CNS2025 Boston

March 29–April 1 | 2025

Cognitive Neuroscience Society

32nd Annual Meeting, March 29 - April 1, 2025
Sheraton Boston Hotel, Boston, MA, USA

2025 Annual Meeting Program

Contents

Cognitive Neuroscience Society
c/o Center for the Mind and Brain
267 Cousteau Place, Davis, CA 95616
www.cogneurosociety.org

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Schedule Overview

Saturday, March 29, 2025

9:30 am - 6:30 pm	On-site Registration & Pre-Registration Check-In, *Grand Ballroom Foyer*
10:30 am - 12:00 pm	Data Blitz Session 1, *Grand Ballroom* Data Blitz Session 2*, Independence Ballroom* Data Blitz Session 3*, Constitution Ballroom A* Data Blitz Session 4*, Constitution Ballroom B*
12:00 - 1:00 pm	Workshop **–** Platforms, paradigms, and pipelines for characterizing multisensory development in children, Chair: Mark Wallace, *Grand Ballroom*
12:00 - 1:00 pm	Workshop **–** Communicating Cognitive Neuroscience Concepts for Maximum Impact, Chair: Charan Ranganath, *Independence Ballroom*
12:00 - 1:00 pm	Lunch Break (On your own)
12:00 - 2:00 pm	Exhibitor Check-In, *Grand Ballroom Foyer*
12:30 - 1:00 pm	Poster Session A Set-Up*, Back Bay Ballroom/Republic Ballroom*
1:00 - 3:00 pm	Rising Stars Session*, Constitution Ballroom A*
3:00 - 5:00 pm	Poster Session A*, Back Bay Ballroom/Republic Ballroom*
3:00 - 5:15 pm	Exhibits Open*, Back Bay Ballroom/Republic Ballroom*
3:30 - 4:00 pm	Coffee Service*, Grand Ballroom Foyer*
5:00 - 5:15 pm	Poster Session A Take-Down*, Back Bay Ballroom/Republic Ballroom*
5:00 - 6:00 pm	Opening Ceremonies & Keynote Address – Adolescent Brain Development: The Importance of Connections, Adriana Galván, Ph.D., University of California, Los Angeles, *Grand Ballroom*
5:15 pm - 7:30 am	Exhibit Hall Closed for the Day – No Entry
6:00 - 7:00 pm	Welcome Reception, *Grand Ballroom Foyer*

Sunday, March 30, 2025

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session B Set-Up Only, *Back Bay Ballroom/Republic Ballroom*
7:30 am - 6:30 pm	On-site Registration & Pre-Registration Check-In,*Grand Ballroom Foyer*
8:00 - 8:30 am	Continental Breakfast, *Grand Ballroom Foyer*
8:00 - 10:00 am	Poster Session B, *Back Bay Ballroom/Republic Ballroom*
8:00 am - 7:15 pm	Exhibits Open, *Back Bay Ballroom/Republic Ballroom*
10:00 am - 12:00 pm	Invited Symposium 1 **–** Cognitive functions of replay. Anna Schapiro, Chair, *Grand Ballroom* o Talk 1: Replay for transformation and integration, Anna Schapiro o Talk 2: Unbalanced training regimes, task representations, and the function of replay, Matthijs van der Meer o Talk 3: Prioritized replay: theory and practice, Nathaniel Daw o Talk 4: Building internal models during periods of rest and sleep, Helen Barron
10:00 am - 12:00 pm	Invited Symposium 2 **–** Advances in lesion methods: Mapping, plasticity, disconnectomics, and more. Lesley Fellows, Chair, *Constitution Ballroom* o Talk 1: Using Human Brain Lesions to Infer Function: Entering a New Era, Chris Rorden o Talk 2: Evolution of lesion-behavior relationships over time: Evidence from acute to chronic stroke, Erin Meier o Talk 3: Mapping the effects of brain lesions on neurotransmitter circuits, Pedro Nascimento Alves o Talk 4: The emergent symptoms of the disconnected brain, Michel Thiebaut de Schotten
11:30 - 11:45 am	Poster Session B Take-Down, *Back Bay Ballroom/Republic Ballroom*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	Workshop **–** Integrating biosensors with XR: capturing brain and behavioural data in naturalistic settings, Chair: Kyla Alsbury-Nealy, *Grand Ballroom*

1:30 - 3:30 pm	Symposium Session 1 – Creating the structure of ongoing experience. James Antony, Chair, *Grand Ballroom* o Talk 1: People as anchors for event representations and memories, Zachariah Reagh o Talk 2: Shared and individual encoding mechanisms for making sense of complex narratives, Emily Finn o Talk 3: Behavioral and neural effects of causal structure bridging across experiences, James Antony o Talk 4: Causality and agency in memory for natural events, Janice Chen o Q&A with the Audience
1:30 - 3:30 pm	Symposium Session 2 – New directions in scientific communication in cognitive neuroscience. William Matchin, Chair, Brad Postle, Co-Chair, *Independence Ballroom* o Talk 1: The first year of transition from NeuroImage to Imaging Neuroscience, Anastasia Yendiki o Talk 2: The "publish, review, curate" model at eLife: How's it working out?, Michael Frank o Talk 3: Gender citation balance reporting four years later: Is it working?, Jacqueline Fulvio o Talk 4: JoCNForum: a single archival platform for discussion of cognitive neuroscience, William Matchin o Q&A with the Audience
1:30 - 3:30 pm	Symposium Session 3 – Healing While Sleeping? How sleep shapes our emotional experiences. Xiaoqing Hu, Chair, Jessica Payne, Co-Chair, *Constitution A* o Talk 1: Stress Interacts with Sleep to Selectively Consolidate Negative Emotional Memory, Jessica Payne o Talk 2: The Differential Impact of Sleep Loss and Recovery Sleep on Memory for Emotional and Neutral Scene Components, Tony J. Cunningham o Talk 3: Phase precise REM Theta enhancement modulates emotional memory recall, Lucia Talamini o Talk 4: Updating emotional memories during human sleep, Xiaoqing Hu o Q&A with the Audience
1:30 - 3:30 pm	Symposium Session 4 – Deploying Attention in Real-World Learning Environments within Individual Minds: Contributions from Precision Imaging and Educational Neuroscience. Bruce McCandliss, Chair, *Constitution B* o Talk 1: Precision neuroscience for studies of individual differences in youth environments and cognition, Arielle Keller o Talk 2: Precision Imaging EEG Approaches Unveil Selective Auditory Attention in Middle School Kids, Adi Korisky o Talk 3: The effect of ecological disturbances on neural responses and speech tracking of the teacher during real-life classroom learning, Elana Zion-Golumbic o Talk 4: Attentional fluctuations in real-world learning, Ido Davidesco o Q&A with the Audience
3:30 - 4:00 pm	Coffee Service, *Grand Ballroom Foyer*
3:30 - 4:00 pm	Poster Session C Set-Up, *Back Bay Ballroom/Republic Ballroom*
4:00 - 5:00 pm	The 30th Annual George A. Miller Prize in Cognitive Neuroscience Lecture, The Hidden Benefits of Sleep and Potential Pathways for Amplifying Them, Ken Paller, Ph.D., Northwestern University*, Grand Ballroom*
5:00 - 7:00 pm	Poster Session C, *Back Bay Ballroom/Republic Ballroom*
7:00 - 7:15 pm	Poster Session C Take-Down, *Back Bay Ballroom/Republic Ballroom*
7:15 pm - 7:30 am	Exhibit Hall Closed for the Day – No Entry
8:00 - 11:00 pm`	Pavlov's Dogz, *Cantab Lounge Underground located at 738 Massachusetts Ave, Cambridge, MA 02139*

Monday, March 31, 2025

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session D Set-Up Only, *Back Bay Ballroom/Republic Ballroom*
8:00 - 8:30 am	Continental Breakfast, *Grand Ballroom Foyer*
8:00 - 10:00 am	Poster Session D, *Back Bay Ballroom/Republic Ballroom*
8:00 am - 5:00 pm	Exhibits Open, *Back Bay Ballroom/Republic Ballroom*
8:00 am - 5:30 pm	On-site Registration & Pre-Registration Check-In, *Grand Ballroom Foyer*
8:30 - 10:00 am	Communications Open House, *Clarendon*
10:00 am - 12:00 pm	Symposium Session 5 – Nature and nurture revisited: new insights about core knowledge and visual development across cognitive systems. Gabriel Kreiman, Chair, Elisabetta Versace, Co-Chair, *Grand Ballroom*

	o Talk 1: The combinatorial advantage of predispositions, Elisabetta Versace o Talk 2: Through a glass, darkly: Approximations, hacks, and workarounds in intuitive physics and imagination, Tomer Ullman o Talk 3: The efficient coding of visual textures in rats, chicks and human infants, Judit Gervain o Talk 4: MAPS->SPAM->MAPS, Marge Livingstone o Q&A with the Audience
10:00 am - 12:00 pm	Symposium Session 6 **–** Uncertainty Resolution across Learning, Memory, and Decision-making. Vishnu Murty, Chair, *Independence Ballroom* o Talk 1: Sequential decisions adapt to uncertainty within an environment and across the lifespan, Aaron M Bornstein o Talk 2 Cortico-striatal circuits for goal updating, Ian C Ballard o Talk 3: Identifying between- and within-person factors that moderate information processing in social uncertainty, Chelsea Helion o Talk 4: Uncertainty resolution during hypothesis testing dynamically alters episodic memory, Vishnu P Murty o Q&A with the Audience
10:00 am - 12:00 pm	Symposium Session 7 **–** Interactions between the brain's visual and memory systems: recent advances and new perspectives. Adam Steel, Chair, Serra Favila, Co-Chair, *Constitution A* o Talk 1: Perceiving the past – how do vision and memory work together?, Brett Foster o Talk 2: Transformations between perceptual and mnemonic activity in the human visual system, Serra Favila o Talk 3: Retinotopic coding is a ubiquitous scaffold organizing the brain's internal and external information processing, Adam Steel o Talk 4: How ongoing spontaneous brain activity influences conscious visual perception, Biyu He o Q&A with the Audience
10:00 am - 12:00 pm	Symposium Session 8 **–** Memory in the palm of your hand: New smartphone techniques for measuring emotion and memories of real-life experiences. Elizabeth Goldfarb, Chair, *Constitution B* o Talk 1: Leveraging ecological momentary assessment to capture memory for clinically relevant experiences, Elizabeth Goldfarb o Talk 2: Characterizing the impact of a night of sleep and dreaming on memory for real-life experiences, Morgan Barense o Talk 3: Real-life impact of experiential novelty on memory and mood, Lila Davachi o Talk 4: Using a novel web app to examine dynamic emotional states and their relation to memory and symptoms of psychopathology, David Clewett o Q&A with the Audience
11:30 - 11:45 am	Poster Session D Take-Down, *Back Bay Ballroom/Republic Ballroom*
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	Workshop **–** Interactive career development workshop, Bradley Voytek, Chair, *Grand Ballroom*
12:15 - 1:15 pm	Workshop **–** Navigating this challenging time, Audrey Duarte and Brad Postle, Co-Chairs of CNS Community Engagement and Support Committee, *Independence Ballroom*
1:30 - 2:00 pm	Poster Session E Set-Up, *Back Bay Ballroom/Republic Ballroom*
1:30 - 2:00 pm	Young Investigator Award Lecture 1 **–** One stimulus, many interpretations: The neuroscience of subjective experience, Emily S. Finn, *Constitution Ballroom*
2:00 - 2:30 pm	Young Investigator Award Lecture 2 **–** Multi-Area, high-Density, Laminar Neurophysiology (MaDeLaNe) recordings suggest Predictive Coding is implemented via Predictive Routing, André M. Bastos, *Constitution Ballroom*
2:30 - 4:30 pm	Poster Session E, *Back Bay Ballroom/Republic Ballroom*
3:30 - 4:00 pm	Coffee Service, *Grand Ballroom Foyer*
4:30 - 5:30 pm	The 14th Annual Distinguished Career Contributions Award Lecture, Cognitive Control: From Interacting Hemispheres to Purging Thoughts, Marie T. Banich, Ph.D., *Grand Ballroom*
5:30 - 5:45 pm	Poster Session E Take-Down, *Back Bay Ballroom/Republic Ballroom*
5:45 - 7:15 pm	9th Annual CNSTA Trainee Professional Career Panel, *Independence Ballroom*

5:45 pm - 7:30 am	Exhibit Hall Closed for the Day – No Entry
7:30 - 10:00 pm	CNS Student Trainee Social Night, *Cornwall's Tavern, located 644 Beacon St, Boston, MA 02215*

Tuesday, April 1, 2025

7:30 - 8:00 am	Exhibit Hall Access for Exhibitors/Poster Session F Set-Up Only, *Back Bay Ballroom/Republic Ballroom*
8:00 - 8:30 am	Continental Breakfast, *Grand Ballroom Foyer*
8:00 - 10:00 am	Exhibits Open, *Back Bay Ballroom/Republic Ballroom*
8:00 - 10:00 am	Poster Session F, *Back Bay Ballroom/Republic Ballroom*
8:00 am - 3:00 pm	On-site Registration & Pre-Registration Check-In, *Grand Ballroom Foyer*
10:00 - 10:15 am	Poster Session F Take-Down, *Back Bay Ballroom/Republic Ballroom*
10:00 am - 12:00 pm	Invited Symposium 3 **–** 100 Years of EEG: Where Are We? Bin He, Chair, *Grand Ballroom* o Talk 1: EEG Source Imaging and Brain-Computer Interface, Bin He o Talk 2: Temporal Dynamics of Evoked and Spontaneous Neuronal Networks Revealed by Microstate Analysis of High-density EEG, Christoph Michel o Talk 3: Exploring Functional Brain Networks with EEG: Synchrony, Coherence, and Causality, Laura Astolfi o Talk 4: EEG Information Mining, Scott Makeig
10:00 am - 12:00 pm	Invited Symposium 4 **–** The Cognitive Thalamus: Thalamocortical Mechanisms in Attention and Cognitive Control. Kai Hwang, Chair, *Constitution Ballroom* o Talk 1: What is the role of the human mediodorsal thalamus in cognitive control?, Kai Hwang o Talk 2: What is the role of the ascending superior colliculus – pulvinar pathway in attention control?, Sabine Kastner o Talk 3: Interpreting thalamocortical dynamics of EEG/MEG measures of cognition with the Human Neocortical Neurosolver (HNN) modeling software, Stephanie Jones
10:15 am - 3:30 pm	Exhibit Hall Closed for the Day – No Entry
12:00 - 1:30 pm	Lunch Break (On your own)
12:15 - 1:15 pm	Workshop **–** Wearable Sensor solutions for integrated mobile EEG/EXG, motion capture & eye tracking in the real and virtual worlds. Ryan Hanson, Chair, *Grand Ballroom*
12:15 - 1:15 pm	Workshop **–** Opportunities for education, research, and innovation partnerships with Europe, Micah Murray, *Independence Ballroom*
1:30 - 3:30 pm	Symposium Session 9 **–** Decoding spontaneous thought from neural activity. Aaron Kucyi, Chair, Julia Kam, Co-Chair, *Grand Ballroom* o Talk 1: Predicting spontaneous thoughts using electroencephalogram during naturalistic behavior, Julia Kam o Talk 2: Predictive neural modeling of resting-state spontaneous thought: an idiographic approach, Aaron Kucyi o Talk 3: Modeling dynamical transitions between on- and off-focus states using Hidden-Markov Models, Matthias Mittner o Talk 4: Distinguishing between spontaneity and automaticity using the Dynamic Framework of Thought, Kalina Christoff o Talk 5: Integrating Content and Dynamics of Spontaneous Thought: A Hidden Markov Model Analysis of Think-Aloud fMRI Data, Yuhua Yu o Q&A with the Audience
1:30 - 3:30 pm	Symposium Session 10 **– What can('t) oscillations tell us about cognition?** Agatha Lenartowicz, Chair, *Independence Ballroom* o Talk 1: Multiple faces of alpha oscillations in constructs of attention, Agatha Lenartowicz o Talk 2: Subthalamic beta-gamma activity as a circuit motif underlying domain-general inhibitory control. Jan R. Wessel o Talk 3: Dynamic cortical and oscillatory activity in visual working memory and cognitive control, Bradley Voytek Talk 4: Intracranial neural dynamics during human navigation in the wild, Cory Inman o Q&A with the Audience

1:30 - 3:30 pm — Symposium Session 11 – Harnessing virtual reality to study memory and spatial navigation across the lifespan. Tammy Tran, Chair, Rolando Masís-Obando, Co-Chair, *Constitution A*

- Talk 1: How strong is your memory palace? Reliable room representations predict subsequent memory for placed objects, Rolando Masís-Obando
- Talk 2: Inspiring Creativity through Memory in Immersive Virtual Reality, Birgit Peña Häufler
- Talk 3: Virtual reality assessment to quantify navigational impairments in aging and early Alzheimer's disease, Manu Madhav
- Talk 4: Investigating age-related and disease-related differences in object location memory using immersive virtual reality, Tammy Tran
- Q&A with the Audience

1:30 - 3:30 pm — Symposium Session 12 – Advancing global and local theories of DMN function across cognitive domains. Ajay Satpute, Chair, *Constitution B*

- Talk 1: Characterizing the representational structure of the default mode network through the lens of episodic memory, Maureen Ritchey
- Talk 2: Integrating emotion and social cognition in a predictive processing framework of default mode network function, Ajay Satpute
- Talk 3: Revisiting the default network: Growing evidence for functionally dissociable, parallel association networks, Lauren DiNicola
- Talk 4: What does the DMN do? Insights from network neuroscience, Lucina Uddin
- Q&A with the Audience

Keynote

Adriana Galván, Ph.D.

University of California, Los Angeles

Keynote Address, Open to the Public

Saturday March 29, 2025, 5:00PM - 6:00PM (EDT), Grand Ballroom

Adolescent Brain Development: The Importance of Connections

Adolescence is a special period of development. Young people ages 10-24 reach important developmental milestones during this time of life during which they explore, grow, and connect. The neurodevelopmental changes that occur during adolescence support these developmental changes. As revealed from neuroscience research, the adolescent brain exhibits significant plasticity and undergoes an important period of connectivity—strengthening of brain pathways—that reflect the increasing connections adolescents have with their peers, families and communities. This talk will provide an overview of brain development, current understanding of adolescent neuroscience, and an opportunity to discuss how this research may be useful in supporting system-impacted youth.

About

Adriana Galván is an American psychologist and expert on adolescent brain development. She is a professor of psychology at the University of California, Los Angeles (UCLA) where she directs the Developmental Neuroscience laboratory. She was appointed the Jeffrey Wenzel Term Chair in Behavioral Neuroscience and the Dean of Undergraduate Education at UCLA.

Biography

Galván completed her bachelor's degree in Neuroscience and Behavior at Barnard College, Columbia University in 2001. Galván continued her education in neuroscience under the guidance of B.J. Casey at the Weill Medical College of Cornell University, where she completed her PhD in 2006. She obtained post-doctoral training under the supervision of Russell Poldrack and Susan Bookheimer at the Semel Institute for Neuroscience and Behavior at UCLA from 2006 to 2008, prior to joining the UCLA faculty in 2008. She was the honored recipient of the UCLA Department of Psychology Distinguished Teaching Award (Senior Ladder) in 2015.

Galván is a Fellow of the Association for Psychological Science and a recipient of a U.S. Fulbright Scholarship. Her research program has been supported by grants from the National Institutes of Health, National Science Foundation, Russell Sage Foundation, Jacobs Foundation, and the California Tobacco-Related Disease Research Program.

Galván's research team studies the development of the brain from childhood into adolescence and adulthood, using various neuroimaging techniques to study psychological and neurobiological functioning. Her studies have explored neural mechanisms underlying decision-making and risk-taking, the influences of stress and other experiences on behavior and brain functioning, and neurobiological factors associated with cigarette smoking in adolescence. Other influential work has focused on how sleep affects the developing brain.

Source: Wikipedia®

George A. Miller Prize

Congratulations to Ken Paller, Ph.D. for being awarded this honor!

Ken Paller will accept this prestigious award and deliver his lecture on Sunday, March 30, 2025, 4:00 – 5:00 pm (EDT), in the Grand Ballroom.

The Hidden Benefits of Sleep and Potential Pathways for Amplifying Them

Ken Paller, Ph.D.

Professor of Psychology, Northwestern University

Many people don't appreciate the full range of sleep's benefits (beyond that its nice not to be sleepy). From the first-person perspective, it may even feel like your brain is switched off during sleep, resting in a dormant state punctuated only by the occasional dream. In fact, brain activity continues through all sleep stages. Why is the sleeping brain so active? One critical overnight function is to move memory consolidation forward. This happens when newly acquired information is gradually integrated within existing storage networks. The memories accessed also change in various ways. A rich body of evidence now supports the view that memories are reactivated and changed during sleep without any first-person awareness of that happening. This hidden work of overnight memory reactivation can also enhance creativity and problem-solving. A related idea with important clinical implications is that sleep-based memory reactivation may influence the extent to which a night of sleep improves or degrades psychological well-being. Contemporary research in this area now seeks to both understand and potentially amplify the various cognitive benefits of sleep. Supplementing standard recommendations for sleep hygiene, there may be many tactics for nudging sleep physiology in positive directions, including some that can be engaged in the home using wearable technology. Applying a cognitive neuroscience approach to investigating sleep, including dreaming and other cognitive dimensions of sleep, can thus inspire the development of valuable strategies to help people gain more from — and genuinely appreciate — their slumber.

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

2024	Lynn Nadel, Ph.D., University of Arizona
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 Marie T. Banich, Ph.D. for being awarded this honor!

Marie T. Banich will accept this prestigious award and deliver her lecture on Monday, March 31, 2025, 4:30 – 5:30 pm (EDT), in the Grand Ballroom.

Cognitive Control: From Interacting Hemispheres to Purging Thoughts

Marie T. Banich, Ph.D.

Institute of Cognitive Science, Dept. of Psychology & Neuroscience
Executive Director, Intermountain Neuroimaging Consortium at the University of Colorado at Boulder

In this talk, I will discuss the arc of my research program which has examined the neural processes that underlie cognitive control and executive function. As my research began before the widespread use of human brain imaging, my talk begins with my early studies examining how interacting brain regions work to increase our mental processing capacity. With the advent of functional magnetic resonance imaging (fMRI), my focus shifted to investigating the separate roles of lateral and medial brain regions in cognitive control. Our results suggested that lateral regions are involved in setting task goals while medial regions mediate later stage or response-related aspects of control. I will discuss how these systems interact, are affected by development and can vary based on individual characteristics, such as symptoms related to anxiety and depression. The bulk of the talk will focus on cognitive control mechanisms that serve to displace and purge information from working memory. This work is motivated by the fact that most psychiatric disorders are characterized by an inability to remove specific thoughts from working memory, such as negative thoughts about the self, or the potential threat of future harm. I will show how our research team has used fMRI to actively track the removal of information from working memory, allowing us to see thoughts vanish in real time. Evidence will be presented that demonstrates the neural and psychological specificity of different removal operations including switching to another thought, suppressing one particular thought, or clearing the mind of all thought. I will discuss how the brain represents these operations, their consequences for long-term retention of information, and how these operations act differentially on positive vs. negative thoughts. The talk will conclude by considering the implications of this research for interventions ranging from behavioral therapies to biofeedback.

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

2024	Kia Nobre, Ph.D., Yale University
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 2025 Young Investigator Award Winners

Emily S. Finn, Ph.D., Dartmouth College
André M. Bastos, Ph.D., Vanderbilt University

YIA special lectures take place on Monday, March 31, 2025, 1:30 – 2:30 pm in the Constitution Ballroom.

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

One stimulus, many interpretations: The neuroscience of subjective experience

Monday, March 31, 2025, 1:30 –2:00 pm, Constitution Ballroom

Emily S. Finn, Ph.D.

Assistant Professor of Psychological and Brain Sciences, Dartmouth College

That the same sensory experience (e.g., a photograph, a video clip) can generate distinct, sometimes polar opposite, reactions in different people is obvious to anyone who lives in today's society. When, how, and why do people diverge in their subjective interpretations of a stimulus? While high-level social scenarios, in contrast to basic perceptual information, are most likely to generate divergent interpretations across people, it has been challenging to elicit and quantify these interpretations in experimental settings. In this talk, I will cover recent work in my lab using behavioral, neuroimaging, and computational approaches to understand how features of individuals, features of external input, and brain activity interact to give rise to nuanced percepts of complex social information.

Multi-Area, high-Density, Laminar Neurophysiology (MaDeLaNe) recordings suggest Predictive Coding is implemented via Predictive Routing

Monday, March 31, 2025, 2:00 –2:30 pm, Constitution Ballroom

André M. Bastos, Ph.D.

Assistant Professor, Department of Psychology, Vanderbilt University, Nashville, TN.

To understand the neural basis of cognition, we must understand how top-down control of bottom-up sensory inputs is achieved. We have marshaled evidence for a cortical control circuit that involves rhythmic interactions between different cortical layers. We've found that local field potential (LFP) power in the gamma band (40-100 Hz) is strongest in superficial layers (layers 2/3), and LFP power in the alpha/beta band (8-30 Hz) is strongest in deep layers (layers 5/6). The gamma-band is strongly linked to bottom-up sensory processing and neuronal spiking carrying stimulus information, while the alpha/beta-band is linked to top-down processing. Deep layer alpha/beta is negatively coupled to gamma. Cortical areas become rhythmically prepared to receive their inputs by engaging in inhibitory alpha/beta oscillations. Prediction "errors" are the result of sensory inputs to unprepared cortex. We refer to this combination of mechanisms as Predictive Routing. I will present new evidence that causally supports Predictive Routing from studies of propofol anesthesia. I will also present Multi-Area, high-Density, Laminar Neurophysiology (MaDeLaNe) recordings in both macaque and mouse cortex as subjects observed (un)predictable visual stimulus sequences. These high-density recordings give us an unprecedented look into neuronal activity across the hierarchy and allow us to determine at which stage of processing a sensory-based code is transformed into a prediction-based code. Altogether, these observations suggest Predictive Routing: that the interplay of rhythms is a circuit mechanism for predictive processing, and that genuine predictions are computed in higher-order cortical regions.

JoCN Travel Fellowship Award

Congratulations to the 2025 Award Winners

Phuong Dang, *Queensland Brain Institute, Australia*
Marisol Espinoza, *Instituto de Neurobiología, Universidad Nacional Autónoma de México, Querétaro, Mexico*
Moramay Ramos-Flores, *Institute of Neurobiology, National Autonomous University of Mexico, Querétaro, Mexico*
Ankit Yadav, *National Brain Research Centre, India*
Hasan Duymuş, *Ankara Yıldırım Beyazıt University, Psychology, 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).

"Predictions do not modulate the perception and time-resolved representation of objects**"**

Phuong Dang, *The University of Queensland*

"Perceptual discrimination of temporal patterns in humans and monkeys**"**

Marisol Espinoza Monroy, *Institute of Neurobiology, National Autonomous University of Mexico*

"Cognitive mechanisms and white matter pathways supporting reading acquisition in Spanish speakers**"**

Moramay Ramos-Flores, *Institute of Neurobiology, National Autonomous University of Mexico*

"Differential Neural Correlates of EEG Mediate the Impact of Internally and Externally Directed Attention in a Dual-task Working Memory Paradigm**"**

Ankit Yadav, *National Brain Research Centre, India*

"The visual cortex in the blind but not the auditory cortex in the deaf becomes multiple demands regions**"**

Hasan Duymuş, *Ankara Yıldırım Beyazıt University*

Previous Winners of JoCN Travel Award

2024

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*

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*

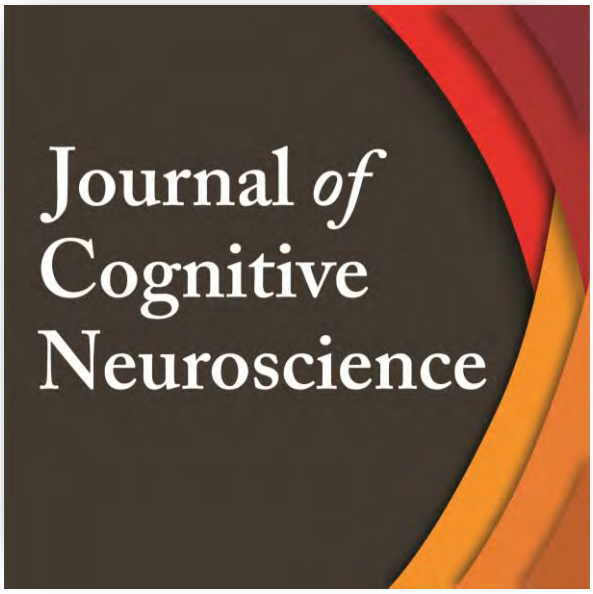
2022

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 - Platforms, paradigms, and pipelines for characterizing multisensory development in children	Saturday, March 29	12:00 - 1:00 pm	Grand Ballroom
2	Workshop - Communicating Cognitive Neuroscience Concepts for Maximum Impact	Saturday, March 29	12:00 - 1:00 pm	Independence Ballroom
3	CNS 2025 Welcome Reception	Saturday, March 29	6:00 - 7:00 pm	Grand Ballroom Foyer
4	Workshop - Integrating biosensors with XR: capturing brain and behavioural data in naturalistic settings	Sunday, March 30	12:15 - 1:15 pm	Grand Ballroom
5	Pavlov's Dogz	Sunday, March 30	8:00 - 11:00 pm	Cantab Lounge Underground (Offsite)
6	Workshop - Interactive Career Development Workshop	Monday, March 31	12:15 - 1:15 pm	Grand Ballroom
7	Workshop - Navigating this Challenging Time	Monday, March 31	12:15 - 1:15 pm	Independence Ballroom
8	CNSTA - Trainee Professional Career Panel	Monday, March 31	5:45 - 7:15 pm	Independence Ballroom
9	Social - CNS Trainee Association Student Social Night	Monday, March 31	7:30 - 10:00 pm	Cornwall's Tavern (Offsite)
10	Workshop - Wearable Sensor solutions for integrated mobile EEG/EXG, motion capture & eye tracking in the real and virtual worlds	Tuesday, April 1	12:15 - 1:15 pm	Grand Ballroom
11	Workshop - Opportunities for education, research, and innovation partnerships with Europe	Tuesday, April 1	12:15 – 1:15 pm	Independence Ballroom

Workshop - Platforms, paradigms, and pipelines for characterizing multisensory development in children

Saturday, March 29, 2025, 12:00 - 1:00 pm (EDT), Grand Ballroom

Chair: Mark Wallace, Vanderbilt University

Speakers: Mark Wallace, Vanderbilt University; Micah Murray, University Hospital and University of Lausanne; David Lewkowicz, Yale; David Tovar, Vanderbilt and Dr. Marcus Watson from Vanderbilt University.

This workshop presents and discusses how our international consortium devised platforms, paradigms, and pipelines for studying multisensory development longitudinally in children in naturalistic settings. We describe elements and innovations in environment control and signal processing for transitioning from lab-based, static paradigms to immersive, dynamic paradigms linking behaviour, neurophysiology, and movement-tracking.

Workshop - Communicating Cognitive Neuroscience Concepts for Maximum Impact

Saturday, March 29, 2025, 12:00 - 1:00 pm (EDT), Independence Ballroom

Chair: Charan Ranganath, Center for Neuroscience and Department of Psychology and director of the Dynamic Memory Lab at the University of California at Davis.

Speakers: Charan Ranganath, Center for Neuroscience and Department of Psychology, and Director of the Dynamic Memory Lab at the University of California, Davis; Paula Croxson, President of Stellate Communications; Ayanna Kim Thomas, Department of Psychology and Dean of Research for the School of Arts and Sciences at Tufts University.

The goal of this workshop is to educate attendees about how to communicate cognitive neuroscience to impact real world issues. Panelists will describe effective techniques for science writing, communication via podcasts, radio, and television, engaging with the legal community, and using the power of narrative to engage and educate the public while remaining faithful to the science. Presentations will be followed by open Q&A from audience members.

CNS 2025 Welcome Reception

Saturday, March 29, 2025, 6:00 - 7:00 pm (EDT), Grand Ballroom Foyer

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 2025 Annual Meeting and enjoy some hors d'oeuvres

and a cash bar (Have a free drink on us when you use your drink ticket!)

Workshop - Integrating biosensors with XR: capturing brain and behavioural data in naturalistic settings

Sunday, March 30, 2025, 12:15 - 1:15 pm (EDT), Grand Ballroom

Chair: Kyla Alsbury-Nealy, Silico Labs
Speakers: Kyla Alsbury-Nealy & Benjamin Alsbury-Nealy and Yanick Leblanc-Sirois

Extended reality (XR) and mobile biosensors (e.g., EEG, fNIRS) enable researchers to capture real-world behaviour and brain activity, but synchronizing these data streams remains challenging. This workshop will demonstrate practical methods to seamlessly integrate these technologies, overcome technical barriers, and open new avenues for neuroscience and psychology research.

Pavlov's Dogz

Sunday, March 30, 2025, 8:00 - 11:00 pm (EDT), Cantab Lounge Underground *located at 738 Massachusetts Ave, Cambridge, MA 02139*

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

Workshop - Interactive career development workshop

Monday, March 31, 2025, 12:15 - 1:15 pm (EDT), Grand Ballroom

Chair: Bradley Voytek, UC San Diego

In this interactive workshop I will cover careers for cognitive neuroscientists, both in industry and academia. Before the workshop I will ask registrants to send in resumes. During the session, and in on-site office hours during the conference, I will cover resume building, professional portfolio development, and networking.

Professional Development office hours: Saturday-Monday from 2:30 - 4:00 PM, located in *Conference Room* (third level)

Workshop - Navigating this challenging time

Monday, March 31, 2025, 12:15 - 1:15 pm (EDT), Independence Ballroom

Chair: Audrey Duarte and Brad Postle, Co-Chairs of Community Engagement and Support Committee.

Speakers: Audrey Duarte, UT Austin; Brad Postle, Ph.D., University of Wisconsin, Madison; Taraz Lee, Ph.D., University of Michigan; Amy Proskovec, University of Texas Southwestern Medical Center and Preston Thakral, Smith College.

It goes without saying that the scientific community is facing a very difficult and uncertain time. In view of the rapid pace at which new challenges are cropping up, we have decided to pivot away from the initially planned focus of this workshop in order to address the current situation. The goal of this discussion is to explore the positive strategies and activities that we can implement, as a society, to support one another. To this end, we want to hear about your experiences over the last few months and your thoughts about the ways you would like to see the society supporting you and the next generation of cognitive neuroscientists. At the meeting, we will be sharing a platform that allows for anonymous sharing of ideas that we will use to generate fruitful discussion, led by the panelists, at this workshop. We encourage attendees of all career levels to contribute and attend. Please add your thoughts to the platform here.

CNSTA - Trainee Professional Career Panel

Monday, March 31, 2025, 5:45 - 7:15 pm (EDT), Independence Ballroom

Chair: Sophie Allen, Yale University & Christian Cazares, UCSD.

Speakers: James Antony, Assistant Professor, Cal Poly; Henrietta

Howells, Senior Editor, Nature Neuroscience; Gordon Kraft-Todd, Partner Ker-twang.

Join our expert panel as they shar their journeys beyond the traditional academic path. They will discuss career trajectories, challenges, and insights followed by an open Q&A!

Please submit any questions you have for these panelists at this link: https://forms.gle/Evvr51rny1jAZ7K18.

CNS Student Trainee Social Night!

Monday, March 31, 2025, 7:30 - 10:00 pm (EDT), Cornwall's Tavern, *located 644 Beacon St, Boston, MA 02215*

Join us immediately after the panel for a trainee social at Cornwall's– a pub in the famed Fenway area. Trainees will walk over as a group and will have access to a selection of free food, pool tables, and drinks (not included).

HOW TO GET THERE:

WALKING from the Sheraton Boston Hotel (39 Dalton St, Boston, MA 02199) - 17 min (0.7 mile) via Massachusetts Ave and Commonwealth Ave, Mostly flat

- Head south towards **Belvidere St**
- Turn right onto **Belvidere St**
- Turn right onto **Massachusetts Ave**
- Turn left onto Commonwealth Ave
- Turn right onto **Kenmore St**
- Turn left onto **Beacon St** (Destination will be on the right)

Workshop - Wearable Sensor solutions for integrated mobile EEG/EXG, motion capture & eye tracking in the real and virtual worlds

Tuesday, April 1, 2025, 12:15 - 1:15 pm (EDT), Grand Ballroom

Chair and Speaker: Ryan Hanson, Wearable Sensing

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

Workshop - Opportunities for education, research, and innovation partnerships with Europe

Tuesday, April 1, 2025, 12:15 - 1:15 pm (EDT), Independence Ballroom

Chair: Micah Murray, University Hospital and University of Lausanne, The Sense Innovation and Research Center

Speakers: Oriane Rutsche, Swissnex Boston; Adi Barel, EIT Health; Garth Smith, Ontario Brain Institute; Josh Rudawitz, Greenberg-Traurig and Micah Murray, The Sense Innovation and Research Center

Bringing together a panel including EIT Health, Swissnex, Ontario Brain Institute, Greenberg-Traurig, and The Sense, this workshop overviews international funding, training, and career opportunities and the benefits of international collaboration for catalyzing both the federation of applied, basic, and clinical research as well as the discovery-to-innovation lifecycle.

Data Blitz

Session #	Date	Time	Location	Chair
Data Blitz Session 1	Saturday, March 29	10:30 am – 12:00 pm	Grand Ballroom	Alexa Tompary
Data Blitz Session 2	Saturday, March 29	10:30 am – 12:00 pm	Independence Ballroom	Carmen Westerberg
Data Blitz Session 3	Saturday, March 29	10:30 am – 12:00 pm	Constitution A	Elisabetta Ambron
Data Blitz Session 4	Saturday, March 29	10:30 am – 12:00 pm	Constitution B	Yuta Katsumi

Data Blitz Sessions

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

Data Blitz Session 1

Saturday, March 29, 2025, 10:30 am – 12:00 pm (EDT), Grand Ballroom

Chair: Dr Alexa Tompary Drexel, University

Speakers: Manqi Sha, Ziyi Cao, Xianhui He, Lindsey Power, Graham Flick, Colton Casto, Anaïs Servais, Ansley Martin, Benjamin Kubit, Andrew Yonelinas, Devayani Joshi, Hannah Kim, Anna Keresztesy, Victoria Schelkun, Simone Viganò.

TALK 1: COUPLED SLEEP RHYTHMS IN THE HUMAN HIPPOCAMPUS SUPPORT MEMORY CONSOLIDATION

Manqi Sha, University of Oxford

Sleep plays an active role in memory consolidation. This process is thought to be facilitated by characteristic neural oscillations during non-rapid eye movement (NREM) sleep, including slow oscillations (SOs, <1 Hz), spindles (12–16 Hz), and ripples (80–120 Hz). Previous invasive recordings from the human hippocampus have shown that rather than operating independently, these oscillations are temporally coordinated. However, whether coupled sleep rhythms in the hippocampus contribute to memory consolidation has remained unknown. To address this question, we analysed intracranial EEG (iEEG) recordings from the hippocampus of 12 participants undergoing invasive monitoring for epilepsy surgery. Each participant underwent one or two sessions, consisting of overnight sleep and pre- and post-sleep memory tasks. In each session, participants learned 100 verb-image pairs, with immediate recall before sleep testing 50% of the pairs and delayed recall after sleep testing the remaining pairs. Behavioural results confirmed that longer NREM sleep is associated with better memory retention. Consistent with prior research, we observed specific temporal dynamics of hippocampal sleep rhythms: spindles were preferentially nested within SO up-states, and ripples aligned with the waxing phase of spindles. Crucially, the precision of SO-spindle coupling in the hippocampus predicted overnight memory retention, with stronger spindle coupling to the SO up-states linked to improved memory performance. These findings highlight the intricate role of coupled hippocampal oscillations in supporting memory consolidation, offering insights into the neural mechanisms underlying sleep-dependent memory processes.

TALK 2: STATISTICAL LEARNING WITH INNER SPEECH SUPPRESSION – BEHAVIORAL AND ERP EVIDENCE FROM AN ARTIFICIAL GRAMMAR LEARNING TASK IN CHILDREN

Ziyi Cao, MGH Institute of Health Professions

Statistical learning is characterized as an implicit, automatic, and unconscious process. However, there are arguments that explicit processing may not be entirely excluded and might play a supplementary or distractive role in commonly-used statistical learning tasks. This study aimed to evaluate implicit learning in school-age children (8:0 – 12:0) by employing two strategies to suppress explicit processing in a visual Artificial Grammar Learning (AGL) task. First, stimuli were replaced with non-namable, abstract shapes to minimize verbalization that could aid memorization. Second, participants were randomly assigned to an inner-speech-suppression group (S) or a non-suppression group (NS) for comparison. The suppression group was required to repeatedly vocalize an irrelevant word (e.g., "tea") during the learning phase to suppress inner speech and working memory. During the learning phase, participants were exposed to sequential patterns governed by an underlying finite structure. In the subsequent testing phase, they judged whether new patterns were grammatical. A follow-up test one week later assessed knowledge consolidation. Preliminary behavioral results revealed that S and NS groups performed with similar accuracy, significantly above chance ($p < .05$). Accuracy levels were maintained across the one-week interval, with the S group showing a trend of improvement. ERP analyses, time-locked to both pattern completion and violation points, showed a P600 effect in response to grammatical violations at completion points in both groups, but at violation points only in the S group . Additionally, the S group exhibited an FN400 effect at both time points, which was absent in the NS group.

TALK 3: LEARNING AND SLEEP RESHAPE THE REPRESENTATIONAL GEOMETRY OF VISUAL EXPERIENCES

Xianhui He, University of Oxford

Neural and cognitive representations of the external world dynamically evolve over time. While research has suggested that new experiences undergo some transformation during memory consolidation, the mechanisms by which relationships among experiences are shaped remain poorly understood, including the role of sleep in this process. The present study used high-density electroencephalogram (EEG) recordings in 26 participants to elucidate potential changes in the representational geometry of visual stimuli as a function of learning and sleep. Prior to learning, participants performed a 'localiser' task (1-back) on 50 unique images from five categories (objects, faces, scenes, pseudowords, body parts). Participants then performed the 'Memory Arena' task in which the 50 images were presented in a specific spatial and temporal arrangement. Participants learned the sequence of the 50 images to criterion, followed by a ~2-hour nap. After the nap, they completed the localiser task again. We then used the first (pre-learning) localiser to train image-specific decoders based on multivariate EEG patterns and applied these decoders to the second (post-sleep) localiser. Interestingly, we found that during image processing in the second localiser, the image's sequential successor from the learning task could be reliably decoded. This suggests that sequential representations persisted even when such information was not task-relevant. Importantly, our results further revealed that better learning performance and longer slow-wave (stage N3) sleep duration predicted the extent of incorporating successor representations across participants. Overall, our findings indicate that learning new inter-item relationships induces lasting changes in neural representational geometry, with N3 sleep strengthening these changes.

TALK 4: BETA BURSTING DURING NATURALISTIC SPEECH PROCESSING

Lindsey Power, McGill University

Cortical oscillations in the beta (15-30 Hz) frequency range are increasingly studied for their role in top-down control of neural circuit functions. Beta oscillations manifest as brief bursts with distinct timing and frequency properties. However, associations between these properties and cognitive processes beyond the motor domain remain to be resolved. The present work investigates the hypothesized involvement of beta bursting in predictive processes participating in naturalistic speech processing. MEG data was obtained from 11 healthy participants listening to TED talk recordings. We trained an artificial neural network to predict upcoming speech tokens, and outputs were used to derive proxy measures of the contextual uncertainty and lexical surprisal surrounding each phoneme and word in the audio recordings. We mapped the cortical sources of MEG data and detected ongoing beta bursts in 200 regions of interest. We found that beta bursting was strongly modulated by contextual and lexical speech features. Specifically, beta bursting decreased during speech segments with high uncertainty and surprise. This effect mapped bilaterally over the auditory cortex and broadly over left frontal and temporal regions typically associated with language. Moreover, duration, magnitude, and peak frequency of the beta bursts correlated with contextual metrics over a subset of these language-related regions. Together, these findings suggest broad involvement of beta bursting in predictive speech processes across the language network. Further research on the functional relevance of burst characteristics in relation to speech variables will provide more insight into the nature of naturalistic speech processing by the human brain.

TALK 5: CONSISTENT ALIGNMENT OF SACCADES AND ALPHA OSCILLATIONS SUPPORTS THE NEURAL REPRESENTATION AND MEMORY ENCODING OF VISUAL OBJECTS

Graham Flick, Baycrest Centre, University of Toronto

Visual memories rest upon input from saccades and gaze fixations. Prior work has highlighted a functional link between neural oscillations in visual cortex and the timing of eye movements for memory encoding: saccades synchronized to consistent phases of alpha oscillations are associated with better memory for visual scenes (Staudigl et al., 2017, PLOS Biol). Here, we tested the hypothesis that saccade-alpha phase alignment improves perceptual representations, which may facilitate the memory benefit. Simultaneous magnetoencephalography (MEG) and eye-tracking were recorded in 32 participants. On each trial, participants maintained central fixation before saccading to an object in the periphery. After a delay, recognition memory was tested for 250 viewed objects. Matching past work, saccades to subsequently remembered objects were preceded by greater phase alignment in alpha oscillations (8-12 Hz, -215-0ms) over visual cortex, compared to objects that would be forgotten. Representational similarity analysis of MEG responses time-locked to eye movements revealed that visual representations, defined from a deep convolutional neural network model, emerged in brain activity before the initial saccade (-100-0ms), whereas both visual and semantic representations, the latter defined from semantic property norms, emerged afterwards (0-300ms). Compared to later-forgotten items, saccades onto subsequently remembered objects elicited stronger visual, but not semantic, representations in MEG responses (0-100ms, $p = 0.002$). Critically, memory-related differences in the strength of these representations were positively associated with differences in pre-saccade alpha phase alignment ($r = 0.39$, $p = 0.048$). Altogether, this suggests that alignment between saccades and neural oscillations leads to perceptual enhancement, supporting memory encoding.

TALK 6: THE CEREBELLAR COMPONENTS OF THE HUMAN LANGUAGE NETWORK

Colton Casto, Harvard, MIT

The cerebellum's capacity for neural computation is arguably unmatched. Yet despite ample evidence of cerebellar contributions to cognition, including language, its precise role in linguistic processing remains debated. One reason for this is that most prior studies have had to choose between cross-domain breadth—sampling a wide range inputs/tasks across domains to inform specificity—and domain-specific depth—sampling specific, theoretically-motivated tasks within a singular domain to inform function. Here, we undertake a large-scale evaluation of cerebellar language-responsive areas using precision fMRI that is both broad and deep with respect to the inputs/tasks that we consider. We identify four cerebellar regions that respond robustly during language processing across both auditory and written modalities (Experiments 1a-b, n=754). However, only one of these areas—spanning Crus I/II/lobule VIIb—appears to be selective for language relative to diverse motor, perceptual, and cognitive nonlinguistic tasks (Experiments 2a-e, n=776). Similar to the cortical language system, Crus I/II/VIIb supports semantic processing, in both comprehension and production, but it does not support word access or phrase structure building (Experiments 3a-b, n=111). Crus I/II/VIIb is also modulated by some, but not all, of the same sentence-level features that modulate cortical language regions (e.g., grammaticality and frequency; Experiment 3c, n=5). Finally, of the cerebellar language-responsive areas, Crus I/II/VIIb is the most functionally integrated with the cortical language system (Experiment 4, n=85), suggesting that it may receive information from the cortical language network for further semantic processing.

TALK 7: WHAT ASPECTS OF FAMILIARITY ARE LINKED TO THE VOLUMES OF THE PERIRHINAL AND ENTORHINAL CORTICES, **THE FIRST REGIONS AFFECTED IN ALZHEIMER'S DISEASE?**

Anaïs Servais, University of Liège

The perirhinal (PrC) and the anterolateral entorhinal (alErC) cortex are among the first brain regions impacted by Alzheimer's Disease (AD). While their role in cognition remains unclear, recent models propose that these regions support episodic and lifetime (or absolute) familiarity when discriminating highly overlapping concepts is necessary. The present study assessed episodic familiarity judgments (task 1) and lifetime familiarity judgments (task 2), using materials with varying levels of conceptual overlap and lifetime familiarity for lures and targets (task 3). The study involved 57 older participants (aged 55+), including healthy individuals and those with either Subjective or Mild Cognitive Impairment. Volumes of the PrC, alErC, and hippocampal subfields were measured using structural MRI. As hypothesized, results suggest the PrC and the alErC volumes are linked with familiarity processes when discriminating highly overlapping concepts is required. This can be interpreted in line with recent ideas suggesting that familiarity feelings emerge from distinct neural pathways depending on the type of representations–PrC being involved in fine-grained representations. Moreover, clustering analysis revealed three distinct subgroups: one including healthy individuals, another including predominantly patients with established memory impairment, and a third, more heterogeneous group, which may represent preclinical cognitive decline. Participants in this subgroup appear to rely on familiarity to compensate for impaired recollection and commit more false alarms. Their recognition accuracy also decreases as conceptual overlap increases. We discuss how the pattern of performance across our three tasks highlights the promise of combining familiarity-related tasks to detect subtle cognitive changes associated with preclinical AD.

TALK 8: REGIONAL BRAIN AGE PATTERNS PREDICT APHASIA OUTCOMES

Ansley Martin, University of South Carolina

Background: Language is a cornerstone of cognition, aiding communication and complex thought. Aphasia is a language impairment commonly caused by stroke, severely affecting quality of life. Emerging evidence suggests that health of surviving brain tissue is important for post-stroke language-related outcomes. Brain age is a novel in vivo neuroimaging biomarker of brain health, but its potential for understanding clinical outcomes in aphasia is largely unexplored. Methods: T1-weighted MR images were analyzed with VolBrain's BrainStructureAges to estimate brain ages for 66 regions. Regional brain age gaps (regiBAG) were calculated as the difference between estimated and chronological ages. An exploratory factor analysis was conducted on the regiBAG correlation matrices from the unlesioned right hemisphere. The 4 identified regiBAG factors, reflecting various brain-aging patterns, were used in a stepwise linear regression model to predict Western Aphasia Battery (WAB) and Philidelphia Naming Task (PNT) scores at baseline and 6-months. Neuroimaging and behavioral data were available for 188 people. All stepwise models included lesion volume, days post-stroke, sex, and age. Results: A model including lesion volume, age, and Factors 1 & 3 significantly predicted WAB scores ($F(4,183)=35.24$, $p<.001$, adj. $R2=.423$). Baseline PNT was significantly predicted by lesion volume, age, and Factors 1 & 3 ($F(4,139)=14.924$, $p<.001$, adj. $R2=.280$) and 6-month PNT by days post-stroke and Factor 4 ($F(2,123)=6.761$, $p=.002$, adj. $R2=.084$). Conclusion: Regional brain age patterns are easily attainable and effectively aid in the prediction of aphasia outcomes, making it a promising tool for evaluation of post-stroke brain health.

TALK 9: EARWORMS, MEMORY CONSOLIDATION, AND NEURAL REPLAY FOR RECENTLY HEARD MUSIC

Benjamin M. Kubit, Northeastern University

Involuntary musical imagery (INMI) is a spontaneous, yet common experience, often referred to as an "earworm" or having a song "stuck

in your head." Previous work demonstrated a functional role of INMI in music memory consolidation. However, the neural basis of the spontaneous mental replay of music remains unspecified, as well as whether patterns for recently heard music are replayed in the human brain. Here, we combine models of music perception, multivariate functional magnetic resonance imagining, and machine learning to (1) examine patterns of music-evoked brain activity during perception and imagery, (2) identify epochs of music memory replay during rest, and (3) relate such replay to measures of memory consolidation and self-reported INMI experienced in the scanner. We found reliable patterns of music-evoked activity distributed across sensorimotor, subcortical, and cerebellar brain regions in two sessions for all 36 participants. The same patterns were replayed during rest blocks after music exposure while subjects were not listening to music. While all neural replay did not manifest as INMI, increased replay in the scanner led to an increase in the probability of experiencing INMI later outside of the scanner. Overall, persistent neural replay during both sessions improved music memory across the 2-day delay period, but only for poorly encoded music. Capturing brain activity during INMI provides evidence for the neural underpinnings of a very common form of spontaneous thought in humans and also for the adaptive role of such spontaneous thought as a form of consolidation that can modify long-term memory.

TALK 10: TOWARDS A UNIFIED THEORY OF MEMORY FOR SIMILAR EPISODES

Andrew Yonelinas, University of California Davis

Important advances have been made in understanding the roles that recollection and familiarity, true and false memory, as well as pattern separation and pattern completion play in episodic memory using several experimental paradigms that examine memory for lures that are similar - but not identical - to prior episodes. These include the Process Dissociation Procedure, the Deese-Roediger-McDermott paradigm and the Mnemonic Similarity Task. However, research using each of these paradigms has remained largely isolated, and a coherent theoretical integration is lacking. We argue that these paradigms can be understood within a unified theory in which memory performance reflects the operation of three distinct processes: false recollection, false familiarity and recollection rejection. We review studies that have included memory confidence judgments in each of these paradigms and show how those results can be used to measure each process. The results indicate that these three memory processes are functionally distinct and they underly performance in each experimental paradigm. This new approach overcomes limitations of earlier methods, it bridges these different literatures, and it points to several open questions for future research.

TALK 11: FMRI EXPLORATION OF MIND-WANDERING AND MEMORY CONSOLIDATION

Devayani Joshi, Drexel University

Mind-wandering, which involves spontaneous thoughts that shift attention to internal processes, is often associated with impaired memory. However, the potential benefits of mind-wandering immediately following learning are not well understood. Quiet rest after learning supports memory consolidation—the process of integrating new information into long-term memory—and provides an ideal environment for mind-wandering. This study explores how mind-wandering during rest relates to neural signatures of systems-level consolidation and consequent memory outcomes. In the study, forty participants learned associations between objects and scenes before spending 40 minutes resting awake in an fMRI scanner. During this resting period, they reported whether they were mind-wandering and described their spontaneous thoughts through experience sampling every minute. Memory tests were administered immediately after the learning session and again after a 24-hour delay. Behavioral analyses showed a positive correlation between reported mind-wandering and performance on the delayed memory test. Using multivoxel pattern analysis (MVPA), fMRI results revealed that spontaneous memory reactivation counts were higher after learning compared to before learning. Interestingly, greater reactivation counts were associated with poorer memory performance. These findings suggest that while mind-wandering during rest may facilitate long-term memory consolidation, the role of hippocampal reactivation is complex and requires further investigation. Future analyses will investigate how the default mode network (DMN) contributes to the relationship between spontaneous mental processes and memory outcomes.

TALK 12: DISTINCT ROLES OF N300 AND N400 IN SEMANTIC PRIMING

Hannah Kim, University of Maryland, College Park

There has been increasing interest in how the frontal N300 (Franklin, Dien, Neely, Waterson, & Huber, 2007; Frishkoff, 2007; Kumar, Federmeier, & Beck 2021) contrasts with the posterior N400. The N300fz emanates from the posterior cingulate (O'Hare, Dien, Waterson, & Savage, 2008) whereas the N400 has been linked to the left superior temporal gyrus and the left inferior frontal gyrus (van Petten and Lukka, 2006). Intriguingly, a study (Rhodes, & Donaldson, 2008) reported N400 effects only for simultaneous word pairs with associative (versus semantic) relations, but did not consider the N300. In this report, 69-channel EEG data were recorded from 40 participants performing a lexical decision task. The prime-target relations (associative, category coordinates, and semantic similarity) under automatic and controlled conditions were varied blockwise. Behavioral analyses indicated associative and category priming at the short SOA and all three types at the long SOA. The N300fz windowed measure revealed associative and category priming at both SOAs. The N400

windowed measure revealed all three types of priming, but only at the long SOA. We suggest that the N300fz reflects an automatic associative semantic process whereas the N400 reflects a more controlled generalized semantic process. By this account, the N300fz reflects the initial semantic retrieval of the individual words from an ASA semantic network, whereas the N400 reflects a more contextualized semantic assembly process in a connectionistic network, drawing on more sources of information. This differentiation can help inform models of semantic processing and the role of different cortical regions in language comprehension.

TALK 13: CONCEPT FEATURE DIAGNOSTICITY: A NEW METRIC TO QUANTIFY CONCEPTUAL ACCESS

Anna M. Keresztesy, University of Rochester

Semantic representations are commonly modeled in terms of elementary features (e.g. CAT = {<fur>, <eats mice>, <purrs>}). Concept-feature models have traditionally studied how features are generated from concepts. Here we define and study a new way to quantify concept-feature relationships, which we term diagnosticity. Diagnosticity refers to the proportion of target responses (e.g., 'cat') that are spontaneously generated when naive participants are given a feature in isolation (e.g., 'eats mice'). Across four Experiments we demonstrate the validity and power of diagnosticity to account for variance in the speed with which healthy participants complete semantic verification tasks. In the core paradigm, participants were presented with a written item name and a semantic feature that was either true of the concept or not. Participants indicated whether the feature was associated with the item by pressing a button (Exp 1) or responding verbally (Exp 2). In Exp 3, a separate group of participants were presented with isolated features and were tasked with generating the corresponding concept name. We found that target production in the free-response task of Exp 3 predicted 70% of the variance in decision times in Exps 1 and 2: highly diagnostic features (those that elicited the target concept most consistently) were associated with shorter verification latencies in Exps 1 and 2. Exp 4 replicated the full pattern with a new and large set of items and new group of participants. These findings suggest that the dynamics of information access is from semantic features to concepts during semantic verification.

TALK 14: NOVELTY IN EVERYDAY LIFE PROMOTES MEMORY FOR REAL-WORLD AUTOBIOGRAPHICAL EVENTS

Victoria Schelkun, Columbia University

Our everyday lives are comprised of multidimensional events involving people, places, and emotions, both new and familiar. A core focus of memory research is to understand how these features may influence memory. While much prior work has investigated these facets of memory using controlled laboratory studies, the current study aimed to understand how features of real-world experiences influence autobiographical memory. To this end, we enrolled participants in an intensive longitudinal "daily diary" study that asked participants to record a wide range of rich information about their experiences each day for two weeks. Participants reported written descriptions of three events that they had engaged in each day, as well as quantitative metrics of novelty of these experiences and their day in general (e.g., how typical a day felt, whether they visited a new location). The written event descriptions were used to prospectively test participants' autobiographical memory after a two-week delay. Our findings suggest that novelty bolsters both subjective vividness and objective level of detail reported in the memory test. Furthermore, we find that the benefit of novelty extends to other non-novel events that occurred within the same day, and that multiple sources of novelty independently and cumulatively improve memory. These data suggest that novel experiences enhance memory, and that daily diaries are a valuable method to naturalistically investigate these processes.

TALK 15: FORAGING IN CONCEPTUAL SPACES: NEUROPHYSIOLOGICAL MECHANISMS OF MENTAL SEARCH IN SEMANTIC MEMORY

Simone Viganò, Max Planck Society

The medial temporal lobe represents both spatial and abstract relational information. However, how do we search and access stored knowledge? During navigation the hippocampal formation displays rhythmic oscillatory activity in the theta band (3-8 Hz), conveying information about traveled distance. Here we asked if this physiological signature of physical exploration also extends to mental exploration of abstract spaces, such as when recalling concepts from memory. We used stereo-EEG to record local field potentials from the hippocampus of 20 epileptic patients performing a categorical verbal fluency task, randomly "foraging" for concepts from different categories (animals, professions, or famous cities). In the period preceding the utterance of a word, when people are searching for and eventually finding a concept, the oscillatory component of hippocampal theta power was significantly higher than during or after word pronunciation. This effect was independent of the semantic category. We used linear mixed models to investigate the possibility that theta power conveys information about exploration of the semantic space, including as predictors semantic distances between words (modeled as FastText linguistic vectors) and temporal distance between utterances. We observed significant modulation when considering high-dimensional semantic distances, as well as modulation by the temporal distance between words, indicating that both temporal and spatial dimensions modulate theta power when people search for concepts in their memory. These results suggest that physiological signatures of hippocampal activity during physical exploration might also extend to mental exploration of abstract spaces, and potentially reveal novel mechanisms underlying the access of conceptual information from memory.

Data Blitz Session 2

Saturday, March 29, 2025, 10:30 am – 12:00 pm EDT, Independence Ballroom

Chair: Dr Carmen Westerberg, Texas State University

Speakers: Sean Polyn, Ash Chinta, Liam McMahon, Samara Glazer, Yueying Dong, David Rothlein, Ewa Beldzik, Freek van **Ede, Arun Asthagiri, Vanessa Lozano Wun, Megan O'Connor,** Denait Haile, Maxi Becker, Heather Bouchard.

TALK 1: CAPACITY NOT REQUIRED: A LONG-TERM MEMORY MODEL THAT EXHIBITS KEY SIGNATURES OF WORKING MEMORY

Sean Polyn, Vanderbilt University

In the study of working memory, it is viewed as critical to show a capacity limit in storage as a way of demonstrating that one is measuring the limited capacity working memory store and not the unlimited capacity long-term memory store. The validity of this hallmark of working memory depends on the contention that a long-term memory system would not exhibit the same performance limitations as a capacity-limited system. Here we show that the set-size effects observed in the change-detection task (short-term recognition) and the continuous report task (short-term cued recall) for visuospatial materials (colored squares) fall out of existing models of human long-term memory. We introduce the Context Maintenance and Retrieval-Working Memory (CMR-WM) model, in which a core component of working memory theories, the capacity-limited store, is replaced by context-guided retrieval from long-term memory. Rapid attentional scanning of a study array produces a long-term memory trace for each study item, with each trace simulated as a composite of color, spatial, and temporal context information. These traces do not decay in strength or fidelity with the passage of time or intervening cognitive events, no noise is added to the traces during storage, and there is no guessing process. The capacity limitations of the model arise from the dynamics of the temporal context representation, and interference from stored long-term memory traces. We discuss how the situation motivates a re-examination of unified models of human memory.

TALK 2: UNDERSTANDING ADHD THROUGH NATURALISTIC FMRI DATA: SYMPTOMS & WHOLE-BRAIN CONNECTIVITY

Ash Chinta, Dartmouth College

Existing attempts to develop classifier models for Attention-Deficit/Hyperactivity Disorder (ADHD) based on neural data have largely been unsuccessful, with the most effective models often relying on non-neural information. This study explored the potential of integrating naturalistic data to reduce neural heterogeneity within ADHD populations. Using fMRI and behavioral assessment data from the Healthy Brain Network, ADHD was identified through clinician diagnoses and behavioral cutoff scores. Attention values were calculated based on a previously defined sustained attention network, and overlap between between-group network differences and the sustained attention network was evaluated using hypergeometric distribution. A classifier model was constructed using connectivity data to distinguish ADHD from controls. Results showed that between-group differences in sustained attention values were larger when ADHD was defined by behavioral scores ($t(665) = 0.878$, $p = 0.380$) compared to clinician diagnoses ($t(655) = 0.447$, $p = 0.655$), with no significant correlation between ADHD assessments and attention values. Classifier accuracy was slightly higher when ADHD was defined by behavioral scores (60%) versus clinician diagnoses (55%). Furthermore, the networks identified from the task data did not significantly overlap with the sustained attention network ($p = 0.859$ for ADHD > control; $p = 0.449$ for ADHD < control). These findings suggest that differences in network connectivity associated with ADHD may not be explained by sustained attention capabilities. These results underscore the necessity for a reevaluation of diagnostic and support strategies for ADHD and other heterogeneous disorders.

TALK 3: EXPLORING THE ROLE OF SELECTIVE ATTENTION IN DECISION RULE REPRESENTATION

Liam P. McMahon, Brandeis University

Adaptive behavior requires the ability to selectively attend to relevant information in complex environments and use this information to guide optimal decisions. Animal studies suggest that the mediodorsal thalamus (MDT) is a critical region for facilitating attention-guided rule representation in prefrontal cortex. Human neuroimaging studies point to a role for connectivity between MDT and both olfactory sensory cortex and prefrontal cortex in selective attention to odor stimuli. However, the relationship between attention-modulated MDT connectivity and neural representation of task rules in prefrontal cortex has not been established in humans. Here we aim to shed light on this process using an attention-guided two-alternative forced choice task. On each trial, participants are first cued to attend to either olfactory or auditory information, and then are simultaneously delivered one of two distinct odors and one of two distinct tones. The identity of the attended stimulus determines which of two subsequently presented choice options leads to a monetary reward. Behavioral results indicate that participants are able to make correct choices throughout the task and selectively attend to the cued stimulus. We aim to explore the mechanisms underlying this process by having participants perform this task while undergoing high-field fMRI scanning. We plan to implement a combination of multivariate pattern analysis techniques and functional connectivity analyses to test the hypothesis that coupling between MDT and prefrontal cortex facilitates representation of decision rules in distributed patterns of prefrontal cortex activity. Findings from this study may reveal a novel role for MDT in selective attention in humans.

TALK 4: INVESTIGATING THE MECHANISMS OF MULTISENSORY DIVIDED ATTENTION IN HUMANS

Samara Glazer, Brandeis University

In complex natural environments, the ability to simultaneously attend to multiple sensory modalities and distinguish relevant information from irrelevant is essential for adaptive behavior. For example, making a decision about what to eat in a crowded street market may require attending to the sights, sounds, and smells of potential options. Divided attention tasks are an effective experimental model of multisensory processing. However, these tasks tend to utilize two modalities, and are almost exclusively limited to auditory and visual domains. The olfactory modality has received less focus in previous research despite being a significant part of daily sensory experience. Here we designed a study in which participants (n = 50) experienced simultaneous presentation of odors, visual images, and sounds in a multisensory divided attention task. On each trial, prior to stimulus presentation participants were cued to attend to one, two, or all three modalities, and then after stimulation probed on the specific identity of one of the attended modalities. We hypothesized that response time would increase and identification accuracy would decrease with an increasing number of attended sensory modalities in this task. Interestingly, we found that performance was significantly above chance in all attention conditions, with significantly decreased accuracy in any condition with olfactory attention. Additionally, the number of modalities attended did not have an impact on performance. These results indicate that humans have the capacity to simultaneously attend to auditory, visual, and olfactory information in multisensory conditions, with decreased accuracy for olfactory stimuli.

TALK 5: FLEXIBLE GAZE REINSTATEMENT DURING WORKING MEMORY FOR NATURAL SCENES

Yueying Dong, University of California, San Diego

Prominent working memory (WM) models assert that feature-specific WM content is stored in sensorimotor cortical activations, and newer evidence suggests that even peripheral oculomotor signals carry WM information. For instance, during a WM delay, small gaze biases veer toward locations in memorized visual space. Yet the specificity and functional relevance of such oculomotor WM signatures is unclear. In long term memory, gaze patterns at retrieval have been found to recapitulate the spatiotemporal pattern from encoding, and the degree of such gaze reinstatement may functionally relate to performance. Here, we ask whether oculomotor patterns during WM exhibit a similar degree of spatiotemporal specificity and relevance to function. We tracked participants' eye gaze during encoding and WM maintenance of naturalistic images, and we manipulated whether they would be tested on the visual or semantic features of the image. In two experiments, we found that gaze patterns during a blank WM delay resembled the spatiotemporal sequence of eye movements observed during visual encoding of the same image. Gaze patterns during WM may therefore track the identity of complex, natural images that are held in mind. Moreover, we found a stronger degree of such WM gaze reinstatement when the task prioritized precise visual information as compared to semantic categories. Peripheral oculomotor signatures of WM content are therefore malleable to how the content will be used. These results highlight a potential role for the earliest levels of visual processing in WM content representation, and suggest that ocular WM signals are functionally flexible to upcoming demands.

TALK 6: WITHDRAWN

TALK 7: DISENTANGLING THE NEURAL RESPONSES TO OVERLAPPING VISUAL STREAMS OF TASK STIMULI AND EMOTIONAL DISTRACTORS IN A SUSTAINED ATTENTION TASK

David Rothlein, Boston VA Healthcare System

In real-world settings, attention balances competing information streams, suppressing distractions to complete goal-directed tasks while remaining sensitive to potential task-irrelevant surprises. How does the brain allocate resources to simultaneously monitor goal-directed information and background distractions? In this fMRI experiment, we used a novel sustained attention task, emogradCPT, where participants responded to a sequence of digit stimuli fading in and out, pressing a button for most digits and withholding for 3 (10% of trials). The digits were overlaid on emotionally positive (e.g., puppies) or negative (e.g., roadkill) backgrounds. We sought to distinguish neural signals from task-relevant digits vs. distracting backgrounds and track their neural pathways. We developed a design leveraging shared inter-subject neural responses exposed to identical stimuli to estimate predicted neural responses specific to the foreground digits or background images. Participants completed two runs: one with a fixed sequence of backgrounds behind a randomized digits, and another with fixed sequences digits and random backgrounds. By By averaging across participants to estimate predicted responses to the fixed sequences of digits and backgrounds. In a third run where both trial orders were fixed, we used these predictors to quantify the brain activity driven by digits versus backgrounds. We found that while sensitivity to backgrounds and digits was widespread, backgrounds dominated the visual cortex and dorsal attention network, and digits dominated the ventral attention and motor networks. This approach demonstrates the value of leveraging shared inter-subject responses in disentangling competing visual streams, providing a framework for studying attentional control dynamics amid emotional distraction.

TALK 8: SUBCORTICAL DYNAMICS DURING FAILURES IN MAINTAINING ALERTNESS AFTER SLEEP RESTRICTION IN THE HUMAN BRAIN.

