall ABC

Come on down to Poster Session C and enjoy some hors d'oeuvres and a cash bar (Have a free drink on us when you use your drink ticket!)

Pavlov's Dogz

Sunday, April 14, 9:00 pm, Adelaide Hall located at *250 Adelaide St W Second Floor, Toronto, ON M5H 1X6, Canada*

Doors open: 8:00pm; Show: 9:00pm

Pavlov's Dogz is a roaming band of neuroscientist-musicians that will rock your brain.

Please note that Adelaide Hall is not wheelchair accessible at this time due to the presence of stairs leading into the venue. We understand the importance of providing an inclusive environment and we deeply regret any limitations the building may pose. If you have any specific accessibility concerns or require assistance, please don't hesitate to contact us at accessibility@themrggroup.com and we will do our best to accommodate your needs.

DEI Workshop - Visibility and Networking: What does it mean and how do you do it?

Monday, April 15, 12:15 - 1:15 pm, Sheraton Hall EF

Chair: Audrey Duarte, Ph.D, University of Texas, Austin
Speakers: Morgan Barense, Vishnu Murty and M. Natasha Rajah.

Visibility is an important part of an academic career. How can we achieve it? Panelists will discuss their experience with scientific visibility and answer all your questions about navigating this, often daunting, aspect of a career in science. The DEI committee welcomes CNS attendees at all career stages.

CNS Trainee Association Student Social Night

Monday, April 15, 2024, 6:30 - 9:30 pm, at Craft Beer Market located at *1 Adelaide Street E, Toronto, ON*

Come and join us for the annual CNS Trainee Association (CNSTA) Student Social Night, Monday, April 15th at 6:30 PM in the upstairs area of the Craft Beer Market located in the heart of Toronto's Financial District on the corner of Adelaide and Yonge, for a casual "drop-in" style evening of fun and entertainment. This meet-up is open to all students and post docs of the Cognitive Neuroscience Society. The Craft Beer Market is a premium casual restaurant and bar with a passion for fresh local food and great craft beer. Please wear your conference name badge to assist in finding your colleagues! There is no cover charge, food will be provided (in the upstairs area), drinks are on your own. We look forward to meeting you!

We will meet at 6:00 PM in the hotel lobby by the Cafe with lounge seating in Hotel lobby called 'Dual Citizen' and walk out to the Craft Beer Market around 6:15pm

HOW TO GET THERE:

*PATH – Toronto's Downtown Pedestrian Walkway - The PATH is a mostly underground pedestrian walkway network in downtown Toronto that spans more than 30 kilometres of restaurants, shopping, services and entertainment. The walkway facilitates pedestrian linkages to public transit, accommodating more than 200,000 business-day commuters as well as tourists and residents.

DIRECTIONS:

From the Sheraton Centre Toronto Hotel (123 Queen St W, Toronto, ON M5H 3M9, Canada)

- Head east on Queen St W
- Turn right onto Bay St.
- Turn right onto The PATH - Simpson-Thomson

. **DIRECTIONS Continued…**

- Turn left to stay on **The PATH** - Simpson-Thomson
- Continue straight onto **The PATH** - Hudson Bay-Simpson
- Turn right onto **The PATH** - Bay Adelaide Centre
- Turn left onto **The PATH** - 100 Yonge-Metlife Pl
- Continue onto **The PATH** - One Financial Pl

End at Craft Beer Market (1 Adelaide St E,Toronto, ON M5C 1J4, Canada).

Workshop: Horizon-scanning for new ELSIs in Cognitive Neuroscience

Tuesday, April 16, 12:15 - 1:15 pm, Pine Room

Chair: Martha Farah, University of Pennsylvania

ELSIs, short for ethical, legal and societal issues, have been discussed for the past 20 years under the heading of 'Neuroethics'. Neuroscience has progressed substantially in that time. What new ELSIs does it present? In this participatory workshop, we will work together to review recent developments in cognitive neuroscience and neurotechnology, from brain stimulation to image analysis, and identify the emergent ELSIs. What's realistic and what's sci fi? How might these capabilities shape life going forward, in the classroom, courtroom, battlefield and beyond?

Data Blitz

Session #	Date	Time	Location	Chair
Data Blitz Session 1	Saturday, April 13	1:00 – 2:30 pm	Ballroom East	Aaron Kucyi
Data Blitz Session 2	Saturday, April 13	1:00 – 2:30 pm	Ballroom Center	Anastasia Kiyonaga
Data Blitz Session 3	Saturday, April 13	1:00 – 2:30 pm	Ballroom West	Audrey Duarte
Data Blitz Session 4	Saturday, April 13	1:00 – 2:30 pm	Sheraton EF	Vishnu Murty

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, April 13, 1:00 - 2:30 pm, Ballroom East
Chair: Aaron Kucyi, Drexel University
Speakers: Troby Ka-Yan Lui, Vegard Volehaugen, Dongyu Gong, Dr. Alfredo Spagna, Rodolfo Solís-Vivanco, Kyla Brannigan, Zhemeng Wu, Haoxin Zhang, Shawn T. Schwartz, Joseph Itiat, Dr Dragan Rangelov, Lindsay I. Rait, Eunchan Na, Claire Lauzon, Kari L. Hoffman.

TALK 1: THE ENCODING OF TASK-IRRELEVANT BUT NOT RELEVANT ACOUSTIC EVENTS DEPENDS ON THE PRE-STIMULUS PHASE OF ALPHA OSCILLATIONS

Troby Ka-Yan Lui, Centre National de la Recherche Scientifique, Université de Toulouse III - Paul Sabatier

The phase of alpha oscillations has been associated with perceptual fluctuations in visual attention. In the auditory modality, however, neural phase and perception seemed uncorrelated in the absence of acoustic rhythms. Here, we hypothesized that this difference reflects the dynamic nature of audition: The momentary change in acoustic input renders it costly to lose the information that coincides with the low-excitability neural phase. We hypothesized that the brain employs constant (i.e. non-phasic) attention to upcoming task-relevant acoustic targets to avoid such information loss. In contrast, the perception of to-be-ignored task-irrelevant acoustic events would still be subject to the pre-stimulus neural phase. In this electroencephalography study, 29 human participants (21F) performed a target-in-noise detection task, wherein pure tones at two pitches were randomly presented amidst a continuous noise. Participants were instructed to detect the tone at one pitch and ignore the other. In line with our hypothesis, we found that neural response to the tone depends on the pre-stimulus alpha phase (9 – 12 Hz) only when the tone is task-irrelevant. The strongest phase dependence was evident in fronto-central and occipital sensors. Perceptual sensitivity was further associated with pre-stimulus alpha phase extracted from central sensors. These results demonstrate that rhythmic perception is restored in the face of task-irrelevant events in the auditory modality.

TALK 2: UNHEARD SURPRISES: ATTENTION-DEPENDENT NEOCORTICAL DYNAMICS FOLLOWING UNEXPECTED OMISSIONS REVEALED BY INTRACRANIAL EEG

Vegard Volehaugen, University of Oslo,

Neocortex may encode and relay sensory input as Bayesian surprisal, or prediction error (PE). By this view, unexpected sensory absence results in PEs that mirror prior expectations. Predictive processing is, however, multi-layered, and knowledge on how attentional states influence hierarchical integration of endogenously generated PE is limited. To address this gap, we used intracerebral field potentials to investigate the interplay between expectation and attention following auditory omissions. Methods: Stereo-electroencephalography (SEEG) was recorded from 20 patients with drug-resistant epilepsy undergoing presurgical evaluation. Sound sequences containing predictable and surprising omissions were played during attentive listening and a distraction task. Population-activity (HFBA, 65 - 250 Hz) was extracted from channels in auditory cortex (AC) along with temporal, cingulo-opercular, and frontoparietal cortices, Results: Responses to unexpected omissions depended on attentional state. When unattended, responses were primarily limited to AC, although notable modulations occurred in frontal operculum (Fop). In the attended state, responses were broadly distributed, with short-latency responses in AC and cingulo-opercular network (CON), followed by long-latency, sustained activity in frontoparietal and somatomotor networks (FPN/SMN). Conclusions: Macroscale neural dynamics induced by PEs are strongly determined by selective attention. Early integration in AC is followed by prominent modulations in Fop; the latter more dependent on attentional state than the former. In contrast, responses in FPN and SMN are fully determined by attention. In line with previous work, the results suggests a three-stage model of sensory deviance processing where PEs are monitored by the CON which implements network transitions based on estimated task relevance.

TALK 3: EEG SIGNATURES OF ORIENTING ATTENTION TO LONG-TERM VS. WORKING MEMORY CONTENTS

Dongyu Gong, Yale University, University of Oxford

Internal attention selects and prioritizes contents within memory representations to guide future behavior. Most studies have considered internal attention within working memory (WM), but selection and prioritization can also occur within long-term memory (LTM). The neural processes engaged by internal attention in LTM are poorly understood. To compare directly internal attention in LTM and WM, we recorded EEG signals from participants engaged in a task where they were presented with a four-placeholder array, featuring two locations for immediate working memory encoding and two associated with pre-learned long-term memory items. A brief delay after a color-based retrocue, participants reproduced the shape of the cued item. Multivariate pattern analysis was able to able to decode the memory domain of the cued item (WM vs. LTM) during the delay, suggesting that internal attention in LTM and WM is at least partially dissociable. Additional EEG and ERP markers also highlighted differences in selecting and prioritizing LTM and WM contents. Even though spatial attention was not strictly required by the task, orienting attention to WM items showed signs of spatial modulation (lateralized event-related potentials and 8-12 Hz alpha-power lateralization). In contrast, spatial modulations were not conspicuous for internal attention in LTM. Instead, non-lateralized theta power (3-7 Hz) was higher when selecting an LTM item. Our findings suggest that orienting attention to LTM contents involves different neural mechanisms compared to WM. Selecting an item in LTM, therefore, may not be contingent on reinstating a WM representation but instead rely on a different memory format.

TALK 4: HIGH-GAMMA OSCILLATIONS IN THE SLF I NETWORK PREDICT CONSCIOUS PERCEPTION OF ATTENDED VISUAL TARGETS

Dr. Alfredo Spagna, Department of Psychology, Columbia University

Introduction. “Look over there” is a common phrase we have all heard in our life. But how does brain responses to a cue help conscious perception of an impending target? Here, we studied how brain oscillations observed following the presentation of predictive peripheral cues benefit conscious perception. Method. Fourteen participants completed a task with spatially predictive supra-threshold peripheral cues (50 ms) preceding by 250 ms the presentation of near-threshold Gabor targets (16 ms). Performance differences in consciously perceived targets between validly cued (same side) and invalidly cued (opposite side) trials were analyzed via a Conscious Reports (Seen, Unseen) x Validity (Valid, Invalid) ANOVA. MEG recordings during the cue-target period underwent time-frequency decomposition analyses to explore the Validity by Conscious Reports interaction. Oscillatory patterns within regions of interest in the Superior Longitudinal Fasciculi (SLF) were submitted to nonparametric testing. Results. The greater discrimination accuracy for seen compared unseen targets ($p<.0001$) was associated with increased gamma oscillations (~60 Hz) during the cue-target period (~158 ms post-cue) in the right superior frontal gyrus, a node of the SLF I network. Further, high-gamma oscillations in both the superior frontal and superior parietal nodes of the right SLF I, as well as their coherence, were greater for seen compared to unseen trials for valid but not for invalid trials. Discussion. Our results indicate that the high-gamma oscillatory activity within the right SLF I plays a crucial role in guiding attention during the cue-target period.

TALK 5: BEING OUT OF THE ZONE: BRAIN OSCILLATORY DYNAMICS DURING DECREASED SUSTAINED ATTENTION

Rodolfo Solís-Vivanco, Instituto Nacional de Neurología y Neurocirugía, Faculty of Psychology, Universidad Nacional Autónoma de México

Sustained attention enables individuals to concentrate on relevant stimuli over an extended time period. Notably, this form of attention is marked by performance fluctuations, alternating between a state of consistent and effective behavior (being "in the zone") and another one characterized by increased performance variability and susceptibility to errors ("outside the zone"). Little is known about the differences between these states in terms of oscillatory brain dynamics during challenging sustained attention tasks, which was our objective. Thirty young adults performed the Gradual-onset continuous performance task, during which their EEG and responses were recorded. States of sustained attention (in the zone vs. out of the zone) throughout the task were identified based on the variability of reaction times to correct stimuli. As expected, being outside the zone correlated with heightened commission errors and reduced task sensitivity. Additionally, being outside the zone showed a significant decline in theta oscillations in prefrontal regions. The extent of this decline predicted commission errors, reduced task sensitivity, and reaction time variability. Moreover, variability in theta rhythm along the task was associated with reaction time variability. Finally, participants exhibiting greater theta variability showed a more pronounced decline in task sensitivity when being outside the zone compared to those with lower variability. Our results suggest that diminished sustained attention is characterized by a reduction in frontal theta activity, and the fluctuation in this rhythm serve as predictor of execution consistency. These findings hold significance for activities where attentional fluctuations play a crucial role.

TALK 6: HIPPOCAMPAL CONNECTIVITY PREDICTING RECOGNITION AND CATEGORIZATION PERFORMANCE

Kyla Brannigan, University of Oregon

The hippocampus is a key contributor to our ability to remember both specific experiences (memory specificity) and extract common infor-

-mation from these experiences to generate new knowledge (memory generalization), through interactions with distinct cortical regions. While there is support for distinct hippocampal connections supporting each of these memory processes, they have not been tested together using the same task. The present study investigates whether distinct hippocampal connections can predict individual differences in memory specificity and memory generalization scores on the same task. To test this, participants underwent two fMRI scans while passively viewing face stimuli. Between the two scans, they learned to sort faces into one of three categories, and after the MRI session, they were tested both on their recognition of the training faces as well as their ability to generalize the previously learned categories onto new faces. Background hippocampal connectivity during passive face viewing was related to recognition and categorization success. Hippocampal connectivity with the frontal pole predicted recognition ability, connectivity with the precuneus predicted categorization ability, and connectivity with lateral occipital cortex predicted both abilities. Overall, this suggests that the hippocampus has distinct yet overlapping connections to support both memory processes.

TALK 7: OPTOGENETIC INHIBITION OF THE RODENT DORSAL HIPPOCAMPUS IMPAIRS TEMPORAL DURATION SEQUENCE MEMORY RETRIEVAL

Zhemeng Wu, University of Toronto Scarborough

Convergent animal and human research have demonstrated that the hippocampus represents timing information embedded within a sequence of events. However, the specific roles of hippocampal subdivisions remain unclear. We developed a novel cross-species behavioural task to examine the temporal acquisition process using a novel computation modelling and then investigated the role of rodent dorsal hippocampus (dHPC) in temporal duration memory after acquisition. Across a number of training days, Long Evans rats learned to identify, via a left/right lever press, two distinct auditory sequences, each comprised of a pure tone and white noise of differing durations. We then developed a computational model to characterize the temporal learning dynamics of each participant and to identify the source of inter-participant variability. This model comprised of two components: (1) Bias, a cubic spline function captured the extent to which a subject's responding is biased towards one lever in the early phases of learning; and (2) Learning, a sigmoid function was implemented to provide insight into each subject's learning process. We found that although rats were able to successfully learn the different sequences, they demonstrated different strategies: some rats acquired both sequences equally throughout learning while others were biased towards learning one sequence over the other early on. After successful sequence acquisition, we inhibited the dorsal hippocampus (dHPC) using optogenetics. dHPC inhibition during sequence presentation impaired performance while inhibition during choice phase had no impact. Our data suggest a critical role for the rodent dHPC in representing temporal duration information in the context of sequences.

TALK 8: SUBSECOND DYNAMICS OF BEHAVIORALLY-RELEVANT PATTERN SEPARATION IN THE HUMAN HIPPOCAMPUS

Haoxin Zhang, University of California Irvine

Episodic memory depends on pattern separation, the ability to discriminate between unique experiences. The neural dynamics of pattern separation were studied in the rodent hippocampus, with unclear behavioral relevance. Human imaging studies were consistent with behaviorally-relevant pattern separation, but the temporal resolution precluded testing the dynamical theories postulated by the rodent and theoretical work. We recorded the intracranial electroencephalogram (iEEG) from the human temporal lobe (amygdala, dentate gyrus/Cornu Ammonis3 (CA3), CA1 and parahippocampal cortex), during the performance on a mnemonic discrimination task. The stronger hippocampal representational similarity between the previously encoded and newly presented stimulus interferes with correct discrimination. The hippocampal representational dynamics are consistent with discrete attractors, characterized by abrupt transitions at sub-second time scale. Finally, higher dimensionality increase predicts correct discrimination, suggesting the orthoganization as a mechanism implementing the pattern separation. This is the first demonstration of behaviorally-relevant pattern separation dynamics at subsecond timescale in the human brain.

TALK 9: REAL-TIME REORIENTING OF PREPARATORY SUSTAINED ATTENTION LAPSING DURING EPISODIC RETRIEVAL USING CLOSED-LOOP PUPILLOMETRY

Shawn T. Schwartz, Stanford University, Wu Tsai Neurosciences Institute, Stanford University

Successful goal-directed knowledge expression is modulated, in part, by moment-to-moment lapses in preparatory sustained attention (assayed by pupillometry/scalp EEG alpha-power) in pre-goal periods immediately preceding memory retrieval attempts. While theoretically informative, correlations between attention and retrieval success yield limited evidence regarding the causal role of attention lapsing on memory retrieval and constrain implications for whether moment-to-moment attention can be intervened upon to optimize performance. Here, we leveraged real-time readouts of trial-to-trial pupil diameter to trigger attention-reorienting probes just prior to retrieval attempts. After completing a goal-directed associative memory encoding task, 75 young adults (18-25 yrs) indicated whether they remembered test probes as having been encountered in one of two task goals during encoding. Memory was assayed at the trial-level (hits/misses) and individual-level (memory d'). At the beginning of each block, we built participant-specific distributions of baseline-pupil during tonic fixation

periods for trigger-thresholding. Critically, then, moment-to-moment pupillary dilations/constrictions which exceeded the empirical threshold triggered deployment of salient, real-time attention-reorienting probes just prior to retrieval probe delivery. As predicted, we found a correlation between hit/miss item memory and pre-stimulus tonic pupil diameter. Attention-reorienting triggers on attention lapsing trials rescued performance (item-memory d'), returning close to that of control trials (those with no detected attention lapses/triggers), although there was marked variability in reorienting efficacy across participants. These initial findings set the stage for better understanding the causal mechanisms underlying arousal-based attention lapsing and its effects on episodic retrieval, as well as considerations for designing more personalized attention-reorienting interventions.

TALK 10: RISK-TAKING PREDICTS SOCIOECONOMIC STATUS-RELATED DIFFERENCES IN LEARNING AMONG ADOLESCENTS

Joseph Itiat, Massachusetts Institute of Technology

Adolescents are notorious for engaging in reward-driven risky decision-making behaviors, which are believed to be highly adaptive for learning. Yet, adolescents differ in their tendency to pursue rewards and learn. Indeed, adolescents from lower socioeconomic status (SES) backgrounds often display diminished reward sensitivity and reduced learning outcomes, raising the possibility that diminished reward-driven risk-taking may underlie SES-related learning gaps. Here, we examined whether risk-taking enhances learning in adolescents, and whether individual differences in risk-taking mediates SES-related disparities in learning outcomes. Adolescents (n=125; aged 13-15) from diverse SES backgrounds completed the Balloon Emotional Learning Task, in which they inflated a balloon on each trial to earn points. Notably, over-inflation caused balloon explosions and a loss of points. There were 3 colors of balloons, each with a distinct explosion threshold. Thus, participants had to incrementally learn via explosion-related feedback the optimal pumping frequency of each colored balloon. We found that within adolescents, trial number positively correlated with points earned, indicating that adolescents incrementally learned the balloons' explosion thresholds. Across adolescents, a higher risk-taking propensity (i.e., more pumps and explosions) correlated with better final learning outcomes (points earned). Further implicating risk-taking in the learning process, more risk-taking early in the task predicted better learning outcomes later. We also observed that lower-SES correlated with reduced risk-taking, and poorer learning outcomes (points), and reduced risk-taking fully mediated SES-related gaps in learning. These findings highlight the adaptive nature of adolescent risk-taking, and demonstrate that disparities in risky decision-making may underlie SES-related disparities in learning.

TALK 11: PERCEPTUAL DECISION-MAKING AT FIXATION IS BIASED BY TASK-IRRELEVANT CONTRALESIONAL STIMULI FOLLOWING UNILATERAL STROKE

Dr Dragan Rangelov, The University of Queensland

Stroke-induced cerebral lesions can cause pathological biases in selective attention, resulting in unilateral spatial neglect for contralesional stimuli in severe cases, particularly for lesions involving the right hemisphere. It remains unclear, however, whether such attentional biases impact evidence accumulation processes involved in perceptual decision-making. Here we characterised the influence of task-irrelevant ipsi- and contra-lesional stimuli on perceptual decisions about centrally presented visual stimuli. Left- and right-hemisphere stroke patients (N=28) judged the direction of coherent motion signals embedded within a central random-dot kinematogram (RDK) while ignoring motion signals presented in two peripheral semi-circular RDKs in the left and right hemifields. Their brain activity was recorded using electroencephalography (EEG). Contrary to expectations, motion signals presented in the contralesional hemifield had a greater effect on central judgements than those in the ipsilesional hemifield. Multivariate EEG analyses revealed robust motion-evoked responses to both task-relevant, central signals and task-irrelevant, peripheral signals. Critically, the neural representations of peripheral stimuli were stronger for contralesional stimuli than for concurrently presented ipsilesional stimuli, consistent with the observed behavioural biases. Our results suggest that unilateral lesions reduce inhibitory control over irrelevant stimuli in the contralesional hemifield, thereby allowing them to interfere with task-relevant processing in central vision.

TALK 12: RATE OF CONTEXT CHANGE AT ENCODING INFLUENCES HIPPOCAMPAL AUTOCORRELATION AND TEMPORAL CLUSTERING OF FREE RECALL

Lindsay I. Rait, University of Oregon

Retrieved context models posit that when an item is presented during study, it is stamped into a slowly drifting internal context representation. In humans, this context drift is thought to critically determine how memories are organized during recall—in particular, the tendency to recall items according to the temporal order in which they were encoded (i.e., temporal clustering). While the hippocampus is thought to be essential for encoding contextual information, there is surprisingly little evidence linking hippocampal context representations to temporal clustering in free recall. In an fMRI experiment (n=38), we actively manipulated the rate of context change in order to test whether this produced parallel changes in hippocampal 'drift' during encoding and temporal clustering during recall. The context change manipulation consisted of switching background scenes at different switch rates during the encoding of a list of words. Afterwards, subjects freely recalled as many words as possible. While context switch rate had no effect on the total number of words that were recalled, it significantly influenced the degree of temporal clustering in recall.

Specifically, temporal clustering was inversely related to switch rate, with the least temporal clustering occurring when switch rate was highest. Strikingly, this qualitative pattern of data was mirrored by autocorrelation (drift) in the hippocampus: autocorrelation significantly decreased when switch rate increased. Collectively, these findings suggest that switching between contexts at a high rate disrupts internal context representations in the hippocampus, thereby weakening temporal clustering during subsequent recall.

TALK 13: LOSS IS THE NEW WIN: THE REVERSAL OF FEEDBACK-RELATED NEGATIVITY (FRN) DIFFERENCES IN RESPONSE TO GOALS

Eunchan Na, University of Alberta

Asymmetrical effects of feedback valence during decision-making suggest that behavioural responses are more impulsive, inflexible, and predictable following a loss compared to a win. Feedback-related negativity (FRN) is a neural signature reflecting early feedback valence evaluation, generating larger (more negative) amplitude in response to losses compared to wins. However, these traditional results overlook the default goal of win maximization, where wins are goal-congruent and losses are goal-incongruent. We asked participants to play a binary response game across two separate goal conditions, where they tried to win (win maximization) or lose (lose maximization) as much as possible. Our manipulation of goal was successful in that behavioural responses following goal-congruent feedback (ie, win in win maximization and loss in loss maximization) were more consistent than goal-incongruent feedback. We observed an interaction between FRN amplitude and goal, whereby FRN was more negative for losses relative to wins during win maximization but more negative for wins relative to losses during loss maximization. These results suggest that both behavioural and neurophysiological responses to feedback can be flexibly redefined as a function of congruence or incongruence with the current goal state.

TALK 14: POSITIVE EMOTION ENHANCES IMPAIRED HIPPOCAMPAL FUNCTIONING

Claire Lauzon, York University, Rotman Research Institute, Baycrest Centre

Pattern separation, the neurobiological process of making overlapping memory representations more distinct, critically depends on sparse firing in the dentate gyrus (DG), while pattern completion, and the more general ability to retrieve previously learned information, has been shown to depend on CA1. The classic and well-validated finding that episodic memory is enhanced for emotional content has been demonstrated in cases with lesions to the hippocampus, but it is unknown whether this enhancement extends to pattern separation, and if it can survive lesions to specific hippocampal subregions. Here we examine if pattern separation is rescued by emotional content in the face of bilateral DG lesions. Two unique individuals with selective bilateral hippocampal lesions, affecting the DG in case B.L. and the CA1 subfield in case B.R., were tested on a behavioural measure of pattern separation requiring the mnemonic discrimination of positive, negative, and neutral scenes. When their memory for negative and neutral stimuli was compared to that of controls, B.L. and B.R. showed significantly worse mnemonic discrimination and recognition memory, respectively. Despite having lesions that would be expected to interfere with these processes, neither patient was impaired compared to controls when tested on positive stimuli. Findings that otherwise impaired hippocampal processes may be preserved for positive content may reflect the conceptual organizing properties of positive stimuli, whereas negative content, which typically leads to overall enhanced memory following bilateral hippocampal lesions, is not sufficient to restore mnemonic discrimination or retrieval when the dentate gyrus and CA1 subfield, respectively, sustain extensive damage.

TALK 15: NEURONAL ENSEMBLE STATES IN CA1 OF THE FREELY-MOVING MACAQUE EXHIBIT TEMPORAL DRIFT WHILE MAINTAINING SEQUENTIAL-TASK STRUCTURE.

Kari L. Hoffman, Vanderbilt University

Hippocampal activity in rodents shows stable spatiotemporal representations of the environment that may serve as cognitive map, while also allowing for systematic drift. How place cells in rats and mice translate to abstraction of cognitive maps in humans, however, is unclear, due in part to uncertainty about the relevant representational spaces the hippocampal ensembles of anthropoids. We assessed this by recording ensembles of hippocampal single units from two freely moving macaques as each performed item-in context sequences in a touchscreen-paneled enclosure. Two sequences, one new and one learned weeks earlier, were located in opposite corners of the environment, crossing paths only on sequence completion, to obtain reward delivered on the opposite side. We used contrastive supervised (CEBRA) and unsupervised (UMAP) methods on 500ms-segments of neural ensemble activity (N= 34 – 84units per session), for both 4-item sequences. Despite stable unit recordings, UMAP revealed a drift and increase in the state space coverage across trials. We ran a multi-session CEBRA on five sessions and found that the test samples were decodable across the two sequences (CEBRA f1: 0.756618). We tested for allocentric representations at the small overlapping portion of the sequences, and found that both CEBRA and UMAP had separable representations of the common space (CEBRA f1: 0.84; UMAP f1: 0.748). By labeling only time, we recovered separable sequences in addition to time, revealing both temporal drift and the underlying sequence structure. Both new and remotely-learned sequences showed drift, consistent with models of continuous temporal context signals in the hippocampus.

Data Blitz Session 2

Saturday, April 13, 1:00 - 2:30 pm, Ballroom Center
Chair: Anastasia Kiyonaga, University of California San Diego
Speakers: Xianhui He, Erik Wing, Emily Heffernan, Pin-Chun Chen, Heleen A. Slagter, Sungshin Kim, Philipp Reber, Rhiannon L. Cowan, Mariana Lomeli Fernandez, Mark Buckley, Abigail Noyce, Alessandro Tavano, Rutva Master, Tyler Santander, Gaeun Son.

TALK 1: HIPPOCAMPAL RIPPLE AND ITS INTERACTION WITH NEOCORTEX SUPPORT SUCCESSFUL VISUAL SHORT-TERM MEMORY

Xianhui He, Zhejiang Univeristy

Hippocampal ripple activity, a highly synchronized neural oscillations generated by local neuronal assemblies (70-180 Hz), has been indicated as playing a critical role in human episodic memory. Nonetheless, how the hippocampal ripple and its interaction with neocortex supports visual short-term memory (VSTM) remains far from clear. The current study investigated the intracranial electroencephalogram (iEEG) recordings of both the hippocampus (HPC) and lateral temporal lobe (LTL) from 14 epilepsy patients during a delayed matching to sample task with naturistic objects as stimuli. The results revealed that hippocampal ripple rates dynamically changed across different VSTM stages. Specifically, hippocampal ripple rates increased during early encoding, ramping up during maintenance, and persistently rising until VSTM responses were made. Importantly, greater ramping-up of hippocampal ripple rates during maintenance predicted successful VSTM memory while higher ripple rates during retrieval predicted faster response times. Moreover, these hippocampal ripples were coupled to the LTL ripples with higher probabilities of LTL ripples occurring around hippocampal ripples (i.e., HPC-LTL co-rippling), showing a similar ramping up during maintenance, especially among remembered trials. Similarly, greater HPC-LTL co-rippling during VSTM retrieval predicted faster response time. Further ripple-locked multivariate decoding analysis based on broadband spectral power revealed that both hippocampal ripples and LTL ripples were associated with memory representational reinstatement during all VSTM stages. All the above-mentioned results were corrected for multiple comparisons. Taken together, our preliminary findings suggested that dynamically changed hippocampal ripple activity, coupled with LTL ripples, coordinates the reinstatement of memory representations in supporting successful VSTM.

TALK 2: PAST EXPERIENCE CHANGES THE TRAJECTORY OF NEURAL CHANGES FOLLOWING NEW LEARNING

Erik Wing, Baycrest

The capacity for learning new information is highly contingent upon prior knowledge. Learning about a completely new topic or domain can take considerable time, whereas learning new information that connects with existing knowledge is typically much easier and tends to be more robust. In the brain, these two scenarios may differ in the degree to which cortically-mediated memory structures can be harnessed to support integration of newly-encountered information. Past work suggests that the presence of relevant schemas or abstracted conceptual networks, supported by the neocortex, can speed the process through which new knowledge is acquired. In the present MRI study, we examined this question by comparing microstructural and functional changes following new learning in the domain of visual object identification. A group of expert birdwatchers and matched controls performed an initial bird identification task on unfamiliar species while being scanned. Both groups were then given training on how to differentiate the highly overlapping items for two hours outside the MRI. Post-training task performance showed improvement for trained concepts, with a greater increase in accuracy for experts. In experts, improved learning was also associated with neural changes in visual processing and frontoparietal regions that appeared to support both perceptual and conceptual aspects of rapid learning, including the differentiation of highly similar items and the ability to abstract across variable exemplars of the same concept or category. These findings support theoretical accounts of memory that stress the importance of prior knowledge in determining how new information is integrated into existing knowledge structures.

TALK 3: INTERROGATING BRAIN ENGAGEMENT AS A FUNCTION OF EXCEPTION LEARNING PERFORMANCE

Emily Heffernan, University of Toronto

Navigating a dynamic environment requires a balance of efficiency and adaptability. Category learning, the process of generalizing past knowledge to novel experiences, is an integral part of efficient learning. However, what happens when the learner encounters “exceptions” that violate what has already been learned? Here we explore learning-related activation in the brain during rule-plus-exception learning. Participants (N = 41) underwent fMRI scanning during a category learning task. Stimuli were cartoon flower images sorted into two categories according to a rule-plus-exception structure. Notably, exceptions were introduced later in learning, after participants had become familiar with category prototypes and rule-following stimuli. Participants were divided into “high” and “low” performance groups based on the median split of end-of-learning exception categorization performance. When exceptions were introduced, we found higher activation in hippocampus for all stimulus types that was associated with improved exception learning. In medial prefrontal cortex (MPFC), engagement differed for prototype versus exception stimuli, with higher activation in high versus low learners specific to prototype stimuli; the opposite effect occurred for exception stimuli. A stimulus-specific effect was also found in parietal regions: better exception learning performance was associated with increased activation to

exceptions but decreased activation to prototypes. These findings are consistent with theoretical accounts of these regions' roles in learning. Hippocampus plays a broad role in integrating rule-violating information, whereas MPFC and parietal regions respectively engage to encode regularities and details. The complementary role of these regions enables the learner to successfully integrate exceptional information while preserving existing knowledge.

TALK 4: HIPPOCAMPAL RIPPLES DURING OFFLINE PERIODS PREDICT MOTOR SEQUENCE LEARNING.

Pin-Chun Chen, University of Oxford, United Kingdom

How does the human brain acquire complex motor skills? Recent studies have revealed that offline rest periods are critical for motor skill learning and implicated the hippocampus in this process. In the declarative memory domain, a key mechanism for offline memory consolidation is the repeated reactivation of neural representations associated with an experience, driven by hippocampal sharp-wave ripples. However, no motor memory studies have recorded directly from hippocampus and therefore the roles of ripples on motor memory remains unknown. Here, we tested the prediction that hippocampal ripples during offline periods contribute to human motor skill learning. Eighteen participants (9 male; age: 31.3 ± 10.16 years) undergoing invasive monitoring for epilepsy surgery performed a standard motor sequence learning task. Specifically, participants were asked to tap a keypress sequence (i.e., 41324) as quickly as possible using their non-dominant hand, in 30-sec blocks interleaved with 30-sec rest periods. We detected hippocampal ripples across the recording session on hippocampal bipolar channels. All statistical tests were performed using linear-mixed effects models in R. Participants showed significant improvement in tapping speed across training ($p < .0001$). Ripple rates increased during rest compared to active tapping periods ($p < .0001$). Furthermore, ripple rates during rest increased across training ($p = .0329$). Finally, ripple rates during rest predicted tapping speed on the subsequent learning block ($p = .0122$). In sum, increased hippocampal ripples during offline periods may play a functional role in motor skill learning, suggesting the involvement of hippocampus in memory consolidation beyond the declarative memory domain.

TALK 5: ACTION PLANNING RENDERS OBJECTS IN WORKING MEMORY MORE ATTENTIONALLY SALIENT

Heleen A. Slagter, Vrije Universiteit Amsterdam, the Netherlands

A growing body of work suggests that working memory is fundamentally action-oriented. Recent studies, for example, indicate that attention is biased more by visual working memory (VWM) representations that are also the target of an action plan. Using EEG and eye tracking, we investigated how action planning in VWM biases selective attention. Participants (n=36) were presented with a geometric shape for a subsequent VWM test. At test, a probe was presented along with a secondary stimulus. In the action condition, participants had to grip the probe if it matched the memorized shape, while in the control condition, they had to grip the secondary stimulus. Crucially, during the VWM delay, participants engaged in a visual selection task (VST), in which they located a target as fast as possible. The memorized shape could either encircle the target (congruent trials) or a distractor (incongruent trials). Analysis of gaze bias during the VST replicated previous findings: attention was captured more by a VWM-matching stimulus when it was the direct target of an action plan. Moreover, in the action condition, the VWM-matching shape elicited (1) a stronger Ppc, signaling greater attentional saliency, (2) a larger inverse (i.e., positive) SPCN in incongruent trials, possibly signifying increased suppression of the memorized shape when this was a distractor, and (3) a positivity over right prefrontal and left motor regions, suggesting enhanced response inhibition of the action-relevant hand. Overall, these results suggest that action planning renders objects in VWM more salient, supporting the notion of selection-for-action in working memory.

TALK 6: NETWORK-TARGETED RTMS FOR TREATMENT OF **ALZHEIMER'S DISEASE (AD) USING A PERSONALIZED 3D**-PRINTED FRAME

Sungshin Kim, Hanyang University

We explore the efficacy of a 20-Hz hippocampal network-targeted repetitive transcranial magnetic stimulation (rTMS) protocol for treating early AD patients. We conducted an evaluator-blinded, randomized, and sham-controlled clinical trial involving 44 early-stage AD patients, who were confirmed by amyloid deposition on PET scans or cerebrospinal fluid tests. The patients were randomly assigned to the rTMS treatment group or sham control group. The intervention consisted of twenty rTMS sessions over four weeks, targeting the left parietal area connected to the hippocampus, guided by individual fMRI maps. A personalized 3D-printed frame was utilized for precise coil placement. The primary outcome was measured by the Alzheimer's Disease Assessment Scale-Cognitive Subscale (ADAS-Cog) score at four and eight weeks post-baseline. Secondary measures included the Clinical Dementia Rating-Sum of Boxes (CDR-SB), the Seoul-Instrumental Activity Daily Living (S-IADL) scales, and resting-state fMRI connectivity between the hippocampus and cortical areas. Among 30 patients who completed the entire 4-week sessions, those in the rTMS group demonstrated significant improvement (i.e., reduction) in primary and secondary outcomes compared to the sham group. Furthermore, the improvement of the ADAS-Cog immediately after the 4-week sessions was associated with increased functional connectivity between the hippocampus and precuneus. These findings support using rTMS as a non-pharmacological approach to treating AD, highlighting its potential to induce beneficial neural plasticity within the hippocampal-cortical network. Finally, using personalized 3-D printed frames represents a promising innovation that could improve the precision and efficacy of rTMS treatments, making it a viable option

in clinical settings without depending on neuronavigation technology.

TALK 7: AMPLITUDE-MODULATED KILOHERTZ TRANSCRANIAL MAGNETIC PERTURBATION (KTMP) HAS FREQUENCY-SPECIFIC EFFECTS ON MOTOR PERFORMANCE

Philipp Reber, University of California Berkeley

We tested the efficacy of a novel non-invasive brain stimulation method, kilohertz transcranial magnetic perturbation (kTMP) in modulating motor performance. kTMP is a magnetic induction method capable of applying strong subthreshold E-fields in the kilohertz frequency range to superficial cortical structures without eliciting tactile sensations. Amplitude modulation (AM) of the kilohertz carrier waveform can be used to target physiologically relevant frequencies. In the current study, we asked if kTMP over the primary motor cortex impacted performance on a force-tracking task. We targeted two prominent motor rhythms: 1) Beta (15-30 Hz), a rhythm associated with movement idling and shown in previous work with invasive alternating current stimulation to impede motor learning; 2) Low-frequency oscillations (3-6 Hz), a range useful for decoding movement kinematics that has been shown to be disrupted following stroke. kTMP was applied with a carrier frequency of 3.5 kHz with the intensity set to induce a cortical E-field of 4 V/m. In three separate sessions, we employed two AM-kTMP conditions, individualized beta (17-29 Hz) or 3 Hz (fixed for all participants), or sham stimulation in a double-blind repeated-measures design. Within each session, motor performance was measured before, during, and after the application of kTMP. We found that AM-kTMP modulated motor performance in a frequency-dependent manner: Performance improvement during and following beta stimulation was reduced compared to the 3 Hz and sham conditions. These results indicate that kTMP has the potential to expand our non-invasive toolset to investigate brain function and provide new therapies for brain disorders.

TALK 8: INTRACRANIAL DYNAMICS OF REWARD POSITIVITY ASSOCIATED WITH IMPULSIVE CHOICE

Rhiannon L. Cowan, University of Utah

Reward positivity (RewP) is an event-related potential (ERP) component occurring around 250ms after a rewarded outcome. RewP amplitude is dependent on reward outcome feedback, including the expected value of reward and prediction error related to the reward outcome. RewP amplitude has been shown to vary based on impulsivity level, with greater reward sensitivity in more impulsive (MI) individuals. However, the interactions between RewP and impulsivity have not been disentangled utilizing spatially precise intracranial recordings. We used the Balloon Analog Risk Task to assess ERP, frequency dynamics, and neural encoding associated with intracranial RewP (200-400ms), recorded from 49 drug-resistant epilepsy patients. Using the Kullback-Leibler divergence between active and passive balloon inflation times as a measure of impulsive choice, we clustered subjects into more- or less-impulsive choosers, to further scrutinize potential group-level differences between RewP characteristics in specific brain regions. We saw increased delta activity and decreased theta activity encoding for MI choosers for rewarded vs unrewarded trials compared to LI choosers (Delta, MI: 237, LI: 213; ?2 =6.72, p =0.009; Theta, MI: 138, LI: 115; ?2 =6.35, p =0.012). For MI choosers, Delta-band activity was uniquely encoded in middle frontal gyrus (MFG) (17%), while theta-band activity was uniquely encoded in Anterior Cingulate Cortex (9%) and MFG (22%). We extend previous win-related delta and loss-related theta frequency findings differentiating between impulsivity groups and highlighting unique RewP encoding in the brain for MI individuals. Future work will scrutinize the neural underpinnings of reward and examine RewP relative to temporal difference modeling.

TALK 9: PREFRONTAL CORTEX AND HIPPOCAMPUS JOINTLY GUIDE FLEXIBLE WORKING MEMORY

Mariana Lomeli Fernandez, School of Psychology, University of Nottingham, Hertie Institute for Clinical Brain Research, University Medical Center Tuebingen

A crucial role of working memory (WM) is the flexible manipulation of memories to guide behavior. Extensive research links WM to the prefrontal cortex (PFC), and more recently intracranial recordings in humans have also suggested a role for the hippocampus. Their roles in the flexible manipulation of WM are unclear. We explored this question by recording intracranial electroencephalography from the hippocampus and PFC of epileptic patients. Participants performed a match-to-sample task that required holding two visual stimuli in WM. On each trial, one of the stimuli was cued as the target. On consecutive trials, participants were cued to either the same (repeat trial) or the other stimulus (switch trial), requiring rapid reprioritization of the uncued memory. On switch vs. repeat trials, accuracy was lower for mismatch trials whose probe matched the cued stimulus in the previous trial. Match vs. mismatch conditions could be decoded from high-frequency (70-150 Hz) neural activity in both the PFC and the hippocampus. Our findings are consistent with hippocampal involvement in WM for adaptive memory-guided behavior. PFC dynamics during WM-guided decision-making may therefore hinge on accurate memory reinstatement in the hippocampus.

TALK 10: DISTINCT PREFRONTAL AREA CONTRIBUTIONS TO RULE-GUIDED DECISION-MAKING IN PRIMATES: MECHANISTIC INSIGHTS FROM MULTI-AREA E-PHYS. AND NEUROSTIMULATION.

Mark Buckley, University of Oxford

Lesion studies have previously shown that different prefrontal cortex (PFC) areas contribute in distinctly different ways to rule-guided

behaviour in the context of a Wisconsin Card Sorting Test (WCST) analog for macaques. Yet we do not understand how these functional specializations relate to intrinsic neuronal activities nor the extent to which these neuronal activities differ between different prefrontal regions. Here we present new data from our studies using multi-area multi-electrode recording techniques in NHPs. 'Utah arrays' were chronically implanted in dorsolateral PFC, ventrolateral PFC, orbitofrontal cortex, and frontopolar cortex (FPC) of two macaques, allowing us to simultaneously record single and multiunit activity, and local field potential (LFP), from all regions while the monkey performs the WCST analog. Rule-related neuronal activity was widespread in all areas recorded but it differed in degree and in timing (task-epoch) between different areas. Decoding analyses and inter-area coherence measures applied to rule-related neuronal activities confirmed dynamic task-epoch related activities and inter-area interactions that differ between prefrontal regions. Moreover, after observing modulation of LFPs within beta and gamma bands in FPC tracked reward and unchosen rule value, we used single-trial-specific causal interventions in that frequency range (electrical microstimulation via arrays) to FPC to significantly enhance and impair animals' WCST performance in WCST functionally relevant ways. All results are therefore consistent with an emerging picture of regional functional specialization within a distributed network of interacting and interconnected PFC regions, about which the combination of electrophysiology and neurostimulation provides mechanistic insights.

TALK 11: DYNAMIC NEURAL REPRESENTATIONS OF AUDITORY SELECTIVE ATTENTION

Abigail Noyce, Carnegie Mellon University

Representational similarity analysis (RSA) has been used to characterize where and when different stimulus features or categories are represented in the brain. We extended this approach to investigate executive control processes - namely, auditory selective attention - by analyzing representations within electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) data. Young adults listened for a target syllable among distractor syllables while we recorded EEG (N=30) or fMRI (N=19). The rich (21 conditions) design included spatial attention, nonspatial attention, and passive listening. In EEG, we extracted representational features at each time point during a trial using the topography of either the raw voltage timecourse or cognitively-relevant frequency bands (e.g. alpha). In fMRI, we extracted representational features using a searchlight approach. In both cases, we estimated dissimilarity between each pair of conditions at one timepoint or one region via the validated classification accuracy of a linear support vector machine (trained separately for each subject, with leave-one-trial-out cross-validation) . Within EEG, we observed differences in the dynamics of neural representation between features. For example, when subjects were cued to use spatial versus non-spatial attention, we observed a transient representation of attention type in the raw voltage, but a sustained representation in alpha band power. Within fMRI, we also observed region-specific representations. For example, posterior superior temporal gyrus encoded the difference between active and passive listening, but not attention type, while regions along parietal sulcus robustly encoded the type of attention. Representational analysis allows new investigations of neural processes underlying executive control.

TALK 12: DECOUPLING SPEECH ACOUSTICS AND LINGUISTIC REPRESENTATIONS

Alessandro Tavano, Goethe University Frankfurt

Speech tracking is assumed to rely on the temporal alignment of neural oscillations to low-frequency (<10 Hz), quasi-rhythmic amplitude modulations of the speech sound carrier between 3 and 5 Hz, supporting the hypothesis that humans are endowed with a neural oscillator tuned to narrow-band speech rhythmic fluctuations. Recently, it has been proposed that also higher order linguistic units, such as syntactic phrases, segregate to narrow-band acoustic rhythms, so that dedicated neural oscillators would capture their temporal distribution. Two rarely discussed, but almost invariably implicit assumptions ground such hypothesis: 1) Speech and language units are unimodally distributed; 2) The overlap in duration across the hierarchy of speech and language units is negligible. We modelled the temporal distribution of multiple speech and syntactic units extracted from two audiobook chapters, and show that: 1) key speech units such as words and sentences, and syntactic units such as Noun Phrases are bimodally distributed: a neural oscillator would not capture their variance profile; 2) Speech units and syntactic categories largely overlap in time, making it effectively impossible to temporally segregate linguistic representations. We conclude that the temporal dimension of speech acoustics vastly underspecifies the time scales of speech and syntactic processing. To test such conclusion, we run a time-resolved mutual information analysis of EEG data recorded from 23 participants listening to the audiobook chapters, and demonstrate that information extraction using vectors based on hierarchical linguistic annotations outperforms information analyses using vectors based on speech acoustics.

TALK 13: INFANT COMMUNICATION OUTCOMES RELATE TO LANGUAGE NETWORK CONNECTIVITY IN UTERO

Rutva Master, Western University

There is evidence that the language network begins to develop in utero, however whether connectivity strength can predict later language outcomes is unknown. Using resting-state functional magnetic resonance imaging (rs-fMRI) data, we examined the FC of the language network with cognition-related brain regions in utero, and how it relates to developmental outcomes. The goals of this study were to: 1) use rs-fMRI data to evaluate FC patterns between the primary auditory cortex and the frontal and temporal lobes of the brain and 2)

assess interhemispheric connectivity between these regions. 25 mothers were scanned using MRI during the third trimester and completed the ASQ, a validated screening tool for identifying developmental delays in infants and young children when their infant was 3 months. Infants were divided into high and low communication groups based on the communication sub-scale of the ASQ using a median split. Left Heschl's gyrus showed enhanced connectivity with the precentral, superior frontal, and middle frontal gyri in the high communication group. Furthermore, in infants with strong communication skills, critical language-processing areas such as the pars triangularis and pars opercularis, exhibited robust connectivity not only within the same hemisphere but also across hemispheres. The enhanced connectivity observed in high-communication infants suggests a more efficient and widespread neural network supporting language skills, emphasizing the importance of early childhood development in shaping subsequent communication abilities. Identifying specific FC patterns associated with communication skills may inform targeted interventions for infants at risk of language delays.

TALK 14: SPLITTING THE BRAIN: COMPLETE CORPUS CALLOSOTOMY IN ADULTHOOD PROFOUNDLY DISRUPTS THE FUNCTIONAL ARCHITECTURE OF INTERHEMISPHERIC BRAIN NETWORKS

Tyler Santander, University of California, Santa Barbara

Corpus callosotomy is a major intracranial intervention that severs the largest fiber tract in the human brain as a last-resort treatment for medically-intractable epilepsy. A rich history of experimental psychology has revealed striking insights into the 'split-brain' phenomenon, describing two cerebral hemispheres operating independently, without conscious awareness of the other. However, we know comparatively little about the impact of callosotomy on the human brain's functional architecture: extant literature is limited to pediatric patients and/or single case studies. Here we investigate, for the first time, multiple adult callosotomy patients using modern network neuroscience methods. Five patients (2 partial splits, 3 full splits) underwent resting-state fMRI at least one-year post-op; large-scale patterns of intrinsic functional connectivity (FC) were assessed using seed-based and parcellation-based techniques, including edge timeseries and multiresolution modularity. For comparison, healthy adult controls were taken from the HCP 100 Unrelated Subjects sample. We find that full callosotomy dramatically diminishes interhemispheric FC, whereas partial splits retain relatively-normal levels of FC—even when only 1 cm of splenium is spared. Similarly, multivariate patterns of edge co-fluctuations suggest the left and right hemispheres are broadly-decoupled following full callosotomy, and the topological organization of functional modules becomes strongly lateralized. Curiously, the visual network demonstrates nominal interhemispheric FC when resting-state is collected with eyes open—but not with eyes closed, perhaps indicating that synchronized external sensory inputs can yield the appearance of interhemispheric coupling in the absence of anatomical pathways. Together, these results provide a novel perspective on the split-brain and a functional basis for 'disconnected' cognition.

TALK 15: MAPPING NEURAL SIMILARITY SPACES FOR SCENES WITH GENERATIVE ADVERSARIAL NETWORKS

Gaeun Son, University of Toronto

Recent progress in vision science has focused on characterizing how the perceptual similarity of visual stimuli is reflected in the similarity of neural representations. While such neural similarity spaces are well-established in simple feature domains (e.g., orientation columns in V1), a correspondent finding with complex real-world stimuli has yet to be demonstrated. We explored this topic using scene wheels (Son et al. 2021), an AI-generated continuous scene stimulus space in which various global scene properties changed gradually along a circular continuum. Participants were shown scene wheel images during fMRI scanning with a continuous carry-over design to provide stable estimates of scene-specific neural patterns. After scanning, participants rated pairwise perceptual similarity for the same scene wheel images. We performed representational similarity analysis by comparing the similarity of scene-specific voxel patterns across multiple high-level visual regions as measures of physical (angular distances in the scene wheels; pixel correlation), perceptual, and semantic similarity (category). We found that for scene wheels constrained to a single scene category (e.g., dining room), the neural patterns in visual cortex mainly represented the physical similarity of the scenes. However, when the scene wheels contain notable category boundaries (e.g., dining rooms and living rooms), both perceptual and category similarity structures were present in neural pattern similarity. These results provide important evidence that similarity structures defined by the complex feature spaces of real-world scenes are coded in neural representations and that such neural representations flexibly code for physical, perceptual, and categorical information.

Data Blitz Session 3

Saturday, April 13, 1:00 - 2:30 pm, Ballroom West
Chair: Audrey Duarte, University of Texas
Speakers: Ryan Yeung, Jadyn S. Park, Lena J. Skalaban, Joanne Stasiak, Alexander Eperon, Dian Lyu, Marina de Oliveira Emerick, Brianna E. Cairney, Karen Sasmita, Claire Pauley, Louis Chitiz, Raven Wallace, Mats W.J. van Es, Chih-Yi Chen, Nakwon Rim.

TALK 1: THE CURSE OF IMAGERY: TRAIT OBJECT AND SPATIAL IMAGERY RELATE TO TRAUMA AND STRESS OUTCOMES

Ryan Yeung, Rotman Research Institute, University of Waterloo

Imagery is integral to autobiographical memory (AM). Past work has highlighted the benefits of high trait imagery on episodic AM, such as faster, more detailed retrieval and greater feelings of vividness and reliving. However, these advantages may also come with drawbacks: following stressful or traumatic events, strong imagery could promote the intrusive memories and flashbacks characteristic of PTSD. We examined relationships between trait object imagery (e.g., imagery for form, size, shape), trait spatial imagery (e.g., imagery for spatial relations, locations), and PTSD symptoms (e.g., intrusive memories) using self-report measures in online studies in two independent samples: undergraduates (n = 493) and trauma-exposed adults (n = 936). Controlling for gender and depression symptoms, regressions indicated that higher object imagery was associated with more PTSD symptoms in both samples (?s = 0.11–0.21, ps < .002). In contrast, spatial imagery was associated with fewer PTSD symptoms (?s = 0.09–0.15, ps < .03), although in undergraduates this effect interacted with gender such that it was present in men and not women. These findings suggest that different forms of imagery have different (or even opposing) relationships with remembering, which in turn impacts outcomes following exposure to trauma and stress.

TALK 2: FUNCTIONAL NETWORK INTEGRATION MEDIATES AROUSAL EFFECTS ON NATURALISTIC RECALL

Jadyn S. Park, The University of Chicago

A consistent finding in memory research is that arousing stimuli are more likely to be remembered than neutral ones. Yet, the neural mechanisms underlying how arousal supports memory are not fully understood. Here, we examined whether functional network integration is a potential mechanism by which high arousal events are better remembered. We used two publicly available fMRI datasets, where participants watched an hour-long movie clip immediately followed by a free verbal recall session. Using graph theoretical approaches, we tested how the dynamic re-organization of functional networks during encoding was associated with recall performance. Further, we leveraged large language models to estimate the arousal level of movie events and validated the results with human ratings from behavioral experiments. Across both datasets, whole-brain functional network integration was associated with more rich and accurate recall (Dataset1: b=.19, SE=.03, t(809)=5.66, p<.001; Dataset2: b=.16, SE=.03, t(1017)=5.26, p<.001). Events with high arousal were indeed better remembered (Dataset1: b=.20, SE=.04, t(796)=4.57 p<.001; Dataset2: b=.19, SE=.04, t(1004)=4.65, p<.001) and coincided with events with greater functional network integration (Dataset1: b=.22, SE=.04, t(796)=4.91, p<.001; Dataset2: b=.21, SE=.04, t(1004)=5.33, p<.001). A formal mediation analysis revealed that functional network integration mediated the effects of arousal on recall (Dataset1: b=.04, 95%CI=[.02, .06], p<.001; Dataset2: b=.03, 95%CI=[.02, .05], p<.001). Our results suggest that arousal-dependent biases in memory are related to dynamic changes in the integration of functional networks. Combining approaches from systems and affective neuroscience, our work contributes to building an integrative theoretical framework that bridges affective states, ongoing cognition, and functional network topology.

TALK 3: FUNCTIONAL CONNECTIVITY BETWEEN CORTICAL MEMORY NETWORKS AND THE HIPPOCAMPUS ACROSS DEVELOPMENT

Lena J. Skalaban, Temple University

Decades of research has focused on the role of the hippocampus in the development of memory. However, recent work in adults uncovered a set of cortical memory networks functionally connected to the hippocampus including a Medial Temporal Network (MTN), and a Default Mode Network (DMN) — comprised of the Medial Prefrontal (MP), Posterior Medial (PM), and Anterior Temporal (AT) sub-networks (Barnett et al., 2021). We sought to test the existence of these networks in the developing brain using a publicly available fMRI movie-watching dataset collected in 3-12 year-olds and adults (Richardson et al., 2017). We generated two dueling hypotheses: a) given the general posterior to anterior developmental gradient, it could be that posterior-reliant subnetworks like the MTN and PM develop earlier than the AT and MP networks; b) conversely, in a memory-centric hypothesis, the PM sub-network might develop later than the AT sub-network, given its proposed role in slower-developing episodic memory. We find significant evidence of the existence of these cortical networks in all age groups except the 3-4 year-olds. We find significant age-related changes in the PM and MP sub-networks and the MTN, but no changes with age in the AT sub-network. While 8-12 year-olds show adult-like connectivity from all of the cortical networks to the hippocampus, children aged 3-4 and 5-7 show significantly lower connectivity to the hippocampus than the older age groups. These results coincide with our memory centric hypothesis and will be evaluated further using inter-subject correlation approaches within and across age groups.

TALK 4: LATERAL FRONTAL POLE TRACKS EMOTION METACOGNITIVE ASSESSMENTS DURING ANTICIPATORY THREAT

Joanne Stasiak, University of California, Santa Barbara

Metacognitive assessments of emotion, which are thought to promote context-adaptive action under duress, require integrating across experiential and bodily emotion channels. However, whether and how threat impacts the integration of physiological and experiential systems for emotion metacognition is unknown. Moreover, it remains unclear whether prefrontal regions previously implicated in perceptual metacognition–such as the lateral frontal pole (FPl)– support emotion metacognition. Here, we assessed sympathetic nervous system responding and self-reported emotion to examine how threat modulates emotion metacognition. In the MRI scanner, participants (n=50, 39F) underwent a threat-of-shock paradigm that orthogonally manipulated shock intensity and controllability. Anticipatory threat was induced via a prolonged countdown to shock administration, after which participants provided emotional-intensity and confidence ratings. Cardiac contractility data were collected continuously, providing a high-resolution index of sympathetic drive. To estimate trial-wise coherence between sympathetic and experiential emotion systems, we computed the concordance between intensity ratings and sympathetic drive. We found that sympathetic drive was positively associated with subjective ratings of emotional intensity (?=0.19, t=4.13, p<0.001). Moreover, participants' confidence in their subjective experience was lowest when system coherence was lowest (F=213.9, p<0.001). Neural activation during threat anticipation was parametrically modulated by participants' confidence reports, such that higher confidence predicted greater FPl activation during the anticipation of unpleasant (vs. mild) threat (t=2.73, p=0.006). Together, these results suggest that coherence between sympathetic and experiential emotion systems shape metacognitive judgments of emotion, and that FPl function supports emotion metacognition.

TALK 5: LOOKING AT NUMBERS: EVIDENCE FOR A NEURAL REPRESENTATION OF STATE TRANSITIONS IN THE ENTORHINAL AND PREFRONTAL CORTICES

Alexander Eperon, University of Trento, Italy, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

Previous work has demonstrated that the hippocampal-entorhinal region is sensitive to the relational structure of experience, in both spatial and non-spatial domains. Within this, the medial entorhinal cortex (MEC) may play a role in generalising task structure across different sensory stimuli and environments. However, it remains unclear how we use our relational memory to guide behaviour: even if we know the states involved in making coffee, to exploit this knowledge we need to know which actions to take. To support this, the entorhinal cortex may map out learned 'actions', or transitions, between nodes in a graph structure (like velocity signals in navigation). To test this idea, we carried out an fMRI experiment (n=57) in which participants learned to navigate around a numberline using a set of mathematical operations. This strong linear prior allowed us to test for the similarity of possible actions from each state. Using representational similarity analysis, we find a representation of possible transitions per state in the entorhinal cortex ('non-spatial affordances'). Concurrently, the medial prefrontal cortex, a region previously associated with action choice, represented the magnitude of possible actions from each state. Importantly, this action code is independent of any other features of the state space, and we believe this to be the first evidence that the entorhinal cortex is involved in the representation of actions in an abstract space. These findings reinforce suggestions from systems

TALK 6: THALAMO-CENTRIC CAUSAL CONNECTIVITY MAPPING IN HUMAN BRAIN WITH INTRACRANIAL ELECTRICAL STIMULATION

Dian Lyu, Department of Neurology and Neurological Sciences, Stanford University

In this study we explore the whole-brain causal connectivity with a central focus on the thalamus' role in shaping whole-brain connectivity motifs, investigated through multi-site stimulation and recording using deep intracranial electrodes. The study involved 27 participants with focal epilepsy and implanted electrodes. Whole-brain causal connectivity was examined by stimulating each bipolar channel while recording from others. The Uniform Manifold Approximation and Projection (UMAP) algorithm was employed to encode neural signals, utilizing time-variant power and inter-trial phase coherence spectrograms of stimulation evoked potentials (SEPs). Activation labeling was derived through semi-supervised learning, and group-level supervised UMAP was used to map activated spectrograms to anatomical identities. Neural features 1&2, characterized by gamma/beta and high theta respectively, were distinguished in cortical stimulations. A unique third cluster (Feature3) emerged in thalamus stimulations, revealing delayed and persistent theta oscillations. Whole-brain causal connectivity matrices unveiled modularity in adjacent areas within hemispheres (Feature-1), widespread representations across hemispheres (Feature-2), and widespread delayed thalamocortical feedback (Feature-3). Comparing thalamic subdivisions, anterior thalamus exhibited recurrent connectivity with the frontal areas, while the posterior thalamus showed stronger connections with parietal and occipital areas. In conclusion, the study encoded whole-brain stimulation-evoked potentials into three neural features, representing direct cortical connectivity, indirect connectivity via cortex, and thalamocortical feedback. Thalamus was found to receive direct connectivity from the whole brain, while its direct cortical projection was hemisphere-limited. Indirect thalamocortical feedback, persisting in cortical signals for approximately 200 ms with a late onset (>165ms upon stimulation), acts as a propagator of theta oscillations throughout the brain.

and computational neuroscience that medial temporal representations do not just describe our surroundings, but actively guide our behaviour.

TALK 7: ANODAL TRANSCRANIAL DIRECT STIMULATION REVEALS CAUSAL LINKS BETWEEN THE SUPPLEMENTARY MOTOR AREA AND GROOVE PERCEPTION

Marina de Oliveira Emerick, Neuroscience Program, Schulich School of Medicine & Dentistry, The University of Western Ontario, Brain and Mind Institute, The University of Western Ontario

Why we experience 'groove', or the pleasurable feeling of 'wanting to move' to music, remains to be understood. One reason may be that groove is related to increases in motor brain activity. For example, transcranial magnetic stimulation over the primary motor cortex shows that high-groove music elicits higher corticospinal excitability than low-groove music. However, there is a lack of causal evidence that motor areas contribute to groove perception. Here we used transcranial direct current stimulation (tDCS), a causal method that modulates brain excitability in two opposite directions: anodal stimulation, which increases cortical excitability, and cathodal stimulation, which inhibits cortical excitability. We targeted the supplementary motor area (SMA), an area that fMRI studies indicate has higher activity for high-groove rhythms. Sixty subjects (anodal N = 31; cathodal N = 29) participated in two sessions, receiving active tDCS or sham while rating experienced groove and pleasure to 40 drum sequences from the Lucerne Groove Research Library. We predicted that anodal tDCS would increase groove ratings, while cathodal tDCS would decrease them relative to sham stimulation. As expected, anodal stimulation increased groove ratings when compared to sham, but no effect of cathodal stimulation was found. Thus, the results support that the SMA plays a role in groove perception—greater SMA excitability leads to greater experience of groove. Further research could examine whether SMA stimulation selectively alters groove, or concomitantly alters the perception of other musical features.

TALK 8: **ICONIC GESTURES FORM "CONCEPTUAL PEGS":** BEHAVIORAL AND ERP EVIDENCE

Brianna E. Cairney, Louisiana State University

Concrete words evoke more vivid mental imagery than abstract words, leading to enhanced memory for both the words themselves and paired associates (e.g., by serving as "conceptual pegs"; Paivio, 1965). We hypothesized that the addition of iconic gestures to spoken action words would mimic effects of concreteness. ERPs were recorded while participants heard unrelated verb-noun pairs (e.g., '…driving apple'). On some trials, the verb was accompanied by a matching iconic gesture (i.e., a steering motion for 'driving'). Free recall was used to test item memory (memory for gestured verbs) and associative memory (memory for verb-noun pairs). In Exp. 1, both types of memory were greater for word pairs accompanied by iconic gestures relative to no gestures or simple beat gestures. However, when the beat gestures were replaced with ambiguous "nonsense" gestures (Exp. 2), memory benefits were limited to the verbs. ERPs elicited by the nouns suggested that the ambiguous gestures may have caused a global shift in attention toward the gestures and away from the paired nouns. Indeed, when the same set of iconic- and non-gestured word pairs were studied without the nonsense-gestured pairs (Exp. 3), the associative memory benefit was restored. Moreover, under these circumstances, nouns preceded by iconic-gestured verbs elicited larger N700 amplitudes relative to those preceded by non-gestured verbs, suggesting enhanced associative imagery. Overall, these results suggest that iconic gestures can provide imagery and memory benefits that resemble those of concreteness. However, these benefits are reduced when listeners expect the gestures to be difficult to interpret.

TALK 9: NEURAL DYNAMICS OF EVENT PROCESSING UNDER REDUCED UNCERTAINTY.

Karen Sasmita, Cornell University

Processing everyday experience may involve monitoring errors in predictions made by working memory representations of the current situation (event models) at points of uncertainty (e.g. when the situation changes, event boundaries). How does event processing change when uncertainty at event boundaries is reduced? To answer this question, we used EEG to examine changes in neural activity during the viewing of two ~7-minute long movie clips. We manipulated uncertainty along two dimensions: familiarity with the movie clips (which were viewed twice and then segmented into events), and by allowing participants to sample visual information in a restricted (by asking participants to maintain central fixation; n = 20) or unrestricted (by allowing participants to freely move their eyes; n = 20) manner. Restricted and unrestricted viewing groups identified boundaries at similar times. However, theta (4-8 Hz), alpha (8-12 Hz), and gamma (30 - 100 Hz) band power was modulated around event boundaries encountered during the first movie viewing, particularly when eye movements were unrestricted. In contrast, during the second viewing, power in these frequency bands was reduced around event boundaries in the unrestricted condition and temporally shifted in the restricted condition. These observations are consistent with uncertainty contributing to event processing, both through knowledge about what is happening when and by the ability to develop that knowledge through active sampling of visual information.

TALK 10: AGE-RELATED NEURAL DEDIFFERENTIATION: UNVEILING THE ROLE OF FUNCTIONAL CONNECTIVITY AND NETWORK REORGANIZATION

Claire Pauley, Max Planck Institute for Human Development, Humboldt University of Berlin

'Age-related neural dedifferentiation', the finding that neural

representations of information are less distinctive in older adults compared with younger adults, has been reported to underly age differences in memory performance. However, little is known about how brain-wide neural changes in old age contribute to age-related neural dedifferentiation. Here, we explored whether age-related differences in functional network organization explain neural dedifferentiation in category-selective visual regions. In this study, 35 younger and 34 older adults viewed blocks of faces and houses in the fMRI scanner. Using multivoxel pattern analysis, we identified age differences in the distinctiveness (operationalized as the difference between within-category and between-category similarity) of face processing in the fusiform gyrus (FG) and house processing in the parahippocampal gyrus (PHG). Using background connectivity, we found that younger adults had greater connectivity between the FG and the visual network than older adults. Crucially, interindividual differences in connectivity were related to neural distinctiveness, suggesting that age-related disruptions in communication between category-selective regions and the visual network may explain dedifferentiated category representations. Furthermore, we observed age differences in global network structure, defined as the functional segregation of the visual network from the default mode network. Older adults exhibited less coherent network structures than younger adults, a phenomenon referred to as network-level dedifferentiation. Finally, we found a relationship between dedifferentiated category representations and dedifferentiated network structure. Thus, we provide evidence supporting the idea that senescent reorganization of functional networks and differences in connectivity to category-selective regions may be an underlying cause of age-related neural dedifferentiation.

TALK 11: STABILITY IN ONGOING CONSCIOUS THOUGHT RELATES TO MACROSCALE PATTERNS OF BRAIN ORGANIZATION

Louis Chitiz, Queen's University

Ongoing thought differs across person and context. However, it remains unclear as to how situations impact the stability of different types of thought. We had 190 healthy participants score their most recent thoughts on 16 dimensions across 14 cognitive tasks. We then used Principal Components Analysis (PCA) to decompose individuals' probe scores on the 16 dimensions into 'thought patterns' representing characteristics of thought that tended to covary across the tasks measured. To quantify how stability in thought varied across the tasks, we computed the intraclass correlation coefficient (ICC) for each task on each thought pattern, with a greater ICC indicating greater within-subject stability in reported thought on a given task. To examine how stability in self-reported thought relates to fMRI-based representations of brain activity, we used existing fMRI data for each of the tasks to map them according to their whole-brain similarity. We then mapped the association between stability in reported thought and these macroscale patterns of brain organization. Two thought patterns whose stability related to whole-brain organization during task processes were "Deliberate Task-Focus" and "Intrusive Distraction". Tasks associated with greater activation of transmodal regions tended to also have more stable thought-content with regards to "Intrusive Distraction", and greater activation of frontoparietal regions associated with higher stability in "Deliberate Task-Focus". The analysis thus indicated that a person's stability in their thinking relates to patterns of whole-brain activation engendered by their situation.

TALK 12: THE RELATIONSHIP BETWEEN BRAIN ACTIVITY AND ONGOING THOUGHT PATTERNS DURING MOVIE WATCHING

Raven Wallace, Queen's University

The relationship between brain activity and ongoing thought patterns during everyday states like movie-watching is poorly understood. One challenge comes from the difficulty of measuring cognition during movies without disrupting how experience and brain activity naturally unfold. Here, we establish a novel method to identify neural correlates of different experiential states during movie-watching while minimally interrupting viewers or disrupting ongoing brain dynamics. Using two samples, we utilized existing fMRI data from 44 participants (Sample 1) who watched three full-length movies and collected experience using multi-dimensional experience sampling (mDES) from 120 participants (Sample 2) who watched 11-minute clips of the same films and responded to comprehension questions. In the lab, mDES was probed five times in each film using a pseudo-randomized probe schedule to create a time course of experience across the clips at a rate of 15 seconds. We identified four patterns of thoughts labelled Episodic Knowledge, Intrusive Distraction, Verbal Detail and Sensory Engagement. The time course of each thought pattern generated by Sample 2 was included as a regressor of interest in a time series analysis of brain activity from Sample 1. This revealed primary visual and auditory cortex were active during periods when experience was characterized by Sensory Engagement — which significantly predicts better scores on the movie comprehension test. Our study highlights an unanticipated role of primary systems in features of experiences and our memories of what we watched in films while introducing a novel method of collecting experience in naturalistic states.

TALK 13: AGE DIFFERENCES IN DECISION-MAKING STRATEGIES TO PROCESS FEATURAL VS. STRUCTURAL PERTURBATIONS IN ENVIRONMENTAL CHOICE-OUTCOME MAPPINGS

Chih-Yi Chen, National Taiwan University, Taipei, Taiwan

Recognizing crucial survival features and grasping genuine structures amid environmental noise is vital for navigating life. Previous studies suggest that cognitive aging impacts older adults' capacity to manage tasks involving uncertainty, maintain task representations, and preserve task structures. Yet, the specific influences of different

sources of uncertainty on older adults' cognitive processing of environmental information remain unclear. To address this, 27 younger adults and 22 older adults participated in a probabilistic fMRI experiment, which required them to choose keys with varied color and shape combinations in interconnected rooms to unlock doors and optimize rewards at different levels of uncertainty. Behavioral results demonstrated that older adults exhibited lower success rates than their younger counterparts, as featural noise increased, regardless of structural noise. Reinforcement learning-based computational models were employed to investigate the roles of selective attention and successor representation in accounting for age group behavioral differences. Younger adults favored a more model-free algorithm, while older adults tended toward a more model-based approach, despite both age groups being able to identify relevant dimensions. Finally, brain imaging results revealed that increased structural noise induced higher responses in default mode areas, with heightened medial frontal activation in older adults but increased precuneus activation in younger adults. Conversely, elevated featural noise prompted higher responses in non-default mode areas, with increased cerebellar and frontal responses in older adults and heightened parahippocampal and middle temporal responses in younger adults. The above findings reflect age-related differences in neurocomputational strategies that yield distinct behaviors in response to environmental uncertainty.

TALK 14: LARGE-SCALE CORTICAL NETWORKS ARE ORGANIZED IN STRUCTURED CYCLES

Mats W.J. van Es, University of Oxford

The brain needs to perform a diverse set of cognitive functions essential for survival, but it is unknown how it self-organizes to ensure that each of these functions is fulfilled within a reasonable period. It is a widely shared belief that they arise from dynamic switching in coherent activity within large-scale cortical networks. Here, we developed a new method to study the temporal evolution of these networks based on the long-term asymmetries in state transitions. We show that cortical networks activate in a structured manner in spontaneous brain activity. Reproduced across five independent magnetoencephalography (MEG) studies, we show that the network activations are stochastic on short time scales but self-organize into a distinct cycle that has a 300-1000 ms duration, with each network occupying a preferred location within the cycle. We further show that the cycle groups cortical networks with similar function and spectral content at specific positions within the cycle, and in turn, that the position of an individual's brain activity within the cycle is predictive of cognition, including the spontaneous replay of memories. Moreover, we find that an individual's cycle strength and cycle speed are heritable and predictive of individual traits; with stronger and slower cycling found in older people and males. These results suggest that cortical network activations are inherently cyclical and may provide the organisation the brain needs to spend time focusing on different cognitive functions. This occurs at time scales that have previously been shown to be the most relevant for global brain processing.

TALK 15: PERCEIVING NATURAL IMAGES MAY CONSUME LESS COGNITIVE RESOURCES: EVIDENCE FROM IMAGE MEMORABILITY, EDGE MAGNITUDES, AND SPECTRAL CONTENT

Nakwon Rim, University of Chicago

Theories have suggested that perceiving natural scenes requires less cognitive resources compared to perceiving urban scenes, leading to the cognitive benefits of interacting with natural environments. While studies have shown that natural environments have restorative benefits, the hypothesized mechanisms have not been rigorously tested. Here, we investigated whether perceiving natural scenes may consume less cognitive resources. First, we conducted a continuous recognition task to probe the memorability of images and found that natural images are less remembered, suggesting that fewer cognitive resources are used to process them. Next, using a Canny edge detection algorithm, we analyzed the number and significance of edges in the images and found that the proportion of edges with higher gradient magnitude is smaller in natural images. This suggests that the number of edges essential to capture scene information is smaller for natural images, aligning with theories that suggest perceiving natural images consumes less cognitive resources. Finally, we analyzed the spectral properties of the images by applying a discrete cosine transform to 8x8 pixel tiles. We found that natural scenes have a larger proportion of their spectral energy in high-frequency coefficients. As the human visual system may be less sensitive to high-frequency information, this implies that natural images have less information that will be processed and thus less taxing. In conclusion, we found that natural scenes are less memorable, have less strong edges, and contain more high-frequency information than man-made scene images. These findings are con sistent with theories positing that perceiving natural images is less taxing.

Data Blitz Session 4

Saturday, April 13, 1:00 - 2:30 pm, Sheraton Hall EF

Chair: Vishnu Murty, Temple University

Speakers: Jens Madsen, Yushuang Liu, Sam Audrain, Nina Curko, Sarah Solomon, Hayley Caldwell, Kazuhisa Shibata, Anna Blumenthal, Aaron Vandendaele, Maximilian Nentwich, Keela Thomson, Dorottya Hetenyi, Louisa Krile, Dr. Maxi Becker, Nelly Matorina.

TALK 1: BRAIN-BODY INTERACTION DURING AUDITORY NARRATIVES DRIVES AUTONOMIC FUNCTION

Jens Madsen, City College of New York

When people listen to auditory narratives both neural and physiological signals can synchronize between people, but the relationship between these signals, and the underlying mechanism is unclear. We hypothesized a top-down effect of cognition on arousal, and predicted that auditory narratives will drive not only brain signals but also peripheral physiological signals. Despite the lack of visual stimuli, we find that auditory narratives entrain eye movements, saccade initiation, blink onset, pupil size, and heart rate. This is consistent with a top-down effect of cognition on autonomic function. We elaborate on the underlying mechanism by investigating the brain-body interaction when people listen to auditory narratives and at rest. We found an anterior-central EEG scalp potential that correlates with heart rate, pupil size and gaze variation. In addition, we hypothesized a bottom-up effect, whereby autonomic physiology affects arousal. To investigate this bottom-up effect we conducted controlled experiments asking people to breathe in a rhythmic fashion, saccade rhythmically to a dot pattern and vary luminance modulating the pupil size. We found that controlled breathing not only affected heart rate but also pupil size. During controlled saccades we found the heart rate entrained to specific rhythms whereas controlled luminance did not have a widespread effect on other physiological signals. Together this suggests bidirectional causal effects between peripheral autonomic function and central brain circuits involved in the control of arousal.