Ewa Beldzik, Massachusetts Institute of Technology

Sleep restriction can severely impair alertness, resulting in delayed responses, omissions, or microsleeps. The neural dynamics underlying these drowsy periods and subsequent recovery to alertness are not well understood. Previous fMRI studies have focused on cortical and thalamic regions, which likely reflect downstream effects of dysregulated arousal mechanisms originating in the brainstem and hypothalamus, as shown in animal research. However, high-resolution imaging of these structures in humans is limited due to their small size and deep location. This study aimed to overcome these challenges using ultra-high-field (7T) fMRI to measure activity in brain regions critical for sleep-wake regulation during a simple attention task (psychomotor vigilance task) in sleep-restricted subjects (n=25). We applied advanced subcortical segmentation tools to analyze hemodynamic activity linked to the first omission trial (entering drowsiness) or the first alert trial after an omission (regaining alertness), across all nuclei of the ascending arousal network (AAN). We found that at the onset of drowsiness, activity decreased across all AAN regions, except for the tuberomammillary nucleus, which increased. Regaining alertness was marked by a strong increase in AAN activity, except in the hypothalamic preoptic area, which decreased, consistent with its sleep-promoting function. These patterns were influenced by the duration of the drowsiness period. Further, distinct temporal characteristics (e.g., number, latency, and width of peaks/troughs) in the hemodynamic activity across AAN regions suggested local neuromodulatory effects on the fMRI signal. Our findings shed light on the complex interactions between subcortical circuits that mediate attentional lapses after sleep restriction.

TALK 9: MICROSACCADES STRONGLY MODULATE BUT DO NOT NECESSARILY CAUSE THE N2PC EEG MARKER OF SPATIAL ATTENTION SHIFTS IN PERCEPTION AND WORKING MEMORY

Freek van Ede, Vrije Universiteit Amsterdam

The N2pc is a popular human-neuroscience marker of covert and internal spatial attention that occurs 200-300 ms after being prompted to shift attention – a time window also characterised by the spatial biasing of small fixational eye-movements known as microsaccades. To delineate the relation between these co-occurring spatial modulations, we conducted a combined EEG-eyetracking study where a central colour cue prompted covert or internal selection of a left/right visual target that was either visible (selection from perception) or held in working memory (selection from memory). We show how co-occurring microsaccades profoundly modulate N2pc amplitude during top-down shifts of spatial attention in both perception and working memory. At the same time, we show that a significant – albeit severely weakened – N2pc can still be established in the absence of co-occurring microsaccades. Thus, while microsaccade presence and direction strongly modulate N2pc amplitude, microsaccades are not strictly a prerequisite for the N2pc to be observed. Moreover, this relation holds no matter whether microsaccades also bring attended visual targets closer to the fovea (in perception) or not (in working memory).

TALK 10: SYNCHRONIZED MUSIC AND RHYTHMIC VISUAL STIMULATION INCREASES THETA-GAMMA PHASE-AMPLITUDE COUPLING IN MILD COGNITIVE IMPAIRMENT

Arun Asthagiri, New England Conservatory/Northeastern

Gamma sensory stimulation has emerged as a promising non-invasive treatment for Alzheimer's Disease (AD), shown to mitigate neurodegeneration in mouse models (Iaccarino et al, 2016) and support cognition in older adults (Chan et al., 2022). Working memory decline in aging is causally related to decreased theta-gamma coupling (Reinhart & Nguyen, 2019), especially with AD (Goodman et al., 2018). While direct neural stimulation (for example, using transcranial alternating-current stimulation) has been shown to improve theta-gamma coupling (Reinhart & Nguyen, 2019), music provides an affordable, and typically more enjoyable, alternative for entraining theta-band brain activity at frequencies that reflect the perceived beat (Tichko et al., 2022). Here, we present results from an audiovisual intervention that uses musical rhythm to drive delta-theta frequencies and modulate visual gamma stimulation. We hypothesize that (1) music entrains neural oscillations in theta band, (2) entrained theta frequencies are coupled to gamma activity, and (3) theta-gamma coupling increases from pre to post intervention. In an ongoing clinical trial, 21 participants with mild cognitive impairment (scoring >=0.5 on Clinical Dementia Rating Scale) used the intervention at home for 8 weeks. Completion rates were high (87%) and preliminary results showed that the music and gamma light stimulation successfully entrained music-specific delta and theta frequencies. Furthermore, the intervention facilitated phase-amplitude coupling between the targeted theta and gamma frequencies, which increased from pre to post intervention in frontocentral electrodes. Overall, the results suggest that the gamma music-based intervention leverages musical rhythm to enhance cross-frequency coupling that is disrupted in AD patients.

TALK 11: FRONTOSTRIATAL WHITE MATTER CONNECTIVITY: LONGITUDINAL DEVELOPMENT THROUGH ADOLESCENCE AND ASSOCIATIONS WITH REWARD AND EXECUTIVE CONTROL PROCESSES

Vanessa Lozano Wun, University of Minnesota

Adolescence is marked by significant change, including alterations in neural systems underpinning executive control and reward processes. Structural and functional variations in frontostriatal circuits are implicated in alterations of self-control, reward sensitivity, and sensation-seeking during adolescence. While seminal work in nonhuman primates has established that frontostriatal connections proceed along a ventromedial-dorsolateral gradient, this has only

recently been validated in humans. Using resting-state functional connectivity (rsFC), work from our lab established that these gradients refine during adolescence, including a) developmental increases in ventral striatum (VS) rsFC with brain areas implicated in reward processing, b) concurrent VS rsFC decreases with areas implicated in executive function (EF), and c) the opposite patterns for dorsal striatum (DS) rsFC. Moreover, more rapid developmental increases in VS rsFC with reward areas were related to improvements in reward-based decision-making, whereas increases in DS rsFC with EF areas were related to improved EF (Klein et al., under review). However, it remains unclear if frontostriatal white matter (WM) connectivity exhibits the same ventromedial-to-dorsolateral gradient. Using data from 153 individuals with 360 total scans acquired across 4 waves and 8 years (ages 11-32 years), probabilistic tractography was performed for ventral (VS to medial orbitofrontal cortex) and dorsal (DS to dorsolateral prefrontal cortex) frontostriatal WM tracts. The longitudinal developmental trajectories of WM microstructure and associations with reward sensitivity (self-reported via the Behavioral Activation System Scales) and EF (composite index of Digit Span, CANTAB Spatial Working Memory, Tower of London, and spatial delayed response performance) will be assessed using hierarchical linear modeling.

TALK 12: INVESTIGATION OF SINGLE- AND MULTI-ELECTRODE ANODAL TDCS FOR ENHANCING EXECUTIVE FUNCTION: IMPLICATIONS FOR SIMPLIFIED PROTOCOLS

Megan O'Connor, Massachusetts General Hospital and Harvard Medical School

While transcranial direct current stimulation (tDCS) shows promise for enhancing executive function, its outcomes vary due to differences in stimulation parameters. In motor studies, multi-site stimulation targeting broader networks proved more effective than single-site stimulation. However, it remains unclear whether a similar approach improves executive function over the traditional left dorsolateral prefrontal cortex (DLPFC) montage. In two randomized, placebo-controlled, cross-over studies, we first compared single-site versus multi-site tDCS on executive function. After finding that left DLPFC stimulation outperformed multi-site stimulation, we conducted a follow-up study to test whether this was due to differences in current intensity, modifying the multi-electrode montage to ensure both the left and right DLPFC received 2 mA each. In Study 1 (N=22), we applied 2 mA anodal tDCS targeting the left DLPFC using a standard bipolar montage vs. 2 mA anodal tDCS targeting the frontoparietal network (FPN) using a multi-electrode montage vs. sham. In Study 2 (N=22), we applied 2 mA anodal tDCS targeting the left DLPFC using a standard bipolar montage vs. 2 mA anodal tDCS targeting each the left and right DLPFC using a bilateral montage vs. sham. Subjects performed the Flanker Task before and after tDCS to assess reaction time and accuracy. In both studies, anodal tDCS targeting the left DLPFC with a standard bipolar montage significantly improved reaction time compared to both multi-electrode montages and sham. These findings suggest that a simpler, non-specific tDCS approach may be more effective than multi-site, current-intensity optimized models in improving reaction time on the Flanker Task.

TALK 13: EXAMINING THE PHYSIOLOGICAL AND COGNITIVE EFFECTS OF INTERMITTENT HYPOXIA TRAINING (IH) IN HEALTHY ADULTS.

Denait Haile, Western University

Executive function (EF) is improved following a single bout of exercise, a benefit linked to an exercise-mediated increase in cerebral blood flow (CBF). A bi-directional relationship exists between EF and CBF, such that transient decreases in CBF negatively impact EF. Some evidence has reported that chronic exposure to a hypoxic environment (i.e., lower than atmospheric concentration of O2) improves EF via enhanced cerebrovascular O2 extraction. This study aimed to determine whether a single session of intermittent hypoxia (IH) benefits EF. Healthy young adults (N=24) participated in two 60-minute sessions: an IH condition involving alternating 5-minute intervals of hypoxic (FiO2 = 10%) and normoxic breathing (FiO2 = 20%), and a normoxic control condition of the equivalent duration. CO2 levels were maintained at baseline for both conditions, and concurrent fNIRS and TCD were used to measure condition-based cortical hemodynamic changes. Additionally, EF was assessed via the antisaccade task (i.e., saccade mirror-symmetrical to exogenous target) at baseline (T0), immediately post-protocol (T1), and 30-min post-protocol (T2). As expected, arterial and cerebral O2 saturation decreased during hypoxia intervals (ps<.001). In the IH condition, antisaccade reaction times (RTs) improved by 7% from T0 to T2 ($p = .004$), with no significant changes from T0 to T1 ($p = .22$), nor in the control condition (ps > .32). Accordingly, results provide a first demonstration that a single bout of IH provides a transient EF “boost”, potentially via enhanced cortical oxygen extraction and EF network efficiency. Supported by the Natural Sciences and Engineering Research Council of Canada.

TALK 14: A NOVEL FRAMEWORK TO LINK INSIGHT TO GENERAL BRAIN MECHANISMS

Maxi Becker, Humboldt University Berlin

Sudden insights rank among the most captivating human phenomena. They combine a cognitive breakthrough with the distinctive “Aha” moment—marked by suddenness, surprise, pleasure and confidence in the solution. Why are we surprised and certain about thoughts we generate ourselves? While classical theories emphasize the cognitive processes leading to insights, a novel framework, the insight-as-prediction-error hypothesis, offers a broader explanation, linking the Aha! experience to enhanced memory and general brain mechanisms. According to this framework, the brain forms an internal model based on prior experience, predicting patterns to interpret problem elements.

Negative cognitive prediction errors (PEs) accumulate when predictions fail. Insight occurs when the internal model is restructured such that negative cognitive PEs are sharply reduced generating positive meta-cognitive PEs (representing surprise about the sudden solution) which leads to a strong internal model update and enhances its long-term memory encoding. We provide evidence from behavioral, eye-tracking and neuroimaging data to empirically support this theoretical framework. Behaviorally, we demonstrate that the intensity of the Aha! experience is directly influenced by PEs associated with both the solution and its process, as well as by pupil dilation before the solution, a marker for reward PEs. Neurally, we show a sharp reduction in negative PEs during visual insight in higher visual brain areas. Additionally, we identify modality-independent activity in hippocampus, ACC and medial PFC during insight and subsequent memory, reflecting the detection and integration of metacognitive PEs. These findings deepen our understanding of the neurocognitive mechanisms underlying insight and its role in adaptive learning.

TALK 15: STRUCTURAL NETWORK EFFICIENCY AND SELF-REPORTED COGNITIVE SYMPTOMS AFTER SPORTS-RELATED CONCUSSION

Heather C Bouchard, University of Nebraska-Lincoln

Concussion results in diverse symptoms, including self-reported cognitive concerns. Prior research has investigated the effects of concussion on local brain networks, with limited attention to global network disruptions. This study examines global efficiency, a measure of system-wide network integration, to elucidate how concussion alters brain network organization and contributes to clinical presentation and recovery. We collected MRI and self-reported symptoms from collegiate athletes (n = 35) at three time points: baseline (pre-injury), within approximately 48 hours of a diagnosed concussion (post-injury), and after clearance to return-to-play (recovery). Athletes reported symptoms using the Post-Concussion Symptom Scale, which were categorized into cognitive, somatic, affective, and sleep-related domains. Structural connectomes were constructed from diffusion-weighted MRI using anatomically-constrained tractography, and global efficiency was calculated for each time point. Linear mixed-effects models were employed to assess the relationship between global efficiency and symptoms across the three time points. Athletes showed reduced global efficiency following concussion when controlling for prior concussion history, which persisted through recovery compared to baseline. Total symptom reports increased after concussion and decreased at recovery. Additionally, there was an interaction between global efficiency and cognitive symptoms, indicating lower global efficiency after concussion was associated with more cognitive symptoms. Our findings demonstrate that decreases in global efficiency may reflect a neurobiological marker of cognitive symptoms following concussion, such as slowed thinking, difficulty concentrating, and memory concerns. This relationship appears to diminish with clinical recovery, highlighting the need to further explore longitudinal effects and how these changes relate to objective markers of recovery.

Data Blitz Session 3

Saturday, March 29, 2025, 10:30 am – 12:00 pm EDT, Constitution A
Chair: Dr Elisabetta Ambron, University of Pennsylvania
Speakers: Natalie Nielsen, William Lopez, Heesu Yun, Mengsi Li, Lorenzo Pasquini, Laura Rai, Ziyan Han, Rosari Naveena Selvan, Irene Echeverria-Altuna, Zizhuang Miao, Clara Sava-Segal, Soukhin Das, Xinxu Shen, Zsofia Zavecz, Margaret Henderson

TALK 1: DISTRACTION-RELATED DISRUPTION OF RUMINATIVE THOUGHTS

Natalie M. Nielsen, Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour

Rumination, the excessive maintenance of negative information in working memory (WM), is a core symptom of anxiety and depression, both associated with WM deficits. Research on long-term memory shows that retrieval puts memories into an active state, therefore rendering it vulnerable to reconsolidation. By analogy, Mallett and Lewis-Peacock (2019) found that WM content prioritised for attention is disproportionally vulnerable to distraction. This study aimed to replicate these findings and tested whether the distraction effect is stronger for negative than neutral memories. We enriched the double retro-cue paradigm of Mallett and Lewis-Peacock with a valence manipulation. Participants associated negative and neutral autobiographical thoughts with images from separate categories and rated their feelings about them. Subsequently, subjects encoded two images of distinct categories, prioritised one and rated the memory paired with it. Before being cued to stay with or switch items, participants were distracted or not. Finally, subjects again rated the prioritised thought and indicated whether the image matched the probe. About 24 hours later, participants re-rated their thoughts to access reconsolidation effects. We used Bayesian linear mixed effects modelling to analyse reaction times and accuracy. Contrary to expectations, valence did not affect performance. However, participants rated negative thoughts as less negative 24 hours after the task, suggesting that the entire task may have initiated reconsolidation. Moreover, exploratory analyses imply that distraction-related decreases in the negative valence of ruminative thoughts are greater for prioritised than non-prioritised items. This raises questions about the efficacy of combining current treatment of rumination with distraction therapy.

TALK 2: STEPPING INTO VR: EMBODIED SENSE OF PRESENCE IN A VIRTUAL ENVIRONMENT MEDIATES PHYSIOLOGICAL AND BEHAVIORAL INDICES OF FEAR

William R. Lopez, New College of Florida

Laboratory studies of emotional arousal and fear have suffered from low ecological validity and small effect sizes. The sense of embodied presence in virtual reality environments may aid in eliciting high-intensity emotional responses. To assess the efficacy of virtual reality environments in studying fear and to determine the importance of embodied presence in those environments, we exposed participants to virtual heights in one of two conditions. All participants took an elevator to the 80th floor of a building and had to walk to the end of a beam extending over the edge. In the control condition, participants were instructed to hold a cane horizontally as a balance aid. In the embodied feedback condition, participants were instructed to use the cane to feel along the ground in the real-world environment. We measured peak EDA relative to baseline during walking, time to reach the end of the beam, and post-hoc self-reported fear on a 7-point Likert scale (10 points in the pilot). In the pilot, self-report data and EDA measures of fear were moderately high, suggesting that experiencing heights in VR produced a genuine fear response in most subjects. EDA values and walking time measures were much lower in participants in the embodied feedback condition, indicating that the sense of embodied presence in VR accounts for a significant portion of the fear response. Strikingly, there was a much smaller effect of the embodied feedback on self-reported fear, indicating a dissociation between conscious experience of fear and physiological and behavioral indicators.

TALK 3: ACROSS- BUT NOT WITHIN-CATEGORY SPEECH DISCRIMINATION IS ASSOCIATED WITH INDIVIDUAL PHONOLOGICAL AWARENESS

Heesu Yun, Northeastern University

Phonological awareness, a foundational skill for language development, has been hypothesized to relate to speech-sound discrimination and its neural correlates. This study examines the relationship between electrophysiological markers, behavioral measures of phonological awareness, and speech discrimination performance in native English speakers (n = 30). Native English speakers completed the Comprehensive Test of Phonological Processing (CTOPP), which assesses phonological manipulation and synthesis skills through subtests such as Elision and Blending. Then, an auditory oddball task presented English consonant contrasts (/ba/and /ga/) to evaluate across- and within-category discrimination. EEG data were collected during the discrimination task using a 32-channel ActiChamp system. Event-related potentials (ERPs) were analyzed to extract mismatch negativity (MMN; 100–250ms) and late difference negativity (LDN; 300–550ms) components, focusing on group-level differences between native deviants and standard stimuli. Mass univariate analysis (MUA) identified electrodes showing significant ERP differences, controlling for multiple comparisons. Results revealed significant correlations between across-category discrimination and CTOPP scores. Specifically, MMN amplitudes for across-category stimuli correlated with Elision scores (r = -0.32), while LDN amplitudes demonstrated even stronger correlations with both Elision (r = -0.43) and Blending (r = -0.32). Interestingly, across- and within-category MMN were marginally correlated in a negative direction (r = -0.28). Within-category ERP components were not significantly associated with CTOPP scores. These findings suggest that phonological awareness is closely tied to neural markers of across-category discrimination, particularly LDN, while within-category discrimination appears less relevant. Greater sensitivity to speech categories may be related to reduced sensitivity to acoustic differences within categories.

TALK 4: THE INTERPLAY BETWEEN TEMPORAL MEMORY CODING AND AFFECT DYNAMICS

Mengsi Li, University of California, Santa Barbara

Everyday life is characterized by frequent shifts between emotional and neutral events. Emotional responses often 'spillover' beyond their context to bias appraisals of later-processed events (Lapate et al., 2017). Growing evidence suggests that emotional responses sculpt the temporal organization of memories (Wang & Lapate, 2024). However, the flip of the coin—whether temporal coding is associated with emotional-response dynamics—remains unclear. To address this, we designed a novel EEG event-boundary task. Participants (N=51) viewed emotional-event sequences of four positive or negative images, which were interleaved with novel-neutral face presentations. Following each sequence, participants rated neutral-face likeability (indexing affective spillover). Memory for temporal order and distance of emotional-image pairs sampled from within and across sequences was tested. We used factorial representational similarity analysis to unveil the structure of emotional valence and sequence processing, and the image-locked late-positive potential (LPP) to index emotional valence/arousal. Negative images were represented more similarly than positive ones. Images presented at closer sequence positions were also represented more similarly, an effect that increased with later sequence positions. Replicating event-boundary effects, emotional-image pairs sampled from across (vs. within) sequences were associated with longer temporal-distance judgements and poorer order memory. Critically, sequences producing shorter temporal distance judgments and better temporal-order memory elicited larger affective spillover, suggesting that emotional-event integration is associated with more pervasive emotional responses. Finally, larger LPPs predicted shorter temporal-distance estimates and larger affective spillover following negative sequences. Collectively, these findings underscore the bidirectional interplay between emotion and temporal memory—and suggest an affect-regulatory role for high-fidelity temporal coding.

TALK 5: NEUROPHYSIOLOGICAL CORRELATES OF AWE

Lorenzo Pasquini, University of California San Francisco

Awe is a complex emotional experience typified by perceived vastness and promoting well-being as well as social cohesion. Yet, few studies have investigated the neurophysiological basis of awe. The overarching aim of this study was to identify EEG-based neurophysiological signatures of awe. A 30-minute nature film was shown to 19 participants twice. The 1st viewing was uninterrupted and recorded with 64-channel electroencephalography (EEG), heart rate, electrodermal activity, and respiration. In the 2nd viewing, participants paused the video whenever they remembered feeling awe and rated their awe on a 1-10 point scale. Awe event timestamps from the 2nd viewing were projected onto the 1st viewing and neurophysiological correlates of awe were ascertained at ±3 seconds relative to each awe event. Non-awe events were randomly chosen and used as control events. Awe events caused EEG alpha and theta decreases, increases in Lempel-Ziv complexity (LZC), and decreased skin conductance levels. Alpha and theta desynchronizations were most evident in midfrontal and bilateral occipital areas, whereas LZC increases were most prominent in the left lateral occipital areas (peak effect at P9 electrode, $t(18)=2.6, p=0.02$). Electrophysiological measures correlated with the self-reported intensity of awe. Our findings concur with limited, prior reports of awe neurophysiology. Confirmatory analyses in independent, cross-cultural datasets with pharmacological or audiovisual stimuli are ongoing. This characterization may aid in identifying signatures of the awe experience and also for monitoring feelings of awe in therapeutic interventions.

TALK 6: DELTA-FREQUENCY EEG SYNCHRONY TRACKS SHARED AUDIENCE ENGAGEMENT WITH LIVE DANCE PERFORMANCES.

Laura Rai, University College London

Evolutionary theories claim that the performing arts – dance, music and theatre – transmit culture though live social interactions between groups of people. Yet, neuroscientific studies of these inherently social art forms are almost exclusively conducted on individual people watching video or sound recordings alone in a laboratory. Across three live dance performances, we simultaneously measured real-time dynamics between the brains of large audience groups of up to 23 members using mobile wet-electrode EEG (N = 69). We computed inter-subject correlations and phase lag values between the EEG of audience members relative to an active resting-state baseline. In a separate study (N = 28), individuals watched a recorded video of the performance alone in a laboratory condition. Interpersonal neural synchrony (INS) in the delta band (1-4 Hz) varied systematically with the dancers' movements and the audiences' collective engagement as predicted by the choreographer. INS was reduced when people watched a video of the performance on their own in a laboratory. Choreographic sections with higher INS were also rated as more engaging by an independent sample of viewers. Our study shows that live experiences are measurable as dynamic brain synchrony between co-present spectators and reflects artistically directed engagement with a live dance performance.

TALK 7: USING MOTOR PERFORMANCE OF THE SISL TASK TO IDENTIFY PSYCHOSIS-RELATED CLINICAL RISK

Ziyan Y. Han, Northwestern University

Motor disturbances have been observed in disorders like psychosis and depression, and are hypothesized to be symptoms predictive of clinical risk. Using an online perceptual-motor learning protocol, the Serial Interception Sequence Learning (SISL) task, we show that motor precision and processing speed measurements can be assessed during a paradigm resembling rhythm-based video games. Within this task, participants attempt to make a series of precisely-timed motor responses to cues moving towards a target location. Throughout the protocol, speed of moving cues is individually adaptively adjusted to maintain a constant overall accuracy rate. In Experiment 1, response precision to the moving cues was compared for patients identified as Clinically High Risk (CHR) for psychosis and healthy controls. CHR patients exhibited poorer initial response precision ($d = 0.91$), consistent with the hypothesis that motor control may act as a biomarker for psychosis risk. Impaired precision improvement was furthermore linked to greater positive symptom severity within this group ($p = 0.036$). In Experiment 2, SISL performance measures were obtained from a large community sample of participants who also completed the Community Assessment of Psychotic Experiences (CAPE). Within this sample, participants scoring higher on a subscale related to depressive symptoms exhibited a tendency towards requiring slower overall cue speed to maintain performance accuracy, suggesting that motor slowing associated with depressive symptoms may also be detectable within this protocol. By evaluating multiple aspects of motor performance, the SISL task can potentially be utilized for identifying risk markers and uncovering motor related mechanisms related to clinical risk.

TALK 8: ME OR US? MINE OR YOURS? HERE OR THERE? NEURAL AND BEHAVIORAL RESPONSES OF PREDICTION IN JOINT ACTION

Rosari Naveena Selvan, University of Münster

Everyday life is filled with instances of joint action, including cooking together, unloading groceries from the car, or playing games. Research suggests that our brains employ a dual hierarchical predictive model to anticipate our own and our partner's actions simultaneously. This hierarchical model has been suggested to have three layers: a sensorimotor layer, a sequence/subgoal layer, and a schema/common goal layer. This study aims to investigate the interplay between shared intention, sub-goal coordination, and

movement coordination. We hypothesized that these levels could be modeled as a flexibly coupled dual predictive hierarchy with varying degrees of coupling strength. To test this hypothesis, we employed a two-by-two-by-two factorial design, manipulating the presence/absence of shared common goal, sub-goal coordination, and movement coordination. N=70 participants engage in teams of two players in a novel card game simulating naturalistic joint action scenario. Hand and eye movements are recorded from both players, and EEG is recorded from one of the players. Computer vision is used to map game actions to players' eye movements to analyze successful predictions and errors. Neural (EEG) responses to different levels of coordination – goal, sub-goal, and movement - are analyzed using Hidden Markov Models (HMM), while Dynamic Causal Modeling (DCM) will be used to explore the activation of the Action Observation Network (AON) and the Theory of Mind (ToM) network. By investigating these measures, our findings will shed light on the mechanisms underlying joint action coordination and the role of predictive processing in facilitating efficient and adaptable interpersonal interactions.

TALK 9: DIFFERENCES IN THE TIMING OF ACTION PREPARATION IN PEOPLE WHO STUTTER

Irene Echeverria-Altuna, Yale University

Stuttering involves interruptions to the smooth flow of speech and is suggested to arise from differences in the internal timing of speech. Consistently, speech fluency can be induced in people who stutter using external cues to time speech production. Recent studies have reliably shown differences in mu/beta (8-30 Hz) frequency M/EEG (magnetoencephalography and electroencephalography) activity patterns prior to speech production in people who stutter. However, whether this reflects a speech-specific alteration or a more general anomaly in motor control remains unknown. Also uncharted is the extent to which the temporal coordination of action preparation is affected in people who stutter. Here, we developed a working-memory task in which participants shifted between hand-action plans as a function of internally driven temporal expectations. In this task, the dynamic prioritisation of action plans was mirrored by an action-specific and temporally tuned modulation of mu/beta (8-30 Hz) frequency activity as measured with MEG in both people who stutter (n = 20) and typically fluent speakers (n = 20). Intriguingly, despite showing identical performance in the task, people who stutter differed from typically fluent speakers in the temporal pattern of mu/beta activity modulation when shifting between internal action plans. These findings suggest that stuttering may be linked to more general differences in the timing of action preparation.

TALK 10: COMMON AND DISTINCT NEURAL CORRELATES OF SOCIAL INTERACTION PERCEPTION AND THEORY OF MIND

Zizhuang Miao, Dartmouth College

Social cognition spans from perceiving agents and their interactions to making inferences based on theory of mind (ToM). Despite their frequent co-occurrence in real life, the commonality and distinction between social interaction perception and ToM at behavioral and neural levels remain unclear. Here, participants (N = 231) provided moment-by-moment ratings of four text and four audio narratives on social interactions and ToM engagement. Social interaction and ToM ratings were reliable (split-half r = .98 and .92, respectively) but only modestly correlated across time (r = .32). In a second sample (N = 90), we analyzed co-variation between normative social interaction and ToM ratings and functional magnetic resonance (fMRI) activity during narrative reading (text) and listening (audio). Social interaction perception and ToM activity maps generalized across text and audio presentation (r = .83 and .57 between unthresholded t maps, respectively). When ToM was held constant, merely perceiving social interactions activated all regions canonically associated with ToM under both modalities (FDR q < .01), including temporoparietal junction, superior temporal sulcus, medial prefrontal cortex, and precuneus. ToM activated these regions as well, indicating a shared, modality-general system for social interaction perception and ToM. Furthermore, ToM uniquely engaged lateral occipitotemporal cortex, left anterior intraparietal sulcus, and right premotor cortex. These results imply that perceiving social interactions automatically engages regions implicated in mental state inferences. In addition, ToM is distinct from social interaction perception in its recruitment of regions associated with higher-level cognitive processes, including action understanding and executive functions.

TALK 11: EVALUATING THE NEUROPHYSIOLOGICAL EVIDENCE FOR CROSS MODAL EXPECTATIONS USING ALPHA OSCILLATIONS

Soukhin Das, University of California Davis

Predictive coding is a general model of sensory processing in the brain that forms expectations about the likely causes of sensory input to predict future outcomes. Discrepancies between expectations and sensory inputs are propagated hierarchically as prediction errors to update these expectations. Recent studies suggest that alpha oscillations (8–12 Hz) are a spectral signature of predictive coding in different modalities. However, their distinct patterns during cross-modal sensory processing remain underexplored. Using a 2×2 cross-modal design, auditory (HEAR or SEE) and visual cues (H or S) indicated the target modality (visual/auditory). In 80% of trials, targets were presented in the expected modality, while 20% of trials involved targets in the unexpected modality. Participants distinguished the frequency of visual gratings or the tone of auditory stimuli irrespective of cue validity. Our findings revealed dissociative alpha desynchronization in central and occipital channels, guiding modality-specific expectations. Topographical analysis demonstrated modality-specific cortical activation, with stronger alpha suppression in occipital regions during correct responses compared to incorrect ones. Post-

stimulus analysis revealed distinct alpha dynamics for expected versus unexpected targets. Expected targets exhibited sustained occipital alpha desynchronization, while unexpected targets showed transient alpha modulation, reflecting the neural cost of processing errors. Temporal generalization of alpha-power suggested sequential propagation of prediction error signals across cortical regions, highlighting efficient hierarchical updates to internal models. In summary, our study underscores the critical role of alpha oscillations in predictive coding, revealing distinct sensory and cognitive mechanisms underlying expectation and prediction error processing during cross-modal tasks.

TALK 12: WITHIN-INDIVIDUAL NEURAL PATTERNS DIFFER FOR MEMORIES OF SELF- AND OTHER-GENERATED INTERPRETATIONS OF THE SAME STIMULI

Clara Sava-Segal, Dartmouth College

Ambiguous information can be interpreted and remembered in multiple ways, providing a tool for studying subjective memory. Social contexts, like considering others' opinions, often expose us to interpretations different from our own. The role of source (self- or other-generated) in subjective recall remains underexplored. We developed an encoding-recall paradigm using ambiguous images that generated multiple interpretations. Participants (N=41) underwent fMRI across two sessions. In session-1, on each trial, they viewed an image, generated their own interpretation (SELF), and saw another person's interpretation (OTHER). A week later, in session-2, participants freely viewed each image again, then were cued to recall SELF and OTHER interpretations one at a time (order counterbalanced across trials). Behaviorally, both interpretations were recalled above chance, though SELF was recalled more accurately. SELF and OTHER became more similar in memory, but this merge was asymmetrical: OTHER memories shifted to resemble SELF more than vice versa ($p<.001$). Neurally, we compared multivariate activity patterns in 100 cortical parcels during SELF-vs.-OTHER-cued viewings. Cueing with different interpretations significantly shaped neural activity across multimodal cortical regions, despite identical sensory input ($q<.05$). The "asymmetrical merging" was mirrored neurally, with less distinct patterns for the two interpretations in the temporal poles and angular gyrus on trials where OTHER merged more toward SELF. This suggests self-generated interpretations serve as a default "anchor" in memory. Further, neural activity during uncued viewing also resembled SELF-cued more than OTHER-cued patterns. These findings suggest self-generated interpretations dominate subjective recall by anchoring how ambiguous information is remembered.

TALK 13: HIERARCHICAL PREFRONTAL CONTRIBUTIONS TO PERCEPTUAL DECISION-MAKING

Xinxu Shen, Temple University

In visual decision-making, both high-level semantic information and low-level visual properties influence choice. However, the strong correlation between these low and high-level features in natural stimuli makes their contributions challenging to isolate. To address this, we used a deep neural network to design a stimulus set that decorrelates these properties. In the task, participants judged the similarity between a root image and two alternatives, differing in their low- and high-level similarities to the root image. Behaviorally, participants were sensitive to high-level similarity, but also showed an additive effect of low-level similarity. Participants were around 20% more likely to select an image when both low- and high-level information agreed on its similarity than when they conflicted. Neuroimaging results showed that activation in the middle frontal gyrus (MFG) increased with both high- and low-level visual similarity. Strikingly, we observed an anterior-posterior gradient within the MFG, with anterior regions linked to higher-level similarity and posterior regions to lower-level similarity. These results showed that the hierarchical organization of prefrontal cortex in encoding visual information mirrors the hierarchy of visual processing in ventrotemporal cortex. At choice, the ventromedial prefrontal cortex (vmPFC) represented the high-level similarity between the chosen image and the root, mirroring its role in representing the subjective value of choices. These findings expand our understanding of role vmPFC beyond traditional value-based decision-making to include representation of decision variables in any domain where options are compared. Together, the results suggest that the brain integrates low- and high-level visual features hierarchically to support perceptual decision-making.

TALK 14: ADAPTIVE INHIBITORY FEEDBACK MECHANISMS FOR PERCEPTUAL LEARNING

Zsofia Zavecz, University of Cambridge

Detecting relevant information in cluttered environments is key for successful recognition and interactions. Yet, our understanding of the brain mechanisms that underlie our ability to improve in perceptual tasks with training—a skill known as perceptual learning—remains limited. Here, we investigate the neurochemical and electrophysiological processes that support perceptual learning. We trained healthy young adults to detect radial vs. concentric patterns embedded in noise (i.e., Glass patterns) and measured neurochemical and electrophysiological signals before and after training. Using magnetic resonance spectroscopy (MRS), we measured neurotransmitters—glutamate and GABA—in the early visual cortex. Using electroencephalography (EEG), we assessed brain synchronization in the alpha frequency proposed as a feedback mechanism between higher- and lower-order visual areas. First, we demonstrate that training improved participants' perceptual judgments. Second, training altered the excitatory-inhibitory balance in the early visual cortex, with glutamatergic excitation increasing while GABAergic inhibition decreasing. Decreased inhibition was associated

with faster rates of perceptual learning. Third, alpha synchronization in occipital areas changed with training; that is, alpha power following stimulus presentation increased. This increase in alpha synchronization was linked to faster learning rates, suggesting that inhibitory feedback mechanisms contribute to perceptual learning. Finally, these learning-dependent changes in alpha synchronization were positively correlated with increased glutamate levels in the early visual cortex, suggesting that inhibitory feedback may drive excitation in the visual cortex to boost perceptual decisions with training. Our findings reveal a strong link between adaptive neurochemical and electrophysiological inhibitory mechanisms for optimized perceptual decisions in the adult human brain.

TALK 15: GENERATIVE MODELING TOOLS FOR CHARACTERIZING HUMAN HIGHER VISUAL CORTEX

Margaret M Henderson, Carnegie Mellon University

Characterizing the fine-grained functional organization of human higher visual cortex remains a significant challenge. Traditional neuroimaging experiments are limited in the number of stimuli they can sample, which may bias results toward particular stimulus attributes. In prior work we developed a novel data-driven tool, termed "BrainDiVE" (Luo et al. 2023, NeurIPS), which addresses these challenges by synthesizing images optimized to activate specific brain regions. BrainDiVE leverages pretrained image diffusion models guided by gradients from an image-computable fMRI encoding model. Here, we validated BrainDiVE experimentally by generating images that targeted several functional regions of interest (i.e., images predicted to maximally activate those areas), and showing them to participants in a new human fMRI study. We found that the synthesized images elicited robust and specific responses in the predicted target regions, validating BrainDiVE's ability to capture neural selectivity in human ventral visual cortex. Furthermore, we demonstrated fine-grained experimental control by differentially activating two face-selective regions—the occipital face area (OFA) and fusiform face area (FFA)—suggesting, as reflected in the BrainDiVE images, that they encode distinct aspects of faces. These findings provide new insights into the representational structure of category-selective regions and establish a novel paradigm for targeted exploration of neural selectivity in human visual cortex. More generally, our approach offers a powerful tool for investigating the functional organization of visual cortex at a fine-grained level, exceeding the capabilities of traditional methods across multiple dimensions.

Data Blitz Session 4

Saturday, March 29, 2025, 10:30 am – 12:00 pm EDT, Constitution B
Chair: Dr Yuta Katsumi, Harvard Medical School
Speakers: Ole Jensen, Nathan Whitmore, Gavin Doyle, Thays Brenner dos Santos, Simon Leipold, Marthe Mieling, Gaelle Doucet, Josefina Weinerova, Christoph Huettl, Yifan Gao, Halle Shearer, Tiara Bounyarith, Raven Wallace, Yeongji Lee, Miriam Hauptman

TALK 1: THE CONNECTIVITY CRISIS

Ole Jensen, University of Oxford

The case is often made that the brain should be investigated as a network rather than studying individual brain regions in isolation. It has been proposed that interregional functional connectivity identified from electrophysiological data is reflected by phase-synchronization in the gamma band and that the degree of synchronisation is task-dependent thus reflecting communication. Other 'non-oscillatory' methodologies have also been tested e.g. information theoretical measures, Granger causality and dynamical causal modelling. Nevertheless, the field of cognitive neuroscience has after more than three decades not converged on a commonly accepted measure of task-related functional brain connectivity estimated from electrophysiological data. We suggest that the lack of convergence is anchored in the observation that few findings on task-modulated connectivity are reproduced across laboratories. We challenge the community to prove us wrong by pointing to a MEG dataset collected by the Cogitate consortium (https://www.arc-cogitate.com/). This dataset allows for testing and verifying measures of functional connectivity associated with visual perception. In contrast to measures of interregional connectivity, the application of multivariate approaches relying on spatially distributed activity patterns has proven very powerful for identifying representational and task-specific neuronal activity. These multivariate patterns are highly distributed and reflect network interactions across the brain. We argue that theories based on circuit diagrams relying on estimating functional connectivity between a handful of regions should be abandoned in favour of testable models embracing neuronal computations distributed across the brain.

TALK 2: SLOW WAVE STIMULATION USING A SMARTWATCH IMPROVES SLEEP QUALITY

Nathan W Whitmore, MIT

Slow electrical waves in the cortex during sleep play a vital role in memory consolidation and restorative functions of sleep. Experiments that use rhythmic sounds to increase slow wave amplitude (closed-loop acoustic stimulation) have shown that increasing slow wave amplitude can improve measures of sleep quality and cognition. However, current systems used for slow wave enhancement are expensive, cumbersome, and fragile, limiting their use outside of research. To improve the usability of slow wave stimulation, we created a smartwatch app to stimulate slow waves using rhythmic vibration and sound. Stimuli are controlled using a machine learning model which uses motion and heart rate data to predict the optimal stimulus timing and intensity. We tested the effects of smartwatch stimulation in 106 participants who used the device at home. Stimulation (especially sound stimulation) increased frontal EEG delta

power compared to no stimulation, replicating previous findings on the effects of slow wave stimulation. Continuous 0.8 Hz sound stimulation was more effective than vibration stimulation or intermittent stimulation. Participants with a large delta increase during stimulation showed improvements in self-rated sleep quality and mood and reduced errors on a trail-making task following stimulation. Our results suggest that smartwatch-based slow wave stimulation can replicate the effects of stimulation with more complex lab-based and EEG systems. Smartwatch stimulation could provide a path to wide use of slow wave stimulation for cognitive enhancement.

TALK 3: ACTIVATING THE PATH TO RECOVERY: TMS-EVOKED FUNCTIONAL CONNECTIVITY RESPONSE PREDICTS CLINICAL CHANGES IN CLOSED-LOOP ACCELERATED RTMS FOR DEPRESSION

Gavin Doyle, Medical University of South Carolina

Background: Transcranial Magnetic Stimulation (TMS) is a FDA-approved treatment for depression but it is not effective in half of patients and the underlying mechanisms remain unclear. Our prior work developed a fMRI-EEG-TMS (fET) instrument that acquires fMRI and EEG simultaneously while delivering TMS. This showed TMS-evoked functional connectivity (FC) between the dorsolateral prefrontal cortex (DLPFC) and the subgenual anterior cingulate cortex (sgACC) depended on an individual's EEG phase at stimulation onset. TMS-evoked responses in the cognitive control and limbic networks significantly predicted clinical improvement for patients that received six weeks of once-daily closed-loop EEG-TMS treatment. We are investigating if our prior FC prediction results replicate in an accelerated repetitive TMS (rTMS) paradigm, where all treatment sessions are compressed into 1 week. Methods: Depressed patients undergo a fET session, then receive six closed-loop rTMS treatments a day for five days. fMRI and EEG data are processed to identify FC networks and alpha phase. Depression scores are evaluated over time. Results: Two patients have completed treatment and their fET session, with four more patients completing soon. We expect to see similar results to prior analysis on 22 fET datasets that FC between DLPFC and sgACC is modulated by EEG phase. We also expect to see that clinical improvement is predicted by TMS-evoked responses in the cognitive control and limbic networks, which was shown in prior analysis of 20 fET datasets. Conclusion: This work will demonstrate that FC predicts clinical improvement in a 1-week accelerated rTMS protocol, like our prior 6-week treatment protocol.

TALK 4: DIFFERENTIAL CONTRIBUTIONS OF DOPAMINE D1- AND D2-RECEPTOR-EXPRESSING NEURONS IN THE PRELIMBIC CORTEX DURING APPROACH-AVOIDANCE CONFLICT IN RATS

Thays Brenner dos Santos, University of Texas Health Science Center at Houston

The prelimbic cortex (PL) is involved in resolving approach-avoidance conflict when reward- and threat-associated cues co-occur. PL neurons that express dopamine type-1 (D1R) or type-2 (D2R) receptors are implicated in motivated behaviors, but their role in approach-avoidance conflict remains unknown. To address this question, we used fiber photometry combined with a dopamine sensor (GRAB-DA) or a Ca2+ indicator (GCaMP7f) to record dopamine levels or D1R and D2R neuronal activity in PL. Rats previously trained to press a lever for food during audiovisual cues were exposed to the food cues in the presence of a neutral odor (reward phase) or a fear-inducing cat odor (conflict phase). The following day, food cues were presented with a neutral odor in the same context to evaluate memory-guided decision-making (contextual phase). Rats exhibited increased defensive behaviors and reduced food-seeking responses during the conflict and contextual phases compared to the reward phase. Dopamine levels and PL-D1R activity increased in response to food cues during the reward phase and in rewarded trials of the contextual phase (risk-taking trials) but not during the conflict phase or in non-rewarded trials of the contextual phase (risk-avoiding trials). In contrast, PL-D2R activity decreased in response to food cues during the reward and risk-taking trials but not during the conflict and risk-avoiding trials. Together, our results demonstrate that increased D1R and decreased D2R neuronal activity in response to food cues bias rats' behavior towards food-seeking during conflict, suggesting that PL-D1R and PL-D2R neurons contribute to risky behavior through opposing activity patterns.

TALK 5: BETWEEN-MOVIE VARIABILITY SEVERELY LIMITS **GENERALIZABILITY OF "NATURALISTIC" NEUROIMAGING**

Simon Leipold, Donders Institute for Brain, Cognition, and Behaviour, Radboud University

"Naturalistic imaging" paradigms, where participants watch movies during fMRI, have gained popularity over the past two decades. Many movie-watching studies measure inter-subject correlation (ISC), which refers to the correlation between participants' neural activation time series. Previous research has focused on explaining ISC differences during movie-watching based on individual states and traits, such as social distance, personality, and political orientation. For example, friends show higher ISC than strangers while watching movies. However, movies are not natural categories but cultural artifacts that evoke varying levels of ISC depending on content, directing style, or editing methods. This raises questions about how much trait- or state-like differences in ISC depend on the specific movies chosen, potentially limiting the generalizability of findings across different movies. Here, we used an fMRI dataset of 112 participants watching eight animated movies to (a) quantify between-movie variability in ISC across the brain and (b) assess the implications for the generalizability of trait- or state-like effects on ISC. We found substantial between-

movie variability in ISC, with this variability differing across brain regions. Crucially, brain regions with the highest ISC exhibited the greatest variability, indicating that trait- or state-like differences in ISC from one movie may not generalize to others. We conclude that variability between movies limits the generalizability of trait- or state-like ISC differences. Using a specific movie in neuroscience should be treated similarly to using a particular task, requiring a comparable characterization of the constituent cognitive elements. Broad generalizations about "naturalistic imaging" or "movie watching" are not warranted.

TALK 6: GLOBUS PALLIDUS IRON LEVELS RELATE TO **COGNITIVE IMPAIRMENT IN ALZHEIMER'S DISEASE:** EVIDENCE FROM AN IN VIVO MRI-BASED META-ANALYSIS

Marthe Mieling, University of Lübeck

Iron plays an essential role in brain metabolism and, therefore, cognitive functioning. However, region specific iron level increases during healthy and, even more so, pathological aging, in particular Alzheimer's disease, can have detrimental effects. Although this notion has been supported by several single studies, meta-analytic evidence of a relationship between iron levels, as measured with in vivo MRI, and Alzheimer's disease (AD) is still missing. We used a meta-analytic approach of 22 in vivo MRI experiments with, in total, 685 AD patients and 1104 healthy controls (HC). All studies employed iron sensitive markers, such as R2* or QSM, and reported effects in specific brain regions, including the putamen, caudate nucleus, globus pallidus, hippocampus, and thalamus, that were further analyzed here. We also investigated the relationship between iron levels in AD and cognitive performance as measured with the Mini-Mental-Status-Examination (MMSE). In all regions of interest, iron level increases were significant in AD compared to HC, with the most pronounced effects in the putamen followed by the caudate. Importantly, in AD globus pallidus iron levels showed a negative correlation with MMSE performance. Our results provide unique evidence for the notion that iron level increases, especially within basal ganglia structures, which provide a hub for cognitive information processing, are a characteristic hallmark of AD. While this may relate to neurodegeneration, amyloid plaques and tau pathologies, our findings suggest that iron level increases can help to explain and possibly predict cognitive decline in AD.

TALK 7: DEV-ATLAS: A NEW REFERENCE ATLAS OF FUNCTIONAL BRAIN NETWORKS FOR ADOLESCENTS

Gaelle Doucet, Boys Town National Research Hospital

Adolescence is a critical period for neural changes, including maturation of the functional brain networks. The spatial and functional organization of these networks shows major age-related changes across the lifespan, but particularly during adolescence. Yet, there is currently no reference functional brain atlas derived from typically-developing adolescents. In this context, the aim of this study was to construct and validate a reference functional brain atlas based on typically-developing youth aged 8 to 17 years. We term this new atlas, "Dev-Atlas". For this, we utilized datasets from three large developmental projects (Philadelphia Neurodevelopmental Cohort, the Pediatric Imaging, Neurocognition, and Genetics study, and the Lifespan Human Connectome Project – Development). We also used an independent smaller sample collected at Boys Town National Research Hospital, for replication (n=214, 53% males, mean age=12.23 (2.63) years). After strict quality control analyses and preprocessing, our final main sample was 1,391 individuals (47% males, age=13.56 (2.7) years). For each individual dataset, the first-level analysis was carried out using probabilistic single-subject Independent Component Analysis (ICA), followed by the multiscale individual component clustering algorithm (MICCA). We further conducted linear model analyses to test the effect of age and sex on each identified network. We identified 24 reproducible networks classified within 6 domains (Default-Mode, Cognitive Control, Salience, Dorsal Attention, SensoriMotor, and Visual). Large effects of age were detected but only very limited sex differences. We have created Dev-Atlas, an atlas of reliable functional brain networks based on typically-developing children and adolescents. Dev-Atlas is freely available to the research community.

TALK 8: DETECTION OF LANGUAGE NETWORK DURING FREE SPEECH USING OPTICALLY PUMPED MAGNETOMETERS (OPMS)

Josefina Weinerova, University of Nottingham

Our memories of events represent a key aspect of our identity. Recently, there has been a shift to using more naturalistic approaches to studying memory, especially memory encoding. Natural retrieval on the other hand is currently poorly understood. This is partly due to methodological challenges. In natural settings memories are often retrieved within a conversation. However, with the sensitivity of most imaging methods to movement artifacts, recording brain activity while participants engage in a conversation can be challenging. This study aims to develop and validate a method to analyse brain signals during continuous speech, using the Optically Pumped Magnetometers (OPMs). OPMs can be used to characterise brain activity on a millisecond timescale and are more resilient to movement artifacts. We will utilise these advantages to investigate whether we can accurately detect brain activity during continuous speech. We will use a rapid visual presentation (RSVP) task where participants will be exposed to 4 conditions: sentences and nonword sequences read overtly or covertly. We expect to detect the well-established language network using the contrast between sentences and nonword sequences. The key addition is the contrast between the overt and covert reading condition which will allow us to develop a specialized pipeline to detect comparable language network for each condition and participant, despite increased movement and muscle artefacts in the overt reading

condition. This study has the potential to create a way to study brain function during continuous speech, therefore enabling further research that would significantly improve our understanding of natural memory retrieval.

TALK 9: NEUROIMMUNOLOGICAL MECHANISMS OF PSYCHOSIS - A NETWORK PERSPECTIVE WITH THE VIRTUAL BRAIN

Christoph V. M. Huettl, Charité - University Medicine Berlin

Psychosis is a severe psychiatric syndrome, with long-term quality of life most impaired by negative symptoms such as avolition and anhedonia, and cognitive deficits affecting memory and reasoning. Beyond genetic factors and substance abuse (e.g. cannabis and other hallucinogens), increasing evidence points to inflammatory imbalances —marked by elevated pro-inflammatory cytokines and imaging-based inflammatory biomarkers —as key factors for the development of psychosis. Functional connectivity (FC) changes have been found to be predictive for specific symptom profiles. While clinical trials with immunomodulatory therapies have shown significant e.g.: cognitive improvements the underlying mechanisms remain unclear, limiting personalized treatments. For the first time, this study integrates neuroinflammatory biomarkers, FC alterations, and behavioral symptoms of Psychosis in one framework. Using data from the Human Connectome Project for Early Psychosis (HCP-EP), FC and network-metrics like integration and segregation were derived from minimally preprocessed fMRI data, while brain simulation-based metrics were computed using the neuroinformatics platform The Virtual Brain (TVB: www.thevirtualbrain.org) . Symptoms were assessed using a comprehensive set of questionnaires, including PANSS and WASI-II. Our Findings demonstrate that inflammatory biomarkers significantly predict symptom severity, with FC changes acting as relevant mediators. The results shed light on the question which psychotic symptoms are closely related to inflammatory processes providing potential targets for immunomodulatory therapies. This approach may also enhance our understanding of Psychosis as a concept, adding to a growing body of evidence suggesting different mechanisms underlying this one diagnostic label.

TALK 10: REAL-TIME MODULATION OF REINFORCEMENT LEARNING USING CLOSED-LOOP TMS-EEG

Yifan Gao, Rutgers University - Newark

Background: While the link between frontal-midline theta (FMT) power, reward prediction errors, and behavioral adaption is well established, little is known about the role of FMT phase dynamics in reinforcement learning. Here, we developed a novel closed-loop system capable of tracking FMT in real-time and tested whether precisely triggering TMS synchronized with the peak or trough of FMT following feedback would impact the electrophysiological and behavioral correlates of reinforcement learning. Methods: Thirty-four participants were randomly assigned to either peak or trough closed-loop stimulation, and completed two sessions (active and sham). For each session, participants completed two decision-making tasks and received peak or trough stimulation following positive and negative feedback. The T-maze task assessed phase effects on neural responses to feedback (ERPs), while the Probabilistic Selection Task (PST) evaluated the effects on learning. Results: Relative to sham (M=2.48?V), trough stimulation diminished the reward positivity (M=0.79?V, t[16]=-2.42, p=0.028), an ERP component associated with reward processing. While the ability to generalize learning to novel pairing was spared across TMS conditions, the accuracy of learned stimulus-response mappings was impaired by peak stimulation (M=0.76) relative to sham (M=0.87, t[16]=-2.43, p=0.028). Further, trough stimulation slowed reaction time (M=979ms) compared to sham (M=877ms, t[16]=2.31, p=0.035). Discussion: These findings highlight the impact of phase-specific FMT stimulation on neural reward responses and stimulus-response associations, providing new insights into the function of FMT phase dynamics in reinforcement learning, as well as a therapeutic TMS target for cognitive impairments in conditions like substance use disorders, schizophrenia, ADHD, and traumatic brain injury.

TALK 11: BRAINEFFEX: A WEB APP FOR EXPLORING FMRI EFFECT SIZES

Hallee Shearer, Northeastern University

Estimating effect size is a critical step in power analyses, and can help inform experimental design. However, effect size estimation is particularly difficult for fMRI data due to the complexity of both the data and the analysis techniques. Further, it is difficult to obtain estimates from the literature, and small sample sizes of pilot studies may not provide precise enough estimates. When similar studies can be found in the literature, effect sizes are often not reported across the whole brain, limiting utility for study design. To facilitate the estimation and exploration of effect sizes for fMRI, we estimated effects for “typical” study designs with large (n>500) datasets (ABCD, HCP, HBN, PNC, UKB). We conducted brain-behavior correlations, task vs. rest contrasts, and between-group analyses with both functional connectivity and task-based activation maps. The analyses leverage fMRI data from rest and commonly used tasks, and behavioral data reflecting various phenotypes. In light of recent research supporting the promise of broader-level methods, we included network-level and multivariate versions of all analyses. We repeated analyses with four motion deconfounding strategies: statistical control, full residualization, thresholding, and no correction. We transformed results to Cohen’s d and R-squared estimates of effect size and calculated simultaneous confidence intervals. Finally, we created an interactive web application (BrainEffeX) for comprehensively exploring and visualizing these results. BrainEffeX is the first step in an effort to address the need for facilitated power calculations in fMRI by providing a growing resource enabling researchers to estimate and summarize

effect sizes for fMRI studies.

TALK 12: EXAMINING THE NEURAL BASES OF SPONTANEOUS MENTAL EXPERIENCES WITH REAL-TIME FMRI

Tiara Bounyarith, Drexel University

There is growing scientific interest in understanding how the brain spontaneously generates unprompted, inner mental experiences. The neural representation of mind-wandering has typically been studied using random-onset experience sampling during functional neuroimaging. However, random sampling imprecisely estimates brain activity as it is not tied to the onset of mind-wandering events. To address this limitation, we developed a method, real-time fMRI-triggered experience sampling (rt-fMRI-ES), in which thought probes are triggered based on real-time estimates of spontaneous blood-oxygenation-level-dependent (BOLD) activity. In our ongoing peer-reviewed pre-registered study, rt-fMRI-ES targeted BOLD activation in two typically-anticorrelated regions: (1) the dorsal anterior insular cortex (daIC), which is theorized to underlie subjective arousal, and (2) the posteromedial cortex (PMC), implicated in domain-general stimulus-independent thought. By targeting typically-anticorrelated regions, we could potentially validate the rt-fMRI-ES technique's ability to capture neural events that are separately time-locked to distinct mental experiences. In our current sample (n=29 of our target 60), we aimed to preliminarily test (H1) whether ratings of subjective arousal time-locked to daIC-triggered thought probes were higher than ratings not time-locked to daIC-activation, and (H2) if ratings of externally-focused attention time-locked to PMC-triggered thought probes were lower than ratings not time-locked to PMC-activation. On average, arousal was higher during daIC-activation trials compared to non-daIC-activation trials, but this relationship did not reach significance ($p=0.25$). There was no difference between attention ratings during PMC-activation trials versus non-PMC-activation trials ($p=0.63$). Support for our hypotheses after applying more rigorous statistical models once data collection has been completed could potentially validate the rt-fMRI-ES method.

TALK 13: NEURAL AND EXPERIENTIAL CORRELATES OF SUBSEQUENT MEMORY DURING MOVIE-WATCHING

Raven Wallace, Queen's University

Movie-watching is a unique paradigm that allows the opportunity to record brain activity in contexts that closely resemble real-world situations. During movie-watching, our brains coordinate between processing sensory, narrative, and emotional information. Yet, the specific neural mechanisms that uphold and sustain the focus required to support effective memory for events in a film remain unclear. One potential explanation is that regions in association cortex, such as the frontoparietal network (FPN), which are believed to facilitate cognitive control, play a significant role in sustaining our focus during movie-watching (Duncan, J. (2013), Neuron). The current study addresses this possibility using a novel approach where thoughts are mapped using multi-dimensional experience sampling (mDES) in one group of participants (Sample 1) onto the brain activity of another set of participants (Sample 2) who watched the same films. We also recorded comprehension performance in our experience sample (Sample 1) to examine whether the brain states of individuals in Sample 2 were predictive of the experience and comprehension reported by Sample 1. Our research suggests that states of reduced distraction are linked to improved memory performance for information in a given film clip, and this occurs when brain activity shows greater activation of the FPN. Our results suggest that regions in association cortex, particularly the FPN, are crucial during our experience for maintaining focus during movie-watching and help ensure that information about the film can be accurately retrieved.

TALK 14: TRACKING THE TEMPORAL DYNAMICS OF CONCEPTUAL LEARNING DURING A STEM LECTURE

Yeongji Lee, Dartmouth College

During a science lecture, successful understanding emerges as individual pieces of information are revisited, interconnected, and integrated into a unified network during the course of the lecture. In this fMRI study, participants watched a video lecture on Newtonian physics concepts and then verbally recalled what they remembered and learned from the lesson while still inside the scanner. Using the embedding space of a large language model (LLM), we first used representational similarity analysis (RSA) to identify brain regions where patterns of neural activity reflected the semantic network structure of the lecture, supporting successful comprehension as measured by verbal recall performance. In a separate analysis, we then used a voxelwise forward encoding model to predict the degree to which participants understand each underlying concept as they are built up over time throughout the lecture. We fitted a linear mapping to predict neural responses from LLM-derived semantic features, and then this mapping was aligned again with human-labeled individual concepts. Whereas the RSA approach reveals where in the brain neural patterns reflect the overall semantic organization of concepts discussed during the whole lecture, the voxelwise timecourse analysis enabled us to quantify understanding of specific concepts at given time points during the lecture, and then to compare these estimates with post-lecture quiz scores and verbal recall performance. The findings demonstrate that mapping the timecourse of neural representations with a large language model provides a powerful tool to characterize individual differences in conceptual understanding by revealing the temporal dynamics of abstract knowledge construction during learning.

TALK 15: CAUSAL KNOWLEDGE IS EMBEDDED IN SEMANTIC NETWORKS

Miriam Hauptman, Johns Hopkins University

When reading something like, “Sam attended a busy conference. Now he has COVID,” we naturally infer a causal relationship between crowded spaces and the invisible transmission of illness. What neural mechanisms support such automatic causal inferences? We tested the pre-registered hypothesis that causal knowledge is embedded within distinct high-level semantic networks. Prior work suggests that thinking about living things (people, animals) and inanimate objects depends on partially distinct networks (e.g., Warrington & Shallice, 1984). The precuneus has been implicated in high-level representations of living things (e.g., Fairhall & Caramazza, 2013). Participants (n=32) undergoing fMRI read causal vignettes that encouraged biological inferences about illness (e.g., cancer, flu) or encouraged mechanical inferences about objects breaking down (e.g., teapots, houses). Non-causal control vignettes contained the same sentences but were not causally connected. All vignettes were about people and contained similar grammatical structure and lexical items. The same participants performed localizer tasks: theory of mind, language, and logical reasoning. Univariate and multivariate analyses revealed that biological causal inferences selectively recruit the precuneus. Within the precuneus, responses to biological inferences were ventral to individually localized responses to mental states, pointing to a neural distinction between causal inferences about the body and the mind. Visual regions in lateral ventral occipitotemporal cortex involved in the perception of living things did not exhibit sensitivity to biological causal inferences. Mechanical causal inferences recruited a distinct set of areas implicated in intuitive physics and place concepts. Together, these findings suggest that causal knowledge is distributed across distinct high-level semantic networks.

Rising Stars Session

Saturday, March 29, 2025, 1:00 – 3:00 pm EDT, Constitution Ballroom
Chair: Vishnu Murty, University of Oregon
Speakers: Samuel McDougle, Jiefeng Jiang, Rachel Denison, Karolina Lempert, Thomas Schreiner, Meghan Meyer, Trevor Brothers

SLIDE 1: ABSTRACT INTERNAL MODELS FOR SENSORIMOTOR PLANNING

Samuel McDougle, Yale University

Internal models enable efficient motor planning by predicting the sensory consequences of movements. However, it is not well understood where and how these models are represented neurally, independent from lower-level features of movement control. We developed an fMRI reaching task where, in certain contexts, participants made the same movements to reach the same sensory goal, but under differently structured sensory perturbations (visuomotor rotation versus mirror reflection). This caused participants to plan identical movements using distinct abstract internal models, despite lower-level features (e.g. target locations and reaching kinematics) being identical. This allowed us to analyze BOLD data during motor planning to localize abstract internal models in the brain via decoding analyses. Our results help clarify where and how abstract internal models for movement are represented in the brain and reveal new clues about the neural correlates of the cognitive-motor interface.

SLIDE 2: NOT JUST SELF-CONTROL: LINKS BETWEEN MEMORY AND TEMPORAL DISCOUNTING

Karolina Lempert, Adelphi University

Temporal discounting, the tendency to prefer smaller, sooner rewards over larger, later rewards, is a universal phenomenon. Yet people vary drastically in their temporal discounting rates, which reflect the extent to which they can tolerate delays. Higher temporal discounting rates, which indicate a relative preference for more immediate rewards, are associated with gambling, drug abuse, and other risky behaviors. It has long been assumed that high temporal discounting rates emerge from poor cognitive control, but evidence for this idea is scarce and mostly indirect. Recently, experimental research showing that episodic future thinking reduces temporal discounting has led to an increased interest in the role of the episodic memory system in this choice process. However, it is unknown if (and how) episodic memory contributes to individual differences in discounting. Here I will argue that temporal discounting rates are shaped by people's concepts of time, which are formed via episodic memory processes. I will present some preliminary findings from my lab that support this idea. We find that individual differences in event segmentation – which influences memory for time duration – are associated with temporal discounting rates, such that people who segmented an audio narrative more normatively were more future-oriented. Moreover, people with more variability in pupil-linked arousal during time intervals (1) remember those intervals as longer, and (2) are less willing to wait for future rewards. This research advances our understanding of the adaptive functions of episodic memory, by demonstrating how it may be foundational to the formation of intertemporal preferences.

SLIDE 3: RESPIRATION MODULATES SLEEP OSCILLATIONS AND MEMORY REACTIVATION IN HUMANS

Thomas Schreiner, Department of Psychology, Ludwig-Maximilians-Universität, München, Germany

The beneficial effect of sleep on memory consolidation relies on the precise interplay of slow oscillations (SOs) and spindles. However, whether these rhythms are orchestrated by an underlying pacemaker has remained elusive. Here, I will argue that respiration, known to influence brain rhythms and cognition during wakefulness, might represent such a scaffold rhythm, enabling the precise coordination of sleep-related oscillations and memory reactivation in humans. We recorded electroencephalography and respiration throughout an experiment in which participants (N = 20) acquired associative memories before taking a nap. Our results reveal that respiration modulates the emergence of sleep oscillations. Specifically, slow oscillations, spindles as well as their interplay (i.e., SO-spindle complexes) systematically increase towards inhalation peaks. Moreover, the strength of respiration – SO-spindle coupling is linked to the extent of memory reactivation (i.e., classifier evidence in favour of the previously learned stimulus category) during SO-spindles. These results identify a clear association between respiration and memory consolidation in humans and highlight the role of brain-body interactions during sleep.

SLIDE 4: HIERARCHICAL PREDICTIVE CODING IN LANGUAGE: LIMITS AND FUTURE DIRECTIONS

Trevor Brothers, North Carolina A&T State University

Language is inherently hierarchical, and the brain must transfer sensory information from lower to higher cortical areas as we process the meaning of words and sentences. In my recent work, hierarchical predictive coding has provided a useful conceptual framework for understanding 1) how sensory inputs activate higher-order conceptual representations and 2) why language inputs give rise to specific patterns of evoked neural activity over time. Here, I present an implemented predictive coding model of the N400 that links this neural response to prediction error at the lexico-semantic level of representation. Next, I discuss late (post-N400) neural activity, which I interpret as a prediction error at the level of the discourse or situation model. Finally, I present event-related potential data from reading comprehension that demonstrates the limits of predictive coding. Specifically, I show that predictive context has no influence on early

visual responses (0-200ms), and I discuss why these early processing stages may be informationally encapsulated.

SLIDE 5: HOW IS TASK KNOWLEDGE ORGANIZED ALONG AN AXIS OF COMPLEXITY?

Jiefeng Jiang, University of Iowa

One hallmark of human intelligence is the ability to perform a diversity of complex tasks, such as driving a car, cooking a meal, or making financial decisions. How we live our lives depends heavily on this task knowledge, which encompasses the tasks we have learned to perform (i.e., our skillsets) and how well we perform them. Our lab works on a fundamental question in cognitive neuroscience: How does the brain organize and implement task knowledge to achieve adaptive behaviors? Specifically, we are interested in how different tasks can be organized based on their complexity. I will present two projects in this line of research. In the first project, we use theories of associative memory to study how simple tasks can be used as building block to facilitate the learning of complex tasks. We show that the brain not only encodes associations between subtasks of a complex task but also accelerates the learning of a novel complex task through associative inference. In a second project, we demonstrate how the brain decomposes a complex task into simple stimulus-response associations through practice. I will also introduce how we use computational modeling and tools of dynamic systems in these projects.

SLIDE 6: NEURAL MECHANISMS OF ATTENDING TO MOMENTS IN TIME

Rachel Denison[1,2], [1]Boston University, [2]New York University

Our brains receive a continuous flow of sensory information but cannot process all of it. Attention allows us to prioritize the information that is most relevant for our behavioral goals. We can attend not only to locations in space but also to moments in time when we expect something relevant to appear. Here in two studies we investigated the neural mechanisms of attending to moments in time using MEG. Participants were cued to attend to one of two sequential grating targets with predictable timing. The first study used time-resolved steady-state visual evoked responses (SSVER) to investigate how temporal attention modulates anticipatory visual activity. In the pre-target period, visual activity measured with a background SSVER probe steadily ramped up as the targets approached. Furthermore, we found a low-frequency modulation of visual activity, which shifted approximately 180 degrees in phase according to which target was attended. The second study used time-resolved decoding and source reconstruction to examine how temporal attention affects the dynamics of target representations. Temporal attention to the first target enhanced its orientation representation within a left fronto-cingulate region just before the second target appeared, perhaps protecting it from interference from the second target within the visual cortex. Together these studies reveal how temporal attention flexibly shapes pre-target periodic dynamics and post-target routing of stimulus information to select a task-relevant stimulus within a sequence.

SLIDE 7: THE DEFAULT NETWORK PRIORITIZES SOCIAL MEMORY CONSOLIDATION DURING REST

Meghan Meyer; Columbia University

Sociality is central to human experience—we rely on others for survival and navigate complex networks to thrive. Are there brain mechanisms that help us quickly learn about our social world? This talk reviews two recent fMRI studies testing whether social information is prioritized during memory consolidation during rest. Study 1 used the documentary Samsara, featuring real people and places. Participants watched “social” and “nonsocial” scenes, normed to control for confounding factors (e.g., valence, narrative processing). Afterward, they completed a rest scan and a surprise memory test. Participants showed better social (vs. nonsocial) memory performance, which was driven by neural pattern reinstatement during early rest in the dorsomedial prefrontal cortex (DMPFC), a key default network node—supporting a temporal “prioritization” account. Study 2 found that individual differences in default network connectivity during early rest predicted what features of social stimuli participants recall, again pointing to temporal prioritization. Together, these findings suggest portions of the default network prioritize social memory consolidation, influencing both how much and which social information we retain. This work updates theories of memory consolidation, which have largely overlooked social prioritization, and advances understanding of default network function. More broadly, it highlights our intrinsic drive to comprehend the social world.

General Information

Abstracts

Poster abstracts can be found in the program 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 and we will do our best to accommodate you.

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

Sheraton Boston Hotel ADA Amenities - Property has elevators, Self-Operating lift or a sloped entry in hotel swimming pools, Service Animals are Welcome

Accessible Areas with Accessible Routes from Public Entrance Accessible Entrance to On-Site Pool; Entrance to On-Site Business Center is Accessible; Entrance to On-Site Fitness Center is Accessible Main Entrance is Accessible; Meeting Spaces are Accessible; On-Site Restaurants are Accessible; Room and Suites Access through the Interior Corridor

Nursing/Lactation Room - CNS is providing a Nursing/Lactation Room with comfortable seating in the MPO – Back Bay Room of the Sheraton Boston 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

Hotel guests can check their bags with the bellman, at the hotel front desk. Non-hotel guests are not able to check their bags.

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Business Center

The FedEx Office and Print center is conveniently situated on the Second Floor across from Back Bay Ballroom at the Sheraton Boston 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, March 29

Coffee Service, 3:30 – 4:00 pm, *Grand Ballroom Foyer*
Welcome Reception, 6:00 – 7:00 pm, *Grand Ballroom Foyer*

Sunday, March 30

Continental Breakfast, 8:00 – 8:30 am, *Grand Ballroom Foyer*
Coffee Service, 3:30 – 4:00 pm, *Grand Ballroom Foyer*

Monday, March 31

Continental Breakfast, 8:00 – 8:30 am, *Grand Ballroom Foyer*
Coffee Service, 3:30 – 4:00 pm, *Grand Ballroom Foyer*

Tuesday, April 1

Continental Breakfast, 8:00 – 8:30 am, *Grand Ballroom Foyer*

Certificate of Attendance

Certificate of Attendance will be available in your CNS account after the CNS Annual meeting concludes. If you require any changes, email meeting@cogneurosociety.org we will be happy to assist.