TALK 2: ENGAGEMENT FLUCTUATIONS DURING COLLABORATIVE LEARNING: A REAL-WORLD EEG STUDY

Yushuang Liu, University of Connecticut

Collaborative learning is known to be effective, but not all students engage and benefit from it. Here, we conducted electroencephalography (EEG) recordings in a real-world classroom to examine how students engage in a collaborative learning task. A total of 36 high school students participated in the study in groups of four. Students were equipped with portable, 32-channel EEG devices and were instructed to collaboratively make a model of a cell. Student learning was assessed at the end of the EEG session using a test. The sessions were video recorded, and the behavior of each student was coded in 5-second segments, and classified as “on-task,” “off-task,” or “idle.” Analysis of the video data indicated that students alternated between on- and off-task states every 10 to 20 seconds. The amount of time students were continuously on-task was positively correlated with their test performance. Additionally, students were idle for about 13% of the time, meaning that they were not explicitly engaged with the task. However, based on behavior alone, it is challenging to assess how engaged students are cognitively. EEG analyses revealed that students exhibited higher alpha (8-12 Hz) activity when they were off-task compared to on-task, especially in posterior EEG electrodes. During idle periods, students’ alpha brain activity was indistinguishable from their brain activity during off-task periods. These findings provide key new evidence for the value of brain data collected in real-world learning settings.

TALK 3: GRANULARITY OF HIPPOCAMPAL LONG-AXIS REPRESENTATIONS WITH REPEATED ENCODING

Sam Audrain, NIMH

Repeated exposure to an experience can either strengthen the neural representation of that unique experience or integrate it with overlapping memories to the detriment of memory specificity. The hippocampus is thought to play a critical role in maintaining unique mnemonic representations that can be differentiated from similar experiences. However, it is unclear how repeated encoding affects representation of overlapping experiences along the long-axis, which differs in representational granularity. We investigated how the hippocampus represents granular content along its long-axis with repeated encoding. We scanned healthy young adults with 7 Tesla fMRI as they repeatedly encoded unique objects paired with one of four scenes: two visually similar beaches, and two visually similar kitchens. At retrieval, they were presented with each object and asked to retrieve which specific scene it had been paired with. We examined pattern similarity across the long-axis of the hippocampus as a function of repeated encoding and degree of content overlap between object-scene pairs. We found that patterns in the posterior hippocampus changed more than in the anterior hippocampus with repeated encoding, becoming less similar to other memories with each exposure regardless of how much scene content overlapped. Across the long axis, while individual trials maintained representational specificity with repetition (e.g. apple-beach1 vs apple-beach1), they became differentiated from overlapping trials (e.g. apple-beach1 vs pylon-beach1). Thus, we found evidence of both content-agnostic and content-specific changes in pattern similarity with repetition, suggesting multiple scales of representational change within the hippocampus with experience that serves to preserve unique, granular memory traces.

TALK 4: DISTINCT BRAIN PATHWAYS FOR RECALLING THE CONCEPTUAL AND PERCEPTUAL DETAILS OF NATURALISTIC EMOTIONAL MEMORIES

Nina Curko, Boston College

Emerging evidence suggests a dissociation among default mode network (DMN) subsystems during retrieval of conceptual and perceptual event details. An open question is whether these subsystems are differentially involved in remembering emotionally negative and positive events, which vary in their mnemonic content. For instance, compared to positive memories, negative memories tend to be associated with greater perceptual detail and sensory recapitulation. Here we examined how default subsystems support conceptual versus perceptual remembering, and how these processes are modulated by emotional valence. In a naturalistic design, participants viewed positive, negative, and neutral news clips, then brain activity was recorded while participants covertly recalled the videos in response to word cues. One day later, participants wrote memory descriptions for each video, and content was categorized into conceptual and perceptual details. Linear mixed effects models were used to examine the effects of valence and number of remembered conceptual and perceptual details on retrieval-related activity in the hippocampus, amygdala, and DMN regions. We found that activity in the hippocampus and amygdala was related to perceptual detail memory, and that in the amygdala, this relationship was stronger for negative memories. We additionally observed dissociations in default network contributions to emotional memory retrieval: whereas ventral DMN activity was related to memory for perceptual details, especially for neutral memories, dorsal DMN regions were sensitive to valence and correlated with memory for conceptual details for emotional memories. These results suggest differential contributions of default subsystems to recalling conceptual and perceptual details of emotional memories.

TALK 5: RECENT STATISTICS SHIFT OBJECT REPRESENTATIONS IN PARAHIPPOCAMPAL CORTEX

Sarah Solomon, University of Pennsylvania

There is a stability vs. plasticity trade-off within our semantic system. Our representations need to be stable enough to support our general knowledge of the world but flexible enough to incorporate new information as our environment changes. How does the human brain manage this trade-off? We analyzed the Natural Scenes Dataset in which eight participants viewed thousands of scenes across 30 fMRI sessions. An encoding model learned voxel-wise responses to each of 80 object categories that appeared in the scenes (e.g., giraffe, umbrella) and estimated multivoxel patterns for these objects within each session. We found that multivoxel pattern similarities matched the semantic similarities of a word embedding model across areas in the medial temporal lobe (MTL) and high order visual areas. Within the MTL areas containing semantic representations, only in parahippocampal cortex (PHC) were these representations sensitive to recent co-occurrence statistics in the scenes: the ways that objects appeared together in the first half of a session influenced neural pattern similarity in the second half of the session. Greater mismatch between recent and long-term statistics predicted more change in PHC. We also saw evidence of representational drift in PHC at a longer timescale, across sessions. These results demonstrate that while some regions of the brain encode stable visual object semantics, PHC exhibits higher plasticity, with semantic representations constantly tweaked by the statistics of the recent environment.

TALK 6: SIGMA POWER AND ENCODING STRENGTH IN SLEEP-BASED AND RETRIEVAL-MEDIATED MEMORY CONSOLIDATION

Hayley Caldwell, University of South Australia

Emerging evidence suggests that memory consolidation can be achieved during wake, using repeated retrieval training, rather than only during sleep. However, the neural mechanisms of sleep-based and retrieval-mediated consolidation have never been directly compared. Sigma activity, which is important for sleep-based consolidation's enhancement of initially weakly encoded memories, may be involved in this selective enhancement in both consolidation states. To test this, we compared the interaction of sigma band (~12-15 Hz) power and encoding strength across different memory interventions. Participants (N=22, 18-31 years) learnt different object-word pairs in each of 3 sessions, completed an immediate recognition test, then experienced 1 of 3 120-minute interventions: (i) retrieval training (repeated cued-recall); (ii) restudy (repeated viewing, eliciting no consolidation); or (iii) a nap opportunity. After 45 minutes, participants were given a delayed recognition test. It was hypothesised that sleep and retrieval training, but not restudy, would enhance weakly encoded memories, when sigma power was high. We instead found that across all conditions, high sigma power stabilised the initial encoding strength, and low sigma power lead to the deterioration of initially strongly encoded memories, ?2(1)=5.11, p=.024, ?=1.06. This suggests that sigma activity may represent a unifying mechanism of stabilising initial memory strength, across different brain states and learning paradigms. Our research is the first to investigate sigma activity's influence on memories during wake. Further research is required to determine sigma activity's specific influence on memories, involving their qualitative, inter-item, and longitudinal changes, to uncover if it is involved in state-independent consolidation, or paradigm-independent learning.

TALK 7: REACTIVATION OF MOTOR MEMORY BY PASSIVE FINGER MOVEMENTS WITH ROBOTIC HAND EXOSKELETON

Kazuhisa Shibata, RIKEN Center for Brain Science,

Motor learning evolves beyond the period of training on a skill. Key to this evolution is reactivation, which destabilizes once-consolidated

motor memory, thus enabling further refinement of skills through reconsolidation. Here, an important question arises: what triggers this reactivation? While reactivation has traditionally been assumed to occur by re-experiencing the same context as in training, no two experiences are exactly alike in our uncertain world. Consequently, the context involved in reactivation (e.g., motor command, somatosensory feedback, visual input) inevitably differs from that in training. This difference demands the brain to make concessions on the contexts necessary for effective reactivation. However, excessive concessions could admit reactivation under contexts unrelated to the original training, leading to potential overwriting or disruption of the memory. To examine how the brain resolves this plasticity-stability dilemma in reactivation, we conducted finger movement learning experiments that systematically manipulated the context for reactivation. Notably, we introduced a 'passive condition' where participants, using a robotic hand exoskeleton, re-experienced the somatosensory feedback and visual inputs in the absence of motor commands. This passive condition resulted in a performance gain comparable to the condition involving all three components. The performance gain was still observed when participants performed a cognitively demanding task while experiencing the somatosensory feedback, suggesting that somatosensory feedback alone can trigger reactivation. In contrast, visual inputs alone did not yield such gain. These results imply that the brain primarily relies on somatosensory feedback related to motor actions during training to resolve the plasticity-stability dilemma in reactivating motor memory.

TALK 8: THE AFRICAN BRAIN AND COGNITIVE DEVELOPMENT (AFRIBCD) NETWORK: A STEP TOWARDS BETTER REPRESENTATION OF NEUROCOGNITION RESEARCH IN AFRICA

Anna Blumenthal, Université Laval & Cervo Brain Research Center

Our understanding of neurocognition is incomplete, as most research has been conducted in minority world settings where only 15% of the world's population live (Draper et al., 2022). As such, cognitive neuroscience needs stronger representation from more diverse populations around the world. AfriBCD is a network (currently 131 members) aimed at bringing together researchers and partners who are interested in neurocognition in Africa across the lifespan. Drawing on the views of network members - who represent Africa (17 countries) and other international countries working with African partners (10 countries), a survey was conducted to understand the challenges and potential solutions for catalyzing neurocognition work in Africa. The highest rated challenges include (i) translation and contextualization of measures and tools, (ii) networking to build career path, and (iii) capacity building, infrastructure, and sustainability for more diverse work contexts. Recommendations for addressing these challenges include (i) investing in building respectful partnerships through allocating adequate time/funds, developing project ideas before the start of the project and maintaining long term relationships, (ii) increasing knowledge of networking opportunities that cross borders and create partnerships (i.e. through online networks like AfriBCD) and (iii) funding for early career researchers 1 -2 years post PhD or following a career break. A further twelve solutions were also proposed and will be discussed in this presentation. The key to the AfriBCD Network is co-creation and collaboration. We invite researchers and partners from Africa and around the world to partner with us in this endeavor.

TALK 9: EXPLORING PARALLEL SYNTACTIC PROCESSING IN READING: INSIGHTS FROM ERP STUDIES

Aaron Vandendaele, Ghent University

To what extent can skilled readers extract higher-order lexical information from multiple words in parallel? The answer to this question has remained controversial with regards to how our brain deals with processing incoming visual information. On the one hand, both eye-tracking and behavioral studies consistently found an effect of parafoveal stimuli on the processing of the fixated foveal stimulus. On the other, effects of higher-order lexical information such as syntax, semantics and grammar have remained elusive. In this project, I will present data from two experiments which used event-related potential (ERP) recordings to investigate the timeframe of how higher-order lexical information impacts ongoing word and sentence recognition. In the first experiment, we used the lexical flanker paradigm in which participants had to classify foveal target words as either being a noun or an adjective. Targets were flanked by either syntactically congruent or incongruent words (e.g.; noun noun noun vs. adjective noun adjective), or syntactically compatible or incompatible words (e.g., adjective noun verb vs. verb noun adjective). The second experiment employed the same stimuli as the latter condition, with participants now tasked to judge the sentence grammaticality instead. Results showed a significantly reduced amplitude in the N400 component (thought to reflect the mapping of word identities to lexical representations) for the syntactic compatible condition and for the sentence grammaticality judgements. These indicate that our reading system can extract and process syntactic information from multiple words in a short timeframe, and that syntactic units are integrated as a single (i.e., sentence) unit.

TALK 10: SEMANTIC NOVELTY MODULATES NEURAL RESPONSES TO SENSORY STIMULI ACROSS THE HUMAN BRAIN

Maximilian Nentwich, The City College of New York, CUNY, New York, NY, The Feinstein Institutes of Medical Research, Northwell Health, Manhasset, NY

Our continuous sensory experience in daily life is dominated by change. Previous research has focused on change due to stimulus

motion, eye movements, unfolding events, or auditory edges in speech. However, in naturalistic environments, these stimuli interact with each other and with semantic novelty. We investigate the neural responses to these distinct sources of visual change during film viewing. In addition, we investigate the multimodal interactions between visual change across saccadic eye movements with sensory and semantic features of speech. We analyzed intracranial recordings in humans across 6328 electrodes from 23 individuals. Responses associated with saccades and film cuts were dominant across the entire brain. Film cuts at semantic event boundaries were particularly effective in the temporal and medial temporal lobes. Saccades to visual targets with high visual novelty were also associated with strong neural responses. Specific locations in higher-order association areas showed selectivity to either high or low-novelty saccades. We conclude that neural activity associated with film cuts and eye movements is widespread across the brain and is modulated by semantic novelty.

TALK 11: DEVELOPMENT OF THE HIPPOCAMPUS AND THE ABILITY TO PERCEPTUALLY INTEGRATE IMAGES DRIVE THE EMERGENCE OF VISUAL ILLUSION SUSCEPTIBILITY IN CHILDHOOD

Keela Thomson, University of Toronto

Young children are less susceptible to the Ebbinghaus visual illusion—in which misleading contextual information distorts an object's apparent size—than older children and adults (Doherty at al., 2010). We investigated the possibility that this is due to changes in the ability to perform perceptual integration across development (Kovacs, 2000) due to ongoing development of the hippocampus (Barense et al., 2010). We hypothesized that young children do not integrate the misleading image context, preventing it from affecting their size perceptions. If so, physically integrating the image components for viewers should allow children to "see" the illusion. Children aged 4-10 (n=93) and adults (n=30) viewed the Ebbinghaus, Sander, and Vertical-Horizontal illusions. These illusions differ in whether target items and surrounding context are visually integrated: the Ebbinghaus illusion is unintegrated (target and context do not touch) and the Sander and Vertical-Horizontal illusions are integrated. Consistent with prior work, younger children experienced the (unintegrated) Ebbinghaus illusion less than older children. In contrast, children of all ages were equally susceptible to the (integrated) Sander and Vertical-Horizontal illusions. These findings indicate that the ability to integrate visual context drives the developmental emergence of illusion susceptibility. We further explored the role of hippocampal development by investigating categorical perception, a hallmark of hippocampally-mediated processes in which continuous perceptual differences are binarized (experienced as a sudden shift). We examined the degree to which participants' responses varied sigmoidally (as expected in categorical perception) versus linearly. Young participants were less categorical, suggesting developmental change in the role of the hippocampus.

TALK 12: INCREASED BRAIN SIGNAL COMPLEXITY ASSOCIATED WITH MIND-WANDERING INHIBITS PERFORMANCE GAINS FOLLOWING PERCEPTUAL TASK TRAINING

Louisa Krile, University of Calgary

Mind-wandering, or attentional shifts from the current task to unrelated thoughts, consumes up to 50% of our waking hours and impacts neural and behavioural function. Mind-wandering is typically associated with decreased performance on perceptual and cognitive tasks but may facilitate performance on tasks that require creative problem-solving. Until now, research has focused on the impact of mind-wandering on immediate task performance, but the impact on learning-related gains over time remains unclear. Previous research examining brain signal complexity during task performance showed that periods of mind wandering are associated with higher signal complexity compared with focused states, reflecting increased global neural flexibility. In this study, we investigated how the amount of mind-wandering during task performance influences learning and whether higher signal complexity during mind-wandering may represent a flexible neural state conducive to learning. Nineteen healthy adults underwent electroencephalography (EEG) recording while performing a visual texture discrimination task before and after a training period, with their attention state probed throughout the experiment. Task performance significantly improved ($p < .001$) and the amount of mind-wandering during task performance significantly increased ($p = .011$) following training. Greater pre-training mind-wandering was associated with increased signal complexity across all timescales, but this corresponded with lower performance gains following training ($p = .001$). Further, there were no significant associations between post-training mind-wandering, signal complexity, and changes in task proficiency. These results suggest that a high-flexibility brain state associated with mind-wandering may hinder learning in low-level perceptual tasks that demand narrow attention to basic visual stimuli for optimal performance.

TALK 13: PRE-STIMULUS ALPHA OSCILLATIONS CONTAIN REPRESENTATIONS OF EXPECTED VISUAL SHAPES

Dorottya Hetenyi, Wellcome Centre for Human Neuroimaging, University College London

Our prior knowledge greatly influences how we perceive the world. However, it remains unclear how the brain keeps predictions online prior to stimulus onset. Here, we combined magnetoencephalography (MEG) and decoding techniques to investigate the neural dynamics of pre-stimulus sensory predictions. Participants were engaged in a shape discrimination task, while auditory cues predicted which specific abstract shape would likely appear. We trained a shape decoder on

data from a separate localiser run, and applied this decoder to the time window after the predictive auditory cues, but before shape onset, to test for neural representations of expected shapes. Frequency analysis revealed significant oscillatory fluctuations in the pre-stimulus decoded time series, predominantly in the alpha band (10 – 11Hz). We created baseline measurements of alpha power by training the decoder 1) with pseudo-randomised labels and 2) on different shapes than those used in the main experiment, to rule out effects of non-specific alpha oscillations. Furthermore, we found that this stimulus-specific alpha power was linked to expectation effects on behavioural accuracy and on post-stimulus neural shape representations. Previous research has already shown that the raw power of alpha oscillations modulate perception. While our results are consistent with these observations, they additionally demonstrate that alpha fluctuations can contain stimulus-specific contents which predict behavioural performance and sensory encoding. Together, these findings show that sensory predictions are embedded in the alpha frequency band and can modulate perception through their oscillatory dynamics, providing a neural mechanism through which the brain generates and deploys predictions.

TALK 14: THE INFLUENCE OF INSIGHT ON RISKY DECISION MAKING AND NUCLEUS ACCUMBENS ACTIVATION

Dr. Maxi Becker, Humboldt University Berlin,

During insightful problem solving, the solution appears unexpectedly and is accompanied by the feeling of an AHA!. Research suggests that this affective component of insight can have consequences beyond the solution itself by motivating future behavior, such as risky (high reward and high uncertainty) decision making. Here, we investigate the behavioral and neural support for the motivational role of AHA in decision making involving monetary choices. The positive affect of the AHA! experience has been linked to internal reward. Reward in turn has been linked to dopaminergic signal transmission in the Nucleus Accumbens (NAcc) and risky decision making. Therefore, we hypothesized that insight activates reward-related brain areas, modulating risky decision making. We tested this hypothesis in two studies. First, in a pre-registered online study (Study 1), we demonstrated the behavioral effect of insight-related increase in risky decision making using a visual Mooney identification paradigm. Participants were more likely to choose the riskier monetary payout when they had previously solved the Mooney image with high compared to low accompanied AHA!. Second, in an fMRI study (Study 2), we measured the effects of insight on NAcc activity using a similar Mooney identification paradigm to the one of Study 1. Greater NAcc activity was found when participants solved the Mooney image with high vs low AHA!. Taken together, our results link insight to enhanced NAcc activity and a preference for high but uncertain rewards, suggesting that insight enhances reward-related brain areas possibly via dopaminergic signal transmission, promoting risky decision making.

TALK 15: SLEEP IS ASSOCIATED WITH PRESERVED VIVIDNESS, PERSPECTIVE, AND FELT RECENCY FOR AUTOBIOGRAPHICAL MEMORIES

Nelly Matorina, University of Toronto,

Sleep plays a role in the consolidation of episodic memories, yet little is known about how the very first night of sleep impacts autobiographical memories. In the current study, participants recorded one morning and one evening memory from their everyday lives on a smartphone application over the course of two weeks. They also completed two memory tests per day (one in the morning and one in the evening) that assessed the memory from 12 hours prior (i.e., the evening memory test pertained to the morning memory and the morning test pertained to the evening memory from the night before). Preliminary data indicated that sleep, compared to wake, was associated with memories that were more vividly recalled, $t(261.90) = -2.87$, $p < .01$, recalled through an own eyes rather than observer perspective, $t(262.13) = 2.30$, $p = .02$, and a feeling of being closer in time to the event, $t(262.71) = 2.26$, $p = .02$. We also found that dreaming about a memory was associated with an increased feeling of recency, such that evening memories that were dreamt about were reported as feeling significantly closer in time compared to memories that were not dreamt about, $t(26) = 2.52$, $p = .02$. Overall, our findings provide evidence that sleep preserves autobiographical memory vividness, perspective, and felt recency. We also provide the first evidence that dreaming about an autobiographical memory impacts felt recency, suggesting that hippocampal replay during dreaming may play a role in this meta-memory feature.

General Information

Abstracts

Poster abstracts can be found in the printed program and in the PDF version which is downloadable from www.cogneurosociety.org.

ADA

We look forward to welcoming you to the meeting! If you have a disability or special need that may affect your participation, please contact us at meeting@cogneurosociety.org.

ASL Interpreter Services & Real-Time Captioning Services - Closed Captioning / CART captioning is a speech-to-text interpreting service. Live event captioning benefits attendees who have a hearing loss, are deafened or deaf. If you require CART Transcription Services, please contact us at the Registration Desk located in the Ballroom Foyer to inquire about these services.

Gluten-free - options at coffee breaks/receptions available upon request, please contact us at meeting@cogneurosociety.org.

Sheraton Centre Toronto Hotel Room - A ramp to the stage will be provided upon request for speakers. Please contact us at meeting@cogneurosociety.org

Sheraton Centre Toronto Hotel ADA Amenities - The Property has elevators for to access different levels of the hotel. Service Animals are Welcome and valet parking for vehicles outfitted for drivers in wheelchairs.

Nursing/Lactation Room - CNS is providing a Nursing/Lactation Room with comfortable seating in the Vide Room of the Sheraton Centre Toronto Hotel. Email meeting@cogneurosociety.org for more information

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 CheckT Business Center is conveniently situated within the "Main Lobby" of the Sheraton Hotel, presenting an array of comprehensive services tailored to meet your needs.

Catering

Catering will be available during the conference and is included in the registration fee. *Gluten-free options at coffee breaks/receptions available upon request. Please refer to the table below for the catering times, date and times.

Saturday, April 13

Coffee Service, 3:30 – 4:00 pm, *Sheraton Hall ABC*
Welcome Reception, 5:30 – 6:30 pm, *Provincial Ballroom/Waterfall Garden*

Sunday, April 14

Continental Breakfast, 8:00 – 8:30 am, *Sheraton Hall ABC*
Coffee Service, 3:30 – 4:00 pm, *Sheraton Hall ABC*

Monday, April 15

Continental Breakfast, 8:00 – 8:30 am, *Sheraton Hall ABC*
Coffee Service, 3:30 – 4:00 pm, *Sheraton Hall ABC*

Tuesday, April 16

Continental Breakfast, 8:00 – 8:30 am, *Sheraton Hall ABC*

Certificate of Attendance

To receive a Certificate of Attendance please email meeting@cogneurosociety.org and a certificate of attendance will be emailed to you after the 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 / CART Services

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 in the Ballroom Foyer of the Sheraton Centre Toronto 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 any situation that creates a hostile or offensive work environment.

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.

Monday, April 15, 8:30 am - 10:00 am, *Peel Room*

Contact Us

To contact us onsite, visit the Registration Counter in the Ballroom Foyer of the Sheraton Centre Toronto Hotel or send an email to meeting@cogneurosociety.org We will respond to your email at our soonest opportunity.

Dietary Restrictions

Gluten Free options are available during Coffee Breaks and at the Welcome Reception upon request. If you have any severe food allergies, please contact us and let us know at meeting@cogneurosociey.org .

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.

Drink Ticket

Each Attendee will receive two drink tickets; they can be redeemed for alcoholic or non-alcoholic beverages at the Welcome Reception on Saturday and at the Poster Session C Social Hour on Sunday. Lost drink tickets will not be replaced.

Exhibit Hall

The conference exhibit is located in the Sheraton Hall ABC of the Sheraton Centre Toronto 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, April 13
Open, 2:30 pm – 4:45 pm
Closed for the Day – No Entry hours 4:45 pm – Sunday, 7:30 am

Sunday, April 14
Open, 8:00 am – 7:15 pm
Closed for lunch- No Entry hours 12:00 - 1:30 pm
Closed for the Day – No Entry hours 7:15 pm – Monday, 7:30 am

Monday, April 15
Open, 8:00 am – 5:00 pm
Closed for lunch- No Entry hours 12:00 -1:30 pm
Closed for the Day – No Entry hours 5:00 pm – Tuesday, 7:30 am

Tuesday, April 16
Open, 8:00 am – 10:00 am
Closed for the Day- No Entry after 10:00am

Facebook

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

Hotel

The Sheraton Centre Toronto Hotel is our exclusive Hotel for the CNS 2024 Annual Meeting and where all CNS 2024 meeting events will be held. The Sheraton Centre Toronto Hotel is located at 123 Queen St W, Toronto, ON M5H 2M9, Canada.

Hotel Restaurants

43 Down (American)
A curated, intimate bar delivering perfectly on the classics through handcrafted cocktails and locally-inspired flavours from our community.

Monday & Sunday's - Closed
Tuesday - Thursday - 5:00 PM-12:00 AM
Friday - Saturday - 5:00 PM-1:00 AM

Dual Citizen
Inspired by the global traveler, Dual Citizen offers a selection of quick grab & go breakfast items for the morning commuter and a variety of

all-day offerings, including barista/mixologist-crafted coffees & cocktails.

Hours (Everyday) - 6:00 AM-12:00 AM

Internet Access

CNS is pleased to offer free basic wireless internet in all meeting areas. 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.

NETWORK ID: Sheraton_CONFERENCE
PASSWORD: CNS2024

LinkedIn

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

Lost & Found

The meeting Lost and Found is located at the Registration Desk in the Ballroom Foyer of the Sheraton Centre Toronto Hotel.

Meeting Safety Information

Masks recommended in meeting rooms and hand sanitizing stations will be available at registration and also outside each meeting room.

Member Services

The member services desk is located at the Registration Counter in the Ballroom foyer of the Sheraton Centre Toronto Hotel. The member services desk will be open at the following times (*Subject to Change):

Saturday, April 13	11:00 am – 5:00 pm
Sunday, April 14	7:30 am – 4:30 pm
Monday, April 15	8:00 am – 5:00 pm
Tuesday, April 16	Closed

Message Center

Messages for meeting registrants can be left and retrieved at the Registration Counter in the Ballroom foyer of the Sheraton Centre Toronto Hotel.

Mobile Phones

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

Name Badges

The Sheraton Centre Toronto Hotel 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 Desk in the Ballroom foyer of the Sheraton Centre Toronto Hotel for a replacement.

Nursing/Lactation Room

CNS is providing a Nursing/Lactation Room with comfortable seating in the Vide Room of the Sheraton Centre Toronto Hotel. Email meeting@cogneurosociety.org for more information.

Parking

The Sheraton Centre Toronto Hotel offers indoor valet service as well as self-parking for $60, daily. Please note this information was correct at time of print.

Personal Belongings

The Sheraton Centre Toronto Hotel 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.

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, April 13, Sunday, April 14, Monday, April 15, and Tuesday, April 16. The presenting author must be present during the assigned session and other authors may be present to answer questions. The poster sessions are in Sheraton Hall ABC of the Sheraton Centre Toronto Hotel. Badges are required at all times. Do not leave personal items in the poster room.

Printed Program

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 Desk in the Ballroom foyer of the Sheraton Centre Toronto 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.

Quiet Lounge

CNS will be providing a quiet lounge area in the Ballroom Foyer Hall with comfortable seating.

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 Provincial Ballroom/Waterfall Garden, Saturday, April 13, 5:30-6:30 pm. You must wear your badge to gain entrance.

Registration

The Registration Counter is located in the Ballroom foyer of the Sheraton Centre Toronto Hotel. The Registration Counter will be open at the following times:

Saturday, April 13	11:00 am – 6:00 pm
Sunday, April 14	7:30 am – 6:30 pm
Monday, April 15	8:00 am – 5:30 pm
Tuesday, April 16	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.

Transportation

Taxis - There is a taxi stand at the front of the Hotel.

Twitter

Follow CNS Annual Meeting (@CNSmtg). Our Hashtag this year is #CNS2024

Website

http://www.cogneurosociety.org

Exhibits

Exhibitors

Visit our exhibitors in Sheraton Hall ABC

ANT Neuro North America	BOOTH 111
AXON	BOOTH 112
Brain Vision Solutions	BOOTH 115
Cambridge University Press	BOOTH 117
Cortech Solutions, Inc.	BOOTH 113
CUNY Graduate Center	BOOTH 106
Enchanted Wave LLC	BOOTH 116
mBrainTrain	BOOTH 110
Mightex	BOOTH 102
Neuracle	BOOTH 109
NIRx Medical Technologies, LLC	BOOTH 105
NITRC-NeuroImaging Tools & Resources Collaboratory	BOOTH 103
Rogue Research, Inc.	BOOTH 107
SilicoLabs	BOOTH 101
Soterix Medical	BOOTH 104
The MIT Press	BOOTH 108
Vielight Inc.	BOOTH 114

Exhibit Hours

The conference exhibits are located in Sheraton Hall ABC of the Sheraton Centre Toronto 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, April 13	2:30 pm – 4:45 pm
Sunday, April 14	8:00 am – 12:00 pm 1:30 pm – 7:15 pm
Monday, April 15	8:00 am – 12:00 pm 1:30 pm – 5:00 pm
Tuesday, April 16	8:00 am – 10:00 am

**Exhibit Hall closed Sunday and Monday, 12:00 pm – 1:30 pm.*

GSA/PFA Awards

Congratulations to the 2024 winners of the Graduate Student Awards and the Post-Doctoral Fellow Awards.

Graduate Student Award Winners

- Gal Chen, *Hebrew University of Jerusalem*
- Yuxi Candice Wang, *Duke University*
- Anna Mini Jos, *McGill University*
- Sean Guo, *The University of Hong Kong*
- Emmanouela Kosteletou Kassotaki, *University of Barcelona*
- Aakash Sarkar, *Boston University*
- Raphael Geddert, *Duke University*
- Dongning Liu, *Peking University*
- Levi Kumle, *University of Oxford*
- Erica Shafer, *Virginia Tech*

Post-Doctoral Fellow Award Winners

- Tara Ghafari, *University of Birmingham*
- Zhifang Ye, *University of Oregon*
- Emily T Cowan, *Temple University*
- Adam Steel, *Dartmouth College*
- Davide Momi, *Centre for Addiction and Mental Health (CAMH), Toronto*
- Diana C Dima, *Western University*
- Katharina Menn, *Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany*
- Zachariah Cross, *Northwestern University*
- Charles Ferris, *McGill University*
- Rebecca Marks, *University of Michigan*

Invited-Symposium Sessions

#	Title	Date	Time	Location
1	Advancing knowledge through open science adversarial collaboration	Sunday, April 14	10:00 am - Noon	Ballroom East
2	Memory engrams and their implications for human memory	Sunday, April 14	10:00 am - Noon	Ballroom Center + West
3	The Science and Engineering of the Speaking Brain	Tuesday, April 16	10:00 am - Noon	Ballroom East
4	The Geometry of Neural Representations of Tasks: What Does it Mean for Cognition and Behavior?	Tuesday, April 16	10:00 am - Noon	Ballroom Center + West

Invited Symposium Session 1

ADVANCING KNOWLEDGE THROUGH OPEN SCIENCE ADVERSARIAL COLLABORATION

Sunday, April 14, 10:00 am - Noon, Ballroom East

Chair: Lucia Melloni[1,2]; [1]Max Planck Institute for Empirical Aesthetics, [2]NYU Grossman School of Medicine
Speakers: Lucia Melloni, Aya Khalaf, Ole Jensen, Melanie Boly, Fanis Panagioraropoulos

Consciousness is all there is for us. It is there where we exist, we feel pain, love and also reason. Yet, a unified explanation of the mechanism(s) that mediate our subjective experience is still lacking. Following the decline of behaviorism, which once sidelined consciousness in scientific discourse, the past 30 years have seen a resurgence of research in the field of consciousness. Several neuroscientific theories of consciousness have been proposed. However, theories have evolved in parallel, without cross-talk between, and oftentimes offer contradictory explanations. To break those theoretical siloes, the Cogitate consortium is experimenting with open science adversarial collaboration. Competing predictions from two theories of consciousness are tested: Global Neural Workspace (GNW) and Integrated Information Theory (IIT), across two experiments, designed and endorsed by the theories' proponents. Preregistered experiments were conducted on a large number of subjects (250) combining three techniques (fMRI, M-EEG and iEEG) using similar analytical approaches. This symposium aims to showcase a new model of collaborative science and a systematic approach for theory development. First, Lucia Melloni will outline the promises and challenges to advance science and theory development through adversarial collaborations, presenting the case study of the Cogitate consortium. Next, Aya Khalaf will showcase results of two predictions concerning decoding and maintenance of the content of consciousness in which GNWT and IIT are tested. Ole Jensen will present results from the third prediction, concerning network connectivity. We conclude with a debate (Boly, Panagioraropoulos, Jensen, Melloni) on the role of adversarial collaborations in advancing theoretical understanding.

TALK 1: ADVANCING SCIENCE AND THEORY DEVELOPMENT THROUGH OPEN SCIENCE ADVERSARIAL COLLABORATION

Lucia Melloni[1,2], Cogitate Consortium; [1]Max Planck Institute for Empirical Aesthetics, [2]NYU Grossman School of Medicine

This presentation aims to accomplish three objectives: First, it offers a concise overview of the current state of consciousness science, where theories have developed in parallel, often showing signs of confirmation bias. Second, it introduces a model of science based on adversarial collaboration, designed to bridge the divide between theoretical camps, facilitating robust theory testing and development. The discussion centers on two prominent theories of consciousness: the Global Neuronal Workspace (GNW) Theory and the Integrated Information Theory (IIT), both evaluated through adversarial collaboration. This approach allows for a direct comparison of the divergent perspectives on neural mechanisms underlying consciousness, employing uniform experimental and analytical methods. Third, the presentation will demonstrate the efforts of the COGITATE consortium in realizing this objective. By conducting two experiments that employ MEG, fMRI, and iEEG techniques across six independent laboratories with a large sample, including cross-lab replication, the consortium aims to rigorously test pre-registered predictions. Specifically, we will focus on Experiment 1, where stimuli of varying visibility and duration are presented in different task contexts to assess critical aspects of GNW and IIT. We will describe the path from divergent claims of GNW and IIT to the core of their testable predictions to reveal how each of the findings justifies or challenges the theories. Further, we will discuss how robust theory testing requires testing across multiple predictions which, together, provide convergent or divergent evidence for a given theoretical position.

TALK 2: ADVERSARIAL COLLABORATION TO EVALUATE GLOBAL NEURONAL WORKSPACE THEORY AND INTEGRATED INFORMATION THEORY: RESULTS AND CHALLENGES PART 1

Aya Khalaf[1], Cogitate Consortium; [1]Department of Neurology, Yale School of Medicine

In this talk, we will present results of two key predictions of GNW and IIT evaluated in the adversarial collaboration. Prediction #1 focused on where and when do cortical areas contain information about clearly

consciously perceived stimuli. IIT predicts that such information should be present primarily in posterior cortex, while GNWT predicts the involvement of PFC. Prediction #2 focused on the temporal dynamics predicted by each theory for the maintenance of content in consciousness. GNW and IIT make specific, yet distinct, predictions about the spatial and temporal dimensions of such information in the brain: GNW predicts phasic responses in PFC supporting the maintenance of conscious content. More specifically, brief content specific ignition in PFC ~0.3-0.5s both after stimulus onset and offset indicating the update of the workspace. Conversely, IIT proposes sustained responses in the posterior cortex, aligned with the duration of consciousness, reflecting the theory's view that conscious experience equates to persistent cause-effect structures. We utilized multivariate decoding techniques on MEG, fMRI, and iEEG data to identify information about the category and orientation of visible stimuli, thereby decoding content of consciousness. Additionally, we analyzed the temporal activation profiles and conducted representational similarity analysis to examine the dynamics of sustained consciousness content. Our findings shed light on the spatio-temporal dynamics underpinning consciousness and contrast the theoretical predictions of GNW and IIT. By applying a Lakatosian approach, we emphasize how the challenges to these theories' predictions provide deeper insights than mere confirmations, offering a nuanced understanding of the neural mechanisms of consciousness.

TALK 3: ADVERSARIAL COLLABORATION TO EVALUATE GLOBAL NEURONAL WORKSPACE THEORY AND INTEGRATED INFORMATION THEORY: RESULTS AND CHALLENGES PART 2

Ole Jensen[1], Cogitate Consortium; [1]Centre for Human Brain Health, University of Birmingham

In this presentation, we discuss the evaluation of the third prediction by Global Neuronal Workspace Theory (GNWT) and Integrated Information Theory (IIT) within this adversarial collaboration. Both theories offer distinct views on interareal communication in the brain to support conscious perception. GNWT suggests that consciousness involves the broadcasting of information from a fronto-parietal network to specialized modules for further processing, predicting transient and specific communication between the prefrontal cortex and high-level visual areas. In contrast, IIT posits sustained, content-specific communication between early sensory cortices and high-level visual areas, reflecting the theory's emphasis on experience-specific substructures.These are further bound by relations – overlaps between causes and effects - which in the brain should typically be accompanied by firing synchrony. Our research utilized MEG, iEEG, and fMRI to measure connectivity through phase-locked synchrony, dynamic functional connectivity, and psychophysiological interactions, aiming to test these theories' predictions regarding interareal communication. Findings from fMRI and iEEG showed significant convergence, highlighting the robustness of these methods in capturing functional connectivity, despite MEG's less consistent results, indicating the need for further exploration of connectivity metrics. We conclude by addressing the challenges faced by both theories across three tested predictions. While for a 'science-as-usual' approach these results might be deemed sufficient to arbitrate among theories, we argue that theory testing requires more. Specifically, our project seeks convergence across several predictions, and experiments, which as a whole tests the theories' prediction in the context of a research program.

TALK 4: OPEN SCIENCE ADVERSARIAL COLLABORATION TO ADVANCE THEORY: A DEBATE

Melanie Boly[1], Fanis Panagioraropoulos, Ole Jensen[2], Lucia Melloni[3,4]; [1]Department of Neurology and Department of Psychiatry, University of Wisconsin, Madison, [2]Centre for Human Brain Health, University of Birmingham, Birmingham, [3]Max Planck Institute for Empirical Aesthetics, Frankfurt, [4]NYU Grossman School of Medicine, New York

We will conclude the symposium with a debate addressing the challenges encountered while testing three predictions using multiple methodologies on a substantial number of subjects (over 250). The primary goal is to engage in an open discussion about what these challenges reveal concerning the theories' predictive capabilities. Subsequently, we will expand the conversation to consider the significance of adversarial collaborations in theory testing and as a means to reinforce theoretical foundations. We advocate that both consciousness science and cognitive science at large demand more robust theories, more rigorous testing, and systematic strategies to counteract confirmation bias, coupled with a substantial degree of intellectual humility. However, it's important to acknowledge that science operates within a system of incentives that often does not support thorough theory evaluation.

Invited Symposium Session 2

MEMORY ENGRAMS AND THEIR IMPLICATIONS FOR HUMAN MEMORY

Sunday, April 14, 10:00 am - Noon, Ballroom Center + West

Chair: Denise Cai[1]; [1]Mount Sinai

Speakers: Denise Cai, Paul Frankland, Inbal Goshen, Tomás Ryan

Creating stable memories is critical for survival. An animal relies on past learning to navigate its environment, avoid dangerous situations, and find needed resources. Because the environment is dynamic, stable memory engrams must be updated with new information to enable responses to changing threats (a specific danger) and rewards (such as food and water). In this symposium, we will discuss how memories become contextually linked, strengthened, updated, and even forgotten. Dr. Denise Cai will discuss the stability and flexibility of memory engrams using in vivo calcium imaging and chemogenetics to explore how traumatic experiences can alter past (and influence

future) memory engrams across a lifetime. Dr. Paul Frankland will highlight the contextual modulation of dentate gyrus ensembles corresponding with context-specific neural states in downstream CA1, and how these internally-generated patterns of activity are sufficient to drive context-appropriate decisions. Dr. Inbal Goshen will discuss the contribution that astrocytes have on strengthening engrams by manipulating the activity of Gq- or Gi- pathways in CA1 astrocytes during memory acquisition, which affect ACC projecting neurons and control behavioral performance. Lastly, Dr. Tomás Ryan will share why forgetting may be an adaptive form of engram plasticity that allows engrams to switch from an accessible to inaccessible state, illustrated through optogenetic stimulation or inhibition to facilitate or prevent the recall of an object memory.

TALK 1: STABILITY AND FLEXIBILITY OF MEMORY ENGRAMS ACROSS A LIFETIME

Denise Cai[1]; [1]Icahn School of Medicine at Mount Sinai

Creating stable memories is critical for survival. An animal relies on past learning to navigate its environment, avoid dangerous situations, and find needed resources. Because the environment is dynamic, stable memories must be updated with new information to enable responses to changing threats (a specific danger) and rewards (such as food and water). The brain circuits involved in memory and learning require both stability and flexibility. Using in vivo calcium imaging and chemogenetics, we discovered that traumatic experiences can alter past memories engrams and have long-lasting changes to how future memory engrams are encoded. This has important implications for how the brain stably stores and flexibly updates memories across the lifetime.

TALK 2: CONTEXTUAL MODULATION OF MEMORY RETRIEVAL

Paul Frankland[1]; [1]University of Toronto

Memories of events are linked to the contexts in which they were encoded. This contextual linking ensures enhanced access to those memories that are most relevant to the context at hand, including specific associations that were previously learned in that context. This principle, referred to as encoding specificity, predicts that context-specific neural states should bias retrieval of particular associations over others, potentially allowing for the disambiguation of retrieval cues that may have multiple associations or meanings. Using a context-odor paired associate learning paradigm in mice, here we show that manipulation of dentate gyrus ensembles corresponding to specific contexts reinstates context-specific neural states in downstream CA1, and these internally-generated patterns of activity are sufficient to drive context-appropriate decisions.

TALK 3: ASTROCYTES CONTROL MEMORY STRENGTH BY AFFECTING THE ENGRAMS

Inbal Goshen[1,2]; [1]Edmond and Lily Safra Center for Brain Sciences (ELSC), [2]The Hebrew University of Jerusalem

Recent and remote memories are encoded throughout the brain in 'Engrams': cell ensembles formed during acquisition, and upon their reactivation, a specific memory can be recalled. The maturation of engrams from recent to remote time points involves the recruitment of dorsal CA1 neurons projecting to the anterior cingulate cortex (CA1 to ACC). Various modifications to CA1 astrocytes, to the Gq- or Gi-GPCR pathways, during memory acquisition were shown to affect recent and remote recall in seemingly contradictory ways. We manipulated the activity of either Gq- or Gi- pathways in CA1 astrocytes during memory acquisition and tagged cFos+ engram cells and CA1 to ACC cells during recent and remote recall. The behavioral results were coupled with changes in the recruitment of CA1 to ACC projection cells to the engram. Gq pathway activation in astrocytes caused enhancement of recent recall alone and was accompanied by earlier recruitment of CA1 to ACC projecting cells to the engram. When activating the Gi pathway in astrocytes during acquisition, only remote recall was impaired, and CA1 to ACC projecting cells were not recruited during remote memory. Finally, we provide a simple working model, hypothesizing that astrocytes control behavioral performance by targeting the CA1 to ACC projection. Specifically, that Gq- and Gi-pathway activation affect memory differently, but do so by modulating the same mechanism. These findings illuminate the importance of astrocytes in the acquisition of fear memory and their implications on recent and remote recall.

TALK 4: FORGET THE ENGRAM - MEMORY EXPRESSION ACROSS DEVELOPMENT

Tomás Ryan[1]; [1]Trinity College Dublin

Forgetting generally refers to the loss of previously formed memories. Although multiple forms of forgetting have been characterized, ranging from natural "every day" forgetting to unnatural pathological forgetting, a formal scientific framework with which to explain and investigate the neuroscience of forgetting is lacking. This may be because forgetting has been regarded as a defect of the brain, and it has been assumed to have many diverse and incidental causes. However, contemporary research is challenging this paradigm and an alternative perspective has emerged where forgetting may be viewed as an adaptive feature of the brain that allows an organism to respond optimally to its environment. Behavioral studies imply that forgetting serves as an adaptive function to allow organisms to generalize and abstract from initial experiences. Engram cell labeling methodologies allow us to genetically label, observe, and manipulate the specific ensembles of neurons that encode particular memories in the rodent brain. Our recent research on innate and acquired forms of long-term forgetting in the mouse focuses on infantile amnesia during development on one

hand, and natural forgetting in adults on the other. Many forms of forgetting are in fact reversible, and that the core information endures within the brain's engrams. I will present a formal model of natural forgetting, based on our empirical data, that will inform future experimental investigations. Finally, I will outline a novel framework that considers both natural and unnatural forgetting to be predictive processes that involve the interaction of a subject's priors with perceptual experience.

Invited Symposium Session 3

THE SCIENCE AND ENGINEERING OF THE SPEAKING BRAIN

Tuesday, April 16, 10:00 am - Noon, Ballroom East

Chair: Gopala Anumanchipalli[1]; [1]UC Berkeley/ UC San Francisco
Speakers: Greg Hickock, Liberty Hamilton, Stephanie Ries, Gopala Anumanchipalli

This session will bring together the latest in our understanding of the neural substrates of speech communication, guided by large scale studies of cortical recordings across humans, underlying the remarkable behavior of speech communication, both using speech impaired and control populations, across ages, and spanning various cognitive processes underlying speaking. We will then discuss current engineering approaches for rehabilitation of speech impaired individuals using cortical implants based on our current insights and neural engineering for creating Brain-Computer Interfaces for communication.

TALK 1: BEYOND BROCA: NEURAL ARCHITECTURE AND EVOLUTION OF A DUAL MOTOR SPEECH COORDINATION SYSTEM

Greg Hickock[1]; [1]Departments of Cognitive Sciences and Language Science, UC Irvine

Classical neural architecture models of speech production propose a single system centerd on Broca's area coordinating all the vocal articulators from lips to larynx. Modern evidence has challenged both the idea that Broca's area is involved in motor speech coordination and that there is only one coordination network. Drawing on a wide range of evidence, here we propose a dual speech coordination model in which laryngeal control of pitch-related aspects of prosody and song are coordinated by a hierarchically organized dorsolateral system while supralaryngeal articulation at the phonetic/syllabic level is coordinated by a more ventral system posterior to Broca's area. We argue further that these two speech production subsystems have distinguishable evolutionary histories and discuss the implications for models of language evolution.

TALK 2: MODULATION OF NEURAL RESPONSES DURING SELF-GENERATED SPEECH USING INTRACRANIAL RECORDINGS IN CHILDREN AND ADULTS

Liberty Hamilton[1]; [1]Department of Speech, Language, and Hearing Science; Department of Neurology; The University of Texas at Austin

Prior work on speech processing in the brain using intracranial recordings has shown that the superior temporal gyrus (STG) can be separated into two subregions: one posteriorly that encodes acoustic onsets, and one more anteriorly that evokes a more sustained response. The onset responses in the pSTG appear to be important for segmenting continuous speech information, but it is unclear how these responses are modulated by audiomotor feedback during speech production -- for example, when people hear their own voice versus external speech. In this talk, I will describe our findings from intracranial recordings from 17 patient participants across a wide age range (aged 8-37) while they performed a dual speaking and listening task and intracranial signals were recorded from auditory, motor, prefrontal, and insular regions of the brain. Participants read sentences aloud and then heard either immediate playback of the same sentence they had said, or playback of another sentence they had uttered in a previous trial. Overall, we found strong, specific suppression of neural onset responses in the STG that were not related to the predictability of playback. In addition, we found a specific subregion of the insula that exhibited fast latency dual onset responses during both perception and production. Our results have implications for understanding audiomotor feedback and the interactions between naturalistic speech perception and production.

TALK 3: BRAIN DYNAMICS OF COGNITIVE CONTROL MECHANISMS IN LANGUAGE PRODUCTION

Stephanie Ries[1]; [1]School of Speech, Language, and Hearing Sciences and Center for Abstract: Clinical and Cognitive Neuroscience, San Diego State University, San Diego, California, USA.

Although producing language seems relatively easy, a number of cognitive processes are needed to transform ideas into language output. Cognitive control processes are thought to play a crucial role in helping resolve different forms of conflict throughout language production. Our research examines the brain dynamics of cognitive control processes as they interact with core language processes through the use of behavioral data, and scalp and intracranial EEG. Results show that different parts of the prefrontal cortex are involved in resolving different types of conflict (proactive vs. reactive) at different time points, and that these prefrontal areas are functionally connected with core language regions in the left posterior temporal cortex as we are producing language.

TALK 4: CURRENT STATE OF COMMUNICATION NEUROPROSTHESES

Gopala Anumanchipalli[1]; [1]EECS, UC Berkeley/ Neurosurgery, UC San Francisco

In this talk, I will go over the latest advances in engineering approaches to create neuroprostheses for communication (Speech Brain-Computer Interfaces). I will summarize the efforts toward understanding the neural bases of speech production in the speech motor cortex, the primary region of interest for current speech prosthesis. I will then give a report on the state of current Brain-decoding approaches for communication (within the BRAVO clinical trial at UCSF) in speech impaired populations using invasive neural implants. I will discuss challenges and opportunities in bringing more insights from neurophysiology of speech production toward future neuroprosthesis.

Invited Symposium Session 4

THE GEOMETRY OF NEURAL REPRESENTATIONS OF TASKS: WHAT DOES IT MEAN FOR COGNITION AND BEHAVIOR?

Tuesday, April 16, 10:00 am - Noon, Ballroom Center + West

Chair: Tim Buschman[1]; [1]Princeton University

Speakers: Tatiana Engel, Nikolaus Kriegeskorte, Tatyana Sharpee, Tim Buschman

A central goal of cognitive neuroscience is to understand how the brain represents and transforms information relevant to the current task. Previous work has shown sensory inputs, thoughts, and actions are all represented in the pattern of activity across large populations of neurons. Yet, it has been difficult to understand how these high-dimensional representations relate to cognition and behavior. Recent work suggests new insights may come from understanding the geometry of neural representations – that is, how representations relate to one another in neural space. This symposium brings together speakers using experimental and computational techniques to understand how the geometry of neural representations can capture semantic meaning, facilitate learning, influence cognitive computations, and support behavior.

TALK 1: THE DYNAMICS AND GEOMETRY OF CHOICE IN PREMOTOR CORTEX

Tatiana Engel[1]; [1]Princeton University

The brain represents sensory variables in the coordinated activity of neural populations, in which tuning curves of single neurons define the geometry of the population code. Whether the same coding principle holds for dynamic cognitive variables remains unknown because internal cognitive processes unfold with a unique time course on single trials observed only in the irregular spiking of heterogeneous neural populations. We show the existence of such a population code for the dynamics of choice formation in the primate premotor cortex. We developed an approach to simultaneously infer population dynamics and tuning functions of single neurons to the population state. Applied to spike data recorded during decision-making, our model revealed that populations of neurons encoded the same dynamic variable predicting choices, and heterogeneous firing rates resulted from the diverse tuning of single neurons to this decision variable. The inferred dynamics indicated an attractor mechanism for decision computation. Our results reveal a unifying geometric principle for neural encoding of sensory and dynamic cognitive variables.

TALK 2: COMPARING TASK-PERFORMING MODELS BY THEIR PREDICTIONS OF REPRESENTATIONAL GEOMETRIES AND TOPOLOGIES

Nikolaus Kriegeskorte[1]; [1]Columbia University

Understanding the brain-computational mechanisms underlying cognitive functions requires that we implement our theories in task-performing models and adjudicate among these models on the basis of their predictions of brain representations and behavioral responses. Previous studies have characterized brain representations by their representational geometry, which is defined by the representational dissimilarity matrix (RDM), a summary statistic that abstracts from the roles of individual neurons (or responses channels) and characterizes the discriminability of stimuli. The talk will cover (1) recent methodological advances implemented in Python in the open-source RSA3 toolbox that support unbiased estimation of representational distances and model-comparative statistical inference that generalizes simultaneously to the populations of subjects and stimuli from which the experimental subjects and stimuli have been sampled, (2) computational insights on recurrent and generative processes in visual recognition gained with these methods, and (3) topological representational similarity analysis (tRSA), an extension of representational similarity analysis (RSA) that uses a family of geo-topological summary statistics that generalizes the RDM to characterize the topology while de-emphasizing the geometry. Results show that topology-sensitive characterizations of population codes are robust to noise and interindividual variability and maintain excellent sensitivity to the unique representational signatures of different neural network layers and brain regions.

TALK 3: HYPERBOLIC GEOMETRY OF NEURAL RESPONSES EXPANDS IN MAXIMALLY INFORMATIVE WAY

Tatyana Sharpee[1]; [1]Salk Institute

I will describe results showing that neural responses in the hippocampus have a low-dimensional hyperbolic geometry and that their hyperbolic size is optimized for the number of available neurons. It was also possible to analyze how neural representations change with experience. In particular, neural representations continued to be described by a low-dimensional hyperbolic geometry as the animal explored the environment but the radius increased logarithmically with

time. This time dependence matches the maximal rate of information acquisition by a maximum entropy discrete Poisson process, further implying that neural representations continue to perform optimally as they change with experience.

TALK 4: THE GEOMETRY OF COGNITIVE CONTROL

Tim Buschman[1]; [1]Princeton University

Cognition is flexible – behavior can change on a moment-by-moment basis. Such flexibility is thought to rely on the brain's ability to route information through different networks of brain regions in order to support different cognitive computations. However, the mechanisms that determine which network of brain regions is engaged are unknown. To address this, we combined cortex-wide calcium imaging with high-density electrophysiological recordings in eight cortical and subcortical regions of mice. This revealed different dimensions within the population activity of each brain region were functionally connected with different cortex-wide 'subspace networks' of regions. These subspace networks were multiplexed, allowing a brain region to simultaneously interact with multiple independent, yet overlapping, networks. Alignment of neural activity within a region to a specific subspace network dimension predicted how neural activity propagated between regions. Thus, changing the geometry of the neural representation within a brain region could be a mechanism to selectively engage different brain-wide networks to support cognitive flexibility.

Symposium Sessions

#	Title	Date	Time	Location
1	Into the night: The cognitive neuroscience of dreaming	Sunday, April 14	1:30 - 3:30 pm	Ballroom East
2	Hippocampal predictions link perception and memory	Sunday, April 14	1:30 - 3:30 pm	Ballroom Center
3	Multisensory Development Across the Neurotypical and Neurodivergent Lifespan: The Birth of a Research Consortium	Sunday, April 14	1:30 - 3:30 pm	Ballroom West
4	Reconciling the Impact of Emotion on Episodic Relational Memory	Sunday, April 14	1:30 - 3:30 pm	Sheraton Hall EF
5	Subjectivity: Who cares?	Monday, April 15	10:00 am - Noon	Ballroom East
6	Insights into flexible cognition: Structure learning, inference, and abstraction based on cognitive maps	Monday, April 15	10:00 am - Noon	Ballroom Center
7	Neurocognitive Mechanisms of Mindfulness: Insights from Basic Research and Translational Science	Monday, April 15	10:00 am - Noon	Ballroom West
8	A hands-on technical workshop for cognitive neuroscientists	Monday, April 15	10:00 am - Noon	Sheraton Hall EF
9	Cortical mechanisms for transsaccadic perception and memory	Tuesday, April 16	1:30 - 3:30 pm	Ballroom East
10	Endel Tulving and the Modern Science of Memory	Tuesday, April 16	1:30 - 3:30 pm	Ballroom Center
11	Advances in speech prosody perception research: Integrating behavioral, neuroimaging, (neuro)genomics, and clinical techniques	Tuesday, April 16	1:30 - 3:30 pm	Ballroom West
12	Leveraging social cognitive neuroscience tools to characterize heterogeneity in Autism Spectrum Disorder	Tuesday, April 16	1:30 - 3:30 pm	Sheraton Hall EF

Symposia Session 1

INTO THE NIGHT: THE COGNITIVE NEUROSCIENCE OF DREAMING

Sunday, April 14, 2024, 1:30 PM - 3:30 PM, Ballroom East

Chair: Remington Mallett[1,2]; [1]University of Montréal, [2]Center for Advanced Research in Sleep Medicine

Speakers: Erin Wamsley, Kathleen Esfahany, Saba Al-Youssef, Claudia Picard-Deland

While our grasp of waking cognition has expanded, the study of dreaming remains a complex and challenging field. This complexity is being unraveled thanks to technological and methodological innovations, shedding light on previously obscure aspects of dreaming. This symposium showcases these novel approaches and the scientific insights that have been derived from them. Through clever study designs and technical advancements, the speakers will explore fundamental questions about the cognitive neuroscience of dreaming. What do we dream about? Though dream content is popularly viewed as random and chaotic, Talk 1 will present a series of studies suggesting that what we dream about is systematically biased towards individualized semantic knowledge and assists with memory integration. Why do we dream? Talk 2 will present causal evidence implicating dreams as conducive to content-specific creativity, suggesting that the objects of our dreams are later subject to creative ideation in waking thought. How are dreams generated? Talk 3 implements real-time dream reporting to observe the neural mechanisms of perception in dreams. Does dreaming play a role in sleep health? Talk 4 will present new findings on the neural correlates of "deep dreaming" and its relationship with sleep misperception using an intensive lab procedure designed to collect detailed dream reports throughout the night. These presentations highlight the psychological complexity of sleep and its pivotal role in the broader context of cognitive neuroscience. These findings, and the methods developed to uncover them, suggest that cognitive neuroscience is ready to move into the night.

TALK 1: DREAMING AS EVIDENCE THAT RECENT EXPERIENCE TRIGGERS REACTIVATION OF SEMANTICALLY RELATED REMOTE MEMORY DURING SLEEP

Erin Wamsley[1]; [1]Furman University

The reactivation of newly formed memory in the sleeping brain both contributes to memory consolidation and influences dream content. Meanwhile, emerging evidence suggests that new learning is preferentially reactivated and consolidated during sleep when it overlaps with existing semantic or remote memory networks. In two studies, we tested the hypothesis that participants are especially likely to dream of recent experiences that overlap with well-established semantic or remote memory. Prior to sleep, we either exposed partic-

ipants to new information about a person they have extensive prior semantic knowledge about (a favorite celebrity, Study 1), or asked participants to write about an emotional remote autobiographical memory (Study 2). In both studies, we tracked the effect of this experimental manipulation on dream content, and also queried participants about other recent and remote memory sources of their dreams. In Study 1, the experimental manipulation failed to significantly affect dream content. However, in Study 2, participants very frequently incorporated the target remote autobiographical memory into their dreams. Beyond this, participants often reported dreams that combined fragments of other recent episodic memories with content drawn from semantically related remote episodes. These datasets provide rich information about how recent and remote memory fragments are incorporated into dreams, with multiple memory sources combining to create bizarre dream scenarios. We interpret these data as phenomenological evidence that during sleep, recent episodic memories are co-activated with related remote and semantic memory. These observations could be relevant to the integration of new experience into existing cortical networks during sleep.

TALK 2: TARGETED DREAM INCUBATION INCREASES SUBSEQUENT CONTENT-RELATED CREATIVITY

Kathleen Esfahany[1,2]; [1]Massachusetts Institute of Technology, [2]Harvard University

The link between dreams and creativity has been a topic of intense speculation. Recent scientific findings suggest that sleep onset (also known as N1) may be an ideal brain state for creative ideation. However, the specific link between N1 dream content and creativity has remained unclear. To investigate the contribution of N1 dream content to creative performance, we administered targeted dream incubation (a protocol that presents auditory cues at sleep onset to introduce specific themes into dreams) and collected dream reports to measure incorporation of the selected theme into dream content. We then assessed post-sleep creative performance using a set of three theme-related creativity tasks. We evaluated creativity task responses for both creative performance (using human raters) and semantic distance (using computational methods). Our findings show enhanced creative performance and greater semantic distance in task responses following a period of N1 sleep as compared to wake, corroborating recent work identifying N1 as a creative sweet spot and offering novel evidence for N1 enabling a cognitive state with greater associative divergence. We further demonstrate that successful N1 dream incubation enhances creative performance more than N1 sleep alone. To our knowledge, this is the first controlled experiment investigating a direct role of incubating dream content in the enhancement of creative performance.

TALK 3: **HOW DOES CLOSING ONE'S 'DREAM' EYES AFFECT** ALPHA POWER AND VISUAL CONTENT IN LUCID REM SLEEP?

Saba Al-Youssef[1,2]; [1]Sorbonne Université, [2]National Reference Centre for Narcolepsy

When dreaming, we experience strong visual imagery although our eyes are closed. During wake, closing one's eyes is robustly accompanied by the appearance of EEG alpha oscillations. We aim to test whether this fundamental property of the waking visual system is maintained during REM sleep and whether it is associated with dream visual content. To do so, we recruited lucid dreamers with narcolepsy, who are conscious of dreaming while in REM sleep, can perform tasks while dreaming and can signal the start/end of the task using muscular codes. Each participant had five naps monitored by polysomnography. We instructed participants to successively close and open their dream eyes (signaled via 2 or 1 sniffing, respectively), and to report whether they had a visual content in each condition by frowning (no visual content) or smiling (visual content). We then computed the occipital alpha power, time-locked on open/close signals. We found that having one's dream eyes open was always associated with visual content, but closing one's dream eyes did not always suppress visual content. Furthermore, we found a main effect of the visual content condition on the occipital alpha band power (increased alpha power in the absence of visual content). However, closing one's dream eyes did not reliably increase alpha power. This study should help better understand the neural correlates of visual perception during dreams.

TALK 4: SLEEP DEPTH, DREAM IMMERSION, AND THE NEURAL ARCHITECTURE OF SLEEP

Claudia Picard-Deland[1,2]; [1]University of Montréal, [2]Center for Advanced Research in Sleep Medicine

The subjective feeling of being asleep does not always correspond to objective measures of sleep. In this study, we aimed to uncover how sleep perception fluctuates across a night of sleep and how it relates to dream experience using a serial awakening paradigm. Participants spent a night in the laboratory and were awakened approximately 12 times spread across early, middle, and late periods of sleep, and covering all stages of sleep. After each awakening, participants were asked to report (a) how deeply asleep they felt, and, if dreaming, (b) how immersed and physically present they felt in their dream. We found that instances of feeling awake while asleep most often occurred in NREM sleep stages compared to REM sleep, especially in absence of dream recall. When participants did feel asleep, they rated their sleep as being deeper in early REM sleep compared to early N1 or N3 sleep; and deeper in late-night N1 and N3 sleep compared to early N1 and N3 sleep. In all stages of sleep, subjective sleep depth was strongly correlated with how immersive the dream experience was. The findings replicate and extend previous studies showing that sleep is perceived as deeper in the presence of rich and immersive dreams, which are more common in REM sleep or late-night sleep, contrasting

the conception of N3 sleep as the 'deepest' stage of sleep. Further clarifying the phenomenology of sleep depth across the night could inform underlying mechanisms and treatments for sleep disorders leading to restless sleep.

Symposia Session 2

HIPPOCAMPAL PREDICTIONS LINK PERCEPTION AND MEMORY

Sunday, April 14, 2024, 1:30 PM - 3:30 PM, Ballroom Center

Chair: Peter Kok[1], Morgan Barense[2]; [1]University College London, [2]University of Toronto

Speakers: Dhairyya Singh, Anna Schapiro, Oliver Warrington, Mariam Aly, Oded Bein

Memory and perception are intimately linked through prediction. Memory is used to generate predictions of upcoming perceptual events, and mismatches between those predictions and perception determine how we update our memories. Despite this, memory and perception are traditionally studied separately, with knowledge gained in one field not significantly impacting the other. In this symposium, we will bring together researchers that bridge this gap by studying predictions in order to uncover the interplay between what we see and what we remember. We will discuss how perceptual predictions influence memory formation (Singh, Bein) and how memory-based predictions influence sensory processing (Kok, Aly). The presented research will span the gamut of cognitive neuroscience techniques, from psychophysics and computational modeling to cutting edge human neuroimaging. The speakers also span a range of career stages, from PhD and postdoc to PI. Following the individual talks, we will have a general discussion on the current state of knowledge of the field and the most pressing outstanding questions (chaired by Barense). With this symposium, we aim to use prediction as a means to bridge the gap between memory and perception, allowing researchers in the two fields to interact and learn from each other, promoting new understanding and novel research avenues.

TALK 1: STATISTICAL LEARNING DRIVES PREDICTIVE SHIFTS IN OBJECT MEMORY

Dhairyya Singh[1], Anna Schapiro[1]; [1]University of Pennsylvania

The world around us is highly regular, with objects clustering predictably in time and space. How do statistical relationships between the objects in our environment impact the way we remember them? Previous work has shown that neural representations of objects morph closer together if they co-occur reliably in time, and there is a forward bias in these shifts, with objects moving closer to their successors in the hippocampus. It remains unclear whether and how these representational shifts manifest in our memory and what learning mechanisms may underlie them. Employing color memory as a continuous index of memory change, we investigated how the strength and direction of transition statistics shape object memory over the course of statistical learning. Participants viewed sequences of colored shapes consisting of pairs, with the first member of the pair predicting the second at varying transition probability strengths. The shapes from each pair were assigned nearby colors in a perceptually uniform colorspace. We found that color memory for predictive shapes systematically distorted towards the color of their successor shapes over the course of learning, especially for pairs with highly reliable transition probabilities. Our model of the hippocampus, trained through simple auto-encoding on an analogous task, recapitulated human behavioral results, with predictive object representations asymmetrically distorting toward their successors and the magnitude of the shift increasing in proportion to transition probability. Together, our results show how our memory for objects systematically shifts toward the predictable future and how simple hippocampal learning mechanisms can give rise to these changes.

TALK 2: LEARNING AND COMMUNICATION OF PERCEPTUAL PREDICTIONS BY THE HIPPOCAMPUS

Oliver Warrington[1]; [1]University College London

We constantly exploit the statistical regularities in our environment to help guide our perception. The hippocampus (HC) has been suggested to play a pivotal role in both learning environmental statistics, as well as exploiting them to generate perceptual predictions. However, the mechanisms whereby the hippocampus learns such predictions remain unclear, as does its potential role in communicating predictions to sensory cortex. Here, we present the results of high-resolution human fMRI work directly investigating this. We collected submillimetre 7T fMRI data to measure layer-specific activity in the medial temporal lobe (MTL), specifically the entorhinal (EC), parahippocampal (PHC), and perirhinal cortex (PRC). Layer-specific fMRI allows one to infer the direction of communication between the HC and MTL, since superficial layers of MTL project to the HC, while deep MTL layers receive feedback projections from HC. Participants performed a task in which an auditory cue predicted shapes in 75% of trials. Crucially, we omitted the expected shape on 25% of trials, thus isolating the prediction signal from the bottom-up input. Activity patterns in the posterior subiculum reflected the predicted-but-omitted shapes. We used layer-specific informational connectivity analysis to ask: In which direction are predictions communicated between the HC and neocortex? We find that the CA2/3 subfield of the hippocampus sends information specific to the predicted-but-omitted shapes to the deep layers of the PHC. These findings suggest that the HC sends prediction signals to the neocortex, adding weight to the suggestion of its pivotal role in generating perceptual predictions.

TALK 3: HIPPOCAMPAL MEMORIES ENABLE PREPARATION FOR ANTICIPATED ATTENTIONAL GOALS

Mariam Aly[1]; [1]Columbia University

In the complex world around us, it can be difficult to know what to pay attention to. We often solve that problem by leveraging our memories of past experiences, which help us determine which part of the world is most relevant for our goals. One key advantage of using memory to guide attention is that it affords the opportunity to predict what we will likely have to pay attention to in the future. What mechanisms allow memories to enable preparatory coding for anticipated attentional goals? A key candidate region for coordinating preparation for memory-guided attention is the hippocampus, given its roles in attention, long-term memory, and prediction. In complementary fMRI studies, we investigated how the human hippocampus may enable preparation for upcoming attentional states. First, we show that the hippocampus exhibits preparatory coding for anticipated attentional tasks. This hippocampal preparation signal is stronger when attention is guided by memory rather than an explicit instruction. Second, we show that the ability of the hippocampus to differentiate similar memories allows the resolution of competition in memory-guided attention. Hippocampal differentiation of competing memories predicts both the precision of subsequent memory-guided eye movements and the precision of preparatory coding in visual cortex prior to the execution of visual search. Together, these studies show that hippocampal memories can serve an adaptive role in online attentional behavior by influencing our ability to predict how and where we should direct our attention.

TALK 4: BUILDING EVENT MODELS: HOW HIPPOCAMPAL SUBFIELDS DIFFERENTIALLY SEGMENT EVENTS THROUGH LEARNING, AND HOW ANXIETY ALTERS EVENT SEGMENTATION

Oded Bein[1]; [1]Princeton University

Event representations are knowledge of unfolding occurrences within a context. They guide context-relevant predictions, memory, and behavior, and are segmented at changes of context, termed 'event boundaries'. I ask how the hippocampus represents events through learning, and how event representations alter in anxiety. Neurotypical participants viewed sequential events while undergoing high-resolution fMRI. Event lists were repeated in identical order to induce learning and predictability. Behavioral segmentation, indexed by increased reaction times at event boundaries, was observed in all repetitions, which is at odds with prediction errors at boundaries triggering segmentation. Neurally, as events became learned, hippocampal CA3 multivoxel activation patterns clustered to reflect the event context. In contrast, the dentate gyrus exhibited event-specific temporal pattern separation, with temporally proximal items belonging to the same event becoming more differentiated, potentially maintaining event details. While these results might reflect appropriate context representation, variations in context representation may play a role in mental health concerns. In anxiety, overgeneralization of fear might result from poor separation between contexts. However, recent evidence showed enhanced sensitivity to context changes in anxiety. In large online studies, we asked how trait anxiety influences event segmentation. We found that, during story reading, anxious individuals (based on self-report) read slower specifically sentences that included boundaries. In another study, we tested how participants segment movie clips into events. Anxious individuals segmented events more like the group norm, potentially reflecting more precise segmentation. Together, these studies suggest hierarchical event representations in the hippocampus, and slower, but more precise, event segmentation in anxiety.

Symposia Session 3

MULTISENSORY DEVELOPMENT ACROSS THE NEUROTYPICAL AND NEURODIVERGENT LIFESPAN: THE BIRTH OF A RESEARCH CONSORTIUM

Sunday, April 14, 2024, 1:30 PM - 3:30 PM, Ballroom West

Chair: Mark Wallace[1], Micah Murray[2,3]; [1]Vanderbilt University, [2]Lausanne University Hospital, [3]University of Lausanne

Speakers: Mark Wallace, David Tovar, Micah Murray, Monica Gori, David Lewkowicz

One of the most challenging jobs for the developing brain is the almost continually changing nature of the sensory information that it is tasked with processing. In addition to the widening experiential repertoire of the child, the sensory organs and the body itself are changing rapidly as the child matures. Layered on top of this is the fact that these brains must combine (as well as segregate) information coming from the different modalities in order to form a coherent perceptual gestalt. Although we have a number of important snapshots of the function and organization of sensory and multisensory systems at various ages, we are still lacking a more comprehensive understanding of the longitudinal progression of events leading up to the mature system. To address this knowledge void, the symposium highlights the work of a newly formed consortium structured to detail how multisensory processes and their neural correlates change across lifespan, how these developmental processes differ between various neurodivergent and neurotypical children, and how this maturation relates to the development of higher-order cognitive capacities. A special element of the consortium is the creation of immersive environments across each of the sites to examine multisensory development in more naturalistic settings.

TALK 1: MULTISENSORY TEMPORAL DEVELOPMENT IN AUTISM: CONTRIBUTIONS TO THE BROADER PHENOTYPE

Mark Wallace[1], David Tovar[1]; [1]Vanderbilt University

Previous work has shown that the development of multisensory temporal acuity is surprisingly protracted, although its exact longitudinal progression has yet to be fully elucidated. How such an extended maturational timecourse for multisensory development relates to higher-order cognitive abilities has yet to be determined. Such a knowledge gap is surprising, given that aspects of early sensory and multisensory development are highly likely to scaffold the construction and maintenance of various cognitive domains. Some insight into this question has come from our prior work in autistic children ages 8-12, which has shown poorer audiovisual temporal acuity when compared with neurotypical peers. Furthermore, these alterations in audiovisual temporal acuity map onto weaknesses in the magnitude of the child's ability to integrate or "bind" elements of audiovisual speech. Follow up work has focused on perceptual plasticity-based training approaches in autistic children focused on improving audiovisual temporal acuity and cascading effects onto distal measures of social communication. Such results in neurodiverse children emphasizes the need to better characterize multisensory temporal acuity from birth until adulthood, and to examine links between this facet of sensory development and the maturation of cognitive domains.

TALK 2: LOW-LEVEL MULTISENSORY PROCESSES: FROM THE IMPACT OF EARLY LIFE EXPERIENCE TO THE PREDICTION OF HIGHER-ORDER COGNITION

Micah Murray[1,2]; [1]Lausanne University Hospital, [2]University of Lausanne

Multisensory processes subserve the combination and segregation of sensory information, oftentimes improving stimulus representations and behavior. Whether multisensory processes are an innate capacity or instead require experience with environmental stimuli remains debated. We addressed this knowledge gap by studying multisensory processes in preterm and full-term infants. Atypical early-life experiences, such as preterm birth, can have a dramatic impact on how sensory information is processed and integrated. We show this across multiple developmental timescales. Multisensory processes at hospital discharge sharply differ between full-term and preterm neonates. While full-term children exhibit linear auditory-somatosensory neural response interactions, responses from preterm children are nonlinear and characterized by topographic modulations. What's more, the degree of topographic modulation in multisensory, but not unisensory brain responses, was predictive of sensory profiles at 12 months of age and internalizing tendencies at 24 months of age. We further showed that effects of premature birth persist into late childhood. Preterm schoolchildren, when tested on a multisensory simple detection task, exhibited general slowing as well as larger variability in reaction times. Nonetheless, all children exhibit multisensory facilitation. However, while the facilitation observed in full-term children exceeded probability summation predictions and thus forcibly invoked neural response interactions prior to motor response initiation, this was not the case in pre-term schoolchildren. Finally, we provide additional evidence for multisensory processes providing the scaffolding for global cognitive function in healthy schoolchildren. These collective results underscore the interplay of early-life events on sensory and cognitive development and reinforce the call for targeting supportive interventions throughout childhood.

TALK 3: MULTISENSORY INTEGRATION AND SENSORY INTERACTION DURING THE DEVELOPMENT

Monica Gori[1]; [1]Italian Institute of Technology

Multisensory integration is functional to our interaction with the environment by improving perceptual precision, accuracy, and reaction times. The mechanisms that subtend multisensory development are still unclear. In the past, we have highlighted the importance of sensory interaction in scaffolding multisensory integration. Results from our works show how visual modality is critical in developing audio and tactile integration. Without vision, audio space and body representations are altered making the integration between audio and touch impossible or reduced in blind with respect to sighted infants and in children. In infancy (age 5-36 months), we observe good audio-tactile integration for simple space localization in sighted participants and reduced multisensory integration in blind infants. Alterations in blind infants are also evident at the tactile level considering body representation in space. EEG data in blind infants show different cortical processing compared to sighted for tactile localization when the hands are positioned in the canonical or un-canonical position. In childhood (age 5-14 years), we observed in sighted participants a late development of audio and tactile integration for ventriloquist tasks, the rubber hand illusion and the temporal binding window. No multisensory integration was evident in blind peers. These results suggest that sensory interaction is one of the building blocks of multisensory development. The strict connection between sensory interaction and multisensory development offers a model to disentangle the basic principles that subtend our ability to interact in a multisensory environment and allow us to develop science-driven technology to improve the quality of life of sensory impaired individuals.

TALK 4: THE MULTISENSORY COCKTAIL PARTY PROBLEM (MCPP): PERCEPTUAL SEGREGATION AND INTEGRATION OF MULTISENSORY INPUTS DEVELOPS GRADUALLY

David Lewkowicz[1]; [1]Yale University

Social events usually consist of multiple people talking (e.g., a party). Successful communication between any two individuals at such an event requires them to solve the MCPP. They must perceptually

segregate the unique auditory and visual attributes of each social partner and then integrate the corresponding pairs of auditory and visual attributes into unitary multisensory entities. This is a challenging task for infants and children whose ability to process and integrate multisensory information develops gradually. To investigate the developmental emergence of the ability to solve the MCPP, we have conducted studies in which participants can see multiple talking faces articulating temporally jittered monologues while they hear an audible monologue which is either only temporally synchronized with one of the talking faces or also correlated in terms of identity and/or semantic cues. Using an eye tracker, we measure selective attention to each of the faces and the eyes and mouth of each face to study perceptual segregation and integration. Findings indicate that starting at 3 years of age children begin preferring the audio-visually synchronized talking face, that this preference increases substantially with age, that the preference is driven by lipreading, and that audio-visual synchrony plays an outsize role compared to identity and semantic cues. These findings demonstrate that the challenges of the MCPP become more tractable with development and suggest that the observed improvement in perceptual segregation and integration of multisensory clutter likely contributes to speech and language acquisition and a general improvement in children's communication skills.

Symposia Session 4

RECONCILING THE IMPACT OF EMOTION ON EPISODIC RELATIONAL MEMORY

Sunday, April 14, 2024, 1:30 PM - 3:30 PM, Sheraton Hall EF

Chair: Florin Dolcos[1], Deborah Talmi[2]; [1]University of Illinois at Urbana-Champaign, USA, [2]University of Cambridge, UK

Speakers: Florin Dolcos, Paul Christian Bogdan, Yuta Katsumi, Alexandru Daniel Iordan, Simona Buetti2, Alejandro Lleras, Hillary Schwarb, Kara Federmeier, Kelly Freeman Bost, Sanda Dolcos, Deborah Talmi, Emilie De Montpellier, Rik Henson, Hannah Bernhard, Mathias Weymar, Janine Wirkner, Julia Wendt, Lars Schwabe, Florin Dolcos, Alfons O. Hamm, Carlos Ventura-Bort, Daniela Palombo, Omran Safi, Chantelle Cocquyt, Victoria Victoria Wardell

The effects of emotion on memory are wide-ranging and powerful, but they are not uniform. Although there is agreement that emotion enhances memory for individual items, how it influences memory for associated contextual details (relational memory, RM) remains debated, and the factors influencing these discrepant findings are not clear. Clarifying the circumstances in which emotion enhances or impairs RM has game-changing practical benefits for improving RM in healthy functioning and for alleviating RM declines associated with psychopathology and aging. Capturing the richness or RM is a significant challenge. Studies identifying impaired RM by emotion typically measure accuracy in recognizing spatially-based relations between pictorial items and associated contexts, such as between the picture of an accident and the background where it occurred. However, assessments that capture more fully the richness of RM (e.g., by probing participants to recollect specific contextual details surrounding emotional stimuli – what, where, when) often identify enhancing effects of emotion on RM. Adding to this controversy, emerging studies specifically investigating the impact of emotion on memory for associated temporal details of events also point to inconsistent findings. Benefitting researchers, practitioners, and educators alike, this comprehensive symposium addresses central open issues: Dolcos will provide reconciling evidence from behavioral, eye-tracking, and functional neuroimaging investigations, Talmi will discuss evidence disproving the prevalent view that emotion impairs RM, Weymar will present brain imaging, electrophysiological, and neurostimulation evidence regarding the impact of emotion on RM, and Palombo will pinpoint the circumstances in which emotion enhances or impairs memory for temporal associations.

TALK 1: RECONCILING OPPOSING EFFECTS OF EMOTION ON RELATIONAL MEMORY: BEHAVIORAL, EYE-TRACKING, AND BRAIN IMAGING EVIDENCE

Florin Dolcos[1], Paul Christian Bogdan[1,2], Yuta Katsumi[1,3], Alexandru Daniel Iordan[1,4], Simona Buetti2[1], Alejandro Lleras[1], Hillary Schwarb[1,5], Kara Federmeier[1], Kelly Freeman Bost[1], Sanda Dolcos[1]; [1]University of Illinois at Urbana-Champaign, [2]Duke University, [3]Harvard Medical School, [4]University of Michigan, [5]University of Nebraska

Available evidence suggests that emotion impairs relational memory (RM), but there is also evidence that emotion enhances RM. To reconcile these diverging findings, we performed three main studies incorporating the following features: (1) increased specificity of testing RM, by distinguishing between subjective (recollection-based) and objective (item-context match) RM accuracy, (2) accounted for emotion-attention interactions via eye-tracking and task manipulation, and (3) used stimuli with integrated item-context content. Challenging the view that emotion impairs RM, we identified both enhancing and impairing effects. First, emotion enhanced subjective RM, separately and when confirmed by accurate objective RM. Second, emotion impaired objective RM through attention-capturing, but it enhanced RM accuracy when attentional effects were statistically accounted for using eye-tracking data. Importantly, these two sets of findings were replicated and extended in two larger online studies. Third, emotion also enhanced RM when participants were specifically cued to focus on contextual details during encoding, likely by increasing item-context binding. Finally, challenging models of emotion-RM interactions, fMRI data recorded from a subset of participants showed that enhanced RM by emotion was associated with increased activation within and functional connectivity among regions involved in emotion (amygdala) and context (parahippocampal cortex) processing, and in item-context binding (hippocampus). These results challenge the prevalent view

that emotion impairs RM by inhibiting the hippocampal engagement in binding operations. Overall, these findings reconcile evidence regarding opposing effects of emotion on RM and inform training interventions to increase RM specificity in healthy functioning, PTSD, and aging, by promoting item-context binding and diminishing memory decontextualization.

TALK 2: NO EVIDENCE THAT EMOTION DECREASES HIPPOCAMPALLY-BASED ASSOCIATIVE BINDING: RESULTS OF AN EMOTIONAL VARIANT OF THE WEATHER-PREDICTION TASK

Deborah Talmi[1], Emilie De Montpellier[1], Rik Henson[1], Hannah Bernhard[1]; [1]University of Cambridge

The weather-prediction task offers a well-established methodology to identify the contribution of the hippocampus to associative binding. This is achieved by comparing the 'paired-associates' condition, where participants memorise associations between patterns and outcomes, and the 'feedback' condition, where they learn them through trial-and-error. Neuroimaging and neuropsychology results suggest that the paired-associate condition relies on hippocampal mechanisms. Because conditions are well-matched, comparing them inference about hippocampal mechanisms is less vulnerable to measurement noise. We replaced traditional abstract patterns by negative or neutral scenes to test whether emotion impairs hippocampally-based associative binding. Two pre-registered experiments used a 2 (Emotion: negative/neutral) X 2 (Learning condition: feedback/paired-associates). Ratings suggested that the emotion manipulation was successful. We obtained no evidence that emotion impairs hippocampally-based associative binding. Analysis of participants' learning strategy provided no evidence that emotion decreased deployment of hippocampally-based 'simple' strategies. Present results suggest that previous findings using paired-associate memory tests, where emotion decreased memory performance, may not be due to the effect of emotion on hippocampally-dependent associative binding. Our results add to evidence that the dual-representation account, originally developed to account for trauma memories in post-traumatic stress disorders, may not account for memory performance in laboratory settings where stimuli that are less personally traumatic.

TALK 3: EFFECTS OF EMOTION AND STRESS ON ITEM VS. CONTEXTUAL MEMORY: BRAIN DYNAMICS AND NEURAL SUBSTRATES

Mathias Weymar[1], Janine Wirkner[2], Julia Wendt[1], Lars Schwabe[3], Florin Dolcos[4], Alfons O. Hamm[2], Carlos Ventura-Bort[1]; [1]University of Potsdam, Germany, [2]University of Greifswald, Germany, [3]Universität Hamburg, Germany, [4]University of Illinois at Urbana-Champaign, USA

It is well known that single arousing emotional events are better remembered than neutral events, a mechanism mediated by the release of stress hormones. When emotional information is encoded as a part of a complex event, such as in the context of or in relation to other events, the beneficial effect of emotion on memory and the role of stress, however, has been less clear so far. In the present talk I present data from a series of studies, in which we found that non-invasive vagal nerve stimulation (taVNS), putatively targeting the LC/NA system, enhances recollection memory for emotional scenes. We further show that objects that have been encoded in the context of emotional compared to neutral scenes were better remembered (source memory). Using ERPs and functional neuroimaging (fMRI) we further demonstrate that correct recognition of these emotional associates (objects from emotional background scenes) produced enhanced parietal ERP Old/New differences as well as larger activation in parietal and prefrontal regions, as part of the recollection network for item and source memory. Interestingly, when acute stress was applied during item/context binding at encoding, opposing effects emerged with stronger brain activation in regions of the recollection network during item retrieval and impaired activation during context (particularly unpleasant) retrieval. Taken together, our line of research provides new insights into the binding mechanisms of emotional and neutral item/context information, which could also be important for better understanding memory abnormalities and neural changes that are typically observed in individuals suffering from stressor- and trauma-related disorders.

TALK 4: THE TEMPORAL TAPESTRY OF EMOTIONAL MEMORY: UNTANGLING THE THREADS

Daniela Palombo[1], Omran Safi[1], Chantelle Cocquyt[1], Victoria Victoria Wardell[1]; [1]University of British Columbia

The events of our lives unfold in time. Later, when we remember those events, we can recall not only what transpired, but also their sequential unfolding and the amount of time that elapsed—namely, 'remembered time.' How does emotion, especially negative emotion, affect our ability to stitch together the elements of an event with correct temporal features? During my presentation, I will present an overview of recent studies from my laboratory that revolve around this question. Specifically, these studies utilize video, virtual reality, and other naturalistic stimuli to explore the influence of negative emotion on memory for temporal order and temporal duration. Our work—in combination with an established and growing body of literature—suggests that the effects of negative emotion on both aspects of temporal processing are intricate. They evidence enhancements, impairments, or no effects at all under different experimental circumstances. Seeking to reconcile the myriad of findings, I will provide a theoretical roadmap poised to steer future efforts in this domain of cognition. I will also delve briefly into the applied implications of this roadmap in the context of mental health and beyond.

Symposia Session 5

SUBJECTIVITY: WHO CARES?

Monday, April 15, 2024, 10:00 AM – 12:00 PM, Ballroom East

Chair: Brian Levine[1,2], Brad Buchsbaum[1,2]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]Department of Psychology, University of Toronto

Speakers: Peggy L. St. Jacques, Brad Buchsbaum, Brian Levine, Wilma Bainbridge

Science demands operationalization. In the study of memory, recall or recognition responses are interpreted according to that test's scoring criteria, enabling agreement on what is right and wrong. Yet the same answer can arise from vastly different subjective experiences. Two rats may select the same option upon presentation with a forced-choice, yet one is – in Guthrie's words – "buried in thought" while the other selects without a care. Plumbing a rat's consciousness is ill-advised, and by some accounts the attempted measurement of subjectivity in humans is only slightly better, and yet we still do it because it currently provides the only way we know how to access the inner life of other people. This symposium will address the scientific study of subjectivity within and beyond memory through experimentation, analysis of cortical reinstatement, and analysis of individual differences. These presentations will address whether subjectivity matters, how it relates to objective neural activity measures, and how to leverage networked brain connectivity and cognitive science to improve both the understanding of conscious experience and outcome prediction. The symposium will conclude with a discussion led by Dr. Andy Yonelinas

TALK 1: VISUAL PERSPECTIVE BIASES AUTOBIOGRAPHICAL REMEMBERING

Peggy L. St. Jacques[1]; [1]University of Alberta, Edmonton, Canada

Autobiographical memories are not veridical records of the personal past but instead can be retrieved in novel ways from how the past occurred, such as when people adopt alternative visual perspectives. People report that they can retrieve events from one of two perspectives: 1) an own eyes perspective, from the same viewpoint where the event was initially experienced, and 2) an observer-like perspective, where one might "see" themselves in the remembered event. In this talk, I will discuss how the flexible ability to shift perspective in autobiographical memories biases how people remember. First, I will describe evidence about how that visual perspective alters subjective and objective characteristics of autobiographical memories and contributes to inconsistencies in narratives of the personal past. Then, I will present fMRI evidence demonstrating how visual perspective cues bias autobiographical memory recall in a goal-directed way by recruiting angular gyrus and precuneus. Finally, I will end with a discussion of whether all individuals are able to adopt multiple viewpoints, and the potential implications on how shifts in visual perspective influence memory. Together these findings reveal how our subjective point-of-view biases the way that we remember the personal past.

TALK 2: GROUNDING INTROSPECTIVE EPISODIC MEMORY JUDGEMENTS WITH NEURAL READOUTS

Brad Buchsbaum[1,2]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]Department of Psychology, University of Toronto

At the turn of the 20th century the budding field of experimental psychology was dominated by "introspectionism", a methodology in which the "observer" and the "subject" are one and the same person. Introspectionism was, for good reason, a dead end; however, human episodic memory is inescapably subjective, and although introspectionism may not be a grounds for a science of memory, phenomenological experience remains an important and valid object of study. I will present a line of evidence that uses functional magnetic resonance imaging (fMRI), behavioural measures, and eye-movement data, as a way to objectively link subjective experience associated with detailed memory retrieval, and co-occurring physiological signals measured in the brain. In a series of studies we have shown that 1) judgements of memory vividness correspond to the decodability of multivoxel patterns of neural activity, 2) that memories that are reported to be vivid are also more accurate, 3) that eye-movement patterns are more faithfully "reinstated" during vivid memories, and 4) that individual differences in average vividness ratings are linked to neural reinstatement in distributed areas of the neocortex. Finally, we outline a new method for classifying the vividness of a memory or imagination based only on a "readout" of fMRI patterns of activity. Such a method holds the promise of offering a scientifically neutral way of assessing subjective memory experiences with physiological measurement tools.

TALK 3: INDIVIDUAL DIFFERENCES IN SUBJECTIVE MEMORY: BRAIN IMAGING, COGNITION, AND PSYCHOPATHOLOGY

Brian Levine[1]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]Department of Psychology, University of Toronto

It has long been understood that responses on memory tests -- whether free recall or recognition -- are associated with heterogenous subjective experiences, including confidence, familiarity, or recollection. While there is a rich tradition of assessing such responses across items or in response to manipulations, comparatively little research has been conducted on individual differences in recollection or stable mnemonic traits, yet the existence of such differences ("How good (or bad) is my memory?") is generally accepted. The identification of extreme individual difference profiles in memory and imagery (e.g., Highly Superior Autobiographical Memory, HSAM; Severely Deficient Autobiographical Memory, SDAM; hyperphantasia, aphantasia) provides leverage on such traits in group studies, leading

in turn to full-spectrum assessment individual differences in large samples. Structural and functional neuroanatomical findings in SDAM provide objective measures of subjectively-reported low recollection and imagery, including marked asymmetries (L>R) in medial temporal lobe structures, reduced integrity of the fornix, and reduced cortical re-instatement of low-level visual features in visual memory. People with SDAM are biased towards processing of semantic or implicational features that cut across epodes, as opposed to unique details. This processing mode confers advantages on tasks requiring conceptual analysis, including STEM occupations that are more prevalent in SDAM. Moreover, when exposed to trauma, people with SDAM are less likely to develop post-traumatic psychopathology, possibly due to their reduced visual re-experiencing. This and other research underscores the importance of considering subjectivity in mnemonic assessments, as well as an individual differences framework in cognitive and clinical neuroscience.

TALK 4: IS A LACK OF VISUAL IMAGERY SUBJECTIVE OR OBJECTIVE (OR BOTH)?

Wilma Bainbridge[1]; [1]Department of Psychology, University of Chicago

Congenital aphantasia has emerged as a fascinating condition in which individuals report no experience of visual imagery or recall, despite intact perception and semantic memory. As a result, this group serves as a natural "knock-out" case of visual memory that allows us to examine dissociations between visual perception and recall. However, one major question is whether the lack of visual imagery could be explained by a lack of conscious access to successfully reinstated information. To answer this question, we studied the imagery experience of a pair of identical twins: one with aphantasia and one with typical imagery. First, we confirmed their divergent imagery experiences through behavioral and drawing measures. Second, we conducted an fMRI study in which they performed visual perception and recall tasks using both novel and highly familiar stimuli. We were successfully able to decode the stimulus category (i.e., face or scene) being perceived and recalled by both individuals, suggesting the aphantasic twin still experiences retrieval of visual memory. However, importantly, while we could cross-decode patterns between perception and recall across multiple cortical regions in the typical imagery twin, we could not in the twin with aphantasia. This suggests that their reinstated representation is fundamentally different from their perceptual representation. Additionally, we could cross-decode perceptual representations for the same items between twins but not memory representations. In sum, these results suggest that the experience of aphantasia can be objectively measured in the brain, and may reflect an interesting difference in how their memories are represented and retrieved.

Symposia Session 6

INSIGHTS INTO FLEXIBLE COGNITION: STRUCTURE LEARNING, INFERENCE, AND ABSTRACTION BASED ON COGNITIVE MAPS

Monday, April 15, 2024, 10:00 AM - 12:00 PM, Ballroom Center

Chair: Stephanie Theves[1]; [1]Max Planck Institute for Human Cognitive and Brain Sciences

Speakers: Stephanie Theves, Alison R. Preston, Erie D. Boorman, Yunzhe Liu

The concept of a cognitive map, a mental model that integrates various relationships between experiences, has been a long-standing idea in psychology. Systems neuroscience has provided compelling evidence for a neural implementation of cognitive maps within the hippocampal-entorhinal memory and navigation system. Theoretically, cognitive maps are assumed to form the basis for inference, abstraction, and generalization, thereby providing flexibility to cognitive operations. Yet, whether and how hippocampal processing incorporates these functions in human cognition is not fully understood and a vibrant field of research. In this symposium, four speakers offer a variety of approaches and complementary perspectives on the role of the human hippocampal-entorhinal system in rapid structure learning and in making novel inferences. Theves presents behavioral and fMRI evidence that similar hippocampal-entorhinal mechanisms which form cognitive maps of physical spaces, also support concept formation, updating of category boundaries, and category abstraction. Preston leverages rare insights in the developmental trajectories of hippocampal and frontoparietal task representations to link them to differences in memory and inference performance. Boorman suggests that the entorhinal cortex, hippocampus, and mPFC track cognitive map relationships at different levels of abstraction to flexibly compute decision variables based on task demands. Finally, Liu deploys intracranial EEG recordings to unveil the contribution of hippocampal replay to cognitive map formation in offline periods and to on-task inferences. In conclusion, the findings presented in this symposium promise to shed new light on our understanding of how the hippocampal-entorhinal system supports flexible cognition.

TALK 1: THE ROLE OF COGNITIVE MAPS IN CONCEPT UPDATING AND PROTOTYPE ABSTRACTION

Stephanie Theves[1]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig

How does the human brain transform experiences into concepts? Recent evidence suggests that the ability to extract commonalities and to mark distinction across experiences to build generalisable knowledge is supported by the same hippocampal mechanisms that create cognitive maps of physical spaces. Neuroimaging studies show that, as a result of concept learning, the hippocampus encodes distances between exemplars as well as category boundaries in a

representational space along defining feature dimensions. I will present results of two studies that link these properties to key features of concept representations: updating of category boundaries and prototype abstraction. The first, behavioural study shows that category boundary shifts during concept learning exert similar effects on human memory as physical boundary changes and that the observed distortions are consistent with predictions derived from a place cell population model. The second fMRI study evaluates hippocampal mechanisms underlying prototype abstraction and category-based inferences. Results suggest that, alongside the emergence of an entorhinal grid-like representation of the underlying feature space after concept learning, the hippocampus represents unseen category prototypes as central positions in a cognitive map and guides cortical instatement of prototype features during category-based decisions. This may link hippocampal processing to the long-held view that cognitive maps afford the interpolation to never-experienced states.

TALK 2: HIPPOCAMPAL AND FRONTOPARIETAL DEVELOPMENT ENHANCE KNOWLEDGE OF SPECIFICS AND GENERALITIES

Alison R. Preston[1]; [1]The University of Texas at Austin

Hippocampus structure and connectivity with frontoparietal regions develop into adolescence, a period associated with substantial gains in memory and reasoning. While such structural changes are well documented, we know less about the functions that hippocampal and frontoparietal development confer, fundamentally limiting mechanistic understanding of how children and adolescents learn and reason about the world. From early life, children can learn simple associations that they directly experience. However, with age, memory becomes more complex, reflecting not only directly observed information, but also knowledge derived across multiple episodes. Such derived knowledge is hierarchical, representing generalities across experiences while simultaneously exaggerating important differences between them. Hierarchical cognitive maps thus support inference decisions about event relationships, while also preserving detailed memory for when and where those relationships might vary by context. In this talk, I will discuss three developmental neuroimaging studies leveraging computational methods with both spatial and non-spatial tasks. I will show that hippocampal, ventromedial prefrontal cortex (vmPFC), and lateral parietal cortex (LPC) representation undergoes qualitative changes during development, shifting from representing simple, individual associations to a system that extracts hierarchical knowledge about the relationships between experiences. I will further show developmental differences in hippocampal error signaling drive age-related differences in memory updating that predict developmental differences in behavior. I will also show that hippocampal representations reflect simple associations in children and adolescents, while the mature hippocampus and vmPFC code inferred, generalizable knowledge. Finally, I will show developmental differences in how LPC mediates flexible decision making that draws upon learned cognitive maps.

TALK 3: COGNITIVE MAPS, COGNITIVE DEMANDS, AND INFERENCE

Erie D. Boorman[1]; [1]University of California, Davis

Cognitive maps refer to internal representations of spatial or non-spatial relationships between physical locations, people, objects, and events in the world that afford behavioral flexibility. In my talk I will present a series of studies showing that the hippocampus (HC), entorhinal cortex (EC), and orbitofrontal/ventromedial prefrontal cortex (OFC/vmPFC) construct unitary cognitive maps of abstract social hierarchical relationships sampled piecemeal. We further find that novel direct inferences made over these abstracted cognitive maps use a grid-like code in EC and mPFC when they are composed on the fly during decision making. A second study decouples the abstract position in the cognitive map from its contents, and reveals both stable and highly flexible, context-dependent coding in the EC-HC-mPFC network, and an abstraction hierarchy amongst these regions, with EC showing the most abstract coding. Collectively, these studies show how task demands sculpt the subjective map's representational geometry and how this geometry effectively balances context-invariant representations ideal for generalization with context-specific representations ideal for the particularities of the task at hand.

TALK 4: HIPPOCAMPAL RIPPLE TRIGGED BRAIN-WIDE ACTIVATION UNDERLIES LEARNING AND INFERENCE

Yunzhe Liu[1]; [1]Beijing Normal University

The intricate interplay between cortico-hippocampal interactions during rest and sleep is postulated to be the foundation of offline learning and memory consolidation. Yet, its exact neural mechanism in humans remain elusive. We delve into this question by observing human patients diagnosed with drug-resistant epilepsy, monitored via intracranial EEG (iEEG). In this talk, I will cover 1) the hippocampal sharp-wave ripple (SWR) triggered brain-wide connectivity during deep sleep (N3 stage of NREM sleep), 2) the role of hippocampal ripple in offline learning to form the cognitive map, 3) as well as on-task inference based on the relational knowledge.

Symposia Session 7

NEUROCOGNITIVE MECHANISMS OF MINDFULNESS: INSIGHTS FROM BASIC RESEARCH AND TRANSLATIONAL SCIENCE

Monday, April 15, 2024, 10:00 AM - 12:00 PM, Ballroom West

Chair: Erika Nyhus[1]; [1]Bowdoin College

Speakers: Kathryn Devaney, David Ziegler, Norman Farb, Erika Nyhus

Mindfulness meditation is the practice of becoming aware of present-moment experience with a compassionate, nonjudgmental stance (Kabat-Zinn, 1990). This seemingly simple act has had a profound impact on the world. In fact, the two most popular Mindfulness Apps, Headspace and Calm, have had over 200 million downloads. With such broad reaching impact, we've all heard the hype about mindfulness meditation, but what does the research show? Does mindfulness meditation really alleviate stress and improve cognition? How does mindful meditation change the brain? In this symposium, we examine the effects of mindfulness meditation on brain network activation, attention, emotion regulation, and episodic memory. To address these areas, we bring together researchers with diverse perspectives and methods, including behavioral methods employing expert meditators, in person meditation training, and mindfulness training Apps and neuroimaging methods using fMRI, EEG, and brain stimulation methods. This symposium will be of interest not only to researchers studying attention and memory, but to the general CNS audience interested in mindfulness meditation.

TALK 1: HIGHLY EXPERIENCED MEDITATORS DISPLAY ENHANCED STABILITY IN SUSTAINED ATTENTION PROCESSES AND ALTERED RESTING-STATE CONNECTIVITY

Kathryn Devaney[1]; [1]University of California, Berkeley

Meditation experience has previously been shown to improve performance on behavioral assessments of attention, and has been posited to effect predictive processing systems, but the neural bases of these changes are unknown. Here, we used functional magnetic resonance imaging (fMRI) to contrast cortical network activation between highly experienced focused attention Vipassana meditators and matched controls. Participants performed two attention tasks during scanning: a sustained attention task and an attention-capture oddball task (Devaney et al 2019). Meditators demonstrated increased magnitude of differential activation in the dorsal attention network (DAN) vs. default mode network (DMN) in the sustained attention task, relative to controls. A resting state functional connectivity analysis revealed a greater magnitude of anticorrelation between DAN and DMN in the meditators, compared to both our local control group and a n = 168 Human Connectome Project dataset. In contrast, attentional reorienting did not reveal attention network differences between meditators and controls. These results demonstrate, with both task- and rest-based fMRI data, increased stability in sustained attention processes in meditators without an associated attentional capture cost.

TALK 2: CLOSED-LOOP DIGITAL MEDITATION AS A TOOL FOR ENHANCING COGNITION AND BOLSTERING NEURAL NETWORK EFFICIENCY AND MODULARITY ACROSS THE LIFESPAN

David Ziegler[1]; [1]University of California, San Francisco

Given that attention is a fundamental component process of all aspects of higher order cognition, there exists a need for new methods to enhance attention abilities. A growing scientific literature supports the positive effects of real-world practices of focused-attention meditation as a means of improving sustained and selective attention. However, traditional forms of meditation can be challenging, intimidating, and expensive to learn. To help address these challenges, we developed a closed-loop, digital meditation intervention (MediTrain). This digital approach to meditation integrates key aspects of traditional meditation with a neuroplasticity-based approach to cognitive training and personalizes the experience to the real-time abilities of individuals and makes the practice available to anyone with a smartphone. I will summarize findings from a series of double-blind, randomized controlled trials (RCTs), in which we have demonstrated that MediTrain leads to improvements in sustained attention in healthy young adults, in adolescents who have experienced adverse childhood events, and in healthy older adults. In addition, MediTrain led to increased coherence of frontal theta activity in adults and led to a strengthening of functional connectivity in key cognitive control networks in both teens and older adults. We also found reductions in stress reactivity in older adults, and these stress and cognitive gains were maintained at a one-year follow up. I will conclude by previewing several ongoing studies aimed at increasing the reach of our intervention through fully mobile RCTs and by combining digital meditation with other forms of cognitive enhancement, such as noninvasive brain stimulation.

TALK 3: MINDFUL EMOTION REGULATION: NEURAL MECHANISMS OF DEPRESSION VULNERABILITY AND PROPHYLAXIS

Norman Farb[1]; [1]University of Toronto Mississauga

Interoceptive training is a central facet of mindfulness training (MT), with the bulk of intervention practices including contemplative techniques such as breath monitoring, body scans, and yoga. Yet the mechanisms by which interoceptive mechanisms support MT benefits are still poorly understood. Two neuroimaging (fMRI) studies will be discussed. First, a large (N=85 x 2 timepoints) clinical trial of depression relapse vulnerability suggested that, in a context of provoked negative emotion, past, present, a future depression vulnerability is linked to a combination prefrontal activation and inhi-

-ibition of sensory cortices, particularly the somatosensory cortex and posterior insula. Treatment response via both MT and cognitive behavioral therapies (CBT) was linked to reduced lateral prefrontal activation in a region which demonstrated a stress-evoked inhibitory relationship with sensory cortices following psychophysiological interaction (PPI) analysis. Second, neuroimaging of attention to the breath (N=22 x 2 timepoints) suggested that, relative to visual attention, training-related increases in subjective interoception (MAIA scale) were related to spared deactivation of the anterior cingulate cortex (ACC) and language regions within a broader context of cortical deactivation. PPI analysis suggested that attention to the breath also enhanced ACC connectivity with the dorsal attention network. Together, these findings support a model of mindful interoception as reversing the tendency for emotional stressors to inhibit sensory attention, which may allow practitioners to retain cognitive flexibility in the face of daily stressors.

TALK 4: INCREASES IN THETA OSCILLATORY ACTIVITY DURING EPISODIC MEMORY RETRIEVAL FOLLOWING MINDFULNESS MEDITATION TRAINING

Erika Nyhus[1]; [1]Bowdoin College

Mindfulness meditation has been shown to improve episodic memory and increase theta oscillations which are known to play a role in episodic memory retrieval. The present study examined the effect of mindfulness meditation on episodic memory retrieval and theta oscillations. Using a longitudinal design, subjects in the mindfulness meditation experimental group who underwent 4 weeks of mindfulness meditation training and practice were compared to a waitlist control group. During the pre-training and post-training experimental sessions, subjects completed the Five Facet Mindfulness Questionnaire (FFMQ) and studied adjectives and either imagined a scene (Place Task) or judged its pleasantness (Pleasant Task). During the recognition test, subjects decided which task was performed with each word ("Old Place Task" or "Old Pleasant Task") or "New." FFMQ scores and source discrimination were greater post-training than pre-training in the mindfulness meditation experimental group. Electroencephalography (EEG) results revealed that for the mindfulness meditation experimental group theta power was greater post-training than pre-training in right frontal and left parietal channels and changes in FFMQ scores correlated with changes in theta oscillations in right frontal channels (n = 20). The present results suggest that mindfulness meditation increases source memory retrieval and theta oscillations in a fronto-parietal network.

Symposia Session 8

A HANDS-ON TECHNICAL WORKSHOP FOR COGNITIVE NEUROSCIENTISTS

Monday, April 15, 2024, 10:00 AM - 12:00 PM, Sheraton Hall EF

Chair: Bradley Voytek[1]; [1]UC San Diego

Speakers: Quirine van Engen[1], Andrew Bender[1], Eena Kosik[1]; [1]UC San Diego

Data science! GitHub! LLMs and generative AI and scikit-learn and… it feels like there are an overwhelming number of technical skills and technologies to learn in order to succeed in our current data-heavy world. While these technologies are widely used in industry, and are often required for industry data science and research jobs, in this hands-on workshop we will teach how they can be used by cognitive neurosciences. Attendees will be required to bring a laptop so that they can participate in the exercises, where we will show how these technologies can make your scientific research easier to track, make it more efficient, and more reproducible. Specifically, we will introduce Git and explain its esoteric lingo (forking, cloning, pulling, merging, and fetching repos). We will show how GitHub's project management tools can be used for tracking research projects, and we will demonstrate how GitHub and Jupyter can be used together for scientific reproducibility. Reproducibility will be taught using the "executable papers" model adopted by some publishers, such as eLife, where Jupyter notebooks are published alongside scientific manuscripts. While we will focus on Python, interactive Jupyter notebooks support many programming languages, including Python, R, and Matlab. These notebooks permit the mixture of executable code with graphs and images, as well as detailed textual annotations using Markdown markup language. We will conclude the workshop by walking attendees through a neural data science project, published as an executable notebook, that leverages multiple open neural data sets.

Symposia Session 9

CORTICAL MECHANISMS FOR TRANSSACCADIC PERCEPTION AND MEMORY

Tuesday, April 16, 2024, 1:30 PM - 3:30 PM, Ballroom East

Chair: John Douglas Crawford[1], Bianca Baltaretu[2]; [1]York University, Toronto Canada, [2]Justus Liebig University Giessen, Germany

Speakers: Marisa Carrasco, Nina Hanning, Antonio Fernández, A. Caglar Tas, Jessica Parker, Aaron Buss, Julie Golomb, Bianca Baltaretu, John Douglas Crawford

Visual perception and memory are usually studied in the laboratory with the eyes fixed on one location, but in real world circumstances we make saccades several times per second. Thus, 'transsaccadic' perception and memory is the normal state of the visual system. Although saccades help us to place the fovea (and corresponding

expanded cortical regions) on objects of interest, they also briefly disrupt vision and then alter the spatial register between eye-fixed memory signals and the external world. Therefore, transsaccadic vision requires additional mechanisms (such as matching remembered and new retinal information) that are not evident when the eyes fixate. In the current symposium, we will highlight recent psychophysical, computational, and neuroimaging approaches to human transsaccadic vision, including 1) the specific roles of early visual cortex and human frontal eye fields in presaccadic attention, 2) the relationship between transsaccadic memory and traditional concepts of visual working memory, 3) mechanisms for remapping visual information across saccades, and 4) cortical mechanisms for transsaccadic perception of specific object features. An emerging theme of this symposium is that although transsaccadic vision recruits specific cortical mechanisms, it engages the entire cortical networks for saccades, vision, and visual memory, as well as other cognitive / sensorimotor systems, to optimize behavior for real world conditions.

TALK 1: DISSOCIABLE ROLES OF HUMAN FRONTAL EYE FIELDS AND EARLY VISUAL CORTEX IN PRESACCADIC AND COVERT ATTENTION

Marisa Carrasco[1], Nina Hanning[1,2], Antonio Fernández[1]; [1]New York University, NY, [2]Humboldt University, Berlin

Attention is a central neural process that enables selective and efficient processing of visual information. People can attend to specific information either overtly, by making an eye movement to an object of interest, or covertly, without moving their eyes. First, I will highlight some behavioral, neurophysiological, and computational evidence of presaccadic attentional modulations that occur while preparing saccadic eye movements and their differences from those of covert spatial endogenous (voluntary) and exogenous (involuntary) attention (Li, Hanning & Carrasco, TINS 2021). Then, I will present recent transcranial magnetic stimulation (TMS) studies revealing the dissociable roles of early visual cortex (V1/V2) and human frontal eye fields (rFEF+) in presaccadic attention (Hanning, Fernández & Carrasco, Nature Comm, 2023) and endogenous covert attention (Fernández, Hanning & Carrasco, PNAS, 2023). Our findings indicate that presaccadic and endogenous attention modulate perception through cortico-cortical feedback –but with different temporal dynamics– and further dissociate presaccadic and covert spatial attention.

TALK 2: THE RELATIONSHIP BETWEEN TRANSSACCADIC VISUAL STABILITY AND VISUAL WORKING MEMORY: AN FNIRS STUDY

A. Caglar Tas[1], Jessica Parker[1], Aaron Buss[1]; [1]University of Tennessee, Knoxville, USA

Transsaccadic visual stability (VS) is the process by which the visual system creates a continuous representation of the visual world across saccades. It has been suggested that visual working memory (VWM) plays a direct role in VS by automatically encoding and updating the saccade target properties (Aagten-Murphy & Bays, 2019; van der Stigchel & Hollingworth, 2018). The present study investigates neural signatures of VS, and the possible role of VWM in VS. We recorded neural data using functional near-infrared spectroscopy (fNIRS) while participants completed a VS task (blanking task) and a VWM task (color change detection, CD) separately. In the blanking task, participants were asked to report which direction the saccade target was displaced. On some trials, VS was manipulated by briefly removing the saccade target from the screen (blank). On the others, VS was not disrupted (no-blank). Behaviorally, we found a significant correlation between the blanking and CD tasks: Participants with a higher VWM capacity performed better in the blanking task. Neurally, we found that left inferior parietal cortex was more strongly activated for no-blank than blank trials, suggesting this region is involved in establishing visual stability. In comparison, superior parietal cortex showed increased activation as VWM load increased from 2 to 4 items during the CD task. Importantly, there was a significant positive association between activation in this region during blank trials and performance in the CD task, suggesting a significant link between VWM and the processes by which the visual system establishes VS.

TALK 3: UNDERSTANDING REMAPPING AND ITS CONSEQUENCES FOR PERCEPTION

Julie Golomb[1]; [1]The Ohio State University, USA

Remapping is the updating process that helps align visual input from before and after a saccade. Initial work on remapping focused on anticipatory, presaccadic shifts of neuronal spatial receptive fields, but over time, it has become clear that there are multiple forms of remapping that may operate at different timescales and be mediated by different neural mechanisms. Moreover, there is evidence that remapping may not always be efficient, and the consequences of this can extend to non-spatial processing, resulting in distorted visual feature perception, object binding errors, and disruption of working memory filters following saccades. In this talk I will share recent behavioral and neuroimaging work revealing some of these consequences of saccades and imperfect updating, along with efforts to determine whether factors such as dynamic saccade context and reward/motivation can mitigate these consequences and improve perceptual stability across saccades.

TALK 4: CORTICAL MECHANISMS FOR TRANSSACCADIC PERCEPTION OF LOW-LEVEL OBJECT FEATURES

Bianca Baltaretu[1], John Douglas Crawford[2]; [1]Justus Liebig University Giessen, Germany, [2]York University, Toronto, Canada

Spatial updating of a single point target has been studied for many years, but the cortical underpinnings for transsaccadic memory and perception of specific object features has received less attention. For example, some studies point to the role of posterior parietal cortex in the transsaccadic updating of a low-level object feature, such as orientation (Dunkley et al., Cortex, 2016), but it is unknown whether parietal cortex plays a general role in transsaccadic perception or if multiple, feature-specific mechanisms are involved. To address this question, we used functional magnetic resonance imaging (fMRI) to test for the cortical correlates of 1) transsaccadic perception of orientation for grasping (Baltaretu et al., J. Neurosci., 2020), 2) a different low-level object feature (i.e., spatial frequency; Baltaretu et al., Sci. Rep., 2021), and 3) multiple object features (i.e., orientation and shape; Baltaretu et al., Sci. Rep., 2023). Our findings, suggest that different occipital and parietal areas are recruited for transsaccadic vision, depending on the nature of the stimulus features, and that these areas become associated with different functional networks, depend on the nature of the task for perception and / or action.

Symposia Session 10

ENDEL TULVING AND THE MODERN SCIENCE OF MEMORY

Tuesday, April 16, 2024, 1:30 PM - 3:30 PM, Ballroom Center

Chair: Daniel L. Schacter[1], Donna Rose Addis[2,3]; [1]Harvard University, [2]Rotman Research Institute, [3]University of Toronto

Speakers: Daniel L. Schacter, Fergus Craik, R. Shayna Rosenbaum, Robert Cabeza, Donna Rose Addis, Karl K. Szpunar

Endel Tulving (1927-2023) was a major figure in the cognitive psychology and cognitive neuroscience of memory, generating numerous findings and theories that have shaped these fields over the past six decades. His most impactful ideas include the distinction between episodic and semantic memory, the encoding specificity principle, the role of the frontal lobes in encoding and retrieval, and how memory supports thinking about the future. This symposium honors these and others of Tulving's most important contributions. The speakers will examine different aspects of Tulving's work and link them to current issues in the cognitive neuroscience of memory.

TALK 1: ENDEL TULVING: AN INTRODUCTION

Daniel L. Schacter[1]; [1]Harvard University

Endel Tulving (1927-2023) produced a series of findings and ideas extending over more than a half-century that provided the conceptual and empirical foundation for the modern field of memory research. Beginning in cognitive psychology and extending into cognitive neuroscience later in his career, Tulving's influence on the field has been massive. In this brief introduction to the symposium, I will summarize a few of Tulving's career highlights, note some of my personal experiences working with him, and preview the five talks to follow.

TALK 2: **ENDEL TULVING'S COGNITIVE PSYCHOLOGY**

Fergus Craik[1]; [1]Rotman Research Institute, Toronto

Endel Tulving's early work on memory rejected the dominant paradigm of paired-associate learning in favor of free recall – learning and recalling a list of words in any order. This new-found freedom raised new questions: How did participants encode each word? How were the words related in the mind? And how were they retrieved in the free recall phase? These questions led first to the observation and measurement of subjective organization and its differentiation from associations as a mode of representation. Second, on considering why some words were not retrieved, Tulving drew the distinction between availability and accessibility – were the items no longer present or were they simply inaccessible, perhaps because the appropriate cue had not been applied? This last question led in turn to the notion that the "appropriate" cue for an encoded item must be some specific aspect of the context in which the item was initially processed – the encoding specificity principle. He also proposed that successful cues interacted with the neural record of the encoded event in a process he termed "synergistic ecphory". But his major contribution may have been the concept of memory systems – he distinguished between episodic memory for events and semantic memory for general knowledge. He also included procedural memory, working memory and the perceptual representational systems in his scheme. Most impressively of all, these purely behavioral concepts have provided a solid foundation for later investigations of the neural bases of memory. Perhaps we are finally experiencing a cumulative science!

TALK 3: DO COMPLEX NEUROPSYCHOLOGICAL CASES ADVANCE MEMORY THEORY? THE LEGACY OF K.C.

R. Shayna Rosenbaum[1]; [1]York University

Much of what we know about brain-behavior relations is made possible by the study of neuropsychological cases. Given the ubiquity of functional neuroimaging studies, and the importance they have assumed in elucidating brain function, the goal of my talk is to describe how single cases continue to challenge accepted dogma, lead to new discoveries, and suggest hypotheses and theories that steer the field in new directions. Endel Tulving proposed the now widely recognized distinction between episodic and semantic memory and supported its neuropsychological foundations in partnership with the single amnesic case K.C.: Extensive brain damage in K.C. resulted in "episodic amnesia," which encompassed an entire lifetime of personal experiences but left relatively undisturbed semantic memory for personal and world facts acquired before his accident. I will describe

how this pattern of spared and impaired memory extended to spatial memory for large-scale environments and beyond memory to decision-making. K.C. displayed a prominent dissociation between impaired detailed spatial memory but spared remote schematic spatial memory, sufficient for navigating within environments learned long ago. Despite deficits in episodic memory that extended to future imagining, a number of functions that were thought to depend on it, such as social, moral, and future decision-making, were spared. These patterns of performance have been confirmed in more recent studies of amnesic individuals with more selective hippocampal lesions. Together, this work provides novel, theoretical insights on the nature of hippocampal-neocortical interactions and the types of mnemonic and non-mnemonic abilities they help represent.

TALK 4: **TULVING'S CONTRIBUTIONS TO FRONTAL AND** HIPPOCAMPAL THEORIES IN COGNITIVE NEUROSCIENCE

Robert Cabeza[1]; [1]Duke University

This talk focuses on Tulving's contributions to theories of the roles of prefrontal cortex (PFC) and hippocampus in episodic (EM) and semantic memory (SM). Tulving was one of the first to emphasize the PFC's role in EM. Although somewhat overlooked recently due to limitations in event-related fMRI, the hemispheric asymmetry he observed between EM encoding and retrieval in PET studies is a genuine phenomenon. At any rate, more significant than this hypothesis itself is that it gave rise to new ideas, including the role of the PFC in semantic processing during EM encoding and to monitoring during retrieval. Concerning the hippocampus, Tulving proposed that it plays a more critical role in EM than in SM. While there is now evidence that SM is not immune to hippocampal damage, Tulving's hypothesis aligns with many findings, including those from developmental amnesia. It is crucial to emphasize that Tulving's view on the EM/SM distinction significantly evolved from focusing on types of memory tests to centering on the phenomenological qualities of EM retrieval (autonoetic consciousness) and SM retrieval (noetic consciousness). Thus, experimental paradigms that emphasize conscious qualities, such as the R/K paradigm, provide the most relevant data, and accumulated fMRI evidence clearly links hippocampal activity to R (EM) rather than to K (SM). In sum, Tulving's ideas have played a major role in the development of cognitive neuroscience of memory.

TALK 5: MEMORY, CONSCIOUSNESS, AND THE SELF

Donna Rose Addis[1,2]; [1]Rotman Research Institute, [2]University of Toronto

In one of Endel Tulving's many seminal papers, "Memory and Consciousness" (1985), he introduced the idea that a core feature of episodic memory is a self-knowing conscious experience. Autonoetic consciousness imbues episodic memory with its phenomenal flavour, and the awareness we are re-experiencing our self from a previous point in time. This theory spurred decades of memory research examining the neural correlates of "remembering" vs "knowing". Perhaps less well known are the contributions of Tulving's theory to the study of the self. In this talk, I will first overview the concept of autonoesis. Next, using our Self and Autobiographical Memory framework, I will present evidence for the role of autonoetic consciousness in two core aspects of the self: (1) the awareness of the self's present-moment experience, which is a critical precursor of episodic memory; and (2) the experience of the self across continuous time.

TALK 6: EPISODIC FUTURE THINKING: FROM MIND TO SOCIETY

Karl K. Szpunar[1]; [1]Toronto Metropolitan University

Inspired by Endel Tulving's seminal observations of comorbid memory and future thinking deficits in a case of amnesia, memory scientists have generated extensive research on the cognitive and neural bases of episodic future thinking—the act of simulating specific events that might occur in the future. I begin this talk by providing a brief overview of research on episodic future thinking and its role in supporting adaptive behaviour. I will then turn to an aspect of Endel Tulving's writings about memory and future thinking that has received less attention from the field. Specifically, I will focus on the notion that the capacity to mentally traverse subjective time represents a driving force in the development and maintenance of culture and society. To this end, I will present new evidence indicating that thoughts about the future shift away from personal events and toward societal concerns as a function of increasing age, and that these age-related differences in thinking about the future predict complex social behaviour.

Symposia Session 11

ADVANCES IN SPEECH PROSODY PERCEPTION RESEARCH: INTEGRATING BEHAVIORAL, NEUROIMAGING, (NEURO)GENOMICS, AND CLINICAL TECHNIQUES

Tuesday, April 16, 2024, 1:30 PM - 3:30 PM, Ballroom West

Chair: Tamar Regev[1], Srishti Nayak[2]; [1]MIT, [2]Vanderbilt University Medical Center

Speakers: Maya Inbar, Shir Genzer, Anat Perry, Eitan Grossman, Ayelet N. Landau, Anna Greenwald, Tamar Regev, Hee So Kim, Niharika Jhingan, Hope Kean, Colton Casto, Evelina Fedorenko, Srishti Nayak, Alyssa C. Scartozzi, Daniel E. Gustavson, Nicole Creanza, Cyrille L. Magne, Jennifer E. Below, Reyna L. Gordon

Prosody encompasses the acoustic features of spoken language—pitch, loudness, duration, timbre—that carry linguistic, emotional, and social information. Although prosody plays an essential role in human communication and has attracted significant attention in psycholinguistics, the cognitive, neural, and biological mechanisms

supporting prosody perception remain unclear. This symposium seeks to spotlight the significance of prosody research in the field of human communication while presenting recent advances in understanding speech prosody perception. We will examine the major components of prosody, emphasizing rhythmic, intonation, and emotional information embedded in speech. The speakers will present recent advances enabled by diverse methodologies–including behavioral, EEG, fMRI, neurogenetics, and clinical approaches. These insights will shed light on how listeners perceive and process speech prosody, with relevance to real-world communication contexts. We will conclude with an inclusive discussion, engaging both our symposium speakers and the audience, to tackle important open questions in prosody research. Among the issues up for debate: Do distinct aspects of prosody rely on shared or unique processing mechanisms? What might the neural architecture for processing prosody in the brain look like, and how might its dysfunctions be linked to disorders in prosody perception and production? How can the study of individual differences enhance our understanding of prosody skills in the population and their relevance for language and learning?

TALK 1: INTONATION UNITS IN SPONTANEOUS SPEECH EVOKE A NEURAL RESPONSE

Maya Inbar[1], Shir Genzer[1], Anat Perry[1], Eitan Grossman[1], Ayelet N. Landau[1]; [1]The Hebrew University of Jerusalem

Spontaneous speech is produced in chunks called Intonation Units (IUs). IUs are defined by a set of prosodic cues and presumably occur in all human languages. Recent work has shown that across different grammatical and socio-cultural conditions IUs form rhythms of approximately one unit per second. Linguistic theory suggests that IUs pace the flow of information and serve as a window onto the dynamic focus of attention in speech processing. As a result, IUs provide a promising and hitherto unexplored theoretical framework for studying the neural mechanisms of communication. We identify a neural response unique to the boundary defined by the IU, and relate our findings to the body of research on rhythmic brain mechanisms in speech processing. We measured the EEG of participants (N=50) who listened to different speakers recounting an emotional life event in Hebrew. We analyzed the speech stimuli linguistically, and modeled the EEG response at word offset using a GLM approach. Words were categorized as either IU-final or IU-nonfinal. Additionally, we quantified an acoustic-based measure of prosodic boundary strength. We find that the EEG response to IU-final words differs from the response to IU-nonfinal words even when equating acoustic boundary strength. Finally, we study the unique contribution of IUs and acoustic boundary strength in predicting delta-band EEG. This analysis suggests that IU-related neural activity, which is tightly linked to the classic Closure Positive Shift, could be a time-locked component that captures the previously characterized delta-band neural speech tracking.

TALK 2: EFFECTS OF STROKE ON EMOTIONAL PROSODY PROCESSING

Anna Greenwald[1]; [1]Georgetown University Medical Center, Washington, DC, USA

After injury to the brain's right hemisphere, patients often have lasting difficulty producing and/or comprehending emotional prosody – at least when the injury happens in adulthood. Interestingly, such difficulties are rarely observed in children and adults who had a stroke around the time of birth. This is reminiscent of the relative absence of other language impairments in this population. It is now well established that after a large left-hemisphere perinatal stroke, language functions normally supported by left perisylvian cortex can be supported by homotopic right-hemisphere regions instead. Could the inverse be true for emotional prosody after large right-hemisphere perinatal stroke? And could contralesional left-hemisphere activation also play a role in recovery from aprosodia after stroke in adulthood? Using functional MRI, we identified emotional prosody areas in 10 participants who had a right-hemisphere stroke around the time of birth, 10 participants who had a right-hemisphere stroke in adulthood, and matched controls for both groups. As expected, prosody activation was right-lateralized in controls. In contrast, most perinatal stroke survivors showed their strongest prosody activation in left perisylvian cortex, homotopic to the right perisylvian areas most strongly activated in controls. Prosody activation after adult stroke was more variable, likely due to greater variability in lesion size and location. However, left-hemisphere activation was particularly high in one participant whose stroke affected all right-hemisphere areas activated by controls. These results highlight left perisylvian activation as an important contributor to emotional prosody processing after large right-hemisphere stroke and as a potential target for aprosodia treatment.

TALK 3: A NETWORK OF BRAIN AREAS IS SENSITIVE TO PROSODY AND DISTINCT FROM LANGUAGE AND AUDITORY AREAS

Tamar Regev[1], Hee So Kim[1], Niharika Jhingan[1], Hope Kean[1], Colton Casto[1], Evelina Fedorenko[1]; [1]MIT

Supra-segmental prosody refers to acoustic features of speech beyond phonetics. Prosodic features include pitch, loudness, and duration/pauses and convey linguistic, emotional, and other socially-relevant information. Does the brain contain specialized areas for processing prosody or is prosodic information processed by known auditory or language areas? Previous neuroimaging studies have reported sensitivity to prosody in numerous brain regions, but have only included a few conditions, making it difficult to infer the underlying neural computations. We designed a new fMRI 'localizer' for prosody-sensitive areas based on a contrast between prosody-rich stimuli vs. stimuli with distorted prosody, and then characterized these areas with respect to diverse auditory, linguistic, and social conditions. Our prosody localizer contrast identified several temporal and frontal

areas, which were strongly sensitive to prosody with or without linguistic content. We replicated this finding in two distinct experiments (n=37 participants overall). These prosody-sensitive areas were adjacent to but distinct from language areas which extract meaning from linguistic input, and from areas that support pitch perception, speech perception, and general cognitive demands. Furthermore, these areas were selective for prosody over diverse types of natural sounds, but showed some response to communicative signals, especially facial expressions and non-speech vocalizations. These results suggest that prosody is processed by a network of brain areas that lie in close proximity to language-selective areas and are broadly sensitive to non-linguistic communicative cues. This work lays a critical foundation for further investigations of the neural basis of prosodic processing and its disorders.

TALK 4: GENETIC INDIVIDUAL DIFFERENCES IN SPEECH RHYTHM SENSITIVITY: IMPLICATIONS FOR THE COGNITIVE NEUROSCIENCE OF LANGUAGE AND LEARNING

Srishti Nayak[1], Alyssa C. Scartozzi[2], Daniel E. Gustavson[3], Nicole Creanza[2], Cyrille L. Magne[4], Jennifer E. Below[1], Reyna L. Gordon[1]; [1]Vanderbilt University Medical Center, [2]Vanderbilt University, [3]University of Colorado, Boulder, [4]Middle Tennessee State University

Disruptions in stress and rhythm perception in speech (an aspect of prosody perception) have been linked to developmental disorders of speech and language, and learning disorders. Individual differences in word-level stress perception have been previously linked with variability in reading skills in children and adults, and developmental speech-language disorders. Here, we report on the first genome-wide association study (GWAS) of prosody, revealing that the genetic variant (SNP) significantly associated with prosody ($p = 8.39e-10$) occurs in or genetically upstream of gene TMEM108, involved in brain and central nervous system development (e.g., neuronal migration), function (e.g., cellular response to BDNF), and structure (e.g., fetal brain basal ganglia). Top genes associated with prosody, while non-significant, echo these results. Further, we explored the evolutionary history of human prosody perception by investigating comparative biology of prosody perception and vocal learning in songbirds. Gene-set enrichment analyses showed that genes expressed in songbird brain Area X (a key song learning brain area, homologous to human basal ganglia) were overrepresented in human prosody-related genes ($p < 7.14e-3$). All analyses were adjusted for multiple test corrections. This work highlights the biology of speech rhythm perception and the broader neurobiological and neurodevelopmental functions associated with it. Our comparative approach using songbird models provides evidence for shared evolutionary mechanisms between human speech rhythm perception and songbird vocal learning, extending similar findings about human musical rhythm (Gordon et al., 2021). These results are a key step in mapping biological relationships between prosody and other language and learning processes.

Symposia Session 12

LEVERAGING SOCIAL COGNITIVE NEUROSCIENCE TOOLS TO CHARACTERIZE HETEROGENEITY IN AUTISM SPECTRUM DISORDER

Tuesday, April 16, 2024, 1:30 PM - 3:30 PM, Sheraton Hall EF

Chair: Dorit Kliemann[1], Gabriela Rosenblau[2]; [1]The University of Iowa, [2]The George Washington University

Speakers: Caroline J. Charpentier, Gabriela Rosenblau, Dorit **Kliemann, Anila M. D'Mello**

Social challenges constitute a core difficulty for many psychiatric conditions, most prominently for Autism Spectrum Disorder (ASD). Despite a long line of research characterizing social differences between autistic and neurotypical individuals, there is a lack of robust neurocognitive markers of social difficulties – particularly due to the vast phenotypic heterogeneity. This session will synthesize a deeper understanding of the cognitive neuroscience of ASD. We will showcase how theory-driven experiments and state-of-the-art methods can be used to characterize the heterogeneity in ASD. We will emphasize fine-grained, objective, and complementary approaches to measure behavior and cognitive strategies using computational modeling, and its underlying neurobiology using functional neuroimaging. The first two talks will focus on the behavioral and cognitive domains. The first talk will discuss how individual differences in autistic traits are associated with reduced social goal inference using computational models of observational learning in over 1000 participants. The second talk will introduce a social learning framework that quantifies how autistic and non-autistic groups incorporate prior knowledge for learning about others' preferences. The last two talks will tie phenotypic differences in ASD to the underlying neurobiology. The third talk will discuss amygdala functional connectivity in ASD using a preregistered Bayesian approach leveraging large datasets. The fourth talk will focus on differences in the neural representation of social and nonsocial stimuli in ASD using multivariate neuroimaging analysis. The session will culminate in a discussion with the general CNS audience on the next big challenges in precisely specifying autism phenotypes including time for Q&A.

TALK 1: INDIVIDUAL DIFFERENCES IN AUTISM-LIKE TRAITS ARE ASSOCIATED WITH REDUCED GOAL EMULATION IN A COMPUTATIONAL MODEL OF OBSERVATIONAL LEARNING

Caroline J. Charpentier[1,2]; [1]Department of Psychology, University of Maryland, College Park, USA, [2]Division of Humanities and Social Sciences, California Institute of Technology, USA

The ability to infer the goals and intentions of others is crucial for social interactions, and such social cognitive abilities are broadly distributed across individuals. Autism-like traits (i.e., traits associated with autism spectrum disorder (ASD)) have been associated with reduced social

inference, yet the underlying computational principles and social cognitive processes are not well characterized. Here we tackle this gap by investigating inference during social learning through computational modeling, in two large samples of adult participants from the general population (N1=943, N2=352). Autism-like traits were extracted and isolated from other associated symptom dimensions through a factor analysis of the Social Responsiveness Scale. Participants completed an observational learning task that allowed quantifying the tradeoff between two social learning strategies: imitation (repeat the observed partner's most recent action) and emulation (infer the observed partner's goal). Autism-like traits were associated with reduced observational learning specifically through reduced emulation (but not imitation), revealing reduced social goal inference. This association held even when controlling for other model parameters (e.g., decision noise, heuristics), and was specifically related to social difficulties in autism but not social anxiety. The findings, replicated in two independent samples, provide a powerfully specific mechanistic hypothesis for social learning challenges in ASD, employing a computational psychiatry approach that could be applied to other disorders.

TALK 2: SOCIAL KNOWLEDGE REPRESENTATIONS FOR LEARNING IN AUTISTIC ADOLESCENTS

Gabriela Rosenblau[1,2]; [1]Psychological and Brain Sciences, the George Washington University, Washington, DC, [2]The Autism and Neurodevelopmental Disorders Institute, the George Washington University, Washington, DC

Social interaction difficulties are a key aspect of autism spectrum disorder (ASD), potentially stemming from less adaptive social learning strategies that hinder an accurate understanding of the mental states of interaction partners. Here, we examined social learning in a larger and more heterogeneous group of autistic adolescents. This study aimed to uncover differences in social learning in the autistic group and link these differences to clinical profiles, in particular to cognitive flexibility. We conducted an online study with a larger sample of autistic adolescents (N=217) and sex matched non-autistic young adults (N = 194). As expected, there were significant differences in self-preferences between the non-autistic and autistic groups. We investigated whether participants relied on knowledge of their respective group when learning about non autistic and autistic adolescents. Participants learned about individuals from either a non-autistic and or autistic adolescent groups. As hypothesized, prediction errors (PEs) in the social learning task of autistic adolescents were associated with reduced cognitive flexibility. Contrary to our initial expectation, however, both non-autistic and autistic groups had lower PEs when learning about the non-autistic mean profile. They also significantly reduced PEs over time when learning about autistic profiles. Consistent with our previous findings, autistic teenagers tended to rely more on their self-preferences during the learning task. In contrast, non-autistic adults relied more on the preferences of average non-autistic adolescents rather than on their own reference group. We are currently conducting computational modeling analyses that can uncover differences and heterogeneity in learning strategies of autistic adolescents.

TALK 3: FUNCTIONAL CONNECTIVITY OF THE AMYGDALA: TESTING THREE LEADING NEUROBIOLOGICAL HYPOTHESES OF ASD

Dorit Kliemann[1,2,3]; [1]Department of Psychological and Brain Sciences, The University of Iowa, Iowa City, IA, USA, [2]Department of Psychiatry, The University of Iowa, Iowa City, IA, USA, [3]Iowa Neuroscience Institute, The University of Iowa, Iowa City, IA, USA

Three leading neurobiological hypotheses about Autism Spectrum Disorder (ASD) propose underconnectivity in the brain, atypical amygdala function, and higher variability between autistic and neurotypical participants. Replicability and generalization of prior neuroimaging findings have been limited due to data quality issues, statistical power, and analytic bias. Addressing these limitations, the current study investigated three hypotheses in a comprehensive pre-registered study using the ABIDE datasets, the largest sample of ASD resting-state functional magnetic resonance imaging (rs-fMRI) data (N=488 after exclusions; 212 with ASD). We analyzed magnitude, pattern similarity and variability of amygdala functional connectivity from two amygdala subdivisions (basolateral, BLA; corticocentro-medial, CCM) across a range of anatomical scales from whole-brain to specific regions and networks, using a Bayesian approach for hypothesis evaluation. We found some evidence for BLA underconnectivity to the whole brain in ASD (Bayes' Factor; BF10 = 6.9), however, the effect was weaker for normalized connectivity and disappeared when only considering a subset of regions or using a different preprocessing approach. Amygdala connectivity patterns were similar between the groups across pipelines and strategies to define amygdala subregions (BF10 > 100). We did not find robustly increased between-subject variability in the autistic group. In sum, a comprehensive and preregistered set of analyses found no robust evidence for atypical amygdala functional connectivity in ASD. Future studies would benefit from an extended set of hypotheses in deeper individual data using multiple processing pipelines to increase generalizability of findings on amygdala functional connectivity in ASD.

TALK 4: AUTISTIC ADULTS SHOW INCREASED VARIABILITY IN CORTICAL SELECTIVITY ACROSS SOCIAL AND NON-SOCIAL DOMAINS

Anila M. D'Mello[1,2,3]; [1]Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX, [2]**Peter O'Donnell** Jr. Brain Institute, University of Texas Southwestern Medical Center, Dallas, TX, [3]Department of Psychology, University of Texas at Dallas, Richardson, TX

Functional neuroimaging analyses rely on assumptions regarding

associations between a stimulus and its neural representation. In neurotypicals (NTs), certain regions consistently represent particular stimuli (e.g., fusiform face area, FFA, for faces). These stimulus-specific responses reliably co-localize across individuals. However, studies of autism spectrum disorder (ASD) often find reduced activation in these stimulus specific brain regions. One question is whether representations of particular stimulus categories are more heterogeneous in autistic individuals, resulting in atypical activation at the group level. We acquired fMRI data in n=31 ASD and n=29 NT adults who completed classical repetition suppression tasks to measure stimulus representations across social (faces, spoken words) and non-social (text, objects) categories. We assessed the degree to which patterns of significantly activated voxels in each domain overlapped across participants in each group. Across all domains, we found reduced overlap in significantly activated voxels in ASD as compared to NT. Increased Euclidean distance between each participant's peak activation and that of every other participant was related to greater social communication challenges across groups and within ASD. Importantly, there were no group-wise magnitude differences, suggesting that results were not simply a product of lower activations in ASD. These data suggest that neural representations of social and nonsocial stimulus categories are more heterogenous in ASD, and that this is associated with social communication difficulty. These data speak to the importance of using methods that do not rely solely on group differences in magnitude, and interpreting results within the context of increased spatial variability.

Poster Schedule

Poster sessions are scheduled for Saturday-Tuesday in Sheraton Hall ABC of the Sheraton Centre Toronto Hotel. All attendees must present their CNS 2024 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 2024 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	Set-Up Begins	Session Open	Take-Down	Take-Down Completed
A	Saturday, April 13	12:30 pm – 1:00 pm	2:30 pm – 4:30 pm	4:30 pm – 4:45 pm	4:45 pm
B	Sunday, April 14	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
C	Sunday, April 14	3:30 pm – 4:00 pm	5:00 pm – 7:00 pm	7:00 pm – 7:15 pm	7:15 pm
D	Monday, April 15	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
E	Monday, April 15	1:30 pm – 2:00 pm	2:30 pm – 4:30 pm	4:30 pm – 4:45 pm	5:00 pm
F	Tuesday, April 16	7:30 am – 8:00 am	8:00 am – 10:00 am	10:00 – 10:15 am	10:15 am

* 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.

Poster Session A

Saturday, April 13, 2:30 – 4:30 pm, Sheraton Hall ABC

A1 - The encoding of task-irrelevant but not relevant acoustic events depends on the pre-stimulus phase of alpha oscillations
Troby Ka-Yan Lui[1,2] (ka-yan.lui@cnrs.fr), Benedikt Zoefel[1,2]; [1]Centre National de la Recherche Scientifique, [2]Université de Toulouse III - Paul Sabatier
Topic Area: ATTENTION: Auditory

A2 - Neurophysiological correlates of auditory attention in monolinguals and bilinguals
Wenfu Bao[1] (wenfu.bao@mail.utoronto.ca), Alejandro Pérez[2], Claude Alain[1], Michael Thaut[1], Monika Molnar[1]; [1]University of Toronto, [2]University of Surrey
Topic Area: ATTENTION: Auditory

A3 - Speech reconstruction of higher formant and dispersion **dynamics predicts listeners' ability to resolve multispeaker** scenarios
Francisco Cervantes Constantino[1] (fcervantes@iibce.edu.uy), Rodrigo Caramés Harcevnicow[1], Ángel Caputi[2]; [1]Universidad de la Republica, Uruguay, [2]Instituto Clemente Estable
Topic Area: ATTENTION: Auditory

A4 - Selective attention towards and away from trigger sounds in misophonia: a fMRI study
Marie-Anick Savard[1], Heather A. Hansen[1], Randa El Chami[1], Mickael L.D. Deroche[1], Emily B.J. Coffey[1]; [1]Concordia University
Topic Area: ATTENTION: Auditory

A5 - Listeners Detect Deviant Beats Better in Musical Rhythm Contexts with Fewer Subdivision Levels: an MMN and Behavioral Study
Julia Yu[1], Aditi Tuli[1], Naomi Shi Yan Gong[1], Takako Fujioka[1]; [1]Stanford University
Topic Area: ATTENTION: Auditory

A6 - P3b Auditory Processing Differences in Adults With and Without Self-Reported Attentional Deficits
Danielle Rosengrant[1] (droseng1@ramapo.edu), Suzanne Zaugg[1], Naseem Choudhury[1]; [1]Ramapo College of New Jersey
Topic Area: ATTENTION: Auditory

A7 - Cortical circuit dynamics contributing to spatially directed attentional control in complex auditory environments.
Martín Irani[1,3] (mirani2@illinois.edu), Oliver Qu[2,4], Rachael Bell[1,4], Sepideh Sadaghiani[1,3], Howard Gritton[1,2,4]; [1]Neuroscience Program, University of Illinois, Urbana, 61820, IL, USA, [2]Department of Bioengineering, University of Illinois, Urbana, 61820, IL, USA, [3]Department of Psychology, University of Illinois, Urbana, 61820, IL, USA, [4]Department of Comparative Biosciences, University of Illinois, Urbana, 61820, IL, USA
Topic Area: ATTENTION: Auditory

A8 - Event Processing during Story Listening in Background Noise
Ryan Panela[1,2] (ryan.panela@utoronto.ca), Alexander Barnett[2], Morgan Barense[1,2], Björn Herrmann[1,2]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]Department of Psychology, University of Toronto
Topic Area: ATTENTION: Auditory

A9 - Neural Markers of Conscious and Non-conscious Speech Processing
Gal Chen[1] (galrefa.chen@mail.huji.ac.il), Ran Hassin[1], Leon Deouell[1]; [1]Hebrew University of Jerusalem
Topic Area: ATTENTION: Auditory

A10 - Early auditory stream formation of simultaneous musical objects
Shu Sakamoto[1] (sakams1@mcmaster.ca), Emily Wood[1], Laurel J. Trainor[1]; [1]McMaster Institute of Music and the Mind, McMaster University
Topic Area: ATTENTION: Auditory

A11 - Dynamics of the Multiple Demand Network Connectivity Under Varied Speech to Noise Ratios
Madison Tutton[1] (mtutton2@uwo.ca), Ali Tafakkor[1], Björn Herrmann[3,4], Aysha Motala[5], Ingrid Johnsrude[1,2]; [1]Department of Psychology, Western University, [2]School of Communication Sciences & Disorders, Western University, [3]Rotman Research Institute at Baycrest Academy for Research and Education, [4]Department of Psychology, University of Toronto, [5]Department of Psychology, University of Stirling
Topic Area: ATTENTION: Auditory

A12 - Sound Focus
Maya Peacock[1] (mpeacock@ramapo.edu); [1]Ramapo College of New Jeresy
Topic Area: ATTENTION: Auditory

A13 - Neural timescales of attention switching during speech listening
Sara Carta[1] (cartas@tcd.ie), Emina Aličković[2,3], Johannes Zaar[2,4], Alejandro López Valdés[1], Giovanni Di Liberto[1]; [1]Trinity College Dublin, [2]Eriksholm Research Centre, Oticon A/S, Snekkersten, Denmark, [3]Department of Electrical Engineering, Linköping University, Linköping, Sweden, [4]Hearing Systems Section, Department of Health Technology, Technical University of Denmark, 18 Kgs. Lyngby, Denmark
Topic Area: ATTENTION: Auditory

A14 - Unheard Surprises: Attention-Dependent Neocortical Dynamics Following Unexpected Omissions Revealed by Intracranial EEG
Vegard Volehaugen[1] (vegardvo@uio.no), Sabine Liliana Leske[1], Ingrid Funderud[2], Anais Llorens[3], Vinicius Rezende Carvalho[1], Tor Endestad[1], Anne-Kristin Solbakk[1], Alejandro Omar Blenkmann[1]; [1]University of Oslo, [2]Oslo University Hospital, [3]FEMTO-ST Institute
Topic Area: ATTENTION: Auditory

A15 - Connectome-based modelling reveals ketamine's modulatory effects on thalamocortical connectivity during auditory attention processing
Andreea Diaconescu[1,2] (andreea.diaconescu@camh.ca), Zheng Wang[1], Milad Soltanzadeh[1,2], Davide Momi[1], Andrew Clappison[3], Andre Schmidt[4], Franz Vollenweider[5], John D Griffiths[1,2]; [1]University of Toronto, [2]Centre for Addiction and Mental Health, [3]University of Ottawa, [4]Unversity of Basel, [5]University Hospital of Psychiatry, Zurich
Topic Area: ATTENTION: Auditory

A16 - Impact of Familiar and Unfamiliar Music on Brain Network Reconfigurations
Sydney Yeung[1] (sydneyyeung1@gmail.com), Karen Liu[1], Johan Nakuci[2], Kanika Bansal[2,3]; [1]Student Research Accelerator, [2]US DEVCOM Army Research Laboratory, Maryland, USA, [3]Computer Science and Electrical Engineering, University of Maryland, Baltimore County, Maryland, USA
Topic Area: ATTENTION: Auditory

A17 - Age Modulates the Effect of Attentional States on Affect in Adults with ADHD
Yudhajit Ain[1] (yudhajit.ain@ucalgary.ca), Simrit Rai[1], Avery Krupa[1], Jonas Buerkner[1], Brandy L. Callahan[1,2], Julia W. Y. Kam[1,2]; [1]University of Calgary, [2]Hotchkiss Brain Institute
Topic Area: ATTENTION: Development & aging

A18 - Associations Between Socioeconomic Stress, Engagement in Joint Attention, and Infant Neurodevelopment in 24- to 36-Month-Old Infants
Ana Badal[1] (anabadal@yorku.ca), Leen Asaad[1], Diana Pombo[1]; [1]York University
Topic Area: ATTENTION: Development & aging

A19 - Neural correlates of semantically driven visual search in naturalistic scenes in older adults.

Ilenia Salsano[1,2], Nathan M. Petro[1,2], Giorgia Picci[1,2,3], Ryan Glesinger[1,2], Hannah J. Okelberry[1,2], Lucy K. Horne[1,2], Jason A. John[1,2], Valerio Santangelo[4,5], Moreno Coco[6], Tony W. Wilson[1,2,3]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital, Boys Town, NE, USA, [2]Center for Pediatric Brain Health, Boys Town National Research Hospital, Boys Town, NE, USA, [3]Department of Pharmacology & Neuroscience, Creighton University, Omaha, NE, USA, [4]Neuroimaging Laboratory, Santa Lucia Foundation IRCCS, Rome, Italy, [5]Department of Philosophy, Social Sciences & Education, University of Perugia, Perugia, Italy, [6]Sapienza University of Rome, Rome, Italy

Topic Area: ATTENTION: Development & aging

A20 - Locus Coeruleus Impact on Memory Variability in Older Adults

Kitzia Solis[1], Jason Langley[1], Andrew Sun[2], Aaron Seitz[2], Xiaoping Hu[1], Ilana Bennett[1]; [1]University of California, Riverside, [2]Northeastern University

Topic Area: ATTENTION: Development & aging

A21 - Neural synchrony as a mechanism for broader attention in childhood?