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.

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, March 31, 8:30 am - 10:00 am, *Clarendon Room*

Contact Us

To contact us onsite, visit the Registration Counter in the Ballroom Foyer of the Sheraton Boston 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 one drink ticket that can be redeemed for alcoholic or non-alcoholic beverages at the Welcome Reception on Saturday. Lost drink tickets will not be replaced.

Exhibit Hall

The conference exhibit is located in the Back Bay Ballroom + Republic Ballroom of the Sheraton Boston Hotel. Located in this room are the posters and exhibit booths. The Exhibit Hall is open to all attendees at the following times:

Saturday, March 29
Exhibits Open, 3:00 pm – 5:15 pm
Exhibit Hall Closed for the Day – No Entry after 5:15 pm

Sunday, March 30
Exhibits Open, 8:00 am – 7:15 pm
Exhibit Hall Closed for lunch – No Entry, 12:00 - 1:30 pm
Exhibit Hall Closed for the Day – No Entry after 7:15 pm

Monday, March 31
Exhibits Open, 8:00 am – 5:00 pm
Exhibit Hall Closed for lunch – No Entry, 12:00 -1:30 pm
Exhibit Hall Closed for the Day – No Entry after 5:45 pm

Tuesday, April 1
Exhibits Open, 8:00 am – 10:00 am
Exhibit Hall Closed for the Day – No Entry after 10:15 am

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The Sheraton Boston Hotel is our exclusive Hotel for the CNS 2025 Annual Meeting and where all CNS 2025 meeting events will be held. The Sheraton Boston Hotel is located at 39 Dalton St, Boston, MA 02199, USA.

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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.

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Lost & Found

The meeting Lost and Found is located at the Registration Desk in the Ballroom Foyer of the Sheraton Boston 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 Boston Hotel. The member services desk will be open at the following times (*Subject to Change):

Saturday, March 29	11:00 am – 5:00 pm
Sunday, March 30	7:30 am – 4:30 pm
Monday, March 31	8:00 am – 5:00 pm
Tuesday, April 1	Closed

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

Mobile Phones

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

Name Badges

The Sheraton Boston 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 Boston Hotel for a replacement.

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CNS is providing a Nursing/Lactation Room with comfortable seating in the MPO Back Bay Room of the Sheraton Boston Hotel. Located on the second floor. Email meeting@cogneurosociety.org for more information.

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The Sheraton Boston Hotel offers valet service for $70, daily. Please note this information was correct at time of print.

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Poster Sessions

Poster sessions are scheduled on Saturday, March 29, Sunday, March 30, Monday, March 31, and Tuesday, April 1. The presenting author must be present during the assigned session and other authors may be present to answer questions. The poster sessions are in Back Bay Ballroom + Republic Ballroom of the Sheraton Boston Hotel. Badges are required at all times. Do not leave personal items in the poster room.

Quiet Lounge

CNS will be providing a quiet lounge area in the Fairfax Room located on the 3rd floor.

Receipts

You received two receipts via email, two at the time of purchase, one from Stripe and a second from CNS 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 Grand Ballroom Foyer of the Sheraton Boston Hotel, Saturday, March 29, 6:00-7:00 pm. You must wear your badge to gain entrance.

Registration

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

Saturday, March 29	9:30 am – 6:30 pm
Sunday, March 30	7:30 am – 6:30 pm
Monday, March 31	8:00 am – 5:30 pm
Tuesday, April 1	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

From the Sheraton Boston Hotel, you have various transportation options, including the GoBoston Shuttle, the City of Boston Shuttle, the subway, taxis, ride-sharing services (Uber/Lyft), and the Logan Express

Trifold

One copy of the Trifold 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 Boston Hotel on the last day of the event. Every effort has been made to produce an accurate Trifold. If you are speaking at the conference, please confirm your presentation times as listed in this Trifold.

Website

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Exhibitors

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mBrain Train	BOOTH 17
Neuracle Neuroscience	BOOTH 3
NeuroWoods, Inc.	BOOTH 16
NIRx Medical Technologies, LLC	BOOTH 6
NITRC-NeuroImaging Tools & Resources Collaboratory	BOOTH 11
Porsolt	BOOTH 13
Psychology Software Tools	BOOTH 9
Rogue Research, Inc.	BOOTH 8
SilicoLabs	BOOTH 5
Soterix Medical	BOOTH 10
The MIT Press	BOOTH 4
Tucker-Davis Technologies (TDT)	BOOTH 18
Wearable Sensing	BOOTH 1

Exhibit Hours

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Monday, March 31	8:00 am – 12:00 pm 1:30 pm – 5:00 pm
Tuesday, April 1	8:00 am – 10:00 am

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

GSA/PFA Awards

Congratulations to the 2025 winners of the Graduate Student Awards and the Post-Doctoral Fellow Awards.

Graduate Student Award Winners

- Chelsea C. Ajunwa, Northeastern University
- Brenna Hagan, Boston University
- Shenyang Huang, Duke University
- Ji Sun Kim, Seoul National University
- Lexin Liang, New York University
- Rupsha Panda, University of Michigan
- Ryan Panela, Rotman Research Institute
- Laura M. Stoinski, Max Planck Institute CBS, Leipizig
- Harshada Vinaya, University of California, San Diego
- Marine Yumeng Wang, University of Chicago

Post-Doctoral Fellow Award Winners

- James Brissenden, University of Michigan
- Pin-Chun Chen, University of Oxford
- Christine Chesebrough, Feinstein Institutes for Medical Research
- Philip Deming, Northeastern University
- Jérémie Ginzburg, Montreal Neurological Institute, McGill University
- Yushuang Liu, Boston College
- Liu Mengxing, School of Medicine, Tufts University
- Athanasia Metoki, Washington University in St. Louis
- Samer Nour Eddine, Tufts University
- Qin Yin, University of Texas at Dallas

Invited-Symposium Sessions

#	Title	Date	Time	Location
1	Cognitive functions of replay	Sunday, March 29	10:00 am - Noon	Grand Ballroom
2	Advances in lesion methods: Mapping, plasticity, disconnectomics, and more	Sunday, March 29	10:00 am - Noon	Constitution Ballroom
3	100 Years of EEG: Where Are We?	Tuesday, April 1	10:00 am - Noon	Grand Ballroom
4	The Cognitive Thalamus: Thalamocortical Mechanisms in Attention and Cognitive Control	Tuesday, April 1	10:00 am - Noon	Constitution Ballroom

Invited Symposia Session 1

COGNITIVE FUNCTIONS OF REPLAY

Sunday, March 30, 2025, 10:00 am – 12:00 pm EDT, Grand Ballroom

Chair: Anna Schapiro[1]; [1]University of Pennsylvania
Presenters: Anna Schapiro, Matthijs van der Meer, Nathaniel Daw, Helen Barron

During periods of sleep, awake rest, and pauses amidst active behavior, the brain reactivates memories of previous experiences. What is the function of this offline replay? Replay appears to be far from a simple recapitulation of recent experience, both in the way that experiences are prioritized for replay and in the content of the reactivation. Observations about the complex characteristics of replay have led to diverse theories of replay's function, including that it plays important roles in memory consolidation, planning, decision making, and reinforcement learning. The speakers in this symposium will lay out a range of recent views on the functions of replay, with some contrasts for discussion.

TALK 1: REPLAY FOR TRANSFORMATION AND INTEGRATION

Anna Schapiro[1]; [1]University of Pennsylvania

The canonically-assumed function of replay is to strengthen recent memories for long term storage and use. But a simple strengthening account does not explain how memories change over time or how they are integrated with our existing knowledge. I will present empirical evidence that replay drives memory transformation as opposed to just strengthening, that it results in knowledge abstracted away from the superficial features of memories, and that it can drive integration of related new and old memories. I will present computational models accounting for ours and others' empirical results that support a memory-focused interpretation of replay's function.

TALK 2: UNBALANCED TRAINING REGIMES, TASK REPRESENTATIONS, AND THE FUNCTION OF REPLAY

Matthijs van der Meer[1]; [1]Dartmouth College

Despite many compelling experimental and theoretical results, we still don't know the internal logic of what experiences are prioritized for replay. After a brief critical review where I evaluate the leading theories against the data, I will examine one particular puzzle: on tasks that feature unbalanced training regimes, rats paradoxically replay the less-experienced trajectory. To understand why, we simulated a feedforward neural network using either rich (structured representations tailored to task demands) or lazy learning (unstructured, task-agnostic representations). Rich, but not lazy, representations degraded following unbalanced experience, an effect that could be reversed with paradoxical replay. To test if this computational principle can account for the experimental data, we examined the relationship between paradoxical replay and learned task representations in the rat hippocampus. In two different data sets, we found an association between the richness of learned task representations and the paradoxicality of replay. Taken together, these results suggest that paradoxical replay specifically serves to protect rich representations from the destructive effects of unbalanced experience, and more generally demonstrate a novel interaction between the nature of task representations and the function of replay in artificial and biological systems.

TALK 3: PRIORITIZED REPLAY: THEORY AND PRACTICE

Nathaniel Daw[1]; [1]Princeton University

There are many hypotheses – but rather little direct evidence – about the function(s) of replay. We have suggested that which items the brain "chooses" to replay in different circumstances should be revealing about the goals driving those selections, and therefore bear on the question of function. I review several examples of this theoretical framework and recent results supporting the notion that nonlocal activity in hippocampus is judiciously allocated with respect to the animals' ongoing goals.

TALK 4: BUILDING INTERNAL MODELS DURING PERIODS OF REST AND SLEEP

Helen Barron[1]; [1]University of Oxford

Every day we make decisions critical for adaptation and survival. We repeat actions with known consequences. But we can also infer associations between loosely related events to infer and imagine the outcome of entirely novel choices. In the first part of the talk I will show that during periods of rest, co-activation of hippocampal cells in sharp-wave/ripples represent inferred relationships that include reward, thereby "joining-the-dots" between events that have not been observed together but lead to profitable outcomes. I will show how this hippocampal mechanism appears to propagate to other brain regions, to build a hierarchical internal model. Building on these findings at the cellular level, I will then show the implications of this neural mechanism for behaviour. I will show that memory reactivation during periods of rest facilitates participants' ability to perform novel inferences, with no effect observed for directly learned information. Together these studies suggest that computing new mnemonic links during rest/sleep provides an important mechanism to support adaptive behaviour.

Invited Symposium 2

ADVANCES IN LESION METHODS: MAPPING, PLASTICITY, DISCONNECTOMICS, AND MORE

Sunday, March 30, 2025, 10:00 am – 12:00 pm EDT, Constitution Ballroom

Chair: Lesley Fellows[1]; [1]McGill University
Presenters: Pedro Nascimento Alves, Chris Rorden, Erin Meier, Michel Thiebaut de Schotten

Studies of the effects of focal brain lesions on behaviour are at the foundation of cognitive neuroscience. Clinical case reports were pivotal in launching the study of the brain basis of many cognitive functions, with the symptoms of patients such as Leborgne, H.M., and Phineas Gage still serving as touchstones and sources of inspiration in our field. With the proliferation of new methods to study the healthy human brain in recent years, lesion research took something of a back seat in cognitive neuroscience. However, it continues to be a crucial source of causal evidence for brain-behavior relationships, complementing the correlational findings from other methods. Lesion studies are also natural bridges for the clinical translation of cognitive neuroscience insights. Human lesion research has not been resting on its inferential and translational laurels: Methodological and analytic innovations have improved how we define the effects of lesions, including considering both local and distant effects, and how lesion-induced dysfunction is mapped to component processes of behavior. Larger sample sizes and sophisticated statistical approaches have enhanced reliability and generalizability. This symposium will provide an overview of recent advances in lesion research methodologies, give examples of how lesion findings have supported or questioned current models of the neural substrates of cognition, and discuss how these methods can be best applied to enhance our understanding of the human brain and to use that understanding to improve health.

TALK 1: USING HUMAN BRAIN LESIONS TO INFER FUNCTION: ENTERING A NEW ERA

Chris Rorden[1], Hans-Otto Karnath[2], Leonardo Bonilha[1]; [1]University of South Carolina, [2]University of Tübingen, Germany

Lesion mapping provides unique insights into the causal relationships between brain regions and cognitive functions, leveraging routine clinical imaging data to address critical questions about brain function and injury. Unlike other neuroimaging methods, lesion studies capitalize on vast existing datasets from routine care, enhancing generalizability and patient impact. Recent advances in imaging, machine learning, and network modeling have revolutionized this field, allowing for accurate prognosis, personalized treatment, and deeper understanding of brain resilience and recovery. However, lesion-based methods face challenges, including spatial biases from vascular architecture and limited data on infrequently injured regions. Innovative approaches like disconnectome analyses and complementary injury types (e.g., traumatic brain injury, tumors) mitigate these issues, while machine learning identifies synergistic predictors from diverse datasets. Clinical applications extend beyond neuroscience, improving stroke care, trial design, and preventative strategies. Future progress requires standardized behavioral metrics, longitudinal studies, and robust data-sharing frameworks. Advances in anonymization, data alignment, and federated learning address privacy concerns and enhance collaborative research. This new era integrates lesion-based tools with complementary methods, advancing both basic neuroscience and clinical care.

TALK 2: EVOLUTION OF LESION-BEHAVIOR RELATIONSHIPS OVER TIME: EVIDENCE FROM ACUTE TO CHRONIC STROKE

Erin Meier[1,2], Argye Hillis[2]; [1]Northeastern University, [2]Johns Hopkins University School of Medicine

The emergence and subsequent widespread application of lesion-symptom mapping (LSM) techniques has revolutionized scientific understanding of the neural architecture of complex cognitive processes. Unlike cross-sectional studies, longitudinal LSM elucidates how causal brain-behavior relationships evolve over time, providing insight into potential redundancy within cognitive networks. In stroke research, LSM in acute and chronic samples differs in its theoretical implications and methodological requirements. Lesion correlates of acute stroke impairments likely reflect critical processing nodes of the undamaged, neurotypical network whereas lesion findings unique to the chronic stroke stage likely reflect neural reorganization and recovery. Work from our group has demonstrated the importance of incorporating other markers of tissue dysfunction (e.g., hypoperfusion, white matter hyperintensities) into LSM models in different stroke

recovery stages. In this talk, we will consolidate and review findings from over 20 years of work from our group regarding lesion correlates of language deficits in acute to chronic stroke in order to demonstrate the power of LSM and its implications for the neurobiology of language.

TALK 3: MAPPING THE EFFECTS OF BRAIN LESIONS ON NEUROTRANSMITTER CIRCUITS

Pedro Nascimento Alves[1], Justine Y Hansen[2]; [1]Universidade de Lisboa, Portugal, [2]McGill University

The discovery of neurotransmitters reshaped our understanding of brain function. Distinctive patterns of neurotransmission frame determinant circuits for cognition and behavior. Stroke, as a predominant cause of brain pathology, triggers a cascade of cognitive and behavioral sequelae. The relationship between the neurotransmitter systems and deficits arising from stroke presents a promising avenue for exploration. Yet, the challenges of neurotransmitter circuits mapping in vivo have hampered this investigation. Recently, we combined normative nuclear medicine imaging data with tractography to develop a novel MRI white matter atlas of neurotransmitter circuits. We created a tool - the NeuroT-map - that estimates how stroke damages neurotransmitter systems and innovatively charts if the disruption was predominantly pre or postsynaptic, taking into account neurochemical diaschisis. We will show the main patterns of neurotransmitter circuit damage in stroke and discuss the potential of tailored neurotransmitter modulation treatments for stroke-associated cognitive dysfunction.

TALK 4: THE EMERGENT SYMPTOMS OF THE DISCONNECTED BRAIN

Michel Thiebaut de Schotten[1,2], Anna Masleuvits[2], Chris Foulon[2], Lia Talozzi[2]; [1]Sorbonne Universities, Paris, [2]CEA University of Bordeaux

Significant strides have been made in delineating the white matter architecture in the living human brain in the last two decades. These pathways have been identified as pivotal in supporting cognitive functions, with their variability closely associated with differences in cognitive performance, psychiatric conditions, and neurological manifestations. This underscores a hypothesis that brain functionality is not isolated within regions but emerges from the interaction facilitated by white matter connections. In our presentation, we will unveil cutting-edge methodologies developed recently in our lab – namely, the disconnectome and emuse – to explore these emergent properties. We will discuss their implications for understanding complex neuroscientific phenomena, such as consciousness and neuropsychological recovery post-stroke.

Invited Symposium 3

100 YEARS OF EEG: WHERE ARE WE?

Tuesday, April 1, 2025, 10:00 am – 12:00 pm EDT, Grand Ballroom

Chair: Bin He[1]; [1]Carnegie Mellon University

Presenters: Bin He, Christoph Michel, Laura Astolfi, Scott Makeig

Electroencephalography (EEG) represents the scalp manifestation of brain activity, reflecting synchronized activity of neuronal populations engaged in specific tasks or brain states. Over the past century, EEG research has undergone remarkable evolution. Initially focused on the visual inspection of amplitude and frequency changes in spontaneous brain activity—such as rhythmic oscillations in the delta, theta, alpha, beta, and gamma bands—and event-related potentials (ERPs), it has advanced to enable three-dimensional source imaging of dynamic brain activity, microstate analysis of brain information processing, separation of brain signals from non-brain components, and the study of coherence and functional connectivity. In this session, Dr. Bin He will discuss EEG source imaging for dynamic brain source localization using high-density EEG, as well as EEG-based brain-computer interfaces for controlling computers and robotic devices. Dr. Christoph Michel will discuss EEG microstate analysis and its role in revealing information processing within large-scale neural networks. Dr. Laura Astolfi will discuss the investigation of functional brain networks through analyses of synchrony, coherence, and causality. Dr. Scott Makeig will discuss EEG information mining using independent component analysis (ICA) to extract brain-relevant sources and reject non-brain processes.

TALK 1: EEG SOURCE IMAGING AND BRAIN-COMPUTER INTERFACE

Bin He[1]; [1]Carnegie Mellon University

Brain activity is distributed across a three-dimensional volume and evolves over time. Mapping the spatiotemporal distribution of brain activation with high spatial and temporal resolution is crucial for understanding brain function and aiding in the clinical diagnosis and management of brain disorders. EEG source imaging has significantly advanced our ability to map and image brain function and dysfunction. In this presentation, we will review the EEG source imaging approaches developed over the past decades and highlight the state-of-the-art capabilities for imaging brain source location, extent, and dynamics using scalp-recorded EEG as a functional neuroimaging modality. We will also discuss the principles and advancements in brain-computer interfaces utilizing noninvasive EEG, which enable the decoding of human intentions for controlling computers and robots. We demonstrate that humans can control the flight of a drone and robotic arm—enabling actions such as reaching, grasping, and continuous movement in three-dimensional space—using only "thoughts" decoded from noninvasive EEG signals.

TALK 2: TEMPORAL DYNAMICS OF EVOKED AND SPONTANEOUS NEURONAL NETWORKS REVEALED BY MICROSTATE ANALYSIS OF HIGH-DENSITY EEG

Christoph Michel[1]; [1]Faculty of Medicine, University of Geneva, Switzerland

High-density EEG recordings, along with scalp electric field analysis, provide a powerful tool for capturing the rapid flow of information processing within large-scale neural networks. EEG studies examining the spatial distribution of global scalp electric fields have demonstrated that both ERPs and ongoing EEG activity can be segmented into brief, sub-second periods of stable topographies, referred to as "EEG microstates." These microstates are hypothesized to represent fundamental units of thought during information processing. Neurophysiologically, EEG microstates correspond to periods of synchronized activity within large-scale networks that support specific cognitive functions. EEG microstate analysis has become widely adopted in EEG research, with a notable increase in publications across cognitive and clinical neuroscience. This presentation provides an overview of the analytical approach and summarizes current knowledge on the functional significance of EEG microstates.

TALK 3: EXPLORING FUNCTIONAL BRAIN NETWORKS WITH EEG: SYNCHRONY, COHERENCE, AND CAUSALITY

Laura Astolfi[1]; [1]University of Rome Sapienza, Italy

Over its century-long history, EEG analysis has evolved from visual inspection of amplitude and frequency changes over time to a comprehensive description of data properties in the temporal, spatial and spectral domains. Unlike other neuroimaging techniques, EEG allows the study of fast neural interactions, which are essential for understanding synchrony, coherence and causal relationships within functional brain networks. Despite limitations in spatial resolution, the millisecond-level precision of EEG is essential for capturing the dynamics of brain connectivity, allowing for a deeper analysis of how neuronal populations communicate and synchronise over time. My presentation will explore these aspects, highlighting how EEG data can reveal the temporal flow and structure of neural interactions in cognitive and clinical contexts. By situating EEG-based connectivity studies within the larger field of network neuroscience, I will discuss current methodologies, recent advances and ongoing challenges in using EEG to reveal the brain's dynamic network organization in health and disease.

TALK 4: EEG INFORMATION MINING

Scott Makeig[1]; [1]University of California San Diego

The primary limitation of EEG as a brain imaging modality, the broad spatial spread of current from each cortical location to the scalp, is ever more addressable through information theory-based methods. Separation of potentials arising from brain and non-brain processes by independent component analysis (ICA) is now routine. Identification of multiple temporally and functionally-distinct brain ‘effective source’ signals is an important concomitant. Localization of cortical brain effective source activities contributing to the scalp-recorded signals is most accurate when combined with geometric information in participant magnetic resonance head images. Combining these with ICA also enables estimation of individual participant skull conductivity – the strongest uncertainty now limiting localization of specific cortical territories contributing most markedly to scalp-recorded signals. ICA decomposition of scalp EEG recordings can now also be used to detect non-stationary transitions in brain and cognitive state, to identify characteristic source frequency modes, and to clarify relationships of brain source activities to individual event context.

Invited Symposium 4

THE COGNITIVE THALAMUS: THALAMOCORTICAL MECHANISMS IN ATTENTION AND COGNITIVE CONTROL

Tuesday, April 1, 2025, 10:00 am – 12:00 pm EDT, Constitution Ballroom

Chair: Kai Hwang[1]; [1]University of Iowa
Presenters: Kai Hwang, Sabine Kastner, Stephanie Jones

This symposium will showcase the critical role of the thalamus in cognitive control and attention. By highlighting diverse methodologies—including population recordings, representational analyses, computational modeling, and developmental investigations—the symposium will present thalamocortical motifs as fundamental building blocks for a variety of cognitive processes.The four invited talks will cover the following topics: (1) Kai Hwang (University of Iowa) will discuss findings on the human mediodorsal thalamus, highlighting its low-dimensional activity structure, its role in encoding context for flexible cognitive control, and its influence on cortical task representations. (2) Sabine Kastner (Princeton University) will examine the functional role of the pulvinar, focusing on transthalamic pathways that regulate cortical interactions and integrate contextual signals for attention and perception, particularly under conditions of uncertainty. (3) James Bourne (NIMH) will explore the medial pulvinar's role in developing thalamocortical circuits. Lesion studies in marmosets reveal its essential contributions to the maturation of prefrontal cortex circuits and executive functions such as working memory and cognitive flexibility, underscoring its relevance to neurodevelopmental disorders. (4) Stephanie Jones (Brown University) will introduce the Human Neocortical Neurosolver (HNN), a modeling tool for interpreting the biophysical underpinnings of EEG/MEG signals. HNN bridges macro-scale recordings with cellular-level thalamocortical dynamics, providing insights into how these interactions generate neural signals critical for higher-level cognitive functions. Together, these talks will provide an integrated perspective on how thalamocortical interactions underpin attention, cognitive control, and neurocognitive development.

TALK 1: WHAT IS THE ROLE OF THE HUMAN MEDIODORSAL THALAMUS IN COGNITIVE CONTROL?

Kai Hwang[1]; [1]The University of Iowa

In a series of studies, we investigated the connectivity and representational properties of the human mediodorsal thalamus (MD) and its contributions to cognitive control. Our findings revealed several key insights. First, using fMRI data from subjects performing a diverse set of tasks, we found that task-evoked thalamic responses converge onto a low-dimensional structure. This architecture reflects a compact set of basis activity patterns in the thalamus, with anterior, medial, and posterior-medial regions exhibiting broad, domain-general activity profiles. These findings align with evidence identifying these thalamic regions as multi-domain network hubs. Second, this low-dimensional representation preferentially encodes context in the MD during hierarchical cognitive control and influences cortical activity to select context-relevant representations. To further understand how task-evoked thalamic responses contribute to hierarchical cognitive control, we developed a thalamocortical network model. This model demonstrated that MD representations, through functional connectivity with cortical networks, transform task-specific activity into cognitive representations. It outperformed models based on other brain structures, underscoring the critical role of thalamocortical interactions in supporting cognition. We validated the model through simulations and empirical data from patients with focal thalamic lesions. These lesions selectively disrupted task-specific cortical activity and impaired executive functions, directly linking thalamic network properties to cognitive deficits. Finally, our recent work revealed that MD context representations integrate with error signals, promoting context-dependent flexibility. Together, these studies demonstrate how the MD serves an active, representational role in cognition, facilitating flexible, goal-directed behavior.

TALK 2: WHAT IS THE ROLE OF THE ASCENDING SUPERIOR COLLICULUS – PULVINAR PATHWAY IN ATTENTION CONTROL?

Sabine Kastner[1], Yujie Wu[1], Rober Boshra[1]; [1]Princeton University

In recent years, evidence has emerged regarding the functional role of pulvinar supporting cognition. Specifically, it has been shown that that indirect transthalamic pathways are important for regulating inter-areal cortical interactions, gating signals in cortex and integrating contextual signals from diverse cortical and subcortical sources. First, transthalamic pulvino-cortical pathways have been shown to temporally coordinate cortical networks that are recruited during cognition to enhance the efficiency of information transmission across the cortical network. Specifically, pulvinar has been shown to synchronize cortical areas in the alpha-frequency band during cue-target intervals in attention tasks, when the attention network is set up and optimized for the selection process. Second, transthalamic pathways may gate, or even enable information processing by controlling local responses of cortical neurons. Third, pulvinar has been shown to track contextual signals related to perceptual uncertainty in guiding decisions. Together, these studies suggest that pulvinar has unique functions in supporting cognitive behaviors. In addition to cortical inputs, particularly medial and lateral pulvinar also receive projections from the superior colliculus (SC) – a midbrain structure involved with the control of saccadic eye movements as well as higher order cognitive processes such as target selection and spatial attention. We will discuss recent studies that explore influences that SC has on pulvinar and pulvino-cortical interactions before and during reversible SC inactivation.

TALK 3: INTERPRETING THALAMOCORTICAL DYNAMICS OF EEG/MEG MEASURES OF COGNITION WITH THE HUMAN NEOCORTICAL NEUROSOLVER (HNN) MODELING SOFTWARE

Stephanie Jones[1]; [1]Brown University

Electro- and magneto-encephalography (EEG/MEG) are the leading methods to non-invasively record human thalamocortical dynamics with millisecond temporal resolution. However, it can be extremely difficult to infer the underlying cellular and circuit level origins of these macro-scale signals. This limits the translation of E/MEG into novel principles of human information processing and cognition. To address this need, we developed the Human Neocortical Neurosolver (HNN: https://hnn.brown/edu), a user-friendly neural modeling tool designed for multiscale thalamocortical interpretation of human E/MEG signals. A unique feature of HNN's model is that it accounts for the biophysics generating the primary electric currents underlying EEG/MEG with enough detail to connect to cell and circuit level phenomena that can be studied with invasive techniques in animal models. In this talk, I will give an overview of the theory behind the development of HNN and demonstrate its use in uncovering the mechanisms and meaning of brain rhythms in attention and perception. I will also briefly describe applications to clinical studies of Aging and Alzheimer's disease. Overall, HNN provides a novel inferential tool for translational neuroscience discovery.

Symposium Sessions

#	Title	Date	Time	Location
1	Creating the structure of ongoing experience	Sunday, March 30	1:30 - 3:30 pm	Grand Ballroom
2	New directions in scientific communication in cognitive neuroscience	Sunday, March 30	1:30 - 3:30 pm	Independence Ballroom
3	Healing While Sleeping? How sleep shapes our emotional experiences	Sunday, March 30	1:30 - 3:30 pm	Constitution A
4	Deploying Attention in Real-World Learning Environments within Individual Minds: Contributions from Precision Imaging and Educational Neuroscience.	Sunday, March 30	1:30 - 3:30 pm	Constitution B
5	Nature and nurture revisited: new insights about core knowledge and visual development across cognitive systems	Monday, March 31	10:00 am - Noon	Grand Ballroom
6	Uncertainty Resolution across Learning, Memory, and Decision-making	Monday, March 31	10:00 am - Noon	Independence Ballroom
7	Interactions between the brain's visual and memory systems: recent advances and new perspectives	Monday, March 31	10:00 am - Noon	Constitution A
8	Memory in the palm of your hand: New smartphone techniques for measuring emotion and memories of real-life experiences	Monday, March 31	10:00 am - Noon	Constitution B
9	Decoding spontaneous thought from neural activity	Tuesday, April 1	1:30 - 3:30 pm	Grand Ballroom
10	**What can(‘t) oscillations tell us about cognition?**	Tuesday, April 1	1:30 - 3:30 pm	Independence Ballroom
11	Harnessing virtual reality to study memory and spatial navigation across the lifespan	Tuesday, April 1	1:30 - 3:30 pm	Constitution A
12	Advancing global and local theories of DMN function across cognitive domains	Tuesday, April 1	1:30 - 3:30 pm	Constitution B

Symposia Session 1

CREATING THE STRUCTURE OF ONGOING EXPERIENCE

Sunday, March 30, 2025, 1:30 – 3:30 pm EDT, Grand Ballroom

Chair: James Antony[1]; [1]California Polytechnic State University, San Luis Obispo

Presenters: Zachariah Reagh, Emily Finn, James Antony, Janice Chen

Although time flows continuously, we tend to chunk our experiences into discrete events. This chunking has been demonstrated behaviorally – via recall clustering within versus across events – and neurally – via stable neural patterns within events to rapid changes at event boundaries. However, real-world events are interrelated according to various forms of structure, meaning that successive neural states may reactivate prior states to link them and influence recall. In this symposium, we will tackle the behavioral and neural consequences of structure bridging across ongoing experiences. First, Zach Reagh will demonstrate that (1) similar neural states track individual people and relationships between people across multiple events, and that (2) memories of people distort the narrative timeline during recall. Next, Emily Finn will show (1) how the brain “unscrambles” chronological information from a nonlinear narrative by revisiting prior neural states and (2) how across-subject variability of neural event boundaries across the brain predicts interpretation and memory. Next, James Antony will present on (1) how causal structure among events influences recall organization in a nonlinear narrative, and (2) how the brain transitions during different event boundary types and reactivates prior neural states according to their causal structure. Finally, Janice Chen will show (1) how causal and semantic structure among events influences recall performance and its underlying neural substrates and (2) how human agency in a choose-your-own-adventure story affects the influence of these factors. Altogether, these synergistic approaches make substantial inroads into how the brain creates structure by loading and unloading neural states.

TALK 1: PEOPLE AS ANCHORS FOR EVENT REPRESENTATIONS AND MEMORIES

Zachariah Reagh[1]; [1]Washington University in St. Louis

Despite the complex and continuous nature of everyday experiences, people tend to represent and remember those experiences as structured events. We can derive event structure from many different sources of information. Given that humans are social creatures, one

potentially powerful source of information is that of people. However, the way in which the brain represents people and their significance, and the way this affects our memories is not clear. Here, I will present recent studies weighing in on this issue. First, I will describe an fMRI study demonstrating that anterior-temporal regions of the default mode network stably represent individual people across multiple events. I will then discuss another fMRI study revealing that these anterior-temporal default mode regions carry information about characters and relationships between those characters across an extended narrative. Finally, I will present behavioral evidence that characters in extended narratives serve as anchors, leading participants to "jump" across distant events, distorting the original narrative timeline in service of memory. Together, this set of findings indicates the importance of people in shaping our representations and memories of complex experiences.

TALK 2: SHARED AND INDIVIDUAL ENCODING MECHANISMS FOR MAKING SENSE OF COMPLEX NARRATIVES

Emily Finn[1]; [1]Dartmouth College

Although we must experience our lives chronologically, storytellers often manipulate the order in which they relay events. Furthermore, although neural and behavioral event segmentation show a degree of inter-subject consistency, meaningful individual variability exists atop these shared patterns. How does the brain support shared and/or individual-level processes for making sense of complex narratives during encoding? In this talk, I will cover two studies, one aimed at uncovering a group-level mechanism for encoding nonlinear narratives (i.e., those told out of order) and the second aimed at investigating individual differences in online event segmentation. In the first study, we found that when processing non-chronological narrative information, the precuneus and posterior cingulate engage in on-the-fly temporal unscrambling to represent information chronologically; we suggest that this unscrambling may support our ability to embed the causal structure of events in a mental situation model. In the second study, using four ambiguous short films, we found that across-subject alignment of neural event boundaries followed a posterior-to-anterior gradient that was tightly correlated with the rate of segmentation: slower-segmenting regions that integrate information over longer time periods showed more individual variability in their boundary locations. Furthermore, this variability was behaviorally significant in that similarity of neural boundary locations during movie-watching predicted similarity in how the movie was ultimately remembered and appraised.

TALK 3: BEHAVIORAL AND NEURAL EFFECTS OF CAUSAL STRUCTURE BRIDGING ACROSS EXPERIENCES

James Antony[1]; [1]California Polytechnic State University, San Luis Obispo

While recounting experiences, one can transition between events via multiple forms of stimulus structure, including nearby events in time (temporal), similar events (semantic), or events influenced by the current event (causal). Here, I will discuss two experiments disentangling the behavioral and neural consequences of these factors. In a first experiment, participants watched the non-linear narrative, Memento, under different task instructions. For each scene, I computed semantic and causal networks, after which I contrasted the evidence for temporal, semantic, and causal recall strategies. Critically, there was stronger evidence for the causal than semantic or temporal strategies – even after asking participants to perform recall in the presented order. In a second, fMRI experiment, participants watched and recalled a TV show featuring five temporally interleaved storylines. Notably, some transitions across storylines featured spatiotemporal changes (ST), while others were storyline only (SO) (i.e., the conversation topic changed within-scene). Behaviorally, causal structure again significantly influenced recall organization. Neurally, boundary responses substantially differed across the brain between ST and SO transitions. Additionally, using greedy state boundary search, a (visual) control region showed neural event boundaries only at ST transitions, whereas the angular gyrus had boundaries in both cases. Moreover, pattern similarity analyses revealed that the angular gyrus was more similar for scenes within versus across storylines (while controlling for time), suggesting it supports mental bridging across temporal gaps. In sum, these findings highlight the importance of accounting for complex, causal networks – and their underlying neural substrates – in scaffolding knowledge building and organizing recall.

TALK 4: CAUSALITY AND AGENCY IN MEMORY FOR NATURAL EVENTS

Janice Chen[1]; [1]Johns Hopkins University

What will you remember from this day? Some details and moments of our experiences are forgotten or never encoded, while others are retained in memory for minutes, days, or even years. I will first describe experiments showing how the causal and semantic structure of experiences -- the network of causal and semantic connections between events in audiovisual movies -- predicts what we remember later, and how this structure is recapitulated during narrated recall. In the brain, hippocampal responses increase when event connections become more dense, and representations in default mode network areas synchronize across individuals during recall of these events. Next, I will show how causal and semantic structure's impact on memory changes when participants have agency, that is, when they choose their own path through an interactive story. Our results demonstrate that agency enhances idiosyncrasy in which details are later recalled, reduces the ability of NLP-derived semantic structure to predict memory, and increases clustering of recalled events; all three phenomena may reflect a "personalization" of semantic space when individuals have decision power over their own experience. Together,

these studies reveal how event network structure and agency guide the flow of our ongoing experiences, shaping what and how we remember.

Symposium Session 2

NEW DIRECTIONS IN SCIENTIFIC COMMUNICATION IN COGNITIVE NEUROSCIENCE

Sunday, March 30, 2025, 1:30 – 3:30 pm EDT, Independence Ballroom

Chairs: William Matchin[1], Brad Postle[2]; [1]University of South Carolina, [2]University of Wisconsin-Madison
Presenters: Anastasia Yendiki, Michael Frank, Jacqueline Fulvio, Brad Postle, William Matchin

Communication is essential to science – our results and theories are only as useful as they can be conveyed to others. However, there are many challenges to effective science communication. Social media platforms have enabled more rapid and interconnected scientific discussion, but such informal yet highly visible interactions can be disrespectful or off-putting to many members of the community, with potentially problematic dynamics based on gender, ethnicity, and career status. There are major imbalances in citation and participation by these same dimensions, which can have big impacts on those seeking jobs and promotion which depend on scientific works being received by the community. Publication paywalls limit access to the public, but even scientists whose institutions do not have large budgets, which may be common around the world; frankly, even within major research institutions in Europe and the United States it can be difficult to access publications within our own fields. Finally, new open science practices have their limitations in dealing with scientific fraud, reproducibility, and overall rigor of ideas and results. This symposium brings together leading figures addressing a variety of these current topics, discussing new mechanisms for scientific discourse within the field of cognitive neuroscience. This symposium will be of interest to a broad audience, from students to faculty to members of the general public interested in cognitive neuroscience.

TALK 1: THE FIRST YEAR OF TRANSITION FROM NEUROIMAGE TO IMAGING NEUROSCIENCE

Anastasia Yendiki[1]; [1]Harvard Medical School

The move of scientific journals towards open access models was in principle a positive development, lifting barriers to knowledge for the general public. In practice, however, it shifted costs from the reader to the author; instead of institutions paying for their members to access journal articles through their library systems, individual investigators must pay for their articles to be published. As research funding typically comes from government grants, ultimately the cost is shifted to taxpayers. Recent years have seen these article publication costs (APCs) balloon, particularly for more successful and highly regarded journals, with no commensurate increase in research funding. This puts an undue burden on investigators, particularly those from less well-funded labs and under-resourced institutions or countries. Thus, a development aimed at democratizing who can access the products of research ended up exacerbating disparities in whose research can be accessed. In response to this troubling trend, and after unsuccessful attempts to negotiate a reduction in APCs with the for-profit publishing house Elsevier, the entire editorial board of the journals NeuroImage and NeuroImage:Reports resigned and started the journal Imaging Neuroscience, under the non-profit publisher MIT Press. This was a risky move from an established journal that, at the time, had an impact factor of 7.4 and was publishing almost 1000 papers a year, to a brand new one. I will discuss lessons from the first year of Imaging Neuroscience, the next steps in this endeavor, and how it can serve as a blueprint for the similar transitions in other journals.

TALK 2: **THE "PUBLISH, REVIEW, CURATE" MODEL AT ELIFE: HOW'S IT WORKING OUT?**

Michael Frank[1]; [1]Brown University

In 2021, just 10 years into its existence, eLife had already experienced a remarkable growth in popularity, and was viewed by many as among the most prestigious journals in which to publish life-sciences research. This was a paradoxical state of affairs, however, because although it met conventional criteria for "success" as a journal, it was dissonant with journal's core philosophy of moving science away from the use of journal titles as a primary index for judging the quality of a paper. Consequently, in 2021, eLife adopted a radically new publishing model: submissions to eLife would only be considered if they were already publicly accessible preprints, and those selected for review would become "refereed preprints." That is, eLife would no longer be in the business of deciding "what papers should be published," but instead began acting as a curator of "already published" research (in the sense that every preprint can be said to have been "published" on a preprint server). A critical component to curation would be to solicit high-quality peer reviews, and to subsequently publish these reviews alongside the original paper (together with a rebuttal from the authors, at their discretion). This would encourage a move toward a culture in which a paper's importance is determined in large part by its substantive evaluation by peer reviewers. In this presentation I will offer my perspective as a Senior Editor responsible for handling much of the cognitive neuroscience research submitted to eLife.

TALK 3: GENDER CITATION BALANCE REPORTING FOUR YEARS LATER: IS IT WORKING?

Jacqueline Fulvio[1], Brad Postle[1]; [1]University of Wisconsin–Madison

Although the proportion of peer-reviewed publications authored by women has increased in the field of neuroscience in recent decades, the proportion of citations of women-led publications has not seen a commensurate increase. Analysis of citation practices at the Journal of Cognitive Neuroscience (JoCN) indicated this is a systemic problem impacting our own subfield of cognitive neuroscience. Given the important implications that such underrepresentation have on the careers of women researchers, a targeted intervention addressing this inequity in the way we carry out and communicate our science was needed. To that end, a new initiative at JoCN was launched. We developed a webtool that went "live" in late October, 2020, that accepts a reference list and returns the categorical gender breakdown of citations. Authors submitting to JoCN are encouraged, but not required, to use the tool to generate the 'gender citation balance indices' for the author gender categories and report them in their submission. Reviewers are invited to recommend papers from underrepresented author-gender groups that the authors might consider including in their revision. Analyses of JoCN citation practices over the past four years reveal that the proportion of authors choosing to use the tool has steadily increased, and, critically, the gender citation balance of the journal has improved, indicating that yes, the initiative is working.

TALK 4: JOCNFORUM: A SINGLE ARCHIVAL PLATFORM FOR DISCUSSION OF COGNITIVE NEUROSCIENCE

William Matchin[1]; [1]University of South Carolina

A firm grounding for science requires subjecting our ideas to scrutiny; doing so requires the courage of being open to the possibility that our ideas are based on mistakes, lack of knowledge, or the human predisposition to only highlight evidence that supports our views. Thus, we rely on other experts to evaluate and weigh in. However, the social media landscape falls short of supporting effective scientific discourse. First, many platforms are unmoderated and allow for rapid, impulsive responses. Thus, the tone can quickly decline, which not only adds noise to the discussion but can also discourage early career scientists from getting involved (e.g., for fear of offending senior figures in the field). Second, the social media landscape is fragmented. Valuable discussions that unfold in one channel may go unnoticed by important segments of the community. Finally, many illuminating discussions and insightful points have been lost to the void of the internet, and cannot be incorporated into the scientific record. With this context, a team from the Journal of Cognitive Neuroscience has launched a new initiative—the JoCN Discussion Forum. JoCNForum provides a single archival platform (via generation of DOIs for each post) for moderated discussion and debate of topics of relevance to the conduct and dissemination of cognitive neuroscience research. Light moderation comes from an editorial team that will approve all content before it is posted. JoCNForum is editorially distinct from JoCN but shares the mission of being an authoritative vehicle for dissemination of high-quality content to the cognitive neuroscience community.

Symposium Session 3

HEALING WHILE SLEEPING? HOW SLEEP SHAPES OUR EMOTIONAL EXPERIENCES

Sunday, March 30, 2025, 1:30 – 3:30 pm EDT, Constitution A

Chairs: Xiaoqing Hu[1], Jessica Payne[2]; [1]The University of Hong Kong, [2]University of Notre Dame
Presenters: Jessica Payne, Tony J. Cunningham, Lucia Talamini, Xiaoqing Hu

While it is well-established that sleep plays an important role in re-processing emotional memories, significant questions remain to be addressed. Specifically, to which extent does sleep prioritize the consolidation of emotional over neutral memories; how does sleep differentially impact the affect tones and memory contents of emotional experiences; what are the roles of non-rapid-eye-movement and rapid-eye-movement; how can we manipulate the reactivation and consolidation of emotional memories during sleep. In this symposium, we present new results advancing our understanding of these questions. Talks in this symposium employ various experimental methods and assessments to address these outstanding questions, including sleep deprivation, closed-loop stimulation, targeted memory reactivation, and stress-related hormones. We will present evidence on how stress and its related hormones "tag" emotional memories for subsequent consolidation; how sleep deprivation and subsequent recovery sleep influence the consolidation of emotional and neutral memory components; how closed-loop auditory stimulation during rapid-eye-movement sleep would influence fear memories; how targeted memory reactivation during non-rapid-eye-movement sleep would weaken older aversive memories. Collectively, these findings advance theoretical models of sleep-dependent memory consolidation, and how sleep interventions can be developed to achieve better mental health outcomes.

TALK 1: STRESS INTERACTS WITH SLEEP TO SELECTIVELY CONSOLIDATE NEGATIVE EMOTIONAL MEMORY

Jessica Payne[1]; [1]University of Notre Dame

Elevated stress hormones (e.g., cortisol and norepinephrine) can selectively benefit the consolidation of emotional memories, as can the occurrence of sleep shortly after learning. I will discuss evidence, from behavioral, psychophysiological, and neuroimaging studies, suggesting that stress and arousal interact with sleep to augment memory consolidation, particularly for emotionally negative information, as well as how these relationships might change with age.

I will present a model arguing that stress hormones help 'tag' emotional information as important to remember at the time of encoding, thus enabling subsequent, sleep-based plasticity processes to optimally consolidate emotional information in a selective manner.

TALK 2 :THE DIFFERENTIAL IMPACT OF SLEEP LOSS AND RECOVERY SLEEP ON MEMORY FOR EMOTIONAL AND NEUTRAL SCENE COMPONENTS

Tony J. Cunningham[1,2], Dan Denis[3], Ryan Bottary[4], Elizabeth A. Kensinger[5], Shengzi Zeng[1,2], Robert Stickgold[1,2]; [1]Beth Israel Deaconess Medical Center, [2]Harvard Medical School, [3]University of York, [4]Widener University, [5]Boston College

Sleep has long been lauded as a primary driver of successfully processing episodic emotional memories, elevating them above neutral content in our memory stores. However, a recent slew of reviews and meta-analyses have revealed a lack of consistency for this effect in the literature, and that sleep's influence may be relatively small, hinging on the context or content of the encoding and retrieval episodes. In this talk, potential "boundary conditions" of this effect will be discussed with special attention paid to potential areas of future research. Further, as a demonstration of the importance of the positioning of sleep and sleep loss across the stages of memory processing, results from a recent study investigating the effects of total sleep deprivation (TSD) prior to encoding and recovery sleep during early consolidation of emotional and neutral memory components will be discussed. Briefly, a night of TSD significantly impaired memory for all scene components, regardless of position or valence. A period of recovery sleep during early consolidation, however, restored memory functioning such that performance on a second recognition test 4-hours later matched typically rested individuals. These results demonstrate that while there may be some conditions, sleep is distinctly involved in healthy emotional memory processing.

TALK 3: PHASE PRECISE REM THETA ENHANCEMENT MODULATES EMOTIONAL MEMORY RECALL

Lucia Talamini[1]; [1]University of Amsterdam

Closed-loop auditory stimulation (CLAS) approaches have been used extensively to investigate brain oscillations and memory consolidation, but reports are focused on non-REM sleep. For the first time, we apply a new method able to precisely model and predict EEG oscillatory dynamics and to track and phase-target theta oscillations (4-8 Hz) during human REM sleep. To further investigate the link between REM sleep, theta oscillations and emotional memory consolidation, a fear conditioning paradigm associated with a memory recollection task took place before and after a night of sleep, during which we recorded subjects' EEG signals. Our results shows that fear memories can be attenuated through phase auditory stimulation – highlights a promising avenue for influencing emotional memory consolidation. This finding demonstrates the potential of sleep manipulation to modulate emotional responses, offering a significant step forward in both understanding memory dynamics and advancing potential therapeutic interventions.

TALK 4: UPDATING EMOTIONAL MEMORIES DURING HUMAN SLEEP

Xiaoqing Hu[1], Tao Xia[1], Ziqing Yao[1], Danni Chen[1]; [1]The University of Hong Kong

Not all memories are welcome by the mind. Overconsolidated unwanted memories such as aversive or traumatic memories pose significant threats to our emotional well-being. Can we edit unwanted memories during sleep? Our recent work suggests that the sleep-mediated memory reactivation processes can be leveraged to foster positive memories and to weaken aversive memories. Via unobtrusively delivering auditory cues during non-rapid-eye-movement sleep (targeted memory reactivation), we found that both affect tones and memory contents of aversive memories can be modified. Cueing benefits are associated with cue-elicited delta/theta/sigma power, and with the coupling between slow oscillations and external emotional stimuli. These results suggest that sleep-mediated memory reactivations play adaptive roles in memory updating and even forgetting.

Symposium Session 4

DEPLOYING ATTENTION IN REAL-WORLD LEARNING ENVIRONMENTS WITHIN INDIVIDUAL MINDS: CONTRIBUTIONS FROM PRECISION IMAGING AND EDUCATIONAL NEUROSCIENCE.

Sunday, March 30, 2025, 1:30 – 3:30 pm EDT, Constitution B

Chair: Bruce McCandliss[1]; [1]Stanford University
Presenters: Arielle Keller, Adi Korisky, Elana Zion-Golumbic, Ido Davidesco

Cognitive neuroscience investigations of attention are increasingly expanding to grapple with several forms of complexity. Neural measures are moving beyond a 'one-size-fits-all' model toward 'precision imaging' which enables researchers to capitalize on subject-level variations in brain anatomy and functional localization. These more personalized approaches are especially important as the field expands to study changes in attention over development, and deployment of attention in complex environments, such as educational settings. Classrooms present complex, dynamic environments that place demands on sustained and selective attention, as students navigate relevance across multiple modalities as they select speech from noise, relevant from irrelevant visual stimuli, and navigate the social world. Combining the approaches of precision imaging of individuals and studying the deployment of attention in such complex environments such as real-world educational contexts can help drive deeper insights into how attention supports learning and cognitive

engagement. This symposium will bring together several recent advancements in brain imaging and mobile EEG studies of attention to show how they can enhance our understanding of the diverse attentional strategies students employ in both lab and naturalistic learning scenarios. Presentations will focus on the benefits of leveraging results at the individual level to emphasize how precision neuroscience and data-driven approaches can reveal the varied paths through which students manage attention, moving beyond group-based models. Ultimately, this symposium aims to uncover how we can utilize personalized approaches to pave the way to a better understanding of attention mechanisms that modulate learning in complex environments.

TALK 1: PRECISION NEUROSCIENCE FOR STUDIES OF INDIVIDUAL DIFFERENCES IN YOUTH ENVIRONMENTS AND COGNITION

Arielle Keller[1,2], [1]University of Connecticut, [2]Connecticut Institute for the Brain and Cognitive Sciences

Each human brain is unique in its physical and functional characteristics. Despite this observation, many human neuroscience studies still rely on a “one-size-fits-all” approach to functional brain mapping, relying on the assumption that all brains share a 1:1 correspondence between structure and function. Recently, the field has begun to shift toward the use of precision neuroscience techniques to derive brain measures that capture the unique features of each individual. This shift is critically important for studies of cognition in classroom settings for two reasons. First, group-averaged brain atlases are typically defined in adult populations, making standard group atlas approaches especially problematic for studies of school-aged children and adolescents. Recent developmental studies have shown that, not only does functional brain network organization tend to be highly variable in youth, it also tends to change over the course of development. Second, many cognitive functions like attention, memory, and executive functioning that are essential for effective classroom learning rely on functional brain networks that tend to exhibit the most inter-individual heterogeneity of all large-scale brain networks. In this talk, I will introduce the goals of precision neuroscience, showcase current methodological approaches for personalized brain mapping, and highlight results from two recent studies linking inter-individual variability in functional brain organization with individual differences in cognitive functioning in youth. I will also describe theoretical models for how environmental contexts may shape person-specific cognitive neurodevelopment. Together, these studies underscore the future potential of precision neuroscience for better understanding attention and learning in the classroom.

TALK 2: PRECISION IMAGING EEG APPROACHES UNVEIL SELECTIVE AUDITORY ATTENTION IN MIDDLE SCHOOL KIDS

Adi Korisky[1], [1]Stanford University

Maintaining goal-directed attention in environments with multiple stimuli requires effective filtering of sensory distractors. Individual differences in attention strategies are crucial, as they influence how each person responds to competing information, ultimately impacting learning outcomes. To explore these individual-level differences in attention, we used Reliable Components Analysis (RCA), a data-driven approach inspired by precision imaging that computes a unique spatial filter for each individual. To connect the existing literature on RCA to a natural learning environment, we implemented a within-subject design in a local K-8 school as part of a long-term research-practice partnership. Forty middle school-aged children participated in a selective attention task featuring multimodal steady-state stimuli interwoven with more naturalistic stimuli recorded by their social studies teacher. Our findings revealed consistent individual-level attention patterns across two sessions ($r = 0.48$, $p < 0.02$), indicating that students employed stable strategies to process auditory stimuli in a complex environment. Auditory attention decoding, using RCA-derived spatial filters, demonstrated significantly higher neural power during the audio-attend condition, showcasing RCA's potential to capture attention dynamics in individual students. Additionally, we examined how these individual patterns could identify attentional fluctuations while listening to natural stimuli, such as speech, in noisy settings. By integrating data from both controlled and naturalistic contexts, we utilized RCA-derived patterns to decode attention over time, exploring how laboratory-established neural markers of attention translate to real-world educational scenarios.

TALK 3: THE EFFECT OF ECOLOGICAL DISTURBANCES ON NEURAL RESPONSES AND SPEECH TRACKING OF THE TEACHER DURING REAL-LIFE CLASSROOM LEARNING

Elana Zion-Golumbic[1], [1]Bar Ilan University, Israel

Real-life classrooms can be notoriously noisy. Sounds from both outside and inside the classroom can cause severe disturbances to the lesson and distract students’ and teachers’ attention. Although the detrimental effects of noise and irrelevant sounds have been studied extensively in highly controlled settings, few studies have investigated how learning and neural processing are affected by irrelevant sounds under ecological conditions. Here we present a unique data set, collected as part of a research-practice partnership with a local high-school, where we leveraged mobile EEG technology to study students’ neural activity (9-11th grade) as they engaged in realistic classroom learning. Validating the premise of this field-based neuroscience study, we demonstrate that neural tracking of the teachers’ speech can be reliably measured in over 80% of individual students, even in these real-life conditions. Moreover, we show that both behavior (comprehension of lesson elements) and neural speech tracking are

reduced in the presence of background "chatter" in the classroom, reflecting its disruptive nature. We also investigated how performance and neural speech tracking relate to more "general" neural metrics associated with attention, such as alpha- and beta-power, and how they change throughout the course of the lesson, potentially capturing the effects of fatigue or fluctuations in attention. This novel dataset demonstrates the transformative potential of using mobile EEG for advancing our understanding of perception and attention in real-life situations, particularly in school contexts where maintaining attention and avoiding distraction are such pivotal (and difficult) cognitive feats.

TALK 4: ATTENTIONAL FLUCTUATIONS IN REAL-WORLD LEARNING

Ido Davidesco[1], [1]Boston College

Maintaining attention during lectures is highly demanding, as attentional states naturally fluctuate between externally focused and internally generated thoughts (external and internal attention, respectively). These fluctuations are implicit and challenging to capture through self-report or observational methods. Additionally, they tend to vary between individuals, making precision neuroscience techniques highly suitable for studying them. A key open question in the field is the relationship between internal attentional states and learning: Does shifting attention internally support or hinder learning? To address this question, 100 undergraduate students viewed a lecture from an introductory biology course. In the experimental condition, lecture segments were interspersed with periods of internal attention, during which participants were instructed to silently reflect on a lecture-related prompt for one minute. In the control condition, participants simply pressed a button to advance from one lecture segment to the next. Attentional states were assessed through electroencephalography (EEG) and eye-tracking data. Behaviorally, participants in the experimental condition demonstrated better learning outcomes than those in the control group. Analysis of the EEG data revealed that alpha-band (8-12 Hz) power was higher during uninterrupted lectures compared to those interspersed with internal attention periods. These results suggest that incorporating structured opportunities for internal attention can enhance attentiveness and improve learning. The long-term goal of this research is to identify neural and gaze-based markers that can track attentional fluctuations in individual learners.

Symposium Session 5

NATURE AND NURTURE REVISITED: NEW INSIGHTS ABOUT CORE KNOWLEDGE AND VISUAL DEVELOPMENT ACROSS COGNITIVE SYSTEMS

Monday, March 31, 2025, 10:00 am – 12:00 pm EDT, Grand Ballroom

Chairs: Gabriel Kreiman[1,2], Elisabetta Versace[3]; [1]Harvard Medical School, [2]Boston Children's Hospital, [3]Queen Mary University of London

Presenters: Elisabetta Versace, Tomer Ullman, Judit Gervain, Marge Livingstone

The convergence between advances in Artificial Intelligence (AI) and models of how brains perform computations highlights a central question common to cognition and AI: the extent to which natural and artificial circuits are hard-wired to solve specific problems versus how much is learned from experience. This question re-centers the age-old debate of nature vs. nurture in terms of innate priors and inductive biases (nature) versus experience and learning (nurture). The extraordinary successes of artificial neural networks in AI mainly rely on supervised learning through vast amounts of data. All the weights in a network are initially randomized and then learned from millions of labeled examples via backpropagation, an algorithm that is unlikely to be implemented in the brain. In stark contrast, humans and other animals are born with somewhat functional neuronal circuits and, after birth, most refinement of these circuits likely occurs via unsupervised interactions with the environment. Cognitive circuits reflect information available at multiple time scales: (a) the evolutionary past shapes architectural structures; (b) the experience available during early development sculpts circuits via largely unsupervised mechanisms; and (c) learning in adults is a combination of supervised and unsupervised processes. Using vision as a paradigmatic example, this symposium will highlight recent advances in our understanding of inductive biases across multiple species (chicks, rats, humans), the nature of core knowledge, and the fundamental constraints imposed by exposure to the statistical regularities of the environment.

TALK 1: THE COMBINATORIAL ADVANTAGE OF PREDISPOSITIONS

Elisabetta Versace[1]; [1]Queen Mary University of London

The more we observe newborn animals, the more we discover cognitive preparedness. For example, our studies show that shortly after hatching, inexperienced chicks and tortoise hatchlings are naturally drawn to certain stimuli, such as upward movement against gravity, changes in speed, hollow objects, specific colours or combinations of stimuli. These features are reliable indicators of the presence of animate living beings or even adult animals, suggesting that predispositions that appear widespread across different species—including humans—aid young animals in identifying and responding to stimuli that have high adaptive relevance. Interestingly, early

predispositions are not merely reflections of the most frequent environmental patterns. These expectation are flexible and transient rather than rigid and unchanging. Why is this the case if they should help inexperienced animals to respond to the stimuli that they expect to encounter, as a result of evolutionary pressures? We have analysed the role of these predispositions at the beginning of life, treating them as predictors with varying strengths. By examining the trade-offs associated with false positives and false negatives at different developmental stages, we propose a new model that underscores the adaptive function of multiple predispositions in early life. This model mitigates the risk of errors by integrating various features. Furthermore, we highlight how insights from biology can inform computational and artificial intelligence models, enabling the development of general intelligence systems that prioritise a combination of predictors, enhancing the ability of inexperienced cognitive systems to navigate complex environments.

TALK 2: THROUGH A GLASS, DARKLY: APPROXIMATIONS, HACKS, AND WORKAROUNDS IN INTUITIVE PHYSICS AND IMAGINATION

Tomer UIlman[1]; [1]Harvard University

People can handle everyday interactions with everyday objects with remarkable ease. One current model of human 'intuitive physics' supposes that people are carrying out a mental simulation, moving objects in the mind step by step. This proposal is motivated by the use of world simulators in other areas, including game engines. While successful in many cases, even the people who champion this proposal recognize that humans can't be running a perfect simulation. I consider several principled bounds and approximations that may underlie imperfect mental simulation in humans, including approximate bodies in tracking, lazy evaluation in imagery, and bounds on the number of objects that can be simulated at once. I will also consider the computational models that capture these approximations, and behavioral studies that inform the arguments through empirical findings.

TALK 3: THE EFFICIENT CODING OF VISUAL TEXTURES IN RATS, CHICKS AND HUMAN INFANTS

Judit Gervain[1], [1]University of Padua, Italy

Neural encoding should be adapted to the statistics of natural stimuli to efficiently process sensory inputs. This principle, known as efficient coding, successfully explains many aspects of the early stages of sensory processing. Recently, human adults' sensitivity to visual textures defined by multipoint correlations has been found to match the variability of these correlations in natural images, suggesting that visual perception obeys efficient coding principles at the cortical level, too. How does efficient coding of visual textures arise ontogenetically? Do young infants already show sensitivities similar to adults early in development or is experience needed for these to emerge? We measured human infants' sensitivity to multipoint correlations (one-, two-, three- or four-point correlations) tested in adults. In one study, we measured 6-12-month-old infants' spontaneous looking-time preference for images with different multipoint correlations, and found that infants preferred, i.e. showed the longest looking times, to images with 1-point correlations (i.e., light intensity statistics) over all other patterns, while they showed the shortest looking times to 2-point correlations, i.e., lines. Preliminary observations in a second study testing whether infants can discriminate these correlation patterns from one another and from white noise suggest that all statistical patterns are discriminated. These results suggest that early sensitivity (discrimination ability) to image statistics is already present from the onset of relatively mature visual acuity (4-6 months) in human development. Preference patterns may reflect additional developmental specificities, different from those of adults, the functional relevance of which needs to be better understood.

TALK 4: MAPS->SPAM->MAPS

Marge Livingstone[1]; [1]Harvard Medical School

I will address the question of whether domains in inferotemporal cortex are innate or a consequence of experience.

Symposium Session 6

UNCERTAINTY RESOLUTION ACROSS LEARNING, MEMORY, AND DECISION-MAKING

Monday, March 31, 2025, 10:00 am – 12:00 pm EDT, Independence Ballroom

Chair: Vishnu Murty[1]; [1]University of Oregon
Presenters: Aaron M Bornstein, Ian C Ballard, Chelsea Helion, Vishnu P Murty

The ability to adaptively navigate the world is challenged by individual's having incomplete models of how the world works. This type of uncertainty is pervasive across a wide range of behaviors, deciding where to invest our money, who to trust, or what strategy to use to win a board game. Thus, there is a constant need for individuals to resolve uncertainty, making it a growing topic of interest across multiple domains of cognitive neuroscience. In this symposium, we will bring together researchers from decision-making, episodic memory, and social/affective science to understand mechanisms of uncertainty resolution and its consequences on adaptive behavior. Our first talk from Aaron Bornstein explores how individuals dynamically shift their foraging behavior across the lifespan as a function of environmental uncertainty. Our second talk from Ian Ballard synthesizes data across humans and non-human primates to arbitrate whether the striatum's role in uncertainty resolution reflects reward feedback or goal updating. Our third talk from Chelsea Helion explores uncertainty resolution in the context of social behavior and how it is modulated by internal (affect) and external (relational schemas) factors. Our final talk explores how resolving uncertainty in real time has downstream influences on long-term memory. With this symposium, we will showcase a variety of behavioral orientations and techniques that converge on answering a foundational question of how individuals resolve uncertainty in service of adaptive behavior.

TALK 1: SEQUENTIAL DECISIONS ADAPT TO UNCERTAINTY WITHIN AN ENVIRONMENT AND ACROSS THE LIFESPAN.

Aaron M Bornstein[1]; [1]University of California: Irvine

Humans and animals are often maligned as being bad ("suboptimal") at making decisions, especially decisions under uncertainty. But is this allegation justified? In this talk, I will present recent findings in the domain of patch foraging. Foraging requires individuals to compare a local option to the distribution of alternatives across the environment. Foragers, across a range of species, have been observed to systematically deviate from exogenous notions of optimality by "overharvesting"—staying too long in a patch. We developed a new computational model that explains the appearance of overharvesting as a by-product of two mechanisms: 1) statistically rational learning about the distribution of alternatives and 2) decisions that adapt to the uncertainty of these distributions–in particular, by using an estimate of local uncertainty to adjust how much to weight potential future rewards. Across four experiments (total N=525), we test this model using a variant of a serial stay-leave task and find that human foragers' behavior is consistent with both mechanisms. Our findings suggest that overharvesting, rather than reflecting a deviation from optimal decision-making, is instead a consequence of optimal learning, and rational adaptation to uncertainty about our learning. Importantly, this finding is replicated in distinct populations, each with experiential and biological factors that should alter their estimates of uncertainty. We show that individuals' decisions rationally adapt to the predictability of their environment, the breadth of their experiences, and the capacity of their neural circuitry to represent and transmit information with high fidelity.

TALK 2: CORTICO-STRIATAL CIRCUITS FOR GOAL UPDATING

Ian C Ballard[1]; [1]University of California: Riverside

Reward feedback leads to learning but can also signal the need to update behavior. Learning and behavioral updating are interrelated but could rely on distinct neural circuits. However, a challenge for disentangling these constructs has been that reward prediction error (RPE), a learning signal, is perfectly confounded with behavioral updating in many tasks. As a result, neural signals that correlate with RPE could reflect behavioral updating. We designed a task to disentangle whether feedback signals in the striatum reflect RPE or behavioral updating. We accomplish this by varying the amount of information conveyed by negative feedback in a 2-arm bandit task so that behavioral updating is linked with positive and RPEs on different trials. We found that the BOLD response in the dorsal striatum reflected goal updating but not RPE. Specifically, the dorsal striatum responded more strongly to losing than winning money when losing money led to behavioral updating. Additionally, dorsal striatal feedback responses strongly predicted upcoming behavioral change. In the ventral striatum, we found a mixture of RPE and updating responses, suggesting that the ventral striatum translates learning into behavioral change. We found a markedly similar pattern in neurophysiological recordings from nonhuman primates: dorsal striatal neurons signaled upcoming behavioral change, whereas separate ventral striatal neurons tracked RPE and behavioral updating. Our results suggest that a large portion of the striatal feedback response reflects behavioral change rather than RPE and, therefore, can be used to probe altered behavioral updating in neurological and psychiatric diseases.

TALK 3: IDENTIFYING BETWEEN- AND WITHIN-PERSON FACTORS THAT MODERATE INFORMATION PROCESSING IN SOCIAL UNCERTAINTY

Chelsea Helion[1]; [1]Temple University

Navigating the social world requires processing information under uncertainty (e.g., Is that person trustworthy? Did she mean to hurt my feelings?). Across two studies, we examined two factors that influence

information processing in the context of social uncertainty: 1) relational schemas, and 2) individual differences in sensitivity to uncertainty. To do so, we leveraged multimodal narrative stimuli (i.e., film clips) in which an individual had been accused of a crime. Participants were instructed to watch the film(s) while continuously rating their certainty that the accused individual was guilty. In the first study, participants (n = 43), adopted a relevant relational perspective (i.e., friend of the accused or victim, a detective). We found that perspective moderated information processing, such that individuals in the friend of the victim condition showed greater decision impulsivity than the other conditions. Using a convolutional neural network (EmoNet), we found that scenes associated with higher levels of emotional entropy (i.e., uncertainty in the emotional category elicited by the visual stimuli) were also associated with greater schema reliance. In our second study, using intersubject representational similarity analysis, we found that individuals higher in intolerance of uncertainty showed increased time-course similarity in circuitry associated with somatosensory integration (i.e., insula) and that individuals higher in state anxiety showed increased time course similarity in regions associated with social cognition (i.e., TPJ, ATL). Taken together, these studies identify two potentially important contributors to processing social uncertainty, which may inform complex social judgment and decision-making.

TALK 4: UNCERTAINTY RESOLUTION DURING HYPOTHESIS TESTING DYNAMICALLY ALTERS EPISODIC MEMORY

Vishnu P Murty[1]; [1]University of Oregon

Uncertainty signals that the world around us has changed, and individuals need to update their mental maps, a process facilitated by hippocampal-dependent memories. The relationship between uncertainty and memory is not a one-to-one relationship (i.e., more uncertainty, better memory). Rather, research in meta-cognition during re-study decision show that motivation to learn is greatest during moderate levels of uncertainty. However, research has yet to explore how dynamic changes in uncertainty resolution influences memory when individuals are building and modifying priors during goal-directed search. In this talk, we will highlight two studies that utilize a hypothesis testing paradigm, in which participants figure out rules to unlock treasure chests to reveal trial-unique memoranda. In Study 1, we show an inverted U-shape relationship between decision uncertainty and memory, such that memory was best at moderate levels of uncertainty during hypothesis testing. In Study 2, we replicate findings the associations between decision uncertainty and memory and show that uncertainty-related memory enhancements are related to an integration of (1) markers of encoding success in the hippocampus and (2) markers of uncertainty in the striatum and ventromedial prefrontal cortex. Together, these findings provide greater insight into how hypothesis testing primes mesolimbic-hippocampal interactions in service of storing features of the environment related to uncertainty resolution.

Symposium Session 7

INTERACTIONS BETWEEN THE BRAIN'S VISUAL AND MEMORY SYSTEMS: RECENT ADVANCES AND NEW PERSPECTIVES

Monday, March 31, 2025, 10:00 am – 12:00 pm EDT, Constitution A

Chairs: Adam Steel[1], Serra Favila[2]; [1]University of Illinois Urbana-Champaign, [2]Brown University

Presenters: Brett Foster, Serra Favila, Adam Steel, Biyu He

Understanding how the human brain integrates externally- and internally-oriented information is a central goal of cognitive neuroscience. Yet, conventional studies of brain organization often separately consider how external information is represented in sensory systems and internal information is represented in memory systems. As a result, current models of brain function fail to account for complex natural behaviors that require dynamic integration of perceptual and mnemonic representations, like choosing where to direct our gaze as we turn our heads or searching for a familiar face in a crowd. This symposium will highlight new advances in understanding how the brain's vision and memory systems interact, and the perceptual and behavioral consequences of these interactions. Across four talks, we will highlight findings from the human visual cortex, default mode network, and hippocampus, addressing several open questions at the interface of perception and memory: 1) How are cortical perceptual and mnemonic representations integrated in space and time? (Foster), 2) How is feature coding in visual cortex similar and distinct during perception and memory, and how is this shaped by cognitive factors? (Favila); 3) How does complementary, opponent coding between visual and memory systems balance and integrate internal cognition with external perception? (Steel); and 4) How does ongoing activity within the default network and visual cortex shape conscious perception? (He). Collectively, this work advances a new framework for understanding how visual and memory systems dynamically exchange information to support complex behaviors.