Justine A. Vorvis[1,2] (justine.vorvis@mail.utoronto.ca), Amy Finn[1], Donald Mabbott[1,2], Katherine Duncan[1], Julie Tseng[2]; [1]University of Toronto, [2]The Hospital for Sick Children

Topic Area: ATTENTION: Development & aging

A22 - Reduced Integrity of White-Matter Tracts in Adolescents with ADHD: A Symptom Specific, Longitudinal Investigation

Rowan Bhagar[1,2] (rowan.bhagar@slu.edu), Katherine Luking[1]; [1]Saint Louis University, [2]Indiana University, School of Medicine

Topic Area: ATTENTION: Development & aging

A23 - Tracking the Transition from Stimulus-Specific Object Representations to Category-Level Abstractions During Visual Search

Ryan S. Williams[1] (ryanscott.williams@mail.utoronto.ca), Joseph M. Saito[2], Keisuke Fukuda[2], Susanne Ferber[1]; [1]University of Toronto, [2]University of Toronto Mississauga

Topic Area: ATTENTION: Nonspatial

A24 - Neural correlates of temporal orienting of attention in dynamic stimuli

Yi Gao[1] (lizzie.gao@yale.edu), Anna Christina Nobre[1,2], Irene Echeverria-Altuna[2], Sage Boettcher[2]; [1]Yale University, [2]University of Oxford

Topic Area: ATTENTION: Nonspatial

A25 - Exploring the Relationship Between Self-Reported Mind-Wandering and Executive-Functioning

Bhavneet Chohan[1], Chelsie Hart[1], Brandy Callahan[1], Julia Kam[1]; [1]University of Calgary

Topic Area: ATTENTION: Nonspatial

A26 - Subjective and pupillometric markers of arousal during movie viewing

Agnieszka Zuberer[1,2] (azuberer@gmail.com), Melanni Nanni-Zepeda[1,2], Flavio Frohlich[3], Thomas Liebe[4,2,6], Peter Vavra[6], Jörn Kaufmann[7], Tino Zaehle[7], Michael Esterman[8,9,10]; [1]Department of Psychiatry and Psychotherapy, University of Tübingen, Tübingen, Germany, [2]Department of Psychiatry and Psychotherapy, University Hospital Jena, Germany, [3]Carolina Center for Neurostimulation, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, [4]Department of Dermatology, University Hospital Magdeburg, Germany, [5]Department of Psychiatry, Medical University of Vienna, Vienna, Austria, [6]Department of Biological Psychology, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany, [7]Department of Neurology, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany, [8]National Center for PTSD, VA Boston Healthcare System, United States, [9]Boston Attention and Learning Laboratory, VA Boston Healthcare System, Boston, MA, USA, [10]Department of Psychiatry, Boston University School of Medicine, Boston, MA, USA

Topic Area: ATTENTION: Nonspatial

A27 - The attentional template is adaptively updated by learned associations

Dengxinyi Wei[1,2,3], Zhiheng Zhou[1,4], Joy J. Geng[1,2]; [1]Center for Mind and Brain, University of California Davis, Davis, CA, USA, [2]Department of Psychology, University of California Davis, Davis, CA, USA, [3]Department of Psychology, Yale University, New Haven, CT, USA, [4]College of Psychology, Sichuan Normal University, Chengdu, Sichuan, China

Topic Area: ATTENTION: Nonspatial

A28 - Temporal predictions dynamically modulate attentional capture by expected target features during visual search

Gwenllian C. Williams[1] (gwenllian.williams@psy.ox.ac.uk), Sage E. P. Boettcher[1], Anna C. Nobre[1,2]; [1]University of Oxford, [2]Yale University

Topic Area: ATTENTION: Nonspatial

A29 - Intracranial Neural Dynamics of Selective Attention in Rapid Visual Recognition

Meredith McCarty[1,2] (meredith.j.mccarty@uth.tmc.edu), Oscar Woolnough[1,2], Elliot Murphy[1,2], Nitin Tandon[1,2,3]; [1]Texas Institute for Restorative Neurotechnologies, The University of Texas Health Science Center at Houston, [2]Vivian L. Smith Department of Neurosurgery, McGovern Medical School, [3]Memorial Hermann Hospital, Texas Medical Center

Topic Area: ATTENTION: Nonspatial

A30 - Being out of the zone: Brain oscillatory dynamics during decreased sustained attention

Rodolfo Solís-Vivanco[1,2] (rsolis@innn.edu.mx), Louise Barne[3], Anthony Harris[3], Nilli Lavie[3]; [1]Instituto Nacional de Neurología y Neurocirugía, [2]Faculty of Psychology, Universidad Nacional Autónoma de México, [3]University College London

Topic Area: ATTENTION: Nonspatial

A31 - Longitudinal trajectories of neural activity change distinguish training of different mindfulness skills
Marne White[1], Yanli Lin[1], Natee Viravan[2], Monet Davis[1], Rithvika Payala[1], Samuel Wang[1], Deanna Wu[1], Todd Braver[1]; [1]Washington University in St. Louis, [2]Mahidol University
Topic Area: ATTENTION: Other

A32 - Investigating relationships between mind-wandering subtypes and spontaneous EEG activity at rest
Christine Chesebrough[1] (christinechesebrough@gmail.com), Lotus Shareef-Trudeau[2], Swetha Rao[2], Julia Kam[3], Aaron Kucyi[2]; [1]Feinstein Institutes for Medical Research, [2]Drexel University, [3]University of Calgary
Topic Area: ATTENTION: Other

A33 - Examining Intra-Individual Associations between Mind Wandering and Response Time Variability as a Function of Time-on-Task
Brooke Schwartzman[1] (bes171@miami.edu), Anthony P. Zanesco[1], Ekaterina Denkova[1], Amishi P. Jha[1]; [1]University of Miami
Topic Area: ATTENTION: Other

A34 - Rhythmic stimulation with wearables improves sustained attention and increases arousal
Nathan W Whitmore[1] (nathanww@media.mit.edu), Samantha WT Chan[1], Jingru Zhang[1,2], Patricia Maes[1]; [1]MIT, [2]Tsinghua University
Topic Area: ATTENTION: Other

A35 - Magnetoencephalography highlights the relationship between alpha power and patterns of ongoing thought
Jaana Simola[1] (jaana.simola@helsinki.fi), Linda Henriksson[2], Elizabeth Jefferies[3], Jonathan Smallwood[4]; [1]University of Helsinki, Finland, [2]Aalto University, Finland, [3]University of York, UK, [4]Queen's University, Canada
Topic Area: ATTENTION: Other

A36 - How Spontaneous Exploration of the Dynamic Repertoire at Rest Shapes Behavioural Performance
John Eusebio[1] (john.eusebio@mail.utoronto.ca), Norman Farb[1]; [1]University of Toronto
Topic Area: ATTENTION: Other

A37 - On the role of prefrontal and parietal cortices in mind wandering and dynamic thought
Tara Rasmussen[1] (t.rasmussen@uq.net.au), Hannah Filmer[2], Paul Dux[3]; [1]The University of Queensland
Topic Area: ATTENTION: Other

A38 - Is Working Standing up Better? A Comparative Analysis of Work Posture on Sustained Attention.
Julia Cardarelli[1] (juliac4@hawaii.edu), Jonas Vibell[1]; [1]University of Hawaii at Manoa
Topic Area: ATTENTION: Other

A39 - Attention-based Practices for Migraineurs: An Investigation of How Neurofeedback Mindfulness Improves Migraine Experience.
Faly Golshan[1] (faly.golshan@usask.ca), Rachel Lysenko, Monika Nabizadeh, Parham Alibolandi, Marla Mickleborough; [1]University of Saskatchewan
Topic Area: ATTENTION: Other

A40 - Adolescent brain development and the impact of adversity and peers: longitudinal insights from the ABCD study
Ms Lara Ayla Pollmann[1] (ayla.pollmann@kcl.ac.uk), Divyangana Rakesh[1,2], Katie McLaughlin[2], Delia Fuhrmann[1]; [1]King's College London, [2]Harvard University
Topic Area: EMOTION & SOCIAL: Development & aging

A41 - Do Psychosocial Factors Interact with ApoE Status to Predict Cognitive Decline in African Americans?
Neke Nsor[1], Kyle Bourassa[2], Lisa Barnes[3], Casey Brown[1]; [1]Georgetown University, [2]Duke University Medical Center, [3]Rush University Medical Center
Topic Area: EMOTION & SOCIAL: Development & aging

A42 - The unique contribution of tau pathology in the amygdala on depressive symptoms in cognitively normal older adults
Teodora Z. Markova[1] (teodoramarkova@brandeis.edu), Corrina Fonseca[2], Claire J. Ciampa[1], Alice Murphy[2], Susan M. Landau[2,3], Theresa M. Harrison[2], Anne S. Berry[4,5]; [1]Department of Biology, Brandeis University, Waltham, MA, USA, [2]Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA, USA, [3]Lawrence Berkeley National Laboratory, Berkeley, CA, USA, [4]Department of Psychology, Brandeis University, Waltham, MA, USA, [5]Volen Center for Complex Systems, Brandeis University, Waltham, MA, USA
Topic Area: EMOTION & SOCIAL: Development & aging

A43 - A cross-modal social-semantic space explains patterns of social-knowledge impairment in semantic dementia
Claire Peplinski[1], Y. Ivette Colón[1], Matthew Rouse[2], Matthew Lambon Ralph[2], Timothy Rogers[1]; [1]University of Wisconsin - Madison, [2]University of Cambridge
Topic Area: EMOTION & SOCIAL: Development & aging

A44 - Influence of Emotional Context on the Perception of Neutral Stimuli: An ERP Study
SHIH-KUEN CHENG[1] (skcheng@cc.ncu.edu.tw); [1]National Central University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A45 - Functional Connectivity Patterns Reveal A Role for Interoceptive Processing in the Representation of Emotion Concepts
Alexandra E. Kelly[1] (allie.e.kelly@gmail.com), Evangelia G. Chrysikou[1]; [1]Drexel University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A46 - Misophonia severity predicts cognitive impairment in the presence of trigger sounds
Kate Raymond[1] (kraymon9@uwo.ca), Blake Butler; [1]Western University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A47 - Impaired scene construction ability in adolescents with symptoms of post-traumatic stress
Hannah Marlatte[1,2], Jennifer Ryan[1,2,3], Asaf Gilboa[1,2]; [1]Rotman Research Institute, Baycrest Hospital, [2]Psychology Department, University of Toronto, [3]Psychiatry Department, University of Toronto
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A48 - Influence of emotional information on cognitive flexibility
Ms Vrushali Rao Gumnur[1] (gumnur@ualberta.ca), Sandra A. Wiebe[1]; [1]University of Alberta
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A49 - Functional organization of lateral prefrontal cortex during time-emotion integration
Mengsi Li[1] (mengsili@ucsb.edu), Jingyi Wang[1], Runan Wang[1], Regina C Lapate[1]; [1]University of California, Santa Barbara
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A50 - Lateral frontal pole tracks emotion metacognitive assessments during anticipatory threat
Joanne Stasiak[1] (joannestasiak@ucsb.edu), Christina Villanueva[1], Parker Barandon[1], Jingyi Wang[1], Neil Dundon[1], Elizabeth Rizor[1], Scott Grafton[1], Regina Lapate[1]; [1]University of California, Santa Barbara
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A51 - Art therapy and emotion regulation: A rigorous investigation of creative engagement's impact on mental health
Lucas Bellaiche[1] (lucas.bellaiche@duke.edu), Kayla Lihardo[1], Chloe Williams[1], Jill Chaffee[1], Paul Seli[1], Kevin S. LaBar[1]; [1]Duke University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A52 - Investigating Emotional Lateralization Biases with Verbal and Nonverbal Stimuli
Grace Wang[1,2], Jed Meltzer[1,2]; [1]University of Toronto, [2]Rotman Research Institute at Baycrest
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A53 - Pre-lecture Social Interaction Affects Teacher-Student Neural Coupling and Eye Movement Synchronization during Lecture
Yingying Peng[1] (20113471r@connect.polyu.hk), Samuel A Nastase[2], Yuhan Huang[1], Minghua Wu[1], Yuxi Li[3], Ping Li[1]; [1]The Hong Kong Polytechnic University, [2]Princeton University, [3]The Chinese University of Hong Kong
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A54 - Emotion impacts the entrainment of concurrent visual stimuli
Nathan M. Petro[1] (nathan.petro.phd@gmail.com), Yi Wei[1], Giorgia Picci[1,2], Thomas W. Ward[1,2], Christine M. Embury[1], Hannah J. Okelberry[1], Jason A. John[1], Ryan Glesinger[1], Lucy K. Horne[1], Tony W. Wilson[1,2]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital, [2]Department of Pharmacology & Neuroscience, Creighton University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A55 - Investigating the influence of deadlines and target agreements on cognitive control in a color discrimination task using the EEG
Stefan Arnau[1] (arnau@ifado.de), Yannick Metzler[1], Edmund Wascher[1], Mauro Larra[1]; [1]Leibniz Research Centre for Working Environment and Human Factors, Dortmund
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A56 - Emotion regulation and salivary cortisol in Top 100 esports competitors
Kyle Nolla[1] (knolla@u.northwestern.edu), Mark Beeman[1], Paul Reber[1], Aiden Cella[2], Emma Adam[1]; [1]Northwestern University, [2]Purdue University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A57 - Exploring the interplay of divergent creative thinking, smartphone use, mindfulness, and stress symptoms: A three-year cross-sectional study.
Joshua Upshaw[1] (jupshaw@uark.edu), Darya Zabelina[1]; [1]University of Arkansas
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A58 - Electrophysiological Dynamics of Emotion Regulation under the Two-Dimensional Model of Adult Attachment: An Event-Related Potential Study
Marcos Domic Siede[1] (mdomic@ucn.cl), Andrea Sánchez-Corzo[2], Martín Irani[3], Mónica Guzmán[1], Xaviera Álvarez[1], Vanessa Araya[1], Camila Espinoza[1], Karla Zenis[1], Jennifer Marín-Medina[1]; [1]Universidad Católica del Norte, [2]St. Jude Children's Research Hospital, [3]University of Illinois Urbana-Champaign
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A59 - Examining the neural correlates of error and moral processing
Shyh-Chang Kao[1] (sckao02.ls11@nycu.edu.tw), Cheng-Yi Chen[2], Yang-Teng Fan[3], Ya-Wei Cheng[1]; [1]National Yang Ming Chiao Tung University, [2]Taipei Medical University, [3]Yuan Ze University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A60 - Brain Activity During Emotion Regulation Predicts Working Memory Performance
Scarlett Horner[1] (horners@myumanitoba.ca), Roshni Lulla[2], Helen Wu[2], Shruti Shaktivel[2], Anthony Vaccaro[2], Ellen Herschel[2], Leonardo Christov-Moore[2], Colin McDaniel[2], Jonas Kaplan[2], Steven G. Greening[1]; [1]University of Manitoba, [2]University of Southern California
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A61 - Human brain activity at event boundaries and emotion changes in naturalistic videos
Ruiyi Chen[1] (rc799@cornell.edu), Karen Sasmita, Khena Swallow; [1]Cornell University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A62 - Investigating Spatio-Temporal Dynamics in Emotion-Cognition Interactions: A Multivoxel Pattern Analysis Approach
Reyhaneh Bakhtiari[1] (reyhaneh@gmail.com), Brea Chouinard[2], Andrea T Shafer[3], Matthew Moore[4,5], Florin Dolcos[6,7,8,9], Anthony Singhal[1,9]; [1]Department of Psychology, University of Alberta, Edmonton, AB, Canada, [2]Faculty of Kinesiology, Sport, and Recreation, University of Alberta, Edmonton, AB, Canada, [3]Specialty Care, Neurology and Oncology Baltimore, MD, USA, [4]War Related Illness and Injury Study Center, Veterans Affairs Palo Alto Health Care System, Palo Alto, CA, USA, [5]Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA, USA, [6]Beckman Institute for Advanced Science & Technology, University of Illinois at Urbana-Champaign, USA, [7]Neuroscience Program, University of Illinois at Urbana-Champaign, USA, [8]Department of Psychology, University of Illinois at Urbana-Champaign, USA, [9]Neuroscience & Mental Health Institute, University of Alberta, Edmonton, AB, Canada
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A63 - Title: Emotion Recognition and Autistic Traits: A Pupillometry Study
Marilyn Chege[1] (mchege@uwo.ca), Fakhri Shafai[1], Julia Montenegro[1], Nichole Scheerer[1], Elizabeth Gateman[1], Meara Stow[1], Arin Abraham[1], Tse Wing Winnie Ho[1], Ryan A. Stevenson[1]; [1]University of Western Ontario
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A64 - Mental Imagery and Fear Generalization
Andrew Lyons[1] (lyonsa3@myumanitoba.ca), McKenzie Andries[1], Ryan M Ferstl[1], Steven G Greening[1]; [1]University of Manitoba
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A65 - Influence of anxiety and threat on cognitive map learning
Brooke Sevchik[1] (bls85@duke.edu), Raphael Geddert[1], Tobias Egner[1]; [1]Duke University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A66 - The Impact of Potentially Morally Injurious Content on Reasoning and Its Neural Correlates: Data from the Canadian Armed Forces (CAF)
Oshin Vartanian[1] (oshinv1@mac.com), Anthony Nazarov[2], Timothy Lam[1], Shawn Rhind[1], Maria Shiu[1], Elaine Maceda[1], Kristen King[1], Janani Vallikanthan[1], Maitri Lad[1], Stacey Silins[3], Megan Thompson[1]; [1]Defence Research and Development Canada, [2]MacDonald Franklin Operational Stress Injury (OSI) Research Centre, [3]Director General Military Personnel Research and Analysis
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A67 - Not just disgust: Network-based and seed-to-voxel insular connectivity distinguishes misophonia from disgust sensitivity and related clinical measures
Heather A Hansen[1] (heather.hansen@concordia.ca), Charles S Ferris[2], Zeynep M Saygin[3]; [1]Concordia University, [2]McGill University, [3]The Ohio State University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A68 - COGNITIVE FLEXIBILITY AND PUPIL RESPONSE DURING SOCIAL NEGOTIATIONS UNDER ACUTE STRESS
Catalina Fabar[1] (fabar.chagay@gmail.com), Martín Irani[2], Pablo Billeke[3], Valentín Peñaloza-Sancho[4], Alexies Dagnino-Subiabre[4], Nadira Faber[5,6], Tomás Ossandon[1]; [1]Pontificia Universidad Católica, [2]University of Illinois Urbana-Champaign, [3]Universidad del Desarrollo, [4]Universidad de Valparaíso, [5]University of Oxford, [6]University of Bremen
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A69 - Enhancement of emotion perception through transcranial random noise stimulation over the inferior frontal gyrus
Carmen Dang[1] (c1dang@torontomu.ca), Michael Zara[1], Frank Russo[1]; [1]Toronto Metropolitan University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A70 - Fault Lines and TikTok: How Social Media Influences Emotional Decisions
Katie Cooke[1] (kgc516@gmail.com), Baie Ensio[2], Chase Elliott[3], Alexander Clayton[4], Carole Scherling[5]; [1]Belmont University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A71 - Drivers of epistemic curiosity in younger and older adults: The role of knowledge confidence and future value
Megan Vaziri[1] (megan.vaziri@torontomu.ca), Liyana T. Swirsky[1], Julia Spaniol[1]; [1]Toronto Metropolitan University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A72 - Associations Between the Late Positive Potential and PTSD, Anxiety, and Depressive Symptoms Among Trauma-Exposed Undergraduates
Erick J. Fedorenko[1], Patrick V. Barnwell[2], Richard J. Contrada[2]; [1]Alpert Medical School of Brown University, [2]Rutgers University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A73 - Depressive Symptomology and Gray Matter Integrity of Interoceptive Networks in Remitted Depressed Outpatients
Liliana C. Wu[1] (liliana.wu@mail.utoronto.ca), Zindel V. Segal[2], Norman A. S. Farb[2,3]; [1]University of Toronto, [2]University of Toronto Scarborough, [3]University of Toronto Mississauga
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A74 - Can you still HAND-le these emotions? A continued investigation on hemispheric dominance with exposure to visual stimuli.
Siena DeAngelo[1] (siena.deangelo@bruins.belmont.edu), Youstina Tadros[1], Hannah Potts[1], Savannah Campbell[1], Carole Scherling, PhD[1]; [1]Belmont University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A75 - Alpha-frequency Transcranial Alternating Current Stimulation Attenuates Anxiety-induced Salience Network Hyperconnectivity
John Massa[1] (massa@psy.fsu.edu), Peter Kuan-Hao Cheng[1], Joshua Brown[1], Yijia Ma[1], Wen Li[2]; [1]Florida State University, [2]UTHealth Houston
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A76 - Untangling the Threads of Motivated Memory: Independent Influences of Reward and Emotion
Holly Bowen[1] (hbowen@smu.edu), Christopher Madan[2]; [1]Southern Methodist University, [2]University of Nottingham
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A77 - Moderate effect of social anxiety tendency in the influence of prior social information on emotional attribution bias
Yuka Hirayama[1] (hyu1114aaaaa@gmail.com); [1]Senshu University, Japan
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A78 - The Prediction Accuracy of Enjoyment is Influenced by a History of Peer Victimization
Isabel Leiva[1], Samantha Reisman[2], Chelsea Helion[1], Vishnu P. Murty[1], Johanna M. Jarcho[1]; [1]Temple University, [2]Brown University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A79 - Investigating the Use of Speech Analysis as a Diagnostic Tool for Treatment-Resistant Depression
Micaela Wiseman[1,2] (micaela.wiseman@mail.utoronto.ca), Madeline Wood Alexander[1,3], Sean Nestor[1,4], Nir Lipsman[1,2,4,5], Jessica Robin[7], Michael J. Spilka[7], William Simpson[1,2,4], Jennifer S. Rabin[1,2,3,6]; [1]Harquail Centre for Neuromodulation, Sunnybrook Research Institute, Toronto ON, [2]Institute of Medical Sciences, University of Toronto, Toronto, ON, [3]Rehabilitation Sciences Institute, University of Toronto, Toronto, ON, [4]Department of Psychiatry, University of Toronto, Toronto, ON, [5]Department of Surgery, University of Toronto, Toronto, ON, [6]Division of Neurology, Department of Medicine, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, [7]Winterlight Labs, Inc, Toronto, ON;
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A80 - Common and distinct patterns of intrinsic whole-brain functional connectivity in unipolar and bipolar depression: A voxel-based meta-analysis
Zachary Pierce[1] (zapierce11@gmail.com), Jessica Black[1]; [1]Boston College
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

A81 - Gradients of Time, Action and Memory in Frontal, Parietal and Temporal Cortices Supporting Cognitive Control
McKinney Pitts[1] (pitts@psy.fsu.edu), Derek Nee; [1]Florida State University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A82 - Temporal Dynamics of Parametric Task Switching
Bettina Bustos[1] (bettinanicolebustos@gmail.com), Eliot Hazeltine[1], J. Toby Mordkoff[1], Jiefeng Jiang[1]; [1]University of Iowa, Psychological and Brain Sciences
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A83 - Decoding Composition and Generalization of task representations in hierarchical task learning
WooTek Lee[1] (woo-tek-lee@uiowa.edu), Jiefeng Jiang[1]; [1]University of Iowa
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A84 - Multi-level dynamics of task representation during learning
Dr. Guochun Yang[1] (guochun-yang@uiowa.edu), DR. Jiefeng Jiang[1]; [1]University of Iowa
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A85 - Intracranial dynamics of Reward Positivity associated with Impulsive Choice
Rhiannon L. Cowan[1] (rhiannon.cowan@utah.edu), Tyler S. Davis[1], Bornali Kundu[2], Ben Shofty[1], Shervin Rahimpour[1], John D. Rolston[3], Elliot H. Smith[1]; [1]University of Utah, [2]University of Missouri, [3]Brigham & Women's Hospital and Harvard Medical School
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A86 - Task Preparation is Reflected in Neural State Space Dynamics
Harrison Ritz[1] (hritz@princeton.edu), Aditi Jha[1], Nathaniel Daw[1], Jonathan Pillow[1], Jonathan Cohen[1]; [1]Princeton University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A87 - Understanding dietary regulatory success as weight status-dependent changes in large-scale cortical organization.
Remi Janet1 (ramj@queensu.ca), Jonathan Smallwood1, Cendri Hutcherson2,3, Hilke Plassmann4, Bronte McKeown1, Anita Tusche1,5; 1Departments of Psychology, Queen's University, Kingston, Canada, 2Department of Psychology, University of Toronto, Toronto, ON Canada, 3Department of Marketing, Rotman School of Management, University of Toronto, Toronto, ON Canada, 4Marketing Area, INSEAD and Paris Brain Institute, Sorbonne University, France, 5Division of Humanities and Social Sciences, California Institute of Technology, Pasadena, United States
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A88 - Prefrontal Cortex and Hippocampus Jointly Guide Flexible Working Memory
Mariana Lomeli Fernandez[1,2], Randolph Helfrich[2], Nicholas Myers[1]; [1]School of Psychology, University of Nottingham, [2]Hertie Institute for Clinical Brain Research, University Medical Center Tuebingen
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A89 - Sustained neural mechanisms of proactive control in a novel task-switching color-word Stroop fMRI paradigm
Maya Quale[1] (mayaq@wustl.edu), Thomas Dudey[1], Joset Etzel[1], Julie Bugg[1], Todd Braver[1]; [1]Washington University in Saint Louis
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A90 - Interactive ocular motor set-shifting task evoked distinct electrophysiological markers for stages of cognitive flexibility
Ling-Yu Huang[1] (beryl.ly.huang@gmail.com), Riley Byers[2], James A. Branch[1], Areeb Syed[1], Jennifer E. McDowell[1], Brett A. Clementz[1]; [1]University of Georgia, [2]Brandeis University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A91 - Selective attention to prior knowledge modulates default network activity in support of cognitive control
Veronica Diveica[1] (veronica.diveica@mcgill.ca), Roni Setton[2], Gary Turner[3], Nathan Spreng[1]; [1]Montreal Neurological Institute, [2]Harvard University, [3]York University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A92 - The Influence of Task Demands and Object Feature Dimensions on Saccade Target Selection.
Daniel MacDonald[1] (dmacdo22@uoguelph.ca), Mazyar Fallah[1], Heather Jordan[1]; [1]University of Guelph
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A93 - Decoding congruency effects: Insights from reach actions and electroencephalography (EEG)
Moaz Shoura[1] (moaz.shoura@mail.utoronto.ca), Katie Smith[2], Adrian Nestor[1], Christopher Erb[2]; [1]University of Toronto, [2]University of Auckland
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A94 - The neural dynamics of sequence-specific behavior in obsessive-compulsive disorder
Hannah Doyle[1] (hannah_doyle1@brown.edu), Sarah Garnaat[2], Nicole McLaughlin[1], Theresa M. Desrochers[1]; [1]Brown University, Providence, RI, [2]Dartmouth-Hitchcock Medical Center, Lebanon, NH
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A95 - Distinct prefrontal area contributions to rule-guided decision-making in primates: mechanistic insights from multi-area e-phys. and neurostimulation.
Mark Buckley[1] (buckley@psy.ox.ac.uk), Juan Galeazzi[1], Matthew Ainsworth[1]; [1]University of Oxford
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A96 - **CLOCKΔ19 mouse model elucidates cognitive deficits in** bipolar disorder
Dennis Arruda[1] (darruda@rwu.edu), Simrat Dhillon[1], Eden Fraatz[1], Giana Guerra[1], Brittany Martin[1], Samantha Soares[1], Victoria Heimer-McGinn[1]; [1]Roger Williams University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A97 - Intracranial EEG Correlates of Concurrent Demands on Cognitive Stability and Flexibility
J. Zhang[1] (jzhang7345@gmail.com), A. Earle-Richardson[1], D. Southwell[1], B. Frauscher[1], T. Egner[1], G.B. Cogan[1]; [1]Duke University
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A98 - Both stimulus-control state associations and stimulus-response associations contribute to item-specific proportion congruency effect
Bingfang Huang[1] (bingfang-huang@uiowa.edu), Jiefeng Jiang[1]; [1]University of Iowa
Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A99 - Investigating the congruency sequence effect: A behavior meta-analysis and an fMRI study
Yunji Lee[1] (ylee737@gatech.edu), Derek Smith[2], Eric Schumacher[1]; [1]Georgia Institute of Technology, [2]Johns Hopkins University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A100 - Motor inhibition and switching in variant stop signal tasks
Rain Paul[1], Angela Gori[1], Chiang-shan R. Li[2], Sien Hu[1]; [1]SUNY Oswego, [2]Yale University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A101 - Out-of-phase transcranial alternating current stimulation modulates prestimulus EEG theta and alpha power
Dr. Byoung-Kyong Min[1] (min_bk@korea.ac.kr), Yukyung Kim[1], Je-Hyeop Lee[1], Je-Choon Park[1], Jeongwook Kwon[1], Sangbin Yun[1], Jaewon Yang[1], Dr. Jeehye Seo[1]; [1]Korea University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A102 - Physical Activity on Impulsivity Control in Pediatric ADHD
Lauren Dacorro[1,2] (ldacorro6@gmail.com), Jennifer Bruno[2], Elveda Gozdas[2], S.M. Hadi Hosseini[2], Shu-Shih Hsieh[1]; [1]Kingston University London, [2]Stanford University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A103 - Modeling of control over task-switching and cross-task interference supports a two-dimensional model of cognitive stability and flexibility
Raphael Geddert[1] (raphael.geddert@duke.edu), John Pearson[1], Tobias Egner[1]; [1]Duke University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A104 - The effect of surprise on cognitive flexibility and motor control: an EEG study
Stefania C Ficarella[1] (stefania.ficarella@onera.fr), Sébastien Angelliaume[1], Thomas Rakotomamonjy[1], Nicolas Lantos[1], Marielle Plat-Robain[2], Jean-Christophe Sarrazin[1]; [1]ONERA – The French Aerospace Lab, Salon-de-Provence, France, [2]Airbus Operations SAS, Toulouse, France
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A105 - The influence of incentives on performance generalizes across cognitive control tasks
Ziwei Cheng[1] (ziwei_cheng@brown.edu), Xiamin Leng[1], Amitai Shenhav[1]; [1]Brown University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A106 - Alcohol Sensitivity, Approach Bias, and Inhibitory Control in Young Adult Binge Drinkers
Luke Poole[1] (lgp34@kines.rutgers.edu), Jonathon Bourque[2], Hannah Perdue[3], Amber Sarwani[4], Andrew Ude[5], Marsha Bates[6], Brandon Alderman[7]; [1]Rutgers University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A107 - The Connection Between Cravings and Food-Related Inhibitory Control: Observations from an Event-Related Potential (ERP) Study
Hayley K. Cooper[1] (hcooper3@toromail.csudh.edu), Kaylie A. Carbine[1], James D. LeCheminant[2], Michael J. Larson[2]; [1]California State University Dominguez Hills, [2]Brigham Young University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A108 - Anxiety and Depression Affect Frontal Theta Power in Response to Threatening Stimuli
Sarah Poirier[1], Riley McHugh[2], Brynn Castellani[3], Brigid Baldwin[4], Audrey Weil[5]; [1]Washington College
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A109 - Task-Related Interference in Older Adults: Behavioural and Electrophysiological Correlates of On- and Off-Task Thoughts
Sarah Henderson[1] (sh14jm@brocku.ca), A. D. Ryan[2], Luke Atack[3], Karen Campbell[1]; [1]Brock University, [2]Acadia University, [3]McGill University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A110 - Title: Youth with Elevated ADHD or Lower Inhibitory Control are at Increased Risk Following TBI in Early Adolescence
Jacob Franzen[1] (jfranzen113@gmail.com), Stephanie Hartling[1], Katherine Luking[1]; [1]Saint Louis University Psychology Department
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A111 - The ERN-Anxiety correlation: a closer examination with robust statistics
Zelin Chen[1] (z439chen@uwaterloo.ca), Roxane J Itier[1]; [1]University of Waterloo
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A112 - Does screentime impact response inhibition in neurdiverse children?
Elizabeth Kuenzel[1] (ekuenzel@uwo.ca), Abagail Hennessy[1], Eun Jung Choi[1], Emily S. Nichols[1,2], Emma G. Duerden[1,2,3]; [1]Faculty of Education, Western University, [2]Western Institute for Neuroscience, Western University, [3]Schulich School of Medicine and Dentistry, Western University
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A113 - Improved anti-saccade performance in major depression following repetitive transcranial magnetic stimulation of the dorsolateral prefrontal cortex
Rachel Yep[1] (rachel.yep@sri.utoronto.ca), Christopher B. Pople[1,2], Donald C. Brien[3], Brian C. Coe[3], Douglas P. Munoz[3], Nir Lipsman[1,2,4], Sean M. Nestor[1,2,5], Peter Giacobbe[1,2,5], Jennifer S. Rabin[1,2,6]; [1]Sunnybrook Research Institute, Toronto ON, Canada, [2]Harquail Centre for Neuromodulation, Sunnybrook Health Sciences Centre, Toronto ON, Canada, [3]Queen's University, Kingston ON, Canada, [4]Division of Neurosurgery, Sunnybrook Health Sciences Centre, University of Toronto, Toronto ON, Canada, [5]Department of Psychiatry, Sunnybrook Health Sciences Centre, University of Toronto, Toronto ON, Canada, [6]Division of Neurology, Department of Medicine, Sunnybrook Health Sciences Centre, University of Toronto, Toronto ON, Canada
Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A114 - Behavioural response and event-related potential for a novel 3D virtual reality-based Go/No-go (bWell): Validation with a classical 2D Go/No-go

Budhachandra Khundrakpam[1] (budhachandra.khundrakpam@nrc-cnrc.gc.ca), Sujata Sinha[2], Vincent Gagnon-Shaigetz[1], Nusrat Choudhury[1]; [1]National Research Council Canada, [2]McGill University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A115 - Multimodal Imaging of Reward Processing in Major Depressive Disorder

Christopher J. H. Pirrung[1] (chrisjpirrung@gmail.com), Garima Singh[1], Jeremy Hogeveen[1], Davin Quinn[1], James F. Cavanagh[1]; [1]University of New Mexico

Topic Area: EXECUTIVE PROCESSES: Other

A116 - Temporal dynamics of integrative processes that construct task representations

Stephanie Leach[1] (scleach@uiowa.edu), Hannah Morrow[1], Jiefeng Jiang[1], Kai Hwang[1]; [1]University of Iowa

Topic Area: EXECUTIVE PROCESSES: Other

A117 - Exploring the neural organization of cognitive control using dense neuroimaging

Katherine Michon[1], Esther Kim[1], Violet Zhou[1], Jahla Osborne[1], Thad Polk[1]; [1]University of Michigan

Topic Area: EXECUTIVE PROCESSES: Other

A118 - The effects of photobiomodulation treatment on cognitive functioning and symptomatology in mild Traumatic Brain Injury: A pilot study

Hope Nyarady[1] (hopenyar@buffalo.edu), David Shucard[1], Praveen Arany[1], Thomas Mang[1], Janet Shucard[1], Thomas Covey[1]; [1]University at Buffalo

Topic Area: EXECUTIVE PROCESSES: Other

A119 - Neurocognitive rsfMRI Network Connectivity changes after Bariatric Surgery

Hugo Sandoval1 (hugo.sandoval@ttuhsc.edu), Thomas O'Neill1, Benjamin Clapp2, Deborah Clegg3, Taylor Gullet1; 1TTUHSC El Paso Radiology Department, 2TTUHSC El Paso Department of Surgery, 3TTUHSC El Paso Vice President for Research

Topic Area: EXECUTIVE PROCESSES: Other

A120 - Beyond Words: Bilingual Experience Modulates Executive Function Development in Preschool-Aged Children

Sally Sade[1] (sally.sade@uleth.ca), Scott Rathwell[1], Bryan Kolb[1], Claudia Gonzalez[1], Robbin Gibb[1]; [1]University of Lethbridge

Topic Area: EXECUTIVE PROCESSES: Other

A121 - Trauma symptomatology among people with HIV scales with altered theta-gamma dynamics underlying executive dysfunction

Lauren K. Webert[1] (lauren.webert@boystown.org), Mikki Schantell[1], Katherine K. Landler[1], Jake J. Son[1], Lucy K. Horne[1], Grant M. Garrison[1], Hannah J. Okelberry[1], Jason A. John[1], Anna T. Coutant[1], Ryan Glesinger[1], Kellen M. McDonald[1], Christine M. Embury[1], Tony W. Wilson[1]; [1]Boys Town National Research Hospital

Topic Area: EXECUTIVE PROCESSES: Other

A122 - A meta-analysis of language and cognition in the developing bilingual brain: From infancy to adolescence

Kai Ian Leung[1] (kaiian.leung@mail.utoronto.ca), Lindsay Williams[1], Pascale Tremblay[2], Elizabeth Rochon[1], Monika Molnar[1]; [1]University of Toronto, [2]Université Laval

Topic Area: LANGUAGE: Development & aging

A123 - Age-Related Alterations in Alpha and Beta Oscillatory Dynamics During Grammar Processing in Youth

Dr. Elizabeth Heinrichs-Graham[1] (elizabeth.heinrichs-graham@boystown.org), Allison Macdonald[1], Zhiying Shen[1], Augusto Diedrich[1], Phillip Astorino[1], Ryan McCreery[1], Elizabeth Walker[2]; [1]Boys Town National Research Hospital, [2]University of Iowa

Topic Area: LANGUAGE: Development & aging

A124 - Predicting Literacy in Emergent Readers in Rural Côte d'Ivoire: A Longitudinal fNIRS Study

Henry Brice[1] (henrybrice@gmail.com), Benjamin Zinszer[2], Joelle Hannon[3], Fabrice Tanoh[4], Konan Nana N'Goh Anicet[4], Kaja K. Jasińska[1,5]; [1]University of Toronto, [2]Swarthmore College, [3]University of Delaware, [4]Université Félix Houphouët-Boigny, Côte d'Ivoire, [5]Haskins Laboratories

Topic Area: LANGUAGE: Development & aging

A125 - Infant Communication Outcomes Relate to Language Network Connectivity In Utero

Rutva Master[1] (rmaster5@uwo.ca), Emily Nichols[1], Roy Eagleson[1], Emma Duerden[1], Sandrine De Ribaupierre[1]; [1]Western University

Topic Area: LANGUAGE: Development & aging

A126 - A longitudinal research of exploring neural mechanisms of morphological processing in the brains of young Chinese-English bilinguals

Syuan-Yu Lin[1], Shiou-Yuan Chen[2], Li-Ying Fan[3], Hsin-Chin Chen[4], Wei-Hung Lin[1], Tai-Li Chou[1]; [1]National Taiwan University, [2]University of Taipei, [3]National Taipei University of Education, [4]National Chung Cheng University

Topic Area: LANGUAGE: Development & aging

A127 - Feasibility study of a multidomain cognitive assessment in adolescent girls in rural Ethiopia

Victoria Leavitt[1] (vl2337@cumc.columbia.edu), Eshetu Zerihun Tariku[2,5], Maku Demuyakor[3], Muluken Bekele Sorrie[2,5], Gudina Egata[4], Stefaan De Henauw[5], Sean Traynor[6], Souheila Abbeddou[5]; [1]Columbia University, [2]Arba Minch University, Arba Minch, Ethiopia, [3]McKing Consulting, Atlanta, Georgia, USA, [4]Addis Ababa University, Ethiopia, [5]Ghent University, Ghent, Belgium, [6]Tufts University, Boston *shared first author*

Topic Area: LANGUAGE: Development & aging

A128 - Exploring the Links Between Lexical Production and Track-Weighted Imaging in Middle-Aged Adults

Clément GUICHET[1] (clement.guichet@univ-grenoble-alpes.fr), Arnaud Attyé[2], Elise Roger[1,3,4], Sophie Achard[5], Martial Mermillod[1], Monica Baciu[1]; [1]Univ. Grenoble Alpes, CNRS UMR 5105 LPNC, [2]GeodAIsics, Grenoble, France, [3]Institut Universitaire de Gériatrie de Montréal, Communication and Aging Lab, [4]Faculty of Medicine, University of Montreal, [5]LJK, UMR CNRS 5224, Université Grenoble Alpes

Topic Area: LANGUAGE: Development & aging

A129 - Does connectivity between frontotemporal areas at age 7 predict specialization for phonological and semantic processing at age 9.

Avantika MATHUR[1] (avantika9mathur@gmail.com), Jin Wang[2], James R. Booth[1]; [1]Brain Development Laboratory, Department of Psychology and Human Development, Peabody College, Vanderbilt University, Nashville, TN 37203, [2]GAAB lab, 50 Church Street, Cambridge, MA 02138

Topic Area: LANGUAGE: Development & aging

A130 - Characterizing neural signatures of dyslexia and co-occurring math learning difficulties (MLD) with machine learning

Margo Kersey[1] (margo.kersey@ucsf.edu), Janhavi Pillai[1], Rian Bogley[1], Marni Shabash[1], Dolce Vita Martin-Moreno[1], Elizabeth Carpenter[1], Boon Lead Tee[1], Jessica de Leon[1], Zachary Miller[1], Christa Pereira Watson[1], Maria Luisa Mandelli[1], Bettina Pedemonte[1], Maria Luisa Gorno Tempini[1], Pedro Pinheiro-Chagas[1]; [1]University of California, San Francisco

Topic Area: LANGUAGE: Development & aging

A131 - Brain-behavior Support for the Role of Morphology in Child Word Reading

Ramiro Lucas-Mariano[1,2] (rlucasma@usc.edu), Isabella Guzman[1,3], Maria Gonzalez[1,4]; [1]University of Michigan, Ann Arbor, [2]University of Southern California, [3]University of Houston, [4]University of Central Florida

Topic Area: LANGUAGE: Development & aging

A132 - Does regular physical exercise mitigate age-related decline in word production?

Yanina Prystauka[1], Kamen A. Tsvetanov[2], Foyzul Rahman[3], Jack Feron[4], Eunice G. Fernandes[1], Allison Wetterlin[1], Samuel J.E. Lucas[4], Linda Wheeldon[1], Katrien Segaert[4]; [1]University of Agder, [2]University of Cambridge, [3]Birmingham City University, [4]University of Birmingham

Topic Area: LANGUAGE: Development & aging

A133 - The complex relationship between hand preference, language, executive function, and social competence in preschool children

Nicole A van Rootselaar[1] (nicole.vanrootselaar@uleth.ca), Fangfang Li[1], Robbin Gibb[1], Claudia L. R. Gonzalez[1]; [1]University of Lethbridge

Topic Area: LANGUAGE: Development & aging

A134 - Comparison of functional connectivity networks during movie-viewing vs. resting-state with whole-head fNIRS

Virginia Chambers[1], Isabel Nichoson[2], Richard Aslin[1,3], Sara Sanchez-Alonso[1]; [1]Yale University, [2]Tulane University, [3]University of Connecticut

Topic Area: LANGUAGE: Development & aging

A135 - The Impact of interrupted schooling on the functional connectivity for reading in resettled refugee children.

Hassan Abdulrasul[1] (hassan.abdulrasul@utoronto.ca), Angela Capani[1], Henry Brice[1], Kaja K Jasińska[1,2]; [1]University of Toronto, [2]Haskins Laboratories

Topic Area: LANGUAGE: Development & aging

A136 - White matter integrity in the Frontal Aslant Tract and language production in ageing

JIE YAN[1] (jzy5486@psu.edu), Xiaoxiao Bai, Michele Diaz; [1]Pennsylvania State University

Topic Area: LANGUAGE: Development & aging

A137 - How does the aging brain respond to acoustically challenging speech? Insights from simultaneous EEG, pupillometry and memory outcomes

Jack Silcox[1] (jack.silcox@utah.edu), Karen Bennett[1], Allyson Copeland[1], Sarah Ferguson[1], Brennan Payne[1]; [1]University of Utah

Topic Area: LANGUAGE: Development & aging

A138 - Speech Perception in Noise Through Hearing Aids: An fNIRS Investigation of Age-Related Hearing Loss

Allison S. Hancock[1] (allison.hancock@usu.edu), Bridger L. Jorgensen[1], Mindee L. Anderson[1], Alan Wisler[1], Tiffany Shelton[1], Ronald B. Gillam[1], Naveen K. Nagaraj[1]; [1]Utah State University

Topic Area: LANGUAGE: Development & aging

A139 - Modelling the developmental lateralization of MEG event-related beta oscillations during auditory verb generation
Minarose Ismail[1,2] (minaroseismail@gmail.com), Davide Momi[3], Zheng Wang[3], Cathy L. Barr[1,2], Anthony R. McIntosh[4], Darren S. Kadis[1,2], John D. Griffiths[1,3]; [1]University of Toronto, [2]The Hospital for Sick Children, Toronto, [3]Centre for Addiction and Mental Health, Toronto, [4]Simon Fraser University, Vancouver
Topic Area: LANGUAGE: Development & aging

A140 - Tiny changes: exploring bilingualism through NODDI and insights into microstructural plasticity
Imola X MacPhee[1], John AE Anderson; [1]Carleton University, Ottawa, Canada
Topic Area: LANGUAGE: Development & aging

A141 - Neural entrainment as a measure of speech segmentation in infants
Sarah Breen[1] (sarah.breen@manchester.ac.uk), Szilvia Linnert[1], Anna Theakston[1], Alissa Ferry[1]; [1]University of Manchester
Topic Area: LANGUAGE: Development & aging

A142 - The Effect of Social Network Composition and Frequency of Contact on Lexical Retrieval in Older Adults
Ye-Jee Jung[1,2] (yejee.jung@hunter.cuny.edu), Loraine Obler[2], D.H. Whalen[2,3], Aisha Haroun[1,2], Samsun Nahar[1,2], Amy Vogel-Eyny[1]; [1]Hunter College, City University of New York, [2]The Graduate Center, City University of New York, [3]Yale University Child Study Center
Topic Area: LANGUAGE: Development & aging

A143 - Assessing the links among malnutrition, brain functional connectivity, and behavioral outcomes in young Bangladeshi children.
RENATA DI LORENZO[1,2], LAURA PIRAZZOLI[1,2], EILEEN SULLIVAN[1,3], TALAT SHAMA[4], TERRENCE FORESTER[5], JUSTIN O'SULLIVAN[6], CHARLES NELSON[1,2,3]; [1]Boston Children's Hospital, Department of Pediatrics, Division of Developmental Medicine, Boston, Massachusetts, United States, [2]Harvard Medical School, Boston, Massachusetts, United States, [3]Harvard Graduate School of Education, Cambridge, Massachusetts, United States, [4]Icddrb, Dhaka, Bangladesh, [5]University of the West Indies, [6]University of Auckland
Topic Area: LANGUAGE: Development & aging

A144 - Decoding lexical and supralexical processes in American Sign Language comprehension
Brennan Terhune-Cotter[1,2] (bterhunecotter@sdsu.edu), Karen Emmorey[1]; [1]San Diego State University, [2]University of California, San Diego
Topic Area: LANGUAGE: Lexicon

A145 - The neural associations between fingerspelling, print, and signs: An ERP study of deaf readers
Sofia E. Ortega[1] (seortega@sdsu.edu), Katherine J. Midgley[1], Phillip J. Holcomb[1], Karen Emmorey[1], Brittany Lee[2]; [1]San Diego State University, [2]University of Connecticut
Topic Area: LANGUAGE: Lexicon

A146 - Embedding the past and the future into speech perception
Hua Fan[1] (202121198438@stu.blcu.edu.cn), Lei Zhang[1], Yuting Meng[1], Ling Liu[1]; [1]Beijing Language and Culture University, Beijing, China
Topic Area: LANGUAGE: Lexicon

A147 - Signal coherence reflects changes in predictive processing for bilinguals in L2: an EEG study
Katherine Sendek[1], Elaina Jahanfard[1], Tamara Swaab[1]; [1]University of California - Davis
Topic Area: LANGUAGE: Other

A148 - Learning Through Song: Assessing Neural Tracking, Engagement, and Comprehension in the Classroom
Anna Czepiel[1], Christina Vanden Bosch der Nederlanden[1]; [1]University of Toronto Mississauga
Topic Area: LANGUAGE: Other

A149 - Large Language Model Alignment with Brain Representations during Language Production
Roger Beaty[1], John Patterson[1], Elisa Kwon[2], Kosa Goucher-Lambert[2]; [1]Pennsylvania State University, [2]University of California, Berkeley
Topic Area: LANGUAGE: Other

A150 - Chunking Language: Phase-Locked Oscillations or Evoked Responses?
Lena Henke[1] (henke@cbs.mpg.de), Burkhard Maess[1], Lars Meyer[1,2]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Clinic for Phoniatrics and Pedaudiology, University Hospital Münster, Germany
Topic Area: LANGUAGE: Other

A151 - Predicting the next sentence (not word) in pretraining: What model-brain alignment tells us about discourse-level comprehension
Shaoyun Yu[1] (shaoyun.yu@polyu.edu.hk), Chanyuan Gu[1], Kexin Huang[1], Ping Li[1]; [1]The Hong Kong Polytechnic University
Topic Area: LANGUAGE: Other

A152 - Impact of Passive Second Language Exposure on Speech Segmentation and Word Learning
Amiya S. Aggarwal[1] (aaggar7@uwo.ca), E. Rae Hoeppner[1], Laura J. Batterink[1]; [1]University of Western Ontario
Topic Area: LANGUAGE: Other

A153 - Harnessing Implicit Learning to Support the Discovery of Second Language Phoneme Patterns in Adult Learners
Emilie Rae Hoeppner[1] (ehoeppne@uwo.ca), Amiya S. Aggarwal[1], Laura J. Batterink[1]; [1]The University of Western Ontario
Topic Area: LANGUAGE: Other

A154 - Dynamic Neural Interactions in Word and Discourse Processing: insights from fused fMRI/EEG
Clair Min Kyung Hong[1] (min.kyung.hong@vanderbilt.edu), Katherine Aboud; [1]Vanderbilt University
Topic Area: LANGUAGE: Other

A155 - Semantic Richness & Conflict Effects in Discourse-Level Referential Processing
Nathan Caines[1] (ncaines@ucsc.edu), Megan Boudewyn[1]; [1]University of California Santa Cruz
Topic Area: LANGUAGE: Other

A156 - Behavioral and cortical profiles for family history of dyslexia using binary, continuous, and genetic kinship approaches
Oliver Lasnick[1] (oliver.lasnick@uconn.edu), Fumiko Hoeft[1]; [1]University of Connecticut
Topic Area: LANGUAGE: Other

A157 - On the Neural Bases of the Interface between Reading and writing: Implications of Lesion Data from English and Japanese speakers
Venu Balasubramanian[1,4] (venugopal.balasubramanian@shu.edu), Kaitlyn Weber[1,4], Sarah Zimmer[1,4], Ava Amiano[1,4], Jayashree Balaraman[2,4], Maha Aldera[3]; [1]Seton Hall University, IPHS campus, Nutley, NJ, [2]Rensslaer Polytechnic Institute, NYC, [3]Princess Nourah University, Riyad, Saudi Arabia, [4]Communication Neuroscience and Aphasia Research Laboratory (CNARL)
Topic Area: LANGUAGE: Other

A158 - Statistical learning of radical configuration in Chinese character recognition
Tzu-shin Lin[1,2] (ts.lin@g.ncu.edu.tw), Chia-ying Lee[1,2,3]; [1]Academia Sinica, [2]National Central University, [3]National Chengchi University
Topic Area: LANGUAGE: Other

A159 - Beyond language abilities: Subtle qualitative impairments in semantic networks and atypical multisensory processes in 8-year-old very preterm children
Marion Décaillet[1,2] (marion.decaillet@chuv.ch), Micah M. Murray[1,2,3], Alexander P. Christensen[4], Laureline Besuchet[1,2], Cléo Huguenin-Virchaux[1,2], Céline J. Fischer Fumeaux[1], Solange Denervaud[1,3], Juliane Schneider[1,2]; [1]Lausanne University Hospital and University of Lausanne, Switzerland, [2]The Sense Innovation and Research Center, Lausanne and Sion, Switzerland, [3]CIBM Center for Biomedical Imaging, Lausanne, Switzerland, [4]Vanderbilt University, Nashville, TN, USA
Topic Area: LANGUAGE: Other

A160 - **Optimization of Cognitive Behavioral Tasks for CLOCKΔ19** mouse model of Bipolar Disorder
Eden Fraatz[1] (efraatz570@g.rwu.edu), Simrat Dhillon[1], Dennis Arruda[1], Giana Guerra[1], Brittany Martin[1], Samantha Soares[1], Victoria Heimer-McGinn[1]; [1]Roger Williams University
Topic Area: METHODS: Other

Poster Session B

Sunday, April 14, 8:00 – 10:00 am, Sheraton Hall ABC

B1 - Cognitive-Behavioral Predictors of Individual Variability of Functional Connectivity in Healthy Young Adults
Colin Hawco[1,2] (colin.hawco@camh.ca), Julia Gallucci[1,2], Justin Ng[1,2], Teodora Secara[1,2], Ju-Chi Yu[1]; [1]University of Toronto, [2]Centre for Addiction and Mental Health
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B2 - Differential Neural Correlates of Perceived and Predicted Social Feedback
Ga In Shin[1], Camille R. Johnston[1], Megan Quarmley[1], Johanna M. Jarcho[1], Vishnu P. Murty[1]; [1]Temple University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B3 - Investigating the impact of affiliative touch on visual emotional appraisal
Oluwaseun D. Olusanya[1] (oolusany@lakeheadu.ca), James H. Kryklywy[1]; [1]Lakehead University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B4 - Investigating the relationship between imagery strength and features of depression and anxiety
Cara Allardice[1] (callardi@lakeheadu.ca), James H. Kryklywy[1]; [1]Lakehead University
Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

B5 - The future is uncertain - The influence of threat uncertainty on fear generalization
Matthias Wieser[1] (wieser@essb.eur.nl), Asimina Aslanidou[1], Marta Andreatta[2]; [1]Erasmus University Rotterdam, [2]University of Tuebingen
Topic Area: EMOTION & SOCIAL: Emotional responding

B6 - **Looking past the past: Adverse Childhood Experiences'** Impact on Hostile Attribution and Negative Attentional Bias
Carole Scherling[1] (carole.scherling@belmont.edu), Savannah Campbell[2], Molly Georgas[3], Awen Rolinitis[4], Michael Oliver[5]; [1]Belmont University
Topic Area: EMOTION & SOCIAL: Emotional responding

B7 - Identifying Emotions Par Formats: Intra-brain EEG-Connectivity during Emotion Recognition in Human Faces, Emoji Faces, and Stick Figures
Munna R. Shainy[1] (munnarshainy@gmail.com), Meghna Shekar[1], Sumit Sharma[1], Arun Sasidharan[2], Vrinda Marigowda[1]; [1]Axxonet Brain Research Laboratory, Axxonet System Technologies, Bengaluru, [2]National Institute of Mental Health and Neurosciences, Bengaluru
Topic Area: EMOTION & SOCIAL: Emotional responding

B8 - The Second Database of Emotional Videos from Ottawa (DEVO-2): Over 1300 Brief Video Clips Rated on Valence, Arousal, Impact, and Familiarity

Patrick Davidson[1] (patrick.davidson@uottawa.ca), Alex Castro[1], Steven Carton[1], Vanessa Cunha[1], Charles Collin[1]; [1]University of Ottawa

Topic Area: EMOTION & SOCIAL: Emotional responding

B9 - Your voice is music to my ears

shlomo frige[1] (shlomo.frige@mail.huji.ac.il), Bruno Gingras; [1]Hebrew University of Jerusalem, [2]Innsbruck, Austria

Topic Area: EMOTION & SOCIAL: Emotional responding

B10 - Intracranial neurophysiological mechanisms underlying rumination

Xiao Chen[1] (chenxiaocq@gmail.com), Zhen Fan[2], Dong Chen[1], Liang Wang[1], Liang Chen[2], Chao-Gan Yan[1]; [1]Institute of Psychology, Chinese Academy of Sciences, [2]Department of Neurosurgery of Huashan Hospital, Fudan University

Topic Area: EMOTION & SOCIAL: Emotional responding

B11 - Enhancing Resilience: A Novel Fear Conditioning Intervention for Mitigating Social Anxiety in Undergraduate Students

M. Shrestha[1], S. Sklenarik[1], L. Budge[1], P. Long[1], L. Klin[1], M. Astur[1], H. Posada-Quintero[1], K. Treadwell[1], D. F. Tolin[3], R. S. Astur[2]; [1]University of Connecticut

Topic Area: EMOTION & SOCIAL: Emotional responding

B12 - Neural Signatures of Dynamic Emotional Engagement and Disengagement Generalize across Negative Narratives

Melanni Nanni Zepeda[1,2] (nanni.melanni@gmail.com), Travis Evans[3,4,5], Audreyana Jagger-Rickels[3,4,5], Gal Raz[6,7,8], Talma Hendler[7,8,9,10], Flavio Frohlich[1,2], Yan Fan[11], Simone Grimm[12,13,14], Martin Walter[15,16], Michael Esterman[3,4,5], Agnieszka Zuberer[1,2]; [1]Department of Psychiatry, University of North Carolina at Chapel Hill, [2]Carolina Center for Neurostimulation, University of North Carolina at Chapel Hill, [3]National Center for PTSD, VA Boston Healthcare System, [4]Boston Attention and Learning Laboratory, VA Boston Healthcare System, [5]Boston University Chobanian and Avedisian School of Medicine, Department of Psychiatry, [6]Steve Tisch School of Film and Television, Tel Aviv University, [7]Sagol School of Neuroscience, Tel Aviv University, [8]Sagol Brain Institute, Tel Aviv Sourasky Medical Center, [9]Sackler Faculty of Medicine, Tel Aviv University, [10]The School of Psychological Sciences, Tel Aviv University, [11]Department Psychology and Neurosciences, Leibniz Research Centre for Working Environment and Human Factors at the TU Dortmund (IfADo), [12]Department of Psychiatry, Psychotherapy and Psychosomatics, Psychiatric Hospital, University of Zurich, [13]Department of Psychology, MSB Medical School Berlin, [14]Berlin Institute of Health, Campus Benjamin Franklin, Charité-Universitätsmedizin Berlin, Corporate Member of Freie Universität Berlin, Humboldt-Universität zu Berlin, [15]Department of Psychiatry and Psychotherapy, University of Tübingen, [16]Department of Psychiatry and Psychotherapy, University Hospital Jena

Topic Area: EMOTION & SOCIAL: Emotional responding

B13 - Well, this is awkward! The effects of non-normative behavior during emotional clip viewing

Zoe Niesen[1] (zoe.niesen@bruins.belmont.edu), Hannah Kershner[1], Giulia Solomon[1], Mia Sanchez[1], Carole Scherling[1]; [1]Belmont University

Topic Area: EMOTION & SOCIAL: Emotional responding

B14 - Fast auditory and pupillary responses to high temporally modulated sounds suggest the existence of a human magnocellular auditory pathway for threat

Martina Trisia Cinca-Tomás[1,2] (cinca-tomas_t@ub.edu), Emmanouela Kosteletou Kassotaki[1,2], Jordi Costa-Faidella[1,2,3], Nadia Paraskevoudi[1,2], Carles Escera[1,2,3], Judith Domínguez-Borràs[1,2]; [1]Brainlab – Grup de Recerca en Neurociència Cognitiva, Universitat de Barcelona, [2]Institut de Neurociències, Universitat de Barcelona, [3]Institut de Recerca Sant Joan de Déu (IRSJD), Esplugues de Llobregat, Spain

Topic Area: EMOTION & SOCIAL: Emotional responding

B15 - Identifying direct subcortical pathways of the amygdala within the human auditory system using diffusion weighted imaging tractography

Emmanouela Kosteletou Kassotaki[1,2] (emmakosteletou@ub.edu), Martina Trisia Cinca-Tomás[1,2], Federico Varriano[3], Guadalupe Soria[2,3,4], Alberto Prats-Galino[3,4], Judith Domínguez-Borrás[1,2]; [1]Brainlab – Cognitive Neuroscience Research Group, Department of Clinical Psychology and Psychobiology, University of Barcelona, [2]Institute of Neurosciences, University of Barcelona, Spain, [3]Laboratory of Surgical Neuroanatomy, Faculty of Medicine, University of Barcelona, Barcelona, Spain, [4]Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain

Topic Area: EMOTION & SOCIAL: Emotional responding

B16 - Decoding Neural Threat Representations Using Shock Prediction Modelling in Women with PTSD Undergoing an Exposure Therapy Task

Kierra Morris[1] (kierra.morris@austin.utexas.edu), Josh Cisler[2]; [1]University of Texas at Austin Dell Medical School

Topic Area: EMOTION & SOCIAL: Emotional responding

B17 - Unraveling the Fear Circuit: A Novel Computational Model of Fear Acquisition, Extinction, and Subsequent Recovery

Ms. Shreya Rajagopal[1] (shreyara@umich.edu), Dr. Thad Polk[1]; [1]University of Michigan

Topic Area: EMOTION & SOCIAL: Emotional responding

B18 - Would I eat this? Event related potentials to appropriate and inappropriate food combinations

Reiko Graham[1] (rg30@txstate.edu), Justice Corbett[1], Chloe Davis[1], Idali Casas[1], Amelya Rivera[1], Alex Garcia[1], Natalie Ceballos[1]; [1]Texas State University

Topic Area: EMOTION & SOCIAL: Other

B19 - Brain networks underwriting face pareidolia
Valentina Romagnano[1] (valentina.romagnano@student.uni-tuebingen.de), Julian Kubon[1], Alexander N. Sokolov[1], Andreas J. Fallgatter[1], Christoph Braun[2], Marina A. Pavlova[1]; [1]Medical School and University Hospital, Tübingen Center for Mental Health (TüCMH), Eberhard Karls University of Tübingen, [2]MEG Center, Medical School and University Hospital, Eberhard Karls University of Tübingen
Topic Area: EMOTION & SOCIAL: Other

B20 - Heightened E/I ratio associated with PTSD and alpha-frequency dysconnectivity between the Visual Cortex and Default Mode Network
Zhaohan Wu[1] (zwu2@fsu.edu), Wen Li[2]; [1]Florida State University, [2]The University of Texas Health Science Center at Houston
Topic Area: EMOTION & SOCIAL: Other

B21 - Resting rhythmic activity and anxiety
Tamari Shalamberidze[1] (shalambe@ualberta.ca), Jeremy Caplan[1,2], Kyle Nash[1,2]; [1]Neuroscience and Mental Health Institute, University of Alberta, Edmonton, Alberta Canada, [2]Department of Psychology, University of Alberta, Edmonton, Alberta, Canada
Topic Area: EMOTION & SOCIAL: Other

B22 - Cerebellum-Midbrain Reward Circuitry in Humans: an in vivo dissection with implications for socio-affective functioning
Linda Hoffman[1] (tuf72977@temple.edu), Julia Foley[1], Josiah Leong[2], Holly Sullivan-Toole[1], Blake Elliott[1], Ingrid Olson[1]; [1]Temple University, [2]University of Arkansas
Topic Area: EMOTION & SOCIAL: Other

B23 - The Neural Architecture of Interpersonal Cultural Conflicts
Siyuan Zhou[1,2] (zhousiyuan_work@163.com), Xinran Xu[2], Xiangyu He[2], Ruhuiya Aili[2], Chunming Lu[2]; [1]Institute of Brain and Psychological Sciences, Sichuan Normal University, Chengdu, PR China, [2]State Key Laboratory of Cognitive Neuroscience and Learning and IDG/McGovern Institute for Brain,Beijing Normal University, Beijing, PR China
Topic Area: EMOTION & SOCIAL: Other

B24 - Comparative Analysis of Social Cognitive Performance Across Autism Spectrum and Schizophrenia Spectrum Disorders
Ayesha Rashidi[1,2] (ayesha.rashidi@mail.utoronto.ca), Lindsay Oliver[1], Colin Hawco[1,2], George Foussias[1,2], Peter Szatmari[1], Robert Buchanan[3], Anil Malhotra[4,5,6], Meng-chuan Lai[1,2,7,8,9], Aristotle Voineskos[1,2], Stephanie Ameis[1,2,7]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]University of Maryland, [4]The Zucker Hillside Hospital, [5]The Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, [6]The Feinstein Institute for Medical Research, [7]The Hospital for Sick Children, [8]University of Cambridge, [9]National Taiwan University Hospital and College of Medicine
Topic Area: EMOTION & SOCIAL: Other

B25 - Harnessing Visual Unawareness in the Modulation of Fear
Grace L.T. Lei[1,3], Tatia M.C. Lee[1,2,4], Charlene L.M. Lam[1,3]; [1]The State Key Laboratory of Brain and Cognitive Sciences, The University of Hong Kong, Hong Kong, China, [2]Laboratory of Neuropsychology and Human Neuroscience, The University of Hong Kong, Hong Kong, China, [3]Laboratory of Clinical Psychology and Affective Neuroscience, The University of Hong Kong, Hong Kong, China, [4]Guangdong-Hong Kong-Macao Greater Bay Area Center for Brain Science and Brain-Inspired Intelligence, Guangzhou, China
Topic Area: EMOTION & SOCIAL: Other

B26 - Ideological brains: mapping individual variations in national ideology on variations in brain dynamics during a naturalistic viewing paradigm
Po-Yuan Alan Hsiao[1], Feng-Chun Ben Chou[1], Chih-Yuan Edward Chang[1], Pin-Hao Andy Chen[1]; [1]Department of Psychology, National Taiwan University
Topic Area: EMOTION & SOCIAL: Other

B27 - Interbrain visual entrainment induces increases in dyadic cooperation
Ivo Leiva[1,3] (ivo.leiva@ciae.uchile.cl), Eugenio Rodriguez[3], Paulo Barraza[1,2]; [1]Institute for Advanced Studies in Education (IE), University of Chile, [2]Center for Advanced Research in Education (CIAE), University of Chile, [3]Laboratory of Basic and Applied Neurodynamics, School of Psychology, Pontifical Catholic University of Chile
Topic Area: EMOTION & SOCIAL: Other

B28 - Lower Rate of Default Mode Network Functional State Changes are Associated with Greater Psychological Resilience
Chun-Wei Hsu[1,2] (cwhsu617@gmail.com), Joshua Goh[1,2], Wan-Rue Lin[1,2], Ya-Ting Chang[1,2], Shulan Hsieh Hsieh[3], Cheng-Ta Yang[3], Yun-Hsuan Chang[3], Sheng-Hsiang Lin[3]; [1]National Taiwan University, [2]Graduate Institute of Brain and Mind Sciences, [3]National Cheng Kung University
Topic Area: EMOTION & SOCIAL: Other

B29 - Low-level acoustic feature perception differs across affective prosody
Jax Skye[1] (jax-skye@uiowa.edu), Jonathan Peters[1], Jordan Luna[1], Dorit Kliemann[1], James Traer[1]; [1]The University of Iowa
Topic Area: EMOTION & SOCIAL: Other

B30 - Sharing Goals with Human and Non-Human Agents: A Neurofunctional Investigation
Margherita Adelaide Musco[1] (m.musco3@campus.unimib.it), Lucia Maria Sacheli[1], Eraldo Paulesu[1]; [1]University of Milano-Bicocca, Milan, Italy
Topic Area: EMOTION & SOCIAL: Other

B31 - Audience effects are associated with widespread prefrontal activity and physiological changes
Isla L Jones[1] (isla.jones.19@ucl.ac.uk), Michelle Tsang[1], Zihui Wu[1], Antonia Hamilton[1]; [1]University College London, United Kingdom
Topic Area: EMOTION & SOCIAL: Other

B32 - Examining the Neural Correlates of mTBI-related PTSD and Symptom Severity
Jessica Black[1,2], Zachary Pierce[2]; [1]Boston College School of Social Work, [2]Boston College Cell to Society Lab
Topic Area: EMOTION & SOCIAL: Other

B33 - Increased reward generalization underlies risky social decision-making in adolescents
Amrita Lamba[1,2] (a_lamba@mit.edu), Matthew Nassar[2], Oriel FeldmanHall[2]; [1]MIT, [2]Brown University
Topic Area: EMOTION & SOCIAL: Other

B34 - Covert and spontaneous brain to brain interactions during memorization of simultaneous images
Samuel Calmels[1,2] (samuel.calmels@mail.mcgill.ca), Antoine Bou Khalil[1,2], Aidan Schottler-Raymond[1,2], Natan Courchesne[1,2], J. Bruno Debruille[1,2]; [1]McGill University, [2]Douglas Institute of Mental Health
Topic Area: EMOTION & SOCIAL: Person perception

B35 - Attraction is Altered via Modulation of the Medial Prefrontal Cortex: A Novel Application of Repetitive Transcranial Magnetic Stimulation
Julian Keenan[1] (julianpaulkeenan@gmail.com), Sam Zorns[1], Claudia Sierzputowski[1], Skowron Molly[1], Anthony Minervini[1], Adriana LaVarco[1], Sydney Ash[1], Matthew Pardillo[1]; [1]Cognitive Neuroimaging Laboratory, Montclair State University
Topic Area: EMOTION & SOCIAL: Person perception

B36 - Autism and Social Affiliation Choices: Structural Neuroimaging Insights into the role of Similarity Judgments
Yu Hao[1] (hannah.hao@mssm.edu), Sarah Banker[1], Matthew Schafer[1,2], Arabella Peters[1], Abigael Thinakaran[1], Jadyn Trayvick[1], Sarah Barkley[1], Xiaosi Gu[1], Jennifer Foss-Feig[1], Daniela Schiller[1]; [1]Icahn School of Medicine at Mount Sinai, [2]Columbia University
Topic Area: EMOTION & SOCIAL: Person perception

B37 - Happy and angry facial expressions are processed independently of task demands and context congruency – An ERP Mass Univariate Analysis
Amie Durston[1] (ajdurston@uwaterloo.ca), Calla Mueller[1], Roxane Itier[1]; [1]University of Waterloo
Topic Area: EMOTION & SOCIAL: Person perception

B38 - Activity in default mode network discriminates between personally familiar and experimentally familiar faces in older adults
Stefani Morgan[1] (sm22be@fsu.edu), Sophie Allen[2], Emma Tripp[2], Chris Martin[1,2]; [1]Florida State University, Program in Neuroscience, [2]Florida State University, Department of Psychology
Topic Area: EMOTION & SOCIAL: Person perception

B39 - Neural mechanisms of BeMim: copying of choices leads to liking and temporoparietal brain activity
Paula Wicher[1] (paula.wicher.20@ucl.ac.uk), Antonia Hamilton[2]; [1]UCL
Topic Area: EMOTION & SOCIAL: Person perception

B40 - Faces and their race and emotional expressions influence investment choices.
Golijeh Golarai[1] (ggolarai@stanford.edu), Brian Knutson[2], Maryam Hamedani[3], Hazel Markus[4], Jennifer Eberhardt[5]; [1]Research Scientist, [2]Stanford University, Psychology Department
Topic Area: EMOTION & SOCIAL: Person perception

B41 - Are Facial Motion Cues Sufficient for Recognizing Facial Expressions?
Natalia K. Pallis-Hassani[1] (natalia.pallis-hassani@nih.gov), Shruti Japee, Maryam Vaziri-Pashkam, Christopher I. Baker; [1]National Institutes of Health
Topic Area: EMOTION & SOCIAL: Person perception

B42 - The impact of social acceptance on the self-referential processing across different domains: an fMRI study
Yi Ding[1,2,3] (dingyi9508@outlook.com), Kentaro Oba[1], Ryo Ishibashi[1,4], Shinsuke Suzuki[5], Motoaki Sugiura[1,6]; [1]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan, [2]Graduate School of Medicine, Tohoku University, Sendai, Japan, [3]Japan Society for the Promotion of Science, Tokyo, Japan, [4]Center for Information and Neural Networks, National Institute of Information and Communications Technology, Osaka, Japan, [5]Brain, Mind and Markets Laboratory, Department of Finance, Faculty of Business and Economics, University of Melbourne, Melbourne, Australia, [6]International Research Institute of Disaster Science, Tohoku University, Sendai, Japan
Topic Area: EMOTION & SOCIAL: Self perception

B43 - Yours is mine: Neural self-partner representation overlap is associated with support, relationship satisfaction, and well-being
Shanshan Ma[1] (shanshanma@arizona.edu), Andrea M. Coppola[1], Erin L. Maresh[2], David A. Sbarra[1], Jessica R. Andrews-Hanna[1]; [1]University of Arizona, [2]Minneapolis VA Health Care System
Topic Area: EMOTION & SOCIAL: Self perception

B44 - The Mind as a Mirror: Rendering Mental Self-Images
Arijit De[1] (arijit.de@mail.utoronto.ca), Shao Feng Liu[1], Yong Zhong Liang[1], Moaz Shoura[1], Adrian Nestor[1]; [1]University of Toronto
Topic Area: EMOTION & SOCIAL: Self perception

B45 - Intracranial recordings of the human orbitofrontal cortical activity during self-referential episodic and valenced self-judgments

Behzad Iravani1,2,3 (biravani@stanford.edu), Neda Kaboodvand1,3, James Stieger1,2, Eugene Liang1,2, Zoe Lusk1,2, Peter Fransson3, Gayle Deutsch2, Ian Gotlib4, Josef Parvizi1,2; 1Laboratory of Behavioral and Cognitive Neuroscience, 2Departments of Neurology and Neurological Sciences, Stanford University, Palo Alto, USA, 3Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden, 4Department of Psychology, Stanford University, Palo Alto, USA.

Topic Area: EMOTION & SOCIAL: Self perception

B46 - Interoception and Sleep: the role of insula cortex across adult lifespan

Ahhyun Seo[1] (ahhyun@utexas.edu), Kyoungeun Lee[1], Risako Nishiyama[1], Audrey Duarte[1]; [1]The University of Texas at Austin

Topic Area: EMOTION & SOCIAL: Self perception

B47 - Migraine patients recruit a pain-responsive claustrum circuit during pain-free cognitive task performance

Brent W. Stewart[1] (brent.stewart@som.umaryland.edu), Michael L. Keaser[1], Hwiyoung Lee[2], Sarah M. Margerison[1], Matthew A. Cormie[3], Massieh Moayedi[3], Martin A. Lindquist[4], Shuo Chen[2], Brian N. Mathur[1], David A. Seminowicz[1,5]; [1]University of Maryland Baltimore, [2]Maryland Psychiatric Research Center, [3]University of Toronto, [4]Johns Hopkins University, [5]University of Western Ontario

Topic Area: EXECUTIVE PROCESSES: Other

B48 - The Impact of Cognitive Fatigue on Ongoing Processing Speed Task Performance in People with Multiple Sclerosis

Marissa Tripoli[1] (mptripol@buffalo.edu), David W. Shucard[1], Hope Nyarady[1], Ryan O'Donnell[1], Mckenzie Haller[1], Bianca Weinstock-Guttman[1], Ralph HB Benedict[1], Thomas J. Covey[1]; [1]University at Buffalo

Topic Area: EXECUTIVE PROCESSES: Other

B49 - Dynamic relationships between brain networks and trait mind-wandering

Aleah Davis[1] (aleah5sos@gmail.com), Harrison Waters[2], Shella Keilholz[2], Eric H. Schumacher[1]; [1]Georgia Institute of Technology, [2]Emory University

Topic Area: EXECUTIVE PROCESSES: Other

B50 - Exploring the neurophysiological underpinnings of cognitive readiness with the trail making test B

Jared Boasen[1,2] (jared.boasen@hec.ca), Baptiste d'Hau[1], Pierre-Majorique Léger[1], Sylvain Sénécal[1]; [1]Tech3Lab, HEC Montreal, [2]Faculty of Health Sciences, Hokkaido University

Topic Area: EXECUTIVE PROCESSES: Other

B51 - Individual differences in anxiety and perfectionism interact with instructed task goals to shape reinforcement learning behavior and memory

Jacqueline Bao[1], Yuxi Candice Wang[1], Alyssa H. Sinclair[2], R. Alison Adcock[1]; [1]Duke University, [2]University of Pennsylvania

Topic Area: EXECUTIVE PROCESSES: Other

B52 - A pilot study evaluating the feasibility, safety, and efficacy of transcranial photobiomodulation (tPBM) in mild cognitive impairment (MCI)

Neda Rashidi-Ranjbar[1] (neda.rashidi@gmail.com), Nathan W. Churchill[1], Tom A. Schweizer[1,2], Corinne E. Fischer[1,3]; [1]Keenan Research Centre for Biomedical Science, St. Michael's Hospital, University of Toronto, [2]Division of Neurosurgery, Faculty of Medicine, University of Toronto, [3]Department of Psychiatry, Faculty of Medicine, University of Toronto

Topic Area: EXECUTIVE PROCESSES: Other

B53 - Neurochemical predictors of generalized learning induced by brain stimulation and training

Shane Ehrhardt[1] (s.ehrhardt@uq.edu.au), Yohan Wards[1], Reuben Rideaux[2], Malgorzata Marjanska[3], Jin Jin[4], Martijn Cloos[1], Dinesh Deelchand[3], Helge Zollner[5], Muhammad Saleh[7], Steve Hui[6], Tonima Ali[2], Thomas Shaw[1], Markus Barth[1], Jason Mattingley[1], Hannah Filmer[1], Paul Dux[1]; [1]University of Queenland, [2]University of Sydney, [3]University of Minnesota, [4]Siemens Australia, [5]John Hopkins, [6]Children's Hospital, Washington, [7]University of Maryland

Topic Area: EXECUTIVE PROCESSES: Other

B54 - A Cognitive and Neural Framework for Cognitive Flexibility: Perspectives from Traumatic Brain Injury

Hayley O'Donnell[1], Kiah Patel[1], Denise Krch[2], Nancy R. Lee[1], Maria T. Schultheis[1], John Medaglia[1], Evangelia G. Chrysikou[1]; [1]Drexel University, [2]Kessler Foundation

Topic Area: EXECUTIVE PROCESSES: Other

B55 - Multitasking training improves the quality of information processing in perceptual decision making

Andrew Heusser[1], Thomas Wiecki[2], Titiimaea Alailima[1]; [1]Akili Interactive, [2]PyMC Labs

Topic Area: EXECUTIVE PROCESSES: Other

B56 - Estimation of the cognitive resources necessary for the correct use of exoskeletons. A multidisciplinary and mixed reality approach.

DR LUCA FALCIATI[1] (luca.falciati@unibs.it), Maria Lucia Cavallo[1], Noemi Pintori[1], Alessandro Piol[1], Giacomo Valli[1], Martina Mosso[1], Gianluca Rossetto[1], Emma Sala[2], Emilia Scalona[1], Nicola Francesco Lopomo[3], Francesco Negro[1], Debora Brignani[1]; [1]UNIVERSITY OF BRESCIA (ITALY), [2]ASST SPEDALI CIVILI DI BRESCIA (ITALY), [3]POLITECNICO DI MILANO (ITALY)

Topic Area: EXECUTIVE PROCESSES: Other

B57 - **"Repulsive**-followed-by-**attractive" past**-present neural interactions underlie serial dependence
Huihui Zhang[1,2,3,4] (huihuizhang@pku.edu.cn), Minghao Luo[1,2,3], Huan Luo[1,2,3]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]Beijing Key Laboratory of Behavior and Mental Health, Peking University, [3]PKU-IDG/McGovern Institute for Brain Research, Peking University, [4]Peking-Tsinghua Center for Life Sciences, Peking University
Topic Area: EXECUTIVE PROCESSES: Working memory

B58 - Music-type rhythms facilitate auditory working memory
Suizi Tian[1] (13121573599@163.com); [1]Peking University
Topic Area: EXECUTIVE PROCESSES: Working memory

B59 - Brain and Behavioral Differences in Working Memory Updating Between Healthy Young and Older Adults
Nathan Rose[1] (nrose1@nd.edu), Melanie Benitez[1], Chang-Mao Chao[1], Chenlingxi Xu[1], Zengbo Xie[1], Daniel Henrickson[1], Luke Bormann[1], Justine Fragetta[1]; [1]University of Notre Dame
Topic Area: EXECUTIVE PROCESSES: Working memory

B60 - The effect of sleep quality on dynamic network connectivity during rest and n-back task performance
Sakshi Dhawan[1] (sdhawan31@gatech.edu), Dolly Seeburger[1], Nan Xu[2], Clay Baer[1], Autumn Hart*[1], Maya Karkare*[1], Cassandra Rich*[1], Sarah Sorme*[1], Audrey Duarte[3], Shella Keilholz[2], Eric H. Schumacher[1]; [1]Georgia Institute of Technology, [2]Emory University and Georgia Institute of Technology, [3]University of Texas at Austin*
Topic Area: EXECUTIVE PROCESSES: Working memory

B61 - Representations of spatial location by aperiodic and alpha oscillatory activity in working memory
Andrew Bender[1] (abender@ucsd.edu), Bradley Voytek[1]; [1]University of California, San Diego
Topic Area: EXECUTIVE PROCESSES: Working memory

B62 - White matter microstructure in the superior longitudinal fasciculus predicts alpha modulation during visuospatial working memory encoding
Joel P. Diaz-Fong[1,2,3] (joel.diaz@mail.utoronto.ca), Agatha Lenartowicz[1], Holly Truong[1], Giulia C. Salgari[4], Robert M. Bilder[1], James McGough[1], James T. McCracken[1], Sandra K. Loo[1]; [1]Semel Institute for Neuroscience & Human Behavior, University of California Los Angeles, [2]Institute of Medical Science, University of Toronto, [3]Centre for Addiction and Mental Health, [4]University of Central Florida
Topic Area: EXECUTIVE PROCESSES: Working memory

B64 - High-frequency broadband activity demonstrates slow theta phase preference for sequential order in working memory maintenance
Samantha Gray[1] (samantha.gray@northwestern.edu), Adam Dede[1], Jack Lin[2], Ignacio Saez[2,3], Fady Girgis[2,4], Edward Chang[5], Kurtis Auguste[5,6], Ammar Shaikhouni[7,9], Robert Knight[8], Elizabeth Johnson[1]; [1]Northwestern University, [2]University of California, Davis, [3]Icahn School of Medicine at Mount Sinai, [4]University of Calgary, [5]University of California, San Fransisco, [6]UCSF Benoiff Children's Hospital, [7]Ohio State University, [8]University of California, Berkeley, [9]Nationwide Children's Hospital
Topic Area: EXECUTIVE PROCESSES: Working memory

B65 - Interrupting working memory: The time available for primary task resumption influences attentional control processes following an interruption
Daniel Schneider[1] (schneiderd@ifado.de), Soner Ülkü[1], Edmund Wascher[1], Stephan Getzmann[1]; [1]IfADo, Dortmund, Germany
Topic Area: EXECUTIVE PROCESSES: Working memory

B66 - Working memory deficit in high schizotypy: ERP but no power differences
Jenna N. Pablo[1] (jpablo@nevada.unr.edu), Wendy A. Torrens[1], Jorja Shires[1], Sarah M. Haigh[1], Marian E. Berryhill[1]; [1]University of Nevada, Reno
Topic Area: EXECUTIVE PROCESSES: Working memory

B67 - A Comparison of Musicians and Nonmusicians from a Functional Connectivity Perspective
Nicolas Adams[1] (adamsni19@students.ecu.edu), Sunghan Kim[1]; [1]East Carolina University, Department of Engineering
Topic Area: EXECUTIVE PROCESSES: Working memory

B68 - Single Pulses of TMS to Visual Cortex Have Persistent Effects on Visual Working Memory
Chenlingxi Xu[1] (cxu5@nd.edu), Zengbo Xie[2], Jason Samaha[3], Nathan Rose[1]; [1]University of Notre Dame, [2]Vanderbilt University, [3]University of California, Santa Cruz
Topic Area: EXECUTIVE PROCESSES: Working memory

B69 - Action planning renders objects in working memory more attentionally salient
Heleen A. Slagter[1] (haslagter@gmail.com), Caterina Trentin[1], Chris N.L. Olivers[1]; [1]Vrije Universiteit Amsterdam, the Netherlands
Topic Area: EXECUTIVE PROCESSES: Working memory

B70 - The influence of top-down control and storage dynamics on interactions between items held in working memory
Jacqueline M. Fulvio[1] (jacqueline.fulvio@wisc.edu), Bradley R. Postle[1]; [1]University of Wisconsin - Madison
Topic Area: EXECUTIVE PROCESSES: Working memory

B71 - Working memory binding failures and abnormal cortical **neural oscillations in Alzheimer's disease**
Emma-Jane Mallas[1,2] (e.mallas@imperial.ac.uk), Michael C.B. David[1,2], Paresh A. Malhotra[1,2], Gregory Scott[1,2], David J. Sharp[1,2]; [1]Imperial College London, [2]UK Dementia Research Institute, Care Research & Technology Centre
Topic Area: EXECUTIVE PROCESSES: Working memory

B72 - Abstract and Concrete Sequences Rely on Separable Working Memory Resources
Jorja Shires[1] (jshires@nevada.unr.edu), Jenna N. Pablo[1], Bodie Stein[1], Theresa M. Desrochers[2], Marian E. Berryhill[1]; [1]University of Nevada, Reno, [2]Brown University
Topic Area: EXECUTIVE PROCESSES: Working memory

B73 - Statistical regularity improvements to visual working memory capacity depend on subjective awareness
Juan Manuel Chau Delgado[1] (juan.chaudelgado@nottingham.ac.uk), Matias J. Ison[1], Nicholas E. Myers[1]; [1]School of Psychology, University of Nottingham
Topic Area: EXECUTIVE PROCESSES: Working memory

B74 - Neural representations of visual categories generalise across tasks and adapt to cross-task interference
Uma Ajmeria[1], Cal Shearer[2], Jan Derrfuss[1], Nicholas Myers[1]; [1]University of Nottingham, [2]University of Oxford
Topic Area: EXECUTIVE PROCESSES: Working memory

B75 - Spatio-temporal Dynamics of EEG Microstates during Visuo-Spatial Working Memory Task as a Trait Marker for Patients with Schizophrenia
Madhavi Nayyar[1] (drmadhavinayyar@gmail.com), Sunaina Soni[1], Ratna Sharma[1], Suriya Prakash M[1], Prashant Tayade[1], Simran Kaur[1], Abhisek Sahoo[1]; [1]All India Institute of Medical Sciences, New Delhi
Topic Area: EXECUTIVE PROCESSES: Working memory

B76 - Thalamic contributions to working memory
Pedro M. Paz-Alonso[1] (kepa.pazalonso@gmail.com), Liu Mengxing[2], Ane Gurtubay-Antolin[1]; [1]BCBL. Basque Center on Cognition, Brain and Language, [2]School of Medicine, Tufts University, United States
Topic Area: EXECUTIVE PROCESSES: Working memory

B77 - Maintenance suppression reduces the accessibility of visual working memories regardless of their normative valence
Caleb N. Jerinic-Brodeur[1], Marie T. Banich[2], Jarrod A. Lewis-Peacock[1]; [1]University of Texas at Austin, [2]University of Colorado, Boulder
Topic Area: EXECUTIVE PROCESSES: Working memory

B78 - Decreased working memory capacity in the chronic phase of concussion
Amaya Fox[1] (amayajfox@gmail.com), Hannah Filmer[1], Paul Dux[1]; [1]The University of Queensland
Topic Area: EXECUTIVE PROCESSES: Working memory

B79 - Compressive learning of knowledge network
Muzhi Wang[1,2,3], Xiangjuan Ren[1,2,6,7], Tingting Qin[4], Aming Li[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]Center for Systems and Control, College of Engineering, Peking University, [5]Center for Multi-Agent Research, Institute for Artificial Intelligence, Peking University, [6]Max Planck Research Group NeuroCode, Max Planck Institute for Human Development, [7]Institute of Psychology, Universität Hamburg
Topic Area: EXECUTIVE PROCESSES: Working memory

B80 - Cognitive ability, arousal, and synchronization of brain networks
Jason S. Tsukahara[1] (jason.tsukahara@gatech.edu), Dolly T. Seeburger[1], Shella D. Keilholz[1], Eric H. Schumacher[1], Randall W. Engle[1]; [1]Georgia Institute of Technology
Topic Area: EXECUTIVE PROCESSES: Working memory

B81 - Primary Role of the Right Cerebral Hemisphere in Working Memory Updating: A Connectome-based Lesion-Symptom Mapping Study
Emilie Marti[1], Sélim Coll[1], Naz Doganci[1], Radek Ptak[1,2]; [1]Laboratory of Cognitive Neurorehabilitation, Faculty of Medicine, University of Geneva, [2]Division of Neurorehabilitation, Department of Clinical Neurosciences, Geneva University Hospitals
Topic Area: EXECUTIVE PROCESSES: Working memory

B82 - The Immediate Impact of Moderate Exercise on Working Memory Capacity
Xinyun Che[1] (xinyun.che@lin-magdeburg.de), Stefan Dürschmid[1,2]; [1]Leibniz Institute for Neurobiology, [2]University of California Berkeley
Topic Area: EXECUTIVE PROCESSES: Working memory

B83 - The Effects of Binaural Beats on the Brain's Functional Connectivity
Emily Fenton[1] (fentone18@students.ecu.edu), Sunghan Kim[1]; [1]East Carolina University
Topic Area: EXECUTIVE PROCESSES: Working memory

B84 - Subjective time and context changes improve working memory in young and older adults
Jim Faulkner[1] (jimf@umich.edu), Wei-Jie Zhou[1], Cindy Lustig[1]; [1]University of Michigan
Topic Area: EXECUTIVE PROCESSES: Working memory

B85 - Tracking the emergence of concrete and abstract working memory representations guiding future cognition in the intraparietal sulcus and visual cortex
Jongmin Lee[1] (jongmin.lee.529@gmail.com), David De Vito[1], Jacob A. Miller[2], Derek Evan Nee; [1]Department of Psychology, Florida State University, [2]Wu Tsai Institute, Department of Psychiatry, Yale University
Topic Area: EXECUTIVE PROCESSES: Working memory

B86 - Dentate nucleus activity reflects prediction errors during language processing
Darlene Floden[1] (flodend@ccf.org), Anshul Srivastava[1], Olivia Hogue[1], Slobodin Noah[1], Kenneth Baker[1], Andre Machado[1], Raghavan Gopalakrishnan[1]; [1]Neurological Institute, Cleveland Clinic, Cleveland, OH USA
Topic Area: LANGUAGE: Semantic

B87 - Supporting again the N400 ERP inhibition hypothesis and seeing that being alone vs. with a friend modulates the (self) P2, rather than the social N400
Sujata Sinha[1] (sujata.sinha@mail.mcgill.ca), Ashley Chau-Morris[1], Milena Kostova[2], J. Bruno Debruille[1]; [1]McGill University, [2]University of Paris 8
Topic Area: LANGUAGE: Semantic

B88 - Affect, eye-gaze and reference
Veena D. Dwivedi[1] (vdwivedi@brocku.ca), Louis A. Schmidt[2], Haorong Ding[1]; [1]Brock University, [2]McMaster University
Topic Area: LANGUAGE: Semantic

B89 - Decoding the time course of predictive feature activation during speech comprehension from EEG
Timothy Trammel[1] (tgtrammel@ucdavis.edu), Matthew J. Traxler[1], Tamara Y. Swaab[1]; [1]University of California, Davis
Topic Area: LANGUAGE: Semantic

B90 - The influence of memory reactivation during sleep on vocabulary and grammar rule learning
Stacey Reyes[1] (staceydomagasreyes@gmail.com), Laura Batterink[2]; [1]Western University
Topic Area: LANGUAGE: Semantic

B91 - Predictive brain activity shows congruent semantic specificity in language comprehension and production.
Luigi Grisoni[1,2] (grisoniluigi@zedat.fu-berlin.de), Isabella P. Boux[1,3,4,5], Friedemann Pulvermüller[1,2,3,4]; [1]Freie Universität Berlin, Brain Language Laboratory, Department of Philosophy and Humanities, 14195 Berlin, Germany, [2]Cluster of Excellence 'Matters of Activity. Image Space Material', Humboldt Universität zu Berlin, 10099 Berlin, Germany, [3]Berlin School of Mind and Brain, Humboldt Universität zu Berlin, 10099 Berlin, Germany, [4]Einstein Center for Neurosciences, 10117, Berlin, Germany, [5]Biological and Social Psychology Institute of Psychology RWTH Aachen University, Germany
Topic Area: LANGUAGE: Semantic

B92 - Kilo-picture naming: An event-related potential (ERP) study
Ian Martindale[1] (imartindale4976@sdsu.edu), Sofia Ortega[1], Emily Akers[1], Katherine Midgley[1], Phillip Holcomb[1]; [1]San Diego State University
Topic Area: LANGUAGE: Semantic

B93 - Pathways to Word Retrieval revealed by Inferential and Referential Naming
Eliza Reedy[1], Raouf Belkhir[1,2], Aude Jegou[1], Theodor Cucu[2], Arka Mallela[1], Anna Keresztesy[2], Thandar Aung[1], Luke Henry[1], Catherine Liégeois-Chauvel[1], Jorge González-Martínez[1], Bradford Mahon[2]; [1]University of Pittsburgh, [2]Carnegie Mellon University
Topic Area: LANGUAGE: Semantic

B94 - Disentangling the semantic interference effect: an ERP picture word interference study in bilinguals
Jacklyn Jardel[1] (jjardel1361@sdsu.edu), Katherine J. Midgley[1], Yazmin Medina[1], Phillip J. Holcomb[1]; [1]San Diego State University
Topic Area: LANGUAGE: Semantic

B95 - Beta oscillations are critical for semantic processing and predict behavioral performance
Maggie Rempe[1,2] (maggie.rempe@boystown.org), Christine Embury[1], Yasra Arif[1], Seth Bashford[1], Grant Garrison[1], Ryan Glesinger[1], Hannah Okelberry[1], Chloe Casagrande[1], Elizabeth Heinrichs-Graham[1,3], Tony Wilson[1,3]; [1]Boys Town National Research Hospital, [2]University of Nebraska Medical Center (UNMC), [3]Creighton University
Topic Area: LANGUAGE: Semantic

B96 - Neural decoding of semantic representations from novice sign language learners reflects newly-acquired vocabulary
Megan E. Hillis[1] (megan.e.hillis.gr@dartmouth.edu), Brianna Aubrey[1], Julien Blanchet[1], Qijia Shao[2], Xia Zhou[2], Devin Balkcom[1], David J. M. Kraemer[1]; [1]Dartmouth College, [2]Columbia University
Topic Area: LANGUAGE: Semantic

B97 - The neurocognitive basis of semantic reading in stroke alexia
Ryan Staples[1] (ryan.staples6@gmail.com), J. Vivian Dickens[1,2], Sara Dyslin[1], Sarah Snider[1], Andrew DeMarco[1], Rhonda Friedman[1], Peter Turkeltaub[1,3]; [1]Georgetown University Medical Center, Washington, DC, [2]Hospital of the University of Pennsylvania, Philadelphia, PA, [3]Medstar National Rehabilitation Hospital, Washington, DC
Topic Area: LANGUAGE: Semantic

B98 - Hippocampal involvement in reading
Ane Gurtubay-Antolin[1], Dalila Merhej[1], Mingjun Zhai[2], Simon Fischer-Baum[3,4], Pedro M. Paz-Alonso[1,5]; [1]Basque Center on Cognition, Brain and Language-BCBL , Donostia-San Sebastian, Spain, [2]Hong Kong Polytechnic University, Hong Kong, China, [3]Rice University, Houston, Texas, US, [4]National Science Foundation, US, [5]IKERBASQUE, Basque Foundation for Science, Bilbao, Spain
Topic Area: LANGUAGE: Semantic

B99 - Antipsychotic placebo increases electrophysiological indices of stimulus processing and accelerates reaction times on a particular semantic task
Aidan Schottler-Raymond[1] (aidan.schottler-raymond@mail.mcgill.ca), Mingyi Diao[1], Ilya Demchenko[1], Jingyan Quan[1], J. Bruno Debruille[1]; [1]McGill University
Topic Area: LANGUAGE: Semantic

B100 - Prefrontal Cortex Activity When Processing Concrete and Abstract Words: A fNIRS Study
Luke Ammazzalorso[1], Ella McCarthy[2], Jennifer L. Frymiare[3]; [1]Ursinus College
Topic Area: LANGUAGE: Semantic

B101 - Acute effects of antipsychotics on healthy volunteers: An ERP study using meaningful stimuli with self-referential task and placebo controls
Mingyi Diao[1] (mingyi.diao@mail.mcgill.ca), Ilya Demchenko[1], Aidan Schottler-Raymond[1], Jingyan Quan[1], J. Bruno Debruille[1]; [1]McGill University
Topic Area: LANGUAGE: Semantic

B102 - Semantic Embodiment: Decoding Action Words through Topographic Neuronal Representation within Brain-Constrained Network
Maxime Carriere[1] (maxime.carriere@fu-berlin.de), Tomasello Rosario[2], Pulvermüller Friedemann[3]; [1]Freie Universität, [2]Berlin School of Mind and Brain, [3]Cluster of Matters of Activity
Topic Area: LANGUAGE: Semantic

B103 - Using ATL-optimized fMRI to investigate speech perception challenges
Jaimy Hannah[1,2] (jhanna62@uwo.ca), Jennifer Rodd[3], Ingrid Johnsrude[1,2], Richard Binney[4]; [1]University of Western Ontario, [2]Brain and Mind at Western, [3]University College London, [4]Bangor University
Topic Area: LANGUAGE: Semantic

B104 - The structure of lexical semantic representations as revealed by semantic verification
Anna Keresztesy[1], Jessica Smith[1], Eliza Reedy[2], Bradford Mahon[1]; [1]Carnegie Mellon University, [2]University of Pittsburgh
Topic Area: LANGUAGE: Semantic

B105 - Fixation-Related Potentials Reveal Multiple Effects of Context across the Visual Field in Natural Reading
Allyson Copeland[1] (allyson.copeland@psych.utah.edu), Julian Poletti[1], Brennan Payne[1]; [1]University of Utah
Topic Area: LANGUAGE: Semantic

B106 - Is prediction automatic or adaptive during speech comprehension? An EEG decoding study
Melissa G. Jacuinde[1], Timothy G. Trammel[1], Tamara Y. Swaab[1], Matthew J. Traxler[1]; [1]University of California, Davis
Topic Area: LANGUAGE: Semantic

B107 - Motor Representation and Semantic Control: Examining Embodiment of Action Verb in First and Second Language
Siyi Tu[1] (tsyspacelink@163.com), Jing Yang[1]; [1]Zhejiang University
Topic Area: LANGUAGE: Semantic

B108 - A computational approach to creativity: Fostering success and equity in college admissions
Kibum Moon[1] (km1735@georgetown.edu), Kostadin Kushlev[1], John D. Patterson[2], Roger Beaty[2], Adam Green[1]; [1]Georgetown University, [2]Pennsylvania State University
Topic Area: LANGUAGE: Semantic

B110 - Alpha and beta dynamics support task-based word production
Ioanna Zioga[1,2] (ioanna.zioga@donders.ru.nl), Hugo Weissbart[1], Ying Joey Zhou[1,3], Saskia Haegens[1,4,5], Andrea E. Martin[1,2]; [1]Donders Centre for Cognitive Neuroimaging, Nijmegen, the Netherlands, [2]Max Planck Institute for Psycholinguistics, Nijmegen, the Netherlands, [3]Oxford Centre for Human Brain Activity, Oxford, UK, [4]Columbia University, New York, USA, [5]New York State Psychiatric Institute, New York, USA
Topic Area: LANGUAGE: Semantic

B111 - Is it a dog or an animal? Differential responses in reaction times and pupil sizes to basic and superodinate categories.
Alissa Ferry[1] (alissa.ferry@manchester.ac.uk), Sydney Heywood[1], Kexin Fan[1], Yasmin Hunt[1], Xiaotong Xu[1]; [1]University of Manchester
Topic Area: LANGUAGE: Semantic

B112 - Cognitive abilities predicting semantic tracking of speech
Matthew Modrusan[1], Jaimy Hannah[1], Bruno Mesquita[1], Ingrid Johnsrude[1]; [1]University of Western Ontario
Topic Area: LANGUAGE: Semantic

B113 - Cross-modal examinations of narrative structural processing in autistic individuals
Emily Coderre[1] (emily.coderre@med.uvm.edu), Carolyn D'Auria[1], Emily Zane[2], Neil Cohn[3], Emily Booth[2], Holly Chappell[2], Caitlyn Soong[2], Gwendolyn Reichert[1]; [1]University of Vermont, [2]James Madison University, [3]Tilburg University
Topic Area: LANGUAGE: Syntax

B114 - Parafoveal and foveal sensitivity to semantic and syntactic violations in deaf and hearing readers: An ERP study
Emily M. Akers[1,2] (eakers2@sdsu.edu), 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: Syntax

B115 - Decoupling speech acoustics and linguistic representations
Alessandro Tavano[1] (alessandro.tavano.office@gmail.com), Cosimo Iaia[1]; [1]Goethe University Frankfurt
Topic Area: LANGUAGE: Syntax

B116 - Exploring Parallel Syntactic Processing in Reading: Insights from ERP Studies
Aaron Vandendaele[1] (aaron.vandendaele@ugent.be), Sofia E. Ortega[2], Philip J. Holcomb[2], Katherine Midgley[2], Jonathan Grainger[3]; [1]Ghent University, [2]San Diego State University, [3]Aix-Marseille University
Topic Area: LANGUAGE: Syntax

B117 - Exploring the Impact of Motivation and Working Memory on Second Language Sentence Processing: An ERP Study
Nicholas J. Sulier[1] (nsulier@uci.edu), Judith F. Kroll[1]; [1]University of California, Irvine
Topic Area: LANGUAGE: Syntax

B118 - Investigating Working Memory Capacity Processes in the Prefrontal Cortex of Marmosets
Tsz Wai Bentley Lo[1] (tlo57@uwo.ca), Susheel Vijayraghavan[1], Lyle Muller[2], Julio Martinez[1,3]; [1]Department of Physiology and Pharmacology, University of Western Ontario, [2]Department of Mathematics, University of Western Ontario, [3]Department of Psychiatry, University of Western Ontario
Topic Area: EXECUTIVE PROCESSES: Working memory

B119 - Longitudinal Changes of Hippocampal Subfield Volumes from Middle Childhood to Late Adulthood
Roya Homayouni[1] (rhomayouni@wayne.edu), Samaah Saifullah[1], Alexis Chargo[1], Kelsey L. Canada[1], Naftali Raz[2,3], Noa Ofen[1,4], Ana M. Daugherty[1]; [1]Wayne State University, MI, [2]Stony Brook University, NY, [3]Center for Lifespan Psychology, Max Planck Institute for Human Development, Berlin, [4]Center for Vital Longevity, University of Texas, TX
Topic Area: LONG-TERM MEMORY: Development & aging

B120 - Effects of Emotion and Age on Subjective and Objective Memory Measures
Jourdan Parent[1] (jourdanparent@brandeis.edu), Isaac Zygmuntowicz[1], Katherine O'Malley[1], Elizabeth Kensinger[2], Maureen Ritchey[2], Anne Berry[1]; [1]Brandeis University, [2]Boston College
Topic Area: LONG-TERM MEMORY: Development & aging

B121 - Exploring the impact of healthy aging on temporal duration sequence memory
Haoyu Allen Zhang[1,2], Guilan Zhao[2], Xintong Yu[2], Sirui Wang[2], Pei Sun[2], Andy C.H. Lee[1]; [1]University of Toronto, [2]Tsinghua University, China
Topic Area: LONG-TERM MEMORY: Development & aging

B122 - Age-related neural dedifferentiation: Unveiling the role of functional connectivity and network reorganization
Claire Pauley[1,2] (pauley@mpib-berlin.mpg.de), Dagmar Zeithamova[3], Myriam C. Sander[1]; [1]Max Planck Institute for Human Development, [2]Humboldt University of Berlin, [3]University of Oregon
Topic Area: LONG-TERM MEMORY: Development & aging

B123 - Examining how retrieval goals shape memory recall in younger and older adults
Can Fenerci[1] (can.fenerci@mail.mcgill.ca), Samantha O'Toole[1], Kailin Summers[1], Signy Sheldon[1]; [1]McGill University, Department of Psychology
Topic Area: LONG-TERM MEMORY: Development & aging

B124 - Context reactivation in CA1 is linked to age differences in memory for object-context associations
Anna E Karlsson[1,2] (karlsson@mpib-berlin.mpg.de), Claire Pauley[2], Myriam C Sander[2]; [1]Humboldt Univ., Berlin, [2]MPIB, Berlin
Topic Area: LONG-TERM MEMORY: Development & aging

B125 - Investigating the influence of proximity on unitization within the associative memory network
Nancy A. Dennis[1], Alexa Becker[1], Catherine M. Carpenter[1], Spencer Chase[1], John West[1], Amy A. Overman[2]; [1]Penn State University, [2]Elon University
Topic Area: LONG-TERM MEMORY: Episodic

B126 - Categorical stimuli bias episodic memory: Evidence from behavior, lesion patients, and neuroimaging
Hillary Schwarb[1] (hschwarb2@unl.edu), Michael R. Dulas[2], Melissa C. Duff[3], Neal J. Cohen[4]; [1]University of Nebraska-Lincoln, [2]Binghamton University, [3]Vanderbilt University Medical Center, [4]University of Illinois at Urbana-Champaign
Topic Area: LONG-TERM MEMORY: Episodic

B127 - Visual details guide gaze reinstatement during recognition memory
Maureen Ritchey[1], Tingwei Hu[1], Hae Young Yi[1], Paula Brooks[1,2]; [1]Boston College, [2]Princeton University
Topic Area: LONG-TERM MEMORY: Episodic

B128 - Exit light, enter night: Investigating sleep and long-term memory in SDAM
Stephanie Simpson[1,2] (stephanie.simpson@mail.utoronto.ca), Daniel Baena Pérez[3,4], Brian Murray[5,6], Stuart Fogel[3,4], Brian Levine[2,5]; [1]Department of Psychology, University of Toronto, Toronto, [2]Rotman Research Institute at Baycrest Health Sciences, Toronto, [3]School of Psychology, University of Ottawa, Ottawa, [4]Sleep Research Unit, The Royal's Institute of Mental Health Research, Ottawa, [5]Department of Medicine (Neurology), University of Toronto, Toronto, [6]Division of Neurology, Sunnybrook Health Sciences Centre, Toronto
Topic Area: LONG-TERM MEMORY: Episodic

B129 - Spatial updating in amnesia using an eye movement analog of path integration
Anisha Khosla[1,2] (anisha.khosla@mail.utoronto.ca), Morris Moscovitch[1,2], Jennifer D. Ryan[1,2]; [1]University of Toronto, [2]Rotman Research Institute, Baycrest
Topic Area: LONG-TERM MEMORY: Episodic

B130 - Semantic clustering and semantic path length: Two measures of free recall organization with different functional properties
Felicia Chaisson[1] (fchais1@lsu.edu), Heather D. Lucas[1], Amber Alford[1], Christopher R. Cox[1]; [1]Louisiana State University
Topic Area: LONG-TERM MEMORY: Episodic

B131 - A computational model of replay-facilitated retroactive memory effects
Emily T Cowan[1] (emily.cowan@temple.edu), Elizabeth A Horwath[1], Joseph E Dunsmoor[2], Vishnu P Murty[1]; [1]Temple University, [2]University of Texas, Austin
Topic Area: LONG-TERM MEMORY: Episodic

B132 - Aesthetic Experience is Supported by Spontaneous Autobiographical Memory Recollection
Anna P. Smith[1] (anna.p.smith@duke.edu), Felipe De Brigard[1], Elizabeth J. Marsh[1]; [1]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

B133 - Age-Related Differences in Memory Encoding: The Impact of Schematic Knowledge
Shenyang Huang[1] (shenyang.huang@duke.edu), Kirsten Gillette[1], Cortney Howard[1], Lifu Deng[2], Simon Davis[1], Roberto Cabeza[1]; [1]Duke University, [2]Cleveland Clinic
Topic Area: LONG-TERM MEMORY: Episodic

B134 - Imperative and Interrogative motivations shape decision-making and long-term memory via distinct neural routes
Yuxi Candice Wang[1] (yuxi.wang@duke.edu), Alyssa H. Sinclair[2], R. Alison Adcock[1]; [1]Duke University, [2]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

B135 - Rate of context change at encoding influences hippocampal autocorrelation and temporal clustering of free recall
Lindsay I. Rait[1] (lrait@uoregon.edu), Guo Wanjia[1], Zhifang Ye[1], Sarah DuBrow[1], Brice A. Kuhl[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

B136 - Visual perspective reorients how autobiographical memories are recollected
Selen Kucuktas[1] (kucuktas@ualberta.ca), Peggy L. St. Jacques[1]; [1]University of Alberta
Topic Area: LONG-TERM MEMORY: Episodic

B137 - Neural mechanisms of perceptual curiosity and associated memory enhancement
Zhongyu Hu[1,2] (1901110633@pku.edu.cn), Jiongjiong Yang[1,2]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]Beijing Key Laboratory of Behavior and Mental Health, Peking University
Topic Area: LONG-TERM MEMORY: Episodic

B138 - Threat of punishment restructures free recall dynamisc
Vishnu Murty[1], Elizabeth Horwath[1], Brandon Katerman[2]; [1]Temple University, [2]University of California, Los Angeles
Topic Area: LONG-TERM MEMORY: Episodic

B139 - Emotional enhancement of memory extends to subsequent memory formation
Jamie Snytte[1] (jamie.snytte@mail.mcgill.ca), Ting Ting Liu[1], Renée Withnell[1], M. Natasha Rajah[2], Signy Sheldon[1]; [1]McGill University, [2]Toronto Metropolitan University
Topic Area: LONG-TERM MEMORY: Episodic

B140 - **How do we evaluate others' memories?**
Dr Talya Sadeh[1], Avi Gamoran[1], Lilach Lieberman[1], Michael Gilead[2], Ian Dobbins[3]; [1]Ben-Gurion University of the Negev, [2]Tel Aviv University, [3]Washington University in Saint Louis
Topic Area: LONG-TERM MEMORY: Episodic

B141 - Temporally dissociable engagement of mesolimbic and hippocampal circuits supports memory formation during the resolution of uncertainty
Jia-Hou Poh[1], Abigail Hsiung[1], Scott Huettel[1], R. Alison Adcock[1]; [1]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

B142 - Systematic cognitive load and its influence on episodic memory
Emma Laurent[1] (emmalaurent@g.harvard.edu), Linda de Voogd[2], Lila Davachi[3], Elizabeth Phelps[1]; [1]Harvard University, [2]Universiteit Leiden, [3]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

B143 - Amygdala-hippocampal interactions predict temporal memory precision
Jingyi Wang[1] (jy_wang@ucsb.edu), Joanne Stasiak[1], Scott T. Grafton[1], Regina C. Lapate[1]; [1]University of California, Santa Barbara
Topic Area: LONG-TERM MEMORY: Episodic

B144 - The influence of practice experience on neural networks during successful memory retrieval
Lingwei Wang[1,2] (wlwcwsc@sina.com), Jiongjiong Yang[1,2]; [1]School of Psychological and Cognitive Sciences, Peking University, [2]Beijing Key Laboratory of Behavior and Mental Health, Peking University
Topic Area: LONG-TERM MEMORY: Episodic

B145 - Cortical Hubs of Highly Superior Autobiographical Memory
William Orwig[1,2] (williamorwig@g.harvard.edu), Ibai Diez[2], Elisenda Bueichekú[2], Tiziana Pedale[3,4], Fabrizio Parente[3], Patrizia Campolongo[4], Daniel Schacter[1], Jorge Sepulcre[2], Valerio Santangelo[3,5]; [1]Harvard University, [2]Massachusetts General Hospital & Harvard Medical School, [3]Fondazione Santa Lucia, [4]Sapienza University of Rome, [5]University of Perugia
Topic Area: LONG-TERM MEMORY: Episodic

B146 - 'Memento' Memory: Effects of Non-Linear Narrative Structures on Memory
James Antony[1] (james.ward.antony@gmail.com), Angelo Lozano[1], Pahul Dhoat[1], Kelly Bennion[1]; [1]Cal Poly, SLO
Topic Area: LONG-TERM MEMORY: Episodic

B147 - Incidental learning enhances auditory signal detection
Manda Fischer[13] (mfisch5@uwo.ca), Morris Moscovitch[12], Claude Alain[12]; [1]University of Toronto, [2]Rotman Research Institute at Baycrest Hospital, [3]University of Western Ontario
Topic Area: LONG-TERM MEMORY: Episodic

B148 - Behavioral Manipulation of the Consolidation of Specific and General Memory Traces
Katelyn Cliver[1] (kate.cliver@drexel.edu), Alexa Tompary[1]; [1]Drexel University
Topic Area: LONG-TERM MEMORY: Episodic

B149 - Sleep is associated with preserved autobiographical memory richness
Nelly Matorina[1] (nelly.matorina@mail.utoronto.ca), Jeya Scott[1], Astrid Amador[1], Morgan Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

B150 - Positive Emotion Enhances Impaired Hippocampal Functioning
Claire Lauzon[1,2] (cdlauzon@yorku.ca), Michael Yassa[3], R. Shayna Rosenbaum[1,2]; [1]York University, [2]Rotman Research Institute, Baycrest Centre, [3]University of California, Irvine
Topic Area: LONG-TERM MEMORY: Episodic

B151 - Cross-participant neural alignment of attentional states during encoding is linked to better memory in adults and children
Sagana Vijayarajah[1] (sagana.vijayarajah@mail.utoronto.ca), Margaret Schlichting[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

B152 - The relationship between mnemonic discrimination and relational memory impairments in Traumatic Brain Injury
Michael Dulas[1] (mdulas@binghamton.edu), Hillary Schwarb[2], Emily Morrow[3], Nirav Patel[3], Neal Cohen[4], Melissa Duff[3]; [1]Binghamton University, [2]University of Nebraska, [3]Vanderbilt University, [4]University of Illinois
Topic Area: LONG-TERM MEMORY: Episodic

B153 - Menstrual cycle and perceived stress predict performance on the mnemonic similarity task
Mateja Perovic[1] (m.perovic@mail.utoronto.ca), Michael Mack[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

B154 - Predicting Effects of Brain Stimulation from Observational Data
Riley DeHaan[1], David Halpern[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

B155 - Memory-in-a-Box: Assessing Age-Related Differences in Memory Function using a Novel Online Staged Event
Mrinmayi Kulkarni[1] (mkulkarni@research.baycrest.org), Barbara Gundi[1], Rosanna K. Olsen[1,2], Morgan D. Barense[2], Bradley R. Buchsbaum[1,2]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

B156 - Dorsomedial Prefrontal Cortex (DMPFC) Prioritizes Social Consolidation at Rest
Courtney A. Jimenez[1], Meghan L. Meyer[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

B157 - Overlap among neural representations of similar memories triggers repulsion in verbal recall
Anisha Babu[1] (ababu@uoregon.edu), Zhifang Ye[1], Brice Kuhl[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

B158 - Neuronal ensemble states in CA1 of the freely-moving macaque exhibit temporal drift while maintaining sequential-task structure.
Kari L. Hoffman[1], Ken F. Rahman[1], Richard W. Song[1], Saman Abbaspoor[1]; [1]Vanderbilt University
Topic Area: LONG-TERM MEMORY: Episodic

B159 - Reactivating specific memories during sleep in conjunction with a suppression context
Gayathri Subramanian[1] (gayathrisubramanian2024@u.northwestern.edu), Christina Zelano[1], Ken A Paller[1], Eitan Schechtman[2]; [1]Northwestern University, [2]University of California, Irvine
Topic Area: LONG-TERM MEMORY: Episodic

B160 - Hidden Markov Modelling of Viewing Behaviors Reveals **Discrete "Encoding States" During Visuospatial Memory** Formation
Chloe Kindell[1] (ckinde2@lsu.edu), Heather Lucas[1]; [1]Louisiana State University
Topic Area: LONG-TERM MEMORY: Episodic

Poster Session C

Sunday, April 14, 5:00 – 7:00 pm, Sheraton Hall ABC

C1 - Accurate predictions facilitate robust memory encoding separately from stimulus probability for schematic memory
Jiawen Huang[1] (jh4290@columbia.edu), Eleanor Furness[1], Yifang Liu[1], Morell-Jovan Kenmoe[1], Ronak Elias[1], Hannah Tongxin Zeng[1], Christopher Baldassano[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

C2 - Predicting the future comes at a cost to encoding the present
Craig Poskanzer[1] (crp2170@columbia.edu), Hannah Tarder-Stoll[1,2], Raheema Javid[1], Mariam Aly[1]; [1]Columbia University, New York, NY, [2]Rotman Research Institute, Toronto, ON
Topic Area: LONG-TERM MEMORY: Episodic

C3 - Cross regional coordination of activity in the human brain during autobiographical self-referential processing
James Stieger[1] (jstieger@stanford.edu), Josef Parvizi[2]; [1]Stanford University
Topic Area: LONG-TERM MEMORY: Episodic

C4 - Investigating recollection network activation during personal memory retrieval in women with chemotherapy-treated breast cancer
Kristina D. Munelith-Souksanh[1] (kmune008@uottawa.ca), Imola X. MacPhee[2], Chloé Cateaux[1], Amira Boukhelif[1], Julyane Gelinas[1], Megan Bennett[1], Isabelle Poirier[1], Annick F. N. Tanguay[3], John A. E. Anderson[2], Melanie J. Sekeres[1]; [1]University of Ottawa, [2]Carleton University, [3]Vanderbilt University Medical Center
Topic Area: LONG-TERM MEMORY: Episodic

C5 - Neural dedifferentiation and reduced specific memory in aging
Troy M. Houser[1] (thouser@uoregon.edu), Caitlin R. Bowman[2], Dagmar Zeithamova[1]; [1]University of Oregon, [2]University of Wisconsin-Milwaukee
Topic Area: LONG-TERM MEMORY: Episodic

C6 - Pupil dilation during recognition memory is influenced by cue-trace interactions but not by memory strength
Wen Jian[1], Elena K. Festa[1], Mingjian He[2], William C. Heindel[1]; [1]Brown University, [2]Massachusetts Institute of Technology
Topic Area: LONG-TERM MEMORY: Episodic

C7 - Episodic counterfactual plausibility is negatively associated with ease of simulation: behavioral and neural evidence
Ricardo Morales-Torres[1,2] (ricardo.morales.torres@duke.edu), Kaylee Miceli[1,3], Shenyang Huang[1,2], Felipe De Brigard[1,2,3]; [1]Center for Cognitive Neuroscience, Duke University, [2]Department of Psychology and Neuroscience, Duke University, [3]Department of Philosophy, Duke University
Topic Area: LONG-TERM MEMORY: Episodic

C8 - Changes in hippocampal cerebral blood flow in moderate-severe traumatic brain injury
Annick F. N. Tanguay[1] (annick.tanguay@vumc.org), Sophia Kekes-Szabo[1], Hillary Schwarb[2], Neal J. Cohen[3], Binu P. Thomas[4], Melissa C. Duff[1]; [1]Vanderbilt University Medical Center, [2]University of Nebraska-Lincoln, [3]University of Illinois Urbana-Champaign, [4]University of Texas Southwestern Medical Center
Topic Area: LONG-TERM MEMORY: Episodic

C9 - Visual exploration reveals the precision of semantic and spatial memory
Anikka G. Jordan[1] (anikka@uchicago.edu), Joel L. Voss[1], James E. Kragel[1]; [1]University of Chicago
Topic Area: LONG-TERM MEMORY: Episodic

C10 - Memory-selective neurons in human medial temporal lobe and medial frontal cortex can be modulated by the decision criterion during recognition memory
Evan Layher[1,2] (layher@psych.ucsb.edu), Michael B. Miller[2], Adam N. Mamelak[1], Ueli Rutishauser[1]; [1]Cedars-Sinai Medical Center, [2]University of California, Santa Barbara
Topic Area: LONG-TERM MEMORY: Episodic

C11 - False Recognition in Aging is Due To an Emphasis on Semantic Information at Encoding
Loris Naspi[1] (lorisnaspi@gmail.com), Paola Gega[1], Şafak Erener[1], Teuta Dzaferi[1], Roberto Cabeza[2]; [1]Humboldt University of Berlin, [2]Duke Univeristy
Topic Area: LONG-TERM MEMORY: Episodic

C12 - Occipitotemporal alpha and theta dynamics support memory formation in the developing brain
Qin Yin[1,2], Elizabeth L. Johnson[3], Adam J. O. Dede[3], Kurtis I. Auguste[4,5], Robert T. Knight[6], Eishi Asano[1,7], Noa Ofen[1,2]; [1]Wayne State University, Detroit, MI, [2]University of Texas at Dallas, Dallas, TX, [3]Northwestern University, Chicago, IL, [4]University of California, San Francisco, CA, [5]UCSF Benioff Children's Hospital, Oakland and San Francisco, CA, [6]University of California, Berkeley, CA, [7]Children's Hospital of Michigan, Detroit, MI
Topic Area: LONG-TERM MEMORY: Episodic

C13 - Flexible updating of hippocampal representations guides multi-step prediction
Hannah Tarder-Stoll[1] (htarder-stoll@research.baycrest.org), Christopher Baldassano[2], Mariam Aly[2]; [1]Rotman Research Institute, [2]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

C14 - Visual fixations to objects reflect configural processing in the perirhinal cortex among younger and older adults
Natalia Ladyka-Wojcik[1], Rosanna K. Olsen[1,2], Jennifer D. Ryan[1,2], Morgan D. Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute (Baycrest Health Sciences)
Topic Area: LONG-TERM MEMORY: Episodic

C15 - Horror-evoked Arousal Predicts Biased Distance Estimations for Continuous Events
David F. Gregory[1] (david.gregory@temple.edu), Bailey C. Spangler[1], Emily T. Cowan[1], Vishnu P. Murty[1]; [1]Temple University
Topic Area: LONG-TERM MEMORY: Episodic

C16 - Narrative coherence bends the arrow of time when recalling naturalistic events
Angelique Delarazan[1] (a.delarazan@wustl.edu), Jeffrey Zacks[1], Elena Bosak[1], Zachariah Reagh[1]; [1]Washington University in St. Louis
Topic Area: LONG-TERM MEMORY: Episodic

C17 - 7T laminar fMRI responses during encoding and retrieval of naturalistic virtual experiences
Yan I. Wu[1], Alice L. Hickling[1], Nicholas A. Alexander[1], Nadine N. Graedel[1], Robert A. Seymour[1], Oliver Josephs[1], Vahid Malekian[1], Martina F. Callaghan[1], Eleanor A. Maguire[1]; [1]University College London
Topic Area: LONG-TERM MEMORY: Episodic

C18 - Is mental visuospatial imagery essential for episodic autobiographical memory?
Cornelia McCormick[1] (cornelia.mccormick@ukbonn.de); [1]University Hospital Bonn
Topic Area: LONG-TERM MEMORY: Episodic

C19 - Scene memory is better for dynamic than static stimuli in immersive virtual reality
Anna S. L. Romero[1] (asromero@ualberta.ca), Milan Kalra[1], Peggy L. St. Jacques[1]; [1]University of Alberta
Topic Area: LONG-TERM MEMORY: Episodic

C20 - Intracranial neurofeedback of hippocampal theta oscillations enhances human memory formation
Vandana Prasad[1,2,3,6] (vandana.prasad@mail.utoronto.ca), Chaim N. Katz[1,3,5,7], Kramay Patel[1,3,4,7], Thomas M. Biba[1,10], Katherine Duncan[10], Taufik A. Valiante[1,2,3,6,7,8,9]; [1]Krembil Brain Institute, Toronto Western Hospital (TWH), Toronto, Ontario M5T 1M8, Canada;, [2]Electrical and Computer Engineering, University of Toronto, Toronto, Ontario M5S 3G4, Canada;, [3]Center for Advancing Neurotechnological Innovation to Application (CRANIA), Toronto, Ontario, M5G 2A2, Canada;, [4]Faculty of Medicine, University of Toronto, Toronto, ON M5S 1A8, Canada;, [5]Faculty of Medicine, University of Calgary, Calgary, AB T2N 4N1, Canada;, [6]The KITE Research Institute, University Health Network, Toronto, Ontario M5G 2A2, Canada;, [7]Institute of Biomedical Engineering, University of Toronto, Toronto, Ontario M5S 3G9, Canada;, [8]Institute of Medical Sciences, University of Toronto, Toronto, ON M5S 1A8, Canada;, [9]Division of Neurosurgery, Department of Surgery, University of Toronto, Toronto, Ontario M5S 1A1, Canada., [10]Department of Psychology, University of Toronto, Toronto, ON M5S 3G3, Canada
Topic Area: LONG-TERM MEMORY: Episodic

C21 - 7T laminar fMRI reveals the microcircuitry underpinning recall of remote autobiographical memories
Alice L. Hickling[1], Nadine N. Graedel[1], Ian A. Clark[1], Oliver Josephs[1], Vahid Malekian[1], Peter Kok[1], Martina F. Callaghan[1], Eleanor A. Maguire[1]; [1]University College London
Topic Area: LONG-TERM MEMORY: Episodic

C22 - Dissociable neural mechanisms for encoding of memories associated with conceptual and visual-perceptual detail
Charles Ferris[1] (charlessferris@gmail.com), Rebecca Scheurich[1], Wenbo Yi[1], Caroline Palmer[1], Signy Sheldon[1]; [1]McGill University
Topic Area: LONG-TERM MEMORY: Episodic

C23 - Education moderates the effect of hippocampal volume on episodic memory decline
Annalise LaPlume[1] (annaliselaplume@torontomu.ca), Samira Mellah[2], Natasha Rajah[1,3], Sylvie Belleville[2,4]; [1]Toronto Metropolitan University, [2]Institut Universitaire de Geriatrie de Montréal, [3]McGill University, [4]Université de Montréal
Topic Area: LONG-TERM MEMORY: Episodic

C24 - Dimensionality affects memory for events in immersive virtual reality
Julia Feminella[1] (feminell@ualberta.ca), Shikang Peng[1], Peggy L. St. Jacques[1]; [1]University of Alberta
Topic Area: LONG-TERM MEMORY: Episodic

C25 - The curse of imagery: Trait object and spatial imagery relate to trauma and stress outcomes
Ryan Yeung[1,2] (ryeung@research.baycrest.org), H. Moriah Sokolowski[1,3], Carina Fan[1], Myra Fernandes[2], Brian Levine[1]; [1]Rotman Research Institute, [2]University of Waterloo, [3]Toronto Metropolitan University
Topic Area: LONG-TERM MEMORY: Episodic

C26 - Boundaries of behavioral tagging: arousal alters setting of learning tags produced by weak learning
Sydney Lambert[1], Sophia Bibb[2], Joseph Dunsmoor[1]; [1]The University of Texas at Austin, [2]The Ohio State University
Topic Area: LONG-TERM MEMORY: Episodic

C27 - Age differences in the mechanisms underlying remembering events vividly and confidently
Kasia M Mojescik[1] (k.mojescik@sussex.ac.uk), Sam C Berens[1], Flavia De Luca[1], Maureen Ritchey[2], Chris M Bird[1]; [1]University of Sussex, [2]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

C28 - Overnight memory transformation in the human brain– from perceptual detail to conceptual gist
Simon Faghel-Soubeyrand[1] (simon.faghel-soubeyrand@psy.ox.ac.uk), Polina Perzich[1], Bernhard Staresina[1]; [1]University of Oxford, Department of Experimental Psychology
Topic Area: LONG-TERM MEMORY: Episodic

C29 - Is implicit memory associated with the hippocampus?
Ashley Steinkrauss[1] (steinkas@bc.edu), Scott Slotnick[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

C30 - Functional Network Integration Mediates Arousal Effects on Naturalistic Recall
Jadyn S. Park[1] (jadynpark@uchicago.edu), Jin Ke[1], Kruthi Gollapudi[1], Ioannis Papps[2], Yuan Chang Leong[1]; [1]The University of Chicago, [2]Keck School of Medicine, University of Southern California
Topic Area: LONG-TERM MEMORY: Episodic

C31 - Encoding and retrieval of virtual naturalistic experiences during OPM-MEG
Robert Seymour[1] (rob.seymour@ucl.ac.uk), Nicholas Alexander[1], Yan Wu[1], George O'Neill[1], Stephanie Mellor[1], Ryan Timms[1], Tim Tierney[1], Gareth Barnes[1], Eleanor Maguire[1]; [1]University College London
Topic Area: LONG-TERM MEMORY: Episodic

C32 - Intersubject neural similarity and pattern reinstatement during recall are enhanced at meaningful moments during film viewing
Aditya Upadhyayula[1] (aditya.usa8@gmail.com), Jeffrey M. Zacks[1], John M. Henderson[2,3], Zachariah M. Reagh[1]; [1]Depratment of Psychological & Brain Sciences, Washington University in St. Louis, [2]Center for Mind and Brain, University of California, Davis, [3]Department of Psychology, University of California, Davis
Topic Area: LONG-TERM MEMORY: Episodic

C33 - How the Brain Constructs and Maintains Coherent Episodic Memories through Eye Movements
Roger Johansson[1] (roger.johansson@psy.lu.se), Andrey R. Nikolaev[1], Melika Miralem[1], Inês Bramão[1], Mikael Johansson[1]; [1]Lund University
Topic Area: LONG-TERM MEMORY: Episodic

C34 - Selective memory retrieval does not depend on semantic congruency between retrieval goals and test cues: ERP evidence
Xinyue Zhang[1] (xz357@sussex.ac.uk), Alexa Morcom[1]; [1]University of Sussex
Topic Area: LONG-TERM MEMORY: Episodic

C35 - A day that America will remember: flashbulb memories, collective memories and collective future thoughts of the capitol riots
Nawel Cheriet[1,2,4] (nawel.cheriet@uliege.be), Meymune Topçu[3], William Hirst[3], Christine Bastin[1,2,4], Adrien Folville[1,2,4]; [1]Liege University, [2]GIGA CRC IVI - Cyclotron research center ULiege, [3]New School University, [4]PsyNCog - Psychology and Cognitive research unit of Liege University
Topic Area: LONG-TERM MEMORY: Episodic

C36 - Interference between similar memories increases the dimensionality and dispersion of recalled content
Julian Gamez[1], Anisha Babu[2], James Murray[3], Brice Kuhl[4]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

C37 - Can one emotional memory inhibit another? Investigating neural recapitulation patterns related to valence-dependent retrieval-induced forgetting
Julia M. Brau[1] (brauj@bc.edu), Leonard Faul[1], Maureen Ritchey[1], Elizabeth A. Kensinger[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Episodic

C38 - Goal-dependent Integration and Differentiation of Hippocampal Representations.
Eleonora Ghiraldini[1] (eleonoraghiraldini97@gmail.com), Stefani Morgan[1], Sophie D. Allen[2], Emma Tripp[2], Chris B. Martin[1,2]; [1]Program in Neuroscience, Florida State University, [2]Department of Psychology, Florida State University
Topic Area: LONG-TERM MEMORY: Episodic

C39 - Examining the Neural Dynamics of Semantic Memory Integration Using Noninvasive Brain Stimulation with Concurrent EEG
Evangelia G. Chrysikou[1], Alexa Gorman[1], Alexandra E. Kelly[1], Yoed N. Kenett[2]; [1]Drexel University, [2]Technion-Israel Institute of Technology
Topic Area: LONG-TERM MEMORY: Semantic

C40 - Evoking Episodic and Semantic Details with Instructional Manipulation in Young and Older Adults
Louis Renoult[1] (l.renoult@uea.ac.uk), Greta Melega[1,2], Fiona Lancelotte[3], Ann-Kathrin Johnen[4], Michael Hornberger[1], Brian Levine[5]; [1]University of East Anglia, School of Psychology, Nowich, UK, [2]Department of Neurology, Charité – Universitätsmedizin Berlin, Berlin, Germany, [3]School of Psychology, University of Sussex, UK, [4]School of Social Sciences, Birmingham City University, UK, [5]Rotman Research Institute, Baycrest, Toronto, Ontario, Canada and Departments of Psychology and Medicine (Neurology), University of Toronto
Topic Area: LONG-TERM MEMORY: Semantic

C41 - Using naturalistic celebrity stimuli to probe links between memory, interest and curiosity
Gregory Brooks[1,2] (gbrook5@uwo.ca), Aditya Thakur[2,3], Rachel Sargeson[1,2], Stefan Kohler[2,3]; [1]Graduate Program in Neuroscience, [2]Western University, [3]Department of Psychology
Topic Area: LONG-TERM MEMORY: Semantic

C42 - Can students effectively apply encoding techniques to support learning in person and online?
Sophia Tran[1] (sophiahtran@uwaterloo.ca), Myra Fernandes[1]; [1]University of Waterloo
Topic Area: LONG-TERM MEMORY: Semantic

C43 - Stimulus Representation in the Interactions Between Multiple Brain Regions
Paul C. Bogdan[1,2], Simon W. Davis[1,3], Roberto Cabeza[1,2]; [1]Center for Cognitive Neuroscience, Duke University, Durham, NC 27708, USA, [2]Department of Psychology and Neuroscience, Duke University, Durham, NC 27708, USA, [3]Department of Neurology, Duke University, Durham, NC 27710, USA
Topic Area: LONG-TERM MEMORY: Semantic

C44 - Past experience changes the trajectory of neural changes following new learning
Erik Wing[1], Jennifer Ryan[1], Asaf Gilboa[1]; [1]Baycrest
Topic Area: LONG-TERM MEMORY: Semantic

C45 - The representation and retrieval of general versus specific category knowledge
Marlie C. Tandoc[1] (tandoc@sas.upenn.edu), Sarah H. Solomon[1], Jacob A. Parker[1], Alex Gordienko[1], Anna C. Schapiro[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Semantic

C46 - Get a grip: Seeing objects activates grip representations automatically and quickly
Heath Matheson[2], Tanvi Vora[1]; [1]Memorial University of Newfoundland
Topic Area: LONG-TERM MEMORY: Semantic

C47 - Are objects oriented towards your dominant hand easier to recognize?
Lauren A. Miller[1] (lauren.a.2.miller@uconn.edu), Nathan Lautz[1,2], Wesley Leong[1,2], Eiling Yee[1,2]; [1]University of Connecticut, [2]The Connecticut Institute for the Brain and Cognitive Sciences
Topic Area: LONG-TERM MEMORY: Semantic

C48 - Factors that lead to the continued influence effect of misinformation: how can we effectively encode corrections?
Sean Guo[1], Danni Chen[1], Wanrou Hu[2], Xiaoqing Hu[1,3,4]; [1]The University of Hong Kong, Hong Kong SAR, China, [2]University of Electronic Science and Technology of China, Chengdu, China, [3]The State Key Laboratory of Brian and Cognitive Sciences, The University of Hong Kong, Hong Kong SAR, China, [4]HKU-Shenzhen Institute of Research and Innovation, Shenzhen, China
Topic Area: LONG-TERM MEMORY: Semantic

C49 - Exploring Knowledge Integration: Insights from Angular Gyrus (AG) and Ventrolateral Prefrontal Cortex (vlPFC) HD-tDCS
Xuan zhang[1] (xzhang@research.baycrest.org), Michael Lochner[1,3], Karen Joseph[4], Asaf Gilboa[1,2,3]; [1]Rotman Research Institute, Baycrest Hospital, [2]Department of Psychology, University of Toronto, [3]Department of Psychology, York University, [4]Holland Bloorview Kids Rehabilitation Hospital
Topic Area: LONG-TERM MEMORY: Semantic

C50 - Interrogating brain engagement as a function of exception learning performance
Emily Heffernan[1] (emily.heffernan@mail.utoronto.ca), Michael Mack[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Semantic

C51 - Transient semantic memory retrieval failures: Factors associated with the tip-of-the-tongue phenomenon
James Christopher Barry[1] (j.barry@bcbl.eu), Emilio Ferrer[2], Garikoitz Lerma-Usabiaga[1], Pedro M. Paz-Alonso[1]; [1]Basque Center on Cognition, Brain and Language, [2]Department of Psychology, University of California, Davis
Topic Area: LONG-TERM MEMORY: Semantic

C52 - Recent statistics shift object representations in parahippocampal cortex
Sarah Solomon[1] (sarahsol@sas.upenn.edu), Kendrick Kay[2], Anna Schapiro[1]; [1]University of Pennsylvania, [2]University of Minnesota
Topic Area: LONG-TERM MEMORY: Semantic

C53 - An edge-centric approach to discerning the neural networks underlying event script processing
Yongzhen Xie[1] (yongzhen.xie@mail.utoronto.ca), Alexander Barnett[1]; [1]Department of Psychology, University of Toronto
Topic Area: LONG-TERM MEMORY: Semantic

C54 - Semantic Memory and Temporal Discounting
Danielle Akilov[1] (danielleakilov@mail.adelphi.edu), Karolina Lempert[1]; [1]Adelphi University
Topic Area: LONG-TERM MEMORY: Semantic

C55 - The Semantic Level of a Testing Question Influences Subsequent Memory Reactivation
Amy Qi[1], Marc Coutanche[1]; [1]University of Pittsburgh
Topic Area: LONG-TERM MEMORY: Semantic

C56 - Parahippocampal cortex integrates semantic and visual features of object images
Sophie Allen[1] (sda20a@fsu.edu), Ryan Kretschmar[1], Tyler Delmore[2], Morgan Barense[2,3], Chris Martin[1,4]; [1]Department of Psychology, Florida State University, [2]Department of Psychology, University of Toronto, [3]Rotman Research Institute, Baycrest Hospital, Toronto, [4]Program in Neuroscience, Florida State University
Topic Area: LONG-TERM MEMORY: Semantic

C57 - Resting-State Memory Consolidation in Attention Deficit Hyperactivity Disorder
Bridget Scalia[1], Erin J. Wamsley[1]; [1]Furman University Department of Psychology and Program in Neuroscience
Topic Area: LONG-TERM MEMORY: Semantic

C58 - Insights from Simultaneous EEG-fMRI and Patient Data Illuminate the Role of the Anterior Medial Temporal Lobe in N400 generation
Patric Meyer[1] (patric.meyer@srh.de), Christian Baeuchl[2], Michael Hoppstädter[3]; [1]Cognitive Neuroscience Unit, [2]Faculty of Psychology, Technische Universität Dresden, Dresden, Germany, [3]Department of Cognitive and Clinical Neuroscience, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany
Topic Area: LONG-TERM MEMORY: Semantic

C59 - Are representations in the hippocampus organized by the emotional content of stimuli? A multivariate analysis of intracranial electrode recordings
Alexander Lawriw[1] (alawri1@lsu.edu), Christopher R. Cox[1]; [1]Louisiana State University
Topic Area: LONG-TERM MEMORY: Semantic

C60 - Predicting conceptual understanding through key information encoding during a STEM lecture
Yeongji Lee[1] (yeongji.lee.gr@dartmouth.edu), David Kraemer[1]; [1]Dartmouth College
Topic Area: LONG-TERM MEMORY: Semantic

C61 - Thematic relations outperform taxonomic relations in memory retrieval
Weijia Cao[1] (weijia.cao@drexel.edu), Omri Raccah[2], Phoebe Chen[3], Alexa Tompary[1], David Poeppel[3,4]; [1]Drexel University, [2]Yale University, [3]New York University, [4]Ernst Strüngmann Institute for Neuroscience
Topic Area: LONG-TERM MEMORY: Semantic

C62 - A bottom-up approach to finding individual differences in mental representation
Y. Ivette Colón[1] (ycolon@wisc.edu), Claire Peplinski[1], Timothy Rogers[1]; [1]University of Wisconsin - Madison
Topic Area: LONG-TERM MEMORY: Semantic

C63 - From common to unique: connectivity changes in the anterior temporal lobe in semantic memory linked to semantic retrieval ability.
Nicolas Deom[1,2] (nicolas.deom@mail.utoronto.ca), Omar Khalil[1,2], Irene Giannoylis[2], Mary Pat McAndrews[1,2]; [1]University of Toronto, [2]Krembil Brain Institute, Toronto Western Hospital
Topic Area: LONG-TERM MEMORY: Semantic

C64 - Investigating the representational modality of dimensional concepts
Maleah J. Carter[1] (maleah.carter@nih.gov), Christopher I. Baker[1], J. Brendan Ritchie[1]; [1]National Institute of Mental Health
Topic Area: LONG-TERM MEMORY: Semantic

C65 - Different learning processes for response accuracy and precision in implicit perceptual-motor sequence learning
Ziyan Y. Han[1], Paul Reber[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Skill Learning

C66 - Do procedural and declarative category learning form distinct or shared representations? An fMRI-RSA study
Dr. Priya Kalra[1] (pkalra7@uwo.ca), Laura Batterink[2], J. Paul Minda[3], Marc Joanisse[4]; [1]University of Western Ontario
Topic Area: LONG-TERM MEMORY: Skill Learning

C67 - Hippocampal ripples during offline periods predict motor sequence learning.
Pin-Chun Chen1 (pcchen.sleep@gmail.com), Jenny Stritzelberger2, Hajo Hamer2, Bernhard Staresina1; 1University of Oxford, United Kingdom, [2]Universitätsklinikum Erlangen, Germany
Topic Area: LONG-TERM MEMORY: Skill Learning

C68 - Micro-consolidation occurs during implicit motor sequence learning, but is not influenced by exercise
Emily Brooks[1] (emily.brooks1@monash.edu), Sarah Wallis[1], Joshua Hendrikse[1], James Coxon[1]; [1]Monash University
Topic Area: LONG-TERM MEMORY: Skill Learning

C69 - Smart segmentation supports transfer learning
Anna Jafarpour[1] (annaja@uw.edu), Robert Knight[2,3], Elizabeth Buffalo[1,4]; [1]University of Washington, [2]UC Berkeley, [3]Helen Wills Neuroscience Institute, [4]National Primate Center
Topic Area: LONG-TERM MEMORY: Skill Learning

C70 - Reactivation of motor memory by passive finger movements with robotic hand exoskeleton
Kazuhisa Shibata[1] (kazuhisa.shibata@riken.jp), Hiroki Ohashi[1], Hayato Nishioka[2], Yuki Ogasawara[2]; [1]RIKEN Center for Brain Science, [2]SONY Computer Science Laboratories Inc.
Topic Area: LONG-TERM MEMORY: Skill Learning

C71 - Implicit sequence learning does not generalize even after multiple sessions and days
Peigen Shu[1], Paul Reber[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Skill Learning

C72 - In the zone: Enhanced motor sequential performance in a perceptual-motor skill learning task parallels higher flow ratings
Antonio P. Santa Cruz[1] (antoniosantacruz2026@u.northwestern.edu), Ziyan Y. Han[1], Satoru Suzuki[1], Paul J. Reber[1]; [1]Northwestern University
Topic Area: LONG-TERM MEMORY: Skill Learning

C73 - Exploring the Role of Interoception and Interoceptive Brain Regions in Episodic Memory Across the Adult Lifespan: An fMRI Study
Kyoungeun Lee[1] (klee773@utexas.edu), Audrey Duarte[1]; [1]UT Austin
Topic Area: LONG-TERM MEMORY: Development & aging

C74 - Comparing neural activity of younger and older adults using mobile electroencephalography during mobility in an indoor real-world environment
Samantha Marshall[1] (smarsh69@uwo.ca), Gianna Jeyarajan[1], Raphael Gabiazon[1], Jennifer Hanna Al-Shaikh[1], Nicholas Hayhow[1], Tia Seleem[1], Lindsay S. Nagamatsu[1]; [1]Western University
Topic Area: METHODS: Neuroimaging

C75 - Brain-behavior associations of cognitive skills and cortical structures in developing populations influenced by musical experience

Ms. Hilda F. Parra[1,2] (hparra@ucsd.edu), Dr. Timothy T. Brown[1], Dr. John R. Iversen[1,3]; [1]University of California San Diego, [2]San Diego State University, [3]McMaster University

Topic Area: METHODS: Neuroimaging

C76 - Systematically investigating sustained activity estimates of cognitive control processes in mixed blocked/event-related fMRI designs

Rebecca Feldman[1], Joset A. Etzel[1], Todd S. Braver[1]; [1]Washington University in St. Louis

Topic Area: METHODS: Neuroimaging

C77 - The role of sex-steroid hormones and brain volume variation in aging

Thamires Naela C. Magalhaes[1] (thamiresncm@tamu.edu), T. Bryan Jackson[2], Ivan Herrejon[1], Jessica A. Bernard[1,3]; [1]Department of Psychological & Brain Sciences, Texas A&M University, College Station, TX, USA, [2]Vanderbilt Memory & Alzheimer's Center, Nashville, TN, USA, [3]Texas A&M Institute for Neuroscience, Texas A&M University, College Station, TX, USA

Topic Area: METHODS: Neuroimaging

C78 - Dynamical models reveal anatomically reliable attractor landscapes embedded in functional brain networks

Ruiqi Chen[1] (chen.ruiqi@wustl.edu), Matthew Singh[1], Todd Braver[1], ShiNung Ching[1]; [1]Washington University in St. Louis

Topic Area: METHODS: Neuroimaging

C79 - Precision data-driven modeling of cortical dynamics reveals idiosyncratic mechanisms underlying canonical oscillations

Matthew Singh[1,2,3], Todd Braver[2], Michael Cole[3], ShiNung Ching[1]; [1]Washington University in St. Louis, Dept. of Electrical and Systems Engineering, [2]Washington University in St. Louis, Dept. of Psychological and Brain Sciences, [3]Rutgers University, Newark, Center for Molecular and Behavioral Neuroscience

Topic Area: METHODS: Neuroimaging

C80 - Developmental Trajectory of Inhibition-Related Brain Activation during a Stop-Signal Task in Typically Developing Children

Isabel M. Wilder[1] (isabel.wilder@nih.gov), Shau-Ming Wei[1,2], J. Shane Kippenhan[1], Michael D. Gregory[1], Christina A. Recto[1], Destiny S. Wright[1], Caroline B. Raymond[1], Lynnette K. Nieman[3], Jack A. Yanovski[4], Peter J. Schmidt[2], Karen F. Berman[1]; [1]Section on Integrative Neuroimaging, Clinical & Translational Neuroscience Branch, National Institute of Mental Health, Bethesda, MD, [2]Behavioral Endocrinology Branch, National Institute of Mental Health, Bethesda, MD, [3]Diabetes, Endocrinology, and Obesity Branch, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, [4]Section on Growth and Obesity, Division of Intramural Research, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD

Topic Area: METHODS: Neuroimaging

C81 - Functional activation during an associative memory task and its association with self-efficacy in older adults with memory impairments

Raphael Gabiazon[1,3], Amy Swayze[2,3], Lindsay Nagamatsu[2,3]; [1]Schulich School of Medicine & Dentistry, [2]School of Kinesiology, [3]Western University

Topic Area: METHODS: Neuroimaging

C82 - Neural Circuitry and Therapeutic Targeting of Depressive Symptoms in Schizophrenia Spectrum Disorders

Julia Gallucci[1,2] (julia.gallucci@mail.utoronto.ca), Ju-chi Yu[1], Lindsay Oliver[1], Hajer Nakua[1,2], Peter Zhukovsky[1], Erin Dickie[1,3], Zafiris Daskalakis[4], George Foussias[1,2,3], Daniel Blumberger[1,2,3,5], Colin Hawco[1,2,3], Aristotle Voineskos[1,2,3]; [1]Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, ON, Canada, [2]Institute of Medical Science, University of Toronto, Toronto, ON, Canada, [3]Department of Psychiatry, University of Toronto, Toronto, ON, Canada, [4]Department of Psychiatry, University of California San Diego School of Medicine, La Jolla, CA, United States of America, [5]Temerty Centre for Therapeutic Brain Intervention, Centre for Addiction and Mental Health, Toronto, ON, Canada

Topic Area: METHODS: Neuroimaging

C83 - Longitudinal iron accumulation in caudate related to changes in frontoparietal control network connectivity and planning ability in older adults

Jing Zhou[1], Colleen Hughes[1], Alfie Wearn[1], Julia Huck[2], Giulia Baracchini[1], Elisabeth Sylvain[3], Jennifer Tremblay-Mercier[3], Judes Poirier[4], Sylvia Villeneuve[4], Christine Lucas Tardif[1], Claudine J. Gauthier[2], Gary R. Turner[5], R. Nathan Spreng[1]; [1]Montreal Neurological Institute, McGill University Montreal, QC, Canada, [2]Physics Department, Concordia University, Montréal, QC, Concordia University, Montreal, QC, Canada, [3]StoP-AD Centre, Douglas Mental Health Institute Research Centre, Montreal, QC, Canada, [4]Department of Psychiatry, McGill University, Montreal, QC, Canada, [5]Department of Psychology, York University, Toronto, ON, Canada

Topic Area: METHODS: Neuroimaging

C84 - Heterogeneity in Functional Connectivity: Dimensional Predictors of Individual Variability during Rest and Task fMRI in Psychosis

Maria T. Secara[1,2] (teodora.secara@mail.utoronto.ca), Lindsay D. Oliver[1], Julia Gallucci[1,2], Erin W. Dickie[1,3], George Foussias[1,3], James Gold[5], Anil K. Malhotra[4], Robert W. Buchanan[5], Aristotle N. Voineskos[1,3], Colin Hawco[1,3]; [1]Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, ON, Canada, [2]Institute of Medical Science, University of Toronto, Toronto, ON, Canada, [3]Department of Psychiatry, University of Toronto, Toronto, ON, Canada, [4]Department of Psychiatry, Division of Research, The Zucker Hillside Hospital Division of Northwell Health, Glen Oaks, NY, USA, [5]Maryland Psychiatric Research Center, Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD, USA

Topic Area: METHODS: Neuroimaging

C85 - Migraine modulates neural synchrony during emotionally valenced naturalistic fMRI

Keva Klamer[1] (klamer@uleth.ca), Joshua Craig[1], Christina Haines[1], KiAnna Sullivan[1], Chelsea Ekstrand[1]; [1]University of Lethbridge

Topic Area: METHODS: Neuroimaging

C86 - Naturalistic audiovisual stimulation reveals characteristic patterns of fMRI synchrony in temporal lobe epilepsy

Chelsea Ekstrand[1] (chelsea.ekstrand@uleth.ca), Hana Abbas[2], Caroline Chadwick[2], Daniella Ladowski[2], Alenka Bullen[2], Nargess Ghazaleh[2], Ali R. Khan[2], Jorge G. Burneo[2], David A. Steven[2], Susan E. Hayman-Abello[2,3], Jonathan C. Lau[2], Ana Suller Marti[2], Terry M. Peters[2,4], Ingrid S. Johnsrude[2]; [1]University of Lethbridge, [2]Western University, [3]London Health Sciences Centre- University Hospital, [4]Robarts Research Institute

Topic Area: METHODS: Neuroimaging

C87 - M1-PMd connectivity modulation via fMRI-neurofeedback

Marine Keime[1] (m.keime.1@research.gla.ac.uk), Zeena-Britt Sanders[2], Triin Ojakaar[2], Cassandra Sampaio-Baptista[1,2]; [1]University of Glasgow, [2]University of Oxford

Topic Area: METHODS: Neuroimaging

C88 - Neurocognitive Implications of Infantile Hydrocephalus: Findings from Functional Connectivity and Behavioural Measures

Derya Adil[1] (dadil2@uwo.ca), Emma Duerden[1,2], Roy Eagleson[1,3], Sandrine de Ribaupierre[1,4]; [1]Western Institute for Neuroscience, [2]Applied Psychology, Faculty of Education, [3]Electrical and Computer Engineering, Faculty of Engineering, [4]Department of Clinical Neurological Sciences

Topic Area: METHODS: Neuroimaging

C89 - Concurrent brain stimulation and fNIRS to probe human cognitive function

Amy Miller[1] (ps16am@leeds.ac.uk), Melanie Rose Burke[1]; [1]University of Leeds

Topic Area: METHODS: Neuroimaging

C90 - Social Cognition and Individual Variability as Measured by Fractional Amplitude of Low-Frequency Fluctuation in Autism and Schizophrenia

Soroush Bagheri[1], Ju-Chi Yu[1], Julia Gallucci[1,3], Vinh Tan[1,3], Lindsay Oliver[1], Erin Dickie[1,2], George Foussias[1,2,3], Meng-Chaun Lai[1,2,4,8,10,11], Robert Buchanan[5], Anil Malhotra[6,7,8], Aristotle Voineskos[1,2,3], Stephanie Ameis[1,2,4], Colin Hawco[1,2,3]; [1]Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, Ontario, Canada, [2]Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada, [3]Institute of Medical Science, University of Toronto, Toronto, ON, Canada, [4]Research Institute, and Department of Psychiatry, The Hospital for Sick Children, Toronto, ON, Canada, [5]Maryland Psychiatric Research Center, Department of Psychiatry, University of Maryland School of Medicine, Baltimore, Maryland, USA, [6]Division of Psychiatry Research, The Zucker Hillside Hospital, Division of Northwell Health, Glen Oaks, NY, USA, [7]The Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Department of Psychiatry, Hempstead, NY, USA, [8]Center for Psychiatric Neuroscience, The Feinstein Institute for Medical Research, Manhasset, NY, USA, [9]Department of Psychology, University of Toronto, Toronto, Ontario, Canada, [10]Autism Research Centre, Department of Psychiatry, University of Cambridge, Cambridge, United Kingdom, [11]Department of Psychiatry, National Taiwan University Hospital and College of Medicine, Taipei, Taiwan

Topic Area: METHODS: Neuroimaging

C91 - Navigating cognition: A comparison of resting-state and task-based fMRI localization

Caroline Nettekoven[1] (cr.nettekoven@gmail.com), Da Zhi[1], Ladan Shahshahani[1,2], Ana Luisa Pinho[1], Joern Diedrichsen[1]; [1]Western University, [2]Brown University

Topic Area: METHODS: Neuroimaging

C92 - Multivariate transdiagnostic neural biomarkers of Schizophrenia and Autism Spectrum Disorders during the empathic accuracy task

Ju-Chi Yu[1] (ju-chi.yu@camh.ca), Colin Hawco[1,2], Lindsay D. Oliver[1], Maria T. Secara[1,2], Iska Moxon-Emre[1], Fariah A. Sandhu[3], Zara Z. Khan[4], Peter Szatmari[1,2], Meng-Chuan Lai[1,2], Miklos Argyelan[5], James M. Gold[6], Sunny X. Tang[5], George Foussias[1,2], Robert W. Buchanan[6], Anil K. Malhotra[5], Aristotle N. Voineskos[1,2], Stephanie H. Ameis[1,2], Erin W. Dickie[1,2]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]York University, [4]McMaster University, [5]Zucker Hillside Hospital, [6]Maryland Psychiatric Research Center

Topic Area: METHODS: Neuroimaging

C93 - Hippocampal subfield volumes correlate with subjective, but not objective, memory in older adults with normal neuropsychological test performance

Linda MAH[1,3] (lmah@research.baycrest.org), Susan VANDERMORRIS[2], Nicolaas Paul L.G. VERHOEFF[2,3], Nathan HERRMANN[3]; [1]Rotman Research Institute, Baycrest, University of Toronto, [2]Baycrest Health Sciences, [3]Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto

Topic Area: METHODS: Neuroimaging

C94 - Alterations in resting-state functional connectivity in Charles Bonnet Syndrome

Aysha N. Kinakool[1] (ayshak@yorku.ca), Stefania S. Moro[1], Remy Cohan[1], Sara A. Rafique[2], Jennifer K.E. Steeves[1]; [1]Centre for Vision Research and Department of Psychology, York University, Canada, [2]Defence, Science and Technology Laboratory, Department of Defence, UK

Topic Area: METHODS: Neuroimaging

C95 - GABA Levels are Significantly Lower in Mild Cognitive Impairment Patients

Mark Zuppichini[1] (markzupp@umich.edu), Abbey Hamlin[2], Quan Zhou[1], Esther Kim[1], Kayla Wyatt[1], Noah Reardon[1], Thad Polk[1]; [1]University of Michigan, [2]University of Texas at Austin

Topic Area: METHODS: Neuroimaging

C96 - White matter sufferance and obsessive symptomatology in post-COVID-19 cognitive dysfunction

Mariagrazia Palladini[1,2] (palladini.mariagrazia@hsr.it), Mario Gennaro Mazza[1], Margherita Bessi[1], Beatrice Bravi[1,2], Rebecca De Lorenzo[2], Patrizia Rovere-Querini[2,3], Francesco Benedetti[1,2]; [1]Division of Neuroscience, Psychiatry and Clinical Psychobiology Unit, IRCCS San Raffaele Scientific Institute,, [2]Vita-Salute San Raffaele University, [3]Unit of Innate Immunity and Tissue Remodeling, Division of Immunology, Transplantation, and Infectious Diseases, IRCCS San Raffaele Scientific Institute

Topic Area: METHODS: Neuroimaging

C97 - Exploring the effect of choroid plexus volume on white matter integrity and cognitive deficits in bipolar and unipolar depression

Beatrice Bravi[1,2] (bravi.beatrice@hsr.it), Alessia Bortolotti[1], Margherita Biondi[1,3], Sara Poletti[1,2], Mariagrazia Palladini[1,2], Cristina Colombo[2,4], Francesco Benedetti[1,2]; [1]IRCCS San Raffaele Scientific Institute, Division of Neuroscience, Psychiatry and Clinical Psychobiology Unit, [2]Vita-Salute San Raffaele University, [3]Department of General Psychology, Padova Neuroscience Center, University of Padova, [4]IRCCS San Raffaele Scientific Institute, Mood Disorders Unit

Topic Area: METHODS: Neuroimaging

C98 - Evaluating RETROICOR and aCompCor-based denoising for improving multi-voxel pattern analysis

Elizabeth Doss[1], Haley Keglovits[1], Apoorva Bhandari[1], David Badre[1]; [1]Cognitive, Linguistic, and Psychological Sciences, Brown University

Topic Area: METHODS: Neuroimaging

C99 - Uncovering Lifespan-Consistent Representations in Cognitive Function through Metric Learning

Xiaoxiao Sun[1] (xiaoxiao.sun@columbia.edu), Chichi Chang[1], Arunesh Mittal[1], Christian Habeck[2], Yaakov Stern[2]; [1]Columbia University, [2]Columbia University Irving Medical Center

Topic Area: METHODS: Neuroimaging

C100 - Modularity of Functional Connectivity Networks in a Cue Separation Grasp Task

Gaelle Luabeya[1,2] (gaellenl@yorku.ca), Ada Le[1,3], Lina Musa[1,3], Amirhossein Ghaderi[1], Simona Monaco[5], Erez Freud[1,2,3,4], J. Douglas Crawford[1,2,3,4]; [1]Centre for Vision Research, York University, Canada, [2]Departments of Biology, York University, Canada, [3]Department of Psychology, York University, Canada, [4]Department of Kinesiology & Health Sciences, York University, Canada, [5]Center for Mind/Brain Sciences, University of Trento, Italy

Topic Area: METHODS: Neuroimaging

C101 - EEG-ExPy: Democratizing the Cognitive Neuroscience Experiment

John D Griffiths[1] (j.davidgriffiths@gmail.com), Taha Morshedzadeh[1], Sorenza Bastiaens[1], Ore Ogundipe[2], Erik Bjareholt[3], Daniele Marinazzo[4], Yannick Roy[5], EEG-ExPy Team .[6]; [1]University of Toronto & Centre for Addiction & Mental Health, [2]Fusion Research Inc., [3]Lund University, [4]Unversity of Ghent, [5]McGill Universty, [6]github.com/NeurotechX/EEG-ExPy

Topic Area: METHODS: Neuroimaging

C102 - Exploring individual differences in neural event boundaries

Robyn E. Wilford[1] (robyn.wilford@utoronto.ca), Erika Wharton-Shukster[1], Amy S. Finn[1], Katherine Duncan[1]; [1]University of Toronto

Topic Area: METHODS: Neuroimaging

C103 - Dynamic neural representations of auditory selective attention

Abigail Noyce[1] (anoyce@andrew.cmu.edu), Wenkang An[2], Weizhe Guo[1,3], Yuhang Li[1], Barbara Shinn-Cunningham[1]; [1]Carnegie Mellon University, [2]Boston Children's Hospital, [3]Johns Hopkins University

Topic Area: METHODS: Neuroimaging

C104 - Linking time and space in those with epilepsy to investigate seizure spread

Faranak Heidari[1,2,4], Ivan Skelin[2,4], Artur Vetkas[3,4], Taufik Valiante[1,2,3,4]; [1]University of Toronto, [2]Krembil Brain Research Institute, University Health Network, [3]Division of Neurosurgery, Toronto Western Hospital, [4]CRANIA Center for Advancing Neurotechnological Innovation to Application

Topic Area: METHODS: Neuroimaging

C105 - Socioeconomic status is associated with reward processing, interleukin 1b and striatal connectivity in males with major depressive disorder.