TALK 1: PERCEIVING THE PAST – HOW DO VISION AND MEMORY WORK TOGETHER?

Brett Foster[1]; [1]University of Pennsylvania

Episodic memory enables reexperiencing of the past without the original sensory materials constituting a specific item or event. During retrieval, specialized visual regions are thought to be engaged to reinstate sensory details, while specialized memory regions integrate these sensory data to reconstruct past events. This emphasizes how memory processes shape activity within visual brain regions, and conversely, how the coding properties of these sensory regions influence the types of features integrated within mnemonic regions. This talk will present data from human intracranial recordings and neuroimaging, focusing on the interplay between visual and memory systems. Specifically, I will first present data on how category-selective

regions within human ventral temporal cortex (VTC) are shaped by and support the retrieval of prior perceptual experiences. Next, I will discuss how these category-selective responses in VTC potentially influence the features and functional organization of the medial parietal cortex (MPC) and its role in retrieval and the construction of past events. Together, these studies provide some insight into the spatio-temporal transformations in neural activity that occur when visual systems are engaged in the service of memory behavior. The close interaction between these systems raises new theoretical challenges, particularly in understanding how highly specialized visual systems, shaped through development, maintain functional integrity while accommodating plasticity to support long-term memory consolidation.

TALK 2: TRANSFORMATIONS BETWEEN PERCEPTUAL AND MNEMONIC ACTIVITY IN THE HUMAN VISUAL SYSTEM

Serra Favila[1]; [1]Brown University

When we remember an event, we often bring to mind the same sensations and thoughts we experienced initially. This phenomenon has a clear parallel in the brain, where sensory regions that were active during perception are reactivated during recall. While important, the focus on neural similarities between perception and recall has potentially overshadowed important differences between these states. In this talk, I will present human neuroimaging data that characterizes mnemonic activity in the human visual system, its correspondence to perceptual activity, and how it is shaped by cognitive factors. First, using a visual encoding model to quantify spatial reactivation, I will show that spatial responses in visual cortex are markedly different during recall compared to perception, even for extremely well-trained memories. Simulations and modeling work suggest that this change cannot be attributed to memory failure and is instead a constraint imposed by the hierarchical architecture of the visual system. Second, using a task in which multiple memories compete to guide behavior, I will show that hippocampal mechanisms for separating memories have downstream consequences on mnemonic activity in visual cortex. Together, these studies suggest that mnemonic activity is subject to a different set of fundamental constraints than feedforward activity in the visual system, and that cognitive factors such as memory competition further transform mnemonic representations. These findings advance classic theories of memory reactivation and set the stage for developing models that more fully specify how brain activity is transformed from perception to recall.

TALK 3: RETINOTOPIC CODING IS A UBIQUITOUS SCAFFOLD **ORGANIZING THE BRAIN'S INTERNAL AND EXTERNAL** INFORMATION PROCESSING

Adam Steel[1]; [1]University of Illinois Urbana-Champaign

How does the human brain seamlessly integrate internally-oriented (mnemonic) and externally-oriented (perceptual) information? This question has long puzzled neuroscientists, given the traditional view that internally-oriented networks like the default network (DN) and externally-oriented networks like the dorsal attention network (dATN) are globally competitive and implement distinct neural codes. Our research challenges this perspective, revealing a surprising role for the brain's foundational external visuospatial code, retinotopic coding, in structuring interactions between these internally- and externally-oriented networks. Using advanced neuroimaging techniques, I show that retinotopic coding extends beyond visual areas into higher-order brain regions, including the DN and dATN. Moreover, this retinotopic code identified during visual tasks scaffolds the spontaneous opponent interaction between these networks during resting-state fMRI. Finally, the retinotopic code integrates with the domain-specific preferences of subregions within these networks, enabling efficient, parallel processing of retinotopic and categorical information during resting-state fMRI, as well as during visual perception and memory tasks. These findings suggest that retinotopic coding serves as a fundamental organizing principle for brain-wide communication that structures the dynamic interaction between perceptual and mnemonic systems. This work offers a new framework for understanding how the brain balances and integrates internal cognition with external perception, with implications for our understanding of attention, perception, and memory processes.

TALK 4: HOW ONGOING SPONTANEOUS BRAIN ACTIVITY INFLUENCES CONSCIOUS VISUAL PERCEPTION

Biyu He[1]; [1]New York University

Preexisting brain states wield powerful influences on conscious perception. Depending on the preexisting brain state at the time of stimulus arrival, a physically identical stimulus may be consciously perceived or not, a visual object may be consciously recognized or not, and we may perceive something that is not out there. Preexisting brain states include both anatomical connections shaped by past experiences and the moment-to-moment fluctuations in spontaneous brain activity. In this talk, I will discuss our recent work investigating the role of spontaneous activity in shaping conscious visual perception in humans. Employing 7 Tesla fMRI and a threshold-level visual perception task, we observed that prestimulus activity originating from distributed brain regions, including visual cortices and regions of the default-mode and cingulo-opercular networks, exerts a diverse set of effects on the sensitivity and criterion of conscious recognition, and categorization performance. We further elucidated the mechanisms underlying these behavioral effects, revealing how prestimulus activity modulates multiple aspects of stimulus processing. In addition, I will discuss our work using MEG to dissect the electrophysiological and frequency-domain signatures of perceptually relevant spontaneous activity.

Symposium Session 8

MEMORY IN THE PALM OF YOUR HAND: NEW SMARTPHONE TECHNIQUES FOR MEASURING EMOTION AND MEMORIES OF REAL-LIFE EXPERIENCES

Monday, March 31, 2025, 10:00 am – 12:00 pm EDT, Constitution B

Chair: Elizabeth Goldfarb[1]; [1]Yale University
Presenters: Elizabeth Goldfarb, Morgan Barense, Lila Davachi, David Clewett

Our memories emerge from our complex and emotionally dynamic everyday experiences. However, many episodic memory studies take place in controlled laboratory settings, which, while offering precision, raise questions about how well these findings apply to real-world memory. To truly capture the dynamic and meaningful nature of memories for daily life, more sophisticated approaches are needed, methods that are now increasingly possible through novel applications of smartphone technology. In this symposium, we highlight new smartphone-based techniques for capturing different aspects of everyday experiences and quantifying how they are remembered. These approaches are feasible, acceptable to participants, and provide key insights. We present methodological and analytical advances in intensive longitudinal sampling and demonstrate how they enable us to address new questions about how memories are encoded, stored, and retrieved in daily life. We will discuss how a variety of factors, including emotion, novelty, alcohol, and dreams, alter the richness and organization of autobiographical memories. These real-world findings both validate and challenge models of memory derived from observations in laboratory-based experiments. Together, these studies show how advances in smartphone-related monitoring techniques can open up exciting new avenues for human memory research.

TALK 1: LEVERAGING ECOLOGICAL MOMENTARY ASSESSMENT TO CAPTURE MEMORY FOR CLINICALLY RELEVANT EXPERIENCES

Elizabeth Goldfarb[1], [1]Yale University

Memory plays a key role in alcohol use, as what people learn and remember about their experiences with alcohol can drive later drinking. However, we know little about how individuals who engage in riskier patterns of drinking encode and retain such alcohol-related episodes, and whether laboratory observations of these processes extend to memories for real drinking experiences. In a set of experiments, we measured memories for alcohol-related events in the laboratory (including photographs portraying alcoholic beverages) and, using smartphones, memories for real alcohol drinking experiences. Our participants included social drinkers who engaged in light to risky patterns of drinking. Borrowing techniques from clinical ecological momentary assessment, participants received random prompts throughout the day and created user-initiated reports when they had their first drink of the day during a two-week monitoring period. In each prompt, they reported on different features of the event (e.g., where they were, who they were with, and how they were feeling). The next morning, we prompted participants to report their memory for these events. The smartphone-based approach yielded high completion rates and above-chance memory accuracy. Critically, we found differences in how event valence and the presence of alcohol modulated accuracy across settings. Using a new memory integration computation, we also found that positive and alcohol-related events were more integrated in both settings. This smartphone-based memory sampling approach provides a feasible method to study memory for real and clinically meaningful experiences, providing ecologically valid insight to the organization of memories associated with maladaptive behavior.

TALK 2: CHARACTERIZING THE IMPACT OF A NIGHT OF SLEEP AND DREAMING ON MEMORY FOR REAL-LIFE EXPERIENCES

Morgan Barense[1] , [1]University of Toronto

Sleep plays a role in the consolidation of episodic memories, yet surprisingly little is known about how the very first night of sleep impacts real-life, autobiographical memories. Moreover, dreaming about a laboratory task has been shown to improve memory for that task, suggesting that dreaming may also promote memory consolidation. Using a smartphone-based memory sampling approach, we collected high-fidelity autobiographical memory cues from everyday experiences and administered multiple at-home memory tests per day in a population of participants who frequently remembered their dreams. Over the course of two weeks, participants recorded one morning and one evening event from their everyday lives on a smartphone application. They also completed two memory tests per day (one in the morning and evening) that assessed the memory from approximately 8-12 hours prior (i.e., the evening memory test pertained to the morning event and the morning test pertained to the evening event from the night before). Across a converging set of measures, we found that sleep impacted autobiographical memory richness, such that after a sleep delay, compared to a wake delay, memories were reported as more vivid, easier to recall, and felt closer in time. We also found that the memories participants reported dreaming about were associated with preserved emotional strength and an increase in negativity. Both sleep and dreaming were associated with increased memory integration as measured through similarity ratings. Overall, we provide real-world evidence that sleep preserves autobiographical memory richness and that dreaming is involved in emotional processing of these memories.

TALK 3: REAL-LIFE IMPACT OF EXPERIENTIAL NOVELTY ON MEMORY AND MOOD

Lila Davachi[1], [1]Columbia University

Motivated by subjective observations that memory was adversely affected by the pandemic lifestyle involving very little change in our spatial and social environments, we hypothesized that variation in experience and novelty may be broadly important for memory. Using an intensive longitudinal "daily diary" study, we examined the relationships between experiential novelty, emotions and real-world autobiographical event memory. Participants provided descriptions of three events per day for two weeks as well as additional information about their overall daily mood and specific details (social, spatial, emotional) about each event. After a delay of two weeks, memory for these events was tested. First, we found that novel events were remembered more vividly and with greater episodic detail than familiar events. Furthermore, we found that non-novel events that occurred on the same day as a novel event were also better remembered. This shows that novelty can exert a penumbra effect on other more typical experiences of each day, improving their retention. Novel events were also associated with more emotion (both positive and negative) and greater daily physical activity correlated with greater positive emotion for a given day. Other factors that improved autobiographical memory were steps taken and spending time with others. This real-world data collection allowed us to test specific targeted hypotheses about experiential novelty and autobiographical memory while also collecting a rich, multidimensional dataset allowing us to place these effects in their daily context of behaviors, emotions and social experiences.

TALK 4: USING A NOVEL WEB APP TO EXAMINE DYNAMIC EMOTIONAL STATES AND THEIR RELATION TO MEMORY AND SYMPTOMS OF PSYCHOPATHOLOGY

David Clewett[1], [1]University of California, Los Angeles

Emotional flexibility, or the ability to express appropriate emotional reactions in response to one's environment, is thought to be reduced in emotion-related psychiatric disorders. However, current paradigms that measure emotional flexibility fail to capture emotion dynamics outside of the laboratory. Further, it is unclear how navigating one's emotional experiences in real-time relates to the structure and organization of autobiographical memories. In a pre-registered study, we tested if fluctuations in emotional reactions to custom musical pieces relate to symptoms of depression and trauma as well as the content and structure of memory. To capture continuous emotional changes, we developed a novel mobile emotion tracking application called the Mobile Emotion Compass. After the music task, we also instructed participants to self-organize three autobiographical memories into paragraphs, or "chapters", providing insight into the subjective structure of their memories. Our results revealed that across participants, lower average valence ratings (i.e., more negative emotion) and higher variability in valence ratings across music listening were associated with higher self-reported symptoms of trauma. Additionally, the number of self-indicated event memories was positively correlated with more normative emotional ratings to the songs, suggesting that the structure of accessed events relates to more prototypical emotional responding. Finally, we also found that the complexity of recall corresponded with a lower likelihood of remaining in a low-movement, less variable emotional state during music listening. Together, these results reveal how inflexible or unusual emotional responses may relate to impaired memory for everyday events.

Symposium Session 9

DECODING SPONTANEOUS THOUGHT FROM NEURAL ACTIVITY

Tuesday, April 1, 2025, 1:30 – 3:30 pm EDT, Grand Ballroom

Chairs: Aaron Kucyi[1], Julia Kam[2]; [1]Drexel University, [2]University of Calgary

Presenters: Julia Kam, Aaron Kucyi, Matthias Mittner, Kalina Christoff, Yuhua Yu

Understanding the neural basis of mind-wandering and spontaneous thought is an emerging topic in contemporary cognitive neuroscience. In an era dominated by experimental models in cognitive neuroscience that employ structured tasks, the study of spontaneous cognition faces a unique challenge: how can mental experience that is initiated without any experimental triggers—and that is unpredictable even by the experiencer themself—be measured and attributed to neural signals? In our symposium, speakers will present novel paradigms designed to tackle this challenge and demonstrate the decoding of spontaneous thought from neural activity with increasing precision. Our topics include novel applications of machine learning, computational modeling, and precision neuroimaging for the prediction of mind wandering and spontaneous thought from neuroimaging and electrophysiological data. Julia Kam will present evidence for a comprehensive set of brain-to-experience mapping of the phenomenological features of ongoing thoughts and the successful detection of their occurrence during naturalistic behavior using EEG. Aaron Kucyi will present an idiographic (person-specific) approach to predictive modeling of mind-wandering from resting-state fMRI data using precision neuroimaging. Matthias Mittner will present a Hidden Markov Model analysis of fMRI-pupillometry to detect switches between on-task and mind wandering states. Kalina Christoff will describe the differential role of subsystems of the default network in the spontaneity and automaticity in thought, as distinguished within the Dynamic Framework of Thought. Together, our symposium will highlight different experimental and analytic approaches that will set the foundations for a more comprehensive understanding of the neural basis of spontaneous thoughts moving forward.

TALK 1: PREDICTING SPONTANEOUS THOUGHTS USING ELECTROENCEPHALOGRAM DURING NATURALISTIC BEHAVIOR

Julia Kam[1]; [1]University of Calgary

Humans engage in a continuous stream of ongoing mental experience. Although recent fMRI work revealed the functional connectivity patterns underlying several thought dimensions during experimental tasks, little is known about the electrophysiological basis of these thought dimensions in more naturalistic settings and the extent to which we can predict these ongoing thoughts using EEG and machine learning. To address this, we first examined the electrophysiological signatures of ongoing thoughts during naturalistic tasks in seven participants across seven recording sessions. We then combined deep learning algorithms with electrophysiological data to determine the utility of these signals in predicting thought dimensions. Based on a total of 49 datasets, our results revealed distinct oscillatory markers of seven dimensions of ongoing thought as participants completed any computer-based activities they wished to perform. In addition to identifying electrophysiological markers consistent with those observed in experimental settings for internally oriented and freely moving thoughts, we found novel patterns for off-task, goal-oriented, sticky, self and others-oriented thoughts. Importantly, applying deep learning algorithms on electrophysiological data reliably detected the occurrence of all seven thought dimensions based on different EEG features, highlighting the utility of combining deep learning approaches with EEG to detect covert, mental states. Together, these results assembled a comprehensive set of brain-to-experience mapping of the phenomenological features of ongoing thoughts and established the successful detection of their occurrence during naturalistic behavior. Our findings provide an important step towards predicting thought patterns in the real world with clinical implications for establishing biomarkers of atypical thought patterns.

TALK 2: PREDICTIVE NEURAL MODELING OF RESTING-STATE SPONTANEOUS THOUGHT: AN IDIOGRAPHIC APPROACH

Aaron Kucyi[1]; [1]Drexel University

Spontaneous thoughts arise at unpredictable moments. There has been growing scientific interest in using machine learning to model and predict the momentary occurrence of spontaneous mental experiences from neural activity during task-free (resting) states. Commonly, training data include neural features derived from a population of individuals, and testing is performed on held-out data in one or more individuals. However, individual differences in the nature of spontaneous thought raise the critical question of whether population-derived neural models can generalize to individuals. We intensively-sampled three individuals who each reported hundreds of episodes of spontaneous off-task thought across multiple fMRI sessions while engaged in a simple resting state with intermittent experience sampling. Idiographic (i.e., person-specific) connectome-based predictive modeling revealed time-varying whole-brain functional connectivity patterns that consistently predicted momentary off-task thought within individuals but did not fully generalize across individuals. Predictive features were unique to each individual but commonly included the default mode network (DMN), the network most typically implicated in spontaneous thought. However, computational removal of the DMN had a minimal impact on prediction performance, and other networks such as sensorimotor were sufficient for prediction within all individuals. Predictive models of off-task thought and sustained attention from previously published fMRI studies largely failed when applied to intensively-sampled individuals, further highlighting the need for idiographic models. Our work offers strong evidence for person-specific neural representations of spontaneous thought with important implications for the interpretation and practice of resting-state fMRI. Our findings further underscore the broader value of idiographic approaches to predictive brain-experience relationships.

TALK 3: MODELING DYNAMICAL TRANSITIONS BETWEEN ON- AND OFF-FOCUS STATES USING HIDDEN-MARKOV MODELS

Matthias Mittner[1]; [1]The Arctic University of Norway

Previous research has shown that large-scale brain networks such as default-mode network (DMN), executive network and dorsal-attention network are involved in mind-wandering (MW). However, current state-of-the-art methods for predicting MW based on neural data are lacking an explicit model for the temporal evolution and dynamic switches between on-task and MW states. Based on a theoretical model of mind-wandering that postulates that attentional shifts are modulated by norepinephrinergic (NE) activity, we investigate attentional switches using data from a combined fMRI and pupillometry study (N=27). This model assumes the existence of a latent off-focus state, characterized by transiently elevated tonic NE activity, which mediates transitions between on-task and MW. Because of the transient nature of this state, it is difficult to measure with standard methods. To overcome this problem, we implemented a modified Hidden-Markov model (HMM) fit to behavioural and pupillometric data that allows for the modeling of dynamic task transitions between latent states. Crucially, the model is also informed by self-reported MW in the form of thought-probes, and therefore provides interpretable latent states with specific signatures. By projecting the sequence of latent states extracted by the HMM into the fMRI data, we can extract specific brain signatures of on-task, MW and most importantly, the elusive off-focus state. We find that our analysis provides important insights into the dynamics of mind wandering and contributes to disentangling the enigmatic involvement of the DMN and its subnetworks in MW. Finally, we apply the model to a separate dataset to validate its generalizability and robustness.

TALK 4: DISTINGUISHING BETWEEN SPONTANEITY AND AUTOMATICITY USING THE DYNAMIC FRAMEWORK OF THOUGHT

Kalina Christoff[1]; [1]University of British Columbia

Recent precision-fMRI findings reveal two distinct default mode networks (DMNs), DMN-A and DMN-B. How do these two DMNs relate to spontaneity and automaticity in thought, as distinguished within the Dynamic Framework of Thought (Christoff et al., 2016; Girn et al., 2020)? The newly identified DMN-A appears to be closely linked to episodic thought and scene construction, while DMN-B has been linked to semantic thought and social meaning-making. Our fMRI findings with highly experienced meditators suggest that the flexible interactions between subcortical and cortical regions may be the most distinctive feature of spontaneously arising thoughts. Thus, we have observed a spread of activation from subcortical DMN-A structures (e.g., medial temporal lobe) to cortical DMN regions, during the seconds preceding subjective reports of spontaneously arising thoughts in highly experienced meditators. Less experienced meditators, on the other hand, report fewer spontaneously arising thoughts and do not reliably recruit subcortical DMN-A regions prior to spontaneous thought reports, although they do show robust recruitment of cortical DMN regions. Thus, flexible interactions between subcortical and cortical regions of DMN-A appear to be a feature of spontaneous mental arisings. Less is known about the DMN-B. However, the involvement of cortical DMN-B regions in semantic processing and social meaning making hint towards a possible contribution towards the automaticity of thought through semantic constraints. Overall, the subcortical-to-cortical interactions within the DMN-A appear at present as the most promising target of investigation for distinguishing spontaneity from automaticity in thought, but DMN-B interactions remain an important topic for further investigation.

TALK 5: INTEGRATING CONTENT AND DYNAMICS OF SPONTANEOUS THOUGHT: A HIDDEN MARKOV MODEL ANALYSIS OF THINK-ALOUD FMRI DATA

Yuhua Yu[1], [1]University of Arizona

Spontaneous thoughts exhibit a rich interplay of diverse content and temporal dynamics, yet thought content and dynamics are often studied in isolation. Thought contents can be delineated along various dimensions, such as internal versus external orientation, and have been associated with underlying neural substrates. The dynamics of thought – their persistence and transitions – are also starting to be explored with implications in psychopathology. Developing a unified research framework that embeds thought contents in their temporal dynamics may not only bring us closer to decoding spontaneous thought from neural activity, but may also inform broader neurocognitive theories of association cortex function and interaction. However, the lack of a known temporal structure during spontaneous thought poses a challenge to the integration of content and dynamics. In an attempt to address this challenge, we applied a data-driven approach to fMRI data collected from 79 participants (72% female; 24-87 yr) when they verbalized their uninterrupted stream of thoughts for fourteen minutes across 2 runs. We analyzed think-aloud transcripts through both manual ratings and large language models to extract features of thought content and transitions. We modeled whole-brain BOLD signals with a hidden Markov model, where each latent state can be characterized by its activation topographies, functional connectivity profiles, and temporal transition patterns. Moment-to-moment mapping between latent states and think-aloud features revealed neural markers associated with thought content and thought transitions. Our work offers a preliminary step toward embedding spontaneous thought content within its temporal dynamics under a unified framework.

Symposium Session 10

WHAT CAN('T) OSCILLATIONS TELL US ABOUT COGNITION?

Tuesday, April 1, 2025, 1:30 – 3:30 pm EDT, Independence Ballroom

Chair: Agatha Lenartowicz[1]; [1]UCLA
Presenters: Agatha Lenartowicz, Jan R. Wessel, Bradley Voytek, Cory Inman

Neural oscillations clearly play an important role in cognition and neural computation. Thought to capture fundamental mechanisms of neural communication, they have featured prominently in models of attention, memory, and long-range communication in the brain. Being measurable non-invasively and across species, they also offer a powerful bridge for cross-species inference in brain research. However, the interpretation of oscillatory effects in relation to cognitive constructs is not without debate, as new data challenge existing interpretations. In this symposium four speakers will present and discuss data that highlight limits and emerging trends in oscillatory research as it relates to cognition. Dr. Agatha Lenartowicz will present EEG data showing that attentional interpretations of alpha range oscillations depend on experimental context, suggesting multiple contributing sources. Dr. Jan Wessel will present new intracranial recordings from the basal ganglia that support the notion of beta-gamma activity as a domain-general signature of inhibitory control, which is intractable in time-domain recordings. Additionally, Dr. Bradley Voytek will present work showing that both oscillatory and aperiodic activity are dynamically modulated during memory and cognitive control tasks. Finally, Dr. Cory Inman will present wireless ambulatory intracranial EEG data to show that complementary oscillatory and aperiodic temporal lobe dynamics depend on changes in environmental context and naturalistic behaviors as participants navigate through real-world environments. The symposium thus highlights emerging trends, including integration of context and multidimensional profiles that include periodic and aperiodic activity, in bridging neural oscillations and cognition.

TALK 1: MULTIPLE FACES OF ALPHA OSCILLATIONS IN CONSTRUCTS OF ATTENTION.

Agatha Lenartowicz[1]; [1]University of California Los Angeles

Alpha oscillations are a robust neurophysiological phenomenon associated with cortical suppression and synaptic input gating, often interpreted as a mechanism of selective attention. Recently dissociations between alpha oscillations and selective attention processes have emerged that question the specificity of this interpretation. In this talk I will present data from a series of experiments in which EEG data were recorded under several conditions, in the laboratory, during naturalistic activities and concurrently with fMRI, during tasks of working memory and sustained attention in children and adults, including those with ADHD. Across these experiments alpha oscillations were evaluated as a marker of attention and associated attention deficits in ADHD. The results indicate: (i) variability in interpretation of alpha oscillations when manipulated within individual versus measured between individuals, as well as when assessed within laboratory-based versus more naturalistic recording conditions, (ii) structured variability in BOLD-functional-connectivity of alpha oscillations across cognitive contexts, and (iii) functional dissociations between alpha power and non-oscillatory features of EEG. Together these results are consistent with multiple sources of variability in typically measured alpha oscillations (including bottom-up and top-down interactions, internal processes, and regulatory system influences on cortical excitability), and suggest that attention-based interpretations of such oscillations depend on the analytical and experimental context in which they are acquired. Our data echo the need for better understanding of mechanisms across different instantiations of alpha oscillations in cognition.

TALK 2: SUBTHALAMIC BETA-GAMMA ACTIVITY AS A CIRCUIT MOTIF UNDERLYING DOMAIN-GENERAL INHIBITORY CONTROL.

Jan R. Wessel[1]; [1]University of Iowa

Inhibitory control is a key executive function. It is used to suppress outdated or inappropriate information. Over the last two decades, intracranial neurophysiological work in humans has detailed the dynamics of a fronto-basal ganglia neural circuit underlying inhibitory control of movement. This circuit prominently features the subthalamic nucleus (STN) of the basal ganglia and operates predominantly in the beta frequency band. Recently, we have hypothesized that this same circuit could also be involved in the inhibitory control of non-motor activity. This was motivated both by the neuroanatomy of the fronto-basal ganglia circuit, as well as by the empirical observation of beta-band activity during the inhibition of sensory and mnemonic processes. Here, I will present two new studies that lend further support to this theory. In both studies, we recorded STN local field potentials from implanted deep-brain stimulators of Parkinson's patients, alongside scalp EEG. In the first study, we measured the inhibition of active visual attention after distracting sounds. We found that sound-related beta-gamma activity in the STN mediated the sounds' suppressive influence on visual attention, measured by the steady-state visual evoked potential. In the second study, we used semantic violations to study the inhibitory control of language. Once again, beta-gamma activity in the STN was observed when preactivated, but subsequently violated semantic representations had to be inhibited. Together, this work points towards a consistent circuit motif signifying the domain-general inhibitory control of active neural processes.

TALK 3: DYNAMIC CORTICAL AND OSCILLATORY ACTIVITY IN VISUAL WORKING MEMORY AND COGNITIVE CONTROL.

Bradley Voytek[1]; [1]University of California San Diego

Biological neural networks translate sensory information into a neural code that is transmitted across a hierarchy of cortical brain regions, is held in memory over long timescales, and is relatively robust against distractions. Here we provide evidence that both neural oscillations and aperiodic activity are functionally dynamic in distinct ways during human cognition. We provide evidence for this from three different studies, one using intracranial electroencephalography (iEEG) while participants perform a visual working memory task and two using noninvasive EEG while participants perform a visual hierarchical cognitive control task. In the iEEG study, we leverage a novel time-resolved parameterization of neural spectral activity and find clear, event-related changes in both oscillations and aperiodic activity during memory encoding, changes that are largely independent from one another. During memory encoding, visual cortical alpha oscillatory power significantly decreases while, simultaneously, visual cortical aperiodic activity "flattens out". In the cognitive control EEG experiments, we found that frontal aperiodic activity becomes "steeper" at stimulus onset. This coincides with a decrease in posterior, aperiodic-adjusted alpha oscillatory power. These changes occurred across all conditions but were greater with increasing task abstraction. These results suggest that aperiodic activity is a dynamic feature of neuronal computation, capturing task-specific reorganization of functional network dynamics when a greater degree of contextual information must be integrated. We interpret these results within the context of current, though not necessarily distinct, theories regarding the physiology of aperiodic neural activity as reflecting neuronal excitation / inhibition balance and / or neuronal timescales.

TALK 4: INTRACRANIAL NEURAL DYNAMICS DURING HUMAN NAVIGATION IN THE WILD.

Cory Inman[1]; [1]University of Utah

The ultimate goal of cognitive neuroscience is to understand and explain real-world behavior in terms of brain activity, and to use these insights to develop therapeutic approaches for neural disorders. By using wearable sensors synchronized with intracranial EEG

recordings in epilepsy patients with a permanently implanted deep brain recording system, we can begin to explore the electrophysiological basis of human activities such as real-world navigation and memory encoding in a way that captures the complexity, scale, and functional characteristics of real-world experiences. We hypothesized we'd observe changes in medial temporal lobe (MTL) activity based on changes in spatial context, task-relevant behavior, and movement speed. In this initial observational study, we asked five participants to learn a 0.75-mile route around campus while MTL electrophysiology was recorded. Subjects walked the route 7-8 times across two days, with the 1st walk guided (encoding) and 6-7 of the walks navigated by the participants themselves (navigation retrieval). Using a linear mixed effects model, temporal lobe theta power (5-8 Hz) during real-world spatial navigation is best explained by changes in environmental context, velocity, eye movements, and observer-defined event boundaries. Specifically, low-frequency broadband power (5-12 Hz) significantly increases when participants navigate outdoors relative to indoors. We also find evidence that temporal lobe aperiodic, theta, and gamma activity changes immediately around spatial and cognitive event boundaries. Taken together, we find evidence that neural oscillations and aperiodic activity in the medial and lateral temporal lobe changes around shifts in real-world contexts and cognitive event boundaries.

Symposium Session 11

HARNESSING VIRTUAL REALITY TO STUDY MEMORY AND SPATIAL NAVIGATION ACROSS THE LIFESPAN

Tuesday, April 1, 2025, 1:30 – 3:30 pm EDT, Constitution A

Chairs: Tammy Tran[1], Rolando Masís-Obando[2,3]; [1]Stanford University, [2]Johns Hopkins University, [3]Princeton University
Presenters: Rolando Masís-Obando, Birgit Peña Häufler, Manu Madhav, Tammy Tran

In recent years, there is increasing popularity of the usage of immersive virtual reality to explore complex cognitive processes. The current symposium proposal demonstrates innovative applications of immersive virtual reality to investigate episodic and semantic memory, as well as spatial navigation across the lifespan and in Alzheimer's disease. By creating immersive environments that simulate real-world experiences in combination with cutting-edge functional neuroimaging and eye-tracking tools, we can gain unique insights into how individuals of all ages interact with their spatial surroundings, encode, recall, and navigate through spatial environments and the subsequent impact of these immersive virtual environments on other processes such as semantic memory and creative inspiration. The first two talks explore how episodic and semantic memories develop in immersive virtual reality in healthy young adults, and the subsequent effect of these episodic memories as scaffolds for future experiences and the impact on other cognitive processes such as creativity. The last two talks investigate age-related and disease-related changes in egocentric and allocentric navigation and spatial memory across the lifespan in young adults, clinically unimpaired older adults, and patients with mild cognitive impairment, a transitional phase between healthy aging and Alzheimer's disease dementia. By leveraging immersive virtual reality, we can more effectively examine the intricacies of real-world, naturalistic behaviors and investigate complex cognitive processes such as episodic memory and spatial navigation, as well as detect the subtle changes in these behaviors in aging and disease.

TALK 1: HOW STRONG IS YOUR MEMORY PALACE? RELIABLE ROOM REPRESENTATIONS PREDICT SUBSEQUENT MEMORY FOR PLACED OBJECTS

Rolando Masís-Obando[1,2], [1]Princeton University, [2]Johns Hopkins University

It is still not well understood what psychological and neural factors make spatial contexts effective scaffolds for storing and accessing memories. We hypothesized that spatial context representations must be stable over time to provide a consistent cue for retrieval. To test this, we developed a novel paradigm that quantified the within-subject stability of a spatial context ("room reliability"), which could then be used to predict later memory for episodic information occurring at this spatial location. We constructed a virtual reality (VR) "memory palace" environment made up of 23 distinct rooms that participants explored using a head-mounted VR display. The day after learning the layout, participants underwent whole-brain fMRI while being presented with videos of the rooms in the memory palace, allowing us to measure the reliability of the neural activity pattern associated with each room. They were taken back to VR and asked to memorize the locations of 23 distinct objects randomly placed within each of the 23 rooms, and then returned to the scanner as they recalled the objects and the rooms in which they appeared. We found that our room reliability measure was predictive of object reinstatement across cortex, and further showed that this was driven not only by the group-level reliability of a room across participants but also the idiosyncratic reliability of rooms within each participant. Together, these results showcase how the quality of a spatial context memory can be quantified and used to 'audit' its utility as a memory scaffold for future experiences.

TALK 2: INSPIRING CREATIVITY THROUGH MEMORY IN IMMERSIVE VIRTUAL REALITY

Birgit Peña Häufler[1,2], [1]Technische Universität Berlin, [2]Georgia Institute of Technology

Although the presence of visual stimuli has been reported to impact task performance, particularly in stimulating creativity, these mechanisms underlying this relationship are unknown. One proposed mechanism is through the activation of task-related schema. Prior research on the neurocognitive basis of creative idea generation has highlighted the relevance of semantic memory for this process. Here,

we investigate how the visual work environment may relate to semantic memory. We use a word sentence construction task to estimate semantic memory network structures (i.e., flexible vs. steep), and investigate how they are impacted by the activation of work-related schema and their subsequent relationship to idea generation. Drawing on the potential of virtual reality (VR) as individual workspace, we first assess the associations of existing VR workspace applications to work-related schemas. Then we assess their impact on semantic memory network structures and finally, on idea generation, assessed through the alternative uses task. 100 young adults (18-28 yrs) first completed baseline semantic memory and idea generation trials, and repeated these tasks in immersive VR schema-specific workspaces. As predicted, we found significant relationships and differences between exposure to the respective VR workspaces and changes in SMN structure, and between SMN structure and AUT originality. These findings aid our understanding of the relationship between visual workspace representations and creativity and provide insights for effective workspace design.

TALK 3: VIRTUAL REALITY ASSESSMENT TO QUANTIFY NAVIGATIONAL IMPAIRMENTS IN AGING AND EARLY ALZHEIMER'S DISEASE

Manu Madhav[1], [1]University of British Columbia

Alzheimer's Disease (AD) typically begins its progression from the entorhinal cortex and hippocampus, regions crucial for spatial navigation and memory. Although cognitive tests assessing episodic memory are well established, identifying a non-invasive behavioural biomarker based on spatial navigation could allow for earlier detection of AD, leading to more timely interventions and improved quality of life. We are developing a novel virtual reality (VR)-based navigation task that scales in complexity to provide a consistent measure of navigational performance. In this task, younger and older participants must keep track of their starting position and the locations of two distant landmarks as they traverse a corridor in the virtual environment. The task evaluates both egocentric (self-referenced) and allocentric (environment-referenced) navigation across varying path complexities to quantify navigational impairments. Error metrics from the participants' performance increase with the complexity of the path and allow us to quantify differences between younger and older participants. Full behavioral data, including head orientation, virtual movement and joystick actions are used to train a machine learning model, that can also distinguish between younger and older participants. We seek to extend this study to recruit participants with diagnosed early AD, to detect their navigational impairments relative to healthy older participants, with the hypothesis that they will be further impaired in egocentric metrics. Our long-term goal is to develop a portable and sensitive behavioural biomarker that quantifies navigational ability. Designed for use by both clinicians and caregivers, this tool will facilitate early AD detection, enable long-term monitoring, and guide restorative interventions.

TALK 4: INVESTIGATING AGE-RELATED AND DISEASE-RELATED DIFFERENCES IN OBJECT LOCATION MEMORY USING IMMERSIVE VIRTUAL REALITY.

Tammy Tran[1], [1]Stanford University

Misplacing objects is a commonly reported clinical symptom that scales with disease severity in Alzheimer's disease, suggesting a potential role of object misplacement as an early indicator of Alzheimer's disease clinical symptoms. Approaches to tracking object misplacement typically involve questionnaire-based approaches or spatial working memory tasks, which fail to encompass the complexity of naturalistic behaviors. In the current study, we used immersive virtual reality to investigate (1) egocentric and allocentric object location memory and (2) spatial precision of their episodic memories in young adults, clinically unimpaired older adults and patients with Alzheimer's disease. Participants were asked to learn and recall the location of different objects within a living room. In the egocentric version of the task, individuals with mild cognitive impairment (MCI) exhibited the lowest performance, followed by clinically unimpaired older adults, with young adults performing the highest for overall location memory. In the allocentric version of the task, both clinically unimpaired older adults and patients with MCI are impaired on the task compared to young adults. CA1 volume predicts performance on both the egocentric and allocentric version of the task, while differences in eye-tracking fixations during encoding predict subsequent retrieval performance. Together, these findings indicate that examining real-world behaviors in an immersive virtual reality can reveal clear age and disease-related differences in memory performance. Ongoing work links these cognitive changes to plasma biofluid biomarkers of Aβ42:40 and pTau181 to examine the potential of immersive virtual reality in tracking age-related and clinical symptoms of memory decline.

Symposium Session 12

ADVANCING GLOBAL AND LOCAL THEORIES OF DMN FUNCTION ACROSS COGNITIVE DOMAINS

Tuesday, April 1, 2025, 1:30 – 3:30 pm EDT, Constitution B

Chair: Ajay Satpute[1]; [1]Northeastern University

Presenters: Maureen Ritchey, Ajay Satpute, Lauren DiNicola, Lucina Uddin

The brain is composed of networks of interacting brain regions that support higher-order cognition. Among these, the default mode network (DMN) appears to cut across cognitive domains with contributions to memory, social cognition, language, and emotion. In this symposium, we will discuss recent advances in characterizing the functional architecture of the DMN, highlighting evidence for domain integration and/or specialization. Ritchey will discuss the role of the DMN in flexibly representing different types of information to build and update internal models of the world, here discussed through the lens of episodic memory. Satpute will provide a mechanistic account of the

DMN function in affect and emotion based on predictive processing architectures. DiNicola will present recent advances from individualized functional neuroimaging that reveal that the DMN comprises distinct functional networks differentially associated with remembering, social inference and language. Uddin proposes a global model of DMN function, proposes that the DMN functions as a staging ground for goal-directed behavior, interacting with other networks to support complex cognition. These talks will address debates between global and local theories of DMN function, highlighting efforts to pursue a unified account as well as the insights we can gain from its subnetwork organization.

TALK 1: CHARACTERIZING THE REPRESENTATIONAL STRUCTURE OF THE DEFAULT MODE NETWORK THROUGH THE LENS OF EPISODIC MEMORY

Maureen Ritchey[1]; [1]Boston College

What can episodic memory tell us about the functions of the default mode network? In the cognitive neuroscience of episodic memory, there has been a long history of characterizing the functions of individual brain regions, for instance, by studying patterns of memory deficits in patients with focal brain damage. Neuroimaging research, in turn, has revealed the reliable engagement of the default mode network (DMN) during memory tasks, leading to a tension between region- and network-focused accounts of memory function. In this talk, I will discuss efforts to understand the roles of individual brain regions in the context of their associated networks, using the domain of episodic memory as a proving ground for integrating these levels of analysis. Within the DMN, there are distinct cortico-hippocampal subnetworks that represent different kinds of information in memory. Recent fMRI work from my lab has suggested that this subnetwork organization largely explains region-level participation in memory tasks, with the functions of individual regions relating to their ability to bridge across networks. Furthermore, DMN subnetworks are differentially modulated by the perceptual specificity and emotional tone of recall, indicating that parallel DMN pathways can be flexibly engaged to represent a range of experiences. This line of research can inform our understanding of the representational structure of the DMN, as it builds and updates internal representations of the world in the service of memory and other forms of cognition.

TALK 2: INTEGRATING EMOTION AND SOCIAL COGNITION IN A PREDICTIVE PROCESSING FRAMEWORK OF DEFAULT MODE NETWORK FUNCTION.

Ajay Satpute[1]; [1]Northeastern University

In this talk, I embed DMN function in a broader, predictive processing framework, which suggests that the DMN contributes to driving experience-dependent predictions of sensory inputs to the brain. Functional activity in the DMN is a product of prediction and prediction errors wherein the functional role ascribed to each node is dependent on the content of these predictions in relation to its neuroanatomical position. This view suggests three key hypotheses. First, whether and which DMN areas are associated with affective or social cognitive processing will depend on the experimental context. Consistent with this notion, I will summarize research showing that functional activation patterns associated with both domains vary across study contexts. Second, whether and which DMN areas are engaged will depend on the source of predictions and prediction errors in a given study context. Findings from my lab suggest a tradeoff in functional activity between the precuneus and dorsomedial prefrontal cortex in constructing predictive mental models using existing prior experiences or more distant associations. Third, DMN activity will depend on external validity, such that paradigms that study phenomena “in the world” are more likely to engage DMN activity than decontextualized tasks. The summary of this work suggests that DMN nodes perform domain general computations in contributing to diverse phenomena in a context dependent manner.

TALK 3: REVISITING THE DEFAULT NETWORK: GROWING EVIDENCE FOR FUNCTIONALLY DISSOCIABLE, PARALLEL ASSOCIATION NETWORKS

Lauren DiNicola[1]; [1]Harvard University

Nearly two decades ago, a striking observation was made: when groups of people performed social inference, remembering, and self-reflection tasks, similar patterns of brain activity appeared. These patterns overlapped regions commonly called the default (or default mode) network (DMN), opening debate about this network’s role in advanced cognition. Initial DMN studies relied on group-averaging, which revealed broad patterns but blurred spatial details. Recently, individualized functional neuroimaging has provided new insights into network organization and functions. In this talk, I will present growing evidence from individualized work that association zones attributed to the canonical DMN comprise at least three distinct, parallel and domain-specialized networks. These networks are tightly interwoven and easy to blur, but reliably identified within individuals. The networks show dissociable responses to tasks targeting remembering, theory of mind and sentence processing. And over the past five years, the networks have been estimated – and functional distinctions observed – in multiple studies and prospective replications, across distributed cortical regions. Canonical DMN estimates thus appear to overlap multiple networks that differentially subserve some of the cognitive abilities that are hallmarks of our species – remembering, social inference and language. These findings further raise the question: how might such parallel networks form? I will propose one possibility: that interwoven networks might originate from a less-differentiated archetype that fractionates and specializes early in development.

TALK 4: WHAT DOES THE DMN DO? INSIGHTS FROM NETWORK NEUROSCIENCE

Lucina Uddin[1]; [1]University of California, Los Angeles

The default mode network (DMN) is one of the most widely investigated large-scale functional brain networks in neuroscience. Anchored in the medial prefrontal and posterior cingulate cortex, it exhibits unique properties including high metabolic activity at rest and antagonistic relationships with frontoparietal networks underlying executive control. Many clinical conditions are associated with alterations in DMN activation and functional connectivity including autism spectrum disorder and depression. Typical development of the DMN is associated with enhanced performance on tasks of attention and executive function. So, what does the DMN do, exactly? This talk will explore the hypothesis that the main function of the DMN is to act as a staging ground for preparation of goal-congruent behavior, participating in large-scale functional brain network dynamics in ways that impact nearly every domain of cognition.

Poster Schedule

Poster sessions are scheduled for Saturday-Tuesday in Back Bay Ballroom + Republic Ballroom of the Sheraton Boston Hotel. All attendees must present their CNS 2025 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 2025 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, March 29	12:30 pm – 1:00 pm	3:00 pm – 5:00 pm	5:00 pm – 5:15 pm	5:15 pm
B	Sunday, March 30	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
C	Sunday, March 30	3:30 pm – 4:00 pm	5:00 pm – 7:00 pm	7:00 pm – 7:15 pm	7:15 pm
D	Monday, March 31	7:30 am – 8:00 am	8:00 am – 10:00 am	11:30 am – 11:45 am	11:45 am
E	Monday, March 31	1:30 pm – 2:00 pm	2:30 pm – 4:30 pm	5:30 pm – 5:45 pm	5:45 pm
F	Tuesday, April 1	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, March 29, 2025, 3:00 – 5:00 pm, Back Bay Ballroom/Republic Ballroom

A1 - The impact of realistic background noises on neurophysiological responses to speech, in a Virtual-Reality classroom

Orel Levy[1], Shirley Hackmon[1], Yair Zvilichovsky[1], Adi Korisky[1], Elana Zion-Golumbic[1]; [1]Bar-Ilan University

Topic Area: ATTENTION: Auditory

A2 - Investigating the Ventral Attention Network, Vigilance, and Cognitive Fatigue Using EEG, Listening Effort, and tACS Neurostimulation Methods

Corrin Stines[1] (corrin.stines@utsa.edu), Edward Golob[1], Linda Calderon[1], Ricardo Castañeda[1], Jeffrey Mock[1], Juan Fernandez[1], Alyssa Randez[1]; [1]The University of Texas at San Antonio

Topic Area: ATTENTION: Auditory

A3 - Dynamic Attenuation of Task-Irrelevant Auditory Processing During Numerical Tasks

Artturi Ylinen[1] (artturi.ylinen@helsinki.fi), Patrik Wikman[1], Jake McMullen[2], Erno Lehtinen[2,3], Minna Hannula-Sormunen[2], Kimmo Alho[1,4]; [1]University of Helsinki, Helsinki, Finland, [2]University of Turku, Turku, Finland, [3]Vytautas Magnus University, Kaunas, Lithuania, [4]Advanced Magnetic Imaging Centre, Aalto NeuroImaging, Aalto University, Espoo, Finland

Topic Area: ATTENTION: Auditory

A4 - Variations in alpha oscillations and speech evoked responses with different background sound types during performance on a speech-in-noise task

Heather L. Read[1] (heather.read@uconn.edu), Tylor J. Harlow[2], Laila Almotwaly[3]; [1]University of Connecticut

Topic Area: ATTENTION: Auditory

A5 - Cortical and Subcortical aging in the Attention System of Adults Engaged in Musical and Non-Musical Activities

Alexandre Sicard[1,2] (alexandre.sicard.1@ulaval.ca), Pascale Tremblay[1,2]; [1]Université Laval, Quebec City, Canada, [2]CERVO Brain Research Center, Quebec City, Canada

Topic Area: ATTENTION: Auditory

A6 - Attention or prediction? Characterizing the top-down influence of predictive context on speech encoding.
Alyssa Horng[1] (ahorng2@u.rochester.edu), Ilaria Benciolini[1], Aaron R Nidiffer[1,2], Edmund C Lalor[1,2,3]; [1]University of Rochester, [2]Del Monte Institute for Neuroscience, Rochester, New York, [3]Center for Visual Science, Rochester, New York

Topic Area: ATTENTION: Auditory

A7 - Cueing vs. Distracting Effects of Attentional Orienting on Auditory Spatial Discrimination
Norbert Kopco[1] (nkopco@gmail.com), Yeganeh Modaresnia[1], Udbhav Singhal[1], Rene Sebena[1]; [1]P J Safarik University, Kosice, Slovakia

Topic Area: ATTENTION: Auditory

A8 - Selective auditory attention in college students with ADHD: Development of an ERP study and preliminary data
Courtney Stevens[1] (cstevens@willamette.edu), Shane Barbour[1], Amanda Hampton Wray[2], Elif Isbell[3]; [1]Willamette University, [2]University of Pittsburgh, School of Health and Rehabilitation Sciences Communication Science & Disorders, [3]University of California, Merced

Topic Area: ATTENTION: Auditory

A9 - Attention to hedonic stimuli in problematic alcohol consumption: a pilot study in a non-clinical population.
Lucia Alba-Ferrara[1] (lucia.alba@fultra.org), Juan Ignacio Segura, Guillermina Alvarez, Bautista Elizalde Acevedo, Ana Paula Colombini; [1]ENyS-CONICET, [2]Facultad de Ciencias Biomédicas, Universidad Austral

Topic Area: ATTENTION: Auditory

A10 - Attention modulates sound-generated negative emotions and their neural correlates: insights from misophonia
Marie-Anick Savard[1], Mickael Deroche[1], Emily Coffey[1]; [1]Concordia University

Topic Area: ATTENTION: Auditory

A11 - Attentional Dynamics Drive Narrative Lingering Under Effortful Listening Conditions
Ryan Panela[1,2] (ryan.panela@utoronto.ca), Alexander Barnett[2,3], Björn Herrmann[1,2]; [1]Rotman Research Institute, Baycrest Academy for Research and Education, [2]Department of Psychology, University of Toronto, [3]Department of Neurology and Neurosurgery, Montreal Neurological Institute and Hospital, McGill University

Topic Area: ATTENTION: Auditory

A12 - Beyond masking release: Differences in voice pitch and spatial location freeing up cognitive resources
Rebekah Adams[1] (rebekah.adams@mail.mcgill.ca), Mickael Deroche[1]; [1]Concordia University

Topic Area: ATTENTION: Auditory

A13 - **Representing rhythm in the Parkinson's brain: Evidence** from EEG
Hannah Guglin[1], Emma Cozzi[1], Josh Keough[1], David DiStefano[1], Elizabeth Race[1]; [1]Tufts University

Topic Area: ATTENTION: Auditory

A14 - Neural evidence supports the attention-invariant effects of phonetic categorical boundary adaptation
Evan Hare[1,2] (evan.hare@duke.edu), Mary Kate Merenich[1], Jamie Kurzer[1], Tobias Overath[1,2,3]; [1]Department of Psychology and Neuroscience, Duke University, [2]Center for Cognitive Neuroscience, Duke University, [3]Duke Institute for Brain Sciences, Duke University

Topic Area: ATTENTION: Auditory

A16 - **Sleep's impact on music processing in the developing brain**
Rigel Baron[1] (rigel.baron22@stjohns.edu), Yan Yu[1]; [1]St. John's University

Topic Area: ATTENTION: Auditory

A17 - Development of neural mechanisms underlying joint attention during infancy using live-interaction electroencephalography (EEG).
Ana Badal[1] (anabadal@yorku.ca), Lara Pierce[1]; [1]York University

Topic Area: ATTENTION: Development & aging

A18 - Changes in Alpha Spectral Events with Age and Prenatal Exposure to Alcohol
Donovan Roberts[1] (droberts@mrn.org), Falicha Candelaria-Cook[2], Debora Mun[3], Orin Myers[4], Megan Schendel[5], Maryam Alsameen[6], Pilar Sanjuan[7], Cassandra Cerros[8], Dina Hill[9], Julia Stephen[10]; [1]The Mind Research Network

Topic Area: ATTENTION: Development & aging

A19 - Understanding ADHD through naturalistic fMRI data: symptoms & whole-brain connectivity
Ash Chinta[1] (ash.chinta.24@dartmouth.edu), Jean Ye[2], Matthew Rosenblatt[2], Link Tejavibulya[2], Dustin Scheinost[3]; [1]Dartmouth College, [2]Yale University, [3]Yale School of Medicine

Topic Area: ATTENTION: Development & aging

A20 - Investigating the Development of Attention Networks in Preterm Infants at Preschool Age

Florian Ph.S Fischmeister[1] (florian.fischmeister@meduniwien.ac.at), Nadine Pointner[1], Sophie Weinmüller[2], Galatee Reme[1], Alfredo Spagna[1], Vito Giordano[1], Karin Pichler[1], Gregor Kasprian[1], Kathrin Kollndorfer; [1]Medical University of Vienna, Vienna, Austria, [2]Columbia University, New York, NY

Topic Area: ATTENTION: Development & aging

A21 - Developmental changes in neural dynamics serving fluid reasoning.

Sarah Hunter[1] (sarah.hunter@boystown.org), Haley Pulliam[2], Monica Clarke-Smith[3], OgheneTejiri Smith[4], Brittany Taylor[5]; [1]Institute for Human Neuroscience, [2]Boys Town National Research Hospital

Topic Area: ATTENTION: Development & aging

A22 - Differential Effects of tDCS on Working and Long-term Memory During Visual Search

Poopa Kaewbuapan[1,2] (poopa1111@gmail.com), Duanghathai Wiwatratana[2], Sirawaj Itthipuripat[2]; [1]School of Information Technology, King Mongkut's University of Technology Thonburi, Bangkok, Thailand, [2]Neuroscience Center for Research and Innovation, Learning Institute, King Mongkut's University of Technology Thonburi, Bangkok, Thailand

Topic Area: ATTENTION: Development & aging

A23 - **Are Children 'Stickier' Than We Think? How Novelty Shapes** Developmental Differences in Visual Attention

Aarthi Ravi[1] (aarthi.ravi@mail.utoronto.ca), Josie Davies[1], Shelby Suhan[1], Amy Finn[1]; [1]University of Toronto

Topic Area: ATTENTION: Development & aging

A24 - Building multimodal classification of attentional states in the laboratory

John Thorp[1] (john.n.thorp@gmail.com), Joshua Friedman[1], Hengbo Tong[1,2], Helin Wang[2], Ruoxuan Li[1], Lily Penn[1], Emile Al-Billeh[1], Alfredo Spagna[1], Xiaofu He[1,2]; [1]Columbia University, [2]New York State Psychiatric Institute

Topic Area: ATTENTION: Multisensory

A25 - Attentional inhibition by alpha power is modulated by faster theta rhythm and audio-visual congruency during natural speech perception

Hyojin Park[1] (h.park@bham.ac.uk), Gabriel Byczynski[2]; [1]University of Birmingham, [2]Trinity College Dublin

Topic Area: ATTENTION: Multisensory

A26 - Selective attention directed to audiovisual and audio-only continuous speech

Yimeng Wang[1] (yimengw@umass.edu), Alexandra Jesse[1], Lisa D. Sanders[1]; [1]University of Massachusetts Amherst

Topic Area: ATTENTION: Multisensory

A27 - Examining the iEEG correlates of internal vs. external attentional states during movie-watching from eye movements

Christine Chesebrough[1] (christinechesebrough@gmail.com), Maximilian Nentwich[1], Ashesh Mehta[1,2], Stephan Bickel[1,2]; [1]Feinstein Institutes for Medical Research, [2]Zucker School of Medicine at Hofstra University

Topic Area: ATTENTION: Multisensory

A28 - The effect of attentional locus on multisensory congruence in aging: neurophysiological evidence

Edwin Roberto Ramírez Benítez[1,2] (10081996edwin@gmail.com), Rodolfo Solís-Vivanco[1,2]; [1]National Institute of Neurology and Neurosurgery "Manuel Velasco Suárez", Mexico, [2]Faculty of Psychology, National Autonomous University of Mexico, UNAM

Topic Area: ATTENTION: Multisensory

A29 - Exploring the role of selective attention in decision rule representation

Liam P. McMahon[1], Jared Newell[1], Lauren Wolters[1], James D. Howard[1]; [1]Brandeis University

Topic Area: ATTENTION: Multisensory

A30 - Investigating the mechanisms of multisensory divided attention in humans

Samara Glazer[1] (samara.glazer10@gmail.com), Jared Newell[1], Lauren Wolters[1], James Howard[1]; [1]Brandeis University

Topic Area: ATTENTION: Multisensory

A31 - The Path of Attention: Automaticity and Effort, Concept and Percept in Multimodal Visual Search Tasks

Alessandra Sardina[1]; [1]Edgewood College

Topic Area: ATTENTION: Multisensory

A32 - Multisensory integration and awareness in hemispatial neglect

Kun Dong[1] (kun.dong@donders.ru.nl), Arianna Zuanazzi[2,3], Valentina Varalta[4,5], Giorgia Rotundo[4], Cristina Fonte[4], Nicola Smania[4,5], Uta Noppeney[1,2]; [1]Donders Institute, [2]University of Birmingham, [3]New York University, [4]University of Verona, [5]Neurorehabilitation Unit, AOUI Verona

Topic Area: ATTENTION: Multisensory

A33 - Perceptual Load Effects in Rejection Sensitivity Across Facial and Non-Facial Stimuli

Bradley E. Buchanan[1] (buchanan12@usf.edu), Rachel Gaynor[1], Harold A. Rocha[1], Ashlee Ross[1], Sofia Laporte[1], Emma Sonenblum[1], Emily A. Rancorn[1], Geoffrey F. Potts[1]; [1]University of South Florida

Topic Area: ATTENTION: Nonspatial

A35 - How States of Attention Are Represented by EEG Microstate Temporal Dynamics

David DiStefano[1] (david.distefano@tufts.edu); [1]Tufts University

Topic Area: ATTENTION: Nonspatial

A36 - Pupil Size as a Marker of Attentional Effort Across Suboptimal Attention States

Agnieszka Zuberer[1] (azuberer@gmail.com), Ziheng Wang[1*], Melanni Nanni-Zepeda[1], Michael Esterman[2,3,4], Flavio Frohlich[1]; [1]Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, USA, [2]Department of Psychiatry, University of Tübignen, Tübignen, Germany, [3]National Center for PTSD, VA Boston Healthcare System, United States, [4]Boston Attention and Learning Laboratory, VA Boston Healthcare System, Boston, MA, 02130, USA, [5]Department of Psychiatry, Boston University School of Medicine, Boston, MA, USA*

Topic Area: ATTENTION: Nonspatial

A37 - Differential Neural Correlates of EEG Mediate the Impact of Internally and Externally Directed Attention in a Dual-task Working Memory Paradigm

Ankit Yadav[1] (yadavankit99@gmail.com), Arpan Banerjee[1], Dipanjan Roy[2]; [1]National Brain Research Centre, India, [2]Indian Institute of Technology Jodhpur, India

Topic Area: ATTENTION: Other

A38 - Focus and Flight: How focus of attention impacts muscle recruitment and performance in a skills learning task

Evan Rufer[1] (erufer@edgewood.edu), Ferrinne Spector[1]; [1]Edgewood College

Topic Area: ATTENTION: Other

A39 - Attention induces a left hemispheric lateralization for three-dimensional shape from shading: an ERP study

Joshua Matthews[1] (jsm22cvd@bangor.ac.uk), Paloma Marí-Beffa[1], Debra Mills[1], Ayelet Sapir[1]; [1]Bangor University

Topic Area: ATTENTION: Other

A40 - The impact of prefrontal tDCS on periodic and aperiodic contributions to resting-state EEG

Ashley R. Rosenfeld[1] (asrrosen@ucsc.edu), Cameron S. Carter[2], Megan A. Boudewyn[1]; [1]University of California Santa Cruz, [2]University of California Irvine

Topic Area: ATTENTION: Other

A41 - Long-term memory under uncertainty: the impact of cue reliability in attentional prioritization of long-term memory representations

Melinda Sabo[1] (sabo@ifado.de), Kia Nobre[1]; [1]Wu Tsai Institute | Yale University

Topic Area: ATTENTION: Other

A42 - Closed-loop neuromodulation of anticorrelated spontaneous activity between default and dorsal attention networks

Janet Li[1] (jl4646@drexel.edu), Tiara Bounyarith[1], Lotus Shareef-Trudeau[1], David Braun[1], Aaron Kucyi[1]; [1]Drexel University

Topic Area: ATTENTION: Other

A43 - Examining EEG Microstate Dynamics as a Function of Time-on-Task

Brooke Schwartzman[1] (bes171@miami.edu), Anthony P. Zanesco[2], Jason S. Tsukahara[1], Ekaterina Denkova[1], Amishi P. Jha[1]; [1]University of Miami, [2]University of Kentucky

Topic Area: ATTENTION: Other

A44 - A school-based neuroscience study on student engagement with intelligent tutoring systems

Yushuang Liu[1] (yushuang.liu@bc.edu), Ido Davidesco[1], Bruce McLaren[2], J Elizabeth Richey[3], Xiaorui Xue[1], Leah Teffera[2], Hayden Stec[2], Joyce Zhang[4], Elana Golumbic[5]; [1]Boston College, [2]Carnegie Mellon University, [3]University of Pittsburgh, [4]University of Pennsylvania, [5]Bar-Ilan University

Topic Area: ATTENTION: Other

A45 - The impact of emotional item memorability on the attentional blink

Amy MacGlashing[1] (amacglashing@worcester.edu), Brittany M. Jeye; [1]Worcester State University

Topic Area: ATTENTION: Other

A46 - Exploring the Relationship Between Critical Brain Dynamics and Reaction Time Variability in ADHD

Alessandra DallaVecchia[1] (adallave@ucla.edu), Nicolas Zink[1], Sarah L. Karalunas[2], Greg V. Simpson[3], Agatha Lenartowicz[1]; [1]University of California, Los Angeles, [2]Purdue University, [3]ThinkNowInc, San Francisco, CA

Topic Area: ATTENTION: Other

A47 - The Role of the Temporoparietal Junction in Theory of Mind: Evidence from Intracranial EEG

Shweta Soni[1] (shwetanbrc@gmail.com), Julia WY Kam[1], Fady Girgis[1]; [1]University of Calgary

Topic Area: ATTENTION: Other

A48 - Reading with intent: Phonological processing not always automatic

Niki Sinha[1] (nsinha7@uwo.ca), Marc Joanisse[1]; [1]Western University

Topic Area: ATTENTION: Other

A49 - Prioritizing Structure: Statistical Regularities Gate Sustained Attention on a Concurrent Task

Elena Greatti[1,2] (egreatti@sissa.it), Davide Crepaldi[1,3], Amy Sue Finn[4]; [1]International School for Advanced Studies (SISSA), [2]University of Camerino, [3]University of Pavia, [4]University of Toronto

Topic Area: ATTENTION: Other

A50 - Patterns of low-frequency signals across brain networks reflect differences in attention control

Ms Dolly Seeburger[1] (dseeburger3@gatech.edu), Jason Tsukahara[2], Nan Xu[3], Shella Keilholz[1], Randall Engle[1]; [1]Georgia Institute of Technology, [2]University of Miami, [3]University of Maryland

Topic Area: ATTENTION: Other

A51 - Choose Your Own Attention: Does PFC Resting State Determine Selective Attention Ability?

Madison Gaugler[1], A'maya Tatum, Chase Elliott, Kayla Challacombe, Carole Scherling; [1]Belmont University

Topic Area: ATTENTION: Other

A52 - Attentional dysfunction in post-9/11 veterans with suicidal thoughts and behaviors

Jessica Sullivan[1,2], Jaiden Huang[1,6], Audreyana Jagger-Rickels[1,2,3], Catherine Fortier[4,5], William Milberg[4,5], Jaclyn Kearns[2,3], Joseph DeGutis[1,4,5], Michael Esterman[1,2,3,4]; [1]Boston Attention and Learning Lab (BALLAB), VA Boston Healthcare System, Boston, MA, USA, [2]Boston University Chobanian and Avedisian School of Medicine, Boston, MA, USA, [3]National Center for PTSD (NCPTSD), VA Boston Healthcare System, Boston, MA, USA, [4]Translational Research Center for TBI and Stress Disorders (TRACTS), VA Boston Healthcare System, Boston, MA, USA, [5]Harvard Medical School, Boston, MA, USA, [6]University of California, Los Angeles, CA, USA

Topic Area: ATTENTION: Other

A53 - Disentangling the neural responses to overlapping visual streams of task stimuli and emotional distractors in a sustained attention task

David Rothlein[1,2], Samuel Agnoli[2], Travis Evans[1,2,4], Carrie Hughes[1,2], Audreyana Jagger-Rickels[1,2,3], Joseph DeGutis[2,6], Michael Esterman[1,2,3]; [1]National Center for PTSD, VA Boston Healthcare System, [2]Boston Attention and Learning Lab (BALLAB), VA Boston Healthcare System, [3]Department of Psychiatry, Boston University Chobanian and Avedisian School of Medicine, [4]Department of Psychological Sciences, Auburn University, [5]Department of Psychiatry, Harvard Medical School

Topic Area: ATTENTION: Other

A54 - Subcortical dynamics during failures in maintaining alertness after sleep restriction in the human brain.

Ewa Beldzik[1,2] (ewa.beldzik@gmail.com), Daniel Gomez[2], Nicholas Cicero[1,2,3], Zinong Yang[1,3], Juan Eugenio Iglesias[1,2], Brian Edlow[2,4], Laura Lewis[1,2,3]; [1]Massachusetts Institute of Technology, [2]Massachusetts General Hospital, [3]Boston University, [4]Harvard Medical School

Topic Area: ATTENTION: Other

A55 - Brain waves during deep meditative absorption: alpha suppression as a marker for meditation depth

Lionel A. Newman[1] (lionel.newman@allhere.org), Christoph M. Michel[1,2], Monika Stasytyte[1], Erkin Bek[1], Chuong Ngo[1,3]; [1]All Here SA, Geneva, Switzerland, [2]University of Geneva, Switzerland, [3]Swiss Federal Institute of Technology Lausanne, Switzerland

Topic Area: ATTENTION: Other

A56 - Microsaccades strongly modulate but do not necessarily cause the N2pc EEG marker of spatial attention shifts in perception and working memory

Freek van Ede[1] (freek.van.ede@vu.nl), Siyang Kong[1], Baiwei Liu[1]; [1]Vrije Universiteit Amsterdam

Topic Area: ATTENTION: Spatial

A57 - Gray matter volume correlates of Visual-spatial Attention Gradient in Trait Anxiety

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Topic Area: ATTENTION: Spatial

A58 - Parallel, not Serial processes underpin detection of a Stare in the Crowd

Lynne Ling[1], Gregory Davis; [1]University of Cambridge

Topic Area: ATTENTION: Spatial

A59 - Choosing When and Where to Attend: Decoding the Electrophysiological Correlates of Self-Paced Willed Attention

John Nadra[1] (jnadra@ucdavis.edu), Ava Hutchins[1], Grace Sullivan[1], Sofia Fischel[1], Sreenivasan Meyyappan[1], Mingzhou Ding[2], George Mangun[1]; [1]University of California, Davis, [2]University of Florida

Topic Area: ATTENTION: Spatial

A60 - Pinging the Hidden Attentional Priority Map: Suppression Needs Attention

Changrun Huang[1,2,3] (changrun.huang@duke.edu), Dirk van Moorselaar[2,3], Joshua Foster[5], Mieke Donk[2,3], Jan Theeuwes[2,3,4]; [1]Duke University, [2]Vrije Universiteit Amsterdam, [3]Institute Brain and Behavior (iBBA), Amsterdam, the Netherlands, [4]ISPA-Instituto Universitario, Lisbon, Portugal, [5]Boston University

Topic Area: ATTENTION: Spatial

A61 - Wholehead HD fNIRS for Selective Attention Analysis

Sudan Duwadi[1] (sudan@bu.edu), De'Ja Rogers[1], Alex D. Boyd[1], Laura Carlton[1], Yiwen Zhang[1], Anna Kawai Gaona[1], Grace Magee[1], Bernhard Zimmermann[1], W.Joe O'Brien[1], Alexander von Luhmann[2,3], David A. Boas[1], Meryem A. Yucel[1], Kamal Sen[1]; [1]Neurophotonics Center, Department of Biomedical Engineering, Boston University, USA, [2]Intelligent Biomedical Sensing (IBS) Lab, Machine Learning Department, Technical University of Berlin, 10587 Berlin, Germany, [3]BIFOLD – Berlin Institute for the Foundations of Learning and Data, 10587 Berlin, Germany

Topic Area: ATTENTION: Spatial

A62 - **Impacts of Mental Imagery Vividness on Adolescents' Eye** Movements During an Encoding and Recall Science Learning Task

Sarah Wene[1] (sw0661a@american.edu), Cassandra Ivie[1], Elshadai Melkam[1], Sophia Stull[1], Emily Peterson[1]; [1]American University, Washington D.C.

Topic Area: ATTENTION: Spatial

A63 - Investigating the effect of background images on spatial working memory representations

Nicholas Schmitz[1] (nschmitz@vols.utk.edu), Sage Bendickson[1], David Sutterer[1]; [1]University of Tennessee, Knoxville

Topic Area: ATTENTION: Spatial

A64 - Testing the duration of spontaneous spatial representation in working memory when items can be differentiated by temporal-order

Sage Bendickson[1] (sbendic1@gmail.com), Nicholas Schmitz[1], David Sutterer[1]; [1]University of Tennessee Knoxville

Topic Area: ATTENTION: Spatial

A65 - Alpha Lateralization from Distractors: Suppression-Specific and Domain-General

Joshua Seewald[1] (jseewal1@jh.edu), Natalia Khodayari[1], Howard Egeth[1], Susan Courtney[1]; [1]Johns Hopkins University

Topic Area: ATTENTION: Spatial

A66 - The Role of Visual Noise Complexity in Attentional Capture and Hold

Sepideh Hedayati[1] (sepidehh@unc.edu), Hannah L. Morgan[2], Joseph B. Hopfinger[1]; [1]University of North Carolina at Chapel Hill, [2]Duke University School of Medicine

Topic Area: ATTENTION: Spatial

A67 - Independent effects of Surveillance Attention and Spatial Attention on touch: An ERP investigation

Elena Gherri[1] (elena.gherri@unibo.it), Elisabetta Ambron[2], Gioacchino Garofalo[1], Giulia Titone[1], Branch Coslett[2]; [1]University of Bologna, [2]University of Pennsylvania

Topic Area: ATTENTION: Spatial

A68 - Rhythmic and Aperiodic Activity jointly guide the allocation of selective spatial attention

Isabel Raposo[1] (isabel.raposo@student.uni-tuebingen.de), Randolph F. Helfrich[1]; [1]Hertie Institute for Clinical Brain Research

Topic Area: ATTENTION: Spatial

A69 - Target Enhancement Is Not Simply One Process: Different Factors for Explicit Cueing Effects and Statistical Learning Effects on Attention

Natalia Khodayari[1] (nkhodayari@jhu.edu), Howard Egeth[1], Susan Courtney[1]; [1]Johns Hopkins University

Topic Area: ATTENTION: Spatial

A70 - A Neuroinformatics-Computational Approach to the Assessment of Visuospatial Neglect

Vinoth Jagaroo[1,2] (jagaroo@bu.edu), Woo Zhong Han[3], Kiran Jagaroo[4], Sophia Andrienko[3], Annie Chen[3], Darian Cheung[3], Daniel Doh[3], Zekai Wu[3], Joshua Yip[3], Justin Zheng[3]; [1]Boston Univ. School of Medicine (Behavioral Neuroscience), [2]Emerson College, [3]Boston University Center for Computing & Data Sciences and SPARK! Program, [4]University of Massachusetts-Boston, College of Science & Mathematics

Topic Area: ATTENTION: Spatial

A71 - Can 3D shape-from shading be a marker of post-stroke recovery?

Marjola Peca[1] (mrp18fqc@bangor.ac.uk), Ayelet Sapir[1], Giovanni d'Avossa[1]; [1]Bangor University

Topic Area: ATTENTION: Spatial

A72 - The Relation of Early Adversity to Language Processing, Emotion Reactivity, and Working Memory

Emily R. Drucker[1] (emilyrosadrucker@gmail.com), Alisha B. Compton[2], Claire M. Tate[3], James R. Booth[4]; [1]Hunter College, [2]Vanderbilt Brain Institute, [3]Baylor College of Medicine, [4]Vanderbilt Psychology and Human Development

Topic Area: EXECUTIVE PROCESSES: Development &aging

A73 - Does the neural representation of symbolic magnitude task predict future mathematical ability in young children?

Amanda Martinez-Lincoln[1] (amanda.martinez-lincoln@vanderbilt.edu), Gavin Price[2], Laurie Cutting[1]; [1]Vanderbilt University, [2]University of Exeter

Topic Area: EXECUTIVE PROCESSES: Development &aging

A74 - Exploring the Eye Dynamics of People with bvFTD and Apathy in Ecological Settings

Claire Berner[1] (claireliseberner@gmail.com), Elena Karpinski[1], Julie Behenská[1], Richard Levy[1], Karim N'Diaye[1], Monica N. Toba[1,2], Bénédicte Batrancourt[1]; [1]Paris Brain Institute (ICM)Sorbonne Université, Institut du Cerveau - Paris Brain Institute – ICM, Inserm, CNRS AP-HP, Hôpital de la Pitié Salpêtrière, Paris, France., [2]Laboratory of Functional Neurosciences (UR UPJV 4559), University Hospital of Amiens and University of Picardie Jules Verne, Amiens, France

Topic Area: EXECUTIVE PROCESSES: Development &aging

A75 - Neurocognitive development in adolescence: The importance of age versus pubertal stage

Erynn Christensen[1] (erynnchristensen@gmail.com), Katharina Brosch[1], Elvisha Dhamala[1]; [1]Institute of Behavioral Science, Feinstein Institutes for Medical Research, Manhasset, NY, USA

Topic Area: EXECUTIVE PROCESSES: Development &aging

A76 - Changes In Error-Related Theta Oscillations and Post-Error Behavior Across Adolescence

Felix Zakirov[1,2] (fzaki001@fiu.edu), Kianoosh Hosseini[1,2], Ana Garcia-Morazzani[1,2], Lillian LaPlace[1,2], Jeremy W. Pettit[1,2], George A. Buzzell[1,2]; [1]Center for Children and Families, Florida International University, Miami, USA, [2]Department of Psychology, Florida International University, Miami, USA

Topic Area: EXECUTIVE PROCESSES: Development &aging

A77 - White matter tract development may reflect cognitive development in the context of executive functioning

Emily M Harriott[1] (emily.m.harriott@vanderbilt.edu), Tin Q Nguyen[1], Kellam Schmudde[1], Chenglin Lou[1], Bennett A Landman[1], Laura A Barquero[1], Laurie E Cutting[1]; [1]Vanderbilt University, Nashville, TN, USA

Topic Area: EXECUTIVE PROCESSES: Development &aging

A78 - Gender Insights on 24-hour Movement Behaviors and Cognitive Function among the ABCD Cohort: a Compositional Data Analysis

Michelle Lim[1] (michelle.lim@uri.edu), William W. Lewis-de los Angeles[2,3], Nicole E. Logan[1]; [1]University of Rhode Island, [2]Warren Alpert Medical School of Brown University, [3]Emma Pendleton Bradley Hospital

Topic Area: EXECUTIVE PROCESSES: Development &aging

A79 - Divergent aging trajectories of aperiodic neural activity between neurotypical adults and those with autism spectrum disorder

Christian Cazares[1] (cazares@ucsd.edu), Anet Estrada[1], Bradley Voytek[1]; [1]University of California, San Diego

Topic Area: EXECUTIVE PROCESSES: Development &aging

A80 - Set-shifting in older age: Insights from of a large cohort.

Margarita Darna[1] (margarita.darna@lin-magdeburg.de), Constanze I. Seidenbecher[1,2,3,4], Björn H. Schott[1,2,5,6], Anni Richter[1,3,4]; [1]Leibniz Institute for Neurobiology (LIN), Magdeburg, Germany, [2]Center for Behavioral Brain Sciences (CBBS), Magdeburg, Germany, [3]German Center for Mental Health (DZPG), partner site Halle-Jena-Magdeburg, [4]Center for Intervention and Research on adaptive and maladaptive brain Circuits underlying mental health (C-I-R-C), Halle-Jena-Magdeburg, [5]German Center for Neurodegenerative Diseases (DZNE), Göttingen, Germany, [6]Department of Psychiatry and Psychotherapy, University Medical Center Göttingen, Göttingen, Germany

Topic Area: EXECUTIVE PROCESSES: Development &aging

A81 - Four Key Networks Across the Lifespan: A Precision fMRI Study

Ashley Jaimes[1] (ashley.jaimes@fsu.edu), Diana Perez[2], Gretchen Wulfekuhle[1,3], Ally Dworetsky[1,4], Nathan Labora[1,5], Zach Ladwig[2], Mackenzie Mitchell[1], Caterina Gratton[1,2,6]; [1]Florida State University, [2]Northwestern University, [3]University of North Carolina, [4]Washington University, [5]University of Minnesota, [6]University of Illinois Urbana-Champaign

Topic Area: EXECUTIVE PROCESSES: Development &aging

A82 - Impact of non-verbal reasoning and baseline individual differences in cognitive training to enhance mathematical abilities

Nieves Ruiz Ibáñez[1] (nieves.ruiz.ibanes@ki.se), Julia Ericson[1], Torkel Klingberg[1]; [1]Karolinska Institutet

Topic Area: EXECUTIVE PROCESSES: Development &aging

A83 - Synchronized music and rhythmic visual stimulation increases theta-gamma phase-amplitude coupling in Mild Cognitive Impairment

Arun Asthagiri[1], Benjamin M. Kubit[1], Xiaotong Wu[1], Ji Chul Kim[2], Edward W. Large[2], Psyche Loui[1]; [1]Northeastern University, [2]University of Connecticut

Topic Area: EXECUTIVE PROCESSES: Development &aging

A84 - Spindles in Patients with Dravet Syndrome

Joanne Hall[1] (hall.joa@northeastern.edu), Mathew Yarossi[2], Alexander Rotenberg[3]; [1]Northeastern University, [2]Harvard University

Topic Area: EXECUTIVE PROCESSES: Development &aging

A85 - Sound Minds: Testing a novel Cognitive Framework for Rhythm-focused MBIs to address age-related cognitive declines

Cloie Dobias[1] (dobias.c@northeastern.edu), Maruša Laure[1,2], Pierre-Valery Tchetgen[1], Susanne Jaeggi[1], Aaron Seitz[1]; [1]Northeastern University, [2]University of Maribor

Topic Area: EXECUTIVE PROCESSES: Development &aging

A86 - Frontostriatal white matter connectivity: longitudinal development through adolescence and associations with reward and executive control processes

Vanessa Lozano Wun[1] (vlwun@umn.edu), Paul F. Collins[1], Samuel D. Klein[1], Monica Luciana[1]; [1]University of Minnesota

Topic Area: EXECUTIVE PROCESSES: Development &aging

A87 - Gamma Power is a Timescale-Dependent Biomarker for Cognition in Young Adults with Down Syndrome in a Clinical Trial of Transcranial Photobiomodulation

Lauren Sidelinger[1,2] (lsidelinger@mgh.harvard.edu), Maia Gersten[1,2], Puneet Velidi[1,2], Borja Ferreras[1,2], Katelyn Sylvester[1,2], Carlos Lohmann[1,2], Fabio Luchese[1,2], Paolo Cassano[1,2]; [1]Massachusetts General Hospital, [2]Harvard Medical School

Topic Area: EXECUTIVE PROCESSES: Development &aging

A88 - Feedback sensitivity in younger and older adults: Effects of social content and valence on time estimation and event-related potentials

Lindsay A. Santacroce[1] (lsantacroce@torontomu.ca), Santhiya Purohit[1], Kieryn E. A. Carlse[1], Ben J. Dyson[2], Julia Spaniol[1]; [1]Toronto Metropolitan University, [2]University of Alberta

Topic Area: EXECUTIVE PROCESSES: Development &aging

A89 - Title: Exploring Cognitive and Olfactory Differences in APOE e4 Carriers

Hector Reyes[1] (hreyes0762@sdsu.edu), Claire Murphy[1,2,3]; [1]San Diego State University, [2]SDSU/UCSD Joint Doctoral Program in Clinical Psychology, [3]University of California San Diego Department of Psychiatry

Topic Area: EXECUTIVE PROCESSES: Development &aging

A90 - The effects of aging on task representations during rapid instructed task learning

Kirsten L. Peterson[1] (klp173@newark.rutgers.edu), Luke J. Hearne[2], Ravi D. Mill[1], Michael W. Cole[1]; [1]Rutgers University, Newark, NJ, United States, [2]QIMR Berghofer Medical Research Institute, Brisbane, QLD, Australia

Topic Area: EXECUTIVE PROCESSES: Development &aging

A91 - Neural Correlates of Concurrent Demands on Cognitive Stability and Flexibility

Jinjiang Zhang[1] (jzhang7345@gmail.com), Raphael Geddert[1], Roshni Ammanamanchi[1], Michael Andrew[1], Tobias Egner[1]; [1]Duke University

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A92 - Causal fractionation of the contribution of the prefrontal cortex to cognitive control

Jongmin Lee[1] (jongmin.lee.529@gmail.com), Alexandria Meyer[1], Keri Anne Gladhill[1], Anabel Dorfman[1], Sadie Gould[1], Derek Evan Nee[1]; [1]Florida State University

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A93 - Latent structure inference supports behavioral flexibility

Tiffany A. Morton[1], Daniel Kimmel[1], Daphna Shohamy[1,2,3]; [1]Zuckerman Mind Brain Behavior Institute, Columbia University, [2]Kavli Institute for Brain Science, Columbia University, [3]Columbia University, NY, NY

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A94 - Flexibility in FMRI Brain Dynamics Predicted Behavioral Stability and Flexibility

Jean Ye[1] (jean.ye@yale.edu), Saloni Mehta[1], Milana Khaitova[1], Jagriti Arora[1], Fuyuze Tokoglu[1], C. Alice Hahn[1], Cheryl Lacadie[1], Abigail S. Greene[2], R. Todd Constable[1], Dustin Scheinost[1]; [1]Yale University, [2]Brigham and Women's Hospital

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A95 - Decoding the Neural Generator of the Reward Positivity with simultaneous EEG-fMRI

Jaleesa S. Stringfellow[1] (jss388@newark.rutgers.edu), Malte R. Güth[2], Travis E. Baker[1]; [1]Rutgers Newark, [2]University of Minneapolis

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A96 - Impact of Task-Engaged PFC-Targeted tDCS on Neural Markers of Proactive Control in Schizophrenia

Megan A. Boudewyn[1] (mboudewyn@ucsc.edu), Ana-Maria M. Iosif[2], Cameron S. Carter[3]; [1]University of California, Santa Cruz, [2]University of California, Davis, [3]University of California, Irvine

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A97 - The functional organization of task-tailored neural representations for control in human neocortex

Haley Keglovits[1], Robert Zielinski[1], Apoorva Bhandari[1], David Badre[1]; [1]Brown University

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A98 - Decoding Cognitive Control Dynamics: Neural Evidence of Inertia in Cognitive Control Adjustments Following Goal Changes

Ivan Grahek[1] (ivan_grahek@brown.edu), Xiamin Leng[1], Atsushi Kikumoto[2], Ainsley Bonin[3], Amitai Shenhav[1]; [1]University of California, Berkeley, [2]Brown Univeristy, [3]University of Pennsylvania

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A99 - Cognitive control networks direct brain flows underlying rapid instructed learning of stimulus-response tasks

Arun Aryal[1] (arun.aryal@rutgers.edu), Ravi D. Mill[1], Alexandros Tzalavras[1], Michael Cole[1], Nachshon Meiran[2], Inbar Amir[2]; [1]Rutgers University-Newark, [2]Ben-Gurion University of the Negev

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A100 - Context-Dependent Statistical Learning: Bridging Human Cognition and Neural Network Dynamics

Fleming Peck[1] (fpeck@ucla.edu), Hongjing Lu[1], Jesse Rissman[1]; [1]UCLA

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A101 - Neurochemical and functional circuitry alterations underlying goal-directed and habitual behaviour in obsessive-compulsive disorder

Máiréad Healy[1] (mph58@cam.ac.uk), Yuanxi Li[1], Marjan Biria[2], Maité Crespo-García[1], Zoe Kourtzi[1], Trevor Robbins[1]; [1]University of Cambridge, [2]University College London

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A102 - Hippocampo-cortical contributions to the structured organization of task knowledge

Bettina Bustos[1], Jiefeng Jiang; [1]University of Iowa, Psychological and Brain Sciences, [2]Cogitive Control Collaborative

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A103 - Effects of repeated cranial electrotherapy stimulation on high-stress decision making

Marissa Lee[1] (marissa.lee@tufts.edu), Kana Okano[1], Hannah Hart-Pomerantz[1], Travis Harvey[2], Tad Brunyé[3,1]; [1]Tufts University, [2]United States Special Operations Command, [3]United States Army DEVCOM Soldier Center

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A104 - Enhanced P300 and pupil dilation differentiated high-impact from low-impact cognitive states

Ling-Yu Huang[1] (beryl.ly.huang@gmail.com), Victoria Lyons[2], Brett Clementz[3], Jennifer McDowell[3]; [1]Beth Israel Deaconess Medical Center, [2]Boston University, [3]The University of Georgia

Topic Area: EXECUTIVE PROCESSES: Goal maintenance & switching

A105 - MEG Resting State Functional Connectivity Predicts Metacognition in Self-Control

Benjamin Kinder[1], Dong James Sung[1], Uri Maoz[2], Aaron Schurger[2], Mathieu Landry[3]; [1]Montreal Neurological Institute, McGill University, [2]Chapman University, [3]Université du Québec à Trois-Rivières

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A106 - Relations between conflict-related midfrontal theta and parent-reported self-regulation in preschool-aged children

Farnoosh Khandan[1] (fkhandan2@huskers.unl.edu), Carrie Clark[2]; [1]University of Nebraska-Lincoln

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A107 - The Neural Correlates of Inhibitory Control in Children with developmental language disorder (DLD)

Asiya Gul[1] (agul@mghihp.edu), Annika L. Schafer[1], Yael Arbel[1]; [1]MGH Institute of Health Professions, Cognitive Neuroscience Group

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A108 - Inhibition-related executive functioning in children during the Go/NoGo task: a fMRI study

Dania Javaid[1] (djavaid2@huskers.unl.edu), Danya Alderoubi[2], Yingying Wang[3]; [1]Department of Educational Psychology, University of Nebraska-Lincoln, Lincoln, NE, USA, [2]Department of Department of Nutrition and Health Sciences, University of Nebraska-Lincoln, Lincoln, NE, USA, [3]Neuroimaging for Language, Literacy and Learning, Department of Special Education and Communication Disorders, University of Nebraska-Lincoln, Lincoln, NE, USA

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A109 - Investigation of single- and multi-electrode anodal tDCS for enhancing executive function: Implications for simplified protocols

Megan O'Connor[1] (mboconnor@mgh.harvard.edu), Asif Jamil[1], Laura Dubreuil-Vall, Joan A. Camprodon[1]; [1]Massachusetts General Hospital and Harvard Medical School

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A110 - **Late speech error monitoring is impaired if one's own** voice cannot be accessed during vocal errors.

Marlene Buch[1] (marlene.buch@ku.de), Robert Steinhauser[1], Peter Löschner[1], Marco Steinhauser[1]; [1]Catholic University of Eichstätt-Ingolstadt

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A111 - Error-Related Memory Biases Are Specific To Social Stimuli For Socially Anxious Individuals

Kianoosh Hosseini[1] (khoss005@fiu.edu), Aaron T. Mattfeld[1], Jeremy W. Pettit[1], George A. Buzzell[1]; [1]Florida International University, Miami, FL

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A112 - Error monitoring for correct but unfavorable outcomes

Peter Löschner[1] (peter.loeschner@ku.de), Marco Steinhauser[1]; [1]Catholic University of Eichstätt-Ingolstadt

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A113 - Error precursors reflecting selective attention to distractors predict error-related brain activity.

Martin Maier[1], Marco Steinhauser[1]; [1]Catholic University of Eichstätt-Ingolstadt, Eichstätt, Germany

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A114 - Examining the Physiological and Cognitive Effects of Intermittent Hypoxia Training (IH) in Healthy Adults.

Denait Haile[1], Nasimi A. Guluzade[1], Antonio Mendes[1], Daniel A. Keir[1], Matthew Heath[1]; [1]Western University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A115 - The effect of acute stress on mental effort allocation across motivational contexts

Tony El Nemer[1] (tony_el_nemer@brown.edu), Ziwei Cheng[2], Chanel Johnson[1], Joonhwa Kim[1], Amitai Shenhav[2]; [1]Brown University, [2]University of California, Berkeley

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A116 - **A Single Bout of Low "Density" Exercise Optimizes a Post-**exercise Executive Function Benefit

Antonio Mendes[1] (amende@uwo.ca), Denait Haile[1], Jianchun Yin[2], Matthew Heath[1]; [1]Western University, [2]Shanghai Normal University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A117 - Leveraging Continuous Psychophysics to Study Cognitive Control Allocation in Dynamic Environments

Yihuan Dong[1] (yihuand1025@gmail.com), Ivan Grahek[2], Dominik Straub[3], Atsushi Kikumoto[4], Amitai Shenhav[2]; [1]Harvard Medical School, [2]University of California, Berkeley, [3]Technische Universität Darmstadt, [4]Brown University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A118 - Dissociating early and late error monitoring with the target-masking paradigm

Marco Steinhauser[1] (marco.steinhauser@ku.de), Julia Dumsky[1], Martin E. Maier[1], Francesco Di Gregorio[2]; [1]Catholic University of Eichstätt-Ingolstadt, [2]University of Bologna

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A119 - 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]University of Iowa

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A120 - **STOP You're Under ArREST! Harnessing Resting**-State fNIRS to Predict Stop-Signal Performance

Eman elrayah[1], Jessica Samir, Nick DeMille, Katie Cooke, Carole Scherling, PhD; [1]Neuroscience, Department of Psychological Science and Neuroscience, Belmont University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A121 - Naturalistic assessment of response inhibition in adolescence using gamification

Larisa-Maria Dina[1] (larisa.dinu@kcl.ac.uk), Martin Dechant[2], Maximilian Friehs[3], Eleanor Dommett[1]; [1]King's College London, [2]University College London, [3]University of Twente

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A122 - Exploring Saccade Task Performance in Early-Middle-Aged Adults with Hypertension

Kelsey Roberts[1] (kelsey.roberts@uga.edu), Audrey Beradi[1], Ling-Yu Huang[2], Michelle Altvater[3], Emily Dumas[1], Brooke Jackson[1], Qun Zhao[1], Nathan Yanasak[3], Catherine Davis[3], Xiaoling Wang[3], Shaoyong Su[3], Jennifer McDowell[1]; [1]University of Georgia, [2]Beth-Isreal Deaconess Medical Center, [3]Augusta University Medical College of Georgia

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A123 - Home-based transcranial direct current stimulation (tDCS) improves cognitive control in patients with ADHD

Yoonju Cho[1,2], Nicole L. Brocious[1], Arielle R. Rubel[1], Haojue Yu[1], Alexandra G. O'Neil[1], Allyson Smith[1], H. Hamdi Eryilmaz[1,2], Asif Jamil[1,2], Joan A. Camprodon[1,2,3]; [1]Massachusetts General Hospital, Department of Psychiatry, Division of Neuropsychiatry and Neuromodulation, [2]Harvard Medical School, [3]Massachusetts General Hospital, Department of Neurology

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A124 - The Role of Human Subthalamic Nucleus in Inhibition of Competing Task Representations

Nathan Cremers[1] (nathan-cremers@uiowa.edu), Nathan Chalkley[1], Benjamin Rangel[2], Jan Wessel[1]; [1]University of Iowa, [2]Brown University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A125 - Does the anticipation of stuttered speech involve inhibitory control?

Kien Huynh[1] (kien-huynh@uiowa.edu), Julia Kerrigan[1], Carson Lovig[1], Naomi Rodgers[1], Jan Wessel[1]; [1]University of Iowa

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A126 - A Model of the Temporal Dynamics of Automatic and Goal-Directed Processing during Conflict Resolution

Jacob Sellers[1] (jacobsel@umich.edu), Han Zhang[1], John Jonides[1], Taraz Lee[1]; [1]University of Michigan

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A127 - On the Reliability and Factor Structure of Sustained Post-Error Slowing

Clifford Hauenstein[1] (chauens2@jh.edu), Eunbee Kim[2], Alexis Phillips[1], Alana Montanez[1], Derek Smith[1]; [1]1Division of Cognitive Neurology/Neuropsychology, Department of Neurology, The Johns Hopkins University School of Medicine, [2]School of Psychology, Georgia Institute of Technology

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A128 - Anhedonic Features in Effort-Related Reward Processing

Harold Rocha[1] (harochapsych@gmail.com), John Shuford[1], Bradley Buchanan[1], Peter Clayson[1]; [1]University of South Florida

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A129 - Deficient Executive Control in Transformer Attention

Suketu Patel[1] (suketu.patel18@gmail.cuny.edu), Hongbin Wang[2], Jin Fan[1]; [1]CUNY Queens College, [2]Texas A&M University

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A130 - Neural modeling of frontal evoked responses predicts transient beta events influence inhibitory control via slow GABAergic inhibition

Darcy Diesburg[1] (darcy_diesburg@brown.edu), C. J. Abeshaus[2], Stephanie Jones[1]; [1]Brown University, [2]Scripps College

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A131 - Conflict Expectation Shapes Prefrontal Activity: Distinct Mechanisms of Anticipatory and Reactive Control

Anas Khan[1] (anaskhan1107@gmail.com), Colin Hoy[2,3], Kris Anderson, Vitoria Piai[4,5,6], David King-Stephens[7,8], Kenneth Laxer[8], Peter Weber[8], Jack Lin[9], Robert Knight[3], Nicole Bentley[1]; [1]University of Alabama Heersink School of Medicine, [2]University of California, San Francisco, [3]University of California, Berkeley, [4]Radboud University, Nijmegen, Netherlands, [5]Radboud University Medical Center, Nijmegen, Netherlands, [6]Donders Institute for Brain, Cognition, and Behavior, Nijmegen, Netherlands, [7]California Pacific Medical Center, San Francisco, CA, [8]University of California, Irvine, [9]University of California, Davis

Topic Area: EXECUTIVE PROCESSES: Monitoring & inhibitory control

A133 - Attention compensates for reduced reinforcement learning in older adults

Daniel Oppermann Peixoto[1] (dpeix001@ucr.edu), Ian C Ballard[1]; [1]University of California, Riverside

Topic Area: EXECUTIVE PROCESSES: Other

A134 - Brain network flexibility enables learning: Evidence from modal control in adaptive visual attention training

Alexanndra Angebrandt[1], Ramsey Wilcox[1], Aron Barbey[1]; [1]University of Nebraska-Lincoln

Topic Area: EXECUTIVE PROCESSES: Other

A135 - Impact of focal thalamic lesions on task-evoked aperiodic EEG activity

Shannon Stokes[1] (sestokes@uiowa.edu), Neha Nargarkar[1], Boes Aaron[1], Kwang Kai[1]; [1]University of Iowa

Topic Area: EXECUTIVE PROCESSES: Other

A136 - Resting-State EEG Dynamics and Neurophysiological Mechanisms of Transcranial Direct Current Stimulation Responses in Neuropsychiatric Disorders

Katerina Nasto[1] (knasto@mgh.harvard.edu), Samadrita Chowdhury[2], Asif Jamil[2], Shane Walsh[1], Joan Camprodon[2]; [1]Massachusetts General Hospital, [2]Massachusetts General Hospital, Harvard Medical School

Topic Area: EXECUTIVE PROCESSES: Other

A137 - Functional connectivity in dynamic brain networks across different levels of suspense during naturalistic viewing.

Aleah Davis[1] (aleah5sos@gmail.com), Sakshi Dawan[1], Matthew Bezdek[2], Shella Keilholz[3], Eric Schumacher[1]; [1]School of Psychology, Georgia Institute of Technology, [2]Department of Psychological & Brain Sciences, Washington University in St. Louis, [3]Wallace H. Coulter Department of Biomedical Engineering, Emory University/Georgia Institute of Technology

Topic Area: EXECUTIVE PROCESSES: Other

A138 - Using electroencephalography to determine the relationship between emotional regulation and executive attention

Dara Olopade[1], Kristie Stephens, Karlie Souder, Sinead Mukolo-Villegas, Aram Akbari, Emma Chacon, Emily Stripling, Michael Oliver; [1]Belmont University

Topic Area: EXECUTIVE PROCESSES: Other

A139 - A Communication Subspace Relays Behaviorally-relevant Information from Human Prefrontal to Motor Cortex

Neha Binish[1] (neha.binish@uni-tuebingen.de), Robert T. Knight[2], Randolph F. Helfrich[1]; [1]Hertie Institute for Clinical Brain Research, University Medical Center Tübingen, Tübingen, Germany, [2]Helen Wills Neuroscience Institute, UC Berkeley

Topic Area: EXECUTIVE PROCESSES: Other

A140 - A novel framework to link insight to general brain mechanisms

Maxi Becker[1,2] (almaxi@gmail.com), Simon Davis[1,2], Roberto Cabeza[2]; [1]Humboldt University Berlin, [2]Duke University

Topic Area: EXECUTIVE PROCESSES: Other

A141 - Meet me in the Middle: Does fNIRS Resting State Activity Correlate with Line Bisection Performance?

Hannah Kershner[1], Sinead Mukolo-Villegas[2], Karlie Souder[3], Jasmine Clark[4], Carole Scherling, PhD.; [1]Belmont University, [2]Department of Psychological Science and Neuroscience

Topic Area: EXECUTIVE PROCESSES: Other

A142 - Structural Network Efficiency and Self-Reported Cognitive Symptoms After Sports-Related Concussion

Heather C Bouchard[1,2] (hbouchard2@huskers.unl.edu), Ramsey R Wilcox[1,2], Douglas H Schultz[1,2], Aron K Barbey[1,2]; [1]Center for Brain, Biology and Behavior, University of Nebraska-Lincoln, [2]Department of Psychology, University of Nebraska-Lincoln

Topic Area: EXECUTIVE PROCESSES: Other

A143 - Enhancement of gripping force by a simultaneous cognitive task via increase in the overall arousal level

Sofia Nagisa[1], Ethan Oblak[1], Shinsuke Shimojo[2], Kazuhisa Shibata[1]; [1]RIKEN Center for Brain Science, [2]California Institute of Technology

Topic Area: EXECUTIVE PROCESSES: Other

A144 - The Effects of Short-Form Mindfulness Training on the Vigilance Decrement

Jason S. Tsukahara[1] (jason.tsukahara@miami.edu), Brooke Schwartzman[1], Anthony P. Zanesco[2], Ekaterina Denkova[1], Scott Rogers[1], Amishi P. Jha[1]; [1]University of Miami, [2]University of Kentucky

Topic Area: EXECUTIVE PROCESSES: Other

A145 - Intrinsic fluctuations in global connectivity reflect transitions between states of high and low prediction error

Paul C. Bogdan[1] (paulcbogdan@gmail.com), Shenyang Huang[1], Lifu Deng[2], Simon W. Davis[1], Roberto Cabeza[1]; [1]Duke University, [2]Cleveland Clinic

Topic Area: EXECUTIVE PROCESSES: Other

A146 - PRIMED and READy: Prefrontal Cortex Resting-State Activity Modulates Cross-Modal Linguistic Priming Performance.

Maria Angelina Bekhit[1] (mariaangelina.bekhit@bruins.belmont.edu), Cecilia Garcia[2], Kerlous Aziz[3], Zoe Niesen[4], Carole Scherling[5]; [1]Neuroscience, Department of Psychological Science and Neuroscience, Belmont University Nashville, TN

Topic Area: EXECUTIVE PROCESSES: Other

A147 - Investigating Differences in Eye Tracking Metrics Between Numeric and Alphanumeric Test Complexities in the Traill Making Test

Bailey Uitz[1] (uitz.b@northeastern.edu), Ethan Wong[1], Isabella Frenzilli, Erin Lynch, Eugene Tunik, Mathew Yarossi; [1]Northeastern University

Topic Area: EXECUTIVE PROCESSES: Other

A148 - Anxiety and stress symptoms are robustly associated with global negative metacognitive biases

Obinna Megwa[1], Sam Agnoli[1,2,6], Catherine Fortier[1,5], William P. Milberg[1,5], Michael Esterman[1,2,3,4], Joseph DeGutis[1,2,5]; [1]Translational Research Center for TBI and Stress Disorders (TRACTS), VA Boston Health Care System, [2]Boston Attention and Learning Lab, VA Boston Health Care System, [3]National Center for PTSD, VA Boston Health Care System, [4]Boston University Chobanian and Avedisian School of Medicine, [5]Harvard Medical School, [6]Northwestern University

Topic Area: EXECUTIVE PROCESSES: Other

A149 - Causal evidence for the role of cognitive control networks **in motor performance in Parkinson's Disease: a combined fMRI**-TMS approach

Rupsha Panda[1] (rupsha@umich.edu), James Brissenden[1], Ritika Tiwari[1], Michael Vesia[2], Roger Albin[3], Taraz Lee[1]; [1]University of Michigan, Department Psychology, [2]University of Michigan, Department of Kinesiology, [3]University of Michigan, Department of Neurology

Topic Area: EXECUTIVE PROCESSES: Other

A150 - How Does Task Structure Impact Metacognitive Judgment?

Tanvi Palsamudram[1] (tanvi_palsamudram@brown.edu), Haley Keglovits[1], David Badre[1]; [1]Brown University

Topic Area: EXECUTIVE PROCESSES: Other

A151 - Unpredictable auditory stimuli and risk-taking: The role of executive functioning, affect, and sensation-seeking.

Calvin Moen[1] (cwmoen@edgewood.edu), Ferrinne Spector; [1]Edgewood College

Topic Area: EXECUTIVE PROCESSES: Other

A152 - Regional, But Not Brain-Wide, Graph Theoretic Metrics Are Robustly and Reproducibly Linked to General Cognitive Ability

M. Fiona Molloy[1] (mfionamolloy@gmail.com), Aman Taxali[1], Mike Angstadt[1], Tristan Greathouse[1], Katherine Toda-Thorne[1], Katherine M. McCurry[1], Alexander Weigard[1], Omid Kardan[1], Lily Burchell[1], Maria Dziubinski[1], Jason Choi[1], Melanie Vandersluis[1], Cleanthis Michael[1], Mary M. Heitzeg[1], Chandra Sripada[1]; [1]University of Michigan

Topic Area: EXECUTIVE PROCESSES: Other

A153 - Combining gamified cognitive training and walking: A pilot study

Julissa Ruiz[1] (julissa.ruiz@cshs.org), Michael Sobolev[1], Katherine Barnhill[1], Marie Lauzon[1], Arash Asher[1], Jun Gong[1], Celina H. Shirazipour[1], Gillian Gresham[1], Aaron Seitz[2], Sarah-Jeanne Salvy[1]; [1]Cedars-Sinai Medical Center, [2]Northeastern University

Topic Area: EXECUTIVE PROCESSES: Other

A154 - Implementing Deep Learning Models to Personalize Learning in Cognitive Training

Elnaz Vafaei[1] (e.vafaei@northeastern.edu), Jaap Munneke[1], Susanne Jaeggi[1], Aaron Seitz[1]; [1]Northeastern University

Topic Area: EXECUTIVE PROCESSES: Other

A155 - The Impact of Collegiate Amateur Boxing on Cognitive Functioning and Psychological Health

Samara Quintero[1], Ava Romerosa[2], Julia Torre[3], Matt Birnhak[4], Sarah Raskin[5]; [1]Trinity College

Topic Area: EXECUTIVE PROCESSES: Other

A156 - Differential Effects of State and Trait Anxiety on Task Engagement

Ceyda Sayali[1], Emma Heling[2], Roshan Cools[2]; [1]Johns Hopkins University School of Medicine, [2]Donders Institute for Brain, Cognition, and Behaviour

Topic Area: EXECUTIVE PROCESSES: Other

A157 - High boredom proneness and the (in)tolerance of disruptions to agency.

V. Baaba Dadzie[1] (bbdadzie@uwaterloo.ca), James Danckert[1]; [1]University of Waterloo

Topic Area: EXECUTIVE PROCESSES: Other

A158 - The interplay of within and between-sensory binding cues in audiovisual scene analysis

Qiong Wu[1], Noppeney Uta[1]; [1]Donders Institute for Brain, Cognition, and Behaviour

Topic Area: PERCEPTION & ACTION: Multisensory

A159 - Causal Inference Modulates Auditory Spatial Recalibration in Accordance with Bayesian Principles

Wenshu lou[1] (wenshulou795@gmail.com), Uta Noppeney[1]; [1]Donders Institute for Brain, Cognition and Behaviour

Topic Area: PERCEPTION & ACTION: Multisensory

A160 - An expected visual location biases observers' perception and neural encoding of sound locations

Claire Pleche[1], Uta Noppeney[1]; [1]Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, the Netherlands

Topic Area: PERCEPTION & ACTION: Multisensory

A161 - The effect of object familiarity on EEG signal in auditory and visual semantic processing

Emma Karn[1] (ekarn@fordham.edu), Elissa Aminoff[1], Joseph Toscano[2]; [1]Fordham University, [2]Villanova University

Topic Area: PERCEPTION & ACTION: Multisensory

A162 - A practical multi-measure approach assessing compromised color perception

Javid Sadr[1] (sadr@uleth.ca); [1]University of Lethbridge

Topic Area: PERCEPTION & ACTION: Vision

A163 - The effects of targeted memory reactivation of rescripted content during sleep on subsequent intrusive memories

Neda R. Morakabati[1] (nmorakab@uci.edu), Maya Pourreza[1], Ria Karve[1], Eitan Schechtman[1]; [1]Department of Neurobiology and Behavior, University of California, Irvine

Topic Area: LONG-TERM MEMORY: Episodic

Poster Session B

Sunday, March 30, 2025, 8:00 – 10:00 am, Back Bay Ballroom/Republic Ballroom

B1 - Age-related Changes to Recollection and Familiarity in Supporting Auditory Working Memory

Chris Hawkins[1] (hawkins@ucdavis.edu), Sharon Li[1], Edward Jenkins[1], Andrew Yonelinas[1]; [1]University of California, Davis

Topic Area: EXECUTIVE PROCESSES: Working memory

B2 - The visual cortex in the blind but not the auditory cortex in the deaf becomes multiple demands regions

Hasan Duymuş[1,2,3] (hasanduymus9@gmail.com), Mohini Verma[2,3], Ausaf Ahmed Farooqui[2,3]; [1]Ankara Yıldırım Beyazıt University, [2]Bilkent University, [3]National Magnetic Resonance Reseach Center, Bilkent University

Topic Area: EXECUTIVE PROCESSES: Working memory

B4 - Dopamine modulates prefrontal connectivity to promote schema-dependent learning

Mushfa Yousuf[1] (mus.yousuf@uni-luebeck.de), Jannik Prasuhn[2,3,4], Norbert Brüggemann[2,3,4], Lluís Fuentemilla[5,6,7], Nico Bunzeck[1,4]; [1]Universität zu Lübeck, [2]Department of Neurology, University Medical Center Schleswig-Holstein, Lübeck, Germany 3 Institute of Neurogenetics, University of Lübeck, Germany, [3]Institute of Neurogenetics, University of Lübeck, Germany, [4]Center of Brain, Behavior and Metabolism (CBBM), University of Lübeck, Lübeck, Germany, [5]Cognition and Brain Plasticity Group, Bellvitge Institute for Biomedical Research, Hospitalet de Llobregat 08907, Spain, [6]Department of Cognition, Development and Educational Psychology, University of Barcelona, Barcelona 08035, Spain, [7]Institute of Neurosciences, University of Barcelona, Barcelona 08035, Spain

Topic Area: EXECUTIVE PROCESSES: Working memory

B5 - Content-independent pointers mediate working memory storage for both visual and verbal stimuli

Woohyeuk Chang[1] (woohyeukchang@uchicago.edu), Will Epstein[1], Will Ngiam[2], Henry Jones[1], Ed Awh[1]; [1]University of Chicago, [2]University of Adelaide

Topic Area: EXECUTIVE PROCESSES: Working memory

B6 - EEG correlates of active removal from working memory

Jiangang Shan[1] (jshan23@wisc.edu), Bradley Poslte[1]; [1]University of Wisconsin-Madison

Topic Area: EXECUTIVE PROCESSES: Working memory

B7 - Differential Effects of Pubertal Hormones on Adolescent Activation During a Working Memory Task

Attakias Mertens[1] (attakias.mertens@boystown.org), Katrina Myers[1], Delaney Sherman[1], Jordanna Kruse[1], Gaelle Doucet[1]; [1]Boys Town National Research Hospital

Topic Area: EXECUTIVE PROCESSES: Working memory

B8 - Large-scale synchronized networks control stability and flexibility in cognition

Julia Ericson[1] (julia.ericson@ki.se), Nieves Ruiz Ibanez[1], Mikael Lundqvist[1], Torkel Klingberg[1]; [1]Karolinska Institutet

Topic Area: EXECUTIVE PROCESSES: Working memory

B9 - Hierarchically structured neural variability balances sensory reliability with behavioral flexibility in the human brain

Jonas Terlau[1] (jonas.terlau@gmx.de), Jan Martini[1,2], Randolph Helfrich[1]; [1]Hertie-Institute for Clinical Brain Research, University Medical Center Tuebingen, [2]International Max Planck Research School for the Mechanisms of Mental Function and Dysfunction, University of Tuebingen

Topic Area: EXECUTIVE PROCESSES: Working memory

B10 - Increased neural delay activity for simple features when they are remembered as part of real-world objects

Yong Hoon Chung[1] (yong.hoon.chung.gr@dartmouth.edu), Sadye Law[1], Timothy Brady[2], Viola Störmer[1]; [1]Dartmouth College, [2]University of California San Diego

Topic Area: EXECUTIVE PROCESSES: Working memory

B11 - Analysis of EEG complexity in patients with mild cognitive impairment.

Xu Chen[1] (cxwp65@163.com), Benju Zhu[1], Limei Cao[1]; [1]Shanghai Eighth People's Hospital

Topic Area: EXECUTIVE PROCESSES: Working memory

B12 - Immediate reselection of visual and motor memories after external interference

Daniela Gresch[1,2] (daniela.gresch@yale.edu), Larissa Behnke[3], Anna C. Nobre[1,2], Sage E.P. Boettcher[2]; [1]Yale University, [2]University of Oxford, [3]University of Zurich

Topic Area: EXECUTIVE PROCESSES: Working memory

B13 - Motivated for memory: Young and older adults prioritize working memory in an effort trade-off task

Dahlia Kassel[1] (dahliak@umich.edu), Cindy Lustig[1]; [1]University of Michigan

Topic Area: EXECUTIVE PROCESSES: Working memory

B14 - Individual differences in post-error slowing: the role of working memory capacity and positive schizotypy

Wanchen Zhao[1] (wanchen.zhao@yale.edu), Samuel McDougle[2], Tyrone Cannon[3]; [1]Yale University

Topic Area: EXECUTIVE PROCESSES: Working memory

B15 - Maintenance suppression reduces access to fear-conditioned information in working memory

Caleb N. Jerinic-Brodeur[1] (cjerinic@utexas.edu), Joseph E. Dunsmoor[1], Jarrod A. Lewis-Peacock[1]; [1]University of Texas at Austin

Topic Area: EXECUTIVE PROCESSES: Working memory

B16 - Change detection and repetition detection reflect functionally distinct forms of visual working memory

Stephanie Norris[1] (sjnorris@ucdavis.edu), Andrew Yonelinas; [1]Department of Psychology, University of California, Davis

Topic Area: EXECUTIVE PROCESSES: Working memory

B17 - Capacity not required: A long-term memory model that exhibits key signatures of working memory

Sean Polyn[1] (sean.polyn@vanderbilt.edu), Geoffrey Woodman[1]; [1]Vanderbilt University

Topic Area: EXECUTIVE PROCESSES: Working memory

B18 - Semantic activation hinders suppression from visual working memory

Edward Leung[1] (edjoeleung@utexas.edu), Jarrod Lewis-Peacock[1]; [1]The University of Texas at Austin

Topic Area: EXECUTIVE PROCESSES: Working memory

B19 - Flexible redistribution of working memory resources enables distraction-resilient behaviors in dynamic environments

Ziyao Zhang[1] (ziyaopsy@gmail.com), Jarrod Lewis-Peacock[1]; [1]Department of Psychology, University of Texas at Austin

Topic Area: EXECUTIVE PROCESSES: Working memory

B20 - Differential roles of frontoparietal regions in working memory and decision-making demand

Sophie E. Ack[1] (sophie.ack@northwestern.edu), Samantha M. Gray[1,2], Adam J. O. Dede[1], Jack J. Lin[3], David King-Stephens[4,5], Peter B. Weber[4], Kenneth D. Laxer[4], Ignacio Saez[3,6], Fady Girgis[3,7], Stephan U. Schuele[1], Joshua M. Rosenow[1], Edward F. Chang[8], Kurtis I. Auguste[8], Eishi Asano[9], Robert T. Knight[10], Rodrigo M. Braga[1], Elizabeth L. Johnson[1]; [1]Northwestern University, [2]Stanford University, [3]University of California, Davis, [4]California Pacific Medical Center, [5]Yale School of Medicine, [6]Ichan School of Medicine at Mt. Sinai, [7]University of Calgary, [8]University of California, San Francisco, [9]Children's Hospital of Michigan, [10]University of California, Berkeley

Topic Area: EXECUTIVE PROCESSES: Working memory

B21 - Visuospatial Encoding in Adults with ADHD: Aperiodic vs. Periodic EEG Spectral Components

Talía V. Román-López[1,2], Fang Yu Chang[1,2], Holly Troung[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

B22 - Underlying mechanisms to exercise-induced working memory improvements

Sofi Sandstrom[1,2] (sofi.sandstrom@umu.se), Emma Simonsson[1,2], Mattias Hedlund[1], Nina Lindelöf[1], Erik Rosendahl[1], Carl-Johan Boraxbekk[1,2,3,4]; [1]Umeå University, [2]Umeå center for Functional Brain Imaging, [3]University of Copenhagen, [4]Copenhagen University Hospital Bispbjerg

Topic Area: EXECUTIVE PROCESSES: Working memory

B23 - Eye-movement pattern reveals optimal mental organization during memory encoding and maintenance

Qiaoli Huang[1] (qiaolihuang0818@gmail.com), Christian Doeller[1,2]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, [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

Topic Area: EXECUTIVE PROCESSES: Working memory

B24 - Novel Multi-Analysis of Binary Features in Ripple, Beta, and Gamma Bursts for SVM Classification of Memory-Related Event Order in iEEG

Hamed Aliyari[1] (hamed.aliyari@utsouthwestern.edu), Bradley Lega[1]; [1]Department of Neurological Surgery, UT Southwestern Medical Center, Dallas, TX, U.S.A.

Topic Area: EXECUTIVE PROCESSES: Working memory

B25 - Precision Neuromodulation using closed-Loop TMS/fMRI and Neural Network-Based Brain State Decoding

Ahsan Khan[1] (ahsan.khan@pennmedicine.upenn.edu), Hongming Li[1], Camille Blaine[1], Julie Grier[1], Ethan Hammet[1], Almaris Figueroa[1], Sarai Garcia[1], Romain Duprat[1], Justin Reber[1], Joseph Deluisi[1], Yong Fan[1], Desmond Oathes[1]; [1]Perelman School of Medicine, University of Pennsylvania

Topic Area: EXECUTIVE PROCESSES: Working memory

B26 - The representation of ordinal context in visual working memory

Jung Woo Hur[1], Jacqueline M. Fulvio[1], Bradley R. Postle[1]; [1]University of Wisconsin-Madison

Topic Area: EXECUTIVE PROCESSES: Working memory

B27 - Working Memory Demands Influence the Balance between Detailed and Gist-Level Representations during Planning

Zhuojun Ying[1] (z5ying@ucsd.edu), Anastasia Kiyonaga[1]; [1]University of California, San Diego

Topic Area: EXECUTIVE PROCESSES: Working memory

B28 - Developmental Alterations in the Load-Dependent Oscillatory Dynamics of Verbal Working Memory Processing in Youth

Augusto Diedrich[1,2,3] (augusto.diedrich@boystown.org), Yasra Arif[1,2], Maggie Rempe[1,2,4], Zhiying Shen[1,2,3], Elizabeth Heinrichs-Graham[1,2,3]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital, Omaha, NE, [2]Center for Pediatric Brain Health, Boys Town National Research Hospital, Omaha, NE, [3]School of Medicine, Creighton University, Omaha, NE, [4]College of Medicine, University of Nebraska Medical Center, Omaha, NE

Topic Area: EXECUTIVE PROCESSES: Working memory

B29 - Working memory under retrieval uncertainty

Lena L. Kemmelmeier[1] (lkemmelmeier@unr.edu), Jenna N. Pablo[1], Marian E. Berryhill[1]; [1]University of Nevada, Reno

Topic Area: EXECUTIVE PROCESSES: Working memory

B30 - Cerebellum causally influences spatial working memory tuning in frontoparietal and visual cortex

James Brissenden[1] (brissend@umich.edu), Rupsha Panda[1], Jacob Sellers[1], Taraz Lee[1]; [1]University of Michigan

Topic Area: EXECUTIVE PROCESSES: Working memory

B31 - Neural differentiation in working memory operations predicts individual differences thought control difficulties

Jacob DeRosa[1,2] (jacob.derosa@colorado.edu), Harry Smolker[2], Hyojeong Kim[3], Jarrod Lewis-Peacock[3], Marie Banich[1,2]; [1]Department of Psychology and Neuroscience, University of Colorado Boulder, [2]Institute of Cognitive Science, University of Colorado Boulder, [3]Department of Psychology, University of Texas at Austin

Topic Area: EXECUTIVE PROCESSES: Working memory

B32 - A novel eye-tracking paradigm reveals reduced vividness under combined visuospatial imagery and visual working memory requirements

Emaad Razzak[1], Tengyu Song[1], Elmina Aghayeva[1], Jiayi Wang[1], Tim Mousseau[1], Jacqueline Gottlieb[1], Alfredo Spagna[1]; [1]Columbia University

Topic Area: EXECUTIVE PROCESSES: Working memory

B33 - Flexible gaze reinstatement during working memory for natural scenes

Yueying Dong[1] (yud070@ucsd.edu), Sihan Yang[1], Yun-Chen Hung[1], Anastasia Kiyonaga[1]; [1]University of California, San Diego

Topic Area: EXECUTIVE PROCESSES: Working memory

B34 - Stability of working memory related theta synchrony over time

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Topic Area: EXECUTIVE PROCESSES: Working memory

B35 - Differential Patterns of Neural Activation during Control Operations on Positive vs. Negative Information in Working Memory.

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Topic Area: EXECUTIVE PROCESSES: Working memory

B36 - Neural and behavioral correlates of spatiotemporal memory organization and recall

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Topic Area: EXECUTIVE PROCESSES: Working memory

B37 - Fronto-parietal contributions to temporal, spatial, and category biases in visual working memory

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Topic Area: EXECUTIVE PROCESSES: Working memory

B38 - Neural signatures of coding and storing time in working memory

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Topic Area: EXECUTIVE PROCESSES: Working memory

B39 - Using Electrical Stimulation to Test the Causal Role of Aperiodic Activity in Working Memory

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Topic Area: EXECUTIVE PROCESSES: Working memory

B40 - The influence of crowding and cortical spacing on visual working memory

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Topic Area: EXECUTIVE PROCESSES: Working memory

B41 - Computational modeling of the impact of synaptic pruning defects on Working Memory in Autism Spectrum Disorder

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Topic Area: EXECUTIVE PROCESSES: Working memory

B42 - Side-by-Side Regions in Dorsolateral Prefrontal Cortex Robustly Dissociate Salience and Working Memory

Anne Billot[1,2], Wendy Sun[1,3], Kathryn Rodrigues[1,2], Xiangyu Wei[3], Mark C. Eldaief[1,2,4,5], Randy L. Buckner[1,3,4,5]; [1]Division of Medical Sciences, Harvard Medical School, Boston, MA 02115, [2]Dept. of Neurology, Massachusetts General Hospital, Charlestown, MA 02129, [3]Dept. of Psychology, Center for Brain Science, Harvard University, Cambridge, MA 02138, [4]Dept. of Psychiatry, Massachusetts General Hospital, Charlestown, MA 02129, [5]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA 02129

Topic Area: EXECUTIVE PROCESSES: Working memory

B43 - Persistent Nociceptive Pain Alters Verbal Working Memory Neural Oscillatory Dynamics

Amy Proskovec[1,2], Megan White[3], Lin Guo[4], Mahak Virlley[1,2], Una Makris[2], Jason Zafereo[2], Frank Yu[2], Elizabeth Davenport[1,2]; [1]Magnetoencephalography Center of Excellence, Dallas, Texas, [2]University of Texas Southwestern Medical Center, Dallas, Texas, [3]Loyola University, Chicago, Illinois, [4]Baylor Scott & White All Saints Medical Center, Fort Worth, Texas

Topic Area: EXECUTIVE PROCESSES: Working memory

B44 - Aging and Temporal Order Memory in Naturalistic Events

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Topic Area: LONG-TERM MEMORY: Development & aging

B45 - What aspects of familiarity are linked to the volumes of the perirhinal and entorhinal cortices, the first regions affected in **Alzheimer's disease?**

Anaïs Servais[1] (anais.servais@uliege.be), Aurélien Frick[1], François Meyer[1], Christine Bastin[1], Emma Delhaye[1]; [1]GIGA Research CRC Human Imaging, University of Liège

Topic Area: LONG-TERM MEMORY: Development & aging

B46 - Multi-Attribute Memory and Decision-Making Across the Adult Lifespan: Neural Representations and Behavioral Dynamics

Christina Yu[1] (sumin.yu@duke.edu), Kennedy Black[1], Jessie Chan[1], Eric Juarez[1], Elizabeth J. Marsh[1], Felipe De Brigard[1], Gregory Samanez-Larkin[1], Roberto Cabeza[1]; [1]Duke University

Topic Area: LONG-TERM MEMORY: Development & aging

B47 - Moderating effects of cortical thickness, volume, and memory performance on age differences in neural reinstatement of scene-related information

Joshua Olivier[1] (joshua.olivier@utdallas.edu), Sabina Srokova[2], Michael Rugg[1]; [1]University of Texas at Dallas, [2]University of Arizona

Topic Area: LONG-TERM MEMORY: Development & aging

B48 - A Cardiovascular Approach Towards a Better Understanding of Feelings of Familiarity

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Topic Area: LONG-TERM MEMORY: Development & aging

B49 - Distributed Functional Networks Associated with Age-Related Decline in High-Fidelity Memory Retrieval

Joseph C. C. Chen[1], Adam Gazzaley[1], Peter E. Wais[1]; [1]University of California San Francisco

Topic Area: LONG-TERM MEMORY: Development & aging

B50 - Distinct neurophysiological mechanisms of developing medial temporal lobe in human episodic memory

Qin Yin[1], Elizabeth L. Johnson[2], Adam J. O. Dede[2], Robert T. Knight[3], Eishi Asano[4,5], Noa Ofen[1,5]; [1]University of Texas at Dallas, Dallas, TX, [2]Northwestern University, Chicago, IL, [3]University of California, Berkeley, CA, [4]Children's Hospital of Michigan, Detroit, MI, [5]Wayne State University, Detroit, MI

Topic Area: LONG-TERM MEMORY: Development & aging

B51 - Transentorhinal cortex integrity predicts object fine-grained perceptual and mnemonic discrimination

Emma Delhaye[1,2] (emma.delhaye@uliege.be), Gabriel Besson[3], Mohamed Ali Bahri[2], Christine Bastin[2]; [1]CICPSI, Faculty of Psychology, Lisbon University, [2]GIGA-CRC Human Imaging, University of Liège, [3]Proaction Lab, CINECC, Faculty of Psychology, University of Coimbra

Topic Area: LONG-TERM MEMORY: Development & aging

B52 - Spatiotemporal episodic memory decline in MCI and **Alzheimer's disease is associated with parietal alpha/beta** dysregulation

Sang-Eon Park[1] (9sang9@gmail.com), Maria Jieun Hwang[1], Jeonghyun Lee[1], So Yeon Jeon[2], Sang Ah Lee[1]; [1]Department of Brain and Cognitive Sciences, Seoul National University, Seoul, Korea, [2]Department of Psychiatry, Chungnam National University Hospital, Daejeon, Republic of Korea

Topic Area: LONG-TERM MEMORY: Development & aging

B53 - The dynamic interaction between narrative and gaze reinstatement across age groups

Ziming Cheng[1,2] (zcheng@research.baycrest.org), Donna Rose Addis[1,2,3], Jennifer Ryan[1,2,4]; [1]Baycrest Health Sciences, Rotman Research Institute, [2]Department of Psychology, University of Toronto, [3]Department of Psychology, The University of Auckland, [4]Department of Psychiatry, University of Toronto

Topic Area: LONG-TERM MEMORY: Development & aging

B54 - Accelerated Long-Term Forgetting as an Objective Indicator of Subjective Cognitive Decline

Madeline A. Sullivan[1], Carina C. Samson[1], David A. Gallo[1]; [1]University of Chicago

Topic Area: LONG-TERM MEMORY: Development & aging

B55 - Default and Control Network Connectivity Changes Predict Memory Performance in Aging

Shijing Zhou[1] (shijingz@uoregon.edu), Troy Houser[1], Caitlin R. Bowman[2], Dagmar Zeithamova[1]; [1]University of Oregon, [2]University of Wisconsin-Milwaukee

Topic Area: LONG-TERM MEMORY: Development & aging

B56 - Domain-Specific Neural Markers of Age-Related Episodic Memory Decline and Domain-General Markers of Compensation

Maria Jieun Hwang[1] (mariahs@snu.ac.kr), Sang-Eon Park[1], Sang Ah Lee[1]; [1]Seoul National University

Topic Area: LONG-TERM MEMORY: Development & aging

B57 - Self-related thought alterations associated with intrinsic brain dysfunction in mild cognitive impairment

Lucie Bréchet[1,2] (lucie.brechet@unige.ch), Povilas Tarailis[1,3], Kim Lory[1], Paul Unschuld[4,5], Christoph Michel[1,6]; [1]Department of Fundamental Neurosciences, University of Geneva, [2]Department of Clinical Neurosciences, University of Geneva, Switzerland, [3]Life Sciences Center, Institute of Biosciences, Vilnius University, Sauletekio ave 7, LT-10257 Vilnius, Lithuania, [4]Geriatric Psychiatry Service University Hospitals of Geneva (HUG) Thônex, Switzerland, [5]Department of Psychiatry, University of Geneva, Switzerland, [6]Center for Biomedical Imaging (CIBM), Lausanne, Switzerland

Topic Area: LONG-TERM MEMORY: Development & aging

B58 - **"Recall**-to-**reject": A behavioral and neural investigation** into age differences in the strategic use of recollection to promote lure detection

Rebecca Wagner[1] (rmw5981@psu.edu), Caitlin Bowman[2], Nancy Dennis[1]; [1]The Pennsylvania State University, [2]University of Wisconsin-Milwaukee

Topic Area: LONG-TERM MEMORY: Development & aging

B59 - Using novelty and expectation violation to characterise the neural underpinnings of superior memory in superagers

Darya Frank[1,2] (darya.frank@manchester.ac.uk), Marta Garcia Huescar[2], Linda Zhang[3], Bryan Strange[2]; [1]University of Manchester, [2]Universidad Politecnica de Madrid, [3]CIEN Foundation, Queen Sofia Foundation Alzheimer Center

Topic Area: LONG-TERM MEMORY: Development & aging

B60 - Fetal Exposure to Higher Maternal Inflammation is Associated with Lower Memory Capacities in Late Middle Life

Linda Hoffman[1] (tuf72977@temple.edu), Emma Smith[1], Madeleine Pike[1], Ann Kring[2], Elizabeth Breen[3], Barbara Cohn[4], Piera Cirillo[4], Nickilou Krigbaum[4], Ashby Cogan[2], Bhakti Patwardhan[2], Ingrid Olson[1], Lauren Ellman[1]; [1]Temple University, [2]University of California, Berkeley, [3]University of California-Los Angeles, [4]Child Health and Development Studies

Topic Area: LONG-TERM MEMORY: Development & aging

B61 - Examining the influence of proximal spatial configurations on the neural correlates of item-item associative memory in older adults

Alexa Becker[1] (agb5621@psu.edu), Catherine M. Carpenter[1], Spencer O. Chase, John T. West[1], Amy A. Overman[2], Nancy A. Dennis[1]; [1]The Pennsylvania State University, [2]Xavier University

Topic Area: LONG-TERM MEMORY: Development & aging

B62 - Characterizing the relationship between white matter integrity and spatial navigation during early aging.

Daniela Cossio[1] (danielamcossio@gmail.com), Shuying Yu[2], Nick Krohn[1], Rosana Sabur[1], Mary Hegarty[2], Emily G. Jacobs[2], Elizabeth R. Chrastil[1]; [1]Department of Neurobiology & Behavior, University of California, Irvine, [2]Department of Psychological and Brain Sciences, University of California, Santa Barbara

Topic Area: LONG-TERM MEMORY: Development & aging

B63 - When less is more: The impact of repetition on pattern separation across development

Bailey Agard[1], Amy Finn[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Development & aging

B64 - Familiarity Deficits in aMCI: Insights from Event-Related Potentials and Skin Conductance Response

Evi Myftaraj[1,2] (emyftaraj@research.baycrest.org), Hannah Del Gatto[1,2], Nicole Anderson[1,2,3]; [1]Rotman Research Institute, Baycrest, Academy for Research and Education, [2]Department of Psychology, University of Toronto, [3]Department of Psychiatry, University of Toronto

Topic Area: LONG-TERM MEMORY: Development & aging

B65 - Age dependent dissociation in recollection-related functional activity in the medial temporal lobe, memory performance, and non-mnemonic cognition

Ambereen Kidwai[1] (amber.kidwai@utdallas.edu), Mingzhu Hou[1], Marianne DeChastelaine[1], Michael D. Rugg[1]; [1]University of Texas at Dallas

Topic Area: LONG-TERM MEMORY: Development & aging

B66 - Intracranial neural dynamics of recognition memory in the lateral parietal cortex of the developing brain

Joseph P. Kelly[1] (josephkelly1@northwestern.edu), Adam J. O. Dede[1], Samantha M. Gray[2], Qin Yin[3,4], Parisa Vahidi[3], Eishi Asano[4], Olivia Kim McManus[5], Shifteh Sattar[5], Jack J. Lin[6], Joyce Y. Wu[1,7], Sandi K. Lam[1,7], Jeffrey S. Raskin[1,7], Stephan U. Schuele[1], Joshua M. Rosenow[1], Ammar Shaikhouni[8], Peter Brunner[9], Jarod L. Roland[9,10], Kurtis I. Auguste[11], Robert T. Knight[12], Noa Ofen[3,4],

Elizabeth L. Johnson[1]; [1]Northwestern University Feinberg School of Medicine, [2]Stanford University, [3]Wayne State University, [4]University of Texas at Dallas, [5]University of California, San Diego, and UCSD Rady Children's Hospital, [6]University of California, Davis, [7]Ann & Robert H. Lurie Children's Hospital of Chicago, [8]Ohio State University and Nationwide Children's Hospital, [9]Washington University in St. Louis, [10]St. Louis Children's Hospital, [11]University of California, San Francisco, and UCSF Benioff Children's Hospital, [12]University of California, Berkeley

Topic Area: LONG-TERM MEMORY: Development & aging

B67 - Salience Network Connectivity Changes Across the Lifespan Relate to Emotional Memory

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

B68 - Do I want to know the answer? Metacognitive control in younger and older adults

Giovanna Marie Crystal Novi[1] (gmnovi25@colby.edu), Veronica McIntyre[1], Avery Lehneis[1], Alexis Lee[2], Jen Coane[1], Sharda Umanath[2]; [1]Colby College, [2]Claremont McKenna College

Topic Area: LONG-TERM MEMORY: Development & aging

B69 - Reactivation of initial associations predicts reduced proactive interference in memory for updated associations in younger and older adults

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Topic Area: LONG-TERM MEMORY: Development & aging

B70 - Age-related changes in neural representations during memory retrieval

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Topic Area: LONG-TERM MEMORY: Development & aging

B71 - Early memory retention of novel words predicts better later lexical integration: Evidence from regression-based ERP analyses of single-trial N400

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Topic Area: LONG-TERM MEMORY: Development & aging

B72 - Role of event boundaries and prior knowledge in influencing learning and memory in healthy aging and preclinical Alzheimer's disease

Dr Subbulakshmi S[1], Jennifer Park[1], Lucah Guerra[1], Hillary Vossler[1], Isha Sai[1], Dr Alexandra Trelle[1], Dr Tammy Tran[1], Dr Anamaria Lusardi[1], Dr Edward Wilson[1], Dr Elizabeth Mormino[1], Dr Anthony Wagner; [1]Stanford University

Topic Area: LONG-TERM MEMORY: Development & aging

B73 - Neural state changes during movie watching relate to episodic memory in younger and older adults

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Topic Area: LONG-TERM MEMORY: Development & aging

B74 - Age-Dependent Oscillatory Dynamics Underpinning Theta Sequences in the Developing Hippocampus

Rafael Pedrosa[2] (rhapedrosa@gmail.com), Jake Swann[1], Laurenz Muessig[1], Thomas Wills[1], Francesca Cacucci[2]; [1]Cell and Developmental Biology, University College London, Gower Street, London WC1E 6BT, UK, [2]Neuroscience, Physiology and Pharmacology, University College London, Gower Street, London WC1E 6BT, UK

Topic Area: LONG-TERM MEMORY: Development & aging

B75 - Age-related shifts in hippocampal subregion activation during recall

Nathan Chabin[1,4,5] (natechabaz@gmail.com), Molly Booth[2,4,5], Susan Bookheimer[3,4,5], Jesse Rissman[3,4,5], Dara Ghahremani[4,5]; [1]Pitzer College, [2]Scripps College, [3]UCLA Department of Psychology, [4]UCLA Department of Psychiatry & Biobehavioral Sciences, [5]UCLA Semel Institute for Neuroscience & Human Behavior

Topic Area: LONG-TERM MEMORY: Development & aging

B76 - Sleep Variability Related to Reduced Neural Distinctiveness for Episodic Memory Encoding: An fMRI Study Across the Adult Lifespan

Kyoungeun Lee[1] (klee773@utexas.edu), Audrey Duarte[1], Thackery Brown[2]; [1]UT Austin, [2]Georgia Tech

Topic Area: LONG-TERM MEMORY: Development & aging

B77 - Neuron-specific oligomerization of prion-like protein Orb2 required for long-term memory

Weijia LI[1] (wlidh@connect.ust.hk), Yukinori HIRANO[1]; [1]Hong Kong University of Science and Technology

Topic Area: LONG-TERM MEMORY: Other

B78 - The Salience / Parietal Memory Network Responds to Salient Transients Even When They Are New Items in an Old-New Recognition Test

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Topic Area: LONG-TERM MEMORY: Other

B79 - Memory Task Performance Following Brain Lesions and Stimulation Reveals Potential Neuromodulation Targets

Simon Kwon[1] (skwon4@bwh.harvard.edu), Joshua Siegel[2], Melissa Hebscher[3], Molly Hermiller[4], Eyre Ye[5], Michael Freedburg[6], Joshua Hendrikse[7], Gong-Jun Ji[8], Arielle Tambini[9], Jordan Grafman[10], Maurizio Corbetta[11], Joel Voss[3], Shan Siddiqi[1,12]; [1]Brigham and Women's Hospital, USA, [2]Washington University St Louis, USA, [3]University of Chicago, USA, [4]Florida State University, USA, [5]Beijing Normal University, China, [6]University of Texas, USA, [7]Monash University, Australia, [8]Anhui Medical University, China, [9]Kline Institute for Psychiatric Research, USA, [10]Northwestern University, USA, [11]University of Padua, Italy, [12]Harvard Medical School, USA

Topic Area: LONG-TERM MEMORY: Other

B80 - Neural and Behavioral Rhythmicity for Retrieving Memories from More Than Four Items

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Topic Area: LONG-TERM MEMORY: Other

B81 - The Impact of Targeted Memory Reactivation on Counter-attitudinal Learning

Danni Chen[1] (dnchen@connect.hku.hk), Tao Xia[1], Xiaoqing Hu[1]; [1]The University of Hong Kong

Topic Area: LONG-TERM MEMORY: Other

B82 - Acculturation is associated with variation in ERP correlates of self-related memory strategies

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Topic Area: LONG-TERM MEMORY: Other

B83 - Impact of Early Visual Deprivation on Grid-Like Coding during Conceptual Navigation

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Topic Area: LONG-TERM MEMORY: Other

B84 - Earworms, memory consolidation, and neural replay for recently heard music

Benjamin M. Kubit[1] (b.kubit@northeastern.edu), Elizabeth H. Margulis[2], Kenneth Norman[2], Petr Janata[3]; [1]Northeastern University, [2]Princeton University, [3]University of California, Davis

Topic Area: LONG-TERM MEMORY: Other

B85 - Investigating implicitly formed mental representations of abstract knowledge

Irina Barnaveli[1] (barnaveli@cbs.mpg.de), Simone Viganò[1], Patrick Haggard[2], Christian F. Doeller[1,3,4,5]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, [2]Institute of Cognitive Neuroscience, University College London, UK, [3]Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway, [4]Wilhelm Wundt Institute of Psychology, Leipzig, Germany, [5]Department of Psychology, Technische Universität Dresden, Dresden, Germany

Topic Area: LONG-TERM MEMORY: Other

B86 - Uncovering the neural basis for two path integration homing tasks: Triangle Completion and Loop Closure

Alina S. Tu[1] (alinat2@uci.edu), Michael J. Starrett Ambrose[1], Marie Karpinska[2], Mary Hegarty[2], Elizabeth R. Chrastil[1]; [1]University of California, Irvine, [2]University of California, Santa Barbara

Topic Area: LONG-TERM MEMORY: Other

B87 - Exploring the Neural Underpinnings of Eye-Blink Conditioning: Cerebellar, Hippocampal, and LC Contributions

Kaitlin McOwen[1] (kaiti.mcowen@tamu.edu), Jessica Bernard[1]; [1]Texas A&M University

Topic Area: LONG-TERM MEMORY: Other

B88 - Examining mechanism of memory modulation by paced breathing: Arousal or divided attention?

Brandon H. Edwards[1,2], Isabelle Dugle[1], Lilia Reihs[1], Katherine R. Mickley Steinmetz[1]; [1]Wofford College, Spartanburg, SC, [2]University of North Carolina Greensboro

Topic Area: LONG-TERM MEMORY: Other

B89 - Abstract relational distance coding in the human brain

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Topic Area: LONG-TERM MEMORY: Other

B90 - What role does depth of processing play in the picture superiority effect?