Sara Jani[1,2] (sara.jani@mail.utoronto.ca), Stefanie Hassel[3], Susan Rotzinger[1,2,4,5], Sakina Rizvi[1,2], Jane Foster[4,5,6], Gustavo Turecki[7,8], Sidney Kennedy[1,2], Benicio Frey[4,5], Katharine Dunlop[1,2]; [1]Unity Health Toronto, [2]University of Toronto, [3]University of Calgary, Calgary, Canada, [4]St. Joseph's Healthcare, Hamilton, Canada, [5]McMaster University, Hamilton, Canada, [6]University Health Network, Toronto, Canada, [7]McGill University, [8]Douglas Mental Health University Institute, Verdun, Canada

Topic Area: METHODS: Neuroimaging

C106 - Factors affecting signal quality of functional near-infrared spectroscopy measurements of neural activity
Brian Kent[1] (bkkent@crimson.ua.edu), Zahra Bassiri[1], Maggie Logan[1], Adrienne Hildenbrand[1], Caleb Simon[1], Taye Allred[1], Hannah Apostolou[1], Dario Martelli[2], Ian McDonough[3]; [1]The University of Alabama, [2]Medstar, [3]Binghamton University
Topic Area: METHODS: Neuroimaging

C107 - A Comparison of Freesurfer and Automatic Segmentation of Hippocampal Subfields for Estimating Hippocampal Volumes among Preschoolers
Zehua Cui[1] (zcui12@umd.edu), Jade Dunstan[1], Tracy Riggins[1]; [1]University of Maryland
Topic Area: METHODS: Neuroimaging

C108 - Neurophysiological modelling of network stimulation reveals distinct signatures across low- to higher-order networks
Davide Momi[1], Zheng Wang[1], Sara Parmigiani[3], Ezequiel Mikulan[4], Sorenza Bastiaens[1,2], Parsa Oveisi[1,2], Kevin Kadak[1,2], Allison Waters[5], Sean Hill[1], Andrea Pigorini[4], Corey Keller[3], John D Griffiths[1,2]; [1]Centre for Addiction and Mental Health (CAMH), Toronto, [2]University of Toronto, [3]Stanford University, [4]Università degli Studi di Milano, [5]Icahn School of Medicine at Mount Sinai, New York
Topic Area: METHODS: Neuroimaging

C109 - Multi-Layer Extreme Learning Machine for Classification of Subjective Cognitive Decline and Neurodegenerative Disease Stages using White Matter Data
Nishant Chauhan[1], Hyun Woong Roh[2], Sang Joon Son[2], Chang Hyung Hong[2], Dongha Lee[1]; [1]Cognitive Science Research Group, Korea Brain Research Institute, Daegu, Republic of Korea, [2]Department of Psychiatry, Ajou University School of Medicine, Suwon, Republic of Korea
Topic Area: METHODS: Neuroimaging

C110 - Fluid Cognition and Functional Connectivity Relate to Cortical Iron in a Depth-Specific Manner in Healthy Aging
Jenna Merenstein[1] (jenna.merenstein@duke.edu), Jiayi Zhao[1], David Madden[1,2,3]; [1]Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC 27710, USA, [2]Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC 27710, USA, [3]Center for Cognitive Neuroscience, Duke University, Durham, NC 27708, USA
Topic Area: METHODS: Neuroimaging

C111 - Comparison of single- and across-trial fMRI estimates of encoding-related activity in young and older adults
Marianne de Chastelaine[1] (mad106120@utdallas.edu), Mingzhu Hou[1], Sarah Monier[1], Michael Rugg[1]; [1]UTD
Topic Area: METHODS: Neuroimaging

C112 - Quantifying Resting-State Functional Connectivity in Critically Brain Injured Patients: A Graph-Theoretical Approach with fNIRS
Ira Gupta[1] (iqupta6@uwo.ca), Matthew Kolisnyk[1], Sergio L. Novi[1], Androu Abdalmalak[1], Loretta Norton[2], Derek B. Debicki[1], Adrian M. Owen[1]; [1]Western University, [2]King's College at Western University
Topic Area: METHODS: Neuroimaging

C113 - Adolescent Impulsivity is Predicted by Dynamic Functional Connectivity Between the Amygdala and Cognitive Control Network
Attakias Mertens[1] (attakias.mertens@boystown.org), Callum Goldsmith[1], Katrina Myers[1], Jordanna Kruse[1], Jacob Oleson[2], Gaelle Doucet[1]; [1]Boys Town National Research Hospital, [2]Iowa State University
Topic Area: METHODS: Neuroimaging

C114 - Examining age-related differences in recollection and retrieval monitoring effects using single- and across-trial fMRI approaches
Sarah Monier[1], Marianne de Chastelaine[1], Mingzhu Hou[1], Michael D. Rugg[1]; [1]The University of Texas at Dallas
Topic Area: METHODS: Neuroimaging

C115 - BrainEffeX: A Shiny app to explore typical effect sizes in functional neuroimaging research
Hallee Shearer[1] (h.shearer@northeastern.edu), Matt Rosenblatt[2], Jean Ye[2], Rongtao Jiang[2], Link Tejavibulya[2], Qinghao Liang[2], Javid Dadashkarimi[2], Margaret Westwater[2], Iris Cheng[2], Max Rolison[2], Hannah Peterson[2], Brendan Adkinson[2], Saloni Mehta[2], Chris Camp[2], Joshua Curtiss[1], Dustin Scheinost[2], Stephanie Noble[1,2]; [1]Northeastern University, [2]Yale University
Topic Area: METHODS: Neuroimaging

C116 - Rehabilitative exercise in idiopathic Parkinson disease: microstructural white matter changes by using Diffusion Tensor Imaging
Manfredi Alberti[1], Carla Battisti, Davide Momi, David Cioncoloni, Armando Bucciarelli, Roberto Marconi, Alessandra Renieri, Alessandro Rossi, Federica Ginanneschi, Lucia Monti; [1]University Hospital of Siena, Siena, Italy, [2]Clinical Neurology and Neurophysiology Unit; University of Siena;, [3]Keller's Laboratory for Personalized Neurotherapeutics, Stanford University, 450 Jane Stanford Way., Stanford, CA 90305;, [4]Rehabilitative Healthcare Professions Unit, University Hospital of Siena, [5]Rehabilitative Healthcare Professions Unit;, [6]Neurology Unit, General Hospital of Grosseto,, [7]Medical Genetics, University of Siena, [8]Neurology Unit, University of Siena;, [9]Clinical Neurology and Neurophysiology Unit;, [10]Neuroimaging Unit, University Hospital of Siena,
Topic Area: METHODS: Neuroimaging

C117 - Assessing the impact of subject-specific masks on reliability of subcortical connectivity
Alexandra Fischbach[1] (fischbach.a@northeastern.edu), Hallee Shearer[1], Ajay Satpute[1], Karen Quigley[1], Jordan Theriault[1,3], Lisa Feldman Barrett[1,2,3], Stephanie Noble[1]; [1]Northeastern University, [2]Massachusetts General Hospital and Harvard Medical School, [3]Athinoula A. Martinos Center for Biomedical Imaging
Topic Area: METHODS: Neuroimaging

C118 - Functional Brain Networks Underlying Recalling and Imagining Autobiographical Events
Ava Momeni[1,2] (ava.momeni@ubc.ca), Donna Addis[3,4,5], Eva Feredoes[6], Florentine Klepel[7], Maiya Rasheed[1,2], Abhijit Chinchani[1,2], Todd Woodward[1,2]; [1]BC Mental Health and Addictions Research Institute, Canada, [2]Department of Psychiatry, University of British Columbia, Canada, [3]Department of Psychology, University of Toronto, Canada, [4]Rotman Research Institute, Baycrest Health Sciences, Canada, [5]School of Psychology, The University of Auckland, New, [6]School of Psychology and Clinical Language Sciences at the University of Reading, Reading, United Kingdom, [7]Medical Psychology and Behavioural Neurobiology Institute, Eberhard Karls Universität Tübingen, Germany
Topic Area: METHODS: Neuroimaging

C119 - Predicting Cognitive Performance in Older Adults from White Matter Hyperintensities with the Lesion Quantification Toolkit
Arthur P. Hamilton[1] (arthurhamilton@cmail.carleton.ca), Kaiah Sotebeer[2], John G. Grundy[2], Cassandra Morrison[1], John A. E. Anderson[1]; [1]Carleton University, [2]Iowa State University
Topic Area: METHODS: Neuroimaging

C120 - Investigating neural correlates of late life depression using large datasets
Kassandra Hamilton[1], Janine Bijsterbosch[1]; [1]Washington University in St. Louis
Topic Area: METHODS: Neuroimaging

C121 - Developing a Deep Learning Segmentation Tool for the Choroid Plexus – FastPlex
Paulo Lizano[1] (plizano@bidmc.harvard.edu), Ling-yu Huang[1], Victor Zeng[1], David Kuegler[2], Yuan Cao[3], Deepthi Bannai[1], Martin Reuter[2]; [1]BIDMC, [2]DZNE, [3]Sichuan University
Topic Area: METHODS: Neuroimaging

C122 - Integrating Spatial Transcriptomics and Proteomics in Traumatic Brain Injuries: A Multimodal Image Analysis Pipeline
Cai L. McCann[1] (cmccann@broadinstitute.org), James W. Aspden[2,3,4,5], Ruxandra F. Sîrbulescu[2,3,4], Samouil L. Farhi[1]; [1]Broad Institute of MIT and Harvard, Cambridge, MA, United States, [2]Vaccine and Immunotherapy Center, Charlestown, MA, United States, [3]Massachusetts General Hospital, [4]Harvard Medical School, [5]Edinburgh Medical School, Edinburgh, UK
Topic Area: METHODS: Neuroimaging

C123 - **NITRC's Triad of Services: Software, Data, Compute**
Christian Haselgrove[1] (christian.haselgrove@umassmed.edu), Richard Brash[2], Albert Crowley[2], David Kennedy[1], Abby Paulson[3], Nina Preuss[4]; [1]UMass Chan Medical School, [2]Turner Consulting Group, Inc, [3]Alpine 22, [4]Preuss Enterprises, Inc
Topic Area: METHODS: Other

C124 - Gamma oscillations in the frontal cortex and lucid dream induction success
Abigail Roman[1], Remington Mallett[1,2]; [1]Northwestern University, [2]University of Montreal
Topic Area: METHODS: Other

C125 - Event-related BOLD responses distinguish aversive auditory second-order conditioning
Prateek Dhamija[1,2] (prateek.dhamija@mail.utoronto.ca), Asaf Gilboa[1,2]; [1]University of Toronto, [2]Rotman Research Institute at Baycrest Academy for Research and Education
Topic Area: OTHER

C126 - Neurocognitive Correlates of Narrative Processing in Children
Jessica Lammert[1] (jlammert@uwo.ca), Emiko Osborne[1], Blake Butler[1,2,3]; [1]Western University, [2]National Centre for Audiology, [3]Children's Health Research Institute
Topic Area: OTHER

C127 - Cerebello-Basal Ganglia Functional Connectivity **Differences in in Alzheimer's Disease and Mild Cognitive** Impairment.
Ivan A. Herrejon[1] (ivanherrejon0@gmail.com), Brian T. Jackson[1,2], Tracey H. Hicks[1], Thamires N. Magalhaes[1], Jessica A. Bernard[1], Alzheimer's Disease Neuroimaging Initiative; [1]Texas A&M University, [2]Vanderbilt University Medical Center
Topic Area: OTHER

C128 - Unravelling the neural dynamics of hypnotic susceptibility: Aperiodic neural activity as a central feature of hypnosis
Mathieu Landry[1], Jason da Silva Castaheira[2], Karim Jerbi[1]; [1]Universite de Montreal, [2]McGill University
Topic Area: OTHER

C130 - Occupational Attributes relate to Large-Scale Brain Network Organization
H. Moriah Sokolowski[1,2] (hm.sokolowski@torontomu.ca), Ju-Chi Yu[3], Devin Sodums[2], Herve Abdi[4], Brian Levine[2,5,6]; [1]Department of Psychology, Toronto Metropolitan University, Toronto, ON, Canada, [2]Rotman Research Institute, Baycrest Health Sciences, Toronto, ON, Canada, [3]Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, ON, Canada, [4]School of Behavioral and Brain Sciences, The University of Texas at Dallas, Richardson, TX, USA, [5]Department of Psychology, University of Toronto, Toronto, ON, Canada, [6]Department of Medicine (Neurology), University of Toronto, Toronto, ON, Canada
Topic Area: OTHER

C131 - Aperiodic vs. slow wave activity in rat sleep stages
Quirine van Engen[1] (quvaneng@ucsd.edu), Alexandra Garcia[1], Brad Voytek[1,2,3]; [1]Department of Cognitive Science, UCSD, [2]Halıcıoğlu Data Science Institute, UCSD, [3]Department of Neuroscience, UCSD
Topic Area: OTHER

C132 - Self-regulatory, cognitive and personality contributions to an ontology of boredom proneness.
Jamie Nettinga[1] (jinettin@uwaterloo.ca), Anvita Gopal[1], James Danckert[1]; [1]University of Waterloo
Topic Area: OTHER

C133 - Splitting the brain: Complete corpus callosotomy in adulthood profoundly disrupts the functional architecture of interhemispheric brain networks
Tyler Santander[1] (t.santander@psych.ucsb.edu), Jessica Simonson[1], Selin Bekir[1], Henri Skinner[1], Theresa Paul[2], Lena Hopf[3], Anna Rada[3], Friedrich Woermann[3], Christian Bien[3], Barry Giesbrecht[1], Olaf Sporns[4], Michael Gazzaniga[1], Lukas Volz[2], Michael Miller[1]; [1]University of California, Santa Barbara, [2]University of Cologne, [3]Bielefeld University, [4]Indiana University
Topic Area: OTHER

C134 - Resting-state precision functional mapping corresponds with behavioral effects of intracranial electrical stimulation
Christopher Cyr[1] (christopher.cyr@northwestern.edu), Ania Holubecki[1], James Kragel[2], Christina Zelano[1], Joel Voss[2], Joshua Rosenow[1], Stephan Schuele[1], Elizabeth Johnson[1], Rodrigo Braga[1]; [1]Northwestern University, [2]University of Chicago
Topic Area: OTHER

C135 - Hippocampus Subfield Volumes Associated with Spatial Memory Performance in Older Adults At-Risk for Developing Type 2 Diabetes
Jennifer Hanna Al-Shaikh[1,5] (jhannaal@uwo.ca), Olivia Ghosh-Swaby[1,5], Ali Khan[2,5], Jane Thornton[3,4,5], Lindsay Nagamatsu[4,5]; [1]Graduate Program in Neuroscience, Schulich School of Medicine and Dentistry, [2]Department of Medical Biophysics, [3]Departments of Family Medicine and Epidemiology & Biostatistics, [4]School of Kinesiology, [5]University of Western Ontario, London, ON, Canada
Topic Area: OTHER

C136 - Longitudinal basal forebrain atrophy is related to changes in functional connectivity in older adults at risk for Alzheimer's disease
Miriam Taza[1], Giulia Baracchini[1], Colleen Hughes[1], Jennifer Tremblay-Mercier[1], Judes Poirier[1], Sylvia Villeneuve[1], Gary R. Turner[2], R. Nathan Spreng[1]; [1]McGill University, [2]York University
Topic Area: OTHER

C137 - Facilitating Meditation with Focused Ultrasound Neuromodulation: A First Investigation in Experienced Practitioners
Dr. Joshua Cain[1] (jcain@advancedconsciousness.org), Dr. Tracy Brandmeyer[1], Ninette Simonian[1], Jay Sanguinetti[2], Shinzen Young[2], Matthew Sacchet[3], Nicco Reggente[1]; [1]Institute for Advanced Consciousness Studies (IACS), [2]Center for Consciousness Studies, University of Arizona, Tucson, USA, [3]Meditation Research Program, Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Boston, MA USA
Topic Area: OTHER

C138 - Statistical learning of temporal-order regularity is easier in the auditory than visual modality
Andhika Renaldi[1] (ra_andhika21293@yahoo.com), Denise Hsien Wu[2]; [1]Taiwan International Graduate Program in Interdisciplinary Neuroscience, National Central University and Academia Sinica, Taipei, Taiwan, [2]Institute of Cognitive Neuroscience, National Central University, Taiwan
Topic Area: OTHER

C139 - Opposing anterior hippocampal correlations with autobiographical memory vividness in recent versus remote life periods
Tabatha Blaney-Gale[1] (22jqyl@queensu.ca), Jordan Poppenk[1]; [1]Queen's University
Topic Area: OTHER

C140 - Age and Sex Moderate the Effects of Sleep Quality on Resting-State Functional Connectivity in the Salience and Default Mode Network
Selene Tan[1], Matthew Cribbet[1], Jeanne Cundiff[1], Ian McDonough[2]; [1]University of Alabama, [2]Binghamton University
Topic Area: OTHER

C141 - Investigating the Impact of Transcranial Direct Stimulation on Excitatory Purkinje Cell Firing in Essential Tremor: A Computational Model Approach
Gabriela Chayele[1]; [1]William James College, [2]Boston University CTCN, [3]Beth Israel Deaconess Medical Center
Topic Area: OTHER

C142 - Can we experimentally induce a dream of our choosing?
Daniel J. Morris[1] (danielmorris2027@u.northwestern.edu), Karen R. Konkoly[1], Ken A. Paller[1]; [1]Northwestern University
Topic Area: OTHER

C143 - Detection of freely moving thoughts using SVM and EEG signals
Sairamya Nanjappan Jothiraj[1] (sairamya.nanjappanjo@ucalgary.ca), Caitlin Mills[2], Zachary C. Irving[3], Julia Kam[4]; [1]Postdoctoral Associate, University of Calgary, [2]Assistant Professor, University of Minnesota, [3]Assistant Professor, University of Virginia, [4]Assistant Professor, University of Calgary
Topic Area: OTHER

C144 - Effect of Transcutaneous Vagus Nerve Stimulation on the Perception of Time Deviations

Mehrdad Bahadori[1,2,3] (mehrdad.bahadori@umontreal.ca), Neha Bhutani[4], Simone Dalla Bella[1,2,3]; [1]International Laboratory for Brain, Music and Sound Research (BRAMS), [2]Department of Psychology, University of Montreal, [3]Centre for Research on Brain, Language and Music (CRBLM), [4]Revai Inc

Topic Area: OTHER

C145 - Novel cognitive testing tool for epilepsy patients and the cognitive deficits detected

Hannah G. Gray[1,2] (hgray24@uwo.ca), Karnig Kazazian[1,2], Conor Wild[1,2], Derek B. Debicki[1,2], Adrian M. Owen[1,2], Teneille Gofton[1,2]; [1]Western University, [2]London (Ontario) Health Sciences Centre

Topic Area: OTHER

C146 - Association between vascular risk factors, as measured by the CAIDE risk score, and resting-state functional connectivity differs by menopause status

Julia Kearley[1], Sophia LoParco[1], Bratislav Misic[1], M. Natasha Rajah[2]; [1]McGill University, [2]Toronto Metropolitan University

Topic Area: OTHER

C147 - Cognitive Profiles in Treatment-Resistant Late-Life Depression and the Impact on rTMS Treatment Outcomes

Katharina Göke[1], Shawn M. McClintock[2], Alisson P. Trevizol[1,3], Linda Mah[3,4,5], Tarek K. Rajji[1,3,5], Sean M. Nestor[6], Jonathan Downar[4], Yoshihiro Noda[7], Zafiris J. Daskalakis[8], Benoit H. Mulsant[1,3], Daniel M. Blumberger[1,3]; [1]Temerty Centre for Therapeutic Brain Intervention, Centre for Addiction and Mental Health, Toronto, [2]Division of Psychology, Department of Psychiatry, University of Texas Southwestern Medical Center, [3]Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto, [4]Rotman Research Institute, Baycrest Health Sciences, Toronto, [5]Toronto Dementia Research Alliance, University of Toronto, [6]Harquail Centre for Neuromodulation, Sunnybrook Health Sciences Centre, Toronto, [7]Department of Neuropsychiatry, Faculty of Medicine, Keio University School of Medicine, [8]Department of Psychiatry, University of California

Topic Area: OTHER

C148 - Promoting Brain Health and Resilience: The Effect of Three Types of Exercise on Blood-Based Neurotrophins

Thomas Rawliuk[1] (rawliukt@myumanitoba.ca), Mikal Thrones[2], Stephen Cornish[2], Steven Greening[1]; [1]University of Manitoba, Faculty of Psychology, [2]Faculty of Kinesiology and Recreation Management

Topic Area: OTHER

C149 - Attempting dream decoding with generalizable visual EEG encoding models

Qiaorong Yu[1] (qiaorong.yu@balliol.ox.ac.uk), Remington Mallett[2], Michelle Carr[2]; [1]University of Oxford, [2]University of Montreal

Topic Area: OTHER

C150 - Sex Differences in the Association Between Blood Pressure and Cognitive Aging Trajectories Among U.S Hispanic/Latino Adults

Carlos Araujo Menendez[1] (cearaujo@health.ucsd.edu), Armando Lemus[2], Shaun Goycoochea[2], Rubi Carpio[2], Rachel Membreno[2], Ariana Stickel[2]; [1]SDSU/UC San Diego Joint Doctoral Program in Clinical Psychology, [2]San Diego State University, Department of Psychology

Topic Area: OTHER

C151 - Large-scale cortical networks are organized in structured cycles

Mats W.J. van Es[1] (mats.vanes@psych.ox.ac.uk), Cameron Higgins[1,2], Chetan Gohil[1], Andrew J. Quinn[1,3], Diego Vidaurre[1,4], Mark W. Woolrich[1]; [1]University of Oxford, [2]Resonait Medical Technologies Pty Ltd, [3]University of Birmingham, [4]Aarhus University

Topic Area: OTHER

C152 - Brain network flexibility predicts Openness/Intellect and intelligence

Tyler Sassenberg[1] (sasse025@umn.edu), Adam Safron[2,3,4], Colin DeYoung[1]; [1]University of Minnesota, [2]Johns Hopkins University School of Medicine, [3]Institute for Advanced Consciousness Studies, [4]Indiana University

Topic Area: OTHER

C153 - Shared longitudinal neural representations of sleep, depression and cognition

Mohamed Abdelhack[1] (mohamed.abdelhack@camh.ca), Rajith Wickramatunga[1], Daniel Felsky[1,2,3]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, Toronto, [3]Baycrest Hospital

Topic Area: OTHER

C154 - Spontaneous fluctuations in task-independent brain network topologies are correlated with core and multidomain cognitive skills in early adolescence

Jian Loong Jethro Lim[1] (jianloongjethro.lim@childrens.harvard.edu), Catherine Stamoulis[1,2]; [1]Boston Children's Hospital, [2]Harvard Medical School

Topic Area: OTHER

C155 - Virtual reality and dreaming

D. Blaise Elliott[1] (blaiseelliott@u.northwestern.edu), Daniel J. Morris[2], Rachel E. David[3], Justin Wall[4], David Glowacki[5], Ken A. Paller[6]; [1]Northwestern University, [2]CiTIUS Intelligent Technologies Research Centre, [3]Milarepa Center

Topic Area: OTHER

C156 - The neural development of Mandarin lexical tone processing in bilingual English-Mandarin children

Andres F. Diaz[1] (diaza1@stjohns.edu), Sharry Guo[2], Autumn Hill[1], Valerie L. Shafer[2], Gavin M. Bidelman[3], Yan Yu[1]; [1]St. John's University, New York, USA, [2]The Graduate Center, City University of New York, [3]Indiana University

Topic Area: PERCEPTION & ACTION: Audition

C157 - The neurophysiology of multi-feature music processing in children with different language backgrounds

Angela Cheng[1] (angela.cheng22@my.stjohns.edu), Maxfield Rodgers[1], Kristal Reyes[1], Faith Chai[1], Blessy Gill[1], Gavin M. Bidelman[2], Valerie L. Shafer[3], Yan H. Yu[1]; [1]St. John's University, New York, USA, [2]Indiana University, [3]The Graduate Center, City University of New York

Topic Area: PERCEPTION & ACTION: Audition

C158 - Investigating the Neural Underpinnings of Math and Reading Across the Lifespan

Hillary Mastarciyan[1], Ju-Chi Yu[3], Devin Sodums[2], Brian Levine[2,4,5], Moriah Sokolowski[1,2]; [1]Toronto Metropolitan University, Toronto, ON, Canada, [2]Rotman Research Institute, Baycrest Health Sciences, Toronto, ON, Canada, [3]Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, Toronto, ON, Canada, [4]Department of Psychology, Univeristy of Toronto, Toronto, ON, Canada, [5]Department of Medicine [Neurology], University of Toronto, Toronto, ON, Canada

Topic Area: THINKING: Development & aging

Poster Session D

Monday, April 15, 8:00 – 10:00 am, Sheraton Hall ABC

D1 - Multi-session transcranial alternating current stimulations facilitate working memory in older adults by synchronizing the parietal theta oscillation

Yun Zhong[1] (ceceliazy@163.com), Xiyue Chen[1], Ying Cai[1]; [1]Zhejiang University

Topic Area: EXECUTIVE PROCESSES: Working memory

D2 - EEG-based decoding of stimulus shapes and their categories in working memory

Frida Printzlau[1,2] (frida.printzlau@utoronto.ca), Olya Bulatova[2], Keisuke Fukuda[1,2], Michael Mack[1]; [1]University of Toronto, [2]University of Toronto Mississauga

Topic Area: EXECUTIVE PROCESSES: Working memory

D3 - Characterizing hierarchical organization structures of working memory

Jingyi Li[1,2,3], Ying Fan[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: EXECUTIVE PROCESSES: Working memory

D4 - Programs that organize task execution are decodable everywhere

İpek Ciftci[1,2] (ipek8ciftci@gmail.com), İrem Giray[1,2], Ausaf Ahmed Farooqui[1,2]; [1]Aysel Sabuncu Brain Research Center, [2]Bilkent University, Ankara, Turkey

Topic Area: EXECUTIVE PROCESSES: Working memory

D5 - Working memory interrupted: the role of age and benefits of anticipation

Soner Ülkü[1] (uelkue@ifado.de), Stephan Getzmann[1], Edmund Wascher[1], Daniel Schneider[1]; [1]Leibniz Research Centre for Working Environment and Human Factors

Topic Area: EXECUTIVE PROCESSES: Working memory

D6 - When distraction interferes with natural behaviour

Dejan Draschkow[1] (dejan.draschkow@psy.ox.ac.uk), Levi Kumle[1], Melissa Võ[2], Anna C. Nobre[3]; [1]University of Oxford, [2]Goethe University Frankfurt, [3]Yale University

Topic Area: EXECUTIVE PROCESSES: Working memory

D7 - Hippocampal ripple and its interaction with neocortex support successful visual short-term memory

Xianhui He[1] (xhhe.psy@gmail.com), Jing Liu[2], Ying Cai[1]; [1]Zhejiang Univeristy, [2]The Hong Kong Polytechnic University

Topic Area: EXECUTIVE PROCESSES: Working memory

D8 - A Timeline of the Stimulus Memorability Benefit in Visual Working Memory

Greer Gillies[1] (greer.gillies@mail.utoronto.ca), Jonathan S. Cant[1,2], Keisuke Fukuda[1,3]; [1]University of Toronto, [2]University of Toronto, Scarborough, [3]University of Toronto, Mississauga

Topic Area: EXECUTIVE PROCESSES: Working memory

D9 - Inhibitory Control in Working Memory Gate Opening: Insights from Alpha Desynchronization and Norepinephrine Activity Under atDCS Stimulation

Shijing Yu[1] (shijing.yu@outlook.com), Anyla Konjusha[1], Tjalf Ziemssen[2], Christian Beste[1,3]; [1]Cognitive Neurophysiology, Department of Child and Adolescent Psychiatry, Faculty of Medicine, TU Dresden, [2]Department of Neurology, Faculty of Medicine, TU Dresden, [3]Faculty of Psychology, Shandong Normal University, Jinan, China

Topic Area: EXECUTIVE PROCESSES: Working memory

D10 - Investigating the Neural Substrates of Working Memory in Williams Syndrome and Typically Developing Children

Destiny S. Wright[1] (destiny.wright@nih.gov), Tiffany Nash[1], Michael D. Gregory[1], J. Shane Kippenhan[1], Anne K. Ilsley[1], Megan A. Spurney[1], Anna G. Kelemen[1], Madeline H. Garvey[1], Philip D. Kohn[1], Daniel P. Eisenberg[1], Carolyn B. Mervis[2], Karen F. Berman[1]; [1]Section on Integrative Neuroimaging, Clinical and Translational Neuroscience Branch, National Institute of Mental Health, Intramural Research Program, National Institutes of Health, Bethesda, MD, [2]Neurodevelopmental Sciences Laboratory, Department of Psychological and Brain Sciences, University of Louisville, Louisville, KY

Topic Area: EXECUTIVE PROCESSES: Working memory

D11 - Nature Ultrasoundscapes for Attention Restoration and Stress Reduction
Adam Cotton[1] (acotton8@uwo.ca), Stephen Van Hedger[2], Ewan Macpherson[1], Jessica Grahn[1]; [1]University of Western Ontario, [2]Huron University College
Topic Area: EXECUTIVE PROCESSES: Working memory

D12 - Analysis of Alpha Band Activity: Spatial Working Memory in Adults with ADHD
Talía V. Roman Lopez[1,2], Holly Truong[1,2], Fang Yu Chang[1,2], Timothy Kelley[1,2], Joel P. Diaz-Fong[1,2], Andrea Dillon[1,2], Sandra K. Loo[1,2], Agatha Lenartowicz[1,2]; [1]Semel Institute for Neuroscience and Human Behavior, University of California, Los Angeles., [2]Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles
Topic Area: EXECUTIVE PROCESSES: Working memory

D13 - Structural organization of multiple sources of information for efficient encoding in working memory
Qiaoli Huang[1] (qiaolihuang0818@gmail.com), Christian Doeller[1,2,3,4]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Kavli Institute for Systems Neuroscience, Center for Neural Computation, The Egil and Pauline Braathen and Fred Kavli Center for Cortical Microcircuits, Jebsen Center for Alzheimer's Disease, Norwegian University of Science and Technology, Trondheim, Norway, [3]Wilhelm Wundt Institute for Psychology, Leipzig University, Leipzig, Germany, [4]Department of Psychology, Technical University Dresden, Dresden, Germany
Topic Area: EXECUTIVE PROCESSES: Working memory

D14 - Reactivating and Reorganizing Activity-Silent Working Memory: Two Distinct Mechanisms Underlying Pinging the Brain
Can Yang[1] (12339003@zju.edu.cn), Xianhui He[1], Ying Cai[1]; [1]Zhejiang University
Topic Area: EXECUTIVE PROCESSES: Working memory

D15 - Working Memory Capacity Predicts Serial Dependence for Facial Identity
Anette Lidström[1] (anette.lidstrom@psy.lu.se), Inês Bramao[1]; [1]Lund University
Topic Area: EXECUTIVE PROCESSES: Working memory

D16 - Confident but wrong: Improving metacognitive assessments of working memory representations
Hana Yabuki[1], Caitlin Tozios[1], Susanne Ferber[1], Keisuke Fukuda[1,2]; [1]University of Toronto, [2]University of Toronto Mississauga
Topic Area: EXECUTIVE PROCESSES: Working memory

D17 - Chronic cannabis users exhibit altered alpha and beta oscillations serving numerical working memory processing
Peihan J. Huang[1] (jenny.huang@boystown.org), Jake J. Son[1], Jason A. John[1], Lucy K. Horne[1], Seth D. Springer[1], Mikki Schantell[1], Yasra Arif[1], Madelyn P. Willett[1], Hallie J. Johnson[1], Elizabeth Heinrichs-Graham[1], Tony W. Wilson[1]; [1]Boys Town National Research Hospital
Topic Area: EXECUTIVE PROCESSES: Working memory

D18 - Cognitive Training Improves Working Memory, Processing Speed, and Neural Efficiency in Multiple Sclerosis
Ryan O'Donnell[1,2] (ryanodon@buffalo.edu), Janet Shucard[1,2], Thomas Covey[1,2], David Shucard[1,2]; [1]Division of Cognitive and Behavioral Neurosciences, Department of Neurology, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, [2]Neuroscience Program, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo
Topic Area: EXECUTIVE PROCESSES: Working memory

D19 - Brain-Behavior Correlates of Working Memory in Typical Reading and Dyslexia
Hanna Thesken[1] (thesken@mit.edu), Rebecca A. Marks[1], Adriana M. Azor[2], Karolina Wade[1], Rachel T. Norton[2], John D. E. Gabrieli[1], Joanna A. Christodoulou[2]; [1]Massachusetts Institute of Technology, [2]MGH Institute of Health Professions
Topic Area: EXECUTIVE PROCESSES: Working memory

D20 - Effect of Age-Related Hearing Loss on Auditory Working Memory in Age-Related Hearing Loss: An fNIRS Study
Bridger L. Jorgensen[1] (a02212878@usu.edu), Allison S. Hancock[1], Mindee L. Anderson[1], Alan Wisler[1], Tiffany Shelton[1], Ronald B. Gillam[1], Naveen Nagaraj[1]; [1]Utah State Universtity
Topic Area: EXECUTIVE PROCESSES: Working memory

D21 - Medial orbitofrontal cortex repetitive transcranial magnetic stimulation may best treat addiction & preserve working memory for the nicotine-dependent
Tracy Dubin[1] (TDubin@usc.edu), Xingbao Li; [1]Medical University of South Carolina
Topic Area: EXECUTIVE PROCESSES: Working memory

D22 - Prediction of working memory and neuropsychiatric symptom variability with oscillatory and non-oscillatory EEG measures
Fleming Peck[1] (fpeck@ucla.edu), Jean-Baptiste Pochon[1], Sandra Loo[1], Catherine Sugar[1], Carrie Beardon[1], Robert Bilder[1], Jesse Rissman[1], Agatha Lenartowicz[1]; [1]UCLA
Topic Area: EXECUTIVE PROCESSES: Working memory

D24 - Examining MEG visual mismatch responses to American Sign Language by hearing signers and non-signers
Qi Cheng[1] (qicheng2@uw.edu), Yuting Zhang[1], Tzu-Han Zoe Cheng[1], Tian Christina Zhao[1]; [1]University of Washington
Topic Area: LANGUAGE: Other

D25 - A Cross-Linguistic Analysis of Aphasic Speech
Sreekar Baddepudi[1], Josh Van Zak[2]; [1]Evergreen Valley High School, San Jose, California, USA, [2]Cambridge University
Topic Area: LANGUAGE: Other

D26 - Exploring the Neural Mechanisms of Executive Function in Bilinguals Compared to Monolingual Speakers
Yara Odeh[1] (yodeh@my.yorku.ca), Lara Pierce[2], Nusrat Iftikhar[3], Zahra Wakif[4]; [1]York University
Topic Area: LANGUAGE: Other

D27 - Statistical learning in the hippocampus and neocortical regions: Evidence from intracranial neural entrainment
Daniela Herrera Chaves[1], Greydon Gilmore[2,3], Lyle Muller[4,5], Ana Suller Marti[6,7], Seyed Mirsattari[7], Stefan Köhler[8], Laura Batterink*[8]; [1]Graduate Program in Neuroscience, Western University, London, ON, Canada, [2]Centre for Functional and Metabolic Mapping, Robarts Research Institute, Western University, London, ON, Canada, [3]Department of Clinical Neurological Sciences, Division of Neurosurgery, Schulich School of Medicine & Dentistry, Western University, London, ON, Canada, [4]Department of Mathematics, Western University, London, ON, Canada, [5]Western Academy for Advanced Research, Western University, London, ON, Canada, [6]Department of Paediatrics, Schulich School of Medicine and Dentistry, Western University, 339 Windermere Rd. London, Ontario N6A 5A5, Canada, [7]Epilepsy Program, Department of Clinical Neurological Sciences, Schulich School of Medicine and Dentistry, Western University, 339 Windermere Rd. London, Ontario N6A 5A5, Canada, [8]Department of Psychology, Western University, London, ON, Canada*
Topic Area: LANGUAGE: Other

D28 - The moderator for the effects of the disconnection of white matter tract on postoperative cognitive function in patients with brain tumors
Kota Ebina[1] (ebina18n@gmail.com), Mie Matsui[1], Masashi Kinoshita[1], Yuta Takiguchi[1], Mitsutoshi Nakada[1]; [1]Kanazawa university, Kanazawa, Japan
Topic Area: LANGUAGE: Other

D29 - Individual Differences in the Emerging Reading Network: A GIMME Investigation of Functional Connectivity in Beginning Readers
Rebecca Marks[1,2] (rmarks@mit.edu), Xin Sun[1,3], Jocelyn Caballero[4], Florence Bouhali[4], Olga Kepinska[4,5], Adriene Beltz[1], John Gabrieli[2], Joanna Christodoulou[6], Fumiko Hoeft[4,7], Ioulia Kovelman[1]; [1]University of Michigan, [2]Massachusetts Institute of Technology, [3]University of British Columbia, [4]University of California, San Francisco, [5]University of Vienna, [6]MGH Institute of Health Professions, [7]University of Connecticut
Topic Area: LANGUAGE: Other

D30 - Neural evidence for voice-specific representations during listening and silent reading
Kate Revill[1] (krevill@emory.edu), Lynne Nygaard[1]; [1]Emory University
Topic Area: LANGUAGE: Other

D31 - Beyond the Neocortex: Exploring Cerebellar Involvement in Language Comprehension
Bassel Arafat[1], Caroline Nettekoven[1], Jörn Diedrichsen[1]; [1]Western University, London Ontario
Topic Area: LANGUAGE: Other

D32 - Varying sound-symbolic contributions of acoustic parameters in shape- and size-optimized pseudoword sets across multiple domains of meaning
Saachi Nayak[1], Simon Lacey[1], Lynne Nygaard[2], K. Sathian[1]; [1]Penn State College of Medicine, [2]Emory University
Topic Area: LANGUAGE: Other

D33 - Working memory and proficiency in adult second language neurocognitive processing: An ERP study
Ana Rodriguez Gallego[1] (arodr276@uic.edu), Alexis Berles[2], Marina Ridchenko[3], Kara Morgan-Short[4]; [1]University of Illinois Chicago
Topic Area: LANGUAGE: Other

D34 - Measuring listening effort in adults with hearing loss using fNIRS
Hannah Shatzer[1] (hashatzer@msudenver.edu), Michael Zara[2], Lucy Muir[2], Frank Russo[2]; [1]Metropolitan State University of Denver, [2]Toronto Metropolitan University
Topic Area: LANGUAGE: Other

D35 - Far, Car, War, Boar: Mechanisms of Automatic Word Recognition
Niki Sinha[1] (nsinha7@uwo.ca), Marc F. Joanisse[1]; [1]Western University
Topic Area: LANGUAGE: Other

D36 - The N400 is sensitive to story-level context in naturalistic language comprehension.
Ashley L. M. Platt[1] (plaal004@mymail.unisa.edu.au), Matthias Schlesewsky[1], Ina Bornkessel-Schlesewsky[1]; [1]University of South Australia
Topic Area: LANGUAGE: Other

D37 - Discrete hierarchy of temporal receptive windows from a deep neural network using continuous time cells
Aakash Sarkar[1] (aakash18@bu.edu), Marc Howard[1]; [1]Boston University
Topic Area: LANGUAGE: Other

D38 - **A "wordy" endeavor: Functional near**-infrared spectroscopy for investigating angular gyrus function and lateralization
Hannah Potts[1], Youstina Tadros[1], Siena DeAngelo[1], Savannah Campbell[1], Carole Scherling[1]; [1]Belmont University
Topic Area: LANGUAGE: Other

D39 - Representational Similarity Analysis of the Neural Representations of Orthographic, Phonologic, and Semantic Processing
Deanne Wah[1] (dwah@uwo.ca), Marc Joanisse[1,2]; [1]The University of Western Ontario, [2]Haskins Laboratories
Topic Area: LANGUAGE: Other

D40 - The Effect of Language Dominance on Bilingual Emotional Processing: A Behavioral and ERP Study
Nicole Vargas Fuentes[1] (nvargasf@uci.edu), Judith Kroll[1]; [1]University of California, Irvine
Topic Area: LANGUAGE: Other

D41 - **What's so special about language? A comparative study of** linguistic vs. musical effects on tactile perception.
Tally McCormick Miller[1,2] (tally.miller@fu-berlin.de), Friedemann Pulvermüller[1,2,3,4]; [1]Brain Language Laboratory, Freie Universität Berlin, Germany, [2]Berlin School of Mind and Brain, Humboldt Universität zu Berlin, Germany, [3]Cluster of Excellence "Matters of Activity", Humboldt Universität zu Berlin, Germany, [4]Einstein Center for Neurosciences Berlin
Topic Area: LANGUAGE: Other

D42 - Context effects on working memory maintenance
Yaqi Xu[1] (yxu293@ucsc.edu), Megan Boudewyn[1]; [1]UC Santa Cruz
Topic Area: LANGUAGE: Other

D43 - Pervasive impairments on hippocampus-dependent memory tasks in major depressive disorder: Role of memory, executive function, and subfield integrity
Nardeen Yalda[1,2], Mahdieh Varvani Farahani[1,2,3], Georgia Gopinath[1], Darren Liang[4], Lena Palaniyappan[2,3,5], Amer M. Burhan[6,8], Brian Levine[7,9], Ali Khan[1,2,3], Stefan Kohler[1,2,9]; [1]Western University, [2]Western Institute for Neuroscience, [3]Robarts Research Institute, [4]Centre for Addiction and Mental Health, [5]Douglas Mental Health University Institute, [6]Department of Psychiatry, University of Toronto, [7]Department of Psychology, University of Toronto, [8]Ontario Shores for Mental Health Research, [9]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

D44 - Voluntary down-regulation of memory encoding occurs via attentional withdrawal, not active suppression
Joseph M. Saito[1] (joseph.saito@mail.utoronto.ca), Keisuke Fukuda[1,2]; [1]University of Toronto, [2]University of Toronto Mississauga
Topic Area: LONG-TERM MEMORY: Episodic

D45 - Subsecond dynamics of behaviorally-relevant pattern separation in the human hippocampus
Haoxin Zhang[1] (haoxinz1@uci.edu), Ivan Skelin[2], Shiting Ma[1], Michael Yassa[1], Jack Lin[3]; [1]University of California Irvine, [2]Toronto Western Hospital, [3]University of California Davis
Topic Area: LONG-TERM MEMORY: Episodic

D46 - Consistency of Autobiographical Memory Retrieval in Older Adults At Risk of Cognitive Decline
Audrey Li-Chay-Chung[1,2] (ali-chay-chung@research.baycrest.org), William Fisher[1], Riya Trikha[1], Faryn Starrs[2], Jennifer Ryan[2,3,4], Morgan Barense[2,3], Rosanna Olsen[2,3], Donna Rose Addis[2,3,5]; [1]Department of Psychology, York University, Toronto, Canada, [2]Rotman Research Institute, Baycrest Health Sciences, Toronto, Canada, [3]Department of Psychology, University of Toronto, Toronto, Canada, [4]Department of Psychiatry, University of Toronto, Toronto, Canada, [5]School of Psychology, The University of Auckland, Auckland, New Zealand
Topic Area: LONG-TERM MEMORY: Episodic

D47 - Temporal Order Memory in Naturalistic Events Is Influenced by Semantic Knowledge and Hierarchical Event Structure
Yining Ding[1] (d.yining@wustl.edu), Devon R. Alperin[1], Jeffrey M. Zacks[1]; [1]Washington University in St. Louis
Topic Area: LONG-TERM MEMORY: Episodic

D48 - Item memory benefits from schema congruency and incongruency
Regine Bader[1] (regine.bader@mx.uni-saarland.de), Moritz Nicolai Braun[1], Michael Weigl[1,2]; [1]Saarland University, Germany, [2]Institut für Prävention und Verkehrssicherheit (IPV GmbH), Germany
Topic Area: LONG-TERM MEMORY: Episodic

D49 - The influence of retrieval practice on real-world event memory
Lauren A. Homann[1] (lauren.homann@mail.utoronto.ca), Jessica Sun[1], Janice An[1], Morgan D. Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute
Topic Area: LONG-TERM MEMORY: Episodic

D50 - The Impact of Moderate-Severe Traumatic Brain Injury on Hippocampal Structure and Function
Fatima Eldes[1], Annick F. N. Tanguay[1], Hillary Schwarb[2], Neal Cohen[3], Melissa Duff[1]; [1]Vanderbilt University, [2]University of Nebraska-Lincoln, [3]University of Illinois at Urbana-Champaign
Topic Area: LONG-TERM MEMORY: Episodic

D51 - How Does Context Variability Interact with Encoding-Retrieval Match?
Erica Shafer[1] (esshafer@vt.edu), Jefferson Salan, Rachel Diana; [1]Virginia Tech
Topic Area: LONG-TERM MEMORY: Episodic

D52 - A Theory of Memory for Items and Associations
Beige Jin[1] (beigejerryjin@gmail.com), Michael J. Kahana[2]; [1]University of California Berkeley, Department of Statistics, [2]University of Pennsylvania, Department of Psychology
Topic Area: LONG-TERM MEMORY: Episodic

D53 - Neuronal population representation of human emotional memory
Dustin Fetterhoff[1] (dr.dustin.fetterhoff@gmail.com), Robin Hellerstedt[1], Manuela Costa[1], Johannes Sarnthein[2], Bryan Strange[1,3]; [1]Universidad Politécnica de Madrid, [2]University Hospital Zurich, [3]Reina Sofia Centre for Alzheimer's Research
Topic Area: LONG-TERM MEMORY: Episodic

D54 - The construction of complex narrative time
Federica Procida[1], Matteo Frisoni[1], Annalisa Tosoni[1,2], Carlo Sestieri[1,2]; [1]Department of Neuroscience, Imaging and Clinical Sciences, University of Chieti-Pescara, Italy, [2]Institute for Advanced Biomedical Technologies
Topic Area: LONG-TERM MEMORY: Episodic

D55 - Value-**Directed Remembering in Parkinson's Disease**
Annie Cooper[1], Alexis Torres[1], Blake Elliott[2], Samuel McClure[1], Gene Brewer[1], Daniel Peterson[1]; [1]Arizona State University, [2]Temple University
Topic Area: LONG-TERM MEMORY: Episodic

D56 - Enhancing real-world event memory and well-being in individuals with transient epileptic amnesia using a smartphone-based intervention
Bryan Hong[1] (bryan.hong@mail.utoronto.ca), Miranda Chang[1,2], Katrina Thornber[3], Eliza McCann[1], Adam Zeman[4], Christopher Butler[3], Morgan Barense[1,5]; [1]University of Toronto, Toronto, Canada, [2]Simon Fraser University, Burnaby, Canada, [3]Imperial College London, London, United Kingdom, [4]University of Exeter, Exeter, United Kingdom, [5]Rotman Research Institute, Toronto, Canada
Topic Area: LONG-TERM MEMORY: Episodic

D57 - Ripples during associative and non-associative memory retrieval in humans.
Jude Thom[1] (jude.thom@linacre.ox.ac.uk), Bernhard Staresina[1]; [1]Department of Experimental Psychology, University of Oxford
Topic Area: LONG-TERM MEMORY: Episodic

D58 - Shared multivariate brain patterns during recall associated with greater overlap in recalled information
June-Kyo Kim[1] (junekyo.kim@mail.utoronto.ca), Charan Ranganath[2], Alexander Barnett[1]; [1]University of Toronto, Department of Psychology, [2]University of California, Davis, Center for Neuroscience
Topic Area: LONG-TERM MEMORY: Episodic

D59 - Event processing and memory in Mild Cognitive Impairment
Flavia De Luca[1] (f.de-luca@sussex.ac.uk), Naji Tabet[2], Chris Bird[1]; [1]University of Sussex, [2]Brighton and Sussex Medical School
Topic Area: LONG-TERM MEMORY: Episodic

D60 - Do impressions of characters and their actions influence memory of a narrative?
Savannah Born[1] (born@wustl.edu), Zachariah Reagh[1]; [1]Washington University in St. Louis
Topic Area: LONG-TERM MEMORY: Episodic

D61 - Generalization Ability in Memory and the DRM Paradigm
Cheyna Warner[1], Lea Frank[1], Dagmar Zeithamova[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

D62 - Predicting image memorability from evoked feelings
Cheyenne Wakeland-Hart[1] (cdw2147@columbia.edu), Mariam Aly[1]; [1]Columbia University
Topic Area: LONG-TERM MEMORY: Episodic

D63 - The neural signature of retrograde memory enhancement by contrastive focus accent
Axel Mecklinger[1], Regine Bader[1], Sandra Glaser[1], Gerrit Höltje[1], Katharina Spalek[2]; [1]Saarland University, Germany, [2]Heinrich-Heine Universität Düsseldorf, Germany
Topic Area: LONG-TERM MEMORY: Episodic

D64 - Thalamocortical interactions in episodic relational memory across the lifespan
Sandra Rodriguez-Gonzalo[1] (s.rodriguez@bcbl.eu), Pedro M. Paz-Alonso[1]; [1]Basque Center on Cognition, Brain and Language (BCBL)
Topic Area: LONG-TERM MEMORY: Episodic

D65 - The effects of divided attention on long-term memory retrieval
Nursima Unver[1,2] (nursima.unver@mail.utoronto.ca), Eren Günseli[2]; [1]University of Toronto, [2]Sabanci University
Topic Area: LONG-TERM MEMORY: Episodic

D66 - Narrative linking during encoding drives associative inference
Shuran Tang[1] (rayna@wustl.edu), Zachariah Reagh[1]; [1]Washington University in St. Louis
Topic Area: LONG-TERM MEMORY: Episodic

D67 - Using ERPs to investigate the effects of culture and language on memory in Mandarin-English bilinguals.
Caitlin O'Riordan[1] (caitorio@yorku.ca), Sarah Wang[2], Thanujeni Pathman[1], Ellen Bialystok[1]; [1]York University, [2]UC Davis
Topic Area: LONG-TERM MEMORY: Episodic

D68 - Brain-Wide Responses to Item Repetition
Brandon S. Katerman[1], Ricardo T. Adrogue[1], Daniel Schonhaut[1], Matthew Dougherty[1], Evan A. Snyder[1], Madison Paron[1], James P. Bruska[1], Ryan A. Colyer[1], Michael J. Kahana[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

D69 - The effects of targeted reactivation on memories cued once or multiple times during a nap
Matthew Cho[1], Sandhya Murugavel[1], Alison S. Thiha[1], Eitan Schechtman[1]; [1]Department of Neurobiology and Behavior and Center for the Neurobiology of Learning and Memory, University of California, Irvine, Irvine, CA, USA
Topic Area: LONG-TERM MEMORY: Episodic

D70 - Self-Report Anterograde and Retrograde Memory Outcomes Following Electroconvulsive Therapy in Adults with Major Depressive Disorder

Tulip Marawi[1] (tulip.marawi@mail.utoronto.ca), Isabella J. Sewell[1], Georgia Gopinath[1], Claire Lauzon[2], Peter Giacobbe[1,3,4], Sean M. Nestor[1,3,4], Hyewon H. Lee[4], Sandra E. Black[1,5], Nir Lipsman[1,3,6], Maged Goubran[1,3,7], Stefan Kohler[8], R. Shayna Rosenbaum[2], Jennifer S. Rabin[1,3,5]; [1]Hurvitz Brain Sciences Program, Sunnybrook Research Institute, Toronto, Ontario, Canada, [2]Department of Psychology, York University, Toronto, Ontario, Canada., [3]Harquail Centre for Neuromodulation, Sunnybrook Research Institute, Toronto, Ontario, Canada, [4]Department of Psychiatry, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario, Canada, [5]Division of Neurology, Department of Medicine, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Canada., [6]Department of Neurosurgery, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada., [7]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada, [8]Department of Psychology, Western University, London, Ontario, Canada

Topic Area: LONG-TERM MEMORY: Episodic

D71 - Associative inference is influenced by schema congruency

Zhenghao Liu[1] (zhenghao.liu@psy.lu.se), Ieva Valavičiūtė[1], Mikael Johansson[1], Inês Bramão[1]; [1]Department of Psychology, Lund University

Topic Area: LONG-TERM MEMORY: Episodic

D72 - The long-term impact of chemotherapy on episodic memory and mental health in breast cancer survivors

Meenakshie Bradley-Garcia[1], Annick Tanguay[2], Adelaide Jensen[1], Melanie Sekeres[1]; [1]School of Psychology, University of Ottawa, [2]Hearing and Speech Sciences, Vanderbilt University Medical Center

Topic Area: LONG-TERM MEMORY: Episodic

D73 - A retrieved context account of episodic recall and event segmentation

Lynn Lohnas[1] (ljlohnas@syr.edu); [1]Syracuse University

Topic Area: LONG-TERM MEMORY: Episodic

D74 - Learning exceptions to category rules is supported by distinct white matter networks

Melisa Gumus[1] (melisa.gumus@mail.utoronto.ca), Nahal Alizadeh Saghati[1], Michael Mack[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

D75 - Insights on the Neurocognitive Mechanisms Underlying Cognitive Impairment in COVID-19: Evidence from a Large-Scale Online Study

Ann-Kathrin Zaiser[1], Patric Meyer[1,2]; [1]SRH University Heidelberg, Germany, [2]Heidelberg University, Germany

Topic Area: LONG-TERM MEMORY: Episodic

D76 - Position of the uncal apex as a predictor of memory function across the adult lifespan

Kristin Nordin[1] (kristin.nordin@ki.se), Philip Bahrd[2], Micael Andersson[3], Alireza Salami[1,3]; [1]Karolinska Institutet, [2]German Center for Neurodegenerative Diseases, [3]Umeå University

Topic Area: LONG-TERM MEMORY: Episodic

D77 - The Role of the Fornix in Episodic Memory

Melissa Elder[1] (melder@gradcenter.cuny.edu); [1]CUNY Graduate Center

Topic Area: LONG-TERM MEMORY: Episodic

D78 - Do theta rhythms in memory formation modulate proactive interference?

Alan Peng[1] (alanjc.peng@mail.utoronto.ca), Thomas Biba[1,2], Katherine Duncan[1]; [1]University of Toronto, [2]Krembil Brain Institute

Topic Area: LONG-TERM MEMORY: Episodic

D79 - Age-related differences in EEG Oscillatory Subsequent Memory Effects

SEHAM KAFAFI[1] (skafafi@nd.edu), JOSHUA KOEN[2], RACHELLE PICHOT[3], DANIEL HENRECKSON[4], MORGAN FOLEY[5], JESSICA PAYNE[6]; [1]University of Notre Dame

Topic Area: LONG-TERM MEMORY: Episodic

D80 - Evidence for hippocampal involvement in mnemonic discrimination of semantically similar verbal memory traces

Alex Ilyés[1,2,3] (ilyes.alex@ttk.hu), Krisztina Cseh[2], Borbála Brosig[2,3], Donát Keszthelyi[2], György Mező[4,5], Attila Keresztes[3,2]; [1]Doctoral School of Psychology, ELTE Eötvös Loránd University, Budapest, Hungary, [2]Institute of Psychology, ELTE Eötvös Loránd University, Budapest, Hungary, [3]Brain Imaging Centre, HUN-REN Research Centre for Natural Sciences, Budapest, Hungary, [4]Konkoly Observatory, HUN-REN Research Centre for Astronomy and Earth Sciences, Budapest, Hungary, [5]Wigner Data Center, HUN-REN Wigner Research Centre for Physics, Budapest, Hungary

Topic Area: LONG-TERM MEMORY: Episodic

D81 - HippoMaps: multiscale cartography of human hippocampal organization

Jordan DeKraker[1] (jordandekraker@gmail.com), Donna Cabalo[1], Jessica Royer[1], Ali R. Khan[2], Bradley Karat[2], Oualid Benkarim[1], Raul Rodriguez-Cruces[1], Birgit Frauscher[3], Raluca Pana1[1], Justine Hansen[1], Bratislav Misic[1], Sofie Valk[4,5,6], Matthias Kirschner[7], Andrea Bernasconi[1], Neda Bernasconi[1], Sascha Muenzing[5], Markus Axer[5], Katrin Amunts[5,6], Alan Evans[1], Boris Bernhardt[1]; [1]Montreal Neurological Institute and Hospital, McGill University, Canada, [2]Robarts Research Institute, University of Western Ontario, Canada, [3]Department of Neurology, Duke University Medical Center, Durham, NC, United States, [4]Otto Hahn Group Cognitive Neurogenetics, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [5]nstitute of Neuroscience and Medicine INM-1, Research Centre Jülich, Germany, [6]C. & O. Vogt Institute for Brain Research, University Hospital Düsseldorf, Heinrich-Heine-University, Germany, [7]Division of Adult Psychiatry, Department of Psychiatry, University Hospitals of Geneva, 2, Chemin du Petit-Bel-Air, CH-1226, Thonex, Switzerland

Topic Area: LONG-TERM MEMORY: Episodic

D82 - Threat-Related Long-Term Memory Reinstatement in Hippocampus

Mrs Busra Tanriverdi[1] (busra.tanriverdi@temple.edu), David Gregory[2], Ingrid R. Olson[3], Jason Chein[4], Vishnu P. Murty[5]; [1]Temple University

Topic Area: LONG-TERM MEMORY: Episodic

D83 - The effects of naturallistic sonification of space on reaching tasks

Bruno de Avo Mesquita[1,2] (bmesquit@uwo.ca), Mehrdad Kashefi[1,2], Ingrid Johnsrude[1,3]; [1]University of Western Ontario, [2]Brain and Mind at Western

Topic Area: PERCEPTION & ACTION: Motor control

D84 - Amplitude-modulated kilohertz transcranial magnetic perturbation (kTMP) has frequency-specific effects on motor performance

Philipp Reber[1] (reber@berkeley.edu), Christina Merrick[2], Daniel Sheltraw[2], Cidnee Luu[2], Kevin Peter[2], Katheryn Thayer-Pham[2], Ludovica Labruna[2], Richard Ivry[1,2]; [1]University of California Berkeley, [2]Magnetic Tides Inc., California, USA

Topic Area: PERCEPTION & ACTION: Motor control

D85 - Neural Dynamics of Expert Sensorimotor Integration: Unveiling Athlete Mastery Beyond Their Specialized Domain

Saskia Wilken[1] (saskia.wilken@fernuni-hagen.de); [1]Fernuniversität in Hagen

Topic Area: PERCEPTION & ACTION: Motor control

D86 - Action-specific representations of visual task features: Computation on demand

Nina Lee[1], Lin Lawrence Guo[1], Adrian Nestor[1], Matthias Niemeier[1,2]; [1]University of Toronto, [2]Centre for Vision Research, York University

Topic Area: PERCEPTION & ACTION: Motor control

D87 - Large-Scale Network underpinnings of sustained gripping **in Parkinson's Disease**

Oliver Kohl[1] (oliver.kohl@psych.ox.ac.uk), Chetan Gohil[1], Nahid Zokaei[1], Mark Woolrich[1], Kia Nobre[1,2], Andrew Quinn[1,3]; [1]University of Oxford, [2]Yale University, [3]University of Birmingham

Topic Area: PERCEPTION & ACTION: Motor control

D88 - Measuring Conscious Monitoring and Metacognition at the Start, Middle and End of a Reaching Movement

Gabriela Oancea[1,2], Craig S. Chapman[1,2]; [1]University of Alberta, Faculty of Kinesiology, Sport, and Recreation, [2]University of Alberta, Neuroscience and Mental Health Institute

Topic Area: PERCEPTION & ACTION: Motor control

D89 - Intracranial EEG Processing of Auditory Feedback in Perisylvian Cortex

Garret Lynn Kurteff[1] (kurteff@utexas.edu), Elizabeth Tyler-Kabara[1], Dave Clarke[1], Howard Weiner[2,3], Anne Anderson[2,3], Andrew Watrous[2], Saman Asghar[1,2,3], Alyssa Field[1], Liberty Hamilton[1]; [1]The University of Texas at Austin, [2]Baylor College of Medicine, [3]Texas Children's Hospital

Topic Area: PERCEPTION & ACTION: Motor control

D90 - Stability and flexibility of visually guided pointing movements with increasing Time-on-Task

Árpád Csathó[1] (arpad.csatho@aok.pte.hu), András Matuz[1], András Zsidó[2], Rebeka Gőgös[3], Gergő Jákóczi[3]; [1]Department of Behavioural Sciences, Medical School, University of Pecs, Pécs Hungary, [2]Institute of Psychology, Faculty of Humanities and Social Sciences, University of Pécs, Pécs Hungary, [3]Institute of Biology, Faculty of Sciences, University of Pécs, Pécs Hungary

Topic Area: PERCEPTION & ACTION: Motor control

D91 - Quenching the Groove: Inhibition of left SMA with cTBS Disrupts the Urge to Move to Music

Connor Spiech[1,2] (connorspiech@gmail.com), Virginia Penhune[1,2]; [1]Department of Psychology, Concordia University, [2]BRAMS - International Laboratory for Brain, Music and Sound Research

Topic Area: PERCEPTION & ACTION: Motor control

D92 - **Don't Look! It's Object**-Based: Identifying a Distractor Produces Inhibition in an Allocentric Reference Frame for Saccades

Coleman E. Olenick[1] (colenick@uoguelph.ca), Heather Jordan[1], Mazyar Fallah[1]; [1]University of Guelph

Topic Area: PERCEPTION & ACTION: Motor control

D93 - Comparing the effect of low- vs. high-pitched metronomes on gait in rhythmic auditory stimulation

Kristi M. Von Handorf[1] (kvonhand@uwo.ca), Matthew Leung[1], Diana M. Urian[1], Jessica A. Grahn[1]; [1]University of Western Ontario

Topic Area: PERCEPTION & ACTION: Motor control

D94 - Influence of a visual landmark shift on memory-guided reaching in the monkey
Jennifer Iin[1], Veronica Nacher[1], Hongying Wang[1], Saihong Sun[1], Xiaogang Yang[1], J. Douglas Crawford[1]; [1]York University
Topic Area: PERCEPTION & ACTION: Motor control

D95 - Examining predictors of motor imagery timing in Parkinson's Disease
Kathryn Lambert[1], Anthony Singhal[1], Ada Leung[1]; [1]University of Alberta
Topic Area: PERCEPTION & ACTION: Motor control

D96 - **From Sound to Action: The Premotor Cortex's Dual Role in** Learning Direct and Indirect Melodies
Chad Vachon[1] (chadv9745@gmail.com), Bryanna Campbell[1], Lukas Kires[1], Marin Hoh[1], Maria Psomas[1], Connor Spiech[1], Carlotta Lega[2], Virginia Penhune[1]; [1]Concordia University, [2]University of Pavia
Topic Area: PERCEPTION & ACTION: Motor control

D97 - Sense of agency of the voluntary movement in patients with Psychogenic Nonepileptic Seizures
Mayra Jazmin Morales Armenta[2] (armentajaz@gmail.com), Rodolfo Solís-Vivanco[1], Daniel San Juan Orta[3], Noel I. Plascencia Alvarez[4], Erick Israel Correa Medina[1]; [1]Laboratory of Cognitive and Clinical Neurophysiology, Instituto Nacional de Neurología y Neurocirugía, [2]Neuropsychiatry Department, Instituto Nacional de Neurología y Neurocirugía, [3]Neurophysiology, Instituto Nacional de Neurología y Neurocirugía, [4]Epilepsy clinic , Centro Médico Nacional "20 de Noviembre", ISSSTE.
Topic Area: PERCEPTION & ACTION: Motor control

D98 - Tempo representation in the basal ganglia and its role in sensorimotor synchronization
Jacob Duda[1] (dudaj@mcmaster.ca), Jonathan Cannon[1]; [1]McMaster University
Topic Area: PERCEPTION & ACTION: Motor control

D99 - DIFFERNTIAL DOPAMINE RESPONSES DURING AUDITORY-MOTOR SYNCHRONIZATION IN YOUNG AND OLDER HEALTHY ADULTS
Yuko Koshimori[1,2] (yuko.koshimori@utoronto.ca), Antonio Strafella[2,3,4], Vivek Sharma[1], Pablo M Rusjan[5], Sylvain Houle[2], Michael H Thaut[1]; [1]University of Toronto, [2]Centre for Addition and Mental Health, [3]Toronto Western Hospital, [4]Krembil Research Institute, [5]McGill University
Topic Area: PERCEPTION & ACTION: Motor control

D100 - **Iconic gestures form "conceptual pegs": Behavioral and** ERP evidence
Brianna E. Cairney[1] (bcairn2@lsu.edu), Stanley H. West[1], Eileen Haebig[1], Heather D. Lucas[1]; [1]Louisiana State University
Topic Area: PERCEPTION & ACTION: Multisensory

D101 - Disconnection Effects in Split-Brain Patients: A Systematic Evaluation of the Impact of Callosotomy on Cognition and Behavior
Selin Bekir[1] (sbekir@ucsb.edu), Tyler Santander[1], Henri Skinner[1], Jessica Simonson[1], Theresa Paul[2], Lena Hopf[4], Anna Rada[4], Friedrich Woermann[4], Christian Bien[4], Olaf Sporns[3], Barry Giesbrecht[1], Michael Gazzaniga[1], Lukas Volz[2], Michael Miller[1]; [1]University of California Santa Barbara, [2]University of Cologne, [3]Indiana University, [4]Bielefeld University, Epilepsy Centre Bethel
Topic Area: PERCEPTION & ACTION: Multisensory

D102 - Neural dynamics of event processing under reduced uncertainty.
Karen Sasmita[1] (ss3837@cornell.edu), Khena M. Swallow[1]; [1]Cornell University
Topic Area: PERCEPTION & ACTION: Multisensory

D103 - Long-term multimodal sensory circuit adaptation to acquired threat is impaired in anxiety
Joshua Brown[1] (jb19bh@fsu.edu), Yijia Ma[1], Yuqi You[2], Wen Li[1,3]; [1]Florida State University, [2]Zhejiang University, [3]UTHealth Houston
Topic Area: PERCEPTION & ACTION: Multisensory

D104 - Predicting Response to McGurk Effect Based on Periodic and Aperiodic Prestimulus EEG Activity
Vinsea A V Singh[1] (vinseasingh@gmail.com), Vinodh G. Kumar[1,2], Arpan Banerjee[1], Dipanjan Roy[1,3]; [1]National Brain Research Centre, India, [2]Penn State University, [3]Indian Institute of Technology (IIT) Jodhpur
Topic Area: PERCEPTION & ACTION: Multisensory

D105 - Distinct Temporal Neural Dynamics between Audiovisual Perception and Cross-modal Mental Imagery
Yu Hu[1] (yhu584@uwo.ca), Yalda Mohsenzadeh[1]; [1]Western University
Topic Area: PERCEPTION & ACTION: Multisensory

D106 - Exploring how perceived stress modulates neural synchrony using naturalistic fMRI
Joshua Craig[1], Keva Klamer[1], Christina Haines[1], KiAnna Sullivan[1], Chelsea Ekstrand[1]; [1]University of Lethbridge
Topic Area: PERCEPTION & ACTION: Multisensory

D107 - Modulation of neural activity in response to dance training **in Parkinson's: A case study**
Royze Simon[1] (royze@yorku.ca), Judith Bek[2], Khatayoun Ghanai[1], Rebecca Barnstapple[1], Rachel Bar[1,3], Joseph DeSouza[1]; [1]York University, [2]University of Toronto, [3]Canada's National Ballet School
Topic Area: PERCEPTION & ACTION: Multisensory

D108 - Multisensory temporal processing in schizophrenia and bipolar disorder: Implications for positive symptoms.
Maria Bianca Amadeo[1] (mariabianca.amadeo@iit.it), Andrea Escelsior[2,3], Davide Esposito[1], Alberto Inuggi[3], Beatriz Pereira da Silva[2,3], Gianluca Serafini[2,3], Mario Amore[3], Monica Gori[1]; [1]Italian Institute of Technology, Genova, Italy, [2]IRCCS Ospedale Policlinico San Martino, Genova, Italy, [3]DINOGMI, University of Genoa, Italy
Topic Area: PERCEPTION & ACTION: Multisensory

D109 - Hierarchical or independent: Perception of durations, sequences, and beats across modalities
Zhaleh Mohammad Alipour[1] (zhaleh.m.alipour@gmail.com), Blake E. Butler[1], Jessica A. Grahn[1]; [1]Western University
Topic Area: PERCEPTION & ACTION: Multisensory

D110 - Exploring the predictive role of GABA and Glutamate on temporal binding window in audiovisual perception
Viquar Unnisa Begum[1] (unnisa.opt@gmail.com), Remy Cohan[2], Dania Abuleil[1], Jennifer Steeves[2], Ben Thompson[1], Michael Barnett-Cowan[1]; [1]University of Waterloo, [2]York University
Topic Area: PERCEPTION & ACTION: Multisensory

D111 - The neural processing of continuous audiovisual speech in noise in autism: a TRF approach
Theo Vanneau[1] (theo.vanneau@gmail.com), Mick Crosse[4,5], John Foxe[1,2,3], Sophie Molholm[1,2,3]; [1]Department of Pediatrics, The Cognitive Neurophysiology Laboratory, Albert Einstein College of Medicine, Bronx, NY, USA, [2]Department of Neuroscience, Rose F. Kennedy Center, Albert Einstein College of Medicine, Bronx, NY, USA, [3]Department of Neuroscience, The Frederick J. and Marion A. Schindler Cognitive Neurophysiology Laboratory, The Ernest J. Del Monde Institute for Neuroscience, University of Rochester, School of Medicine and Dentistry, Rochester, NY, USA, [4]SEGOTIA, Galway, Ireland, [5]Trinity Centre for Biomedical Engineering, Trinity College Dublin, Dublin, Ireland
Topic Area: PERCEPTION & ACTION: Multisensory

D112 - Auditory Dorsal Stream Connectivity Supports the Older Musicians' Preserved Audiovisual SIN Perception and Visual Benefit
Lei Zhang[1] (lzhang@research.baycrest.org), Yi Du[2,3,4,5], Claude Alain[1,6]; [1]Rotman Research Institute, Baycrest Centre for Geriatric Care, Toronto, ON M6A 2E1, Canada, [2]CAS Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing 100101, China, [3]Department of Psychology, University of Chinese Academy of Sciences, Beijing 100049, China, [4]CAS Center for Excellence in Brain Science and Intelligence Technology, Shanghai 200031, China, [5]Chinese Institute for Brain Research, Beijing 102206, China, [6]Department of Psychology, University of Toronto, ON M8V 2S4, Canada
Topic Area: PERCEPTION & ACTION: Multisensory

D113 - Effect of Autism Spectrum Disorder on Behavioural and EEG Measures of Multisensory Integration
Michelle Luszawski[1,2,3,4] (mluszaws@uwo.ca), Carolynn Hare[1,2,3,4], Julia Shannon[1,2], Yuhe Li[1], Samantha Schulz[1,2,3,4], Ryan Stevenson[1,2,3,4]; [1]Western University, [2]Department of Psychology, [3]Centre for Brain and Mind, [4]Western Institute for Neuroscience
Topic Area: PERCEPTION & ACTION: Multisensory

D114 - Cross-Modal MVPA Reveals Common Brain Representations of Action and Perception of Newly Learned Melodies
Fiona (Yu-Hsin) Chang[1,2], Fredrik Ullén[1,2], Örjan de Manzano[1,2]; [1]Max Planck Institute for Empirical Aesthetics, [2]Karolinska Institutet
Topic Area: PERCEPTION & ACTION: Multisensory

D115 - Brain dynamics associated with perisaccadic time perception: an EEG / graph theory approach
Amirhossein Ghaderi[1] (ghaderi@yorku.ca), Matthias Niemeier[1,2], John Douglas Crawford[1]; [1]York University, [2]University of Toronto
Topic Area: PERCEPTION & ACTION: Multisensory

D116 - I see, therefore I perceive: functional mapping of internal body representation using a 3D avatar
Sameena Karsan[1] (sameena.karsan@camh.ca), Joel P. Diaz-Fong[1,2,3], Madison Lewis[4], Zeina Beidas[1], Jamie D. Feusner[1,2,3,5]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]Semel Institute for Neuroscience & Human Behavior, University of California Los Angeles, [4]University of Toronto Scarborough, [5]Karolinska Institutet, Stockholm, Sweden
Topic Area: PERCEPTION & ACTION: Multisensory

D117 - The Importance of Noise in Audiovisual Learning: An Artificial Neural Network Simulation of the McGurk Effect
Lukas Grasse[1] (lukas.grasse@uleth.ca), Matthew Tata; [1]University of Lethbridge
Topic Area: PERCEPTION & ACTION: Multisensory

D118 - Semantic novelty modulates neural responses to sensory stimuli across the human brain
Maximilian Nentwich[1,2] (mnentwich@ccny.cuny.edu), Marcin Leszczynski[3,4,5], Brian E. Russ[4,6,7], Lukas Hirsch[1], Noah Markowitz[2], Kaustubh Sapru[1], Charles E. Schroeder[3,4], Ashesh D. Mehta[2,8], Stephan Bickel[2,4,8], Lucas C. Parra[1]; [1]The City College of New York, CUNY, New York, NY, [2]The Feinstein Institutes of Medical Research, Northwell Health, Manhasset, NY, [3]Columbia University College of Physicians and Surgeons, New York, NY, [4]Nathan Kline Institute, Orangeburg, NY, [5]Jagiellonian University, Kraków, Poland, [6]Icahn School of Medicine, New York, NY, [7]New York University at Langone, New York, NY, [8]Zucker School of Medicine at Hofstra/Northwell, Manhasset, NY
Topic Area: PERCEPTION & ACTION: Multisensory