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Topic Area: LONG-TERM MEMORY: Other

B91 - Representations formed by procedural and declarative category learning are supported by overlapping sets of cortical areas

Dr. Priya B. Kalra[1] (pkalra7@uwo.ca), J. Paul Minda[1], Laura Batterink[1], Marc Joanisse[1]; [1]University of Western Ontario

Topic Area: LONG-TERM MEMORY: Other

B92 - General Semantic, Personal Semantic and Episodic Details when Thinking about the Past and the Future in Moderate-to-Severe Traumatic Brain Injury

Natalia Rivera[1] (natalia.b.rivera@vumc.org), Suhaah Nadir[2], Sharice Clough[3], Louis Renoult[4], Melissa C. Duff[1], Annick F.N. Tanguay[1]; [1]Department of Hearing and Speech Sciences, Vanderbilt University Medical Center, Nashville, TN, United States, [2]Vanderbilt University College of Arts & Sciences, Nashville, TN, United States, [3]Multimodal Language Department, Max Planck Institute for Psycholinguistics, Nijmegen, Gelderland, The Netherlands, [4]School of Psychology, University of East Anglia, Norwich, Norfolk, United Kingdom

Topic Area: LONG-TERM MEMORY: Other

B93 - Using COVIS to investigate interactions between memory systems

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Topic Area: LONG-TERM MEMORY: Other

B94 - The effects of visual mental imagery and word concreteness on recognition memory

Jennifer Spalten[1], Mark Wheeler[1]; [1]Georgia Institute of Technology

Topic Area: LONG-TERM MEMORY: Other

B95 - THE VISUAL TESTING EFFECT REQUIRES VISUAL PATTERN COMPLETION

Jennifer Gove[1] (jennifer.gove@colorado.edu), David E. Huber[1], Rosemary A. Cowell[1]; [1]University of Colorado Boulder

Topic Area: LONG-TERM MEMORY: Other

B96 - Functional connectivity in the neural systems underlying cross-education for tool-use

Sayori Takeda[1], Kouji Takano[1], Tomoaki Komatsu[1], Kimihiro Nakamura[1]; [1]Research Institute of the National Rehabilitation Center for Persons with Disabilities

Topic Area: LONG-TERM MEMORY: Skill Learning

B97 - Sleep Architecture and Speech Consolidation across Developmental Language Disorder and Typical Development

Ali Solbi[1], Rahul Gurram Thimmugari[2], Anne Van Zelst[3], F. Sayako Earle[1]; [1]University of Delaware, [2]Georgetown University, [3]Florida Atlantic University

Topic Area: LONG-TERM MEMORY: Skill Learning

B98 - Learning from our mistakes? The role of prediction errors in statistical learning: an eye-tracking study

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Topic Area: LONG-TERM MEMORY: Skill Learning

B99 - Sequence-Specific and Task-General Knowledge: Parallel Learning Mechanisms Within an Implicit Perceptual-Motor Skill Learning Task

Antonio P. Santa Cruz[1] (antoniosantacruz2026@u.northwestern.edu), Paul J. Reber[1]; [1]Northwestern University

Topic Area: LONG-TERM MEMORY: Skill Learning

B100 - Exploring the Role of Aesthetic Pleasantness on Implicit Learning

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Topic Area: LONG-TERM MEMORY: Skill Learning

B101 - Immune Biomarkers Associated with Ethanol Consumption in Monkeys and Mice

Anna Rakowski[1] (arakowsk@macalester.edu), Jean Pateman[1], Petar Elenkov[1], Naomi Singer[1], Elizabeth McNeill[2], Allison Weiss[3], Phillip Rivera[1]; [1]Macalester College, [2]Iowa State University, [3]Oregon National Primate Research Center

Topic Area: LONG-TERM MEMORY: Skill Learning

B102 - Changes in task representation via association is linked to hierarchical task learning

WooTek Lee[1] (woo-tek-lee@uiowa.edu), Eliot Hazeltine[1], JIefeng Jiang[1]; [1]University of Iowa

Topic Area: LONG-TERM MEMORY: Skill Learning

B103 - Assessing Aging and Psychological Effects on Habitual Behavior Using a Novel Outcome Revaluation Task

Corinna Franco[1] (corfran001@g.ucla.edu), Barbara Knowlton[1]; [1]Department of Psychology, University of California, Los Angeles

Topic Area: LONG-TERM MEMORY: Skill Learning

B105 - Neural oscillations related to discomfort induced by virtual reality

Mayuka Otsuki[1], Yasufumi Nakata[1], Miki Nagai[1], Ryosuke Yamamoto[1], Minori Sakai[1], Atsushi Aoyama[1]; [1]Keio University, Fujisawa, Kanagawa, Japan

Topic Area: PERCEPTION & ACTION: Multisensory

B106 - The Impact of Mental Illness Labels and Self-Initiated Accommodation Requests on Promotion Evaluations

Yuka Hirayama[1] (hyu1114aaaaa@gmail.com), Atushi Shimotomai[1]; [1]Senshu University, School of Human Sciences

Topic Area: THINKING: Decision making

B107 - Predicting Adolescent Mental Health and Adversity from Neural Networks of Decision-making

Boluwatife Cole[1], MaryAnn Noonan[1,2], Alan Stein[1], Miriam Klein-Flugge[1]; [1]University of Oxford, [2]University of York

Topic Area: THINKING: Decision making

B108 - Perceptual discrimination of temporal patterns in humans and monkeys

Marisol Espinoza Monroy[1] (marisol.em02@gmail.com), Karla Mercado[1], Victor de Lafuente[1]; [1]Institute of Neurobiology, National Autonomous University of Mexico

Topic Area: THINKING: Decision making

B109 - Brain-wide neural correlates of post-error slowing

Gergo Gomori[1] (gomorigergo91@gmail.com), Aditya Gilra[2], Robert Schmidt[1]; [1]Ruhr University Bochum, Germany, [2]National Research Institute for Mathematics and Computer Science, Amsterdam, The Netherlands

Topic Area: THINKING: Decision making

B110 - Examining neuroanatomical correlates of win-stay, lose-shift behaviour

Matt Westerman[1,2] (matt.westerman@manchester.ac.uk), Glyn Hallam[2,3], Alex Kafkas[1], Holly D H Brown[2,4], Chris Retzler[2]; [1]School of Health Sciences, Faculty of Biology, Medicine and Health, University of Manchester, UK, [2]Centre for Cognition and Neuroscience, Department of Psychology, The University of Huddersfield, Huddersfield, UK, [3]School of Education, Language and Psychology, York St John University, York, UK, [4]School of Psychology, University of Leeds, Leeds, UK

Topic Area: THINKING: Decision making

B111 - The Impact of Passive Heat Stress in Virtual Simulations on Decision-Making, Situational Awareness, and Executive Functioning in Military Personnel

Frank Schilder[1] (f.p.m.schilder@umcutrecht.nl), Antoin de Weijer[2], Bastiaan Bruinsma[3], Elbert Geuze[4]; [1]UMC Utrecht, [2]Ministry of Defence

Topic Area: THINKING: Decision making

~~B112 - Investigating the role of neural replay in multi-agent navigation~~

~~*Max A. B. Hinrichs[1,2], Nicholas Menghi[2], Yangwen Xu[2], Nicolas W. Schuck[3,4], Christian F. Doeller[1,2,5]; [1]Max Planck School of Cognition, Leipzig, Germany, [2]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [3]Institute of Psychology, Universität Hamburg, Hamburg, Germany, [4]Max Planck UCL Centre for Computational Psychiatry and Ageing Research, Berlin, Germany, [5]Kavli Institute for Systems Neuroscience, Centre for Neural Computation, The Egil and Pauline Braathen and Fred Kavli Centre for Cortical Microcircuits, Jobsen Centre for Alzheimer's Disease, Norwegian University of Science and Technology, Trondheim, Norway*~~

~~Topic Area: THINKING: Decision making~~

B113 - Abstract contextual representation in the human mediodorsal thalamus

Liu Mengxing[1] (mengxing1844@gmail.com), Norman Lam[1], Michael Halassa[1], Kai Hwang[2]; [1]Tufts University, [2]The University of Iowa

Topic Area: THINKING: Decision making

B114 - Effects of episodic future thinking and perspective taking on climate change risk perception and action

Heather J. Gittelson[1] (heathergittelson@mail.adelphi.edu), Karolina Lempert[1]; [1]Gordon F. Derner School of Psychology, Adelphi University

Topic Area: THINKING: Decision making

B115 - Differential contributions of dopamine D1- and D2-receptor-expressing neurons in the prelimbic cortex during approach-avoidance conflict in rats

Thays Brenner dos Santos[1], Vicky Chuong[1], Guillermo Aquino-Miranda[1], Fabricio H. Do-Monte[1]; [1]University of Texas Health Science Center at Houston

Topic Area: THINKING: Decision making

B116 - Investigating Domain-General Neural Mechanisms of Decision Making Across Perception and Memory

Alice Tsvinev[1] (atsvinev@ucsc.edu), Jason Samaha[1]; [1]UC Santa Cruz

Topic Area: THINKING: Decision making

B117 - Hormonal control of the brain state achieving repetitive challenges over risks

Xinyue Hu[1] (xhubi@connect.ust.hk), Yukinori HIRANO[1]; [1]The Hong Kong University of Science and Technology

Topic Area: THINKING: Decision making

B118 - Entorhinal cortex activation during precise temporal memory retrieval is associated with temporal discounting

Chloe Ott[1], Federica Procida[2], Karolina Lempert[1]; [1]Adelphi University, [2]University "Gabriele d'Annunzio"

Topic Area: THINKING: Decision making

B119 - The Confused Body: How Uncertainty Shapes Somatic Markers and Decision-Making

Mianzhi Hu[1] (rudolfhu@tamu.edu), Darrell Worthy[1]; [1]Texas A&M University

Topic Area: THINKING: Decision making

B120 - The Impact of Ambiguity and Aging on Decision Making Across Probabilistic, Temporal and Effort Discounting

Galston Wong[1,2] (galston.wong@utdallas.edu), Amelia Bradley[1,2], Alina Ali[1,2], Kendra L. Seaman[1,2]; [1]The University of Texas at Dallas, [2]Center for Vital Longevity

Topic Area: THINKING: Decision making

B121 - Investigating the neural basis of representation-mediated learning in humans

Xiaolin Qiao[1] (xiaolinqiao@brandeis.edu), Lauren A. Wolters[1], Liam P. McMahon[1], Jared G. Newell[1], James D. Howard[1]; [1]Brandeis University

Topic Area: THINKING: Decision making

B122 - Differences in Moral Decision-Making between Military Personnel and Civilians

Lukas van Herk[1,2] (l.vanherk@umcutrecht.nl), Frank Schilder[1,2], Antoin de Weijer[1,2], Elbert Geuze[1,2], Bastiaan Bruinsma[1,2]; [1]Brain Research and Innovation Centre, Ministry of Defence, Utrecht, The Netherlands, [2]Department of Psychiatry, University Medical Centre, Utrecht, The Netherlands

Topic Area: THINKING: Decision making

B123 - Why Do Women Overinvest in a Male-Dominated World?

Lexin Liang[1] (ll5234@nyu.edu), Paul Glimcher[2]; [1]New York University

Topic Area: THINKING: Decision making

B125 - Don't Risk It!: The Role ACEs and Depression have on Risky Behavior Choices

Emma Chacon[1] (emma.chacon@bruins.belmont.edu), Emily Stripling, Liam Fienberg, Kristie Stephens, Aram Akbari, Karlie Souder, Dara Olopade, Smyth Harper, Michael Oliver, PhD; [1]Belmont University

Topic Area: THINKING: Decision making

B126 - The Effects of Positive Feedback and Self-Efficacy on Electrophysiology and Behavior

Karlie Souder[1], Kristie Stephens, Aram Akbari, Emily Stripling, Dara Olopade, Emma Chacon, Liam Feinberg, Smyth Harper, Michael Oliver, PhD; [1]Belmont University

Topic Area: THINKING: Decision making

B127 - Dopamine tone influences strategic learning in humans: a pharmacological PET study

Jacinda Taggett[1] (jacinda.taggett@gmail.com), Nienhsuan Su[1,2], Julia Bertolero[1,2], Joshua Warren[4], William Jagust[1], Andrew Kayser[1,2,3], Ming Hsu[1]; [1]UC Berkeley, [2]UC San Francisco, [3]San Francisco VA Health Care System, [4]Yale University

Topic Area: THINKING: Decision making

B128 - Brain Healthy: Empowering High School Students through Brain Health and Wellness Investigations

Cate Schultz[1] (schultcg@bc.edu), Ido Davidesco[1], Wendy Suzuki[2]; [1]Boston College, [2]New York University

Topic Area: THINKING: Decision making

B129 - Real-Time Modulation of Reinforcement Learning Using Closed-Loop TMS-EEG

Yifan Gao[1] (yifangao97@gmail.com), Malte Güth[2], Drew Headley[1], Daniel Robles[1], Emily Zhang[1], Travis Baker[1]; [1]Center for Molecular and Behavioral Neuroscience, Rutgers University – Newark, [2]Department of Biomedical Engineering, University of Minneapolis, Minnesota

Topic Area: THINKING: Decision making

B130 - Defining the optimal form for subjective value encoding by the brain, a numerical approach

Shreya Sinha[1] (ss14468@nyu.edu), Agnieszka Tymula[2], Paul Glimcher[1]; [1]Grossman School of Medicine, New York University, [2]School of Economics, University of Sydney

Topic Area: THINKING: Decision making

B131 - Adolescent Decision-Making Efficiency Maintains Despite Sleep Quality Variation: A Drift Diffusion Model Analysis.

Belkairys Taveras Tapia[1,2], Yue Zhang[4], Alexander S. Weigard[4], Edward Huntley[5], Colter Mitchell[5], Luke W. Hyde[4,5], Christopher S. Monk[3,4,5]; [1]Hunter College, CUNY, New York, NY, [2]BP-ENDURE Program Hunter College CUNY, New York, NY, [3]Neuroscience Graduate Program, University of Michigan, Ann Arbor, MI, [4]University of Michigan, Ann Arbor, MI, [5]Survey Research Center of the Institute for Social Research, University of Michigan, Ann Arbor, MI,

Topic Area: THINKING: Decision making

B132 - Brain signal variability predicts age-related shift in Believer-vs-Empiricist auditory decision style

Niels Kloosterman[1] (n.kloosterman@uni-luebeck.de), Mohsen Alavash[1], Malte Wöstmann[1], Jonas Obleser[1]; [1]Universität zu Lübeck

Topic Area: THINKING: Decision making

B133 - Behavioral and neural methods for comparing dynamic, subjective experiences

Runxuan Niu[1] (niu_rx@pku.edu.cn), Lusha Zhu[1], Zhihao Zhang[2], Andrew Kayser[3,4], Mark Bartholomew[5], Ming Hsu[3]; [1]Peking University, [2]University of Virginia, [3]University of California, Berkeley, [4]University of California, San Francisco, [5]State University of New York at Buffalo

Topic Area: THINKING: Decision making

B134 - Neural representations of metacognitive processes in the medial prefrontal cortex

Yoshinori Nanjo[1] (yoshinori.nyanjo@gmail.com); [1]RIKEN Center for Brain Science, Japan

Topic Area: THINKING: Decision making

B135 - Neuron Type Specific Contributions to Dynamic Coding During Flexible Sensorimotor Decisions in Frontoparietal Cortex

Hamidreza Abdoljabbari[1] (h.abdoljabbari@gmail.com), Fatemeh Balapour[1], Scott L. Brincat[2], Constantin von Nicolai[3,4], Markus Siegel[3,4], Earl K. Miller[2], Mohammad Reza Daliri[1]; [1]Neuroscience and Neuroengineering Research Laboratory, Biomedical Engineering Department, School of Electrical Engineering, Iran University of Science and Technology (IUST), Iran, [2]The Picower Institute for Learning and Memory and Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, [3]Department of Neural Dynamics and Magnetoencephalography, Hertie Institute for Clinical Brain Research, University of Tübingen, [4]Centre for Integrative Neuroscience, University of Tübingen

Topic Area: THINKING: Decision making

B136 - A Cognitive Map of a Subjective Value Space During Risky Decision-Making

Jake Blumwald[1] (jblumwald@ucdavis.edu), Mark A. Orloff[1], Seongmin A. Park[2], Phillipe Domenech[3,4,5], Erie D. Boorman[1]; [1]University of California Davis, [2]Virginia Tech, [3]Paris Brain Institute, [4]INSERM, [5]CNRS

Topic Area: THINKING: Decision making

B137 - The information geometry of flexible decision making

Anne Marazita[1] (anne.marazita@pennmedicine.upenn.edu), Lowell W. Thompson[1], Juvenal Bosulu[1], Jean Zweigle[1], Joshua I. Gold[1]; [1]University of Pennsylvania

Topic Area: THINKING: Decision making

B138 - Evaluation Strategies Modulate the Distractor Effect in Multi-Attribute Decision Making

Kaicheng Yan[1,2] (kaicheng.yan@mail.mcgill.ca), Lesley Fellows[1,2]; [1]McGill University, [2]Montreal Neurological Institute-Hospital

Topic Area: THINKING: Decision making

B139 - When your side quest becomes your main one: choice reinstatement revealing model-based credit assignment

Lindsay Rondot[1] (ljrondot@ucdavis.edu), Erie Boorman[1]; [1]Center for Mind and Brain, Dept. of Psychology, University of California, Davis, USA

Topic Area: THINKING: Decision making

B140 - Wikipedia Exploration Over Time: Conceptualizing Age-Related Changes in Curiosity

Michelle E. Hirsch[1] (michellehirsch8@gmail.com), Andrée-Ann Cyr[2], Buddhika Bellana[2,3]; [1]York University, [2]York University, Glendon Campus, [3]Rotman Research Institute, Baycrest Health Sciences

Topic Area: THINKING: Development & aging

B141 - Developmental differences in the neural organization of knowledge

Alexander W. D. McArthur[1] (alex.mcarthur@mail.utoronto.ca), Sagana Vijayarajah[1], Margaret L. Schlichting[1]; [1]University of Toronto

Topic Area: THINKING: Development & aging

B142 - The Impact of Prenatal Alcohol Exposure on Addiction Behavior in Young Adults and Dams

Jean Pateman[1] (jpateman@macalester.edu), Anna Rakowski, Petar Elenkov, Naomi Singer, Phillip Rivera; [1]Macalester College

Topic Area: THINKING: Development & aging

B143 - Exploring brain system segregation as a neural mechanism of cognitive reserve in bilingualism.
Tyler M. Call[1] (tylercall@cmail.carleton.ca), John G. Grundy[2], John A.E. Anderson[1]; [1]Carleton University, [2]Iowa State University

Topic Area: THINKING: Development & aging

B144 - Age-Related Changes in Curiosity: The Influence of Locus Coeruleus on Information-Seeking Behavior
Hsiang-Yu Chen[1] (hsiangyuchen@brandeis.edu), Emma Lepore Carlson[1], Johanna L. Matulonis[1], McKenna S. Costello[1], Katherine E. O'Malley[1], Heidi I. L. Jacobs[2], Jacob M. Hooker[2], Anne S. Berry[1]; [1]Brandeis University, [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital

Topic Area: THINKING: Development & aging

B145 - Developing a conscious mind: from error-monitoring at 12 months to self-awareness at 18 months?
Cécile Gal[1] (cgg@psy.ku.dk), Katarina Begus[1]; [1]Centre for Early Childhood Cognition, University of Copenhagen, Denmark

Topic Area: THINKING: Development & aging

B146 - Examining the neural bases of spontaneous mental experiences with real-time fMRI
Tiara Bounyarith[1] (tb3344@drexel.edu), David Braun[1], Aaron Kucyi[1]; [1]Drexel University

Topic Area: THINKING: Other

B147 - State-anxiety modulates the relationship between interoception and spontaneous fluctuations in subjective arousal
David Braun[1] (db3566@drexel.edu), Lotus Shareef-Trudeau[1], Swetha Rao[1], Christine Chesebrough[2], Julia Kam[3], Aaron Kucyi[1]; [1]Drexel University, [2]Feinstein Institutes for Medical Research, [3]University of Calgary

Topic Area: THINKING: Other

B148 - Linking cognitive domains to static and dynamic models of brain network controllability
Justin Ng[1,2] (jwk.ng@mail.utoronto.ca), Jamie Feusner[1,2,3], Colin Hawco[1,2]; [1]Centre for Addiction and Mental Health, [2]University of Toronto, [3]Karolinska Institutet

Topic Area: THINKING: Other

B149 - Linking Targeted, Spontaneous Thoughts to Verbal Labels: Implications for Clinical Interventions
Ariel Huh[1], Ezequiel Morsella[1,2], Sarah Brauer[1]; [1]San Francisco State University, [2]University of California, San Francisco

Topic Area: THINKING: Other

B150 - Dynamics of neural recruitment surrounding thought reports during breath-focused meditation
Andre Zamani[1] (azamani@psych.ubc.ca), Douglas Forrest[1], Jennifer Burrell[1], Kalina Christoff Hadjiilieva[1]; [1]University of British Columbia

Topic Area: THINKING: Other

B151 - Neural and experiential correlates of subsequent memory during movie-watching
Raven Wallace[1] (18rsw@queensu.ca), Samyogita Hardikar[1], Louis Chitiz[1], Ian Goodall-Halliwell[1], Jeremy I Skipper[2], Robert Leech[3], Jonathan Smallwood[1]; [1]Queen's University, [2]University College London, [3]King's College London

Topic Area: THINKING: Other

B152 - BOLD Variability as a Biomarker of Concussion in College Athletes
Doug Schultz[1], Bethany Barnwell[1], Heather Bouchard[1], Aron Barbey[1]; [1]University of Nebraska-Lincoln

Topic Area: THINKING: Other

B153 - Stability in self-reported task-focus relates to activation of the multiple-demand network
Louis Chitiz[1] (17lssc@queensu.ca), Raven Wallace[1], Ian Goodall-Halliwell[2], Bridget Mulholland[1], Ting Xu[3], Michael Milham[3], Elizabeth Jefferies[4], Robert Leech[5], Jonathan Smallwood[1]; [1]Queen's University, [2]McGill University, [3]Child Mind Institute, [4]University of York, [5]King's College London

Topic Area: THINKING: Other

B154 - Higher Thinking: The Influence of Cannabis on Thought Content and Dynamics
Jen Burrell[1] (jenbur@psych.ubc.ca), Kailey Baxstrome[1], Shreya Kakachery[1], Kalina Christoff Hadjiilieva[1]; [1]University of British Columbia

Topic Area: THINKING: Other

B155 - Greater flexibility in complex behaviour is linked to greater activity in primary systems.
Samyogita Hardikar[1], Raven Wallace[1], Louis Chitiz[1], Bridget Mullholland[1], Beth Jefferies[2], Robert Leech[3], Jonathan Smallwood[1]; [1]Department of Psychology, Queens University, Kingston, ON, Canada, [2]Department of Psychology, University of York, York, UK, [3]Centre for Neuroimaging Science, King's College London, London, UK

Topic Area: THINKING: Other

B156 - Exploring the Stream of Consciousness: Using Precision fMRI to Investigate the Dynamics of Thought

Desmond Wood-Anderson[1] (dwoodanderson@psych.ubc.ca), Andre Zamani[1], Nicholas Zhu[1], Kalina Christoff Hadjiilieva[1]; [1]University of British Columbia

Topic Area: THINKING: Other

B157 - Mindfulness Without Imagery: Mindfulness Interventions for Individuals with Aphantasia

Madison Lindsey[1], Alexandra Roach; [1]University of South Carolina Aiken

Topic Area: THINKING: Other

B158 - EEG microstates covary with ongoing spontaneous thought

Anthony Zanesco[1] (apza225@uky.edu), Shirley Pandya[2], Ekaterina Denkova[2], Amishi Jha[2]; [1]University of Kentucky, [2]University of Miami

Topic Area: THINKING: Other

B159 - A Game Theoretic Foundation for the Psychophysical Study of Social Interactions

Vered Kurtz-David[1] (kurtzv02@nyu.edu), Adam Brandenburger[2,3,4], Paul Glimcher[1,5]; [1]NYU Grossman School of Medicine, [2]Stern School of Business, NYU, [3]NYU, Tandon School of Engineering, [4]NYU Shanghai, [5]Center for Neural Science, New York University

Topic Area: THINKING: Reasoning

B160 - Behavioral and Neural Correlates of Learning Predictable Rules Intermixed with Random Reinforcement

Leo Yuhao Jin[1] (yj2525@columbia.edu), Greg Jensen[2], Jacqueline Gottlieb[1], Vincent Ferrera[1]; [1]Columbia University, [2]Reed College

Topic Area: THINKING: Reasoning

B161 - Tracking the temporal dynamics of conceptual learning during a STEM lecture

Yeongji Lee[1] (yeongji.lee.gr@dartmouth.edu), David Kraemer[1]; [1]Dartmouth College

Topic Area: THINKING: Reasoning

B162 - Causal knowledge is embedded in semantic networks

Miriam Hauptman[1] (mhauptm1@jhu.edu), Marina Bedny[1]; [1]Johns Hopkins University

Topic Area: THINKING: Reasoning

B163 - Decoding Abstract Concepts: A Neuroimaging Study on the Representational Structure of Relational Categories

Anthony Dunn[1] (anthony.t.dunn.gr@dartmouth.edu), Katherine Alfred[1], Nick Ichien[3], Brianna Aubrey[1], Sophia Baia[2], Silvia Bunge[2], David Kraemer[1]; [1]Dartmouth College, [2]University of California, Berkeley, [3]University of Pennsylvania

Topic Area: THINKING: Reasoning

Poster Session C

Sunday, March 30, 2025, 5:00 – 7:00 pm, Back Bay Ballroom/Republic Ballroom

C1 - Sex differences in episodic memory reinstatement: An fMRI study

Hallie Liu[1], Sricharana Rajagopal[1], Gabriela Vélez Largo[1], Natasha M. Rajah[1,2]; [1]Toronto Metropolitan University, [2]McGill University

Topic Area: LONG-TERM MEMORY: Episodic

C2 - Investigating the time course of retrieval state initiation.

Subin Han[1], Nicole M. Long[1]; [1]University of Virginia

Topic Area: LONG-TERM MEMORY: Episodic

C3 - Neural signature of emotional context

Chantelle Cocquyt[1] (ccocquyt@psych.ubc.ca), Isabel Wilson[1], Daniela Palombo[1]; [1]University of British Columbia

Topic Area: LONG-TERM MEMORY: Episodic

C4 - Musical Context Facilitates Event Segmentation and Sequential Learning Through Interconnected Neural Networks and Strengthened Hippocampal Encoding

Yiren Ren[1], Vishwadeep Ahluwalia[2], Claire Arthur[3], Thackery Brown[1]; [1]School of Psychology, Georgia Institute of Technology, [2]Center for Advanced Brain Imaging, GSU/GT, [3]School of Music, Georgia Institute of Technology

Topic Area: LONG-TERM MEMORY: Episodic

C5 - Temporal Distortions During Narrative Recall

Nathaniel Allen[1] (nallen25@jh.edu), Chris Honey[1], Janice Chen[1]; [1]Johns Hopkins University

Topic Area: LONG-TERM MEMORY: Episodic

C6 - Aging and the Effects of Prior Knowledge on Neural Representations of Scene Images

Yuju Hong[1], Kana Kimura[1], Caitlin R. Bowman[1]; [1]University of Wisconsin-Milwaukee

Topic Area: LONG-TERM MEMORY: Episodic

C7 - Adaptive control of episodic memory retrieval during story listening

Cody V Dong[1] (codydong@princeton.edu), Samuel A Nastase[1], Kenneth A Norman[1]; [1]Princeton University

Topic Area: LONG-TERM MEMORY: Episodic

C8 - Musical Training Impacts Hippocampal Connectivity Patterns Underlying Complex Event Encoding

Mikaila Tombe[1], Rebecca Scheurich[1], Jamie Snytte[1], Caroline Palmer[1], Signy Sheldon[1]; [1]McGill University

Topic Area: LONG-TERM MEMORY: Episodic

C9 - Framing the Past, Shaping the Future: The Power of Political Identity and Media Bias in Collective Memories and Future Thoughts

Nawel Cheriet[1,2,3] (nawel.cheriet@uliege.be), Christine Bastin[1,2,3]; [1]GIGA Research, CRC Human imaging, University of Liège, Belgium, [2]Psychology and Cognitive Neuroscience, University of Liège, Belgium, [3]F.R.S.-Fonds National de la Recherche Scientifique, Bruxelles, Belgium

Topic Area: LONG-TERM MEMORY: Episodic

C10 - Neural substrate for emotional memory schemas in individuals with childhood adversity

Xiang-Shen Liu[1] (xiangshen.liu@donders.ru.nl), Janna N. Vrijsen[2,3], Indira Tendolkar[2,4], Guillén Fernández[1], Nils Kohn[1]; [1]Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour, Department of Cognitive Neuroscience, Nijmegen, The Netherlands, [2]Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour, Department of Psychiatry, Nijmegen, The Netherlands, [3]Pro Persona Mental Health Care, Depression Expertise Center, Nijmegen, The Netherlands, [4]LVR-University Hospital Essen, Department of Psychiatry and Psychotherapy, Medical Faculty, University of Duisburg-Essen, Essen, Germany

Topic Area: LONG-TERM MEMORY: Episodic

C11 - Tracking the traces of forgotten memories over six months with 7 Tesla high-resolution fMRI

Konstantinos Ioannis Zervas[1] (konstantinos.zervas2@unibe.ch), Tom Willems[1], Katharina Henke[1]; [1]University of Bern, Switzerland

Topic Area: LONG-TERM MEMORY: Episodic

C12 - On a roll: Subjective recollection primes the brain to successfully retrieve unrelated memories via dopaminergic mechanisms

Matthew Dougherty[1] (matthew.dougherty@mail.utoronto.ca), Anuya Patil[1], Katherine Duncan[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C13 - Cortical thickness and volume differences in individuals with Severely-Deficient Autobiographical Memory

Shikang Peng[1,2] (speng@research.baycrest.org), Brian Levine[1,2]; [1]Rotman Research Institute, Baycrest Health Sciences, [2]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C14 - Deconstructing the regional contributions within the Posterior Medial Episodic Network to vivid memory recollection.

Kasia M Mojescik[1] (k.mojescik@sussex.ac.uk), Atusa J Saeipour[1], Jessica Daly[1], Annabel Rowney-Smith[1], Alberto Mariola[1], Sam C Berens[1], Flavia De Luca[1], Jon S Simons[2], Maureen Ritchey[3], Chris M Bird[1]; [1]University of Sussex, UK, [2]University of Cambridge, UK, [3]Boston College, USA

Topic Area: LONG-TERM MEMORY: Episodic

C15 - Effects of aging on semantic and episodic contributions to false memory

Isabelle Moore[1] (ilm5fp@virginia.edu), Nicole Long[1]; [1]University of Virginia

Topic Area: LONG-TERM MEMORY: Episodic

C16 - Coupled sleep rhythms in the human hippocampus support memory consolidation

Manqi Sha[1] (manqi.sha@psy.ox.ac.uk), Pin-Chun Chen[1], Yvonne Y. Chen[2], Kathryn A. Davis[2], H. Isaac Chen[2], Brett.L Foster[2], Bernhard P. Staresina[1]; [1]University of Oxford, [2]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C17 - False memory and Individual Differences in Generalization and Specificity

Cheyna Warner[1] (cheyna@uoregon.edu), Lainey Costa[1], Dagmar Zeithamova[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C19 - Vividness of mental imagery and its relationship with resilience to misinformation in young adults

Kennedy King[1] (contactkennedyk@gmail.com), Himanshu Chaudhary[2], Ayanna Thomas[3], Elizabeth Race[4]; [1]Tufts University

Topic Area: LONG-TERM MEMORY: Episodic

C20 - An EEG examination of the timing of neural recapitulation during retrieval of positive, negative, and neutral images

Allison F. Cline[1] (clinaf52@westminster.edu), Luvada R. Mayle[1], Holly J. Bowen[2], Elizabeth A. Kensinger[3], Eric C. Fields[1]; [1]Westminster College, [2]Southern Methodist University, [3]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

C21 - **Children's but not adults' CA2,3/DG differentiates same**-category information in memory

Sagana Vijayarajah[1] (sagana.vijayarajah@mail.utoronto.ca), Margaret Schlichting[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C23 - Neural activities in left angular gyrus and the hippocampus are predictive of memory precision

Mingzhu Hou[1] (mingzhu.hou@utdallas.edu), Luke R. Pezanko[1], Ayse N. Z. Aktas[1], Paul F. Hill[2], Arne D. Ekstrom[2], Michael D. Rugg[1]; [1]Center for Vital Longevity, The University of Texas at Dallas, [2]Department of Psychology, The University of Arizona

Topic Area: LONG-TERM MEMORY: Episodic

C24 - Learning and sleep reshape the representational geometry of visual experiences

Xianhui He[1] (xianhui.he@psy.ox.ac.uk), Philipp K. Büchel[1], Simon Faghel-Soubeyrand[1], Marcel S. Kehl[1], Bernhard P. Staresina[1]; [1]University of Oxford

Topic Area: LONG-TERM MEMORY: Episodic

C25 - Language models capture efficient information compression in human memory

Jianing Mu[1], Alexander G. Huth[1], Alison R. Preston[1]; [1]the Univeristy of Texas at Austin

Topic Area: LONG-TERM MEMORY: Episodic

C26 - Does the hippocampus contribute to the online construction of mental simulations?

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Topic Area: LONG-TERM MEMORY: Episodic

C27 - Rapid context changes at encoding disrupt hippocampal autocorrelation and reduce temporal clustering of free recall

Lindsay I. Rait[1], Guo Wanjia[1], Zhifang Ye[1], Sarah DuBrow, Brice A. Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C28 - The reasons we remember: Characterizing the impact of social and accuracy goals on the way complex events are encoded

Christiane Marie Canillo[1] (christianecan@gmail.com), Kailin Summers[1], Can Fenerci[1], Signy Sheldon[1]; [1]McGill University

Topic Area: LONG-TERM MEMORY: Episodic

C29 - Freediving as a natural human model to study hippocampal adaptability to hypoxia and episodic memory

Julia Micaux[1], Clément Poiret[1], Jingwen Zhao[1], Aya El Hajj[3], Moragne Tillenon[4], Franck Mauconduit[2], Fawzi Boumezbeur[2], Catherine Chiron[1], Marion Noulhiane[1]; [1]UNIACT, InDev 1141, NeuroSpin, CEA-SACLAY F-91191, Gif-sur-Yvette, France, [2]BAOBAB, NeuroSpin, CNRS, CEA-SACLAY F-91191, Gif-sur-Yvette, France, [3]Sport Sciences Department, Univ Rouen Normandie, CETAPS, Rouen, France, [4]Paris Brain Institute, Centre d'Investigation Clinique ; APHP, Département des Maladies du Système nerveux, Hôpital Pitié-Salpêtrière, F-75013, Paris, France

Topic Area: LONG-TERM MEMORY: Episodic

C30 - Complexity compression and the when of memory in virtual reality, an EEG study

Matthew Logie[1] (matthewrlogie@gmail.com), Virginie van Wassenhove[1]; [1]CEA/DRF/Inst. Koliot, Neurospin; INSERM, Cognitive Neuroimaging Unit; Université Paris Saclay, Gif/Yvette, 91191 France

Topic Area: LONG-TERM MEMORY: Episodic

C31 - Modified Signal Detection Models of Context Memory and Feature Memory Account for Age Differences

Ashley, C. Steinkrauss[1] (steinkas@bc.edu), Haley, A. Fritch[2], Chad S. Dodson[3], Scott, D. Slotnick[1]; [1]Boston College, [2]Broad Institute, Massachusetts Institute of Technology & Harvard University, [3]University of Virginia

Topic Area: LONG-TERM MEMORY: Episodic

C32 - Consistent alignment of saccades and alpha oscillations supports the neural representation and memory encoding of visual objects

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Topic Area: LONG-TERM MEMORY: Episodic

C33 - The effects of concept familiarity on event memory in healthy aging

Jamie Snytte[1] (jamie.snytte@mail.mcgill.ca), Can Fenerci[1], Matthew D. Grilli[2], Mary A. Peterson[2], M. Natasha Rajah[3], Signy Sheldon[1]; [1]McGill University, [2]University of Arizona, [3]Toronto Metropolitan University

Topic Area: LONG-TERM MEMORY: Episodic

C34 - Image Memorability Shapes the Temporal Structure of Memory

Marianna Lamprou Kokolaki[1] (lkmarian@hotmail.com), Virginie van Wassenhove[1]; [1]CEA/DRF/Inst. Joliot, NeuroSpin; INSERM, Cognitive Neuroimaging Unit; Université Paris Saclay, Gif/Yvette, France

Topic Area: LONG-TERM MEMORY: Episodic

C35 - Modulating declarative memory with direct human amygdala stimulation

Martina Hollearn[1] (martina.hollearn@psych.utah.edu), Joseph Manns[2], Lou Blanpain[2], Stephan Hamann[2], Kelly Bijanki[3], Robert Gross[2], Daniel Drane[2], Krista Wahlstrom[1], Justin Campbell[1], Griffin Light[1], Aydin Tasevac[1], Zack Wilson[1], Jon Willie[4], Cory Inman[1]; [1]University of Utah, SLC, UT, [2]Emory University, Atlanta, GA, [3]Baylor College of Medicine, Houston, TX, [4]Washington University, St. Louis, St. Louis, MI

Topic Area: LONG-TERM MEMORY: Episodic

C36 - Memory under the microscope: investigating episodic memory as a multi-dimensional cognitive process

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Topic Area: LONG-TERM MEMORY: Episodic

C37 - Neural basis of information seeking and learning during naturalistic web browsing

Haowen Su[1] (su390@purdue.edu), Coralie Knight[1], Yoolim Hong[1], Taylor Korn[1], Hongmi Lee[1]; [1]Department of Psychological Sciences, Purdue University, West Lafayette, IN 47907, USA

Topic Area: LONG-TERM MEMORY: Episodic

C38 - Hippocampal – control network functional connectivity differentially predicts memory in young and older adults

Troy Houser[1] (thouser@uoregon.edu), Caitlin R. Bowman, Dagmar Zeithamova; [1]University of Oregon, [2]University of Wisconsin-Milwaukee, [3]1

Topic Area: LONG-TERM MEMORY: Episodic

C39 - Memory Effects of Event Boundaries Caused by Spatial Change

Lainey Costa[1] (laineyc@uoregon.edu), Troy Houser[2], J. Benjamin Hutchinson[3], Dagmar Zeithamova[4]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C40 - Changes in hippocampal connectivity after category learning predict recognition and generalization performance

Kyla Brannigan[1] (kylabran@uoregon.edu), Lea Frank[1], Dagmar Zeithamova[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C41 - Memory for an event-scrambled story unscrambles over time

William Fisher[1] (fishermwilliam@gmail.com), Andrée-Ann Cyr[1], Buddhika Bellana[1,2]; [1]York University; Glendon Campus, [2]Rotman Research Institute; Baycrest

Topic Area: LONG-TERM MEMORY: Episodic

C42 - Hippocampal neural timescales during movie watching are related to gist memory and to age

Nichole R. Bouffard[1], Angelique I. Delarazan[1], Jeffrey M. Zacks[1], Zachariah M. Reagh[1]; [1]Washington University in Saint Louis

Topic Area: LONG-TERM MEMORY: Episodic

C43 - Memory overlap modulates hippocampal integration and differentiation differently in adolescents and young adults

Merron Woodbury[1] (merron.woodbury@mail.utoronto.ca), Sagana Vijayarajah[1], Margaret L. Schlichting[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C44 - Category-selective functional connectivity increases with parts of the fronto-parietal control network during episodic memory retrieval

Sarah Monier[1] (sxm200026@utdallas.edu), Sabina Srokova[2], Michael D. Rugg[1]; [1]The University of Texas at Dallas, [2]The University of Arizona

Topic Area: LONG-TERM MEMORY: Episodic

C45 - Inducing Amnesia via Suppressing Default Network Activity through Focused External Perceptual Attention

Akul Satish[1], Justin Hulbert[2], Michael Anderson[1]; [1]MRC Cognition and Brain Sciences Unit, University of Cambridge, UK, [2]Program in Neuroscience, Bates College, USA

Topic Area: LONG-TERM MEMORY: Episodic

C46 - Repetition learning produces stronger and faster recollection during recognition

Chong Zhao[1] (chongzhao@uchicago.edu), Edward K. Vogel[1]; [1]University of Chicago

Topic Area: LONG-TERM MEMORY: Episodic

C47 - Rethinking Vividness: Semantic moreso than perceptual features drive the recall vividness of complex pictures

Ricardo Morales-Torres[1] (ricardo.morales.torres@duke.edu), Simon W. Davis[1], Roberto Cabeza[1]; [1]Duke University

Topic Area: LONG-TERM MEMORY: Episodic

C48 - Ripples facilitate human memory consolidation by driving reactivation of learning-related neurons

Marcel S. Kehl[1], Florian Mormann[2], Bernhard P. Staresina[1]; [1]University of Oxford, [2]University Hospital Bonn

Topic Area: LONG-TERM MEMORY: Episodic

C49 - Emergence of Attentional Templates in Concept Learning and the Underlying Neural Mechanisms

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Topic Area: LONG-TERM MEMORY: Episodic

C50 - Complex Experiences Are Represented as a Subset of Key Moments Which Capture the Underlying Semantics

June-Kyo Kim[1] (junekyo.kim@mail.utoronto.ca), Aditya Upadhyayula[2], Jeffrey M. Zacks[2], Alexander Barnett[1,3], Zachariah M. Reagh[2]; [1]University of Toronto, [2]Washington University in St. Louis, [3]McGill University

Topic Area: LONG-TERM MEMORY: Episodic

C51 - Reactivating spatial memories during sleep using multi-sensory cueing and an immersive virtual environment

Gautam Narayan[1,2] (narayag1@uci.edu), Amit Sofer[3], Katharine C. Simon[2,4,5], Evelyn M. Le[1,2], Hansen Zhang[1,2], Matthew Cho[1,2], Anat Arzi[3], Eitan Schechtman[1,2]; [1]Department of Neurobiology and Behavior, University of California Irvine, Irvine, California, USA, [2]Center for the Neurobiology of Learning and Memory, University of California Irvine, Irvine, California, USA, [3]Department of Cognitive and Brain Sciences, Hebrew University of Jerusalem, Jerusalem, Israel, [4]Department of Pediatrics, University of California Irvine, Irvine, California, USA, [5]Pulmonology Department, Children's Hospital of Orange County (CHOC), Orange, California, USA

Topic Area: LONG-TERM MEMORY: Episodic

C52 - Event boundary-elicited neural activities correlate with recent and remote memory

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Topic Area: LONG-TERM MEMORY: Episodic

C53 - Neural Dynamics of Sequential Task Simulation in the Human Brain

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Topic Area: LONG-TERM MEMORY: Episodic

C54 - The subiculum represents semantic boundaries for efficient temporal organization of verbal episodic memory

Jung Han Shin[1] (cautiousjh@snu.ac.kr), Sang Ah Lee; [1]Seoul National University

Topic Area: LONG-TERM MEMORY: Episodic

C55 - Representation of spatial boundary-dependent episodic memory segmentation in the human subiculum

Hye Ja Kang[1] (piotwo412@snu.ac.kr), Jung Han Shin[1], Yu Jin Rah[1], Sang Ah Lee[1]; [1]Seoul National University

Topic Area: LONG-TERM MEMORY: Episodic

C56 - Age-Related Changes in the Cortical Replay of Landmark-Based Navigational Episodic Memory

Jeonghyun Lee[1] (jeonghyun.lee@snu.ac.kr), Sang-Eon Park[1], Sang Ah Lee[1]; [1]Seoul National University

Topic Area: LONG-TERM MEMORY: Episodic

C57 - Confirmed or disconfirmed – predictions pay off for memory retention

Regine Bader[1] (regine.bader@mx.uni-saarland.de), Samira Engels[1], Mecklinger Axel[1]; [1]Saarland University, Germany

Topic Area: LONG-TERM MEMORY: Episodic

C58 - Sleep predicts a hippocampal-cortical shift during memory recall

Mathew Thomas Kollamkulam[1] (mathew.thomaskollamkulam@psy.ox.ac.uk), Simon Faghel-Soubeyrand[1], Katrijn Schruers[1], Bernhard Staresina[1]; [1]University of Oxford

Topic Area: LONG-TERM MEMORY: Episodic

C59 - Marking the Moments: ERP Evidence of Event Boundaries Enhancing Memory Formation in Narratives

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Topic Area: LONG-TERM MEMORY: Episodic

C60 - Integration and differentiation of object representations based on contextual association across the medial temporal lobe subregions

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Topic Area: LONG-TERM MEMORY: Episodic

C61 - Transcranial Direct Current Stimulation interferes with access and consolidation of weak episodic memories

Shawn Hiew[1] (shawn.hiew@unibe.ch), Konstantinos Ioannis Zervas[1], Katharina Henke[1]; [1]University of Bern

Topic Area: LONG-TERM MEMORY: Episodic

C62 - Attentional Breadth Modulates Trade-offs in Memory Precision

Hannah Tarder-Stoll[1] (htarder-stoll@research.baycrest.org), Asaf Gilboa[1], Morris Moscovitch[1]; [1]Rotman Research Institute, Baycrest Hospital

Topic Area: LONG-TERM MEMORY: Episodic

C63 - Executive control deficits and memory brain state engagement in healthy aging

Hannah Buras[1] (hb2mn@virginia.edu), Subin Han[1], Nicole Long[1]; [1]University of Virginia

Topic Area: LONG-TERM MEMORY: Episodic

C64 - Phenomenological and biophysiological differences between forgiven and not forgiven remembered wrongdoings

Gabriela Fernández-Miranda[1] (gabriela.fernandez@duke.edu), Leonard Faul[2], Caroline Howard[1], Annika Socia[1], Kaylee Miceli[1], Kevin LaBar[1], De Brigard Felipe[1]; [1]Duke University, [2]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

C65 - Understanding the mechanisms of lateral parietal memory modulation in Mild Cognitive Impairment

Matthew Slayton[1] (matthew.slayton@duke.edu), Margaret McAllister[2], Kirsten Gillette[1], Emily Finch[1], Jane Rothrock[1], Roberto Cabeza[1], Simon Davis[1]; [1]Duke University, [2]University of North Carolina Chapel Hill

Topic Area: LONG-TERM MEMORY: Episodic

C66 - Exploring the link between self-reported episodic memory traits and differences in episodic memory content and retention across time

Catalina Yang[1] (catalina.yang@mail.utoronto.ca), Quynh Nguyen[1], Nicole Yuen[1], Morgan Barense[1,2], Katherine Duncan[1]; [1]University of Toronto, [2]Rotman Research Institute

Topic Area: LONG-TERM MEMORY: Episodic

C67 - Reactivation of cortical representations predicts vividness **and precision of objects' color and location**

Xinhao Wang[1] (xinhao.wang@hu-berlin.de), Simon Davis[2], Roberto Cabeza[1,2]; [1]Humboldt University of Berlin, [2]Duke University

Topic Area: LONG-TERM MEMORY: Episodic

C68 - The influence of shared age identity on the specificity of autobiographical memory

Bryan Hong[1] (bryan.hong@mail.utoronto.ca), Jialin Du[1], Kailin Summers[2], Morgan Barense[1,3], Signy Sheldon[2]; [1]University of Toronto, Toronto ON, Canada, [2]McGill University, Montreal QC, Canada, [3]Rotman Research Institute, Toronto ON, Canada

Topic Area: LONG-TERM MEMORY: Episodic

C69 - Examining neural representations of perceptual and semantic false memories in younger adults.

Luke Dubec[1] (lxd5406@psu.edu), Rebecca L. Wagner[1], John T. West[1], Nancy A. Dennis[1]; [1]The Pennsylvania State University

Topic Area: LONG-TERM MEMORY: Episodic

C70 - Episodic and semantic memory contributions to imagination and creativity: Insights from eye-tracking

Preston Thakral[1] (pthakral@smith.edu), Kevin Madore[2], Aleea Devitt[3]; [1]Smith College, [2]Lumos Labs (Lumosity), [3]University of Waikato

Topic Area: LONG-TERM MEMORY: Episodic

C71 - Targeted memory reactivation during wakefulness improves spatial recall under challenging retrieval conditions

Gayathri Subramanian[1] (gayathrisubramanian2024@u.northwestern.edu), Ken Paller[1]; [1]Northwestern University

Topic Area: LONG-TERM MEMORY: Episodic

C72 - Evaluating the role of left ventral premotor cortex in bodily self-consciousness and autobiographical memory

Utkarsh Gupta[1,2], Peter Bright[2], Alex Clarke[3,4], Lily Vissouze[5,6], Varvara Belova[2], Abin Andrews[2], Jane E. Aspell[2]; [1]University of North Dakota, [2]Anglia Ruskin University, [3]University of Cambridge, [4]University of Warwick, [5]Sorbonne University, [6]University of Paris

Topic Area: LONG-TERM MEMORY: Episodic

C73 - Effects of Psilocybin on Brain Representations of Movies

Brian Winston[1] (bwinsto2@jh.edu), Gabi Lofland[2], Janice Chen[1], Frederick Barrett[2]; [1]Johns Hopkins University, [2]Johns Hopkins School of Medicine

Topic Area: LONG-TERM MEMORY: Episodic

C74 - Neural representation of relational memory types

Catherine Saunders[1] (cgs47@duke.edu), Paul Bogdan[1], Roberto Cabeza[1], Simon Davis[1]; [1]Duke University

Topic Area: LONG-TERM MEMORY: Episodic

C75 - Effects of Retrieval Demands and Cue/Trace Interactions on Pupil Dilation during Recognition Memory

Wen Jian[1] (wen_jian@brown.edu), Elena K. Festa[1], William C. Heindel[1]; [1]Brown University

Topic Area: LONG-TERM MEMORY: Episodic

C76 - Does the DMPFC Prioritize Consolidating Unpredictable Social Information at Rest?

Courtney Jimenez[1], Meghan Meyer[1]; [1]Columbia University

Topic Area: LONG-TERM MEMORY: Episodic

C77 - Neural Context Reinstatement of Recurring Events

Adam Broitman[1] (adamwb@sas.upenn.edu), Michael Kahana[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C78 - Age Differences in Resisting Interference in an Eyewitness Memory Study

Himanshu Chaudhary[1,2] (himanshu.chaudhary@tufts.edu), Elizabeth Race[1], Ayanna Thomas[2]; [1]Tufts University Integrative Cognitive Neuroscience Lab, [2]Tufts University MetaCognition and Applied Memory Lab

Topic Area: LONG-TERM MEMORY: Episodic

C79 - ESTIMATING MEMORY FUNCTION BY MEASURING THE HEMISPHERIC SPECIALISATION OF ATTENTION ALLOCATION

Daniela Montaldi[1] (daniela.montaldi@manchester.ac.uk), Oliver Gray, Charlotte Hunt, Haoran Guan; [1]University of Manchester

Topic Area: LONG-TERM MEMORY: Episodic

C80 - Reinstatement of personal semantics during episodic recollection

D. Merika W. Sanders[1] (merikasanders@fas.harvard.edu), Preston P. Thakral[1,2], Daniel L. Schacter[1]; [1]Harvard University, [2]Smith College

Topic Area: LONG-TERM MEMORY: Episodic

C81 - Expression of CACNA1C in a circadian mouse model for bipolar disorder

Dennis Arruda[1], Victoria Heimer-McGinn[2]; [1]Roger Williams University

Topic Area: LONG-TERM MEMORY: Episodic

C82 - Sex-specific visuo-spatial recognition memory impairments **in adolescent CLOCKΔ19 mouse model of bipolar disorder**

Eden Fraatz[1] (efraatz570@g.rwu.edu), Simrat Kaur Dhillon[1], Giana Guerra[1], Samantha Soares[1], Victoria Heimer-McGinn[1]; [1]Roger Williams University

Topic Area: LONG-TERM MEMORY: Episodic

C83 - The role of sleep and dreaming in autobiographical memory consolidation: one year delay

Nelly Matorina[1] (nelly.matorina@mail.utoronto.ca), Jeya Scott[1], Morgan Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute

Topic Area: LONG-TERM MEMORY: Episodic

C84 - Towards a Unified Theory of Memory for Similar Episodes

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Topic Area: LONG-TERM MEMORY: Episodic

C85 - fMRI Exploration Of Mind-Wandering And Memory Consolidation

Devayani Joshi[1] (dj584@drexel.edu), Aaron Kucyi[1], Alexa Tompary[1]; [1]Drexel University

Topic Area: LONG-TERM MEMORY: Episodic

C86 - **When practice doesn't make perfect: Retrieving real**-word memories strengthens reviewed content and semantic links without broader episodic changes

Lauren Homann[1] (lauren.homann@mail.utoronto.ca), Mursal Jahed[1], Jessica Sun[1], Jia Gu[1], Simran Grewal[1], Morgan Barense[1,2]; [1]University of Toronto, [2]Rotman Research Institute

Topic Area: LONG-TERM MEMORY: Episodic

C87 - Inter-Event Shifts in Emotional Valence Shape Event Memory Representations

Samira Tavassoli[1] (stavass1@jh.edu), Janice Chen[1]; [1]Johns Hopkins University

Topic Area: LONG-TERM MEMORY: Episodic

C88 - Aligning behavioral expressions of memory with convolutional neural network representations

Julian Gamez[1], Anisha S. Babu[1], Brice A. Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C89 - Motor-based versus declarative memory of multiple durations

Abigail Y. Liu[1] (abliu@u.northwestern.edu), Kezhen Qi[1], Marcia Grabowecky[1], Satoru Suzuki[1]; [1]Northwestern University

Topic Area: LONG-TERM MEMORY: Episodic

C90 - Moments of uncertainty during navigation provoke increases in autonomic arousal and changes in MTL activity in the real world

Amanda Holt[1] (u1309621@utah.edu), Kiersten Olson[1], Luis Garcia[2], Uros Topalovic[3], Mauricio Vallejo Martelo[3], Matthias Stangl[3], Tyler

Davis[1], Martina Hollearn[1], Justin Campbell[1], Lensky Augustin[1], Wyatt Wilson[1], Dawn Eliashiv[1], Nick Hasulak[4], Sonja Hiller[3], Itzhak Fried[3], Nanthia Suthana[3], Cory Inman[1]; [1]University of Utah, [2]USC Information Sciences Institute, [3]University of California, Los Angeles, [4]David Geffen School of Medicine, [5]Phoenix Research Consulting

Topic Area: LONG-TERM MEMORY: Episodic

C91 - Dynamic Recruitment of Category-Selective Cortex During Episodic Retrieval and Future Thinking

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Topic Area: LONG-TERM MEMORY: Episodic

C92 - The big item theory: A high-resolution fMRI investigation into unitization using pattern similarity analysis

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Topic Area: LONG-TERM MEMORY: Episodic

C93 - Hippocampal repulsion as a function of memory similarity and experience

America Romero[1] (america@uoregon.edu), Soroush Mirjalili[1], Dominik Graetz[1], Wanjia Guo[1], Eric Wang[1], Ulrich Mayr[1], Brice A. Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C94 - Episodic simulation samples from recently encoded memories

Tongle Cai[1] (tonglec@uoregon.edu), Zhifang Ye[1], Katie L. Hedman[1], Alexandra G. Tremblay-McGaw[1], Sara DuBrow[1], Robert J. Molitor[1], Brice A. Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C95 - Natural Scene Representations in Parietal Cortex Predict Fine-Grained Representational Structure of Verbal Recall

Anisha Babu[1] (ababu@uoregon.edu), Julian Gamez[1], Zhifang Ye[1], Brice Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C96 - Emotionally-motivated differentiation of hippocampal memory representations

R. Gerald Monkman[1], Vinshu P. Murty[1], Brice A. Kuhl[1]; [1]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C97 - The Role of Relational Reasoning and Schemas in the Simulation of Novel Future Events

Sabrina Valenzano[1,2] (svalenzano@research.baycrest.org), Isaac Kinley[1,2], Reece P. Roberts[3], Daniel L. Schacter[4], Donna Rose Addis[1,2,3]; [1]Baycrest Academy of Research and Education, [2]University of Toronto, [3]The University of Auckland, [4]Harvard University

Topic Area: LONG-TERM MEMORY: Episodic

C98 - Neural Decoding of Anticipation

Joseph Kahana[1] (kahana@psych.upenn.edu), Michael Kahana[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C99 - Can memory representations in parietal cortex be predicted from perceptual representations in sensory cortex?

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Topic Area: LONG-TERM MEMORY: Episodic

C100 - Neural oscillatory mechanisms of autobiographical memory and future imagination: a MEG study

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Topic Area: LONG-TERM MEMORY: Episodic

C101 - Novelty in everyday life promotes memory for real-world autobiographical events

Victoria Schelkun[1] (vrs2122@columbia.edu), Camille Gasser[1], Erin Welch[1], Kathryn Lockwood[2], Lila Davachi[1,3]; [1]Columbia University, [2]Temple University, [3]Nathan Kline Institute

Topic Area: LONG-TERM MEMORY: Episodic

C102 - Dissociating forward versus backward transitions in free recall: Re-analysis of oscillatory EEG activity from a large open data set (PEERS)

Jeffrey Johnson[1] (johnsonjeffre@missouri.edu), Roman Gutierrez[1], Alliya Padiak[1], Brittney Bishop-Chrzanowski[1]; [1]University of Missouri

Topic Area: LONG-TERM MEMORY: Episodic

C103 - Changes in hippocampal structure and spatial memory performance associated with rise and fall in estradiol across the menstrual cycle

Hillary Schwarb[1] (hschwarb2@unl.edu), Aaron T. Anderson[2], Bradley P. Sutton[2], Graham R. Huesmann[2], Neal J. Cohen[2], Ana M. Daugherty[4], Curtis L. Johnson[3]; [1]University of Nebraska-Lincoln, [2]University of Illinois at Urbana-Champagin, [3]University of Delaware, [4]Wayne State University

Topic Area: LONG-TERM MEMORY: Episodic

C104 - event boundary modulation of theta-oscillations in the hippocampus and amygdala

Brandon S. Katerman[1] (katerman@ucla.edu), John J. Sakon[2], Itzhak Fried[2], David Clewett[1]; [1]UCLA, [2]UCLA Neurosurgery

Topic Area: LONG-TERM MEMORY: Episodic

C105 - The Relationship Between Mental Imagery Ability and Memory Representations

Rayna Tang[1] (rayna@wustl.edu), Xinran Zhao[1], Hannah Sabio[1], Zachariah Reagh[1]; [1]Washington University in St. Louis

Topic Area: LONG-TERM MEMORY: Episodic

C106 - Inhibition of the Left Amygdala via Low-Intensity Focused Ultrasound Enhances the Encoding of Emotional and Neutral Episodic Memories

Sydney Lambert[1] (sydney.lambert@austin.utexas.edu), Manoj Doss[1], Charles Nemeroff[1], Gregory Fonzo[1], Joseph Dunsmoor[1]; [1]The University of Texas at Austin

Topic Area: LONG-TERM MEMORY: Episodic

C107 - Repetition facilitates differentiation of neural representations in the hippocampus

Emily T Cowan[1] (ecowan@adelphi.edu), Busra Tanriverdi[2], Ingrid Olson[2], Vishnu P Murty[2,3], Jason Chein[2]; [1]Adelphi University, [2]Temple University, [3]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C108 - Memory content shapes event-specific representations in the default mode network

Nina Curko[1] (curko@bc.edu), Rosalie Samide[1], Valentina Krenz[1], Elizabeth A. Kensinger[1], Maureen Ritchey[1]; [1]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

C109 - EEG Correlates of Event Model Stability in Aging

Mohsen Davoudkhani[1] (mohsen135@ksu.edu), Michael Tollefsrud, Trase Byarlay-McQueen, Kristen McGatlin, Alexia Bouslog, Ashi Wickramasundara, Olivia Edwards, Jordyn Gibson, Morgan Skinner, Heather Bailey; [1]Kansas State University

Topic Area: LONG-TERM MEMORY: Episodic

C110 - Does a shift in mental time translate into a shift in low-frequency oscillations?

Anna M.A. Wagelmans[1] (anna.wagelmans@cea.fr), Virginie van Wassenhove[1]; [1]CEA/DRF/Inst. Joliot, NeuroSpin; INSERM, Cognitive Neuroimaging Unit; Université Paris Saclay, Gif/Yvette, France

Topic Area: LONG-TERM MEMORY: Episodic

C111 - The roles of event content and recall specificity in shaping representations of naturalistic narratives

Angelique Delarazan[1] (a.delarazan@wustl.edu), Tej Bhoga[1], Katherine March[1], Zachariah Reagh[1]; [1]Washington University in St. Louis

Topic Area: LONG-TERM MEMORY: Episodic

C113 - The effect of threat intensity on higher-order fear generalization

lingwei ouyang[1] (lingwei.ouyang@utexas.edu), Isaias De La Rosa[1], Joseph Dunsmoor[2,3]; [1]Department of Psychology, University of Texas at Austin, [2]Institute for Neuroscience, University of Texas at Austin, [3]Department of Psychiatry, University of Texas at Austin

Topic Area: LONG-TERM MEMORY: Episodic

C114 - Forming episodic memories one transition at a time

Valentina Krenz[1] (krenzv@bc.edu), Maureen Ritchey[1]; [1]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

C115 - Using EEG to test the impact of attention deficits on memory performance in cancer-related cognitive dysfunction

Alexandra Gaynor[1], James Root[2], Pangzhongyuan Pei[3], Dishari Azad[4], Maria Estelle[1,2], Isabella Mohr[2], Tim Ahles[2], Jennifer Mangels[4,5]; [1]Montclair State University, [2]Memorial Sloan Kettering Cancer Center, [3]Teachers College, Columbia University, [4]The Graduate Center, The City University of New York, [5]Baruch College, The City University of New York

Topic Area: LONG-TERM MEMORY: Episodic

C116 - Decoding memory-guided predictions in the medial temporal lobe and visual cortex

Dingrong Guo[1] (guo@psych.uni-frankfurt.de), Javier Ortiz-Tudela[2], Yee Lee Shing[1,3]; [1]Department of Psychology, Goethe University Frankfurt, [2]Mind, Brain and Behaviour Research Center (CIMCYC); Department of Experimental Psychology, University of Granada, [3]Brain Imaging Center, Goethe University Frankfurt

Topic Area: LONG-TERM MEMORY: Episodic

C117 - Investigating the impact of cognitive load on hippocampal activity and episodic memory

Emma Laurent[1] (emmalaurent@g.harvard.edu), Elizabeth Miclau[1], Lila Davachi[2], Elizabeth Phelps[1]; [1]Harvard University, [2]Columbia University

Topic Area: LONG-TERM MEMORY: Episodic

C118 - Distortions in Consolidation of Competing Memory Traces by Use of a Post-Encoding Manipulation.

Katelyn Cliver[1] (kate.cliver@drexel.edu), Alexa Tompary[1]; [1]Drexel University

Topic Area: LONG-TERM MEMORY: Episodic

C119 - Something Old, Something New: Interacting effects of novelty and similarity on autobiographical memory

Erin Welch[1], Victoria Schelkun[1], Camille Gasser[1], Kathryn Lockwood[1], Lila Davachi[1,2]; [1]Columbia University, [2]Nathan Kline Institute

Topic Area: LONG-TERM MEMORY: Episodic

C120 - **Does Rewarding "Effort" Rather than Accuracy Alter** Feedback- and Reward-related ERPs in a Declarative Memory Task?

Jennifer Mangels[1,2] (jennifer.mangels@baruch.cuny.edu), Rebecca McCune[1], Daisy Reyes[2], Caesar Ekya[2]; [1]Baruch College, CUNY, [2]Graduate Center of CUNY

Topic Area: LONG-TERM MEMORY: Episodic

C121 - Cultural differences in the self-referencing memory effect and underlying neural mechanisms

Ahhyun Seo[1] (ahhyun@utexas.edu), Iva Dujmic[2], Angela Gutchess[2], Audrey Duarte[1]; [1]The University of Texas at Austin, [2]Brandeis University

Topic Area: LONG-TERM MEMORY: Episodic

C122 - Characterizing Novelty-evoked Prediction Errors across the Mesolimbic System

Yifang Liu[1] (yifangl@uoregon.edu), Ian C. Ballard[2], J. Benjamin Hutchinson[1], Vishnu P. Murty[1]; [1]University of Oregon, [2]University of California, Riverside

Topic Area: LONG-TERM MEMORY: Episodic

C123 - Examining vivid recollection of autobiographical memories using fMRI and eye movement data

Ryan Yeung[1] (ryeung@research.baycrest.org), Devin Sodums[1,2], Brian Levine[1,3]; [1]Rotman Research Institute, [2]Valparaiso University, [3]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C124 - 10-year remote memory evaluation of a verifiable event: Follow-up from the Saguenay Youth Study

Krista Mitchnick[1] (kmitchnick@research.baycrest.org), Louis Richer[2], Tomas Paus[3], Brian Levine[1]; [1]Rotman Research Institute at Baycrest, Toronto, Canada, [2]Université du Québec à Chicoutimi, Montreal, Canada, [3]University of Montreal, Montreal, Canada

Topic Area: LONG-TERM MEMORY: Episodic

C125 - Influence of expertise on episodic autobiographical memory performance during demanding outdoor adventure experiences

Lexi Golestani[1] (lexi.golestani@utah.edu), Cory Inman[1]; [1]University of Utah

Topic Area: LONG-TERM MEMORY: Episodic

C126 - Anterior theta and posterior alpha oscillations in associative memory

Tamari Shalamberidze[1] (shalambe@ualberta.ca), Yvonne Y. Chen[2], Kyle Nash[1], Jeremy B. Caplan[1]; [1]University of Alberta, [2]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C127 - The Relationship Between Physiological Arousal and the Emotional-Trade Off Effect in Younger and Middle-Aged Adults

SEHAM KAFAFI[1] (skafafi@nd.edu); [1]University of Notre Dame

Topic Area: LONG-TERM MEMORY: Episodic

C128 - How Changes in Mental Replay Speed Impact Retrospective Duration Judgments of Past Events?

Wing Yin Winny Yue[1] (winnyue@connect.hku.hk); [1]The University of Hong Kong

Topic Area: LONG-TERM MEMORY: Episodic

C129 - De-Confounding Associations between Neural Activity and Memory Performance

Riley DeHaan[1] (rdehaan@sas.upenn.edu), David Halpern[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C130 - Hippocampal volume changes linked to mnemonic discrimination gains following cognitive training in older adults: a 7T MRI study

Panagiotis Iliopoulos[12] (panagiotis.iliopoulos@med.ovgu.de), Helena Gellersen[2], Anne Maass[13], Boyan Rong[3], Radoslaw Martin Cichy[2], Emrah Düzel[12]; [1]Institute of Cognitive Neurology and Dementia Research, Otto-von-Guericke University, Magdeburg, Germany, [2]German Center for Neurodegenerative Diseases (DZNE), Magdeburg, Germany, [3]Department of Education and Psychology, Freie Universität Berlin, Berlin, Germany

Topic Area: LONG-TERM MEMORY: Episodic

C131 - Characterizing the relationship between episodic memory and hippocampal functional networks in individuals at familial risk for schizophrenia

Aslihan Imamoglu[1], Mackenzie E. Mitchell[2], Tehila Nugiel[3], Mackenzie Woodburn[4], Jessica R. Cohen[5], Aysenil Belger[5], Kelly S.

Giovanello[5]; [1]Vanderbilt University Medical Center, [2]University of Illinois, Urbana-Champaign, [3]Florida State University, [4]Nature Communications, [5]University of North Carolina, Chapel Hill

Topic Area: LONG-TERM MEMORY: Episodic

C132 - Divided attention narrows visual exploration in ways that differentially impact item and relational encoding

Heather Lucas[1] (hlucas2@lsu.edu), Chloe Kindell[1]; [1]Louisiana State University

Topic Area: LONG-TERM MEMORY: Episodic

C133 - Chronotype Misalignment and Memory: Exploring Circadian Rhythms, Sleep, and Episodic Memory Retention with Machine Learning Insights

Shijia Yin[1] (syin84@gatech.edu), Elyse Carlson[1], Jillian Connolly[1], Mark Wheeler[1]; [1]Georgia Institute of Technology

Topic Area: LONG-TERM MEMORY: Episodic

C134 - The gut microbiota composition is associated with human face recognition

Javiera Oyarzun[1] (joyarzun@fas.harvard.edu), Thomas Kuntz[2], Frederike Stein[3], Lila Davachi[4], Curtis Huttenhowe[5], Stefan Hofmann[6], Tilo Kircher[7], Tim Hahn[8], Elizabeth Phelps[9]; [1]Harvard University, [2]Department of Biostatistics, Harvard T.H. Chan School of Public Health, MA, USA, [3]Department of Psychology, Columbia University, NY, USA, [4]Department of Psychology, Philipps University Marburg, Germany, [5]Institute of Translational Psychiatry, University of Münster, Germany

Topic Area: LONG-TERM MEMORY: Episodic

C135 - Temporal (a)symmetries in cued recall of naturalistic events

Xinming Xu[1] (xinming.xu.gr@dartmouth.edu), Jeremy R. Manning[1]; [1]Dartmouth College

Topic Area: LONG-TERM MEMORY: Episodic

C136 - Comparing the impacts of rumination and replay on memory

Paige Sevchik[1] (psevchik@sas.upenn.edu), Brynn Sherman[1], Anna Schapiro[1]; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C137 - Understanding spontaneous false memory in the naturalistic recall of narratives

Phoebe Chen[1] (hc2896@nyu.edu), Omri Raccah[2], Todd M. Gureckis[1], David Poeppel[1,4], Vy A. Vo[3]; [1]New York University, [2]Yale University, [3]Intel Labs, Intel Corporation, Hillsboro, OR, [4]Center for Language, Music, and Emotion, NYU & Max Planck Institute, Frankfurt, Germany

Topic Area: LONG-TERM MEMORY: Episodic

C138 - Audio-Visual Stimulation to Enhance EEG Theta and Episodic-Memory Consolidation

Tashi Lhamo[1] (tashilhamo2026@u.northwestern.edu), Nathan W. Whitmore[2], Ken A. Paller[1]; [1]Northwestern University, [2]Massachusetts Institute of Technology

Topic Area: LONG-TERM MEMORY: Episodic

C139 - Do verbal labels bias visual memory?

Weifang Huang[1] (huangwei@bc.edu), Maureen Ritchey; [1]Boston College

Topic Area: LONG-TERM MEMORY: Episodic

C140 - Sleep efficiency during the retention period predicts episodic memory reconstruction across young and old adults

Chuu Nyan[1] (chuu.nyan@utexas.edu), Sahana Ram[1], Aiden Wachnin[1], Soroush Mirjalili[2], Masoud Seraji[3], Audrey Duarte[1]; [1]Department of Psychology, University of Texas at Austin, [2]Department of Psychology, University of Oregon, [3]TReNDS Center, Georgia State University & Marcus Autism Center in Emory University

Topic Area: LONG-TERM MEMORY: Episodic

C141 - Do fMRI connectivity abnormalities in epilepsy matter?

Johanna M. H. Rau[1] (jmhrau@uchicago.edu), Robert Baudo[1], Daniel Biro[1], Arantzazu San Agustín[1], Shasha Wu[1], Naoum P. Issa[1], Joel L. Voss[1]; [1]The University of Chicago

Topic Area: LONG-TERM MEMORY: Episodic

C142 - Effects of Sleep Quality on Episodic Memory Reinstatement in Young and Older Adults: Insights from EEG Representational Similarity Analysis

Masoud Seraji[1,2] (m.seraji@utexas.edu), Soroush Mirjalili[1,3], Chuu Nyan[1], Aiden Wachnin[1], Sahana Ram[1], Vince Calhoun[2], Audrey Duarte[1]; [1]University of Texas at Austin, [2]TReNDS Center (G-tech, Emory, GSU), [3]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C143 - Medial Pre-frontal & Hippocampal Functional Connectivity at Encoding Supports Prior Knowledge Leveraged Acquisition Of Novel Events In Older Adults

Rujuta Pradhan[1] (rujuta.p5@gmail.com), Morgan Brucks[2], Kristen McGatlin[1], James Bartolloti[2], Alexia Bouslog[1], Dr. Laura Martin[2], Dr. Heather Bailey[1]; [1]Kansas State University, [2]University of Kansas Medical Center

Topic Area: LONG-TERM MEMORY: Episodic

C144 - Menstrual cycle effects on rule-plus-exception category learning vary by BDNF genotype

Mateja Perovic[1] (m.perovic@mail.utoronto.ca), Janice Hou[1], Shreeansha Bhattarai[1], Cathlin Han[1], Michael Mack[1]; [1]University of Toronto

Topic Area: LONG-TERM MEMORY: Episodic

C145 - Modulation of Fixation-Locked Hippocampal iEEG Activity by Visual Content

Arantzazu San Agustín[1] (asanagustin@uchicago.edu), James E. Kragel[1], Joel L. Voss[1]; [1]University of Chicago

Topic Area: LONG-TERM MEMORY: Episodic

C146 - A Life Turned Upside Down: Exploring the Narrative Structure of the Memory for the Event Leading to a Moderate-to-Severe Traumatic Brain Injury

Suhaah Nadir[1] (suhaah.nadir@vanderbilt.edu), Natalia Rivera[2], Daniela Palombo[3], Melissa C. Duff[2], Annick F. N. Tanguay[2]; [1]Vanderbilt University College of Arts and Sciences, [2]Vanderbilt University Medical Center, [3]The University of British Columbia

Topic Area: LONG-TERM MEMORY: Episodic

C147 - Acute stress modulates episodic memory and statistical learning in the hippocampus

Irene Zhou[1] (irene.zhou@yale.edu), Yuye Huang[2], Zihan Bai[1], Elaine G. Wijaya[1], Lusangelis Ramos[1], Brynn E. Sherman[3], Nicholas B. Turk-Browne[1], Elizabeth V. Goldfarb[1]; [1]Yale University, [2]Johns Hopkins University, [3]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C148 - Hippocampus-ventral tegmental area structural connectivity patterns are associated with functional activation patterns of motivation

Blake Elliott[1] (blake.elliott@temple.edu), Vishnu Murty[2]; [1]Temple University, [2]University of Oregon

Topic Area: LONG-TERM MEMORY: Episodic

C149 - A common hippocampal gradient for semantic and spatial information

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

C150 - EEG biomarkers distinguish good and poor learners

Benjamin Falkenburg[1] (benfalken@g.ucla.edu), Michael Kahana; [1]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Episodic

C151 - Hippocampal Representational Shifts Underlie the Learning of Exceptions to Category Knowledge

Yongzhen Xie[1] (yongzhen.xie@mail.utoronto.ca), Michael L. Mack[1]; [1]Department of Psychology, University of Toronto

Topic Area: LONG-TERM MEMORY: Semantic

C152 - Age-Related Differences in Semantic Counterfactual Thinking

Martin Ma[1], Shenyang Huang[1], Felipe De Brigard[1]; [1]Duke University

Topic Area: LONG-TERM MEMORY: Semantic

C153 - Unlocking The Power of Memory: Perception, Encoding, and Recall

Kristie Stephens[1], Emily Stripling[1], Karlie Souder[1], Aram Akbari[1], Emma Chacon[1], Liam Fienberg[1], Dara Olopade[1], Smyth Harper[1], Michael D. Oliver, Ph.D.[1]; [1]Belmont University

Topic Area: LONG-TERM MEMORY: Semantic

C154 - Time-Course Differences in the Processing of Taxonomic and Thematic Semantic Relations Revealed by EEG Spatiotemporal Cluster Analysis

Stephen J. Ball[1] (stephen.ball-4@postgrad.manchester.ac.uk), Jennifer C. Thompson[1,2], Jason R. Taylor[1]; [1]University of Manchester, [2]Northern Care Alliance NHS Foundation Trust

Topic Area: LONG-TERM MEMORY: Semantic

C155 - The One with the Neural Synchrony: How Long-Term Shared Narrative Experiences Shape Brain Activity Over Time

Joshua Koh[1], Alexander Barnett[2,3]; [1]Integrated Program in Neuroscience, McGill University, [2]Department of Neurology & Neurosurgery, McGill University, [3]The Neuro (Montréal Neurological Institute-Hospital), McGill University

Topic Area: LONG-TERM MEMORY: Semantic

C156 - Category learning drives neural repulsion initially but integration at a delay

Marlie Tandoc[1] (tandoc@sas.upenn.edu), Sarah Solomon[1,2], Ashley Williams[1], Alex Gordienko[1], Jacob Parker[1], Anna Schapiro[1]; [1]University of Pennsylvania, [2]Binghamton University

Topic Area: LONG-TERM MEMORY: Semantic

C157 - N400 Evidence for Rapid Semantic Integration Through Fast Mapping

Patric Meyer[1,2] (patric.meyer@srh.de), Ann-Kathrin Zaiser[1], Lisa Festag[3], Regine Bader[3]; [1]SRH University Heidelberg, [2]Heidelberg University, [3]Saarland University

Topic Area: LONG-TERM MEMORY: Semantic

C158 - Conceptual Fluency Supports Retrieval of Labels Encoded Through Fast Mapping: Evidence from Event-Related Potentials

Lisa Festag[1] (lisa.festag@uni-saarland.de), Ann-Kathrin Zaiser[2], Patric Meyer[2,3], Regine Bader[1]; [1]Saarland University, Germany, [2]SRH University Heidelberg, Germany, [3]Heidelberg University, Germany

Topic Area: LONG-TERM MEMORY: Semantic

C159 - Foraging in conceptual spaces: neurophysiological mechanisms of mental search in semantic memory

Simone Viganò[1,2] (vigano@cbs.mpg.de), Giuliano Giari[2], Roberto Mai[3], Christian F. Doeller[1,4], Roberto Bottini[2]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Center for Mind/Brain Sciences, University of Trento, Rovereto, Italy, [3]"Claudio Munari" Center for Epilepsy and Parkinson Surgery, Niguarda Ca' Granda Hospital, Milan, Italy, [4]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

Topic Area: LONG-TERM MEMORY: Semantic

C160 - Exposure to semantic information prior to retrieval practice accelerates learning of chemistry molecule names

Janvi Subramanyan[1] (janvisubramanyan2023@u.northwestern.edu), Evan Grandoit[1], Paul J. Reber[1]; [1]Northwestern University

Topic Area: LONG-TERM MEMORY: Semantic

C161 - Intraindividual Semantic and Brain Networks Provide Evidence of Individual Differences in General Knowledge about Emotions

Alexandra E. Kelly[1] (allie.e.kelly@gmail.com), Evangelia G. Chrysikou[1]; [1]Drexel University

Topic Area: LONG-TERM MEMORY: Semantic

C162 - Memory reactivation during sleep facilitates abstraction of category structure

Sarah Solomon[1,2] (ssolomon4@binghamton.edu), Siri Krishnamurthy[2], Anna Schapiro[2]; [1]Binghamton University, [2]University of Pennsylvania

Topic Area: LONG-TERM MEMORY: Semantic

C163 - Does an impaired sense of smell make it harder to think about things like garlic?

Ishrat Khan[1], Nathan Lautz[1,2], Charles Davis[3], Gitte Joergensen[1,2], Eiling Yee[1,2]; [1]University of Connecticut, [2]The Connecticut Institute for the Brain and Cognitive Sciences, [3]Duke University

Topic Area: LONG-TERM MEMORY: Semantic

C164 - Timing is Everything: Temporal Community Structure is Sufficient for Categorical Inference

Alexander N. Lawriw[1] (alawri1@lsu.edu), Christopher R. Cox[1]; [1]Louisiana State University

Topic Area: LONG-TERM MEMORY: Semantic

C165 - Neural desynchronization during speech planning of phrase composition

Marco C. H. Lai[1], Ellie Abrams[1], Sherine Bou Dargham[2], Jacqui Fallon[3], Ebony Goldman[4], Miriam Hauptman[5], Alicia Parrish[1], Sarah F. Phillips[1,6], Alejandra Reinoso[7], Liina Pylkkänen[1,2]; [1]New York University, [2]New York University Abu Dhabi, [3]University of Colorado Boulder, [4]City University of New York Graduate Center, [5]Johns Hopkins University, [6]Georgetown University Medical Center, [7]Northwestern University

Topic Area: LONG-TERM MEMORY: Semantic

C166 - Resolvin alleviates mechanical and heat, tumor-induced, hyperalgesia by inhibition of HIF-1 Alpha

Laura Neal[1], Kira Braun[2], Iryna Khasabov[3], Donald Simone[3]; [1]Macalester College, [2]Amherst College, [3]University of Minnesota

Topic Area: PERCEPTION & ACTION: Other

Poster Session D

Monday, March 31, 2025, 8:00 – 10:00 am, Back Bay Ballroom/Republic Ballroom

D1 - Exploring Sex Differences in Late-Life Depression and **Genetic Alzheimer's Disease Risk**

Taline Bicakci[1], Claire Murphy[2]; [1]San Diego State University, [2]University of California, San Diego

Topic Area: EMOTION & SOCIAL: Development & aging

D2 - Astrocytic Cholesterol Dysregulation in Fragile X Syndrome

Joy Nguyen[1] (jnguy851@medsch.ucr.edu), Luis Hernandez[2], Victoria Wagner[3], Iryna Ethell[4]; [1]UCR SOM

Topic Area: EMOTION & SOCIAL: Development & aging

D3 - Sex-Dependent Neural Predictors of Internalizing and Externalizing Behaviors in Children

Skyler Cohen[1] (skycohen@outlook.com), Clare Shaffer[1], Laurie Cutting[2], Silvia Bunge[3], Susan Whitfield-Gabrieli[1,4]; [1]Department of Psychology, Northeastern University, [2]Peabody College of Education and Human Development, Vanderbilt University, Nashville, Tennessee, [3]Helen Wills Neuroscience Institute & Department of Psychology, University of California at Berkeley, Berkeley, [4]Center for Precision Psychiatry, Department of Psychiatry, Massachusetts General Hospital, Boston, Massachusetts

Topic Area: EMOTION & SOCIAL: Development & aging

D4 - Altered neural response to emotional faces in infants of mothers with depressed or anxious mood

Joyce Hu[1] (joycexin001@e.ntu.edu.sg), Hui Zhao[1], Cheryl Tan[1], Marchella Smith[1], Marcel Andre Hirt[1], Victoria Leong[1]; [1]Nanyang Technological University

Topic Area: EMOTION & SOCIAL: Development & aging

D5 - Greater neural dissimilarity between emotional stimuli in early visual areas is associated with symptoms of psychopathology in adolescents

Yen-Chu Lin[1] (ylin@barnard.edu), Qingyang Meng[1], Hailey Kopp[1], May Conley[2], Lena Skalaban[3], Estée Rubien-Thomas[2], Richard Watts[4], Dylan Gee[2], Arielle Baskin-Sommers[2], BJ Casey[1]; [1]Barnard College, [2]Yale University, [3]Temple University, [4]University of Canterbury

Topic Area: EMOTION & SOCIAL: Development & aging

D6 - A three-armed bandit task measuring social exploratory/exploitative behavior in older adults

Christian Valtierra[1] (christian.valtierra@ucsf.edu), Lorenzo Pasquini[1], Adam Gazzaley[1], Gabriella Mace[1], Avery Ostrand[1], Maria Auil[1], Patrick McConnell[1], Sydney Griffith[1], Jeremy Hogeveen[2], Nathan Spreng[3]; [1]Neuroscape, Neurology Department, University of California, San Francisco, CA, USA, [2]University of New Mexico, Albuquerque, NM, USA, [3]Montreal Neurological Institute, McGill University, Montreal, Canada

Topic Area: EMOTION & SOCIAL: Development & aging

D7 - Similar Early Life Stress Exposure is Associated with Similar Cortical Neural Representations during the Emotional Go/No-Go in Early Adulthood

Miro Ilomäki[1] (miro.ilomaki@helsinki.fi), Jallu Lindblom[2], Marjo Flykt[1,2], Mervi Vänskä[2], Raija-Leena Punamäki[2], Patrik Wikman[1,3]; [1]University of Helsinki, [2]Tampere University, [3]Aalto University

Topic Area: EMOTION & SOCIAL: Development & aging

D8 - A technology-based randomized controlled trial of self-affirmation and gain-framed health messaging to reduce sedentary behavior in older adults

Caitlin Walker[1,3] (caitlin.walker@mail.mcgill.ca), Meishan Ai[2], Nagashree Thovinakere[1,3,4], Arthur Kramer[2], Maiya Geddes[1,2,3,4,5,6]; [1]McGill University, [2]Northeastern University, [3]Montreal Neurological Institute, [4]Rotman Research Institute, [5]Douglas Mental Health University Institute, [6]Massachusetts Institute of Technology

Topic Area: EMOTION & SOCIAL: Development & aging

D9 - Neural oscillations and risk for internalizing problems from infancy to early adolescence: longitudinal insights using spectral parameterization

Dashiell D. Sacks[1,2] (dashiell.sacks@childrens.harvard.edu), Viviane Valdes[1,2], Carol L. Wilkinson[1,2], April R. Levin[1,2], Charles A. Nelson[1,2], Michelle Bosquet Enlow[1,2]; [1]Boston Children's Hospital, [2]Harvard Medical School

Topic Area: EMOTION & SOCIAL: Development & aging

D10 - Age-dependent predictors of musical reward sensitivity in brain structures

Jinyu Wang[1] (jinyu.wang.csu@gmail.com), Benjamin Kubit[1], Nicholas Kathios[1], Edward Large[2], Psyche Loui[1]; [1]Northeastern University, [2]University of Connecticut

Topic Area: EMOTION & SOCIAL: Development & aging

D11 - Positive Childhood Experiences Support Cognition and Counteract Behavior and Emotion Problems During Early Adolescence

Nicole Logan[1] (nicolelogan@uri.edu), William Lewis-de los Angeles[2,3]; [1]University of Rhode Island, [2]Warren Alpert Medical School of Brown University, [3]Emma Pendleton Bradley Hospital

Topic Area: EMOTION & SOCIAL: Development & aging

D12 - Social Withdrawal is Associated with Widespread Morphological and Topological Differences in the Adolescent Brain

Catherine Stamoulis[1,2], Matthew Risner[2]; [1]Harvard Medical School, [2]Boston Children's Hospital

Topic Area: EMOTION & SOCIAL: Development & aging

D13 - Age and Valence Shape the Encoding, Retrieval, and Recapitulation of Emotional Memories in the Brain

Leonard Faul[1] (leonard.faul@bc.edu), Lauren K. Voso[1], Hannah R. Piccirilli[1], Ryan G. Monkman[1], Brianna D. Lenza[1], Elizabeth A. Kensinger[1]; [1]Boston College

Topic Area: EMOTION & SOCIAL: Development & aging

D14 - Mindfulness meditation with neurofeedback in older adults experiencing loneliness: a pilot randomised controlled study

Eugenie Roudaia[1] (eroudaia@research.baycrest.org), Nicole D. Anderson[1,2], Malcolm Binns[1,2], Morris Freedman[1], Nasreen Khatri[1], Linda Mah[1,2], Gibbs Jr Ollivierre[1,3], Helena Teng[1], Konka Paul[1], Allison B. Sekuler[1,2,3]; [1]Rotman Research Institute, Baycrest, [2]University of Toronto, [3]McMaster University

Topic Area: EMOTION & SOCIAL: Development & aging

D15 - Social media addiction impacts resting spontaneous cortical activity and relates to transdiagnostic mental health symptoms in adolescence

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Topic Area: EMOTION & SOCIAL: Development & aging

D16 - Neurodevelopment of the frontoparietal network underlying social interactions in common marmosets

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Topic Area: EMOTION & SOCIAL: Development & aging

D17 - Screen time and sleep in autistic children and adolescents

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Topic Area: EMOTION & SOCIAL: Development & aging

D18 - Evaluating the impact of valproic acid and valpromide on histone acetylation and the development of ASD-like traits in zebrafish models

Haven Henry[1], Dr. Denise Flaherty[1]; [1]Eckerd College

Topic Area: EMOTION & SOCIAL: Development & aging

D19 - Early Life Threat Exposure Moderates Subcortical Functional Connectivity during Emotion Processing and Psychopathology Symptoms in Adolescents

Sophia Martin[1] (smart48@emory.edu), Philip A. Kragel[1], Alexandra O. Cohen[1]; [1]Emory University

Topic Area: EMOTION & SOCIAL: Development & aging

D20 - Distraction-related Disruption of Ruminative Thoughts

Natalie M. Nielsen[1] (natalie.nielsen@donders.ru.nl), Karolina Figa[2], Ruben van den Bosch[1,2], Guusje Collin[1], Roshan Cools[1]; [1]Radboud University Medical Centre, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, Netherlands, [2]Radboud University, Nijmegen, Netherlands

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D21 - Emotion regulation generation: Creativity and depression predict strategy choice, diversity, and fluency

Lucas Bellaiche[1] (lucas.bellaiche@duke.edu), Leonard Faul[2], Kayla Lihardo[1], Catherine Flanagan[1], Kevin S. LaBar[1]; [1]Duke University, [2]Boston College

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D22 - VR-fMRI reveals greater amygdala activity and fear responses with 3D compared to 2D presentation of fearful movies

Misako Fujino[1,2] (fujino766@gmail.com), Atsushi Wada[2,1], Masahiko Haruno[2,1]; [1]Graduate School of Frontier Biosciences, Osaka University, [2]National Institute of Information and Communications Technology

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D23 - Emotion behind Narratives: How do adolescents perceive emotion during fiction reading? An EEG study.

Panlin Lee[1] (panlin6363@gmail.com), Wen Jui Kuo[1]; [1]National Yang Ming Chiao Tung University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D24 - The impact of affect prediction errors on episodic memory

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Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D25 - Stepping Into VR: Embodied sense of presence in a virtual environment mediates physiological and behavioral indices of fear

William R. Lopez[1] (w.lopez26@ncf.edu), Christian Daloul[1], Emma Leigh D. Cunningham[1], Cassidy F. Brand[1], Peter F. Cook[1]; [1]New College of Florida

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D26 - Affective Framing of Information Influences Engagement, Donations, and Memory

Alyssa Sinclair[1] (sinclair.allie@gmail.com), Danielle Cosme[1], José Carreras-Tartak[1], Emily Falk[1]; [1]University of Pennsylvania

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D27 - Assessing Traumatic Brain Injury and its Impacts on Emotional Memory in Older Veterans

Heera Kamaraj[1,2] (hkamaraj@bu.edu), Kathy Xie[1,2], Yasemin Yilmaz[1,2], Brenna Hagan[1,2], Emily Waksow[1,2], Andrew E. Budson[1,2], Katherine W. Turk[1,2]; [1]Center for Translational Cognitive Neuroscience, VA Boston Healthcare System, Boston, MA 02130,

USA, [2]Alzheimer's Disease Research Center, Department of Neurology, Boston University School of Medicine, Boston, MA 02118, USA

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D28 - The role of hyperpolarization-activated cation channel 1 in PTSD-like phenotypes induced by single prolonged stress with post-corticosterone treatment

Chung Sub Kim[1] (ckim5@augusta.edu), Jiwon Kim[1]; [1]Augusta University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D29 - Electrophysiology Correlates of Face Recognition in a Population of Individuals with Early Course Psychosis

Prachi Patel[1] (ppatel44@bidmc.harvard.edu), Nicolas Raymond[1], Emma Oss[1], Willa Molho[1], Brendan Stiltner[1], Chelsea Kiely[1], Paulo Lizano[1,2], Rebekah Trotti[1,2]; [1]Beth Israel Deaconess Medical Center, [2]Harvard Medical School

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D30 - Lower perceived stress enhances neural synchrony to naturalistic stimuli in attention and emotion regions

Joshua Craig[1] (joshua.craig@uleth.ca), Keva Klamer[1], Christina Haines[1], KiAnna Sullivan[1], Peter Seres[2], Chelsea Ekstrand[1]; [1]University of Lethbridge, [2]University of Alberta

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D31 - Differential fMRI neural synchrony associated with migraine during emotionally arousing naturalistic stimuli

Keva Klamer[1] (klamer@uleth.ca), Joshua Craig[1], Christina Haines[1], KiAnna Sullivan[1], Peter Seres[2], Chelsea Ekstrand[1]; [1]University of Lethbridge, [2]University of Alberta

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D32 - Identification of four dialogue modes in daily conversations and their neural responses: an fMRI study

Yin May Zin Han[1] (yin.may.zin.han.q3@dc.tohoku.ac.jp), Yichuan Huang[1], Sachihiro Shirahama[1], Ayumi Takemoto[2], Hyeonjeong Jeong[2], Motoaki Sugiura[2]; [1]Tohoku University, [2]Institute of Development, Aging and Cancer, Tohoku University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D33 - How Emotional Regulation Contributes to Tsunami Evacuation: An fMRI Study

Masato Takubo[1,2] (takubo.masato.s4@dc.tohoku.ac.jp), Ryo Ishibashi[3], Naoki Miura[4], Azumi Tanabe-Ishibashi[2,5], Motoaki Sugiura[2,5]; [1]School of Medicine, Tohoku University, [2]Institute of Development, Aging and Cancer, Tohoku University, [3]Center for Information and Neural Networks, National Institute of Information and Communications Technology, [4]Faculty of Engineering, Tohoku Institute of Technology, [5]International Research Institute of Disaster Science, Tohoku University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D34 - The Montreal Cognitive Assessment of Middle Aged and Older Aged Adults with Bipolar Disorder

Melissa Harris[1], Hannah Edelstein, Sheri Ryoko Hiroi, Rebecca Marks[1], Hannah Poeng[1], Susan Quatrano[1], Noa Katz Shroitman[1], Brian Pittman[1], George S. Alexopoulos[1], Christopher van Dyck[2], Hilary P. Blumberg[1]; [1]Department of Psychiatry, Yale School of Medicine, New Haven, CT, USA, [2]Department of Psychiatry, Weill Cornell Medical College, New York, NY, USA

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D35 - Psychological Risk Factors Associated with Objective and Subjective Pre-treatment Cancer-Related Cognitive Impairment: A Systematic Review

Aideen Scriney[1], Lorna Gurren[1], Lisa Loughney[2], Pamela Gallagher[1], Lorraine Boran[1]; [1]Dublin City University, [2]Royal College of Surgeons in Ireland

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D36 - Examining Fear Conditioning/Extinction and the Role of the Amygdala Using High Resolution Neuroimaging

Olivia Cook[1], Karisa Hunt[1], Brendan Depue[1]; [1]University of Louisville

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D37 - The Effects of Verbal Instructions on Fear Extinction and Extinction Retrieval in Patients with Anxiety Disorders and Healthy Controls

Armin Zlomuzica[1] (armin.zlomuzica@rub.de), Annalisa Lipp[1], Christian Merz[1], Beray Macit[1], Marcella Woud[2], Oliver Wolf[1], Jürgen Margraf[1]; [1]Ruhr University Bochum, [2]University of Göttingen

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D38 - Relationships between Curiosity and Eye Movement Indicators of Information Seeking in Adolescents

Cassandra Ivie[1] (ci2383a@american.edu), Sarah Wene[1], Elshadai Melkam[1], Sophia Stull[1], Emily Peterson[1]; [1]American University, Washington, D.C.

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D39 - Characteristics of the hemodynamic response during social exclusion in the Cyberball task.

John Foley[1] (john.foley@louisville.edu), Brendan Depue[1]; [1]University of Louisville

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D40 - Similarities and differences in alcohol consumption and neural responses to alcohol images in underaged and legal-aged college students

Madison Risner[1], Chloe Davis[1], Justice Corbett[1], Alex Garcia[1], Amelya Rivera[1], Idali Casas[1], Caydin Hazziez[1], Natalie Ceballos[1], Reiko Graham[1]; [1]Texas State University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D41 - Neural mechanisms of attentional bias toward social concepts in alexithymia

Shu-Hui Lee[1], Kuan-Te Lee[2], Yu-Ching Chen[3]; [1]National Tsing Hua University, [2]National Chengchi University, [3]National Taiwan University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D42 - Examining the Role of the Time Delay Between Acquisition and Extinction in Fear Extinction Mechanisms with Virtual Reality

Shreya Rajagopal[1] (shreyara@umich.edu), Shuhao Cao, Elizabeth Lockwood, Ananya Menon, Oreen Morag, Olivia Terry, Elizabeth Duval, Thad Polk; [1]University of Michigan

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D43 - Vocal Emotion Recognition in Cochlear Implant Users: An over-Reliance on Semantic Cues

Cassandra Neumann[1,2] (cassandra.neumann12@gmail.com), Jade Carrière[1,2], Mickael Deroche[1,2]; [1]Concordia University, [2]The Centre for Research on Brain, Language and Music – CRBLM

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D44 - Exposure to statistical regularities in music influences preference for novel melodies

Alberto Ara Romero[1], Marie-Eve Lisak[1], Neomi Singer[2], Josep Marco-Pallarés[3], Robert J. Zatorre[1]; [1]McGill University - MNI (Montreal, Canada), [2]Sagol Brain Institute (Tel Aviv, Israel), [3]University of Barcelona (Barcelona, Spain)

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D45 - Prefrontal fNIRS-based cortical activity patterns differ during negative emotional recall in young adults with complex PTSD

Prisha Goyal[1] (prishagoyal2@my.unt.edu), Anthony Ryals[1], Steph Camacho[1], Diana Towe[1]; [1]University of North Texas

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D46 - Behavioral and EEG investigations of inter-generational collaborative emotional memory

Marie Diagne[1], Leonard Faul[1], Ido Davidesco[1], Suparna Rajaram[2], Elizabeth Kensinger[1]; [1]Boston College, [2]Stony Brook University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D47 - Rejection Sensitivity and Cognitive Control: Evidence beyond social context

Rachel Gaynor[1], Bradley Buchanan[1], Sofia Laporte[1], Geoffrey Potts[1]; [1]University of South Florida

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D48 - Individual Differences in Sleep Quality Shape the Strength of Vividness-Related Neural Signaling During Emotional Memory Retrieval

Lauren K. Voso[1] (vosol@bc.edu), Leonard Faul[1], Hannah R. Piccirilli[1], Elizabeth A. Kensinger[1]; [1]Boston College

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D49 - Decreased Connectivity between Anterior Cingulate Cortex & Right Inferior Parietal Lobule May Predict Reduced Suicidal Ideation in TMS Patients

Hia Ghosh[1], Samadrita Chowdhury[1], Kevin Tristan Donaldson[1], Megan O'Connor[1], Olivia Newman[1], Shane Walsh[1], Tracy Barbour[1], Kristen Ellard[1], Lipeng Neng[1], Joan Camprodon[1]; [1]Department of Psychiatry, Massachusetts General Hospital

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D50 - Cognitive reappraisal influences the organization of emotional episodes in memory

Bailey Harris[1] (baileybharris@ucla.edu), Mason McClay[1], David Clewett[1]; [1]University of California, Los Angeles

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D51 - Naturalistic movie-viewing paradigms reveal distinct patterns of cognitive-linguistic processing across clinical populations

Manuel Marte[1] (mjmarte@bu.edu), Bryce Gillis[2], Rowan Faris[3], Colin Galvin[4], Laura Rigolo[5], Yanmei Tie[6], Swathi Kiran[7], Einat Liebenthal[8]; [1]Center for Brain Recovery, Boston University, [2]Institute for Technology in Psychiatry, McLean Hospital, Harvard Medical School, [3]Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D52 - Neural synchrony during movie-watching predicts mixed feelings

Rishab S Iyer[1,2] (rsiyer@princeton.edu), Anthony G Vaccaro[2], Helen Wu[2], Shruti Shakthivel[2], Jonas T Kaplan[2]; [1]Princeton University, [2]University of Southern California

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D53 - Effects of aging and valence on emotional response inhibition: Conclusions from a novel stop-signal task

Jill D. Waring[1] (jill.waring@health.slu.edu), Stephanie N. Hartling[1]; [1]Saint Louis University

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D54 - Eudaimonic and Hedonic Rewards Differentially Modulate Neural Engagement During Stressful Cognitive Task Performance

Yi-Fan Fu[1] (r10454013@ntu.edu.tw), Jie-Rong Lin[1], Joshua Oon Soo Goh[1]; [1]National Taiwan University, Taipei, Taiwan

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D55 - Cognition in Flexibility is Associated with Elevated Salience Network Activation During Emotion Regulation in Depression

Archita Tharanipathy[1], Desiree Webb[1], Sarah Zapetis[1], Ellie Xu[1], Jiani Li[1], Margarid Turnamian[1], Xinyan Tao[1], Emily Givens[1], Jonathan Stange[1]; [1]University of Southern California

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D56 - Emotional Congruence of Musical Primes and Target Words Between and Within Valence: An N400 Study

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Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D57 - Neural correlates of anxiety and perfectionism during reinforcement learning under imperative vs. interrogative motivation

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Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D58 - The interplay between temporal memory coding and affect dynamics

Mengsi Li[1] (mengsili@ucsb.edu), Barry Giesbrecht, Regina C Lapate; [1]University of California, Santa Barbara

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D59 - Distinct and Shared Neural Mechanisms Underlying Dark Triad Traits During Facial Emotion Identification

Roshni Lulla[1] (lulla@usc.edu), Jonas T Kaplan[1]; [1]Brain & Creativity Institute, University of Southern California

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D60 - The impact of the complexity of the experimental design on the ability to detect individual differences in fear learning

David Johnson[1,2] (davejohnson7@mac.com), Evelyn Arpi[1], Alexandra Tannenbaum[1]; [1]York College (CUNY), [2]The Graduate Center (CUNY)

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D61 - The Role of the Left DLPFC and VLPFC in Positive and Negative Emotional Memory: An rTMS Study

Sandry M Garcia[1], Preston Thakral[2], Elizabeth A Kensinger[1]; [1]Boston College, [2]Smith College

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D62 - The Impact of Placebo Cues and Transcranial Direct Current Stimulation on Pain Sensation

Amin Dehghani[1] (amin.dehghani@dartmouth.edu), David Gantz[1], Tor Wager[1]; [1]Dartmouth College

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D63 - The Impact of Affect and Age on Facial Expression Predictions

Eva Cortés Velasco[1], Lorena Chanes[1]; [1]Universitat Autònoma de Barcelona

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D64 - Neural Correlates of Intellectual Pleasure - Perception and Appreciation of Creative Street Art

Aleksandra Domagalik[1,2] (aleksandra.domagalik@uj.edu.pl), Patrycja Scislewska[3,4], Halszka Oginska[2]; [1]Centre for Brain Research, Jagiellonian University, Kraków, Poland, [2]Department of Cognitive Neuroscience and Neuroergonomics, Institute of Applied Psychology, Jagiellonian University, Kraków, Poland, [3]Department of Animal Physiology, Institute of Experimental Zoology, University of Warsaw, Poland, [4]Laboratory of Emotions Neurobiology, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Poland

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

D65 - Amygdala subnuclei in processing of approaching in/outgroup others in 360 videos

Iiro Jaaskelainen[1] (iiro.jaaskelainen@aalto.fi), Gloria Mendoza Franco[1], Olli Tammilehto[1], Ville Harjunen[2], Niklas Ravaja[2], Matilde Tassinari[2], Inga Jasinskaja-Lahti[2]; [1]Aalto University, Espoo, Finland, [2]University of Helsinki, Helsinki, Finland

Topic Area: EMOTION & SOCIAL: Emotional responding

D66 - Neurophysiological correlates of awe

Lorenzo Pasquini[1] (lorenzo.pasquini@ucsf.edu), Joseph Chen[2], Gabriella Mace[3], Avery Ostrand[4], Christian Valtierra[5], Sydney Griffith[6], Danny Brown[7], Luca Mazzucato[8], Nicole Swann[9], Xin Hu[10],

Christopher Timmermann[11], Theodore Zanto[12], David Ziegler[13], Adam Gazzaley[14]; [1]University of California San Francisco, [2]University of Oregon, [3]University of Pittsburgh, [4]Imperial College London

Topic Area: EMOTION & SOCIAL: Emotional responding

D67 - Whole brain decoding of common and type-specific positive affect

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Topic Area: EMOTION & SOCIAL: Emotional responding

D68 - The association between physiological arousal and sleep EEG microstructure in young adulthood and middle age

Xinran Niu[1] (xniu2@nd.edu), Kristin Sanders[1], Elizabeth Kensinger[2], Jessica Payne[1]; [1]University of Notre Dame, [2]Boston College

Topic Area: EMOTION & SOCIAL: Emotional responding

D69 - ERP and behavioral responses to social touch among autistic and non-autistic young adults

David Anaki[1] (david.anaki@biu.ac.il), Meyrav Gaziel-Gutman[1], Nira Mashal[1]; [1]Bar-Ilan University

Topic Area: EMOTION & SOCIAL: Emotional responding

D70 - FC between the cingulate cortex and amygdala during an attention to threat task as a predictor of increased self-reported anxiety in teenagers

David Garnica[1,2] (dga@email.unc.edu), Camila Vallebona[1,2], Ani Bryce[1], Idil Baran[1], Joshua Bizzel[1], Cope Feurer[1], Ty Ridenour[3,4,5], Diana Fishbein[6], Jessica R. Cohen[2], Aysenil Belger[1]; [1]Department of Psychiatry, University of North Carolina at Chapel Hill, USA, [2]Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill, USA, [3]RTI International, Research Triangle Park, North Carolina, USA, [4]Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, USA, [5]Center for Education and Drug Abuse Research, University of Pittsburgh, USA, [6]Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill, USA

Topic Area: EMOTION & SOCIAL: Emotional responding

D71 - EMOTIONAL PROCESSING IN COLDHEARTED FEMALES: AN ERP PSYCHOPATHY STUDY

Ingrid Lopez[1] (ingridglopezz@gmail.com), Yuhan Sun[1], Valerie Vengerov[1], Jill Grose-Fifer[1,2]; [1]John Jay College, CUNY, [2]The Graduate Center, CUNY

Topic Area: EMOTION & SOCIAL: Emotional responding

D72 - Revisiting Defensive Motivation and the Error-Related Negativity: A Multi-Site Replication Study

Amy Bland[1] (a.bland@mmu.ac.uk); [1]Manchester Metropolitan University

Topic Area: EMOTION & SOCIAL: Emotional responding

D73 - Resilience through regulation?: Inhibitory control and early-life socioeconomic context shape neural responses to ostracism

Minwoo Lee[1] (dl858@cornell.edu), Marlen Z. Gonzalez[1]; [1]Cornell University

Topic Area: EMOTION & SOCIAL: Emotional responding

D74 - Investigating the Effects of tDCS on Autonomic Arousal in Major Depression: Insights from Electrodermal Activity

Alexa Gorman[1] (alexamgorman@gmail.com), Alexandra E. Kelly[1], Evangelia G. Chrysikou[1]; [1]Drexel University

Topic Area: EMOTION & SOCIAL: Emotional responding

D75 - Resting Parasympathetic Activity Moderates Loneliness-Related Approach Behaviors Across Populations

Mary S. Mousa[1], Anita Restrepo[2], Emily Silver[2], Alexander C. Henoch[1], Kelly E. Faig[3], Karen E. Smith[1]; [1]Rutgers University-Newark, [2]University of Chicago, [3]Hamilton College

Topic Area: EMOTION & SOCIAL: Emotional responding

D76 - The Effect of Acetaminophen on Cognitive and Emotional Pain Empathy

Casey Vojcek[1] (cvojcek@usca.edu), Tyler Robbins[1], Brittany Wrisley[2], Brittany Jones[3], Laura Jelson-Swain[4]; [1]USCA

Topic Area: EMOTION & SOCIAL: Emotional responding

D77 - Dynamic emotional states captured by a novel mobile tool relate to affective disorder symptoms and memory organization

Mason McClay[1] (masongmcclay@g.ucla.edu), Jiayang Li[1], Matthew Sachs[2], Christina Sandman[1], David Clewett[1]; [1]UCLA, [2]Columbia University

Topic Area: EMOTION & SOCIAL: Emotional responding

D78 - Embarrassment as a Model for Socio-Affective Prediction Error—A Pilot Study

Nicole Serino[1] (tut38747@temple.edu), Linda J. Hoffman[1], Lily Prendergast[1], Steven Martinez[1], Maya Kilcullen[1], Johanna Jarcho[1], Vishnu Murty[2], Ingrid R. Olson[1]; [1]Temple University, [2]University of Oregon

Topic Area: EMOTION & SOCIAL: Emotional responding

D79 - Interaction Between Age of First Interpersonal Violence Exposure on Emotion Processing and Neural Network Activation

Paige Broski[1], Luna Malloy[1], Hamza Suhail[1], Ali Arain[1], Elizabeth A. Bauer[1], John Leri[1], Josh Cisler[1]; [1]University of Texas at Austin Dell

Medical School

Topic Area: EMOTION & SOCIAL: Emotional responding

D80 - Impact of Clinical Complexity on Fear Prediction and Face Recognition in Emotional Processing

Hamza Suhail[1], Ali Arain[1], Paige Broski[1], Luna Malloy[1], Elizabeth A. Bauer[1], John Leri[1], Josh Cisler[1]; [1]The University of Texas at Austin Dell Medical School

Topic Area: EMOTION & SOCIAL: Emotional responding

D81 - Linking Individual Differences in Emotion Regulation to Neural Engagement in Fear Predictions and Face Processing

Ali Arain[1], Elizabeth A. Bauer[1], Paige Broski[1], Hamza Suhail[1], John Leri[1], Luna Malloy[1], Kierra Morris[1], Josh Cisler[1]; [1]University of Texas Dell Medical School

Topic Area: EMOTION & SOCIAL: Emotional responding

D82 - Neural architecture of moral reasoning in the human brain

Jinglu Chen[1,2] (jinche@utu.fi), Severi Santavirta[1,2], Vesa Putkinen[1,2,3], Paulo Boggio[4,5], Lauri Nummenmaa[1,2,6]; [1]Turku PET Centre, Turku University Hospital and University of Turku, Turku, Finland, [2]Turku University Hospital, Turku, Finland, [3]Turku Institute for Advanced Studies, University of Turku, Finland, [4]Social and Cognitive Neuroscience Laboratory, Mackenzie Presbyterian University, São Paulo, Brazil, [5]National Institute of Science and Technology on Social and Affective Neuroscience (INCT-SANI), São Paulo, Brazil, [6]Department of Psychology, University of Turku, Turku, Finland

Topic Area: EMOTION & SOCIAL: Other

D83 - Exploring dimensional neural and behavioral predictors of global functioning in psychosis: A structural equation modeling analysis

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Topic Area: EMOTION & SOCIAL: Other

D84 - Delta-frequency EEG synchrony tracks shared audience engagement with live dance performances.

Laura Rai[1] (laura.rai@ucl.ac.uk), Haeeun Lee[2], Emma Becke[3], Carlos Trenado[3], Sonia Abad-Hernando[2], Matthias Sperling[4,5], Diego Vidaurre[6], Melanie Wald-Fuhrmann[3], Daniel C Richardson[7], Jamie A Ward[8], Guido Orgs[1,2,3]; [1]Institute of Cognitive Neuroscience, University College London, Alexandra House, 17 Queen Square, London, UK, [2]Department of Psychology, Goldsmiths, University of London, Lewisham Way, New Cross, London, UK, [3]Department of Music, Max Planck Institute for Empirical Aesthetics, Frankfurt am Main, Germany, [4]Independent Artist & Choreographer, London, UK, [5]Siobhan Davies Studios, 85 St George's Rd, SE1 6ER London, UK, [6]Department of Clinical Medicine - Center of Functionally Integrative Neuroscience, Aarhus University, Denmark, [7]Department of Experimental Psychology, University College London, [8]Department of Computing, Goldsmiths, University of London, Lewisham Way, New Cross, London, UK

Topic Area: EMOTION & SOCIAL: Other

D85 - BEHAVIORAL AND NEURAL CORRELATES OF INTERPERSONAL MOTOR COORDINATION: A HYPERSCANNING-EEG STUDY IN MILITARY PERSONNEL

Nicolas Bourguignon[1], Nicolas Coucke[2], Salvatore Lo Bue[3], Emilie Caspar[4]; [1]Royal Military Academy of Belgium (1,3), [2]Ghent University (2,4)

Topic Area: EMOTION & SOCIAL: Other

D86 - Semantic Space Organization of Fifteen Emotional States Decoded from Task fMRI Data

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Topic Area: EMOTION & SOCIAL: Other

D87 - Decoding of arousal and valence from fMRI data obtained during emotion inductions.

Joel White[1] (jsw82@duke.edu), Yaohui Ding[1], Nathan Muncy[2], John Graner[1], Leonard Faul[3], Kevin LaBar[1]; [1]Duke University, [2]University of Nebraska-Lincoln, [3]Boston College

Topic Area: EMOTION & SOCIAL: Other

D88 - Behavioral correlates of honesty and deception

Andrew Kayser[1,2,3], Julia Bertolero[1,2], Sangil Lee[2], Jan Peters[4], Ming Hsu[2]; [1]UC San Francisco, [2]UC Berkeley, [3]San Francisco VA Health Care System, [4]University of Cologne

Topic Area: EMOTION & SOCIAL: Other

D89 - Comparing event-related potentials and frontal midline theta to motivationally relevant stimuli as markers of approach and avoidance tendencies.

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Topic Area: EMOTION & SOCIAL: Other

D90 - Exploring the neural mechanisms of preference for sad music

Momoyo Tsuchiya[1] (tsuchiya.momoyo.t2@dc.tohoku.ac.jp), Ayumi Takemoto[1], Jeyoon Choi[1], Motoaki Sugiura[1]; [1]Tohoku University,

Japan

Topic Area: EMOTION & SOCIAL: Other

D91 - Structural codependence between deep brain nuclei and sensorimotor cortical regions differs between people with depression and unaffected individuals

Siraj Lyons[1], Isak Beck[2], Brendan Depue[1]; [1]University of Louisville, [2]Arizona State University

Topic Area: EMOTION & SOCIAL: Other

D92 - Pupils, Hotties and Hormones: A Modern Replication of the Hess Pupillary Reactivity Study.

Katie Cooke[1], Hannah Kershner[2], Carole Scherling PhD.[3]; [1]Belmont University, Department of Psychological Science and Neuroscience

Topic Area: EMOTION & SOCIAL: Other

D93 - Exploring Microglial Morphology and PFKFB3 Oxidative Stress in Depressive-like Behavior

Courtney M. Chochol[1] (courtney.chochol@quinnipiac.edu), Colleen D. Ford[1], Kezzia Jones[1], Courtney Whitelock[1], Adrienne J. Betz[1], Martine M. Mirrione[1]; [1]Quinnipiac University

Topic Area: EMOTION & SOCIAL: Other

D94 - Acute Stress Increases Functional Brain Network Integration

Chelsea C. Ajunwa[1] (ajunwa.c@northeastern.edu), Philip A. Kragel[2], Lawrence L. Wald[3,4], Marta Bianciardi[3,4], Tor D. Wager[5], Ji-Kyung Choi[6], Jiahe Zhang[1,4], Ajay B. Satpute[1,4], Karen S. Quigley[1], Lisa Feldman Barrett[1,4], Jordan Theriault[1,3]; [1]Northeastern University, [2]Emory University, [3]Martinos Center for Biomedical Imaging, Massachusetts General Hospital, [4]Massachusetts General Hospital and Harvard Medical School, [5]Dartmouth College, [6]University of California, San Francisco

Topic Area: EMOTION & SOCIAL: Other

D95 - Maternal Postpartum Resting-state Functional Connectivity Associated with Disrupted Mother-infant Interaction

Yingying Ye[1,2,3] (psyyeyingying@163.com), Kyoko Ohashi[2,3], Alaptagin Khan[2,3], Michelle Bosquet Enlow[2,4], Karlen Lyons-Ruth[2,5], Martin Teicher[2,3]; [1]Department of Psychology and Behavioral Sciences, Zhejiang University, Hangzhou 310058, China, [2]Department of Psychiatry, Harvard Medical School, Boston, Massachusetts, USA, [3]Developmental Biopsychiatry Research Program, McLean Hospital, Belmont, Massachusetts, USA, [4]Department of Psychiatry and Behavioral Sciences, Boston Children's Hospital, Boston, Massachusetts, USA, [5]The Family Studies Laboratory, Cambridge Hospital, Cambridge, Massachusetts, USA

Topic Area: EMOTION & SOCIAL: Other

D96 - Photobiomodulation therapy-induced volumetric brain changes on patients with depression

Puneet Velidi[1,2] (pvelidi@uvic.ca), Guillermo Gonzalez-Garibay[1,2], Carlos Lohmann[1,2], Borja Ferreras[1,2], Fabio Luchese[1,2], Akila Weerasekera[1,2], Stefani Kalli[1,2], Paolo Cassano[1,2]; [1]Massachusetts General Hospital, [2]Harvard Medical School

Topic Area: EMOTION & SOCIAL: Other

D97 - Examining Asymmetric Amygdala Activity in Adolescents with Anxiety Using fMRI

Ava Moore[1] (amoore86@fordham.edu), Amy Roy, Tracy Dennis-Tiwary; [1]Fordham Univeristy, [2]CUNY Hunter College

Topic Area: EMOTION & SOCIAL: Other

D98 - Cognitive-Affective Variability in TMS for Depression: Investigating Anxiety Exacerbation as a Treatment Outcome

Morgan Healey[1], Lamaan Haq[1], Joshua Brown[1,2]; [1]Division of Depression and Anxiety Disorders, McLean Hospital, [2]Department of Psychiatry, Harvard Medical School

Topic Area: EMOTION & SOCIAL: Other

D99 - Toward first-person social perception: actively engaging in an interaction boosts sensitivity to social information

Qi Liang[1] (qi.liang@dartmouth.edu), Zishan Su[1], Rekha Varrier[1,2], Eshin Jolly[1,3], Emily Finn[1]; [1]Dartmouth College, [2]University of Bonn, [3]University of California San Diego

Topic Area: EMOTION & SOCIAL: Other

D100 - Exploring the Role of Emotion Intensity and Context on Face Emotion Recognition

Yuanyi Peng[1], Alex Kafkas[1], Karen Lander[1]; [1]University of Manchester

Topic Area: EMOTION & SOCIAL: Person perception

D101 - Human-like social and emotional perception with GPT-4V

Severi Santavirta[1,2] (svtsan@utu.fi), Yuhang Wu[1,3], Lauri Suominen[1], Lauri Nummenmaa[1,2,4]; [1]Turku PET Centre, University of Turku, Turku, Finland, [2]Turku University Hospital, Turku, Finland, [3]Department of Psychology, Renmin University of China, Beijing, China, [4]Department of Psychology, University of Turku, Turku, Finland

Topic Area: EMOTION & SOCIAL: Person perception

D102 - Neural Processing of Dynamic Facial Emotion in Early Course Psychosis

Rebekah Trotti[1,2] (rtrotti@bidmc.harvard.edu), Nicolas Raymond[1], Prachi Patel[1], Emma Oss[1], Daphne Ying[1], Brendan Stiltner[1], Paulo Lizano[1,2]; [1]Beth Israel Deaconess Medical Center, [2]Harvard Medical School

Topic Area: EMOTION & SOCIAL: Person perception

D103 - Understanding Empathy Toward Dissimilar Others in Daily Social Contexts

Rui Watanabe[1,2], Hironobu Kuruma[2]; [1]Turku PET Centre/ University of Turku, [2]Tokyo Metropolitan University

Topic Area: EMOTION & SOCIAL: Person perception

D104 - Common and distinct neural correlates of social interaction perception and theory of mind

Zizhuang Miao[1] (zizhuang.miao.gr@dartmouth.edu), Heejung Jung[1], Philip A. Kragel[2], Patrick Sadil[3], Martin A. Lindquist[3], Tor D. Wager[1]; [1]Dartmouth College, [2]Emory University, [3]Johns Hopkins University

Topic Area: EMOTION & SOCIAL: Person perception

D105 - The Influence of Social Exclusion on Perceptions of Facial Trustworthiness

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Topic Area: EMOTION & SOCIAL: Person perception

D106 - Neural Mechanism for Preference/Unpreference Perception of Virtual Avatar Appearance in Human-Computer Communication

Ayumi Takemoto[1] (ayutakemo@gmail.com), Motoaki Sugiura[1]; [1]Tohoku University

Topic Area: EMOTION & SOCIAL: Person perception

D107 - Hormonal Contraceptive Use Predicts Increased Salience Network Activity During Face Detection

Luna Malloy[1] (luna.malloy@austin.utexas.edu), Paige Broski[1], Hamza Suhail[1], Ali Arain[1], Elizabeth Bauer[1], John Leri[1], Josh Cisler[1]; [1]The University of Texas at Austin Dell Medical School

Topic Area: EMOTION & SOCIAL: Person perception

D108 - Brain activation during suicide specific cognition: Insights from the S-IAT in Post-9/11 Veterans

Audreyana Jagger-Rickels[1,2,3,43], (acrickel@bu.edu), Jaclyn Kearns[1,2,4], Travis Evans[3], David Rothlein[1,2,3,4,5], Craig Bryan[6], William Millberg[7,8,9], Catherine Fortier[7,8,9], Joe DeGutis[1,3,7,8], Michael Esterman[1,2,3,4,5,7]; [1]VA Boston Healthcare System, [2]National Center for PTSD, [3]Boston Attention and Learning Lab, [4]Boston University Chobanian and Avedisian School of Medicine, [5]Neuroimaging Research for Veterans, [6]Ohio State University, [7]Translational Research Center for TBI and Stress Disorders, [8]Harvard Medical School, [9]Geriatric Research, Education, and Clinical Center

Topic Area: EMOTION & SOCIAL: Self perception

D109 - Self-Referential Processing Biases in Help-Seeking Youth with Internalizing Problems: Preliminary Insights from Baseline Data of the PRYME Study

Maud Schepers[1,2,3] (maud.schepers@donders.ru.nl), Paul Lagerweij[1,2,3], Marije Zwaneveld[1], Roshan Cools[1,3], Anne Speckens[2,3], Guusje Collin[1,2,3]; [1]Donders Institute for Brain, Cognition, and Behavior, Radboud University, Nijmegen, the Netherlands, [2]Expertise Center for Mindfulness, Department of Psychiatry, Radboud University Medical Center, Nijmegen, the Netherlands, [3]Department of Psychiatry, Radboud University Medical Center, Nijmegen, the Netherlands

Topic Area: EMOTION & SOCIAL: Self perception

D110 - Within-individual neural patterns differ for memories of self- and other-generated interpretations of the same stimuli

Clara Sava-Segal[1], Tory Benson[2], David Igbalajobi[1], Emily Finn[1]; [1]Dartmouth College, [2]Rutgers University

Topic Area: EMOTION & SOCIAL: Self perception

D111 - **Finding the Self in Other's Music: Self and Other** Representations in Prefrontal & Parietal Cortices During Music Listening

Nicholas Kathios[1] (kathios.n@northeastern.edu), Kelsie L. Lopez[1], Rebecca Hennessy[1], Quincy Dillard[1], Fahim Ahmed[2], Rishitha Kudaravalli[1], Juliet Y. Davidow[1], Laurel J. Gabard-Durnam[1], Psyche Loui[1]; [1]Northeastern University, [2]Harvard University

Topic Area: EMOTION & SOCIAL: Self perception

D112 - Beyond Self-Report: Direct Detection of Depressive Symptoms from Neural Activity

Apoorva Vallampati[1] (avalla01@tufts.edu), Victoria Sharpe[1], Arim Choi-Perrachione[1], Julia Klein[1], Maggie Wargo[1], Bethany Bracken[2], Spencer Lynn[2], Gina R. Kuperberg[1,3]; [1]Tufts University, Medford, MA, USA, [2]Charles River Analytics, Cambridge, MA, USA, [3]Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

Topic Area: EMOTION & SOCIAL: Self perception

D113 - Accelerating Sleep Onset with Wireless EEG Biofeedback

James Glazer[1], Ken A. Paller[1]; [1]Northwestern University

Topic Area: METHODS: Electrophysiology

D114 - Using EEG to Predict Dementia Risk and Cognitive Resilience in Elderly Patients Undergoing Surgery

Yessica Martínez Serrato[1] (y.martinez-serrato@bham.ac.uk), Thomas Jackson[1], Ali Mazaheri[1]; [1]The University of Birmingham

Topic Area: METHODS: Electrophysiology

D115 - Screening for amyloid positivity in patients with mild cognitive impairment using an electroencephalography-driven functional network

Hayom Kim[1,2] (happyhy3@gmail.com), Jung Bin Kim[1,2]; [1]Korea University College of Medicine, [2]Korea University Anam Hospital

Topic Area: METHODS: Electrophysiology

D116 - Examining resting state EEG reliability between laboratory and clinical settings

Erin S.M. Matsuba[1] (erin.matsuba@childrens.harvard.edu), Alex Job Said[1], Margaret Norberg[1], Charles A. Nelson[1], Carol L. Wilkinson[1]; [1]Boston Children's Hospital

Topic Area: METHODS: Electrophysiology

D117 - Prediction of Critical Speech Sites in Glioma-Infiltrated Cortex using Intraoperative, Resting State Electrophysiologic Biomarkers

Vardhaan Ambati[1], Sanjeev Herr[1], Jasleen Kaur[1], Paul Villalobos[1], Emily Cunningham[2], Youssef Sibih[1], Sena Oten[1], Alexander Aabedi[1], David Brang[2], Shawn Hervey-Jumper[1]; [1]University of California, San Francisco, [2]University of Michigan

Topic Area: METHODS: Electrophysiology

D118 - Brain Magnetic Resonance Imaging (MRI) Findings Among Patients Presenting with Neurological Symptoms at a Nigerian Tertiary Health Care Facility

Kenneth Chiedozie Oparaji[1] (chiedozieoparaji@gmail.com), Darlington-Peter C. Ugoji[2], Victor U. Chukwu[2], Miracle N. Okoche[1], Chibuike G. Okereke[1], Henry C. Ibere[1], Victory E. Onyenagbagha[1], Yadirichukwu J. Nwani[1]; [1]Alex Ekwueme Federal University Ndufu-Alike Ikwo (AE-FUNAI), [2]David Umahi Federal University Teaching Hospital (DUFUTH)

Topic Area: METHODS: Neuroimaging

D119 - Between-movie variability severely limits generalizability **of "naturalistic" neuroimaging**

Simon Leipold[1], Rajat Ravi Rao[1], Jan-Mathijs Schoffelen[1], Sara Bögels[1], Ivan Toni[1]; [1]Donders Institute for Brain, Cognition, and Behaviour, Radboud University

Topic Area: METHODS: Neuroimaging

D120 - Functional connectivity changes associated with depression in dementia with Lewy bodies

Manon Querry[1] (m.querry@unistra.fr), Anne Botzung[2], Marion Sourty[1], Elena Chabran[1], Léa Sanna[2], Paulo Loureiro de Sousa[1], Benjamin Cretin[2], Catherine Demuynck[2], Candice Muller[2], Alix Ravier[2], Benoît Schorr[2], Nathalie Philippi[2], Frédéric Blanc[1]; [1]Icube Laboratory (CNRS, UMR 7357), IMIS team, [2]University Hospitals of Strasbourg, Research and Resources Memory Center

Topic Area: METHODS: Neuroimaging

D121 - Examining the role of phonological and semantic mechanisms during morphological processing of sentences in seven-year-old children

Marjolein Mues[1] (marjolein.mues@vanderbilt.edu), Avantika Mathur[1], James Booth[1]; [1]Vanderbilt University

Topic Area: METHODS: Neuroimaging

D123 - Improving Infant MRI Success Rates in HBCD Study Visits

Olivia Poolos[1], Emily K. Walsh[1], Vicky Acuna[1], Alberto Martínez-Hernández[1], Michelle Bosquet Enlow, PhD[1], P Ellen Grant, MD, MSc[1], Banu Ahtam, DPhil[1]; [1]Boston Children's Hospital

Topic Area: METHODS: Neuroimaging

D124 - Detection of language network during free speech using Optically Pumped Magnetometers (OPMs)

Josefina Weinerova[1], Ryan Hill[2], Roni Tibon[1]; [1]School of Psychology, University of Nottingham, [2]Sir Peter Mansfield Imaging Centre (SPMIC), University of Nottingham, United Kingdom

Topic Area: METHODS: Neuroimaging

D125 - Exploring the impact of pediatric acquired demyelinating syndrome in brain network connectivity and its influence on neurocognitive outcomes

Florencia Ontiveros[1], Whitney I. Mattson[1], Aaron McAllister[2], Kelsey Poisson[3], Camille S. Wilson[4], Eric E. Nelson[1,5]; [1]Center for Biobehavioral Health, Abigail Wexner Research Institute, Nationwide Children's Hospital, Columbus, OH, [2]Department of Radiology, Nationwide Children's Hospital, Columbus, OH, [3]Division of Neurology, Department of Pediatrics, Nationwide Children's Hospital, Columbus, OH, [4]Division of Pediatric Psychology and Neuropsychology, Nationwide Children's Hospital, Columbus, OH, [5]Department of Pediatrics, The Ohio State University College of Medicine, Columbus, OH

Topic Area: METHODS: Neuroimaging

D126 - Comparative Analysis of Input Devices for a Digitized Trail Making Task

Erin Lynch[1], Isabella* Frenzilli[1], Bailey Utiz[1], Emma Tinney[1], Tarkeshwar Singh[2], Timothy Morris[1], Mathew Yarossi[1]; [1]Northeastern University, [2]Pennsylvania State University*

Topic Area: METHODS: Neuroimaging

D127 - Bridging fMRI Segmentation and 3D Printing for Detailed Modeling of Brain Anomalies

Aryan Kodali[1], Jonathan Barta[1]; [1]University of North Carolina at Chapel Hill

Topic Area: METHODS: Neuroimaging

D128 - Hemispheric biases in automatic atlas-based cortical parcellations exaggerate surface area lateralization

Yinuo Liu[1], Ja Young Choi[2], Tyler K. Perrachione[1]; [1]Boston University, [2]Northwestern University

Topic Area: METHODS: Neuroimaging

D129 - Defining a Photophobia Connectome: Abnormal Visual and Pain Network Activity Associated with Light Sensitivity in a Multimorbid Veteran Sample

Caroline Carrozzini[1,2,3], Madeleine Nowak[2,3,4], Jennifer A. Gustafson[1,2,5,6,7], David H. Salat[2,3,7,8], Catherine B. Fortier[2,7], William P. Milberg[2,7], Francesca C. Fortenbaugh[1,2,3,6,7]; [1]Cognitive & Sensory Systems Laboratory (CASSL), VA Boston Healthcare System, [2]Translational Research Center for Traumatic Brain Injury and Stress Disorders (TRACTS), VA Boston Healthcare System, [3]Neuroimaging Research for Veterans Center (NeRVe), VA Boston Healthcare System, [4]Department of Psychiatry, Boston University Chobanian & Avedisian School of Medicine , [5]Optometry Clinic, VA Boston Healthcare System, [6]New England College of Optometry , [7]Department of Psychiatry, Harvard Medical School, [8]Anthinoula A. Martinos Center for Biomedical Imaging

Topic Area: METHODS: Neuroimaging

D130 - Graph theory reveals electroconvulsive therapy-induced whole-brain network integration and subnetwork changes in major depression and suicidality

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Topic Area: METHODS: Neuroimaging

D131 - New Biomarkers Predict Post-stroke Behavioral Recovery

Emily Long[1] (elong@bu.edu), Rockwell Tang[1], Gülce Küreli[1], Evren Erdener[1,2], Piergiulio Bressan[1], John Jiang[1], Shashwat Shah[1], John Giblin[1], Sreekanth Kura[1], David Boas[1]; [1]Neurophotonics Center, Boston University, Boston, Massachusetts 02215, USA, [2]Institute of Neurological Sciences and Psychiatry, Hacettepe University, Ankara 06230, Türkiye

Topic Area: METHODS: Neuroimaging

D132 - The Impact of Internal Attention on Learning from Online Lectures

Vishal Easwar[1] (easwarv@bc.edu), Ido Davidesco[1], Jason Geller[1], Sarah Gilmore[2]; [1]Boston College, [2]University of Connecticut

Topic Area: METHODS: Neuroimaging

D133 - Mapping the Neural Basis of Cotard Syndrome: Insights from Lesion Network Analysis

Mengyuan Ding[1,2] (jessy@neurospirituality.io), Morgan Healey[1], Yaser Sánchez Gama[1,2], Michael A. Ferguson[1,2]; [1]Neurospirituality Lab, Center for Brain Circuit Therapeutics, [2]Brigham and Women's Hospital, Harvard Medical School

Topic Area: METHODS: Neuroimaging

D134 - Assessing the Reliability of MRS Estimates of GABA and Glx

Silvia Abbasi[1] (silviaa@umich.edu), Esther Kim[1], Bingjie Liu[1], Noah Reardon[1], Kayla Wyatt[1], Thad A. Polk[1]; [1]University of Michigan

Topic Area: METHODS: Neuroimaging

D135 - The salience and frontoparietal networks in dementia with Lewy bodies: functional connectivity changes through disease progression

Vincent Gabriel[1] (vincent.gabriel125@gmail.com), Elena Chabran[1], Marion Sourty[1], Paulo Loureiro de Sousa[1], Anne Botzung[2], Olivier Bousiges[1], Frédéric Blanc[2]; [1]University of Strasbourg and CNRS, ICube Laboratory UMR-7357, IMIS Team, Strasbourg, France, [2]University Hospital of Strasbourg, CM2R, Geriatric Day Hospital and Neuropsychological Unit, Strasbourg, France

Topic Area: METHODS: Neuroimaging

D136 - BrainEffeX: A web app for exploring fMRI effect sizes

Hallee Shearer[1] (h.shearer@northeastern.edu), Matt Rosenblatt[2], Jean Ye[2], Rongtao Jiang[2], Link Tejavibulya[2], Qinghao Liang[2], Javid Dadashkarimi[3,6], Margaret Westwater[2], Iris Cheng[2], Alexandra Fischbach[1], Ashley Humphries[4], Aneesh Kumar[1], Max Rolison[2], Hannah Peterson[2], Brendan Adkinson[2], Saloni Mehta[2], Chris Camp[2], Thomas Nichols[5], Joshua Curtiss[1], Dustin Scheinost[2], Stephanie Noble[1]; [1]Northeastern University, [2]Yale University, [3]Massachusetts General Hospital, [4]University of Nebraska-Lincoln, [5]University of Oxford, [6]Harvard Medical School

Topic Area: METHODS: Neuroimaging

D137 - A Naturalistic Movie Functional Localizer is Equivalent to a Task Localizer of the Fusiform Face Area in Adolescents with and without Autism

Clara J Steeby[1] (clara.steeby@childrens.harvard.edu), Gillian N Miller[1], Alexander L Cohen[1,2]; [1]Boston Children's Hospital, [2]Harvard Medical School

Topic Area: METHODS: Neuroimaging

D138 - Targeting Region-Specific Cerebrospinal Fluid Noise to Enhance Subcortical Neural Estimates in fMRI

Alexandra Fischbach[1] (fischbach.a@northeastern.edu), Hallee Shearer[1], Ajay Satpute[1], Karen Quigley[1], Jordan Theriault[1], Lisa

Feldman Barrett[1], Stephanie Noble[1]; [1]Northeastern University

Topic Area: METHODS: Neuroimaging

D139 - flatsurfer: A flexible, open-source package for generating limbic-centered flat maps of the cerebral cortex

Joshua Paul Rodriguez[1] (rodriguezjoshuapaul@gmail.com), Chan H. Hong[1], Lisa Feldman Barrett[1,2], Karen S. Quigley[1], Bradford C. Dickerson[2,3], David C. Van Essen[4], Jordan E. Theriault[1,2], Yuta Katsumi[2,3*]; [1]Northeastern University, Boston, MA, USA, [2]Massachusetts General Hospital, Boston, MA, USA, [3]Harvard Medical School, Boston, MA, USA, [4]Washinton University in St. Louis, St. Louis, MO, USA*

Topic Area: METHODS: Neuroimaging

D140 - Functional neurobiological effects of electroconvulsive therapy versus transcranial magnetic stimulation in treatment resistant depression

Pedro Silva[1] (phdasilva@mgh.harvard.edu), Asif Jamil[1], Maia Gersten[1], Samadrita Chowdhury[1], Shane Walsh[1], Guillermo Garibay[1], Tracy Barbour[1], Joan Camprodon[1]; [1]Harvard Medical School and Massachusetts General Hospital

Topic Area: METHODS: Neuroimaging

D141 - Unveiling the cognitive relevance of functional connectivity through deconfounding

Michael Cole[1] (mwcole@mwcole.net), Kirsten Peterson, Lakshman Chakravarthula, Ravi Mill, Ruben Sanchez-Romero; [1]Rutgers University

Topic Area: METHODS: Neuroimaging

D142 - Towards Common Dynamic Connectivity Modes in Schizophrenia and Healthy Controls

David Blair[1] (dblair@gsu.edu), Krishna Pusuluri[1], Vince Calhoun[1]; [1]Georgia State University

Topic Area: METHODS: Neuroimaging

D143 - Topological Data Analysis of Pre- and Post-ECT Participant Data

Connor M. Harris[1,2], Shane W. Walsh[1,2], Samadrita Chowdhury[1,2], Joan A. Camprodon[1,2]; [1]Massachusetts General Hospital, [2]Harvard Medical School

Topic Area: METHODS: Neuroimaging

D144 - Precision Networks Exhibit High Temporal Stability over Longitudinal Periods

Hyejin J. Lee[1], Ally Dworetsky[2], Alexis Porter[3], Sihan Fei[3], Benjamin A. Seitzman[2], Babatunde Adeyemo[2], Jessica R. Cohen[4], Mark D'Esposito[5], Maital Neta[6], Steven E. Petersen[2], Caterina Gratton[1]; [1]University of Illinois Urbana-Champaign, [2]Washington University in Saint Louis, [3]Northwestern University, [4]University of North Carolina at Chapel Hill, [5]University of California Berkeley, [6]University of Nebraska-Lincoln

Topic Area: METHODS: Neuroimaging

D145 - Predicting brain responses from short movies: challenges and opportunities

Avery Van De Water[1] (avery-vandewater@uiowa.edu), Lisa Byrge[2], Dan Kennedy[3], Dorit Kliemann[1], James Traer[1]; [1]The University of Iowa, [2]University of North Florida, [3]Indiana University

Topic Area: METHODS: Neuroimaging

D146 - Greater amyloid accumulation in cognitive networks in **Preclinical Alzheimer's Disease**

Sara Nolin[1], Stephanie Aghamoosa[1], Averi Jones[1], Andreana Benitez[1]; [1]MUSC

Topic Area: METHODS: Neuroimaging

D147 - Using a machine learning classifier to estimate neural distinctiveness in EEG data

Noah Reardon[1], Erin Knape[1], Poortata Lalwani[2], David Brang[1], Molly Simmonite[1], Thad Polk[1]; [1]University of Michigan, [2]University of California, Irvine

Topic Area: METHODS: Neuroimaging

D148 - Relationship between Polygenetic Risk Score of BrainAge and plasma biomarkers in the A4/eLearn Study.