D119 - Sensory Sensitivity and Multisensory Integration in adults with ADHD: An EEG Investigation
Carolynn Hare[1] (chare6@uwo.ca), Michelle Luszawski[1], Carol Atta[1], Glenda Zhai[1], Yuhe Li[1], Julia Shannon[1], Kathleen McCombe[1], Ryan A. Stevenson[1]; [1]Western University
Topic Area: PERCEPTION & ACTION: Multisensory

D120 - Sensorimotor beta enhancement, not mu suppression, differentiates emotional vs. affectively-neutral content
Alison M. Harris[1] (aharris@alum.mit.edu), Chandlyr M. Denaro[1], Catherine L. Reed[1]; [1]Claremont McKenna College
Topic Area: PERCEPTION & ACTION: Other

D121 - Dietary cognitive regulation depends on strategy-specific modulation of choice attributes
Hyuna Cho[1] (hyuna.cho@mail.utoronto.ca), Cendri Hutcherson[1,2]; [1]University of Toronto, [2]Rotman Research Institute
Topic Area: THINKING: Decision making

D122 - Incentivized random exploration associated with dorsal-ventral reinforcement learning circuit connectivity
Ethan Campbell[1] (ecampbell@unm.edu), Wanting Zhong[2], Teagan Mullins[1], Jeremy Hogeveen[1], Jordan Grafman[3]; [1]University of New Mexico, [2]Shirley Ryan AbilityLab, [3]Northwestern University
Topic Area: THINKING: Decision making

D124 - Identifying the neural networks that support categorization using brain-informed drift diffusion modelling
Victoria Liu[1] (tliu2@research.baycrest.org), Michael Mack[1]; [1]University of Toronto
Topic Area: THINKING: Decision making

D125 - Risk-taking predicts socioeconomic status-related differences in learning among adolescents
Joseph Itiat[1] (jitiat@mit.edu), Alexandra Decker, John Gabrieli; [1]Massachusetts Institute of Technology
Topic Area: THINKING: Decision making

D126 - Perceptual decision-making at fixation is biased by task-irrelevant contralesional stimuli following unilateral stroke
Dr Dragan Rangelov[1] (d.rangelov@uq.edu.au), Jason Mattingley[1]; [1]The University of Queensland
Topic Area: THINKING: Decision making

D127 - Option similarity modulates subjective strategy use and the value of unchosen options
Azara Lalla[1] (azara.lalla@mail.mcgill.ca), Caitlin Maloney[1], Signy Sheldon[1]; [1]McGill University
Topic Area: THINKING: Decision making

D128 - Misperceptions of impact predict intentions to take action against climate change
Alyssa Sinclair[1] (sinclair.allie@gmail.com), José Carreras-Tartak[1], Danielle Cosme[1], Taurean Butler[1], Heather Kostick[1,2], Michael Mann[1], Emily Falk[1]; [1]University of Pennsylvania, [2]Drexel University
Topic Area: THINKING: Decision making

D129 - Representations of cognitive maps underlying model-based planning
Ata Karagoz[1] (a.b.karagoz@wustl.edu), Wouter Kool[1], Zachariagh Reagh[1]; [1]Washington University in St. Louis
Topic Area: THINKING: Decision making

D130 - Decoding Decision Dynamics: Unraveling Neural Correlates of Criterion Shifting
Courtney Durdle[1] (cadurdle@ucsb.edu), Sara Leslie[1], Evan Layher[1,2], Miguel Eckstein[1], Michael Miller[1]; [1]University of California, Santa Barbara, [2]Cedars-Sinai Medical Center
Topic Area: THINKING: Decision making

D131 - Unraveling the neural representations of preference with a naturalistic neuroimaging approach
Feng-Chun Ben Chou[1] (f11227106@ntu.edu.tw), Tung-An Phoenix Chiu[1], Po-Yuan Alan Hsiao[1], Chih-Yuan Edward Chang[1], Pin-Hao Andy Chen[1]; [1]National Taiwan University
Topic Area: THINKING: Decision making

D132 - Reducing Biases in Decision-Making in the COVID-19 Pandemic
Caitlin M. Terao[1], Julia G. Halilova[1], Samuel Fynes-Clinton[2], Donna Rose Addis[2], R. Shayna Rosenbaum[1,2]; [1]Department of Psychology, York University, [2]Rotman Research Institute, Baycrest
Topic Area: THINKING: Decision making

D133 - The Neurocognitive Process of Group Decision in a Naturalistic Context
Jiahui Dai[1] (202221061047@mail.bnu.edu.cn), Zhaonan Meng[1], Xiangyu He[1], Chunming Lu[1]; [1]Beijing Normal University
Topic Area: THINKING: Decision making

D134 - Creativity involves the subjective valuation of ideas via the Brain Valuation System
Sarah Moreno Rodriguez[1] (sarahmorenorodriguez@gmail.com), Emmanuelle Volle[1], Alizée Lopez-Persem[1]; [1]Paris Brain Institute, INSERM, CNRS, AP-HP, Sorbonne University
Topic Area: THINKING: Decision making

D135 - Deciphering Amotivation in Schizophrenia: A Bayesian Computational Analysis of Exploratory Behavior
Yi Yang[1,2] (jasonyiyang.yang@mail.utoronto.ca), Povilas Karvelis[2], Ishraq Siddiqui[3], George Foussias[1,3,4], Andreea Diaconescu[1,2,4]; [1]Institute of Medical Science, University of Toronto, Toronto, Canada, [2]Krembil Centre for Neuroinformatics, Centre for Addiction and Mental Health, Toronto, Canada, [3]Schizophrenia Division and Campbell Family Research Institute, Centre for Addiction and Mental Health, Toronto, Canada, [4]Department of Psychiatry, University of Toronto, Toronto, Canada
Topic Area: THINKING: Decision making

D136 - Hand and eye movements during object categorization discriminate between younger and older adults
Valerie Sainterant[1] (sainterant@psy.fsu.edu), Ryan Kretschmar[2], Emma Stovall[2], Jonathan Chisolm[2], Patrick Tootle[2], Valery Sastoque[2], Jessica Moser[3], Chris Martin[1,2]; [1]Program in Neuroscience, Florida State University, [2]Florida State University, [3]Wayne State University
Topic Area: THINKING: Decision making

D137 - Neurocomputational Mechanisms Underlying the Subjective Cost of Exerting Self-Control
Kleio Jiang[1] (wenyi.jiang@nyulangone.org), Leone Lewis[2], Konova Anna[3], Glimcher Paul[1], Raio Candace1[1]; [1]NYU Grossman School of Medicine, [2]University of Texas—Austin, [3]Rutgers University—New Brunswick
Topic Area: THINKING: Decision making

D138 - Promoting Healthy and Eco-Friendly Food Choices: Mechanisms Underlying the Impact of Color-Coded Food Labels and Attentional Instructions
Yijun Xu[1] (yijun.xu@queensu.ca), Remi Janet[1], Ruien Wang[1], Lisa Bas[1], Anita Tusche[1]; [1]Queen's University
Topic Area: THINKING: Decision making

D139 - Post Cingulate Cortex Mediates Emotional Approval of Victimization in the Moral Decision
Yu Liu[1], Motoaki Sugiura[2]; [1]Graduate Schoole of Medicine, Tohoku University, [2]Institute of Development, Aging and Cancer, Tohoku University
Topic Area: THINKING: Decision making

D140 - Loss is the new win: The reversal of feedback-related negativity (FRN) differences in response to goals
Eunchan Na[1] (eunchan@ualberta.ca), Ben Dyson[1]; [1]University of Alberta
Topic Area: THINKING: Decision making

D141 - Exploring how Generalized Anxiety Disorder impacts the latent processes and neural correlates underlying approach-avoidance conflict decision-making
Sonja Chu[1] (sonja.chu@mail.utoronto.ca), Lisa Crocco[1], Cendri Hutcherson[1], Vina Goghari[1], Rutsuko Ito[1], Andy Lee[1,2]; [1]University of Toronto, [2]Rotman Research Institute, Baycrest Centre
Topic Area: THINKING: Decision making

D142 - The common root of creativity-related preferences across domains
Gino BATTISTELLO[1] (gn.battistello@gmail.com), Sarah MORENO-RODRIGUEZ[1], Emmanuelle VOLLE[1], Alizée LOPEZ-PERSEM[1]; [1]Paris Brain Institute (ICM), INSERM, CNRS, AP-HP, Sorbonne University
Topic Area: THINKING: Decision making

D143 - No Evidence for a Generalized Construct of Cognitive Effort Aversion
Sean Devine[1] (seandamiandevine@gmail.com), Mario Bogdanov[2], Ziqi Fu[1], Madeleine Sharp[3], Ross Otto[1]; [1]Department of Psychology, McGill University, Montreal, Canada, [2]McLean Hospital, Harvard Medical School, Boston, MA, USA, [3]Department of Neurology and Neurosurgery, Montreal Neurological Institute, Montreal, Canada
Topic Area: THINKING: Decision making

D144 - Neural Correlates of Learning of Priors in Perceptual Decision-Making
Stephanie Wert[1] (stephaniewert@g.ucla.edu), Julia Schorn[1], Jesse Rissman[1], Barbara Knowlton[1]; [1]University of California, Los Angeles
Topic Area: THINKING: Decision making

D146 - Individual differences in functional brain network organization associated with a decision-making exploitation bias in older adults
Kayla Williams[1] (kayla.williams@mail.mcgill.ca), Patrick Hewan[2], Shanny Foo[1], Roel van Dooren[3], Colleen Hughes[1], Giulia Baracchini[1], Jennifer Tremblay-Mercier[4], Judes Poirier[4], Sylvia Villeneuve[4], Gary R. Turner[2], R. Nathan Spreng[1]; [1]Montréal Neurological Institute, Department of Neurology and Neurosurgery, McGill University, Montréal, QC, Canada, [2]York University, Department of Psychology, Toronto, ON, Canada, [3]Institutes of Psychology & Brain and Cognition, Leiden University, The Netherlands, [4]Douglas Research Centre, Department of Psychiatry, McGill University, Montréal, QC, Canada
Topic Area: THINKING: Decision making

D147 - Investigating the interplay between tonic and phasic pupillary activity and cognitive flexibility and stability
Anna Mini Jos[1] (anna.jos@mail.mcgill.ca), Andrew Westbrook[2], Sophia LoParco[1], Ross Otto[1]; [1]McGill University, [2]Rutgers University
Topic Area: THINKING: Decision making

D148 - Neural Evidence of How Shipping Fees Impact Purchasing Decisions
Youngju Lee[1] (yjlee@kbri.re.kr), Yoonsang Lee[2], Ji-Won Chun[3], Dongha Lee[1]; [1]Cognitive Science Research Group, Korea Brain Research Institute, Daegu, Republic of Korea, [2]School of Psychology, Georgia Institute of Technology, Atlanta, GA, United States of America, [3]Department of Medical Informatics, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea
Topic Area: THINKING: Decision making

D149 - Discounting of Cognitive Effort and Ambiguity: Piloting A Novel Task Approach
Galston Wong[1,2] (galston.wong@utdallas.edu), Udaya Gyawali[1,2], Harini Chenchalavahi[1,2], Kendra Seaman[1,2]; [1]The University of Texas at Dallas, [2]Center for Vital Longevity
Topic Area: THINKING: Decision making

D150 - Joint longitudinal and survival modeling predicts avoidance decisions
Brooke Staveland[1] (bstavel@berkeley.edu), Julia Oberschulte[2], Olivia Kim-McManus[3,4], Jon Willie[5,6], Peter Bunner[5,6], Mohammad Dastjerdi[7], Jack Lin[8,9], Ming Hsu[1,10], Robert Knight[1,11]; [1]UC Berkeley, [2]Department of Psychology, LMU Munich, [3]Division of Neurology, Rady Children's Hospital, [4]Department of Neurosciences, UC San Diego, [5]Department of Neurosurgery, Washington University School of Medicine, St. Louis, [6]National Center for Adaptive Neurotechnologies, [7]Department of Neurology, Loma Linda University, [8]Department of Neurology, UC Davis, [9]Center for Mind and Brain, UC Davis, [10]Haas School of Business, UC Berkeley, [11]Department of Psychology, UC Berkeley
Topic Area: THINKING: Decision making

D151 - Frontal structural integrity and increased frontoparietal rs-connectivity are associated with financial ability in middle-aged and older adults
Dr Ian McDonough[1] (imcdonough@binghamton.edu), Macarena Suárez-Pellicioni[2]; [1]Binghamton University, [2]The University of Alabama
Topic Area: THINKING: Development & aging

D152 - Age Differences in Decision-making Strategies to Process Featural vs. Structural Perturbations in Environmental Choice-Outcome Mappings
Chih-Yi Chen[1] (ethan.chihyi.chen@gmail.com), Li-Sheng Wang[1], Ting-Syuan Wang[1], Chih-Chia Hsing[1], Joshua Oon Soo Goh[1]; [1]National Taiwan University, Taipei, Taiwan
Topic Area: THINKING: Development & aging

D153 - Effects of age and curiosity on decision-making and memory
Hsiang-Yu Chen[1], Katherine O'Malley[2], Anne Berry[3]; [1]Department of Psychology, Brandeis University
Topic Area: THINKING: Development & aging

D154 - The Impact of Socioeconomic Status on White Matter Network Organization and General Cognitive Ability in Adolescents
Jaden Dilda[1,2], Julie Tseng[2], Amy S Finn[1], Anne L Wheeler[1,2], Donald J Mabbott[1,2]; [1]University of Toronto, [2]The Hospital For Sick Children
Topic Area: THINKING: Development & aging

D155 - Mapping the neural signatures of abstract reasoning across the lifespan
Sarah Dietz[1] (sarah.dietz@boystown.org), Mikki Schantell[1,3], Thomas W. Ward[1,4], Grace C. Ende[1], Danielle L. Rice[1], Kennedy A. Kress[1], Anna T. Coutant[1], Ryan Glesinger[1], Grant M. Garrison[1], Lucy K. Horne[1], Hannah J. Okelbery[1], Jason A. John[1], Tony W. Wilson[1,2,3,4]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital, Boys Town, NE, USA, [2]Center for Pediatric Brain Health, Boys Town National Research Hospital, Boys Town, NE, USA, [3]College of Medicine, University of Nebraska Medical Center, Omaha, NE, USA, [4]Department of Pharmacology and Neuroscience, Creighton University, Omaha, NE, USA
Topic Area: THINKING: Development & aging

D156 - Visuospatial processing, memory, and reasoning in poor readers
Zahra Kheradmandsaadi[1], Hee Yeon Im[1], Deborah Giaschi[1]; [1]The University of British Columbia
Topic Area: THINKING: Development & aging

D157 - The influence of a single bout of aerobic exercise on creativity
Gianna Jeyarajan[1] (gjeyara2@uwo.ca), Kabir Sodhi[1], Samantha Marshall[1], Jennifer Hanna Al-Shaikh[1], Raphael Gabiazon[1], Lindsay S. Nagamatsu[1]; [1]The University of Western Ontario
Topic Area: THINKING: Other

D158 - Hidden brain states as neural correlates of verbal creativity during metaphor generation
Yuhua Yu[1] (yyu@u.northwestern.edu), Lindsay Krebs[2], Mark Beeman[1], Vicky Lai[2]; [1]Northwestern University, [2]University of Arizona
Topic Area: THINKING: Other

D159 - Factors contributing to the believability of memory narratives
Lynn Nadel[1] (nadel@arizona.edu), Kate Simon[2]; [1]University of Arizona, [2]UC Irvine
Topic Area: OTHER

Poster Session E

Monday, April 15, 2:30 – 4:30 pm, Sheraton Hall ABC

E1 - Investigating the Cognitive Correlates of Semantic and Perceptual False Memory in Older and Younger Adults: A Multi-Group Latent Variable Approach
John T. West[1] (johnwest@psu.edu), Rebecca L. Wagner[1], Ashley Steinkrauss[2], Nancy A. Dennis[1]; [1]The Pennsylvania State University, [2]Boston College
Topic Area: LONG-TERM MEMORY: Development & aging

E2 - Dopaminergic and reward-related enhancement of memory in aging
Claire J. Ciampa[1] (claireciampa@brandeis.edu), Thomas M. Morin[1,2], Jourdan H. Parent[1], Jordyn L. Cowan[1], Alex Adornato[1,2], Katherine O'Malley[1], Arielle Tambini[3], Cristina Cusin[2], Jacob Hooker[2], Anne S. Berry[1]; [1]Brandeis University, [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, [3]Nathan Kline Institute for Psychiatric Research
Topic Area: LONG-TERM MEMORY: Development & aging

E3 - Maintenance of Gray Matter Diffusion in Older Adults Relates to Better Episodic Memory
Danielle L Greenman[1], Ilana Bennett[1]; [1]University of California Riverside
Topic Area: LONG-TERM MEMORY: Development & aging

E4 - Effects of Age, Sex, and Associative Load on Memory and its Relation to White Matter Microstructure
Abbey Page[1], Shruti Prabhakar, Jamilah Zubair, Ilana Bennett; [1]University of California at Riverside
Topic Area: LONG-TERM MEMORY: Development & aging

E5 - Measuring relative differences in socioeconomic status on hippocampal subfield volume and relational memory performance in a developmental sample
Meghan K. Ramirez[1], Abi Heller-Wight[1], Connor Phipps[1], Jennifer Sexton[1,2], Anna Wilhelm[1], Carolyn E. Nagengast[1], Emma A. Armbruster[1], Arthur Maerlender[3], Vaishali Phatak[1], Daniel L. Murman[1], David E. Warren[1]; [1]University of Nebraska Medical Center, [2]University of Nebraska - Omaha, [3]University of Nebraska - Lincoln
Topic Area: LONG-TERM MEMORY: Development & aging

E6 - **Understanding the role of visual processing in older adults'** memory retrieval
Jaclyn Ford[1] (jahennessey@gmail.com), Elizabeth Kensinger[1], Samantha Williams[1], R. Gerald Monkman[1], Brianna Lenza[1], Sandry Garcia[1]; [1]Boston College
Topic Area: LONG-TERM MEMORY: Development & aging

E7 - Age differences in the neural representation of naturalistic events
Karen Campbell[1] (karen.campbell@brocku.ca), Selma Lugtmeijer[2], Djamari Oetringer[3], Geerligs Linda[3]; [1]Brock University, [2]University of Birmingham, [3]Donders Institute for Brain, Cognition and Behaviour
Topic Area: LONG-TERM MEMORY: Development & aging

E8 - Sketchnoting as a drawing-based memory encoding strategy in older adults
Marya Nurgitz[1], Adina Levi[1,2], Myra Fernandes[3], Morgan Barense[4], Asaf Gilboa[1,4], Gary R. Turner[2]; [1]Rotman Research Institute, [2]York University, [3]University of Waterloo, [4]University of Toronto
Topic Area: LONG-TERM MEMORY: Development & aging

E9 - Age-related changes in anatomical connectivity of the human hippocampus revealed using quantitative fibre tracking
Marshall Dalton[1] (marshall.dalton@sydney.edu.au), Hugo Grenier[2], Arkiev D'Souza[1], Fernando Calamante[1], Olivier Piguet[1]; [1]University of Sydney, Australia, [2]University of Marseille, France
Topic Area: LONG-TERM MEMORY: Development & aging

E10 - Does prediction error play a differential role in updating recent versus remote episodic memories?
Catalina Mengyao Yang[1], Katherine Duncan[1], Morgan Barense[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

E11 - Initial encoding strength determines the effectiveness of targeted memory reactivation with odor cues
Gautam Narayan[1] (narayag1@uci.edu), George Babineaux III[2], Matthew Cho[1], Sandhya Murugavel[1], Tiange Lu[1], Nicholas J. Lew[1], Sarvia Aquino[1], Eitan Schechtman[1]; [1]Department of Neurobiology and Behavior and Center for the Neurobiology of Learning and Memory, University of California Irvine, Irvine, California, USA, [2]College of Science and Technology, North Carolina Agricultural and Technical State University, Greensboro, North Carolina, USA
Topic Area: LONG-TERM MEMORY: Episodic

E12 - The effects of reactivation during sleep on the neural representations of episodic memories.
Sarvia Aquino Argueta[1,2] (ssaquino@uci.edu), Andrew Lazarus[3], Laura K. Shanahan[4], Kenneth A. Norman[5,6], Lila Davachi[7,8], Thorsten Kahnt[9], Ken A. Paller[3], Eitan Schechtman[1,2,3]; [1]Department of Neurobiology and Behavior, University of California, Irvine, Irvine, CA, [2]Center for the Neurobiology of Learning and Memory, University of California, Irvine, Irvine, CA, [3]Department of Psychology, Northwestern University, Evanston, IL, [4]Department of Psychology, Rhodes College, Memphis, TN, [5]Princeton Neuroscience Institute, Princeton University, Princeton, NJ, [6]Department of Psychology, Princeton University, Princeton, NJ, [7]Department of Psychology, Columbia University, New York, NY, [8]Nathan Kline Institute for Psychiatric Research, New York, NY, [9]National Institute on Drug Abuse Intramural Research Program, Baltimore, MD
Topic Area: LONG-TERM MEMORY: Episodic

E13 - A high-resolution investigation into the influence of interference on memory: Examining the role of the visual cortex and subregions of the hippocampus
Rebecca Wagner[1], Luke Dubec[1], John West[1], Jordan Chamberlain[1], Nancy Dennis[1]; [1]The Pennsylvania State University
Topic Area: LONG-TERM MEMORY: Episodic

E14 - **Won't get fooled again: The benefit of spatial proximity to** the rejection of lures in an associative memory task
Alexa Becker[1], Nancy Dennis[1]; [1]The Pennsylvania State University
Topic Area: LONG-TERM MEMORY: Episodic

E15 - Theta phase synchrony underlies successful memory retrieval
Aditya Rao[1] (amrao@sas.upenn.edu), Michael Kahana[1]; [1]University of Pennsylvania
Topic Area: LONG-TERM MEMORY: Episodic

E16 - Neuroelectric Correlates of Autobiographically Salient Music Listening
Veronica Vuong[1,2] (veronica.vuong@utoronto.ca), Michael Thaut[1], Claude Alain[1,2]; [1]University of Toronto, [2]Baycrest Health Sciences
Topic Area: LONG-TERM MEMORY: Episodic

E17 - Exploring the effect of sleep structure on internalizing symptoms and emotional memory: preliminary evidence
Xinran Niu[1] (xniu2@nd.edu), Kristin Sanders[1], Tony Cunningham[2,3], Elizabeth Kensinger[2], Jessica Payne[1]; [1]University of Notre Dame, [2]Boston College, [3]Harvard Medical School
Topic Area: LONG-TERM MEMORY: Episodic

E18 - Examining the impact of fornix and cingulum microstructure in memory for naturalistic events
Xianze Meng[1] (marcus.meng@mail.utoronto.ca), Charan Ranganath[2], Alexander Barnett[3]; [1]York University, University of Toronto, [2]University of California, Davis, [3]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

E19 - The effect of threat intensity on episodic conditioned fear memory
lingwei ouyang[1] (lingwei.ouyang@utexas.edu), Joseph Dunsmoor[1]; [1]University of Texas at Austin
Topic Area: LONG-TERM MEMORY: Episodic

E20 - Prior Knowledge and Memory Encoding: Investigating the Influence of Congruency and Incongruency on Learning
Salma Elnagar[1] (elnagar@cbs.mpg.de), Nicholas Menghi[1], Andrea Greve[2], Christian Doeller[1,3,4,5]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]MRC Cognition and Brain Sciences Unit, University of Cambridge, Cambridge, UK, [3]Kavli Institute for Systems Neuroscience, Center for Neural Computation, The Egil and Pauline Braathen and Fred Kavli Center for Cortical Microcircuits, Jebsen Center for Alzheimer's Disease, Norwegian University of Science and Technology, Trondheim, Norway, [4]Wilhelm Wundt Institute of Psychology, Leipzig University, Leipzig, Germany, [5]Department of Psychology, Technical University Dresden, Dresden, Germany
Topic Area: LONG-TERM MEMORY: Episodic

E21 - On a roll: Successful retrieval primes the brain to retrieve other memories via dopaminergic responses
Matthew Dougherty[1], Anuya Patil[1], Katherine Duncan[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Episodic

E22 - Investigating the correlation between sharp wave-ripples and eye movements during memory consolidation and retrieval in the human hippocampus
Nasim Mortazavi[1] (nmortaza@uwo.ca), Milad Khaki[1], Ben Corrigan[1], Greydon Gilmore[2], Jonathan Lau[2], Ana Suller Marti[2], Julio Martinez-Trujillo[1]; [1]Schulich School of Medicine & Dentistry, Departments of Physiology, Pharmacology and Psychiatry, University of Western Ontario, London, ON, Canada, [2]3Department of Clinical Neurological Sciences, London Health Sciences Centre, University of Western Ontario, London, Ontario, Canada
Topic Area: LONG-TERM MEMORY: Episodic

E23 - Individual differences in gist and detail recall of slideshows are predicted by anterior and posterior hippocampus volumes
Tristan De Cotiis[1] (22dxjw@queensu.ca), Jordan Poppenk[1]; [1]Queen's University
Topic Area: LONG-TERM MEMORY: Episodic

E24 - Granularity of hippocampal long-axis representations with repeated encoding
Sam Audrain[1], Jude Baffoe-Bonnie[1], Jenna M. Wilson[1], Alex Martin[1]; [1]NIMH
Topic Area: LONG-TERM MEMORY: Episodic

E25 - Where did I leave my keys? The effects of enactment on the precision of object-location memory.
Suesan MacRae[1] (smacra2@uwo.ca), Ken McRae[1], Stefan Köhler[1]; [1]Department of Psychology, University of Western Ontario
Topic Area: LONG-TERM MEMORY: Episodic

E26 - Down the Rabbit Hole: The Self-Perpetuating Properties of Curiosity and Its Influence on Memory
Paige Sevchik[1], Abigail Hsiung[1], Jia-Hou Poh[1], R. Alison Adcock[1]; [1]Duke University
Topic Area: LONG-TERM MEMORY: Episodic

E27 - Do perceptual or conceptual organizations more strongly bias the formation of new episodic memories?
Ryan O'Donnell[1] (ryanodonnell7@gmail.com), Alexa Tompary; [1]Drexel University
Topic Area: LONG-TERM MEMORY: Episodic

E28 - The role of context in segmentation and continuity
Shira Baror[1] (baror.shira@gmail.com), Aya Ben-Yakov[1]; [1]Edmond and Lily Safra Center for Brain Sciences, The Hebrew University, Jerusalem, Israel
Topic Area: LONG-TERM MEMORY: Episodic

E29 - Can patients with disorders of consciousness form autobiographical memories?
Matthew Kolisnyk[1] (mkolisny@uwo.ca), Geoff Laforge[1], Marie-Eve Gagnon[2], Jonathan Erez[1], Adrian Owen[1]; [1]Western University, [2]Université du Québec à Trois-Rivières
Topic Area: LONG-TERM MEMORY: Episodic

E30 - Memory decisions are predicted by temporally-asymmetric global similarity in parietal cortex
Zhifang Ye[1] (zhifangy@uoregon.edu), J. Benjamin Hutchinson[1], Brice A. Kuhl[1]; [1]University of Oregon
Topic Area: LONG-TERM MEMORY: Episodic

E31 - Quantifying schemas in future narratives

Isaac Kinley[1,2] (isaac.kinley@gmail.com), Yang Xu[3,4], Reece Roberts[5,6], Donna Rose Addis[1,2,5,6,7]; [1]Rotman Research Institute, Baycrest Health Sciences, [2]Data Sciences Institute, University of Toronto, [3]Department of Computer Science, University of Toronto, [4]Cognitive Science Program, University of Toronto, [5]School of Psychology, The University of Auckland, [6]Centre for Brain Research, The University of Auckland, [7]Department of Psychology, University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

E32 - Hippocampal connectivity predicting recognition and categorization performance

Kyla Brannigan[1] (kylabran@uoregon.edu), Lea Frank[1], Dagmar Zeithamova[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

E33 - Gamma and Alpha Band Power Capture Multiple Mechanisms of Variability in Memory Encoding

Jacqueline Kim[1] (jsk422@cornell.edu), Adam Broitman[2], Khena Swallow[1]; [1]Cornell University, [2]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

E34 - Neural Representations of Schemas and Episodic memory using Visual Narratives

Simon Henin[1] (simon.henin@nyulangone.org), Martina Vilas[2], Anli Liu[1], Patricia Dugan[1], Werner Doyle[1], Daniel Friedman[1], Adeen Flinker[1], Zoe Lusk[3], Josef Parvizi[3], Charan Ranganath[4], Lucia Melloni[1,5]; [1]NYU School of Medicine, [2]Ernst Strüngmann Institute for Neuroscience in Cooperation with the Max Planck Society, [3]Stanford University, [4]UC Davis, [5]Max-Planck Institute for Empirical Aesthetics

Topic Area: LONG-TERM MEMORY: Episodic

E35 - Temporal dynamics of memory encoding and retrieval in the human medial temporal lobe and prefrontal cortex

Adam Dede[1] (adam.osman.dede@gmail.com), Zachariah Cross[1], Samantha Gray[1], Qin Yin[2], Parisa Vahidi[2], Eishi Asano[2], Stephan Schuele[1], Joshua Rosenow[1], Joyce Wu[1,3], Sandi Lam[1,3], Jeffrey Raskin[1,3], Jack Lin[4], Olivia Kim-McManus[5], Shifteh Sattar[5], Ammar Shaikhouni[6], David King-Stephens[7,8], Peter Weber[7], Kenneth Laxer[7], Peter Brunner[9], Jarod Roland[9,10], Saez Ignacio[11,12], Fady Girgis[11,13], Robert Knight[14], Noa Ofen[2], Lisa Johnson[1]; [1]Northwestern University, [2]Wayne State University, [3]The Ann & Robert H. Lurie Children's Hospital of Chicago, [4]University of California Davis, [5]University of California San Diegoand UCSD Rady Children's Hospital, [6]Ohio State University, [7]California Pacific Medical Center, [8]Yale University, [9]Washington University in St. Louis, [10]St. Louis Children's Hospital, [11]University of California Davis, [12]Ichan School of Medicine at Mount Sinai, [13]University of Calgary, [14]University of California Berkeley

Topic Area: LONG-TERM MEMORY: Episodic

E36 - Focal Human Left Temporal Pole Damage Produces Emotional Amnesia

Robin Hellerstedt[1] (robin.hellerstedt@ctb.upm.es), Manuela Costa[1], Rafael Toledano[2], Antonio Gil-Nagel[2], Christian Bien[3], Philip Grewe[3], Johanna Kissler[4], Bryan Strange[1,5]; [1]Laboratory for Clinical Neuroscience, Center for Biomedical Technology, Universidad Politécnica de Madrid, IdISSC, Madrid, Spain., [2]Epilepsy Unit, Department of Neurology, Ruber International Hospital, Madrid, Spain., [3]Department of Epileptology, Medical school, Bielefeld University, Bielefeld, Germany, [4]Department of Psychology, Bielefeld University, Bielefeld, Germany, [5]Reina Sofia Centre for Alzheimer's Research, Madrid, Spain

Topic Area: LONG-TERM MEMORY: Episodic

E37 - Cognitive electrophysiology and big data: advancing science through open-source, standardized data

Haydn Herrema[1] (hherrema@sas.upenn.edu), Joseph Rudoler[1], Michael Kahana[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

E38 - Emotional dissociations in temporal associations: opposing effects of arousal on memory for details surrounding unpleasant events

Sanda Dolcos[1] (sdolcos@illinois.edu), Paul Bogdan[2], Kara Federmeier[1], Alejandro Lleras[1], Hillary Schwarb[3], Florin Dolcos[1]; [1]University of Illinois at Urbana Champaign, [2]Duke University, [3]University of Nebraska-Lincoln

Topic Area: LONG-TERM MEMORY: Episodic

E39 - Distinct brain pathways for recalling the conceptual and perceptual details of naturalistic emotional memories

Nina Curko[1] (curko@bc.edu), Rosalie Samide[1], Maureen Ritchey[1]; [1]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

E40 - Organizational Dynamics of Memory Across Days

Daniella Rafla[1] (rafla@sas.upenn.edu), Brandon Katerman[1], David Halpern[1], Michael Kahana[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

E41 - Quantifying the Composition of Memories with Scrambled Narratives

William Fisher[1] (fishermwilliam@gmail.com), Andrée-Ann Cyr[2], Buddhika Bellana[3]; [1]York University, [2]York University, Glendon Campus, [3]York University, Glendon Campus; Rotman Research Institute, Baycrest Health Sciences

Topic Area: LONG-TERM MEMORY: Episodic

E42 - Associative memory formation but not consolidation is affected by distracting information during repeated study

Evan Grandoit[1] (evangrandoit2023@u.northwestern.edu), Janvi Subramanyan[2], Paul Reber[3]; [1]Northwestern University, [2]University of California, Los Angeles

Topic Area: LONG-TERM MEMORY: Episodic

E43 - Optogenetic inhibition of the rodent dorsal hippocampus impairs temporal duration sequence memory retrieval
Zhemeng Wu[1] (zhemeng.wu@utoronto.ca), Sandeep Dhawan[1], Nisma Khan[1], Andy Lee[1], Rutsuko Ito[1]; [1]University of Toronto Scarborough
Topic Area: LONG-TERM MEMORY: Episodic

E44 - Real-time reorienting of preparatory sustained attention lapsing during episodic retrieval using closed-loop pupillometry
Shawn T. Schwartz[1,2] (stschwartz@stanford.edu), Khanh K. Nguyen[1], Haopei Yang[1], Megan T. deBettencourt[1], Tammy T. Tran[1,3], Kevin P. Madore[1], Anthony D. Wagner[1,2]; [1]Stanford University, [2]Wu Tsai Neurosciences Institute, Stanford University, [3]Stanford University School of Medicine
Topic Area: LONG-TERM MEMORY: Episodic

E45 - Curious Hippocampal Subfields: An Ultra High-Field FMRI Study on Curiosity-Enhanced Memory
Tamas Foldes[1] (foldes.andrei@gmail.com), Charlotte Murphy[2], Carl Hodgetts[1], Matthias Gruber[1]; [1]Cardiff University, [2]Royal Holloway, University of London
Topic Area: LONG-TERM MEMORY: Episodic

E46 - Alterations in Hairstyle impact the Other-Race Effect in Face Memory
Grit Herzmann[1] (grit.herzmann@gmail.com), Emma Saxton[2], Maresa Taté; [1]The College of Wooster
Topic Area: LONG-TERM MEMORY: Episodic

E47 - Differential Time-Frequency Dynamics Underlie Memory Encoding and Memory Selectivity
Cole Williams[1], Blake Elliott[2], Gene Brewer[1]; [1]Arizona State University, [2]Temple University
Topic Area: LONG-TERM MEMORY: Episodic

E48 - Fos expression does not reflect specific coding of experience
ning ding[1] (21111520005@m.fudan.edu.cn), chenyun wu[1], yvjie xiao[1], peng yuan[1]; [1]Fudan University, Shanghai , China
Topic Area: LONG-TERM MEMORY: Episodic

E49 - Acute stress modulates hippocampal memory and extraction of regularities across experiences
Irene Zhou[1] (irene.zhou@yale.edu), Yuye Huang[2], Zihan Bai[1], Elaine G. Wijaya[1], Lusangelis Ramos[1], Nicholas B. Turk-Browne[1], Elizabeth V. Goldfarb[1]; [1]Yale University, [2]Johns Hopkins University
Topic Area: LONG-TERM MEMORY: Episodic

E50 - Representation of decision uncertainty in the brain during hypothesis testing
Xinxu Shen[1] (tul04056@temple.edu), David Smith, Vishnu Murty; [1]Temple University
Topic Area: LONG-TERM MEMORY: Episodic

E51 - Exploring memory consolidation interference: The impact of different wakeful post-encoding activities on visual detail memory.
Sandra Gawel[1], Joanna Greer[1], Colin Hamilton[1], Michael Craig[1]; [1]Northumbria University, Newcastle upon Tyne, UK
Topic Area: LONG-TERM MEMORY: Episodic

E52 - The relationship between cortical reinstatement of scene information and memory accuracy
Ambereen Kidwai[1] (amber.kidwai@utdallas.edu), Sabina Srokova[2], Michael D. Rugg[1]; [1]University of Texas at Dallas, [2]University of Arizona
Topic Area: LONG-TERM MEMORY: Episodic

E53 - Flexible Object-Label Associations Following Rapid Perceptual Learning in Patients with Hippocampal Damage
Ariana Giuliano[1,2] (agiuliano@research.baycrest.org), Taneisha Heikurinen[2,3], Karen Joseph[2], Asaf Gilboa[1,2]; [1]University of Toronto, Psychology Department, [2]Rotman Research Institute, [3]York University
Topic Area: LONG-TERM MEMORY: Other

E54 - Object, tactile, and spatial oddity judgements are impaired in DG-compromised rats but enhanced in CA1-compromised rats
Krista Mitchnick[1] (mitchnick.k@gmail.com), R. Shayna Rosenbaum[2], Boyer Winters[3]; [1]York University, [2]Rotman Research Institute at Baycrest, [3]University of Guelph
Topic Area: LONG-TERM MEMORY: Other

E55 - Understanding the Roles of Phasic and Tonic REM Sleep in Memory Consolidation
Ashwin Harimohan[1] (aharimoh@uwo.ca), Laura Batterink[1]; [1]Western University
Topic Area: LONG-TERM MEMORY: Other

E56 - On the Relation Between Polydrug Use and Prospective Memory
Xavier L.T. Celaya[1] (xcelaya@asu.edu), Phil Peper[1], Holly O'Rourke[1], Candace Lewis[1], Gene A. Brewer[1]; [1]Arizona State University
Topic Area: LONG-TERM MEMORY: Other

E57 - Examining the representational stabilization of lifetime period narratives in real time
Ziming Cheng[1,2] (zcheng@research.baycrest.org), Buddhika Bellana[3], Samuel Fynes-Clinton[1], William Fisher[3], Donna Rose Addis[1,2,4]; [1]Baycrest Health Sciences, Toronto, Canada, [2]University of Toronto, [3]York University, Toronto, Canada, [4]The University of Auckland
Topic Area: LONG-TERM MEMORY: Other

E58 - The power of attention: how to boost long-term memory representations in working memory
Melinda Sabo[1] (sabo@ifado.de), Daniel Schneider; [1]Leibniz Research Centre for Working Environment and Human Factors
Topic Area: LONG-TERM MEMORY: Other

E59 - Orienting attention to selective contents of long-term versus short-term memories: an ERP study
Bo-Cheng Kuo[1,2] (bckuo@ntu.edu.tw), Rhianna Watt[1], Nahid Zokaei[1], Anna C Nobre[1,3]; [1]University of Oxford, [2]National Taiwan University, [3]Yale University
Topic Area: LONG-TERM MEMORY: Other

E60 - Sigma power and encoding strength in sleep-based and retrieval-mediated memory consolidation
Hayley Caldwell[1] (hayley.caldwell@mymail.unisa.edu.au), Alex Chatburn[1], Kurt Lushington[1]; [1]University of South Australia
Topic Area: LONG-TERM MEMORY: Other

E61 - The relation between medial temporal lobe structures and spatial navigation following moderate-severe TBI
Sophia Kekes-Szabo[1] (sophia.kekes-szabo@vanderbilt.edu), Annick F.N. Tanguay[1], Michael Dulas[2], Hillary Schwarb[3], Neal Cohen[4], Melissa C. Duff[1]; [1]Vanderbilt University Medical Center, [2]Binghampton University, [3]University of Nebraska-Lincoln, [4]University of Illinois Urbana-Champaign
Topic Area: LONG-TERM MEMORY: Other

E62 - Effect of real-world experience on lab-based scene memory
Maria S. Orlando[1] (morlando@yorku.ca), Alberto Umilta[2], Federico Fornaciari[2], Elisa Ciaramelli[2], R. Shayna Rosenbaum[1]; [1]York University, [2]University of Bologna
Topic Area: LONG-TERM MEMORY: Other

E63 - The Neural Correlates of Metamemory for Prospective Memory
Michaela Rice[1] (michaela.rice@colostate.edu), Deana Davalos[1]; [1]Colorado State University
Topic Area: LONG-TERM MEMORY: Other

E64 - Manipulation Type Interacts with Scene-Object Recognition Performance and Memory-Based Eye-Movement Behavior
Dana Slabbekoorn[1], Deborah Hannula[1]; [1]University of Wisconsin - Milwaukee
Topic Area: LONG-TERM MEMORY: Other

E65 - Is the late positive potential (LPP) a marker of emotional memory encoding and consolidation?
Hannah R. Piccirilli[1] (picchr52@westminster.edu), Eric C. Fields; [1]Westminster College
Topic Area: LONG-TERM MEMORY: Other

E66 - Effects of Spatial Predictability on Attentional Orienting and Memory Retrieval
Marcus Sefranek[1] (marcus.sefranek@linacre.ox.ac.uk), Nahid Zokaei[1], Dejan Draschkow[1], Anna C. Nobre[2]; [1]University of Oxford, [2]Yale University
Topic Area: LONG-TERM MEMORY: Other

E67 - When natural behaviour flexibly engages memories of different timescales
Levi Kumle[1,2] (levi.kumle@psy.ox.ac.uk), Rhianna Watt[2], Sage Boettcher[1,2], Kia Nobre[1,2,3], Dejan Draschkow[1,2]; [1]Oxford Centre for Human Brain Activity, Wellcome Centre for Integrative Neuroimaging, University of Oxford, UK, [2]Department of Experimental Psychology, University of Oxford, Oxford, UK, [3]Wu Tsai Institute and Department of Psychology, Yale University, New Haven, USA
Topic Area: LONG-TERM MEMORY: Other

E68 - Conditioned place preferences to nicotine in a human virtual reality task
Aishwarya Benzy[1] (aishwarya.benzy@uconn.edu), Skyler Sklenarik[1], Lukas Klin[1], Erin Curran[1], Christopher Burrows[2], Robert Astur[1]; [1]University of Connecticut, [2]Texas A&M University
Topic Area: LONG-TERM MEMORY: Other

E69 - The relation between connectivity gradients and spatial representations in human entorhinal cortex
Rebekka M. Tenderra[1] (tenderra@cbs.mpg.de), Christian F. Doeller[1,2,3,4], Stephanie Theves[1]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Kavli Institute for Systems Neuroscience, Center for Neural Computation, The Egil and Pauline Braathen and Fred Kavli Center for Cortical Microcircuits, Jebsen Center for Alzheimer's Disease, Norwegian University of Science and Technology, Trondheim, Norway, [3]Wilhelm Wundt Institute of Psychology, Leipzig University, Leipzig, Germany, [4]Department of Psychology, Technical University Dresden, Dresden, Germany
Topic Area: LONG-TERM MEMORY: Other

E70 - The Effect of Post-Learning Rest on False Memory in the Deese-Roediger-McDermott Paradigm
William H. Livingston[1], Erin J. Wamsley[1]; [1]Furman University Department of Psychology and Program in Neuroscience
Topic Area: LONG-TERM MEMORY: Other

E71 - Phylogeny of the anatomical projections from the neocortex to the hippocampal region: evolutionary insights into the nature of declarative memory
Daniel Reznik[1] (reznik@cbs.mpg.de), Piotr Majka[2], Marcello Rosa[3], Menno P Witter[4], Christian F Doeller[1,5,6]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Nencki Institute of Experimental Biology of the Polish Academy of Sciences, Warsaw, Poland, [3]Department of Physiology and Neuroscience Program, Biomedicine Discovery Institute, Monash University, Australia, [4]Kavli Institute for Systems Neuroscience, NTNU Norwegian University of Science and Technology, Trondheim, Norway, [5]Wilhelm Wundt Institute of Psychology, Leipzig University, Leipzig, Germany, [6]Department of Psychology, Technische Universität Dresden, Dresden, Germany
Topic Area: LONG-TERM MEMORY: Other

E72 - Looking at numbers: Evidence for a neural representation of state transitions in the entorhinal and prefrontal cortices
Alexander Eperon[1,2] (alexander.eperon@unitn.it), Christian F. Doeller[2,3,4,5], Stephanie Theves[2], Roberto Bottini[1]; [1]University of Trento, Italy, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Kavli Institute for Systems Neuroscience, Center for Neural Computation, The Egil and Pauline Braathen and Fred Kavli Center for Cortical Microcircuits, Jebsen Center for Alzheimer's Disease, Norwegian University of Science and Technology, Trondheim, Norway, [4]Wilhelm Wundt Institute of Psychology, Leipzig University, Germany, [5]Technical University Dresden, Germany
Topic Area: LONG-TERM MEMORY: Other

E73 - Lexico-Semantic Processing in Older Adults with Subjective Cognitive Decline: An Eye-Tracking Study
Marc-Antoine Akzam-Ouellette[1,3] (marc-antoine.akzam-ouellette@umontreal.ca), Léoni Labrecque[1,3], Isabelle Rouleau[2,3], Sven Joubert[1,3]; [1]Université de Montréal, [2]Université du Québec à Montréal, [3]Centre de recherche de l'Institut universitaire de gériatrie de Montréal
Topic Area: METHODS: Other

E74 - Introducing the Mini-Intraoperative Language Test (MILT): a new language battery for awake brain surgeries
Giovanna Oliveira Santos[1] (gi.santos.souza@gmail.com), Analia Arevalo[1], Marije Soto[2], Márcia Otsubo, Juliana Novo Gomes[3], Sônia Lopes, Aniela Improta França[2], Vitoria Piai[4], Guilherme Lepski[1,5]; [1]University of São Paulo Medical School, [2]Federal University of Rio de Janeiro, [3]University of Porto, [4]Radboud University, [5]Eberhard Karls University
Topic Area: METHODS: Other

E75 - Can Prefrontal tDCS Improve Memory in Younger or Older Adults? A Rigorous Clinical Trial with Null Results
Tesnim Arar[1], Gabriella V. Hirsch[1], Taylor A. Chamberlain[2], Cheyenne D. Wakeland-Hart[2], Miranda Malone[1], Diane S. Lauderdale[1], L. Philip Schumm[1], David A. Gallo[1]; [1]University of Chicago, [2]Columbia University
Topic Area: METHODS: Other

E76 - A novel continuous measure for subjective experiences: Implications for neuroimaging.
Anvita Gopal[1] (anvitagopal@gmail.com), Adrian Safati[1], James Danckert[1]; [1]University of Waterloo
Topic Area: METHODS: Other

E77 - Network-targeted rTMS **for treatment of Alzheimer's disease** (AD) using a personalized 3D-printed frame
Sungshin Kim[1] (sungshinkim@hanyang.ac.kr), Young Hee Jung, Hyemin Jang, Sungbeen Park, Duk L Na; [1]Hanyang University
Topic Area: METHODS: Other

E78 - Apparent Gray Matter Loss in Early Adolescence Cannot Be Explained by White Matter Growth
Jordan A. Chad[1,2], Catherine Lebel[2]; [1]Rotman Research Institute at Baycrest, [2]University of Calgary
Topic Area: NEUROANATOMY

E79 - Cytoarchitectonic mapping and probabilistic atlas of the human claustrum
Navona Calarco[1] (navona.calarco@mail.utoronto.ca), Olga Kedo[2], Sebastian Bludau[2], Christina Herold[2], Kâmil Uludağ[1], Katrin Amunts[2]; [1]Medical Biophysics, Faculty of Medicine, University of Toronto, [2]Institute of Neuroscience and Medicine, Forschungszentrum Jülich
Topic Area: NEUROANATOMY

E80 - Investigating the neural bases of episodic memory and navigation in children and young adults
Stephanie Doner[1] (stephanie.doner@temple.edu), Kim Nguyen[1], Nora Newcombe[1], Ingrid Olson[1]; [1]Temple University
Topic Area: NEUROANATOMY

E81 - A Novel Assessment of Musical Creativity: Behavioral and EEG Studies
Psyche Loui[1], Corinna Parrish[1], Anjali Asthagiri[2], Eva Wu[1], Jethro Lee[1]; [1]Northeastern University, [2]Cornell University
Topic Area: PERCEPTION & ACTION: Audition

E82 - Neurophysiological Adaptation to Hearing Amplification: Rapid Reduction of Listening Effort in Older Adults
Maxime Perron[1,2] (maxime.perron@mail.utoronto.ca), Brian Lau[2], Claude Alain[1,2]; [1]University of Toronto, [2]Baycrest Academy for Research and Education
Topic Area: PERCEPTION & ACTION: Audition

E83 - A neural mechanistic model of auditory tri-stability
Jiaqiu Sun[1,2] (js11247@nyu.edu), Zeyu Jin[3], James Rankin[4], John Rinzel[2,3]; [1]Division of Arts and Sciences, New York University Shanghai, 1555 Century Avenue, Shanghai, 200122, China, [2]Center for Neural Science, New York University, New York, New York, United States of America, [3]Courant Institute of Mathematical Sciences, New York University, New York, New York, United States of America, [4]Department of Mathematics, College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, EX4 4QJ, UK
Topic Area: PERCEPTION & ACTION: Audition

E84 - GABA and Glutamate/Glutamine Concentration in Auditory Cortex Correlate with Hearing Loss in Older Participants
Ms. Violet Zhou[1] (violetz@umich.edu), Esther Kim, Noah Reardon, Kayla Wyatt, Zoe Li, Shruthi Chakravarthy; [1]University of Michigan
Topic Area: PERCEPTION & ACTION: Audition

E85 - Reduced mismatch negativity in college students with a history of mTBI
Lena L. Kemmelmeier[1] (lkemmelmeier@nevada.unr.edu), Jenna N. Pablo[1], Jorja Shires[1], Hector Arciniega[2], Wendy A. Torrens[1], Sarah M. Haigh[1], Marian E. Berryhill[1]; [1]University of Nevada, Reno, [2]New York University Grossman School of Medicine
Topic Area: PERCEPTION & ACTION: Audition

E86 - ERP correlates of auditory peak shifts in stimulus generalization
Chelsea Joyner[1] (cnjoyner@ksu.edu), Matthew Wisniewski[1]; [1]Kansas State University
Topic Area: PERCEPTION & ACTION: Audition

E87 - Event-Related Potential Differences in the Auditory Imagery of Speech and Nonspeech
Evan Hare[1] (evan.hare@duke.edu), Ricardo Morales Torres[1], Julia Leeman[1], Joseph Zhang[1], Pooja Kabbar[1], Kristi Van Meter[1], Tobias Overath[1]; [1]Duke University
Topic Area: PERCEPTION & ACTION: Audition

E88 - **Neural underpinnings of musicians' enhanced continuity** illusion for both speech and music
Alejandra E Santoyo[1], Kristina C Backer[1], Daniel J Levitin[2], Dulce K Pimental-Hurlburt[1], Antoine J Shahin[1]; [1]UC Merced, [2]McGill University
Topic Area: PERCEPTION & ACTION: Audition

E89 - Exploring encoding of Timbre Perception in EEG using Machine Learning
Praveena Satkunarajah[1] (psatkunaraja@mun.ca), Sarah D Power[1], Benjamin Rich Zendel[1]; [1]Memorial University of Newfoundland, St. John's, NL, CA
Topic Area: PERCEPTION & ACTION: Audition

E90 - Anodal transcranial direct stimulation reveals causal links between the supplementary motor area and groove perception
Marina de Oliveira Emerick[1,2] (mdeoliv4@uwo.ca), Jessica A. Grahn[2,3]; [1]Neuroscience Program, Schulich School of Medicine & Dentistry, The University of Western Ontario, [2]Brain and Mind Institute, The University of Western Ontario, [3]Department of Psychology, Social Science, The University of Western Ontario
Topic Area: PERCEPTION & ACTION: Audition

E91 - The interactions of spatial and pitch cues in auditory scene analysis
Nima Zargarnezhad[1] (nzargan@uwo.ca), Ezgi Coskun[1], Ingrid Johnsrude[1]; [1]Western University
Topic Area: PERCEPTION & ACTION: Audition

E92 - Influence of social and semantic context in processing speech in noise.
Etienne Abassi[1] (etienne.abassi@mcgill.ca), Robert Zatorre[1]; [1]McGill
Topic Area: PERCEPTION & ACTION: Audition

E93 - An fMRI Study of Music Listening for Mild Cognitive Impairment: Effects of Liking, Familiarity, and Self-Selection
Xiaotong (Eva) Wu[1], Corinna Parrish[1], Laine Koenig[1], Jakob Laats[1], Milena Quinci[1], Alex Belden[1], Psyche Loui[1]; [1]Northeastern University
Topic Area: PERCEPTION & ACTION: Audition

E94 - Hey, I thought I was right!: Neural correlates of unexpected feedback on a simple perceptual task
Adam Holm[1] (aholm@ucmerced.edu), Antoine Shahin[1], Kristina Backer[1]; [1]University of California, Merced
Topic Area: PERCEPTION & ACTION: Audition

E95 - An intracranial EEG study on auditory deviance detection.
Alejandro Omar Blenkmann[1] (ablenkmann@gmail.com), Vegard Volehaugen[1], Vinicius Rezende Carvahlo[1], Sabine Leske[1], Anaïs Llorens[2], Ingrid Funderud[3], Santiago Collavini[4], Pål Gunnar Larsson[3], Jugoslval Ivanovic[3], Tristan Bekinschtein[5], Silvia Kochen[4], Robert Knight[6], Tor Endestad[1], Anne-Kristin Solbakk[1]; [1]University of Oslo, [2]FEMTO-ST institute, France, [3]Oslo University Hospital, [4]ENYS-CONICET, Argentina, [5]University of Cambridge, [6]University of California at Berkeley
Topic Area: PERCEPTION & ACTION: Audition

E96 - Development of Excitation-Inhibition Balance Predicts Speech Processing Abilities
Katharina Menn[1] (menn@cbs.mpg.de), Hannah Plueckebaum[2], Lars Meyer[1,3]; [1]MPRG Language Cycles, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Center for Cognitive Science, University of Kaiserslautern-Landau, Germany, [3]Clinic for Phoniatrics and Pedaudiology, University Hospital Münster, Germany
Topic Area: PERCEPTION & ACTION: Audition

E97 - Spatiotemporal dynamics of spontaneous tau-rhythms in human temporal cortex
Natalie Schaworonkow[1], Peter Donhauser[1], David Poeppel[1,2]; [1]Ernst Strüngmann Institute for Neuroscience, Frankfurt am Main, Germany, [2]Department of Psychology, New York University, New York, US
Topic Area: PERCEPTION & ACTION: Audition

E98 - Eyes tap to beats: Proactive sensing in music listening
Yi Du[1,2,4] (duyi@psych.ac.cn), Yiyang Wu[1,2], Xiangbin Teng[3]; [1]Institute of Psychology, Chinese Academy of Sciences, [2]Department of Psychology, University of Chinese Academy of Sciences, [3]Department of Psychology, Chinese University of Hong Kong, [4]Chinese Institute for Brain Research
Topic Area: PERCEPTION & ACTION: Audition

E99 - From Lab to Concert Hall: Live Performance Effects on Acoustic-EEG Phase Locking
Arun Asthagiri[1] (arun.asthagiri@gmail.com), Psyche Loui[2]; [1]New England Conservatory/Northeastern, [2]Northeastern
Topic Area: PERCEPTION & ACTION: Audition

E100 - Effects of Learning on Neural Representations of Rhythm and Beat

Joshua D. Hoddinott[1,2] (jhoddin@uwo.ca), Jessica A. Grahn[1,2]; [1]Brain and Mind, University of Western Ontario, [2]Western Institute of Neuroscience, University of Western Ontario

Topic Area: PERCEPTION & ACTION: Audition

E101 - Testing Effects of Theta-Band Amplitude Modulation on Attention and Working Memory

Jakob Laats[1] (j.laats@northeastern.edu), Psyche Loui[1]; [1]Northeastern University

Topic Area: PERCEPTION & ACTION: Audition

E102 - Stimulus interference and oscillatory EEG feature relationships with auditory working memory fidelity

Michael A. Tollefsrud[1] (attraten@gmail.com), Chelsea N. Joyner[1], Matthew G. Wisniewski[1], Alexandria C. Zakrzewski[1]; [1]Kansas State University

Topic Area: PERCEPTION & ACTION: Audition

E103 - Cortical envelope-tracking of speech and music using electroencephalography

Savanna Richard[1], Lukas Grasse[1], Matthew Tata[1]; [1]University of Lethbridge

Topic Area: PERCEPTION & ACTION: Audition

E104 - The effect of voice identity training on speech understanding in noise

Joseph Rovetti[1] (jrovetti@uwo.ca), Aditi Nayak[1], Ingrid Johnsrude[1]; [1]Western University

Topic Area: PERCEPTION & ACTION: Audition

E105 - Auditory hyper-reactivity and gating across development in autism

Ala Seif[1,2,3] (aseif5@uwo.ca), Renee Guerville[1,2], Mohammad Rajab[1,2], Kristina Schaaf[1,2], Susanne Schmid[1,3], Ryan A. Stevenson[1,2]; [1]Western Institute of Neuroscience, University of Western Ontario, [2]Department of Psychology, University of Western Ontario, [3]Department of Anatomy and Cell Biology, Schulich School of Medicine and Dentistry, University of Western Ontario

Topic Area: PERCEPTION & ACTION: Audition

E106 - Neural and behavioral dynamics of timing processing in subcortical lesion patients

Antonio Criscuolo[1] (a.criscuolo@maastrichtuniversity.nl), Michael Schwartze[1], Sylvie Nozaradan[2], Sonja Kotz[1,3]; [1]Maastricht University, [2]Institute of Neuroscience (IONS), Université Catholique de Louvain (UCL), Brussels, Belgium, [3]Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, 04103, Leipzig, Germany

Topic Area: PERCEPTION & ACTION: Audition

E107 - Multi-level reorganization in the temporal dynamics of sound processing in early blind people

Siddharth Talwar[1] (siddharthtalwar0309@gmail.com), Mattioni Stefania[2], Eleonore Giraudet[1], Calce Roberta P.[1], Barbero Francesca M.[1], Collignon Olivier[1,3]; [1]Institute for research in Psychology (IPSY) & Neuroscience (IoNS), Louvain Bionics, University of Louvain (UCLouvain), Louvain, Belgium, [2]Department of Experimental Psychology; UGent, Gent, Belgium, [3]HES-SO Valais-Wallis, School of Health Sciences; The Sense Innovation and Research Center, Lausanne and Sion, Switzerland

Topic Area: PERCEPTION & ACTION: Audition

E108 - Exploring the effect of coloured background noise on auditory discomfort in people with post-traumatic stress disorder

Hafsa Siddiqui[1] (hasiddiq@lakeheadu.ca), James Kryklywy[1], Deborah Scharf[1]; [1]Lakehead University

Topic Area: PERCEPTION & ACTION: Audition

E109 - Migraine, Lifestyle, Cognition, and Psychological Health Factors: A Population-Based Cross-Sectional Study Examining Findings from the CLSA

Makenna Jensen[1] (makenna.jensen@usask.ca), Marla Mickleborough[1], Megan O'Connell[1]; [1]University of Saskatchewan

Topic Area: PERCEPTION & ACTION: Development & aging

E110 - Plasticity of visuoconstructional skills: Children with late vision onset learn to reproduce spatial patterns but show some persistent impairments.

Grace Hu[1], Sharon Gilad-Gutnick[1], Pragya Shah[2], Priti Gupta[3], Chetan Ralekar[1], Dhun Verma[2], Suma Ganesh[4], Umang Mathur[4], Pawan Sinha[1]; [1]Massachusetts Institute of Technology, [2]Project Prakash, [3]IIT-Delhi, [4]Shroff Charitable Eye Hospital

Topic Area: PERCEPTION & ACTION: Development & aging

E111 - Music training mitigates age-related changes in mismatch negativity and precision in auditory memory

Ricky Chow[1,2], Jennifer Bugos[1,2,3], Shimin Mo[2,4], R. Shayna Rosenbaum[1,2], Claude Alain[2,4]; [1]York University, [2]Rotman Research Institute, [3]University of South Florida, [4]University of Toronto

Topic Area: PERCEPTION & ACTION: Development & aging

E112 - Age-related changes in auditory cortical responses: interactions between pitch, background noise, pure-tone thresholds, and lifetime noise exposure

Amour Simal[1] (asimal@mun.ca), Veronica Hutchings[2], Emily Alexander[2], Zoha Rabie[1], David Fleming[1], Benjamin Rich Zendel[1]; [1]Faculty of Medicine, Memorial University of Newfoundland, [2]Grenfell Campus, Memorial University of Newfoundland

Topic Area: PERCEPTION & ACTION: Development & aging

E113 - Age-related Changes in Neural Synchronization with Naturalistic Music
Yue Ren[1] (yren@research.baycrest.org), Kristin Weineck[2,3], Björn Herrmann[1,4], Molly J. Henry[2,5]; [1]Baycrest Academy for Research and Education, [2]Max Planck Institute for Empirical Aesthetics, [3]Goethe University Frankfurt, [4]University of Toronto, [5]Toronto Metropolitan University
Topic Area: PERCEPTION & ACTION: Development & aging

E114 - Associations of oddity discrimination task accuracy with perirhinal cortex volume in a multi-ethnic cohort of older adults
Madeline Wood Alexander[1,2] (madeline.wood@sri.utoronto.ca), Silina Z. Boshmaf[1], Alexander Nyman[1], Rachel Yep[1], Tulip Marawi[1], Isabella J. Sewell[1], Georgia Gopinath[1], Morgan Barense[2,3], Sandra E. Black[1,2], Maged Goubran[1,2], Jennifer S. Rabin[1,2]; [1]Sunnybrook Research Institute, Toronto, Canada, [2]University of Toronto, Canada, [3]Rotman Research Institute, Toronto, Canda
Topic Area: PERCEPTION & ACTION: Development & aging

E115 - Exploring the Dynamics of Eye Movement: How Fixations Affec Facial Recognition in Younger and Older Adults
Eric Cui[1,2], Farhan Vaheed[3h], Matthew Clark[3], Björn Herrmann[1,2], Allison Sekuler[1,2,3]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, North, ON, Canada, [2]Department of Psychology, University of Toronto, Toronto, ON, Canada, [3]Department of Psychology, Neuroscience, and Behavioural Neuroscience, McMaster University, Hamilton, ON, Canada
Topic Area: PERCEPTION & ACTION: Development & aging

E116 - Directionality distinguishes pictures from their referents in 7-9 months old infants
Nikolaus F. Troje[1] (troje@yorku.ca), Lucie Preißler[2], Gudrun Schwarzer[2]; [1]York University, [2]Justus-Liebig-University Giessen
Topic Area: PERCEPTION & ACTION: Development & aging

E117 - Visual gamma oscillations in 1- to -5-year-old children using OPM-MEG
Julie Sato[1] (julie.sato@sickkids.ca), Marlee Vandewouw[1,2], Kaela Amorim[1], Kristina Safar[1], Margot Taylor[1,2]; [1]The Hospital for Sick Children, [2]University of Toronto
Topic Area: PERCEPTION & ACTION: Development & aging

E118 - Unveiling EEG Rhythmic Processing in Autism Using TRF Linear Models
Shlomit Beker[1,2] (shlomit.beker@einsteinmed.edu), Theo Vanneau[1], Elizabeth Akinyemi[1], John Foxe[1,3], Sophie Molholm[1,3]; [1]The Cognitive Neurophysiology Laboratory, Department of Pediatrics, Albert Einstein College of Medicine, Bronx, New York, USA., [2]Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY, [3]The Cognitive Neurophysiology Laboratory, The Ernest J. Del Monte Institute for Neuroscience, Department of Neuroscience, University of Rochester School of Medicine and Dentistry, Rochester, New York, USA.
Topic Area: PERCEPTION & ACTION: Development & aging

E119 - Neurophysiological Evidence for the Other-race Effect on Configuration Encoding of Conscious Face Perception
Pei-Xuan Luo[1] (shivicter@gmail.com), Erik Chihhung Chang[1], Denise Hsien Wu[1]; [1]National Central University, Zhongli, Taiwan
Topic Area: PERCEPTION & ACTION: Vision

E120 - Deficits in concurrent sensory orienting and decision making in children with attention deficit hyperactivity disorder during visual search
Dongwei Li[1] (dongweili94@gmail.com), Xiangsheng Luo[3], Jialiang Guo[1], Li Sun[2], Yan Song[1]; [1]Beijing Normal University, [2]Peking University Sixth Hospital, [3]Beijing Anding Hospital
Topic Area: PERCEPTION & ACTION: Vision

E121 - Uncertainty-driven updating enables segmentation and categorization of naturalistic activity
Tan Nguyen[1] (n.tan@wustl.edu), Matthew Bezdek[1], Samuel Gershman[2], Aaron Bobick[3], Todd Braver[1], Jeffrey Zacks[1]; [1]Department of Psychological and Brain Sciences, Washington University in St. Louis, [2]Department of Psychology and Center for Brain Science, Harvard University, [3]Computer Science and Engineering, Washington University in St. Louis
Topic Area: PERCEPTION & ACTION: Vision

E122 - Tracking the neural signatures of visual and motor prioritisation in working memory through space and time
Irene Echeverria-Altuna[1,2] (irene.echeverriaaltuna@psy.ox.ac.uk), Sage E.P. Boettcher[1,2], Freek van Ede[3], Kate E. Watkins[1], Anna C. Nobre[1,2,4]; [1]Department of Experimental Psychology, University of Oxford, [2]Oxford Centre for Human Brain Activity (OHBA), Wellcome Centre for Integrative Neuroimaging, University of Oxford, [3]Institute for Brain and Behavior Amsterdam, Vrije Universiteit Amsterdam, [4]Wu Tsai Institute and Department of Psychology, Yale University
Topic Area: PERCEPTION & ACTION: Vision

E123 - Development of the hippocampus and the ability to perceptually integrate images drive the emergence of visual illusion susceptibility in childhood
Keela Thomson[1], Samantha Gualtieri[1], Kay Otsubo[1], Morgan Barense[1], Asaf Gilboa[1,2], Amy Finn[1]; [1]University of Toronto, [2]Rotman Research Institute at Baycrest
Topic Area: PERCEPTION & ACTION: Vision

E124 - Examining the Temporal Dynamics of the Impact of Mental Rotation on Bistable Motion Perception
Zoe Heidenry[1], Taylor Holton[1], Kezia Chuaqui[1], Shiang-Yun Chuko[1], Leo Tien[1], Xianjue Huang[1], Tengyu Song[1], Alfredo Spagna[1]; [1]Columbia University in the City of New York
Topic Area: PERCEPTION & ACTION: Vision

E125 - Inverted visual coding across category-selective visual areas

Adam Steel[1] (adamdanielsteel@gmail.com), Peter Angeli[1], Edward Silson[2], Caroline Robertson[1]; [1]Dartmouth College, [2]University of Edinburgh

Topic Area: PERCEPTION & ACTION: Vision

E126 - Transcranial magnetic stimulation to early visual cortex modulates binocular rivalry

Remy Cohan[1,2,3,4] (rcohan@yorku.ca), Andrew Kim[3,4], Stefania S. Moro[1,2,3,4], Jennifer K.E. Steeves[1,2,3,4]; [1]Centre for Integrative and Applied Neuroscience, [2]Centre for Vision Research, [3]Department of Psychology, [4]York University, Toronto, Canada

Topic Area: PERCEPTION & ACTION: Vision

E127 - Neuronal mechanisms of saccade-coordinated visuospatial memory in the human brain

Qian Chu[1,2,3,4] (qian.chu@mail.utoronto.ca), Thomas M. Biba[2,3], Ivan Skelin[3], Suneil K. Kalia[1,2,3], Taufik A. Valiante[1,2,3], Lucia A. Melloni[1,4,5]; [1]Max Planck - University of Toronto Centre for Neural Science and Technology, [2]University of Toronto, [3]Krembil Brain Institute & KITE Research Institute & CRANIA, University Health Network, [4]Max Planck Institute for Empirical Aesthetics, [5]New York University

Topic Area: PERCEPTION & ACTION: Vision

E128 - Ventral Stream has the Final Say in the (Mis)Localization of the Flash Jump Effect.

Heather Jordan[1] (jordanh@uoguelph.ca), Martina Malito[1], Mazyar Fallah[1]; [1]University of Guelph

Topic Area: PERCEPTION & ACTION: Vision

E129 - The visual word form area is specialized for orthographic-semantic processing of written words

Naail Khan[1] (naailk90@gmail.com), Yara M. Iskandar[1], Alex Martin[2], W. Dale Stevens[1]; [1]Department of Psychology and Centre for Vision Research, York University, Toronto, [2]National Institute of Mental Health, National Institutes of Health, Bethesda, MD

Topic Area: PERCEPTION & ACTION: Vision

E130 - Increased brain signal complexity associated with mind-wandering inhibits performance gains following perceptual task training

Louisa Krile[1] (louisa.krile@ucalgary.ca), Ford Burles[1], Kuljeet Chohan[1], Maddie Kelly[1], Julia W. Y. Kam[1], Andrea B. Protzner[1]; [1]University of Calgary

Topic Area: PERCEPTION & ACTION: Vision

E131 - Expectation modifies the representational fidelity of complex visual objects

Margaret Jane Moore[1] (margaret.moore@uq.edu.au), Amanda Robinson[1], Jason B. Mattingley[1]; [1]University of Queensland

Topic Area: PERCEPTION & ACTION: Vision

E132 - A new technique to measure implicit line orientation discrimination using fast periodic visual stimulation (FPVS).

Oliver Hermann[1] (oph30@bath.ac.uk), Carla Leonardi[2,3], Karin Petrini[1], Elizabeth Coulthard[4], George Stothart[1]; [1]University of Bath, [2]IRCCS Fondazione Santa Lucia, Rome, [3]University of Rome Tor Vergata, [4]University of Bristol

Topic Area: PERCEPTION & ACTION: Vision

E133 - Testing generalization from static to dynamic faces using magnetoencephalography (MEG)

Sebastian Montesinos[1] (sebastian.montesinos@nih.gov), Shruti Japee[1], Lina Teichmann[1], Chris Baker[1]; [1]National Institute of Mental Health

Topic Area: PERCEPTION & ACTION: Vision

E134 - Stability in Ongoing Conscious Thought Relates to Macroscale Patterns of Brain Organization

Louis Chitiz[1] (17lssc@queensu.ca), Raven Wallace[1], Bronte Mckeown[1], Ian Goodall-Halliwell[1], Bridget Mulholland[1], Ting Xu[2], Michael Milham[2], Elizabeth Jefferies[3], Robert Leech[4], Jonathan Smallwood[1]; [1]Queen's University, [2]Child Mind Institute, [3]University of York, [4]King's College London

Topic Area: THINKING: Other

E135 - The Relationship between Brain Activity and Ongoing Thought Patterns during Movie Watching

Raven Wallace[1] (18rsw@queensu.ca), Bronte Mckeown[1], Adam Turnbull[2], Tamara Vanderwal[3], Bridget Mulholland[1], Louis Chitiz[1], Elizabeth Jefferies[4], Jeremy Skipper[5], Samyogita Hardikar[7], Boris Bernhardt[8], Daniel Margulies[9], Jeff Wammes[1], Rob Leech[6], Jonathan Smallwood[1]; [1]Queen's University, [2]Stanford University, [3]University of British Columbia, [4]University of York, [5]University College London, [6]King's College London, [7]Max Planck Institute for Human Cognitive and Brain Sciences, [8]McGill University, [9]Centre national de la recherche scientifique (CNRS)

Topic Area: THINKING: Other

E136 - Individual Differences in Neural Correlates of Spontaneous Thought: A Personalized Brain Network Approach

Tiara Bounyarith[1] (tb3344@drexel.edu), Shao-Min Hung[2], Nathan Anderson[3], Rodrigo Braga[3], Aaron Kucyi[1]; [1]Drexel University, [2]Waseda University, Tokyo, Japan, [3]Northwestern University, Feinberg School of Medicine

Topic Area: THINKING: Other

E138 - Higher general intelligence is linked to stable, efficient, and typical brain connectivity patterns

Justin Ng[1,2] (jwk.ng@mail.utoronto.ca), Ju-Chi Yu[2], Jamie Feusner[1,2,3], Colin Hawco[1,2]; [1]University of Toronto, [2]Centre for Addiction and Mental Health, [3]Karolinska Institutet

Topic Area: THINKING: Other

E139 - Relationships Between Alpha Waves, Creative Thinking, and Stress
Serena Bruneaux[1] (serena_bruneaux@mymail.eku.edu), Dakota Taylor[1], Adam Lawson[1]; [1]Eastern Kentucky University
Topic Area: THINKING: Other

E140 - Electrophysiological Correlates of Naturally Occurring Thought Patterns
YeEun Park[1] (yeeun.park@ucalgary.ca), Nikita Nukala[1], Jonathan Smallwood[2], Julia Kam[1]; [1]University of Calgary, [2]Queen's University
Topic Area: THINKING: Other

E141 - Electrophysiological Signatures of Ongoing Thoughts during Naturalistic Tasks
Tarannum Rahnuma[1] (tarannum.rahnuma@ucalgary.ca), Sairamya Nanjappan Jothiraj[1], Alexandra Ouellette Zuk[1], Robert T. Knight[2], Julia W. Y. Kam[1]; [1]University of Calgary, [2]University of California
Topic Area: THINKING: Other

E142 - The Neural Basis for Number Processing and Its Relation **to Individual Differences in Adults' Math Competence**
Xueying Ren[1,2] (xur1@pitt.edu), Marc N. Coutanche[1,2], Julie A. Fiez[1,2], Melissa E. Libertus[1,2]; [1]Department of Psychology, University of Pittsburgh, [2]Learning Research and Development Center
Topic Area: THINKING: Problem solving

E143 - Investigating Default and Executive network contributions to novel metaphor production in Spanish/English bilinguals
Hannah M. Merseal[1] (hmerseal@psu.edu), Paul V. DiStefano[1], Janet G. van Hell[1], Roger E. Beaty[1]; [1]Pennsylvania State University
Topic Area: THINKING: Problem solving

E144 - Brain Network Functional Connectivity During Scientific Creative Thinking in Adolescents
Danny Holzman[1] (ddholzman@gmail.com), Simone Luchini[2], Adam Green[1], Roger Beaty[2]; [1]Georgetown University, [2]Pennsylvania State University
Topic Area: THINKING: Problem solving

E145 - The influence of insight on risky decision making and nucleus accumbens activation
Dr. Maxi Becker[1] (maxi.becker@hu-berlin.de), Dr. Yuhua Yu, Dr. Roberto Cabeza; [1]Humboldt University Berlin, [2]North Western University, [3]Duke University
Topic Area: THINKING: Problem solving

E146 - A Neurofeedback Study of Default-Executive Network Coupling and Creativity
Simone Luchini[1] (skl5875@psu.edu), Xinbing Zhang[2], Michael Lührs[3], Michal Ramot[4], Roger Beaty[1]; [1]Penn State University, [2]University of Minnesota, [3]Maastricht University, [4]Weizmann Institute of Science
Topic Area: THINKING: Problem solving

E147 - Neural Correlates of Learning Differences and Experience as Determinants of Design Fixation
Dong Ho Kim[1] (dk956@drexel.edu), Shuyao Wang[1], Julie Milovanovic[2], Udo Kannengiesser[3], John Gero[2], Evangelia G. Chrysikou[1]; [1]Drexel University, [2]University of North Carolina at Charlotte, [3]Johannes Kepler University Linz, Austria
Topic Area: THINKING: Problem solving

E148 - Using Transcranial Alternating Current Stimulation with Concurrent EEG to Examine the Role of Alpha- and Gamma-band Oscillations in Creative Thinking
Necla Ece Yilmaz[1], Evangelia G. Chrysikou[1]; [1]Drexel University
Topic Area: THINKING: Problem solving

E149 - Sorting based on partial information: behavior, computational modeling, and neural evidence
Dongning Liu[1,2,3], Muzhi 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: THINKING: Problem solving

E150 - Changes in neural response variability in response to cognitive training and its relation to restricted repetitive behavior in children with autism
Zahra Raza[1] (ztraza@stanford.edu), Jin Liu[1], Hyesang Chang[1], Vinod Menon[1]; [1]Stanford University
Topic Area: THINKING: Problem solving

E151 - How complex is creativity? The functional dissimilarity of brain regions tracks differences in cognitive complexity
Daniel Zeitlen[1], Kaixiang Zhuang[2], Jiang Qiu[2], Roger Beaty[1]; [1]Pennsylvania State University, [2]Southwest University
Topic Area: THINKING: Problem solving

E152 - Age-Related Differences in Mathematical Problem-Solving Among Children and Adolescents
Mo-Ya Chu[1] (108102062@g.nccu.edu.tw), Xin-Yu Chen[1], Chan-Tat Ng[1], Ting-Ting Chang[1,2]; [1]Department of Psychology, National Chengchi University, Taipei City, Taiwan, [2]Research Center for Mind, Brain, and Learning, National Chengchi University, Taipei City, Taiwan
Topic Area: THINKING: Problem solving

E153 - Is this news credible? Neurocognitive mechanisms of news credibility evaluation measured by fMRI
Mareike Bacha-Trams[1] (mareike.bacha-trams@uni-due.de), Daniel Bodemer[1]; [1]Research Methods in Psychology – Media-based Knowledge Construction, Department for Human-centered Computing and Cognitive Science, Faculty of Computer Science, University of Duisburg-Essen, Duisburg, Germany
Topic Area: THINKING: Reasoning

E154 - The impact of sleep and retrieval instructions on the implicit learning of relational stimuli
Alissa Gomez[1], Mark Beeman[1]; [1]Northwestern University
Topic Area: THINKING: Reasoning

E155 - A dual process framework of motivated reasoning: Neural and behavioral evidence for the influence of belief endorsement
Brianna Aubrey[1], Katherine L. Alfred[1,2], Jason Liu[1], David J. M. Kraemer[1]; [1]Dartmouth College, [2]University of California, Berkeley
Topic Area: THINKING: Reasoning

E156 - Neuromodulatory effects of parietal high-definition transcranial direct-current stimulation on network-level activity serving fluid intelligence
Tara D. Erker[1] (tara.erker@boystown.org), Yasra Arif[1], Jason A. John[1], Christine M. Embury[1], Kennedy A. Kress[1], Seth D. Springer[1,2], Hannah J. Okelberry[1], Alex I. Wiesman[4], Tony W. Wilson[1,3]; [1]Boys Town National Research Hospital, [2]University of Nebraska Medical Center (UNMC), [3]Creighton University, [4]McGill University
Topic Area: THINKING: Reasoning

E157 - Continuous Effect of Processing Difficulty in Facilitating Analytical Thinking
Atakan Atamer[1] (atakann@umich.edu), Zeynep Eylul Gul[2], Behcet Yalin Ozkara[3]; [1]University of Michigan, [2]Koc University, [3]Eskisehir Osmangazi University
Topic Area: THINKING: Reasoning

E158 - Cognitive components of semantic memory search and implications for creative ideation
Lucie Vigreux[1], Victor Altmayer[1], Marcela Ovando-Tellez[1], Emmnuelle Volle[1]; [1]Sorbonne University, FrontLab at Paris Brain Institute (ICM), INSERM, CNRS, Paris, France
Topic Area: THINKING: Reasoning

E159 - Localization of acquired deficits in oral word reading versus silent word reading in post-stroke alexia
Elizabeth H.T. Chang[1] (ec1312@georgetown.edu), Sara M. Dyslin[1], Andrew T. DeMarco[1], J. Vivian Dickens[1,2], Peter E. Turkeltaub[1,3]; [1]Georgetown University Medical Center, [2]University of Pennsylvania, [3]MedStar National Rehabilitation Hospital
Topic Area: LANGUAGE: Other

Poster Session F

Tuesday, April 16, 8:00 – 10:00 am, Sheraton Hall ABC

F1 - Brain-body interaction during auditory narratives drives autonomic function
Jens Madsen[1] (jmadsen@ccny.cuny.edu), Lucas C. Parra[2]; [1]City College of New York
Topic Area: ATTENTION: Multisensory

F2 - Neural indices of multisensory processing disturbances in people with multiple sclerosis
Thomas Covey[1] (tjcovey@buffalo.edu), Hope Nyarady[2], Marissa Tripoli[3], Ryan O'Donnell[4], Ralph Benedict[5], Bianca Weinstock-Guttman[6], David Shucard[7]; [1]University at Buffalo
Topic Area: ATTENTION: Multisensory

F3 - Tracking the Neural Signatures of Predictive Cross-Modal Sensory Processing
Soukhin Das[1] (skndas@ucdavis.edu), Dr. Mingzhou Ding[2], Dr George (Ron) Mangun[3]; [1]Department of Psychology and Center for Mind and Brain, University of California Davis, [2]J Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, [3]1Department of Psychology and Center for Mind and Brain, University of California Davis
Topic Area: ATTENTION: Multisensory

F4 - Suppression of audiovisual integration to facilitate covert attention: implications for cochlear implant users
Cailey Salagovic[1] (csalagov@uwo.ca), Catherine Lin[1], Valerie Ah-Yen[1], Ryan Stevenson[1], Blake Butler[1]; [1]University of Western Ontario
Topic Area: ATTENTION: Multisensory

F5 - Attentional Control Of Multimodal Distractor Processing In Adults: Neurophysiological Evidence.
Edwin Roberto Ramírez Benítez[1,2] (10081996edwin@gmail.com), Rodolfo Solís Vivanco[1,2]; [1]"Manuel Velasco Suárez" National Institute of Neurology and Neurosurgery, [2]Faculty of Psychology, National Autonomous University of Mexico, UNAM
Topic Area: ATTENTION: Multisensory

F6 - Age-Related Effects on Crossmodal Switching: An Event-Related Potential Study
Shulan Hsieh[1], Wen-Hsin Wu[1], Pi-Chun Huang[1], Ludivine Schilis[2], Iring Koch[2], Stephan Denise[2]; [1]National Cheng Kung University, Tainan, Taiwan, [2]RWTH Aachen University, Germany
Topic Area: ATTENTION: Multisensory

F7 - Seeing Speech in a New Light: Augmenting Speech Performance using Lip Movement with Imperceptible Light
Hyojin Park[1] (h.park@bham.ac.uk); [1]University of Birmingham
Topic Area: ATTENTION: Multisensory

F8 - Cross modal attention through the three sensory modalities in human adults: an EEG study
Helene Vitali[1,2] (helene.vitali@iit.it), Alice Bollini[1], Claudio Campus[1], Monica Gori[1]; [1]UVIP, Italian Institute of Technology, [2]DIBRIS, University of Genova
Topic Area: ATTENTION: Multisensory

F9 - Connectome-based predictive modeling of mind wandering within densely-sampled individuals
Lotus Shareef-Trudeau[1] (ls3623@drexel.edu), Aaron Kucyi[1], Shao-Min Hung[2]; [1]Drexel University, [2]Waseda Institute for Advanced Study, Waseda University
Topic Area: ATTENTION: Other

F10 - EEG Neural Oscillatory Correlates of Focal Attention during Speech Auditory Feedback Error Detection and Motor Control
Yilun zhang[1], Kimaya Sarmukadam[2], Roozbeh Behroozmand[1]; [1]Speech Neuroscience Lab, Department of Speech Language and Hearing, School of Behavioral and Brain Sciences, The University of Texas at Dallas, [2]Department of Communication Sciences and Disorders, Arnold School of Public Health, University of South Carolina
Topic Area: ATTENTION: Other

F12 - Engagement Fluctuations during Collaborative Learning: A Real-World EEG Study
Yushuang Liu[1] (yu-shuang.liu@uconn.edu), Ido Davidesco[1], Kim Chaloner[2], Emma Laurent[3], Gabriella Amanda Ali[3], Laura Noejovich[3], Henry Valk[3], Dana Bevilacqua[3], David Poeppel[3], Suzanne Dikker[3]; [1]University of Connecticut, [2]Grace Church School, [3]New York University
Topic Area: ATTENTION: Other

F13 - Attentional tracking drives contralateral delay activity in a dual working memory and object tracking task
Piotr Styrkowiec[1,2] (pstyrkowiec@uchicago.edu), William Ngiam[1], William Epstein[1], Ron Gneezy[1], Edward Awh[1], Edward Vogel[1]; [1]University of Chicago, USA, [2]University of Wroclaw, Poland
Topic Area: ATTENTION: Other

F14 - Electrophysiological Analysis of Attention Deficit Hyperactivity Disorder (ADHD) Subtypes: A Subnetwork Modularity Approach
Leila Rafiei[1] (leylarafiei943@gmail.com), Amirhossein Ghaderi[2]; [1]Isfahan University of Medical Sciences, [2]York University
Topic Area: ATTENTION: Other

F15 - Examining individual differences in inward versus outward attentional control: the attentional preference questionnaire
Nia McClendon[1], Mark Beeman[1]; [1]Northwestern University
Topic Area: ATTENTION: Other

F16 - EEG Signatures of Orienting Attention to Long-Term vs. Working Memory Contents
Dongyu Gong[1,2] (dongyu.gong@yale.edu), Dejan Draschkow[2], Anna C. Nobre[1,2]; [1]Yale University, [2]University of Oxford
Topic Area: ATTENTION: Other

F17 - Tracking task-specific activity in dual-task condition with ultrafast fMRI resolves the neural locus of a central bottleneck of information processing
Qiuhai Yue[1,2], Allen T. Newton[3], René Marois[1,4,5]; [1]Vanderbilt University, [2]Shenzhen University, [3]Vanderbilt University Medical Center, [4]Vanderbilt Vision Research Center, [5]Vanderbilt Brain Institute
Topic Area: ATTENTION: Other

F18 - How Internal Attention Impacts Learning from Online Lectures
Ella Ofek-Geva[1] (ella.ofek-geva@uconn.edu), Ido Davidesco[1], Sarah Gilmore[1], Charles Wasserman[2], Mary Kate Coburn[1], Hyosun Lee[1], Annesha Das[1], Advaith Pradeep[1], Gitte Joergensen[2]; [1]University of Connecticut, Neag School of Education, [2]University of Connecticut, Brain Imaging Research Center
Topic Area: ATTENTION: Other

F19 - Gaze cues of human avatars trigger joint attention in macaque monkeys
Ehsan Aboutorabi[1] (eaboutor@uwo.ca), Borna Mahmoudian[1], Julio Martinez-Trujillo[1]; [1]Robarts Research Institute, University of Western Ontario
Topic Area: ATTENTION: Other

F20 - Interoceptive attention and heartbeat detection: Highly aware but confused?
Chantal Trudel[1] (chantal.trudel@uwaterloo.ca), Joshua R. C. Budge[1], Kelly Monk[1], Prof. James Danckert[1]; [1]University of Waterloo
Topic Area: ATTENTION: Other

F21 - My Brain Matters: How Multimodal Intra-Individual Classifiers Reliably Predict Attention, While Inter-Individual Classifiers Do Not
Joshua Friedman[1] (jsf2167@columbia.edu), Shiang-Yun Chuko[2], Lily Penn[3], Hafsah Shaik[4], Conor Lee Shatto[2], John Thorp[2], Xianjue Huang[5], Hengbo Tong[5], Xiaofu He[6], Alfredo Spagna[2]; [1]Teachers College, Columbia University, [2]Department of Psychology, Columbia University, [3]Cognitive Science, Columbia University, [4]Quantitative Methods in the Social Sciences, Columbia University, [5]Department of Statistics, Columbia University, [6]Department of Psychiatry, Columbia University
Topic Area: ATTENTION: Other

F22 - Decoding EEG Correlates of Willed Overt Attention During Visual Search

John Nadra[1,2] (jnadra@ucdavis.edu), Jesse Bengson[2], Mingzhou Ding[3], George Mangun[1,2]; [1]University of California, Davis, [2]Center for Mind and Brain, Davis, CA, [3]University of Florida

Topic Area: ATTENTION: Spatial

F23 - Test for Inhibition hypothesis and EEG alpha rhythm in visual detection: preliminary findings

DR. Kyongje Sung[1], Mariam Aljaafari[1], Nusaibah Al Ameri[1], Claudine Habak[1]; [1]Emirates College for Advanced Education, Abu Dhabi, UAE

Topic Area: ATTENTION: Spatial

F24 - Cueing Spatial Attention Within Visual Mental Imagery and Perception

Ms. Natalie Baer[1] (nb2964@barnard.edu), Anya Nanda[2], Bingjie Kong[3], Yanji Du, Alfredo Spagna[4]; [1]Barnard College, Columbia University, [2]Teachers College, Columbia University, [3]Statistics Department, Columbia University, [4]Department of Psychology, Columbia University

Topic Area: ATTENTION: Spatial

F25 - High-Gamma oscillations in the SLF I network predict conscious perception of attended visual targets

Dr. Alfredo Spagna[1] (as5559@columbia.edu), Dr. Jianghao Liu[2], Dr. Paolo Bartolomeo[2]; [1]Department of Psychology, Columbia University, [2]Sorbonne Université, Institut du Cerveau - Paris Brain Institute - ICM, Inserm, CNRS, AP-HP, Hôpital de la Pitié-Salpêtrière, F-75013 Paris, France

Topic Area: ATTENTION: Spatial

F26 - Explicit Cueing Effects on Attention are Stable Across Days; Experience-Based Effects Are Not

Natalia Khodayari[1], Aaron Patterson[1], Adrian Li[1], Howard Egeth[1], Susan Courtney[1]; [1]Johns Hopkins University

Topic Area: ATTENTION: Spatial

F27 - Investigating the role of beta oscillations in top-down control

Francesca Nannetti[1] (lpxfn1@nottingham.ac.uk), Matias Ison[1], Domenica Veniero[1]; [1]The University of Nottingham, United Kingdom

Topic Area: ATTENTION: Spatial

F28 - The disengagement deficit in spatial attention: evidence from lesion-symptom mapping after focal brain injury

Sélim Coll[1] (selim.coll@unige.ch), Emilie Marti[1], Naz Doganci[1], Radek Ptak[1,2]; [1]Laboratory of Cognitive Neurorehabilitation, Faculty of medicine, University of Geneva, 1206 Geneva, Switzerland, [2]Division of Neurorehabilitation, University Hospitals of Geneva, Rue Gabrielle-Perret-Gentil 4, 1205 Geneva, Switzerland

Topic Area: ATTENTION: Spatial

F29 - Does Driving while Dual-Tasking Affect Landmark Memory in Young Adults?

Yadurshana Sivashankar[1] (ysivasha@uwaterloo.ca), Katherine Bak[2,3], Myra Fernandes[1], Jennifer Campos[2,3]; [1]University of Waterloo, [2]KITE-Toronto Rehabilitation Institute, [3]University of Toronto

Topic Area: ATTENTION: Spatial

F30 - Set up a searchlight on multiple object tracking: functional determinants of training intervention

Anna-Maria Felßberg[1,2] (anna.felsberg@med.ovgu.de), Christian Merkel[1,2], Nadine Schönemann[1,2], Mircea Ariel Schoenfeld[1,3], Jens-Max Hopf[1,2]; [1]Medical Faculty Otto von Guericke University, Magdeburg, [2]Leibniz Institute, Magdeburg, [3]Kliniken Schmieder, Heidelberg

Topic Area: ATTENTION: Spatial

F31 - Linking subcortical structures to behaviour, micro-saccades and neocortical oscillatory activity supporting cognitive functions

Tara Ghafari[1] (t.ghafari@bham.ac.uk), Mohammad Ebrahim Katebi[2], Sayed Mohammad Hossein Ghafari[3], Aliza Finch[1], Cecilia Mazzetti[1], Kelly Garner[4], Tjerk Gutteling[5], Ole Jensen[1]; [1]Centre for Human Brain Health, School of Psychology, University of Birmingham, UK, [2]School of Medicine, Tehran University of Medical Sciences, Tehran, Iran, [3]School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, [4]School of Psychology, University of New South Wales, Australia, [5]CERMEP-Imagerie du Vivant, MEG Department, Lyon, France

Topic Area: ATTENTION: Spatial

F33 - Enhanced Attention Near the Hands: Investigating Neural Activity in Area V2

Hamidreza Ramezanpour[1] (hamidram@yorku.ca), Devin Heinze Kehoe[1], Carolyn Perry[1], Mazyar Fallah[1,2]; [1]York University, Toronto, Ontario, Canada, [2]College of Biological Science, University of Guelph, Guelph, Ontario, Canada

Topic Area: ATTENTION: Spatial

F34 - Does rhythmic temporal coordination help to avoid conflicts between selective attention and working memory?

Amber McFerren[1] (amber_mcferren@urmc.rochester.edu), Paul Cavanah[1], Ian Fiebelkorn[1]; [1]University of Rochester

Topic Area: ATTENTION: Spatial

F35 - Perceptual and neural modulations by regularity of different information value

Joey Zhou[1] (joey.zhou@psych.ox.ac.uk), Sage Boettcher[1], Kia Nobre[1,2]; [1]University of Oxford, [2]Yale University

Topic Area: ATTENTION: Spatial

F36 - Reduced distractor filtering with age: Evidence from the distractor positivity ERP
Rosa E. Torres[1] (rt18dk@brocku.ca), Christine Salahub[2], Stephen M. Emrich[1], Karen L. Campbell[1]; [1]Brock University, [2]University Health Network
Topic Area: ATTENTION: Spatial

F37 - Does Luminance Produce Attentional Weighting?
Nathan Rosen[1] (rosenn@uoguelph.ca), Coleman Olenick[1], Heather Jordan[1], Mazyar Fallah[1]; [1]University of Guelph
Topic Area: ATTENTION: Spatial

F38 - Online vs. In-Person: Environment Familiarity Affects Experience-Based and Rule-Related Selective Attention Differently
Nathaniel Allen[1] (nallen25@jh.edu), Natalia Khodayari[1], Aaron Patterson[1], Adrian Li[1], Howard Egeth[1], Susan Courtney[1]; [1]Johns Hopkins University
Topic Area: ATTENTION: Spatial

F39 - Decoding ongoing thought patterns during incidental face recognition based on eye gaze behaviour
Nerissa Ho[1] (nerissa.ho@plymouth.ac.uk), Jonathan Smallwood[2]; [1]University of Plymouth, [2]Queen's University
Topic Area: ATTENTION: Spatial

F40 - Genetic Influence of Telomere Reverse Transcriptase on Cognition and Cortical Thickness in Aging
Anna Thompson[1] (act200004@utdallas.edu), Chen Gonen[1], Karen Rodrigue[1], Kristen Kennedy[1]; [1]University of Texas at Dallas
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F41 - Neurocomputational maturation of explore-exploit decision-making in adolescence and emerging adulthood.
Dr. Jeremy Hogeveen[1] (jhogeveen@unm.edu), Teagan Mullins[2], Ethan Campbell[3], Caitlin Enders[4], Cidney Robertson-Benta[5], Margaret Austin[6], Yiliang Zhu[7], Vincent Costa[8], Katie Witkiewitz[9]; [1]The University of New Mexico, [2]Oregon National Primate Research Center
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F42 - Relations between multiple dimensions of poverty and infant and toddler resting state brain networks using fNIRS
Kaja Jasińska[1] (kaja.jasinska@utoronto.ca), Hannah Whitehead[1], Fabrice Tanoh[2], Brooke Wortsman[1], Hassan Abdulrasul[1], Stephanie Bugden[3], Rose Kouassi Akissi Hestère[4], Sharon Wolf[5], Amy Ogan[6], Samuel Kembou[7]; [1]University of Toronto, [2]Université Pelefero Gon Coulibaly, [3]University of Winnipeg, [4]Université Felix Houphouet Boigny, [5]University of Pennsylvania, [6]Carnegie Mellon University, [7]Lausanne University
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F43 - Structural Brain Correlates in Offspring of Parents with and without Exceptional Longevity
Natalie Delpratt[1] (natalie.delpratt@einsteinmed.edu), Nir Barzilai[1], Sofiya Milman[1], Joe Verghese[1], Helena Blumen[1]; [1]Albert Einstein College of Medicine
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F44 - Visual evoked potential (VEP) mediates associations between early life stress and cognitive development
Lara Pierce[1] (ljpierce@yorku.ca), Charles Nelson[2,3]; [1]York University, [2]Boston Children's Hospital, [3]Harvard Medical School
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F45 - **Cognitive development reflects children's multidimensional** environments and individual-specific patterns of functional brain network organization
Arielle Keller[1] (arielleskeller@gmail.com), Tyler Moore[1], Audrey Luo[1], Elina Visoki[2], Mārtiņš Gatavinš[2], Alisha Shetty[1], Zaixu Cui[3], Yong Fan[1], Eric Feczko[4], Audrey Houghton[4], Hongming Li[1], Allyson Mackey[1], Oscar Miranda-Dominguez[4], Adam Pines[5], Russell Shinohara[1], Kevin Sun[1], Damien Fair[4], Theodore Satterthwaite[1], Ran Barzilay[2]; [1]University of Pennsylvania, [2]Children's Hospital of Philadelphia, [3]Chinese Institute for Brain Research, [4]University of Minnesota, [5]Stanford University
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F46 - Associations between socioeconomic status and EEG alpha power in monolingual and bilingual infants
Heala Maudoodi[1] (hmaudoodi@outlook.com), Charles Nelson[2,3], Lara Pierce[1]; [1]York University, [2]Boston Children's Hospital, [3]Harvard Medical School
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F47 - Associations between Music Sophistication and Memory: A Pilot Study in Healthy Older Adults
Naomi A Arnold-Nedimala[1] (narnoldn@umd.edu), Daniel D Callow[1,2], Gabriel Pena[1], J Carson Smith[1]; [1]University of Maryland, College Park, [2]Johns Hopkins University School of Medicine
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F48 - Examining the efficacy of combined tDCS and cognitive training on memory consolidation.
Domenico Tullo[1] (d.tullo@northeastern.edu), Yan Ge[2], Ariel Guicheng Tan[3], Quynh Theresa Do[4], Alexandru D. Iordan[5], John Jonides[5], Susanne M. Jaeggi[1,4]; [1]Northeastern University, [2]King's College London, [3]Harvard University, [4]University of California-Irvine, [5]University of Michigan
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F49 - Tertiary Sulci and Brain Aging: A Novel Approach to Understanding Cognitive Aging
Bryan Madero[1] (bmadero@uiowa.edu), Chris Oehler[1], Eliot Hazeltine[1], Michelle Voss[1]; [1]Universiy of Iowa
Topic Area: EXECUTIVE PROCESSES: Development & Aging

F50 - Functional connectivity between cortical memory networks and the hippocampus across development
Lena J. Skalaban[1] (lena.skalaban@temple.edu), Steven A. Martinez[1], Ashley D. Hawk[1], J. Benjamin Hutchison[2], Vishnu P. Murty[1]; [1]Temple University, [2]University of Oregon
Topic Area: LONG-TERM MEMORY: Development & Aging

F51 - Developing a method to improve memory in the home, overnight, suitable for helping people with age-related memory impairments
Erika M. Yamazaki[1], Nathan W. Whitmore[2], Ken A. Paller[1]; [1]Northwestern University, [2]Massachusetts Institute of Technology
Topic Area: LONG-TERM MEMORY: Development & Aging

F52 - Age-related differences in theta oscillations across development: insights from intracranial EEG and brain structure-function relationships
Zachariah Cross[1] (zachariah.cross@northwestern.edu), Samantha Gray[1], Adam Dede[1], Qin Yin[2,17], Parisa Vahidi[2], Elias Rau[3], Christopher Cyr[1], Ania Holubecki[1], Eishi Asano[2], Jack Lin[4], Olivia Kim McManus[5], Shifteh Sattar[5], Ignacio Saez[4,6], Fady Girgis[4,7], David King-Stephens[8,9], Peter Weber Weber[9], Kenneth Laxer[9], Stephan Schuele[1], Joshua Rosenow[1], Joyce Wu[1,10], Sandi Lam[1,10], Jeffrey Raskin[1,10], Kurtis Auguste[11,12], Edward Chang[11], Ammar Shaikhoun[13], Peter Brunner[14], Jarod Roland[14,], Rodrigo Braga[1], Robert Knight[16], Noa Ofen[2,17]; [1]Northwestern University, [2]Wayne State University, [3]Ruhr University Bochum, [4]University of California, Davis, [5]University of California, San Diego, and Rady Children's Hospital, [6]Ichan School of Medicine at Mount Sinai, [7]University of Calgary, [8]California Pacific Medical Center, [9]Yale University, [10]Ann & Robert H. Lurie Children's Hospital of Chicago, [11]University of California, San Francisco, [12]UCSF Benioff Children's Hospital, [13]Ohio State University and Nationwide Children's Hospital, [14]Washington University in St. Louis, [15]St. Louis Children's Hospital, [16]University of California, Berkeley, [17]University of Texas at Dallas
Topic Area: LONG-TERM MEMORY: Development & Aging

F53 - Unveiling Early-Stage Memory Deficits: Pattern Separation Impairments and Neural Dysfunction in Subjective Cognitive Decline
Juan Li[1] (lijuan@psych.ac.cn), Qinghe Zeng[1], Wei Tang[1], Xiaoyu Cui[1]; [1]Institute of Psychology, Chinese Academy of Sciences
Topic Area: LONG-TERM MEMORY: Development & Aging

F54 - Behavioral and neural correlates of visual statistical learning during n-back working memory in cognitively healthy young and older adults
Hwamee Oh[1], Shanti Mechery[1]; [1]Brown University
Topic Area: LONG-TERM MEMORY: Development & Aging

F55 - Sex and menopause status alter age associations with spatial context memory and white matter microstructure at midlife
Rikki Lissaman[1,2,3] (rikki.lissaman@gmail.com), Sricharana Rajagopal[2,3], Julia Kearley[1,2], Stamatoula Pasvanis[2,3], Maria Natasha Rajah[1,2,3]; [1]McGill University, [2]Douglas Research Centre, [3]Toronto Metropolitan University
Topic Area: LONG-TERM MEMORY: Development & Aging

F56 - An online, updated battery for executive control and episodic memory composites in young and older adults
Adelaide Jensen[1] (ajens098@uottawa.ca), Steven Carton[1], Olivia Ardilliez[1], Patrick S. R. Davidson[1]; [1]University of Ottawa
Topic Area: LONG-TERM MEMORY: Development & Aging

F57 - Individual Differences in Resting-State Salience Connectivity and Emotional Memory in the Cam-CAN Dataset
Michael DiCalogero[1] (mjd499@drexel.edu), Meghan D. Caulfield[2], Irene P. Kan[3], Evangelia G. Chrysikou[1]; [1]Drexel University, [2]Seton Hall University, [3]Villanova University
Topic Area: LONG-TERM MEMORY: Development & Aging

F58 - Aging and the Role of Prior Knowledge in Item-Level Neural Discrimination of Scene Images
Yuju Hong[1], Kana Kimura[1], Caitlin Bowman[1]; [1]University of Wisconsin-Milwaukee
Topic Area: LONG-TERM MEMORY: Development & Aging

F59 - The effects of repetition on young children's memory
Bailey Agard[1] (baileyagard@gmail.com), Amy Finn[1]; [1]University of Toronto
Topic Area: LONG-TERM MEMORY: Development & Aging

F60 - Children's darting (not diffuse) attentional spotlight shapes the content of their memories
Alexandra Decker[1] (adecker@mit.edu), Katherine Duncan[2], Amy Finn[2]; [1]MIT, [2]University of Toronto
Topic Area: LONG-TERM MEMORY: Development & Aging

F61 - Effects of Area Deprivation Index and individual-level socioeconomic status on cognitive and brain health among middle-aged and older adults
Kelsey Horn[1] (khorn4@binghamton.edu), Sophia Robles[1], Ian McDonough[1]; [1]Binghamton University
Topic Area: LONG-TERM MEMORY: Development & Aging

F62 - Aging and the Role of Prior Knowledge in Category-Level Neural Discrimination of Scene Images
Kana Kimura[1] (kkimura@uwm.edu), Yuju Hong[1], Caitlin R. Bowman[1]; [1]University of Wisconsin - Milwaukee
Topic Area: LONG-TERM MEMORY: Development & Aging

F63 - Hippocampal subfield volumes in periadolescent children: association with hippocampal dependent relational memory performance.

Abi Heller-Wight[1], Connor Phipps[1], Meghan Ramirez[1], Jennifer Sexton[1], Anna Wilhelm[1], Arthur Maerlender[2], Vishali Phatak[1], Daniel Murman[1], David Warren[1]; [1]University of Nebraska Medical Center, [2]University of Nebraska Lincoln

Topic Area: LONG-TERM MEMORY: Development & Aging

F64 - High-frequency Broadband Activity Increases during Memory Encoding and Retrieval in the Posterior Cingulate Cortex of Children and Adolescents

Joseph P. Kelly[1] (josephkelly1@northwestern.edu), Adam J. O. Dede[1], Samantha M. Gray[1], Qin Yin[2], Parisa Vahidi[2], Eishi Asano[2,3], Olivia Kim McManus[4], Shifteh Sattar[4], Jack J. Lin[5], Ammar Shaikhouni[6], Peter Brunner[7], Jarod L. Roland[7,8], Kurtis I. Auguste[9], Joyce Y. Wu[1,10], Sandi K. Lam[1,10], Jeffrey S. Raskin[1,10], Robert T. Knight[11], Noa Ofen[2], Elizabeth L. Johnson[1]; [1]Northwestern University Feinberg School of Medicine, [2]Wayne State University, and University of Texas at Dallas, [3]Children's Hospital of Michigan, [4]University of California, San Diego, and UCSD Rady Children's Hospital, [5]University of California, Davis, [6]Ohio State University, and Nationwide Children's Hospital, [7]Washington University in St. Louis, [8]St. Louis Children's Hospital, [9]University of California, San Francisco, and UCSF Benioff Children's Hospital, [10]Ann & Robert H. Lurie Children's Hospital of Chicago, [11]University of California, Berkeley

Topic Area: LONG-TERM MEMORY: Development & Aging

F65 - EEG Subsequent Memory Effects Capture Age-Related Cognitive Changes

Adam Broitman[1] (adamwb@sas.upenn.edu), Michael Kahana[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Development & Aging

F66 - Cognitive Intra-Individual Variability is Differentially Associated with Long-term Memory across APOE Allele Status Groups

Taylor Shackelford[1], Ivan Campbell[1], Vasilios Ikonomou[1]; [1]University of South Alabama

Topic Area: LONG-TERM MEMORY: Development & Aging

F67 - Age-related differences in the semantic N400 effect are unrelated to semantic benefits in episodic memory

Véronique Huffer[1] (veronique.huffer@uni-saarland.de), Regine Bader[1], Axel Mecklinger[1]; [1]Experimental Neuropsychology Unit, Saarland University

Topic Area: LONG-TERM MEMORY: Development & Aging

F68 - Curiosity effects sparked by unsuccessful memory recall in cognitive aging

Rachel Sargeson[1,2] (rsargeso@uwo.ca), Gregory Brooks[1,2], Nicole Anderson[4,5,6], Stefan Köhler[1,3]; [1]Western University, [2]Graduate Program in Neuroscience, [3]Department of Psychology, [4]Rotman Research Institute, Baycrest Health Sciences, [5]Departments of Psychology and Psychiatry, [6]University of Toronto

Topic Area: LONG-TERM MEMORY: Development & Aging

F69 - Effects of BDNF and COMT genetic polymorphism on rule-plus-exception category learning at two stages of the menstrual cycle

Shreeansha Bhattarai[1], Mateja Perovic[1], Cathlin Han[1], Janice Hou[1], Yao Chen[1], Michael Mack[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

F70 - BOLD repetition suppression effects are accompanied by EEG power differences during repeat object naming

Adrian W. Gilmore[1] (adrian.gilmore@nih.gov), Leonardo Claudino[1], Cassandra M. Levesque[1], Anna M. Agron[1], Peter J. Molfese[2], Vinai Roopchansingh[3], Michael D. Rugg[4], Stephen J. Gotts[1], Alex Martin[1]; [1]National Institute of Mental Health/NIH, [2]Center for Multimodal Neuroimaging, NIMH/NIH, [3]Functional MRI Facility, NIMH/NIH, [4]Center for Vital Longevity, UT Dallas

Topic Area: LONG-TERM MEMORY: Priming

F71 - Theta oscillations and memory performance effects of transcranial alternating current stimulation

Fenne M. Smits[1,2,3] (f.m.smits-2@umcutrecht.nl), Elbert Geuze[1,2], Dennis J.L.G. Schutter[3]; [1]Department of Psychiatry, UMC Utrecht Brain Center, University Medical Center Utrecht, The Netherlands, [2]Brain Research & Innovation Centre, Ministry of Defence, the Netherlands, [3]Experimental Psychology, Helmholtz Institute, Utrecht University, the Netherlands

Topic Area: METHODS: Electrophysiology

F72 - Waveform shape better explains the relationship between respiration and neural oscillations than cross-frequency coupling

Lee Eena Kosik[1] (ekosik@ucsd.edu), Bradley Voytek[1,2,3]; [1]University of California, San Diego, [2]Halıcıoğlu Data Science Institute, [3]Neurosciences Graduate Program

Topic Area: METHODS: Electrophysiology

F73 - Thalamo-centric causal connectivity mapping in human brain with intracranial electrical stimulation

Dian Lyu[1] (dl577@stanford.edu), Josef Parvizi[1]; [1]Department of Neurology and Neurological Sciences, Stanford University

Topic Area: METHODS: Electrophysiology

F74 - Using Electroencephalography (EEG) to Assess the Long-Term Effects of ACEs on Frontal Lobe-Mediated Cognition

Sinead Mukolo-Villegas[1] (sinead.mukolo-villegas@bruins.belmont.edu), Emma Sells[1], Michelle Johnson[1], Emily Stripling[1], Deya Rassul[1], Ashley Brooks[1], Hannah Johnson[1], Michael Oliver[1]; [1]Belmont University, Nashville, TN

Topic Area: METHODS: Electrophysiology

F75 - Oscillatory mechanisms of intrinsic brain networks
Youjing Luo[1] (youjingluo@gmail.com), Xianghong Meng[4], Fuyong Chen[3], Pengfei Xu[2]; [1]Department of Sport, Physical Education and Health, Hong Kong Baptist University, [2]Faculty of Psychology, Beijing Normal University, [3]The University of Hong Kong - Shenzhen Hospital, [4]Shenzhen General Hospital, Shenzhen University
Topic Area: METHODS: Electrophysiology

F76 - **Beyond Behavior: Using ERPs to Map Parenting Styles'** Influence on Selective Attention
Emily Stripling[1] (emily.stripling@bruins.belmont.edu), Ashley Brook[1], Michelle Johnson[1], Sinead Mukolo-Villegas[1], Deya Rassul[1], Emma Sells[1], Hannah Johnson[1], Michael Oliver[1]; [1]Belmont University
Topic Area: METHODS: Electrophysiology

F77 - Are Your International Classmates Really Smarter than You? The Relationship Between Bilingualism and Cognitive Performance
Michelle Johnson[1] (michelle.johnson@bruins.belmont.edu), Emily Stripling[2], Ashley Brook[3], Deya Rassul[4], Sinead Mukolo-Villegas[5], Hannah Johnson[6], Emma Sells[7], Michael Oliver[8]; [1]Belmont University
Topic Area: METHODS: Electrophysiology

F78 - Characterizing Spontaneous Thought and Conscious Experience at Rest with EEG Microstate k-mers
Shirley Pandya[1] (sxp1464@miami.edu), Anthony P. Zanesco[1], Amishi P. Jha[1]; [1]University of Miami
Topic Area: METHODS: Electrophysiology

F79 - Effects of Contextual Affect and Face Gaze Direction in Social Cognitive Tasks: A Rigorous Mass Univariate Re-Analysis of ERP Data
Seth Winward[1] (swinward@uwaterloo.ca), Roxane Itier[1]; [1]University of Waterloo
Topic Area: METHODS: Electrophysiology

F80 - Cue reactivity of non-dopamine neurons in the midbrain
Varun Nair[1] (vsn7@pitt.edu), Collin Lehmann[2], Khaled Moussawi[2]; [1]University of Pittsburgh, [2]UPMC
Topic Area: METHODS: Electrophysiology

F81 - Machine learning based prediction of mental fatigue based on eye-tracking and psychological data
András Matuz[1] (andras.matuz@aok.pte.hu), Gergő Jakóczi[1], Rebeka Gőgös[1], András Zsidó[1], Árpád Csathó[1]; [1]University of Pécs
Topic Area: METHODS: Electrophysiology

F82 - A cell type database for intrinsic electrophysiological features of NHP neurons collected from the lateral prefrontal and primary visual cortex.
Michael Feyerabend[1], Stefan Pommer[2], Michelle Jimenez Sosa[1], Sam Mestern[1], Jenifer Rachel[2], Julia Sunstrum[1], Felix Preuss[2], Sara Matovic[1], Meagan Wiedermann[1], Stefan Everling[1], David Lewis[3], Guillermo Gonzalez Burgos[3], Andreas Neef[4], Jochen Staiger[2], Wataru Inoue[1], Julio Martinez Trujillo[1]; [1]Schulich School of Medicine and Dentistry, University of Western Ontario, [2]Institute for Neuroanatomy, University of Göttingen, [3]Department of Psychiatry, University of Pittsburgh, [4]Göttingen Campus Institute for Dynamics of Biological Networks
Topic Area: METHODS: Electrophysiology

F83 - RESTING-STATE EEG COMPLEXITY ACROSS ADULT LIFESPAN SUGGESTS A SHIFT IN BRAIN NETWORK ARCHITECTURE IN MIDDLE-AGE
Matthew King-Hang Ma[1] (khmma@polyu.edu.hk), Manson Cheuk-Man Fong[1,2], William Shiyuan Wang[1,2]; [1]Research Centre for Language, Cognition and Neuroscience, Department of Chinese and Bilingual Studies, The Hong Kong Polytechnic University, [2]Research Institute for Smart Ageing, The Hong Kong Polytechnic University
Topic Area: METHODS: Electrophysiology

F84 - Ketamine and psilocybin differentially modulate the aperiodic component of the power spectral density
Milad Soltanzadeh[1,2] (milad.soltanzadeh@mail.utoronto.ca), Zheng Wang[2], Shona G. Allohverdi[1,2], André Schmidt[3], Franz X. Vollenweider[4], Andreea Diaconescu[1,2]; [1]University of Toronto, [2]Centre for Addiction and Mental Health (CAMH), Toronto, [3]University of Basel, [4]University Hospital of Psychiatry, Zurich
Topic Area: METHODS: Electrophysiology

F85 - EEG-based classification algorithms reveal differential neural processing of words and images
Neda R. Morakabati[1] (nmorakab@uci.edu), Alison S. Thiha[1], Eitan Schechtman[1]; [1]Department of Neurobiology and Behavior and Center for the Neurobiology of Learning and Memory, University of California, Irvine, CA, USA
Topic Area: METHODS: Electrophysiology

F86 - Dynamic network analysis of electrophysiological task data
Chetan Gohil[1] (chetan.gohil@psych.ox.ac.uk), Oliver Kohl[1], Rukuang Huang[1], Mats WJ van Es[1], Oiwi Parker Jones[1], Laurence Hunt[1], Andrew J Quinn[2], Mark W Woolrich[1]; [1]University of Oxford, [2]University of Birmingham
Topic Area: METHODS: Electrophysiology

F87 - Complexity Modulation with Naturalistic Narrative Stimuli for Prognosis of Acute Brain-Injured Patients
Hassan Al-Hayawi[1] (halhaya@uwo.ca), Geoffrey Laforge[2], Adrian Owen[3]; [1]Department of Psychology, Western University, London, ON, Canada, N6A 3K7, [2]Brain and Mind Institute, Western University, London, ON, Canada, N6A 3K7, [3]Department of Physiology and Pharmacology, Schulich School of Medicine and Dentistry, Western University, London, ON, Canada, N6A 3K7
Topic Area: METHODS: Electrophysiology

F88 - Validation of a low-cost EEG headband for language ERP research
Hannah Hayes[1] (hb3v@mtmail.mtsu.edu), Cyrille Magne; [1]Middle Tennessee State University
Topic Area: METHODS: Electrophysiology

F89 - Finding tau rhythms in EEG: an independent component analysis (ICA) approach
Matthew G. Wisniewski[1] (mgwisniewski@ksu.edu), Chelsea N. Joyner[1], Alexandria C. Zakrzewski[1], Scott Makeig[2]; [1]Kansas State University, [2]Swartz Center for Computational Neuroscience, University of California, San Diego
Topic Area: METHODS: Electrophysiology

F90 - Measures of hippocampus connectivity as predictors of Theta Burst Stimulation response
Andre Cornejo Marin[1,2,3] (andre.cornejo@mail.utoronto.ca), Chaim Katz[1,2,3,4], Ivan Skelin[1,3], Taufik Valiante[1,2,3,5,6]; [1]Krembil Brain Institute, Toronto Western Hospital (TWH), [2]University of Toronto, [3]Center for Advancing Neurotechnological Innovation to Application (CRANIA), [4]University of Calgary, [5]The KITE Research Institute, University Health Network, [6]Department of Neurosurgery, University Health Network
Topic Area: METHODS: Electrophysiology

F91 - Structure-function coupling of the video-watching EEG on the underlying anatomy
Venkatesh Subramani[1,2] (venkatesh.subramani@umontreal.ca), Giulia Lioi[2], Karim Jerbi[1], Nicolas Farrugia[2]; [1]Université de Montréal, Canada, [2]IMT Atlantique, France
Topic Area: METHODS: Electrophysiology

F92 - Preliminary comparative spectral analysis of EEG for two participants during a free recall working memory task
Martin Pham[1] (martindopham@gmail.com), Hrishikesh Pable[3], Robin Chhabra[2], Maryam Mehri Dehnavi[1], Amedeo D'Anguili[2]; [1]University of Toronto, [2]Carleton University, [3]Indian Institute of Technology Dharwad
Topic Area: METHODS: Electrophysiology

F93 - Not all-or-nothing: intracellular action potential waveform varies systematically with extracellular gamma oscillatory state
Blanca Martin[1] (bcmartinb@gmail.com), Pamela Riviere[2], Ryan Hammonds[3], Bradley Voytek[1,2,3,4]; [1]Neurosciences Graduate Program, UCSD, [2]Department of Cognitive Science, UCSD, [3]Halıcıoğlu Data Science Institute, UCSD, [4]Kavli Institute for Brain and Mind, UCSD
Topic Area: METHODS: Electrophysiology

F94 - Crossroads in the learning brain: neural overlap between arithmetic and phonological processing
Aymee Alvarez Rivero[1] (aymecita22@gmail.com), Lien Peters[2], Daniel Ansari[1]; [1]Western University, [2]Ghent University
Topic Area: OTHER

F95 - Distinct distributed networks support visual and linguistic mental imagery
Nathan Anderson[1] (nathan.anderson@northwestern.edu), Joseph Salvo[1], Maya Lakshman[1], Jonathan Smallwood[2], Rodrigo Braga[1]; [1]Northwestern University, [2]Queen's University
Topic Area: OTHER

F96 - Thalamic modulation of competition between large-scale brain networks revealed by intracranial EEG
Emily Davidson[1] (emily.davidson@mail.mcgill.ca), Zoe Lusk[2], Dian Lyu[2], Josef Parvizi[2], Nathan Spreng[1]; [1]McGill University, [2]Stanford University
Topic Area: OTHER

F97 - Mind spinning? How visual imagery affects visuospatial ability
Katja Gehr[1], Sinead Doogan[1], Carole Scherling[1], Michael Oliver[1]; [1]Belmont University
Topic Area: OTHER

F98 - Intracranial recordings reveal high-frequency activity in the human temporal-parietal cortex supporting non-literal language processing
Shweta Soni[1] (shwetanbrc@gmail.com), Jacqueline Overton[2], Julia W.Y. Kam[3,4], Penny Pexman[3], Akshay Prabhu[5], Nicholas Garza[5], Ignacio Saez[6], Fady Girgis[1,5]; [1]Dept. of Clinical Neurosciences, University of Calgary, [2]Depts. of Neuroscience and Psychiatry, Icahn School of Medicine, Mount Sinai, NY, [3]Dept. of Psychology, University of Calgary, [4]Hotchkiss Brain Institute, University of Calgary, [5]Dept. of Neurological Surgery, University of California, [6]Depts. of Neuroscience, Neurosurgery and Neurology, Icahn School of Medicine, Mount Sinai, NY
Topic Area: OTHER

F99 - Recurrent processing in Aphantasia
Corey Loo[1,2], Bradley Buchsbaum[1,2]; [1]University of Toronto, [2]Rotman Research Insitute, Baycrest
Topic Area: OTHER

F100 - Factors that Promote Resiliency to Cognitive Decline in People with Multiple Sclerosis
Elizabeth B. Bukoskey[1,2,3,4] (ebbukosk@buffalo.edu), Janet L. Shucard[1,2,3,4], David W. Shucard[1,2,3,4], Thomas J. Covey[1,2,3,4]; [1]Division of Cognitive and Behavioral Neurosciences, [2]Department of Neurology, & Neuroscience Program, [3]Jacobs School of Medicine and Biomedical Sciences, [4]University at Buffalo
Topic Area: OTHER

F101 - Firing properties of V1 and lateral of prefrontal cortex neurons in the common marmoset during naturalistic vision
Jarrod Dowdall[1], Juan Pimiento Caicedo[1], Mohamad Abbass[1,2], Susheel Vijayraghavan[1], Michael Feyerabend[1], Julio Martinez-Trujillo[1]; [1]Robarts Research Institute and Brain and Mind Institute, Western University, Canada, [2]Department of Clinical Neurological Sciences, London Health Sciences Centre, Western University, Canada
Topic Area: OTHER

F102 - SEEG-based Localization of the Epileptogenic Zone from Complexity Measures Using Machine Learning
Yorguin Mantilla[1,2,3] (yjmantilla@gmail.com), Jian Li[4], Dileep Nair[5], Karim Jerbi[3], Richard Leahy[6]; [1]Grupo Neuropsicología y Conducta (GRUNECO), Facultad de Medicina, Universidad de Antioquia, Medellín, Colombia, [2]Semillero de Investigación NeuroCo, Universidad de Antioquia, Facultad de Medicina & Facultad de Ingeniería, Universidad de Antioquia, Medellín, Colombia, [3]Cognitive and Computational Neuroscience Laboratory (CoCo Lab), University of Montreal, Quebec, Canada, [4]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital and Harvard Medical School, Charlestown, MA, USA; Center for Neurotechnology and Neurorecovery, Department of Neurology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA, [5]Charles Shor Epilepsy Center, Neurological Institute, Cleveland Clinic, Cleveland, OH, USA, [6]Signal and Image Processing Institute, University of Southern California, Los Angeles, United States
Topic Area: OTHER

F103 - The African Brain and Cognitive Development (AfriBCD) Network: A step towards better representation of neurocognition research in Africa
Anna Blumenthal[1] (anna.blumenthal@cervo.ulaval.ca), Taeko Bourque[2], Chika Ezeugwu[3], Adebunmi Oyekola[4], Bosiljka Milosavljevic[6], Sarah Lloyd-Fox[3], Caylee Cook[5], Catherine Draper[5], Isabelle Blanchette[1], Erfan Ghalibaf[7], Eunice Ndyareeba Murokore[8]; [1]Université Laval & Cervo Brain Research Center, [2]Carleton University, [3]University of Cambridge, [4]University of Ibadan, [5]University of the Witwatersrand, [6]Queen Mary University of London, [7]Université du Québec à Trois-Rivières, Trois-Rivières, Québec, [8]Kyambogo University, Uganda & Kabale University, Uganda
Topic Area: OTHER

F104 - Exploring Minimum Effective Usage Time for a Digital Neurotherapeutic
Tony J. Simon[1] (tsimon@akiliinteractive.com), Heather M. Shapiro[1,2], Andrew C Heusser[1]; [1]Akili Interactive, Inc, [2]Berkana Data
Topic Area: OTHER

F105 - Effect of planning dream content in a lucid dream induction study
Raphaëlle Semin[1], Rachel Raider[2], Remington Mallett[1], Wilfred R. Pigeon[3], Michelle Carr[1,3]; [1]University of Montreal, [2]National University, [3]University of Rochester
Topic Area: OTHER

F106 - Dissociable cognitive deficits associated with substantia **nigra and locus coeruleus degeneration in Parkinson's disease**
Sophie Sun[1] (sophie.sun@mail.mcgill.ca), Victoria Madge[1], Alain Dagher[1], D. Louis Collins[1], Madeleine Sharp[1]; [1]McGill University
Topic Area: OTHER

F107 - The relationship between EEG functional connectivity **during sleep and cognitive function in Parkinson's disease**
Soraya Lahlou[1] (soraya.lahlou@mail.mcgill.ca), Jean-Francois Gagnon[2,3], Julie Carrier[2,4], Madeleine Sharp[1]; [1]Montreal Neurological Institute, [2]Center for Advanced Research in Sleep Medicine, [3]Université du Québec à Montréal, [4]University of Montreal
Topic Area: OTHER

F108 - Hebbian Learning: A Kernel-Based Perspective
Yunqi Huang[1] (yunqi.huang@mail.utoronto.ca), Milad Lankarany[2], Gabriele D'Eleuterio[1]; [1]University of Toronto, [2]Krembil Research Institute
Topic Area: OTHER

F109 - Irritability and Neural Basis of Reward-Processing in ADHD
Prerona Mukherjee[1] (p.mukherjee@ucdavis.edu), Saeedeh Komijani[2], Ian Farnsworth[1,3], Dipak Ghosal[2], Julie B. Schweitzer[1]; [1]Department of Psychiatry and Behavioral Sciences, MIND Institute, University of California, Davis, [2]Department of Computer Sciences, University of California, Davis, [3]Center for Mind and Brain, University of California, Davis
Topic Area: OTHER

F110 - Exploring the neural basis of symbolic and non-symbolic **magnitude processing in rural school children from Cote d'Ivoire**
Hannah Whitehead[1] (hannah.whitehead@mail.utoronto.ca), Stephanie Bugden[2], Fabrice Tanoh[3], Sharon Wolf[4], Amy Ogan[5], Samuel Kembou[6], Kaja Jasińska[1,7]; [1]University of Toronto, [2]University of Winnipeg, [3]Université Péléfero Gon Coulibaly, [4]University of Pennsylvania, [5]Carnegie Mellon University, [6]Lausanne University, [7]Haskins Laboratories
Topic Area: OTHER

F111 - Task learning is subserved by a domain-general brain network
Jiwon Yeon[1,2], Alina Larson[3], Dobromir Rahnev[1], Mark D'Esposito[4]; [1]Georgia Institute of Technology, [2]Stanford University, [3]University of California, Santa Cruz, [4]University of Californania, Berkeley
Topic Area: PERCEPTION & ACTION: Other

F112 - Probing embodied cognition and cognitive-motor interference during walking while listening to words
Mengwan Xu[1,2,3] (meng.wan.xu@umontreal.ca), Elena Maslow[1,4,5], Agnès Zagala[1,2,3], Simone Dalla Bella[1,2,3], Simone Falk[1,2,3]; [1]University of Montreal, [2]International Laboratory for Brain, Music and Sound Research (BRAMS), Montreal, Canada, [3]Centre for Research on Brain, Language and Music (CRBLM), Montreal, Canada, [4]Institute for Phonetics and Speech Processing, Munich, Germany, [5]Ludwig Maximilian University of Munich
Topic Area: PERCEPTION & ACTION: Other

F113 - Mapping Invisible Barriers in the Human Entorhinal Cortex: Context Dependence and Previous Experience in Spatial Navigation
Omar Zeid[1] (ozeid3@gatech.edu), Qiliang He[1], Thackery Brown[1]; [1]Georgia Institute of Technology
Topic Area: PERCEPTION & ACTION: Other

F114 - Pet the Pain Away: Can Therapy Dogs Mitigate Pain Perception
Madison Lindsey[1], Alexandra Roach[1]; [1]University of South Carolina Aiken
Topic Area: PERCEPTION & ACTION: Other

F115 - Estimate Maintenance is Somewhat but not Fully Explained by Motor Cost of Updating
Julia Schirmeister[1] (jul.schirmeister@gmail.com), Britt Anderson[1]; [1]Waterloo University
Topic Area: PERCEPTION & ACTION: Other

F116 - Sensory Dysregulation in ASD: A high density electrophysiological study on the processing of tactile stimuli in ASD Children and Neurotypical Controls
Alia Yamin[1], Shlomit Beker[1], Emily Isenstein[2], Frantzy Acluche, John Butler[3], Sophie Molholm[1,2], John Foxe[1,2]; [1]Albert Einstein College of Medicine, [2]University of Rochester, [3]Technological University Dublin
Topic Area: PERCEPTION & ACTION: Other

F117 - Sex differences in spatial abilities extend beyond vision: Insights from the auditory Corsi test
Daniela Aguilar[1] (d.aguilarramirez@uleth.ca), Walter Setti[2], Monica Gori[2], Claudia L. Gonzalez[1]; [1]The University of Lethbridge, [2]U-Vip Unit, Italian Institute of Technology, Genoa, Italy
Topic Area: PERCEPTION & ACTION: Other

F118 - Deaf Gain: Evidence for enhanced beat perception to vibrotactile rhythms in Deaf individuals
Sean Gilmore[1] (sean.gilmore@torontomu.ca), Harley Glassman[1], Frank Russo[1]; [1]Toronto Metropolitan University
Topic Area: PERCEPTION & ACTION: Other

F119 - Neural underpinnings of sensory phenotypes in Autism
Ryan` Stevenson[1] (ryan.stevenson@uwo.ca), Matthew Kolisnyk[1], Bobby Stojanoski[2], EunJung Choi[1], Hayes Liang[1], Kathleen Lyons[3]; [1]University of Western Ontario, [2]University of Ontario Institute of Technology, [3]King's University
Topic Area: PERCEPTION & ACTION: Other

F120 - Visual mental imagery: an English-language assessment battery for different perceptual and imagery domains with clustered results
Zixin Liu[1], Tengyu Song[2], Kezia Chuaqui[3], Shambhavi Tomar[3], Kassey Chang[2], Natalie Baer[4], Rachel Frank[3], Lucas Manning[3], Jianghao Liu[5], Paolo Bartolomeo[5], Alfredo Spagna[3]; [1]Teachers College, Columbia University, [2]Department of Statistics, Columbia University, [3]Department of Psychology, Columbia University, [4]Department of Psychology, Barnard College, [5]Sorbonne Université, Institut du Cerveau - Paris Brain Institute - ICM, Inserm, CNRS, AP-HP, Hôpital de la Pitié-Salpêtrière, F-75013 Paris, France
Topic Area: PERCEPTION & ACTION: Other

F121 - Thalamocortical circuits naturally perform computationally efficient hierarchical clustering.
Charles Liu[1] (charles.liu.th@dartmouth.edu), Eli Bowen[1], Richard Granger[1]; [1]Dartmouth
Topic Area: PERCEPTION & ACTION: Other

F122 - The Cortico-Basal Ganglia-Cerebellar Pathways of Forming Beat- and Interval-based Temporal Predictions
Ana Luísa Pinho[1] (agrilopi@uwo.ca), Jörn Diedrichsen, Jessica Grahn; [1]Brain and Mind Institute, Department of Computer Science, Western University, [2]Brain and Mind Institute, Department of Computer Science, Department of Statistical and Actuarial Sciences, Western University, [3]Brain and Mind Institute, Department of Psychology, Western University
Topic Area: PERCEPTION & ACTION: Other

F123 - Rhythmic Timing in Continuous-time Recurrent Neural Networks
Manav Shardha[1], Matin Yousefabadi[1], Jonathan Cannon[1]; [1]McMaster University
Topic Area: PERCEPTION & ACTION: Other

F124 - Comparative fMRI reveals differences in the functional specializations of the visual cortex for animacy in dogs and humans
Dr Attila Andics[1] (attila.andics@gmail.com), Dr Raul Hernandez-Perez[1], Eszter Borbala Farkas[1], Dr Laura V. Cuaya[1], Eduardo Rojas-Hortelano[2], Dr Marta Gacsi[1,3]; [1]Department of Ethology, Eotvos Lorand University, Hungary, [2]National Autonomous University of Mexico, [3]HUN-RUN-ELTE Comparative Ethology Research Group
Topic Area: PERCEPTION & ACTION: Vision

F125 - Testing the predictive coding in visual perception using Multivariate EEG analyses
Olga Bulatova[1,2], Frida Printzlau[1,2], Adam Malitek[1,2], Keisuke Fukuda[1,2]; [1]University of Toronto, [2]University of Toronto Mississauga
Topic Area: PERCEPTION & ACTION: Vision

F126 - Natural action representations in the mind and brain
Diana C Dima[1,2] (ddima@uwo.ca), Jody C Culham[1], Yalda Mohsenzadeh[1,2]; [1]Western University, [2]Vector Institute for Artificial Intelligence
Topic Area: PERCEPTION & ACTION: Vision

F127 - A High-Resolution Study of Positive and Negative Retinotopic Codes in the Hippocampus
Peter A. Angeli[1] (peter.a.angeli@dartmouth.edu), Adam Steel[1], Edward H. Silson[2], Caroline E. Robertson[1]; [1]Dartmouth College, [2]University of Edinburgh
Topic Area: PERCEPTION & ACTION: Vision

F128 - **Lateral prefrontal 'gaze' signals encode future head and** hand motion during visually guided reach.
Veronica Nacher Carda[1] (vnacherc@yorku.ca), Parisa Abedi-Khoozani[1], Harbandhan Arora[1], Vishal Bharmauria[1], Xiaogang Yan[1], Hongying Wang[1], John Douglas Crawford[1]; [1]York University
Topic Area: PERCEPTION & ACTION: Vision

F129 - Perceiving a single face in a crowd: Insights from image reconstruction
Marco Sama[1] (marco.sama@mail.utoronto.ca), Moaz Shoura[1], Adrian Nestor[1], Jonathan Cant[1]; [1]University of Toronto Scarborough
Topic Area: PERCEPTION & ACTION: Vision

F130 - Pre-stimulus alpha oscillations contain representations of expected visual shapes
Dorottya Hetenyi[1] (dorottya.hetenyi.21@ucl.ac.uk), Peter Kok[1]; [1]Wellcome Centre for Human Neuroimaging, University College London
Topic Area: PERCEPTION & ACTION: Vision

F131 - Is attentional capture by a color singleton modulated by visuo-motor associations?
Eva Masse[1,2,3], Anna Montagnini[2,3], Stefania Ficarella[1]; [1]ONERA - The French Aerospace Lab, Salon-de-Provence, France, [2]Institut de Neurosciences de la Timone - CNRS, Marseille, France, [3]Aix-Marseille University, Marseille, France
Topic Area: PERCEPTION & ACTION: Vision

F132 - Average Sound Level can be Extracted from Visual Scene Ensembles without Reliance on Visual Contrast
Vignash Tharmaratnam[1], Dirk Bernhardt-Walther[2], Jonathan S. Cant[1]; [1]University of Toronto Scarborough, [2]University of Toronto
Topic Area: PERCEPTION & ACTION: Vision

F133 - Average Temperature can be Extracted from Visual Scene Ensembles without Reliance on Contrast
yuanze huang[1] (davidhyz0806@gmail.com), Vignash Tharmaratnam[1], Dirk walther[2], Jonathan Cant[1]; [1]Univeristy of Toronto Scarborough, [2]University of Toronto
Topic Area: PERCEPTION & ACTION: Vision

F134 - Memory mechanisms associated with serial dependency in visuomotor integration
Esaú Ventura Pupo Sirius[1] (esau.sirius@gmail.com), Veronica Casagrande[1], Raymundo Machado de Azevedo Neto[2], André Mascioli Cravo[1]; [1]Center for Mathematics Computing and Cognition, UFABC, São Bernardo/SP., [2]Brain Institute, Hospital Israelita Albert Einstein (InCe), São Paulo/SP
Topic Area: PERCEPTION & ACTION: Vision

F135 - The effect of affect: modulation of facial expression representations by affective scenes
Shaofeng Liu[1] (shawnliu7@gmail.com), Tyler Roberts[1], Jonathan Cant[1], Adrian Nestor[1]; [1]University of Toronto
Topic Area: PERCEPTION & ACTION: Vision

F136 - The Neural Representation of Other-Race Faces
Yong Zhong Liang[1] (yongzhong.liang@mail.utoronto.ca), Moaz Shoura[1], Marco Sama[1], Arijit De[1], Adrian Nestor[1]; [1]University of Toronto
Topic Area: PERCEPTION & ACTION: Vision

F137 - Ventral-Dorsal Stream Interactions Supporting Functional Object Grasps
Emefa Akwayena[1] (eakwayen@andrew.cmu.edu), Emily Gomez, Cheryl Wang, Marty Armstrong, Steven Tang, Tijana Slepcev, Bradford Mahon[1,2]; [1]Carnegie Mellon University, [2]University of Rochester
Topic Area: PERCEPTION & ACTION: Vision

F138 - Modularity of Brain Networks for Egocentric and Allocentric Memory-guided Reaching.

Lina Musa[1,3] (lmusa09@yorku.ca), Amirhossein Ghaderi[1], Ying Chen[6], J. Douglas Crawford[1-5]; [1]Centre for Vision Research, York University, Toronto, ON, Canada, [2]Vision Science to Applications (VISTA), York University, Toronto, ON, Canada, [3]Department of Psychology York University, Toronto, ON, Canada, [4]Department of Biology York University, Toronto, ON, Canada, [5]Department of Kinesiology York University, Toronto, ON, Canada, [6]Centre for Neuroscience Studies, Queen's University

Topic Area: PERCEPTION & ACTION: Vision

F139 - Illusory Contour Integration in Children with Autism Spectrum Disorder and Their Unaffected Siblings

Dennis Cregin[1], Tringa Lecaj[1], Shlomit Beker[1], Pierfilippo De Sanctis[1], John Foxe[1,2], Sophie Molholm[1]; [1]Cognitive Neurophysiology Laboratory, Albert Einstein College of Medicine, [2]Cognitive Neurophysiology Laboratory, University of Rochester School of Medicine and Dentistry

Topic Area: PERCEPTION & ACTION: Vision

F140 - Cortico-cortical recurrent processes mediate convex figure context effects and cortico-thalamic recurrent processes resolve figure-ground ambiguity

Mary A Peterson[1] (mapeters@arizona.edu), Elizabeth S Campbell[1]; [1]University of Arizona

Topic Area: PERCEPTION & ACTION: Vision

F141 - Deciphering Neural Choreography: Theta and High-Alpha Phase-Locking Dynamics Unveil Face Perception in Ambiguous Stimuli

Nan Liu[1], Ralph Weidner[1], Qi Chen[2], Gereon Fink[1,4], Silvia Daun[1,3]; [1]Forschungszentrum Jülich, Jülich, Germany, [2]South China Normal University, Guangzhou, China, [3]University of Cologne, Cologne, Germany, [4]University Hospital Cologne, University of Cologne, Cologne, Germany

Topic Area: PERCEPTION & ACTION: Vision

F142 - Redundant target effects in the hemianopic field of patients with primary visual cortex lesions

Jessica Smith[1], Kel-Li Chen[1], Ayat Karim[1], Bradford Mahon[1]; [1]Carnegie Mellon University

Topic Area: PERCEPTION & ACTION: Vision

F143 - Neuronal population activity related to inhibition-of-return saccadic phenomena

Ivan Skelin[1,2] (ivan.skelin@uhn.ca), Marco Istasy[3], Chaim Katz[4], Qian Chu[1,5,6,7], Taufik Valiante[1,2,8,9,10,11,12]; [1]Krembil Brain Institute, Toronto Western Hospital (TWH), [2]Center for Advancing Neurotechnological Innovation to Application (CRANIA), Toronto, [3]Faculty of Medicine, University of Toronto, [4]Faculty of Medicine, University of Calgary, [5]Max Planck - University of Toronto Center for Neural Science and Technology, [6]University of Toronto, [7]Max Planck Institute for Empirical Aesthetics, [8]Electrical and Computer Engineering, University of Toronto, [9]The KITE Research Institute, University Health Network, Toronto, [10]Institute of Biomedical Engineering, University of Toronto, [11]Institute of Medical Sciences, University of Toronto, [12]Division of Neurosurgery, Department of Surgery, University of Toronto

Topic Area: PERCEPTION & ACTION: Vision

F144 - Mapping neural similarity spaces for scenes with generative adversarial networks

Gaeun Son[1] (gaeun.son@mail.utoronto.ca), Dirk B. Walther[1], Michael L. Mack[1]; [1]University of Toronto

Topic Area: PERCEPTION & ACTION: Vision

F145 - Peripheral awareness correlates with performance in the random dot motion task

Kenneth Shinozuka[1,2] (kenneth.shinozuka@psych.ox.ac.uk), Sama Alsewaidi[3], Maycee Lue McClure[3], Milton Lim[4], Chelsey Fasano[5], Alfredo Spagna[3]; [1]Centre for Eudaimonia and Human Flourishing, University of Oxford, [2]Department of Psychiatry, University of Oxford, [3]Department of Psychology, Columbia University in the City of New York, [4]Department of Statistics, Columbia University in the City of New York, [5]Teachers College, Columbia University in the City of New York

Topic Area: PERCEPTION & ACTION: Vision

F146 - Relating variability in scalp EEG to variability in cortical morphology

Sara Chaparian[1] (sarach@yorku.ca), Jeff Schall, Peter J. Kohler; [1]York University

Topic Area: PERCEPTION & ACTION: Vision

F147 - Neural representation of discrete and continuous ratios: An fMRI study

Rebekka Lagacé-Cusiac[1] (rlagacec@uwo.ca), Jessica Grahn[1], Daniel Ansari[1]; [1]Brain and Mind, Western University

Topic Area: PERCEPTION & ACTION: Vision

F148 - EEG criticality measures of excitation/inhibition balance show that plasticity regulation during wakefulness is distinct from during sleep

Aaron Cochrane[1] (aaron_cochrane@brown.edu), Theodore LaBonte-Clark[1], Kiley Haberkorn[1], Takeo Watanabe[1], Yuka Sasaki[1]; [1]Brown University

Topic Area: PERCEPTION & ACTION: Vision

F149 - Category learning induces transfer of perceptual learning by steering Feature-Based Attention
Luke Rosedahl[1] (luke_rosedahl@brown.edu), Thomas Serre[1], Takeo Watanabe[1]; [1]Brown University
Topic Area: PERCEPTION & ACTION: Vision

F150 - Comparative analysis of optimization trends in dorsal and ventral stream using computation models
Tahsin Reza[1] (tahsin.reza@mail.utoronto.ca), Steven Luo[1], Gursimar Singh[1], Jessica Tang[1], Rohan Jain[1], Matthias Niemeier[1,2]; [1]University of Toronto, [2]Centre for Vision Research, York University
Topic Area: PERCEPTION & ACTION: Vision

F151 - How does categorization reshape representational geometry in the brain?
J. Brendan Ritchie[1], Maleah J. Carter[1], Peter J. Molfese[1], Micah Holness[1], Vinai Roopchansingh[1], Christopher I. Baker[1]; [1]Laboratory of Brain and Cognition, National Institute of Mental Health
Topic Area: PERCEPTION & ACTION: Vision

F152 - Pupil behaviors in body dysmorphic disorder: an exploration of square wave jerks and pupil diameter
Jessica Qian[1], Joel P. Diaz-Fong[1,2,3], Bea Calahong[1], Gerhard Hellemann[4], Jamie D. Feusner[1,2,3,4,5]; [1]Centre for Addiction and Mental Health, Ontario, Canada, [2]University of Toronto, Ontario, Canada, [3]Semel Institute for Neuroscience & Human Behavior, University of California Los Angeles, California, USA, [4]University of Alabama, Birmingham, Alabama, USA, [5]Karolinska Institutet, Stockholm, Sweden
Topic Area: PERCEPTION & ACTION: Vision

F153 - A quick glance: Associations between body dysmorphic concerns and eye gaze behaviour during facial image viewing
Bea Calahong[1] (bea.calahong@camh.ca), Joel P. Diaz-Fong[1,2,3], Jessica Qian[1], Sameena Karsan[1], Gerhard Hellemann[4], Jamie D. Feusner[1,2,3,5]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]University of California Los Angeles, [4]University of Alabama, [5]Karolinska Institutet
Topic Area: PERCEPTION & ACTION: Vision

F154 - Mapping contour properties across visual cortex
Seohee Han[1] (seohee.han@mail.utoronto.ca), Dirk B. Walther[1]; [1]University of Toronto
Topic Area: PERCEPTION & ACTION: Vision

F155 - Neural Representations of face recognition in biological and artificial systems: Insights from MEG and CNNs
Hamza Abdelhedi[1,2,4] (hamza.abdelhedi@umontreal.ca), Shahab Bakhtiari[1,3], Karim Jerbi[1,2,3,4]; [1]Université de Montréal, [2]Computer Science Department, Université de Montréal, [3]Psychology Department, Université de Montréal, [4]Mila - Quebec AI Institute
Topic Area: PERCEPTION & ACTION: Vision

F156 - Perceiving natural images may consume less cognitive resources: evidence from image memorability, edge magnitudes, and spectral content
Nakwon Rim[1], Omid Kardan[2], Sanjay Krishnan[1], Wilma A. Bainbridge[1], Marc G. Berman[1]; [1]University of Chicago, [2]University of Michigan
Topic Area: PERCEPTION & ACTION: Vision

F157 - Layer-dependent feedback in a grasping neural network increases robustness to noise
Romesa Khan[1], Hongsheng Zhong[1], Jack Cai[1], Matthias Niemeier[1,2,3]; [1]University of Toronto, [2]Centre for Vision Research, York University, [3]Vision: Science to Applications, York University
Topic Area: PERCEPTION & ACTION: Vision

F158 - Beyond Object recognition : The Role of Visual-Semantic Representations in Understanding the Ventral Visual Stream
Siddharth Suresh[1] (siddharth.suresh@wisc.edu), Kushin Mukherjee[1], Timothy Rogers[1]; [1]University of Wisconsin-Madison
Topic Area: PERCEPTION & ACTION: Vision

F159 - Moderate-to-high intensity group exercise improves cognitive function of stroke survivors
Dr Se Hee Jung[1]; [1]Department of Rehabilitation Medicine, Seoul National University Boramae Medical Center, [2]Department of Rehabilitation Medicine, Seoul National University College of Medicine
Topic Area: OTHER

SHERATON
Centre Toronto Hotel

FLOOR PLAN

Meeting Facilities

- M Birchwood Ballroom
- M Birchwood Foyer
- M Carleton
- M Cedar
- M Chestnut East & West
- 2 Churchill
- 2 Churchill Foyer
- 2 City Hall
- 2 Civic Ballroom
- 2 Civic Foyer
- 4 Danforth
- 4 Davenport
- 2 Dominion Ballroom
- 2 Dominion Foyer
- 2 Dufferin
- 2 Elgin
- 4 Forest Hill
- LC Grand Ballroom
- LC Grand Ballroom Foyer
- 2 Huron
- 2 Kenora
- 4 Kensington
- 2 Kent
- 4 Leaside
- M Linden
- 2 Mackenzie
- M Maple East & West
- M Norfolk
- LC Osgoode Ballroom
- LC Osgoode Foyer
- M Oxford
- M Peel
- M Pine East & West
- 2 Provincial Ballroom
- 2 Roosevelt
- 4 Rosedale
- LC Sheraton Hall A–F
- 2 Simcoe
- M Spruce North & South
- C Vide
- C VIP Room
- 2&M Waterfall Garden
- 2 Wentworth
- M Willow East, Centre & West
- M Willow Foyer
- M York
- 4 Yorkville East & West

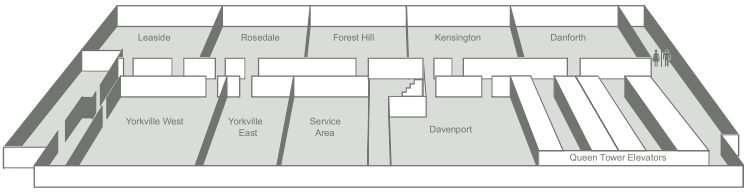
Hotel Services

- L ATM
- L Baggage Room
- L Bell Desk
- L BnB Restaurant & Bar
- L Computer Lounge
- L Concierge & Tour Desk
- C Convention Registration
- C Currency Exchange
- C Food Court
- L Front Desk
- L Link Café
- L Marriott Bonvoy Reception
- L Motor Court
- C Parking (City Hall Underground Lot)
- C PATH Underground Network
- C PSAV Presentation Audio Visual Services
- L Quinn's Steakhouse & Irish Bar
- LC Receiving/Loading Dock
- C Security
- L&C Sheraton Shops
- L TDI Business Centre
- L Valet Parking
- LC Vide Office
- C VIP Room
- 2&M Waterfall Garden

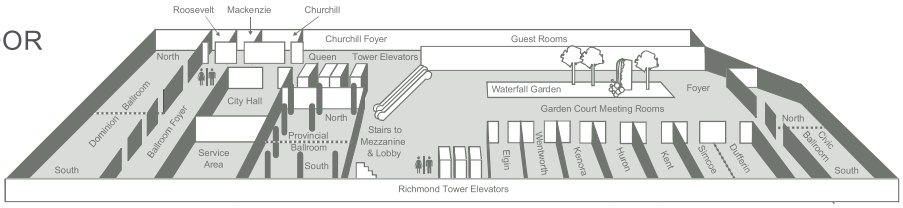
Service Symbols

- $ ATM
- Coatcheck
- Food Court
- Ⓟ Parking (City Hall Lot)
- Restaurants
- Washrooms
- Wheelchair Accesible Elevator

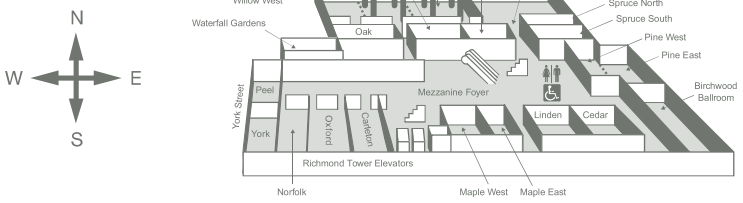
4th FLOOR



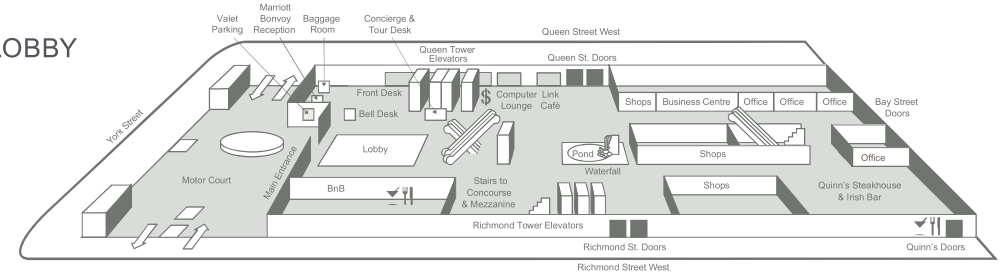
2nd FLOOR



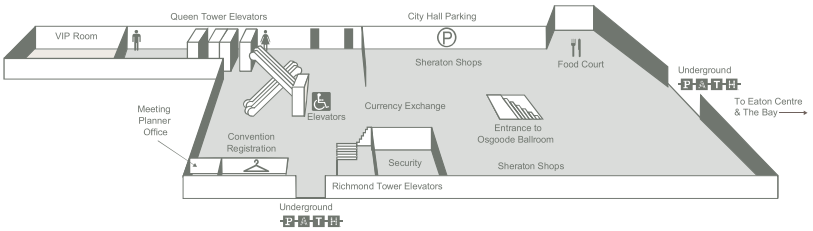
MEZZANINE



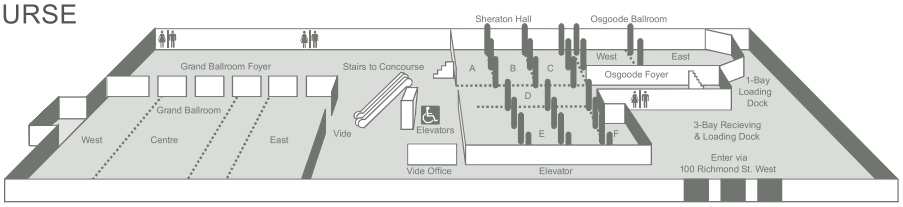
LOBBY



CONCOURSE



LOWER CONCOURSE



SHERATON CENTRE TORONTO HOTEL
TORONTO, ONTARIO

123 Queen Street West
Toronto, Ontario M5H 2M9
T 416 361 1000 | marriott.com/yyztc