Jorge Garcia Condado[1,2,3], Colin Birkenbihl[3], Jesus M Cortes[1,4], Ibai Diez[1,4,5,6], Rachel F Buckley[3,7]; [1]Computational Neuroimaging Lab, Biobizkaia Health Research Institute, [2]Universidad del Pais Vasco (UPV/EHU), [3]Massachusetts General Hospital, Department of Neurology, [4]IKERBASQUE, [5]Gordon Center for Medical Imaging, Department of Radiology, [6]Athinoula A. Martinos Center for Biomedical Imaging, [7]Melbourne School of Psychological Sciences, University of Melbourne

Topic Area: METHODS: Neuroimaging

D149 - Variability in suprathreshold electric field simulations for transcranial magnetic stimulation treatments

Megan E. Chang[1] (mec4024@med.cornell.edu), Nicola Manfredi[1], Maximilian Lueckel[1], Megan Johnson[1], Jolin Chou[1], Claire A. Ho[1], Indira Summerville[1], Immanuel G. Elbau[1], Charles J. Lynch[1], Conor Liston[1]; [1]Weill Cornell Medicine

Topic Area: METHODS: Neuroimaging

D150 - Age and sex-related blood-brain barrier function differences in treatment-resistant depression and obsessive-compulsive disorder

Indira Summerville[1] (ins4004@med.cornell.edu), Claire Ho[1], Jolin Chou[1], Megan E. Chang[1], Megan Johnson[1], Nicola Manfredi[1], Hayley Seltzberg[1], Lindsay Victoria[1], Conor Liston[1], Eric Goldwaser[1]; [1]Weill Cornell Medicine

Topic Area: METHODS: Neuroimaging

D151 - Exploring Amygdalar Activity in Response to Symptom-Relevant Memories in Social Anxiety: A Neuroimaging Study

Sarab Anand[1] (sarab.anand@tufts.edu), Emma Laurent[2], Sophia Vranos[2], Abigail Beech[1], Jamie Greer[2], Emily Stekl[2], Abigail Sullivan[1], Megan Paterson[1], Nur Apkolat[1], Ramina Bebezova[1], Maria Perdomo[1], Connor Gibson[2], KemKem Ogbuefi[2], Gaston Aime[2], Jenn Segawa[2], Elizabeth Phelps[2], M. Alexandra Kredlow[1]; [1]Tufts University, [2]Harvard University

Topic Area: METHODS: Neuroimaging

D152 - Altered spatiotemporal connectivity patterns and diminished higher-**order information exchange in Parkinson's** patients with hyposmia

Sneha Ray[1] (sneha.ray@ucsf.edu), Navkiran Kalsi[2], Henning Boecker[3], Neeraj Upadhyay[3], Rajanikant Panda[1]; [1]University of California San Francisco, [2]O.P. Jindal Global University, [3]University of Bonn

Topic Area: METHODS: Neuroimaging

D153 - Scaling Laws in Functional Region of Interest (fROI) Analyses

Ruimin Gao[1] (rgao76@gatech.edu), Anna Ivanova[1]; [1]Georgia Institute of Technology

Topic Area: METHODS: Neuroimaging

D154 - Community Detection in Adults and Neonates

Nilanjan Chakraborty[1] (chakrabortyn@mst.edu), Ayoushman Bhattacharya[2], Jiaxin Tu[2], Donna Dierker[2], Soumen Lahiri[2], Adam Eggebrecht[2], Muriah Wheelock[2]; [1]Missouri University of Science and Technology, [2]Washington University in Saint Louis

Topic Area: METHODS: Neuroimaging

D155 - Individualized models connect nontrivial whole-brain dynamics across rest and task conditions

Ruiqi Chen[1] (chen.ruiqi@wustl.edu), Matthew Singh[2], Todd Braver[1], ShiNung Ching[1]; [1]Washington University in St. Louis, [2]University of Illinois Urbana-Champaign

Topic Area: METHODS: Neuroimaging

D156 - Nicotine Usage and Changes in Dopamine Physiology Explored Using fMRI Temporal Dynamics

Bhakti Patwardhan[1] (bhaktippat@gmail.com), Ian Ballard, Ioannis Pappas, Ann M. Kring, Ingrid R. Olson, Barbara A. Cohn, Piera M. Cirillo, Nickilou Y. Krigbaum, Thomas M. Olino, Mark D'Esposito, Raana A. Mohyee, Ashby B. Cogan, Lauren Weittenhiller, Lauren M. Ellman; [1]UCSF, [2]UC Riverside, [3]University of Southern California, [4]UC Berkeley, [5]Temple University, [6]Child Health and Development Studies, [7]Child Health and Development Studies, [8]Child Health and Development Studies, [9]Temple University, [10]UC Berkeley, [11]Temple University, [12]UC Berkeley, [13]UCLA, [14]Temple University

Topic Area: METHODS: Neuroimaging

D157 - Correlating the effect of the size and location of TBI induced lesions on the likelihood of developing epilepsy through functional connectivity mapping

Shivek Narang[1] (shivekn@sas.upenn.edu), James Gugger[2]; [1]University of Pennsylvania, [2]University of Rochester

Topic Area: METHODS: Neuroimaging

D158 - Behavioral and neural signatures of transient arousal from sleep during bilateral central lateral thalamic stimulation in humans

Taruna Yadav[1] (taruna.yadav@yale.edu), Zheng Zhang[1], Vaclav Kremen[2], Kristine Dacosta[1], Maxime Oriol[1], Devon Cormier[1], Christopher Benjamin[1], Kate Christison-Lagay[1], Eyiyemisi Damisah[1], Allyson Derry[1], Abhijeet Gummadavelli[1], Tyler Hamilton[1], Lawrence Hirsch[1], Patrice Lauture[1], Bogdan Patedakis Litvinov[1], Dennis Spencer[1], Kim Bailey[2], Karla Crockett[2], Starr Guzman[2], Vladimir Sladky[2], Delana Weis[2], Jennifer Hong[3], Krzystof Bujarski[3], Charlotte Jeffreys[3], Anastasia Kanishcheva[3], Grant G. Moncrief[3], Robert M. Roth[3], George P. Thomas[3], Jonathan Baker[4], Eun Young Choi[5], Jaimie Henderson[5], Matthew Hook[6], Irina Korytov[6], Kyle O'Sullivan[7], Brian Rutt[5], Joseph Giacino[8], Benjamin H. Brinkman[2], George Culler[3], Nicholas Gregg[2], Brian Lundstrom[2], Xi Chen[9], Jermaine Robertson[9], Charles Mikell[9], Sima Mofakham[9], Imran H. Quraishi[1], Joshua P. Aronson[3], Jason Gerrard[1], Jamie Van Gompel[2], Christopher R. Butson[6], Nicholas Schiff[4], Barbara Jobst[3], Gregory Worrell[2], Hal Blumenfeld[1]; [1]Yale School of Medicine, [2]Mayo Clinic, [3]Dartmouth-Hitchcock Medical Center, [4]Weill Cornell Medical School, [5]Stanford University Medical Center, [6]University of Florida, [7]University of Utah, [8]Harvard Medical School, [9]Stony Brook University

Topic Area: METHODS: Neuroimaging

D159 - "Action Understanding and Mu Suppression Between Athletes and Non-Athletes"

Nathan Vandegrift[1] (nathansv@usca.edu), Lucille Burns[1], Vincent Bush[1], Laura Jelsone-Swain[1]; [1]University of South Carolina-Aiken

Topic Area: PERCEPTION & ACTION: Multisensory

D160 - Task-Dependent Changes in Aperiodic Neural Activity Reveal Glioma Subtype and Cognitive Error Profiles

Youssef Sibih[1] (youssef.sibih@ucsf.edu), Niels Olshausen[1], Jasleen Kaur[1], Emily Cunningham[2], Sanjeev Herr[1], Vardhaan Ambati[1], Saritha Krishna[1], Alex Aabedi[1], Andy Daniel[1], David Brang[2], Shawn Hervey-Jumper[1]; [1]University of California, San Francisco, Department of Neurological Surgery, [2]University of Michigan, Department of Psychology

Topic Area: PERCEPTION & ACTION: Multisensory

Poster Session E

Monday, March 31, 2025, 2:30 – 4:30 pm, Back Bay Ballroom/Republic Ballroom

E1 - Crossmodal task and modality representations in the auditory cortex of deaf and hearing individuals

Velia Cardin[1] (velia.cardin@ucl.ac.uk), Konstantin Grin[1], Martin Eimer[2], Samuel Evans[3], Luigi Tamè[4], Bencie Woll[1], Rita Bertani[1], Dilay Ercelik[1], Lucy Core[1], Yueming Gao[1], Matthew Longo[2], Valeria Vinogradova[1,5], Barbara Manini[1,6]; [1]University College London, [2]Birkbeck, University of London, [3]King's College London, [4]University of Kent, [5]HSE University, [6]University of Derby

Topic Area: EXECUTIVE PROCESSES: Other

E2 - Differentiating ADHD Diagnosis and Executive Function Contributions to White Matter Microstructure in Dyslexia

A. Takahesu Tabori[1] (atakahesutabori@mghihp.edu), A. Azor[1], R. Marks[2], A. Cardinaux[3], A. Kaminsky[1], K. Wade[3], R. Norton[1], A. Doyle[4,5], E. Braaten[4,5], J. D. E. Gabrieli[3], J. A. Christodoulou[1]; [1]MGH Institute of Health Professions, [2]Purdue University, [3]Massachusetts Institute of Technology, [4]Harvard Medical School, [5]Massachusetts General Hospital

Topic Area: EXECUTIVE PROCESSES: Other

E3 - Investigating structural differences between children with Developmental Language Disorder, Dyslexia, and controls

Olivia Baldi[1], Ted Turesky[1], Nadine Gaab[1]; [1]Harvard Graduate School of Education

Topic Area: LANGUAGE: Development & aging

E4 - Cognitive Profile of Chinese Children with Developmental Dyslexia

Suei Cheng Wong[1] (scrystal.wong@polyu.edu.hk), Allen Ming Yan Cheong[1], Henry Ho-Lung Chan[1], Duo Liu[2], Tsz Wing Leung[1]; [1]School of Optometry, The Hong Kong Polytechnic University, Hong Kong, [2]Department of Special Education and Counselling, The Education University of Hong Kong

Topic Area: LANGUAGE: Development & aging

E5 - The role of dorsal and ventral white matter tracts in phonological and semantic specialization in beginning readers – a combined fMRI and DTI study.

Avantika Mathur[1] (avantika.mathur@vanderbilt.edu), Sriya Kondapavuluru[1], Marjolein Mues[1], Christiana Werner[1], James R Booth[1]; [1]Vanderbilt University

Topic Area: LANGUAGE: Development & aging

E6 - Cognitive mechanisms and white matter pathways supporting reading acquisition in Spanish speakers.

Moramay Ramos-Flores[1] (morarf35@gmail.com), M. Florencia Assaneo[1], Luis Concha; [1]Institute of Neurobiology, National Autonomous University of Mexico

Topic Area: LANGUAGE: Development & aging

E7 - Gesture-based instruction enhances neural synchrony and **predicts children's mathematical learning**

Marine Yumeng Wang[1] (marinewang@uchicago.edu), Marc Berman[1], Susan Goldin-Meadow[1], Yuan Chang Leong[1]; [1]University of Chicago

Topic Area: LANGUAGE: Development & aging

E8 - Decay makes all the difference: Facilitation and interference from thematic relations in younger and older adults

Katarina Antolovic[1] (katarina.antolovic@gmail.com), Jessica Marutani[2], Yan H. Yu[3], Mira Goral[1,4], Valerie L. Shafer[1]; [1]The Graduate Center, City University of New York, [2]Hunter College, City University of New York, [3]St. John's University, [4]Lehman College, City University of New York

Topic Area: LANGUAGE: Development & aging

E10 - Infants at familial risk for DLD, ADHD, or ASD show enhanced rapid auditory processing as a function of interactive acoustic experiences.

Naseem Choudhury[1,2] (nchoudhu@ramapo.edu), Teresa Realpe-Bonilla[2], Cynthia Roesler[2], Laura Milovic[2], April Benasich[2]; [1]Ramapo College of New Jersey, Mahwah, NJ, [2]Center for Molecular and Behavioral Neuroscience, Rutgers University- Newark, NJ

Topic Area: LANGUAGE: Development & aging

E11 - Examining associations between white matter microstructure in infancy and subsequent reading comprehension skills: A longitudinal investigation

Megan Loh[1], Ted Turesky[1], Olivia Baldi[1], Emily Hu[1], Nadine Gaab[1]; [1]Harvard Graduate School of Education

Topic Area: LANGUAGE: Development & aging

E12 - What makes Metaphors hard(er)? An exploration of behavioral responses as a step towards neuroimaging analysis using fNIRS

Anna Schwartz[1], Erin Meier[1]; [1]Northeastern University

Topic Area: LANGUAGE: Development & aging

E13 - Development of Language Processing and Attention in Adolescence: A Longitudinal fMRI Study

Nea Rinne[1] (nea.rinne@helsinki.fi), Patrik Wikman[1], Sofia Lindholm[1], Juha Salmi[2,3], Kimmo Alho[1,4]; [1]University of Helsinki, [2]University of Oulu, [3]Aalto University, [4]Advanced Magnetic Imaging Centre, Aalto University

Topic Area: LANGUAGE: Development & aging

E15 - I can hear clearly now the strain is gone: Hyper-articulated speech reduces the impacts of listening effort on speech processing in older adults

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

Topic Area: LANGUAGE: Development & aging

E16 - **To "B" or Not to "B": Exploring Letter Statistical Learning** in the Language Network of Autistic Children

Katherine Trice[1] (trice.k@northeastern.edu), Anna Ciriello[1], Brynn Siles[1], Zhenghan Qi[1]; [1]Northeastern University, Boston, MA, USA

Topic Area: LANGUAGE: Development & aging

E17 - Statistical Learning with Inner Speech Suppression – Behavioral and ERP Evidence from an Artificial Grammar Learning Task in Children

Ziyi Cao[1] (zcao@mghihp.edu), Asiya Gul[1], Lauren Baron[1], Shivani Patel[1], Annika Schafer[1], Kelsey Black[1], Yael Arbel[1]; [1]MGH Institute of Health Professions

Topic Area: LANGUAGE: Development & aging

E18 - **Children's reading fluency is predicted by** cortical delay: Processing latencies estimated from steady-state visual evoked potentials

Fang Wang[1] (fangwang@stanford.edu), Quynh Trang Nguyen[1], Blair Kaneshiro[1], Anthony Norcia[2,3], Bruce McCandliss[1]; [1]Graduate School of Education, Stanford University, [2]Department of Psychology, Stanford University, [3]Wu Tsai Neurosciences Institute, Stanford

Topic Area: LANGUAGE: Development & aging

E19 - Exploring the Neural Mechanisms of Phonological Awareness in Chinese Children with Potential Reading Disabilities

Yueh-Lin Li[1], Hsin-Chin Chen[2], Li-Ying Fan[3], Shiou-Yuan Chen[4], Tai-Li Chou[1]; [1]Department of Psychology, National Taiwan University, Taiwan, [2]Department of Psychology, National Chung Cheng University, Taiwan, [3]Department of Education, National Taipei University of Education, Taiwan, [4]Department of Early Childhood Education, University of Taipei, Taiwan

Topic Area: LANGUAGE: Development & aging

E20 - Maturation of the T-complex to lexical tone in bilingual Mandarin-English children

YAN YU[1] (yanhyu@gmail.com), Rigel Baron[1], Anita Hyseni[1], Victoria Billack[2], Angela Cheng[1], Valerie Shafer[3]; [1]St. John's University, New York, [2]Saddle Brook Middle/High School, New Jersey, [3]The Graduate Center, City University of New York

Topic Area: LANGUAGE: Development & aging

E21 - Insights into acquired reading disability: White matter correlates of reading after childhood hemispherectomy

Amy Maguire[1,2,5] (amaguire1@mgb.org), Adriana Azor[2,5], Rebecca Marks[3], Steven Meisler[4], John Gabrieli[5], Joanna Christodoulou[2,5]; [1]Massachusetts General Hospital, [2]MGH Institute of Health Professions, [3]Purdue University, [4]University of Pennsylvania, [5]Massachusetts Institute of Technology

Topic Area: LANGUAGE: Development & aging

E22 - Neural Maturation of T-complex responses to vowels in Spanish-English bilingual infants and toddlers

Valerie L Shafer[1] (vshafer@gc.cuny.edu), Katarina Antolovic[1], Kennedy Stomberg[1], Yan H Yu[2]; [1]The Graduate Center, CUNY, [2]St. John's University

Topic Area: LANGUAGE: Development & aging

~~E23 - Evaluating Hierarchical and Production-Based Prediction Models: Evidence from a Prediction-Production EEG Study~~

~~*Agnes (Yang) Gao[1] (aygao@ucdavis.edu), Matthew Traxler, Tamara Swaab; [1]University of California Davis*~~

~~Topic Area: LANGUAGE: Lexicon~~

E24 - Emotional cues in L2 vocabulary learning: How expressive facial contexts enhance initial learning and long-term vocabulary retention

Chunlin Liu[1] (liu.chunlin.b8@tohoku.ac.jp), Takumi Uchihara[1,2], Motoaki Sugiura[1,3,4], Ping Li[5], Hyeonjeong Jeong[1,2,3]; [1]Cognitive Neuroscience Application Center, Tohoku University, Sendai, Japan, [2]Graduate School of International Cultural Studies, Tohoku University, Sendai, Japan, [3]Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan, [4]International Research Institute for Disaster Science, Tohoku University, Sendai, Japan, [5]Faculty of Humanities, the Hong Kong Polytechnic University, Hong Kong, China

Topic Area: LANGUAGE: Lexicon

E25 - **Like… Immersion Matters: Learning English**-Specific Discourse Marker Use in Mandarin-English Bilinguals from China

Chenke Wei[1] (ckwei@ucdavis.edu), Katie Sendek, Tamara Swaab; [1]Cognitive Neuroscience of Language Lab

Topic Area: LANGUAGE: Lexicon

E26 - Robust Predictive Mechanisms in Aging: Insights from Behavioral and Neuroimaging Research

Sandra Martin[1] (martin@cbs.mpg.de), Merle Schuckart[2,3], Jonas Obleser[2,3], Gesa Hartwigsen[1,4]; [1]Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, [2]Department of Psychology, University of Lübeck, Germany, [3]Center of Brain, Behavior and Metabolism, University of Lübeck, Germany, [4]Wilhelm Wundt Institute for Psychology, Leipzig University, Germany

Topic Area: LANGUAGE: Lexicon

E27 - Beta Bursting During Naturalistic Speech Processing

Lindsey Power[1] (lindsey.power@mail.mcgill.ca), Sylvain Baillet[1]; [1]McGill University

Topic Area: LANGUAGE: Lexicon

E28 - The Influence of Memory Reactivation During Sleep on Vocabulary and Grammar Learning

Stacey Reyes[1] (staceydomagasreyes@gmail.com), Aaron Gibbings[1], Elizabeth Laplante[1], Laura J Batterink[1]; [1]Western University

Topic Area: LANGUAGE: Lexicon

E29 - Periodic statistical events trigger downstream when and what predictions

Lorenzo Titone[1] (titone@cbs.mpg.de), Lars Meyer[1,2]; [1]MPI for Human Cognitive and Brain Sciences, [2]University Hospital Münster

Topic Area: LANGUAGE: Lexicon

E31 - The Effects of Bilingual Experience on Neural Flexibility and Prediction During Language Comprehension

Jaime Chou[1], Katherine Sendek[2], Tamara Y. Swaab[3]; [1]UC Davis

Topic Area: LANGUAGE: Other

E32 - Mirror Speech Entrainment: A novel technique for entraining speech production in aphasia

Celine Davis[1] (celinedavis@usf.edu), Gerald C. Imaezue[1]; [1]University of South Florida

Topic Area: LANGUAGE: Other

E33 - The perceptual span in reading: is there a difference between dyslexic students and their peers?

Antonin Rossier-Bisaillon[1,2,3,4] (antonin.rossier-bisaillon@umontreal.ca), Julie Robidoux[1,2,3,4], Brigitte Stanké[1,2,3], Boutheina Jemel[1,2,3,4]; [1]Université de Montréal, [2]Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain (CRIR), [3]Institut universitaire sur la réadaptation en déficience physique de Montréal (IURDPM), [4]Centre de recherche du CIUSSS du Nord-de-l'Île-de-Montréal (CIUSSS NÎM)

Topic Area: LANGUAGE: Other

E34 - The sound of silence: Intracranial recordings of covert and overt speech

Taisha Donnelly[1] (taisha.donnelly@univ-grenoble-alpes.fr), Ioana Mîndruță[2,3], Andrei Barborica[4], Andrei-Alexandru Vasiliu[4], Jean-Baptiste Eichenlaub[1], Irina Oane[2,3], Monica Baciu[1], Hélène Lœvenbruck[1]; [1]Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, LPNC, Grenoble, France, [2]Emergency University Hospital Bucharest, Bucharest, Romania, [3]Carol Davila University of Medicine and Pharmacy Bucharest, Bucharest, Romania, [4]University of Bucharest, Bucharest, Romania

Topic Area: LANGUAGE: Other

E35 - Representational Similarity Analysis of the Neural Codes in Word Reading

Deanne Wah[1] (dwah@uwo.ca), Marc Joanisse[1,2]; [1]The University of Western Ontario, [2]Haskins Laboratories

Topic Area: LANGUAGE: Other

E36 - Characterizing frontal-eye-field connectivity in reading and attention

Shaylyn Kress[1,2,3], Josh Neudorf[4], Chelsea Ekstrand[1], Ron Borowsky[3]; [1]University of Lethbridge, [2]Western University, [3]University of Saskatchewan, [4]Simon Fraser University

Topic Area: LANGUAGE: Other

E37 - The role of the Speech-Motor Network in implicit linguistic learning, an fMRI study

Anna Ciriello[1] (ciriello.a@northeastern.edu), Amanda O'Brien[2,3], Zhenghan Qi[1], John Gabrieli[2]; [1]Northeastern University, [2]Massachusetts Institute of Technology, [3]Harvard University

Topic Area: LANGUAGE: Other

E38 - How does the environment wire the brain for literacy? Modeling the relationship between SES, white matter, oral language, and reading

Martina Villa[1,2] (martina.villa@uconn.edu), Nabin Koirala[2,3], Meaghan Perdue[4,5], Lee Branum-Martin[6], Nicole Landi[1,2]; [1]Department of Psychological Sciences, University of Connecticut, USA, [2]Child Study Center, Yale University, USA, [3]Brain Imaging Research Core, University of Connecticut, USA, [4]University of Calgary, Department of

Radiology, Canada, [5]Alberta Children's Hospital Research Institute, Canada, [6]Department of Psychology, Georgia State University, USA

Topic Area: LANGUAGE: Other

E39 - EEG and cognitive markers of dyslexia and ADHD

Hailey Suttorp[1], Marc Joanisse[1]; [1]University of Western Ontario

Topic Area: LANGUAGE: Other

E40 - Understanding sarcasm requires theory of mind after acute stroke

Somya Mittal[1] (sm174@rice.edu), Margaret Blake[2], Tatiana Schnur[1]; [1]University of Texas Health Sciences Center at Houston, [2]University of Houston

Topic Area: LANGUAGE: Other

E41 - From a Large Language Model to Three-Dimensional Sentiment

Patrick Clarke[1], Carly Leininger[1], Cristiana Principato[1], Patrick Staples[1], Guy Goodwin[1], Gregory Ryslik[1], Robert Dougherty[1]; [1]Compass Pathways

Topic Area: LANGUAGE: Other

E42 - Quantifying the involvement of subcortical structures in reading using intracranial electroencephalography

Addison Cavender[1] (addison.c.cavender@vanderbilt.edu), Ghassan S. Makhoul[1], Derek J. Doss[1], Emily Liao[2], Bruno Hidalgo Monroy Lerma[1], Anas Reda[1], Graham Johnson[3], Christos Constantinidis[1], Shawniqua Williams Roberson[2], Shilpa B. Reddy[4], Robert P. Naftel[4], Sarah K. Bick[1,2], Victoria L. Morgan[1,2], Laurie E. Cutting[1], Dario J. Englot*[1,2]; [1]Vanderbilt University, [2]Vanderbilt University Medical Center, [3]Mayo Clinic, Rochester, MN, [4]Vanderbilt Children's Hospital*

Topic Area: LANGUAGE: Other

E43 - Precise numeracy, but not approximation, associated with language across targeted regions of interest

Erin Duricy[1] (etd17@pitt.edu), Corrine Durisko[1], Julie A. Fiez[1]; [1]University of Pittsburgh

Topic Area: LANGUAGE: Other

E44 - The cerebellar components of the human language network

Colton Casto[1,2] (ccasto@mit.edu), Benjamin Lipkin[2], Hannah Small[3], Moshe Poliak[2], Greta Tuckute[2], Anila D'Mello[4,5], Evelina Fedorenko[1,2]; [1]Harvard University, [2]MIT, [3]Johns Hopkins University, [4]University of Texas Southwestern, [5]University of Texas at Dallas

Topic Area: LANGUAGE: Other

E45 - Enhanced responses to non-interpretable speech-like stimuli in speech and language brain areas of psychosis patients with auditory hallucinations

Tamar Regev[1] (tamaregev@gmail.com), Melissa Hwang[2], Hee So Kim[1], Evelina Fedorenko[1], Ann Shinn[2,3]; [1]MIT, [2]McLean Hospital, [3]Harvard Medical School

Topic Area: LANGUAGE: Other

E46 - Phoneme encoding during spoken language comprehension is enhanced by linguistic structure and by statistical experience

Filiz Tezcan[1,2] (tezcanfiliz@gmail.com), Fan Bai[1], Noémie te Rietmolen[1], Sanne Ten Oever[1,2,3], Andrea E. Martin[1,2]; [1]Max Planck Institute for Psycholinguistics, Netherlands, [2]Donders Centre for Cognitive Neuroimaging, Radboud University, Netherlands, [3]Maastricht University, The Netherlands

Topic Area: LANGUAGE: Other

E47 - The source of costs in language switching: evidence from ERP and behavioral measures

Kalinka Timmer[1] (k.timmer@uw.edu.pl), Agata Wolna[2], Hanna Cwynar[1], Zofia Wodniecka[3]; [1]University of Warsaw (Poland), [2]Massachusetts Institute of Technology (MIT), [3]Jagiellonian University (Poland)

Topic Area: LANGUAGE: Other

E48 - Investigating the Neural and Behavioural Consequences of Rhythmic Auditory Priming on Statistical Learning

Émilie Rae Hoeppner[1] (ehoeppne@uwo.ca), Laura Batterink[1], Karli Nave[1]; [1]Western University

Topic Area: LANGUAGE: Other

E49 - The Influence of Language Congruency on Narrative Recall in Bilingual Individuals

Veronica Foureaux-Lee[1] (l.veronica@wustl.edu), Angelique I. Delarazan[1], Zachariah M. Reagh[1]; [1]Washington University in St. Louis

Topic Area: LANGUAGE: Other

E50 - Regional Brain Age Patterns Predict Aphasia Outcomes

Ansley Martin[1] (ansleymm@email.sc.edu), Leonardo Bonilha[2], Chris Rorden[1], Julius Fridriksson[1], Nicholas Riccardi[1]; [1]University of South Carolina - Columbia, [2]University of South Carolina School of Medicine

Topic Area: LANGUAGE: Other

E51 - Is language-based statistical learning a stable individual trait?

Amiya Aggarwal[1] (aaggar7@uwo.ca), Laura Batterink[1]; [1]University of Western Ontario

Topic Area: LANGUAGE: Other

E52 - Examining the impact of ADHD subtype on reading ability and brain function in school-aged children with Dyslexia

Alexander J. Kaminsky[1] (ajkaminsky@mghihp.edu), Rebecca A. Marks[1,2], Hanna K. Thesken[2], Annie L. Cardinaux[2], Karolina Wade[2], Rachel T. Norton[1], Adriana M. Azor[1], Alysa E. Doyle[3], Ellen B. Braaten[3], John D. E. Gabrieli[2], Joanna A. Christodoulou[1,2]; [1]Massachusetts General Hospital Institute of Health Professions, [2]Massachusetts Institute of Technology, [3]Massachusetts General Hospital

Topic Area: LANGUAGE: Other

E53 - Second and Foreign Language Learning in Autistic Adults

Catherine Caldwell-Harris[1] (charris@bu.edu); [1]Boston University

Topic Area: LANGUAGE: Other

E54 - How individual differences influence code-switched sentence comprehension: An ERP study

Ingrid Chuang[1], Janet G. van Hell[1]; [1]The Pennsylvania State University

Topic Area: LANGUAGE: Other

E55 - Not so fast! Top-down predictions do not affect the earliest stages of visual word processing

Trevor Brothers[1], Tamara Swaab[2,3], Matthew Traxler[2,3]; [1]North Carolina A&T State University, [2]Univeristy of California, Davis, [3]C Davis Center for Mind and Brain

Topic Area: LANGUAGE: Other

E56 - Brain functional connectivity organization underlying movie watching

Xuehu Wei[1,2], Laura Rigolo[1], Colin P. Galvin[1], Alexandra J. Golby[1], Einat Liebenthal[2], Yanmei Tie[1]; [1]Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, USA, [2]McLean Imaging Center, McLean Hospital, Harvard Medical School, Belmont, Massachusetts, USA

Topic Area: LANGUAGE: Other

E57 - Inferencing During Visual and Verbal Narrative Comprehension in Autism: An EEG Study

Emily Coderre[1] (emily.coderre@med.uvm.edu), Devon Kearns[1], Olivia Ciocca[1], Holly Chappell[2], Caitlyn Soong[2], Nicole Sperrazza[2], Emily Zane[2], Neil Cohn[3]; [1]University of Vermont, [2]James Madison University, [3]Tilburg University

Topic Area: LANGUAGE: Other

E58 - Evaluating the impact of channel density on Representational Similarity Analysis of prediction-related effects in language

Aya Gomaa[1] (gomaa2@illinois.edu), Ryan J. Hubbard[1,2], Kara D. Federmeier[1,3,4]; [1]University of Illinois at Urbana-Champaign, USA, [2]State University of New York at Albany, USA, [3]Beckman Institute for Advanced Science and Technology, University of Illinois Urbana-Champaign, USA, [4]Program in Neuroscience, University of Illinois Urbana-Champaign, USA

Topic Area: LANGUAGE: Other

E59 - Encouraging Gesture for Increased Macro-linguistic Narrative Production

Ted Jenkins[1]; [1]Rhode Island College, [2]New York University

Topic Area: LANGUAGE: Other

E60 - Automated connected speech classification of language impairment in acute stroke

Lokesha Pugalenthi[1] (lp60@rice.edu), Junyi Jessy Li[2], Tatiana Schnur[3]; [1]Rice University, [2]University of Texas at Austin, [3]University of Texas, Houston

Topic Area: LANGUAGE: Other

E61 - Engagement of language-specific and domain-general neural mechanisms in native and second language comprehension

Agata Wolna[1,2], Aaron Wright[1], Evelina Fedorenko[1], Zofia Wodniecka[2]; [1]MIT, Cambridge, USA, [2]Jagiellonian University, Kraków, Poland

Topic Area: LANGUAGE: Other

E62 - A Transcranial Direct Current Stimulation Study of Speech Error Monitoring

Nathan Caines[1] (ncaines@ucsc.edu), Megan Boudewyn[2]; [1]University of California Santa Cruz

Topic Area: LANGUAGE: Other

E63 - Reading Skills are Associated with Neural Activation Variability during Spoken and Written Word Processing

Adianes Herrera-Diaz[1,2], Yishai Pérez-Ponce[2], Rachael M. Harrington[2,3], Robin Morris[1,2,4], Jeffrey G Malins[1,5,6], C. Nikki Arrington[1,2,4,5]; [1]Department of Psychology, Georgia State University, Atlanta, GA, USA, [2]Georgia State/Georgia Tech Center for Advanced Brain Imaging, Atlanta, GA, USA, [3]Department of Communication Sciences and Disorders, Georgia State University, Atlanta, GA, USA, [4]Georgia State University/Georgia Institute of Technology/Emory University Center for Translational Research in Neuroimaging and Data Science (TReNDS), Atlanta, GA, USA, [5]Department of Neuroscience, Georgia State University, Atlanta, GA, USA, [6]Mayo

Clinic, Department of Cardiovascular Medicine, Rochester, MN, USA

Topic Area: LANGUAGE: Other

E64 - Effects of accent variation on Mandarin-English intrasentential code-switching perception using electroencephalography

Khushi Nilesh Patil[1], Philip Monahan[2]; [1]University of Toronto

Topic Area: LANGUAGE: Other

E65 - Navigating the Neural Landscape of Language Comprehension at Millimeter/Millisecond scale: fMRI-EEG fusion analysis

Clair Min Kyung Hong[1] (min.kyung.hong@vanderbilt.edu), Katherine Aboud[2]; [1]Vanderbilt University

Topic Area: LANGUAGE: Other

E66 - Modulation of Cognitive Control and Reading &Language Networks through Noninvasive Brain Stimulation: pilot results for in-scanner tACS

Katherine Aboud[1], Clair Min Kyung Hong[2], Andrew Janson[3]; [1]Vanderbilt University

Topic Area: LANGUAGE: Other

E67 - Brain regions associated with Chinese reading development: a multiple-task fMRI study

Wenwen Zhuang[1,2], Yaxi Yang[2], Li-Hai Tan[1,2,3,4,5]; [1]Guangdong-Hongkong-Macau Institute of CNS Regeneration and Key Laboratory of CNS Regeneration (Ministry of Education), Jinan University, Shenzhen Campus, China, [2]Center for Language and Brain, Shenzhen Institute of Neuroscience, Shenzhen, China, [3]Guangdong Innovation Platform of Translational Research for Cerebrovascular Diseases, Shenzhen, China, [4]Neuroscience and Neurorehabilitation Institute, University of Health and Rehabilitation Sciences, Qingdao 266071, Shandong, China, [5]University International College, Macau University of Science and Technology, Macau, China

Topic Area: LANGUAGE: Other

E68 - Neural Correlates of Reading in Congenitally Blind and Sighted Individuals: The Role of Left vOT

Maria Czarnecka[1,2] (mhczarnecka@gmail.com), Florencia Martinez Addiego[2], Marcin Szwed[1]; [1]Jagiellonian University, Krakow, Poland, [2]Georgetown University, Washington DC, US

Topic Area: LANGUAGE: Other

E69 - Examining the Causal Role of Putative Reading Areas in Individuals with Varying Reading Skills and Reading Difficulty History

Zhichao Xia[1] (zhichao.xia@uconn.edu), Nikki Arrington[2], Brianna Kinnie[1], Robin Morris[2], Fumiko Hoeft[1]; [1]University of Connecticut, [2]Georgia State University

Topic Area: LANGUAGE: Other

E70 - Representational similarity analysis of brain potentials reveals event/schematic activation during fictional language comprehension

Melissa Troyer[1] (melissa.troyer@gmail.com), Ryan J. Hubbard[2]; [1]University of Nevada Las Vegas, [2]University at Albany, State University of New York

Topic Area: LANGUAGE: Semantic

E71 - Probing Prediction-Related Processes in Language Using an EEG Word Stem Completion Paradigm

Hui-Sun Chiu[1] (hschiu2@illinois.edu), Ryan J. Hubbard[2], Kara D. Federmeier[1]; [1]University of Illinois, [2]University at Albany

Topic Area: LANGUAGE: Semantic

E72 - A Research Proposal: Gender-associated English **Adjectives and Their Influence on Readers' Assumptions about** Genders in Non-indicative Contexts

Yiran Jiang[1] (yiran.jiang.26@dartmouth.edu); [1]Dartmouth College

Topic Area: LANGUAGE: Semantic

E73 - The Language-Specific Neural Basis of Word Learning from Context

Tengwen Fan[1] (tfan1@lsu.edu), Julie Schneider[2]; [1]Louisiana State University, [2]University of California, Los Angeles

Topic Area: LANGUAGE: Semantic

E74 - Characterizing the effects of content, task and modality on task-driven semantic processing in the brain

Jin Li[1] (jli3618@gatech.edu), Anna Ivanova[1]; [1]Georgia Tech

Topic Area: LANGUAGE: Semantic

E75 - Language Experience and Top-Down Prediction in Bilingual Phoneme Perception.

Sarah Wang[1] (ssiwang@ucdavis.edu), Agnes Gao[1,2], Tamara Swaab[1]; [1]University of California, Davis, [2]Gunma University

Topic Area: LANGUAGE: Semantic

E76 - L2-Specific vs. General Bilingual Factors in Predictive Processing: Linking Aperiodic EEG Activity and N400 Facilitation in Sentence Contexts

Katherine Sendek[1] (ksendek@ucdavis.edu), Tamara Swaab[1]; [1]University of California - Davis

Topic Area: LANGUAGE: Semantic

E77 - Distinct Neural Representations of Phonological and Semantic Predictions and Prediction Errors in Speech Comprehension

Yi Du[1] (duyi@psych.ac.cn), Baihan Lyu[2], Xiuyi Wang[3]; [1]Institute of Psychology, Chinese Academy of Sciences, [2]Department of Psychology, University of Chinese Academy of Sciences

Topic Area: LANGUAGE: Semantic

E78 - Semantic ERP Correlates in Processing of the Visual Programming Language ScratchJr

Emily Nadler[1] (emily.nadler@bc.edu), Jason Geller[1], Marina Bers[1]; [1]Boston College

Topic Area: LANGUAGE: Semantic

E79 - Investigating the Effect of Foreign Accents on Sensitivity to Word Predictability in Speech Comprehension

Shang-En Huang[1] (sehuang@ucsd.edu), Ian Martindale[1,2], Seana Coulson[1,2]; [1]University of California, San Diego, [2]San Diego State University

Topic Area: LANGUAGE: Semantic

E80 - Predictive Pre-Activation During Language Comprehension Is Preserved in Older Adult Readers

Ryan Hubbard[1] (rhubbard2@albany.edu), Kara Federmeier[2]; [1]University at Albany, SUNY, [2]University of Illinois, Urbana-Champaign

Topic Area: LANGUAGE: Semantic

E81 - Neural Responses to gender stereotypes in a word-face priming paradigm

Francesca Pesciarelli[1,2] (francesca.pesciarelli@unimore.it), Luana Serafini[1]; [1]University of Modena and Reggio Emilia, [2]San Diego State University

Topic Area: LANGUAGE: Semantic

E82 - Cognitive Control Recruitment by Linguistic Cues during Discourse Comprehension

Ma Angela Edith Montiel[1] (anmontie@ucsc.edu), Megan A. Boudewyn[1]; [1]University of California, Santa Cruz

Topic Area: LANGUAGE: Semantic

E83 - Continuous Speech Comprehension in Monolingual and Bilingual Speakers

Haoyin Xu[1] (hyx002@ucsd.edu), Seana Coulson[1]; [1]University of California, San Diego

Topic Area: LANGUAGE: Semantic

E84 - Development of Language Selection in Bilingual Children: A Longitudinal EEG Study

Noemi X. Diaz[1] (nxdiaz@ucdavis.edu), Tamara Y. Swaab[2]; [1]University of California-Davis

Topic Area: LANGUAGE: Semantic

E85 - Eye-gaze, reference and race

Dr Veena D. Dwivedi[1] (vdwivedi@brocku.ca), Haorong Ding[1]; [1]Brock University

Topic Area: LANGUAGE: Semantic

E86 - Distinct Roles of N300 and N400 in Semantic Priming

Hannah Kim[1], Joseph Dien[1], Donald Bolger[1]; [1]University of Maryland, College Park

Topic Area: LANGUAGE: Semantic

E87 - **Differences between Bilingual and Monolingual's Cognitive** Functions Using ERP

Aram Akbari[1,] (aram.akbari@bruins.belmont.edu), Emily Stripling[1,], Kristie Stephens[1,], Karlie Souder[1,], Liam Feinberg[1,], Emma Chacon[1,], Dara Olopade[1,], Smyth Harper[1,], Michael Oliver, PhD[1]; [1]Belmont University

Topic Area: LANGUAGE: Semantic

E88 - Thunder and Lightning: Vision Language Model Representations Predict EEG Response Differences to Visual vs Auditory Attributes in Property Verification

Harshada Vinaya[1] (hyadav@ucsd.edu), Sean Trott[1], Seana Coulson[1]; [1]University of California San Diego

Topic Area: LANGUAGE: Semantic

E89 - Functional Near Infrared Spectroscopy-Based Adaptive Language Mapping in People with Post-Stroke Aphasia and Neurologically Healthy Controls

Erin Meier[1] (e.meier@northeastern.edu), Veronica Fletcher[1], Esprit Ange Andraos[1], Caela Hung[1], Priyansh Khare[1], Isabelle Cotenoff[1], Leanna Ugent[1], Gengchen Wei[1], David Lin[2], Meryem Yücel[3]; [1]Northeastern University, [2]Harvard Medical School, [3]Boston University

Topic Area: LANGUAGE: Semantic

E90 - Downstream behavioral consequences of parafoveal semantic processing in natural reading: Evidence from co-registered eye movements and EEG

Allyson Copeland[1] (allyson.copeland@psych.utah.edu), Brennan Payne[1]; [1]University of Utah

Topic Area: LANGUAGE: Semantic

E91 - Age-related changes in alpha and beta oscillatory dynamics during semantic processing in children and adolescents

Zhiying Shen[1,2,3] (mike.shen@boystown.org), Anel Zhussubali[4], Augusto Diedrich[1,2,3], Wai Hon Lee[1,2], Elizabeth Heinrichs-Graham[1,2,3]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital, Omaha, NE, USA, [2]Center for Pediatric Brain Health, Boys Town National Research Hospital, Omaha, NE, [3]Creighton University School of Medicine, Omaha, NE, [4]Brown University, Providence, RI

Topic Area: LANGUAGE: Semantic

E92 - Integrating discourse information in a second language: Evidence from event-related potentials

Alison Gabriele[1] (gabriele@ku.edu), Münir Özturhan[1], José Alemán-Bañón[2], Andrew Collins[3], Braden Swaim[1], Xiao Yang[4], Manuel Carreiras[5], Simona Mancini[5], Lesa Hoffman[6], Robert Fiorentino[1]; [1]University of Kansas, [2]Stockholm University, [3]University of Texas at Austin, [4]Northeastern University, [5]Basque Center on Cognition, Brain and Language, [6]University of Iowa

Topic Area: LANGUAGE: Semantic

E93 - Parafoveal N400 fixation-related potential effects vary as function of eye movement behavior (i.e., word skipping) during natural sentence reading

Sara Milligan[1] (smilliga@usf.edu), Elizabeth Schotter[2]; [1]University of South Florida

Topic Area: LANGUAGE: Semantic

E94 - Neural patterns reflect quiz performance in novice sign language learners

Megan E. Hillis[1] (megan.e.hillis.gr@dartmouth.edu), David J. M. Kraemer[1]; [1]Dartmouth College

Topic Area: LANGUAGE: Semantic

E95 - Cognition in Absentia: An EEG Investigation of Internally Driven Semantic Retrieval

Yaqi Xu[1] (yxu293@ucsc.edu), Megan Boudewyn[1]; [1]UC Santa Cruz

Topic Area: LANGUAGE: Semantic

E96 - Concept Feature Diagnosticity: a new metric to quantify conceptual access

Anna M. Keresztesy[1,2] (anna_keresztesy@urmc.rochester.edu), Muzi Li[1], Jessica M. Smith[1], Frank E. Garcea[2], Bradford Z. Mahon[1]; [1]Carnegie Mellon University, [2]University of Rochester

Topic Area: LANGUAGE: Semantic

E97 - Distinct temporal lobe areas modulate language representations in the left inferior frontal gyrus.

Benedikt Winzer[1] (benedikt_winzer@urmc.rochester.edu), Rishika Chikoti[1], Madalina Tivarus[2,3], Emma Strawderman[1], Steven Meyers[1,2], Kevin Walter[1], Webster Pilcher[1,4], Bradford Mahon[1], Frank Garcea[1,3,4]; [1]Department of Neurosurgery, University of Rochester Medical Center, [2]Department of Imaging Sciences, University of Rochester Medical Center, [3]Department of Neuroscience, University of Rochester Medical Center, [4]Del Monte Institute for Neuroscience, University of Rochester Medical Center

Topic Area: LANGUAGE: Semantic

E98 - Dynamic duo: Insights from a dual-unit predictive coding model of lexico-semantic processing

Samer Nour Eddine[1] (snoure01@tufts.edu), Trevor Brothers[3], Thomas Hansen[1], Gina Kuperberg[1,2]; [1]Tufts University, [2]Massachusetts General Hospital, [3]North Carolina Agricultural and Technical State University

Topic Area: LANGUAGE: Semantic

E99 - Neuro-anatomic Substrates Supporting Category and Letter Fluency: Evidence from Voxel- and Connectome-based Lesion-Symptom Mapping

William Burns[1] (william_burns@urmc.rochester.edu), Emma Strawderman[1,3], Benedikt Winzer[1], Steven Meyers[1,2], Tyler Schmidt[1], Kevin Walter[1], Webster Pilcher[1,4], Bradford Mahon[1,5], Frank Garcea[1,3,5]; [1]Department of Neurosurgery, University of Rochester Medical Center, [2]Department of Imaging Sciences, University of Rochester Medical Center, [3]Department of Neuroscience, University of Rochester Medical Center, [4]Del Monte Institute for Neuroscience, University of Rochester Medical Center, [5]Department of Psychology, Carnegie Mellon University

Topic Area: LANGUAGE: Semantic

E100 - Disambiguating Semantic Processing and Executive Function in Post-Stroke Aphasia

Ryan Dixon[1] (rldixon@email.sc.edu), Dirk Den Ouden[1], Julius Fridriksson[1], Rutvik Desai[2], William Matchin[1]; [1]Department of Communication Sciences and Disorders, University of South Carolina, [2]Department of Psychology, University of South Carolina

Topic Area: LANGUAGE: Semantic

E101 - Processing of quantifier scales in deaf and hearing users of German Sign Language (DGS) – preliminary results from a truth-value-judgement-task

Elena Georgia Mpadanes[1], Agnes Villwock[1]; [1]Rochester Institute of Technology

Topic Area: LANGUAGE: Semantic

E102 - Chunking Constrains Prediction during Language Comprehension

Jiajie Zou[1,2] (jiajiezou@zju.edu.cn), Nai Ding[1]; [1]Zhejiang University, [2]Ernst Strüngmann Institute, Frankfurt, Germany

Topic Area: LANGUAGE: Syntax

E103 - Examining sensitivity to subject-verb agreement in a second language (L2): An event-related potential (ERP) investigation

Xuan Wang[1] (xuan.wang@ku.edu), Alison Gabriele[1], Robert Fiorentino[1]; [1]University of Kansas

Topic Area: LANGUAGE: Syntax

E104 - Differentiating endogenous and entrained delta-band rhythms in the brain: a naturalistic story-listening experiment

Leonardo zeine[1,2] (leonardo.zeine@gmail.com), David Peoppel[3]; [1]Ernst Strüngmann Institute for Neuroscience, [2]Max Planck School of Cognition, [3]New York University

Topic Area: LANGUAGE: Syntax

E105 - Neuro-Generative Grammar: Universal Physics, Natural Syntax and Language-Chunk Assembly Circuits (LCACs)

Donald O'Malley[1] (d.omalley@neu.edu), Jessy Xue[1]; [1]Northeastern University

Topic Area: LANGUAGE: Syntax

~~E106 - Opioid use disorder and brain health: observational and genetic associations~~

~~*Sara Javidnia[1] (sara.javidnia@psych.ox.ac.uk), James M. Roe[2,3], Ville Karhunen[4], Dipender Gill[5], Steven Bell[4,10], Joseph D. Deak[6,7], Daniel Levey[6,7], Rachel Kember[8,9], Henry R. Kranzler[8,9], Héléne T. Cronjé[4], Stephen Burgess[4], Joel Gelernter[6,7], Klaus P. Ebmeier[1], Anya Topiwala[1]; [1]University of Oxford, [2]Oslo University Hospital, Norway, [3]University of Oslo, Norway, [4]University of Cambridge, [5]Imperial College London, [6]Yale University School of Medicine, [7]Veterans Affairs Connecticut Healthcare System, [8]University of Pennsylvania Perelman School of Medicine, [9]Crescenz Veterans Affairs Medical Center, [10]Cancer Research UK Cambridge Centre*~~

~~Topic Area: LONG-TERM MEMORY: Other~~

E107 - Whole-brain white matter variation across childhood environments

Sofia Carozza[1,2] (scarozza@bwh.harvard.edu), Isaiah Kletenik[1,2], Duncan Astle[3], Lee Schwamm[4], Amar Dhand[1,2]; [1]Harvard Medical School, [2]Brigham & Women's Hospital, [3]University of Cambridge, [4]Yale School of Medicine

Topic Area: NEUROANATOMY

E108 - Distinct brain age gradients reflect diverse neurobiological hierarchies.

Nicholas Riccardi[1] (riccardn@email.sc.edu), Sarah Newman-Norlund[1], Julius Fridriksson[1], Chris Rorden[1], Leonardo Bonilha[2]; [1]University of South Carolina, [2]School of Medicine Columbia

Topic Area: NEUROANATOMY

E109 - Neurodevelopment in Adolescence: Alcohol's Impact and the Role of Prevention Programs

Sanjana Kalagara[1] (sk766@duke.edu), Jennifer E. Lansford[1]; [1]Duke Unviersity

Topic Area: NEUROANATOMY

E110 - Hippocampal volume changes accompanying chronic methamphetamine use are related to use frequency and sex

Alisha L. Schaefer[1] (aschaefer13@huskers.unl.edu), Robert J. Roy, Nicholas A. Hubbard, Hillary Schwarb; [1]University of Nebraska-Lincoln

Topic Area: NEUROANATOMY

E111 - Neural Correlates of Cognitive Functions in Veterans with Gulf War Illness

Yu Zhang[1] (yu.zhang@va.gov), G. Marina Veltkamp[1], Maxine Krengel[1], Peter Bayley[1], Ansgar Furst[1,2]; [1]War Related Illness and Injury Study Center, VA Palo Alto Health Care System, [2]Stanford University

Topic Area: NEUROANATOMY

E112 - Specific anatomical associations of math and reading achievement while taking into account domain general abilities

Kenny Carlson[1] (keca6141@colorado.edu), Marie Banich[1,2], Dan Leopold[1,3], Laurie Cutting[4], Erik Wilcutt[1,3]; [1]Institute of Cognitive Science, University of Colorado Boulder, [2]Department of Psychology & Neuroscience, University of Colorado Boulder, [3]Institute of Behavioral Genetics, University of Colorado Boulder, [4]Department of Psychology, Vanderbilt University, Nashville, TN, USA

Topic Area: NEUROANATOMY

E113 - Prevalence and clinical significance of incidental findings in pre-treatment MRI for rTMS in treatment-resistant MDD

Claire A Ho[1] (cah4022@med.cornell.edu), Jeremy Levit[2], Nicola Manfredi[1], Megan E Chang[1], Indira L Summerville[1], Jolin Chou[1], Megan Johnson[1], Hayley Seltzberg[1], Lindsay W Victoria[1], Charles J Lynch[1], Immanuel G Elbau[1], Conor Liston[1], Benjamin Zebley[1]; [1]Weill Cornell Medicine, [2]NewYork-Presbyterian Hospital

Topic Area: NEUROANATOMY

E114 - Using neuroanatomical features to predict receptive language selectivity in middle frontal gyrus in individual brains

Rebecca Belisle[1] (rbelisle@bu.edu), Emily Stephen[1], Tyler Perrachione[1]; [1]Boston University

Topic Area: NEUROANATOMY

E115 - Trajectories of thalamic resting state connectivity in the Adolescent Brain Cognitive Development Study

Caroline Ostrand[1] (ostra092@umn.edu), Paul Collins[1], Monica Luciana[1]; [1]University of Minnesota

Topic Area: NEUROANATOMY

E116 - In-Silico Structure Analysis on Interactions Between Amyloid-Beta 42 Variants and Lecanemab

Leo Wang[1] (leohy.wang08@gmail.com); [1]Developing Virtue Secondary School

Topic Area: OTHER

E117 - Non-invasive electrical stimulation modulates resting-state thalamocortical functional connectivity

Byoung-Kyong Min[1] (min_bk@korea.ac.kr), Jeehye Seo[1]; [1]Korea University

Topic Area: OTHER

E118 - Effects of Dementia on Incident Post-COVID Conditions (PCC) in Patients with SARS-CoV-2 (COVID-19)

Nicholas Kendrick[1], Michael Horberg[1], Ejaz Shamim[1], Celeena Jefferson[1], Eric Watson[1], Lily Fathi[1], Seohyun Kim[1]; [1]Kaiser Permanente Mid-Atlantic Permanente Medical Group, Mid-Atlantic Permanente Research Institute

Topic Area: OTHER

E119 - Effects of Active Exploration versus Passive Observation on Spatial Learning, on Spatial Memory, and Map Drawing.

LaTajah Lambey[1] (llambey3@gatech.edu), Scott Moffat[1]; [1]Georgia Institue of Technology

Topic Area: OTHER

E120 - Developing a virtual reality assessment to quantify navigational impairments in aging and early Alzheimer's disease

Annie R. Kim[1] (annieek@student.ubc.ca), Afsoon G. Mombeini[1], Isaac G. Morgan[1], Adam W. Lester[1], Inzaghi Moniaga[1], Talia C. Apel[1], Manu S. Madhav[1]; [1]University of British Columbia

Topic Area: OTHER

E121 - Globus pallidus iron levels relate to cognitive impairment **in Alzheimer's disease: Evidence from an in vivo MRI**-based meta-analysis

Marthe Mieling[1] (m.mieling@uni-luebeck.de), Clara Wiskow[1], Nico Bunzeck[1,2]; [1]Department of Psychology, University of Lübeck, Ratzeburger Allee 160, 23562 Lübeck, Germany, [2]Center of Brain, Behavior and Metabolism, University of Lübeck, Ratzeburger Allee 160, 23562 Lübeck, Germany

Topic Area: OTHER

E122 - Dev-Atlas: A new Reference Atlas of Functional Brain Networks for Adolescents

Gaelle Doucet[1] (gaelle.doucet@boystown.org), Callum Goldsmith[1], Katrina Myers[1], Danielle Rice[1], Grace Ende[1], Lucina Uddin[2], Marc Joliot[3], Vince Calhoun[4], Tony Wilson[1]; [1]Boys Town National Research Hospital, Boys Town, NE, USA, [2]University of California Los Angeles, Los Angeles, CA, USA, [3]Groupe d'Imagerie Neurofonctionelle-Institut des maladies neurodégénératives (GIN-IMN) UMR 5293, Bordeaux University, CNRS, CEA, Bordeaux, France, [4]Tri-Institutional Center for Translational Research in Neuroimaging and Data Science (TReNDS), Georgia State University, Georgia Institute of Technology, and Emory University, Atlanta, GA, USA

Topic Area: OTHER

E123 - A Spectroscopy Study of the Brain: Exploring Sex Differences in Healthy Older Adults

Angela Gushue[1,2] (agushue25@cmc.edu), Craig Stark[1], Poortata Lalwani[1]; [1]University of California Irvine, [2]Claremont McKenna College

Topic Area: OTHER

E124 - Atypical Cortical Resting States in Adolescent Females and Males with ASD

Stacy Moppert[1] (stacymop@buffalo.edu), Eduardo Mercado[1]; [1]University at Buffalo

Topic Area: OTHER

E125 - Neuroimmunological Mechanisms of Psychosis - a Network Perspective with The Virtual Brain

Christoph V. M. Huettl[1,2] (christoph.huettl@charite.de), Konstantin Bülau[1,2], Leon Martin[1,2], Luise Da Costa Zemsch[1,2], Rico A. Schmitt[1,2], Michael Schirner[1,2], Leon Stefanovski[1,2], Petra Ritter[1,2,3]; [1]Berlin Institute of Health at Charité – Universitätsmedizin Berlin, Charitéplatz 1, 10117 Berlin, Germany, [2]Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Department for Neurology and Experimental Neurology, Brain Simulation Section, Charitéplatz 1, 10117 Berlin, Germany, [3]Bernstein Center for Computational Neuroscience Berlin, Berlin, Germany

Topic Area: OTHER

E127 - Brain functional connectivity, but not neuroanatomy, captures the interrelationship between sex and gender in preadolescents

Athanasia Metoki[1] (nasia.metoki@gmail.com), Roselyne Chauvin[1], Evan M. Gordon[1], Timothy O. Laumann[1], Benjamin P. Kay[1], Samuel R. Krimmel[1], Scott Marek[1], Anxu Wang[1], Andrew N. Van[1], Noah J. Baden[1], Vahdeta Suljic[1], Kristen M. Scheidter[1], Julia Monk[1], Forrest I. Whiting[1], Nadeshka J. Ramirez-Perez[2], Deanna M. Barch[1], Aristeidis Sotiras[1], Nico U.F. Dosenbach[1]; [1]Washington University in St. Louis, [2]Harvard University

Topic Area: OTHER

E128 - When does an external sound become part of a dream? An exploration of EEG predictors, real-time signals, sleep stage, and temporal factors

Daniel Morris[1] (danielmorris2027@u.northwestern.edu), Gabriela Torres-Platas[1], Karen Konkoly[1], Tashi Lhamo[1], Tenzin Tenkyong[2], Stanzin Wangden[3], Lobsang Wangdue[4], Dorji Lotus[5], Sonam Damdul[6], Lhundup Choeden[2], Amchok Lobsang[7], Ken Paller[1]; [1]Northwestern University, [2]Sera Mey Monastery, [3]Drepung Gomang Monastery, [4]Rato Monastery, [5]Tashi Lhunpo Monastery, [6]Drepung Loseling Monastery, [7]Gaden Shartse Monastery

Topic Area: OTHER

E130 - Efficacy and safety of Kami Guibi-tang in elderly patients with insomnia and memory complaints: A randomized, double-blind, placebo-controlled trial

Seung-Yeon Cho[1], Kyeonghwa Lee[1], Seong-Uk Park[1], Jung-Mi Park[1], Chang-Nam Ko[1]; [1]Kyung Hee University, Seoul, Republic of Korea

Topic Area: OTHER

E131 - Investigating the flexible network architecture of intelligence

Ramsey R. Wilcox[1,2], Babak Hemmatian[1,3], Lav R. Varshney[3,4], Aron K. Barbey[1,2,3,5,6]; [1]Decision Neuroscience Laboratory, Center for Brain, Biology & Behavior, University of Nebrask, [2]Department of Psychology, University of Nebraska, [3]Beckman Institute for Advanced Science & Technology, University of Illinois, [4]Department of Electrical & Computer Engineering, University of Illinois, [5]Department of Psychology, University of Illinois, [6]Department of Bioengineering, University of Illinois

Topic Area: OTHER

E132 - Neural Correlates of Contemplative Sleep Practices

S. Gabriela Torres Platas[1] (susana.torresplatas@northwestern.edu), Daniel Morris[1], James Glazer[1], Karen Konkoly[1], Ema Demšar[2], Michael Sheehy[3], David Germano[3], Ken Paller[1]; [1]Northwestern University, [2]Monash University, [3]University of Virginia

Topic Area: OTHER

E133 - Person-specific changes in brainstem-cortical functional connectivity during cognitive and affective tasks: a 7T fMRI study of humans

Philip Deming[1] (p.deming@northeastern.edu), Ajay Satpute[1], Karen Quigley[1], Philip Kragel[2], Marta Bianciardi[3], Larry Wald[3], Tor Wager[4], Ji-Kyung Choi[5], Jiahe Zhang[1], Lisa Feldman Barrett[1], Yuta Katsumi[3], Jordan Theriault[1]; [1]Northeastern University, [2]Emory University, [3]Massachusetts General Hospital and Harvard Medical School, [4]Dartmouth College, [5]University of California San Francisco

Topic Area: OTHER

E134 - Cannabis use, cognitive functioning, and dementia risk: an observational and Mendelian randomization study

Saba Ishrat[1] (saba.ishrat@stx.ox.ac.uk), Klaus Ebmeier[1], Anya Topiwala[1]; [1]University of Oxford

Topic Area: OTHER

E135 - Early cerebellar damage disrupts typical cognitive development in pediatric tumor patients

Rebecca Tegiacchi[1] (rt6202a@american.edu), Claire Gellner[1], Elizabeth Malloy[1], Meredith Goyette[2], Karin Walsh[2], Catherine Stoodley[2]; [1]American University, [2]Children's National Medical Center

Topic Area: OTHER

E136 - Directed breathing during sleep in healthy adults and potential applications to sleep apnea

Erika M. Yamazaki[1], Hrayr Attarian[2], Phyllis C. Zee[2], Ken A. Paller[1]; [1]Northwestern University, [2]Northwestern University, Feinberg School of Medicine

Topic Area: OTHER

E137 - Psilocybin-Assisted Therapy for Relapse Prevention in Alcohol Use Disorder: A randomized control trial

Nathalie M. Rieser[1,2] (nathalie.rieser@bli.uzh.ch), Raoul Bitar[1], Simon Halm[1], Christina Rossgoderer[1], Ladina P. Gubser[1], Maeva Thevenaz[1], Yara Kreis[1], Robin von Rotz[1], Carlos Nordt[1], Flora Moujaes[1], Etna J.E. Engeli[1], Andres Ort[1], Erich Seifritz[1], Franz X. Vollenweider[1], Marcus Herdener[1], Katrin H. Preller[1]; [1]Psychiatric University Hospital Zurich, [2]Johns Hopkins University

Topic Area: OTHER

E138 - Lateral Prefrontal Cortex is Similarly Associated With Color Source Memory and Spatial Source Memory

Carolina E Carneiro[1] (carneir@bc.edu), Haley A Fritch[2], Ashley C Steinkrauss[1], Robert S Ross[3], Scott D Slotnick[1]; [1]Boston College, [2]Broad Institute, Massachusetts Institute of Technology & Harvard University, [3]Johns Hopkins University

Topic Area: OTHER

E139 - Creative Flow as Optimized Processing: EEG evidence during jazz improvisation

David Rosen[1,2] (drosen9@jh.edu), Yongtaek Oh[1], Christine Chesebrough[1], Fengqing (Zoe) Zhang[1], John Kounios[1]; [1]Drexel University, [2]Johns Hopkins University

Topic Area: OTHER

E140 - The prevalence of allergy and other inflammatory disorder in those with treatment-resistant depressive symptoms

Megan Johnson[1] (mej4003@med.cornell.edu), Megan Chang[1], Jolin Chou[1], Claire Ho[1], Indira Summerville[1], Immanuel Elbau[1], Benjamin Zebley[1], Conor Liston[1], Lindsay Victoria[1]; [1]Weill Cornell Medicine

Topic Area: OTHER

E141 - Structure-function dependencies in large-scale networks: Novel insights from the split brain

Tyler Santander[1] (t.santander@psych.ucsb.edu), Selin Bekir[1], Jessica Simonson[1], Theresa Paul[2], Valerie Wiemer[2], Henri Skinner[1], Lena Hopf[3], Anna Rada[3], Friedrich Woermann[3], Thilo Kalbhenn[3], Barry Giesbrecht[1], Christian Bien[3], 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

E142 - Cannabidiol-Enhanced Fear Extinction in Individuals with Social Anxiety

Finian Zakas[1] (fcx24001@uconn.edu), Skyler Sklenarik[1], Mia Tzikas[1], Aishwarya Benzy[1], Claudia Mizerek[1], Sarah Franzen[1], Riley McNaboe[1], Hugo Posada-Quintero[1], Kimberli Treadwell[1], David Tolin[2], Robert Astur[1]; [1]University of Connecticut, [2]Anxiety Disorder Center, Hartford Hospital

Topic Area: OTHER

E143 - Sudden Gains as an Indicator of Improved Depression Symptom Outcomes in iTBS TMS

Jolin Chou[1] (joc4023@med.cornell.edu), Indira Summerville[1], Megan E. Chang[1], Claire Ho[1], Megan Johnson[1], Nicola Manfredi[1], Hayley Seltzberg[1], Benjamin Zebley[1], Lindsay Victoria[1], Conor Liston[1], Nili Solomonov[1], Immanuel Elbau[1]; [1]Weill Cornell Medicine

Topic Area: OTHER

E144 - Functional Cerebello-Basal Ganglia Networks and their Role in Cognitive and Motor Processes Across the Adult Lifespan

Ivan Herrejon[1], Grace Denny[1], Sydney Cos[1], Thamires Magalhaes[1], Jessica Bernard; [1]Texas A&M University

Topic Area: OTHER

E145 - Parent-Child Neural Concordance in Arithmetic and Reading: Evidence from Task-Based fMRI Activation and Functional Connectivity Analyses

Aymee Alvarez Rivero[1,3], Lien Peters[2], Daniel Ansari[1]; [1]Western University, [2]Ghent University, [3]Harvard Graduate School of Education

Topic Area: OTHER

E146 - Beneficial Effects of 40 Hz Stimulation on Post-Ischemic Recovery In Mice

Piergiulio R. Bressan[1] (pbressan@bu.edu), Rockwell P. Tang[1], Emily A. Long[1], John Jiang[1], Bradley C. Rauscher[1], David A. Boas[1]; [1]Neurophotonics Center, Boston University

Topic Area: OTHER

E147 - Validating Microglia Cell Line HMC3 to Study the B7-1/p75NTR Interaction

Emmanuel Makinde[1,2], Hrshita Das[2], Matthew Houpert[2], Bruce Carter[2]; [1]New York University Center for Neural Science, [2]Vanderbilt University Medical Center: Department of Biochemistry

Topic Area: OTHER

E148 - Neural mechanisms of depressive symptoms in bipolar disorder and major depressive disorder revealed by resting-state functional connectivity

Ayumu Yamashita[1,2] (ayumu722@gmail.com), Suzuka Narukawa[1,3], Yutaro Hori[1,4], Takashi Itahashi[5], Yuki Sakai[1,6], Saori Tanaka[1,7], Go Okada[8], Kouji Kamagata[9], Ryuichiro Hashimoto[1,5,10], Haruto Takagishi[11], Toshiya Murai[12], Koichi Hosomi[13], Yoshiyuki Hirano[14], Masaru Mimura[15], Koji Matsuo[16], Shinsuke Koike[17], Kiyoto Kasai[18,19], Hidehiko Takahashi[12], Takuya Hayashi[21], Mitsuo Kawato[1,6], Okito Yamashita[1,23]; [1]Advanced Telecommunications Research Institute International (ATR), Brain Information Communication Research Laboratory Group, [2]Graduate School of Information Science and Technology, The University of Tokyo, [3]The Graduate University for Advanced Studies, [4]College of Arts and Sciences, The University of Tokyo, [5]Medical Institute of Developmental Disabilities Research, Showa University, [6]XNef Inc., [7]Graduate School of Advanced Science and Technology, Nara Institute of Science and Technology, [8]Department of Psychiatry and Neurosciences, Hiroshima University, [9]Department of Radiology, Juntendo University School of Medicine, [10]Faculty of Humanities and Social Sciences, Tokyo Metropolitan University, [11]Brain Science Institute, Tamagawa University, [12]Graduate School of Medicine, Kyoto University, [13]Graduate School of Medicine, Osaka University, [14]Research Center for Child Mental Development, Chiba University, [15]School of Medicine, Keio University, [16]Faculty of Medicine, Saitama Medical University, [17]Graduate School of Arts and Sciences, The University of Tokyo, [18]Graduate School of Medicine, The University of Tokyo, [19]International Research Center for Neurointelligence, Institutes for Advanced Study, The University of

Tokyo, [20]Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, [21]Center for Biosystems Dynamics Research (BDR), RIKEN, [22]Brain Connectomics, Graduate School of Medicine, Kyoto University, [23]Center for Advanced Intelligence Project (AIP), RIKEN

Topic Area: OTHER

E149 - Obstetric outcomes and effects from COL6A3-associated-Bethlem myopathy: A case report

Ajay Nair[1] (ajay.nair@rockets.utoledo.edu), Sabeena Malik[2], James VanHook[1]; [1]University of Toledo College of Medicine and Life Sciences, [2]Promedica Neurosciences Center ProMedica Toledo Hospital Medical Complex

Topic Area: OTHER

E150 - Association Between Cardiovascular Risk, Regional Brain Age Gap, and Cognition in Healthy Adults

Sriya Pallapothu[1] (sriyap@email.sc.edu), Roger D. Newman-Norlund[1], Nick Riccardi[1], Leo Bonilha[2], Julius Fridriksson[1], Chris Rorden[2]; [1]University of South Carolina, Columbia, [2]University of South Carolina School of Medicine, Columbia

Topic Area: OTHER

E151 - Brain functional connectivity predicts depression and anxiety during childhood and adolescence: a connectome-based predictive modeling approach

Francesca Morfini[1] (f.morfini.work@gmail.com), Aaron Kucyi[2], Jiahe Zhang[1,3], Clemens C.C. Bauer[1], Paul A. Bloom[4], David Pagliaccio[4], Susan Whitfield-Gabrieli[1,3], Randy P. Auerbach[4]; [1]Northeastern University, [2]Drexel University, [3]Massachusetts General Hospital, [4]Columbia University

Topic Area: OTHER

E152 - Meditation and brain health: a 6-month multimodal longitudinal study of Inner Engineering

Sepideh Hariri[1,2] (shariri1@bidmc.harvard.edu), Kestutis Kveraga[1,2], Braiden Deschryver[2], Akila Rayapuraju[2], Sydney Freidopfer[2], Morgan Pratt[2], Nashaw Jafari[2], Preeti Reed[1,2], Balachundhar Subramaniam[1,2]; [1]Harvard Medical School, [2]Beth Israel Deaconess Medical Center

Topic Area: OTHER

E153 - Role of early caregiver predictability in brain network flexibility during the first year of life

Priyanka Ghosh[1] (priyankaghoshmail@gmail.com), Laurel Gabard-Durnam[1]; [1]Northeastern University, Boston

Topic Area: OTHER

E154 - Shifts in brain network topology during Isha Shoonya meditation

Riku Ihalainen[1,2], Sepideh Hariri[1,2], Kestutis Kveraga[1,2], Balachundhar Subramaniam[1,2]; [1]Beth Israel Deaconess Medical Center, Boston, Massachusetts, [2]Harvard Medical School, Boston, Massachusetts

Topic Area: OTHER

E155 - Resting State Neuroelectric Function and Socio-Demographic Constructs in Children and Adolescents

Janis Gaudreau[1] (janis_gaudreau@uri.edu), Michelle Lim[1], Nicole Logan[1]; [1]The University of Rhode Island

Topic Area: OTHER

E156 - Novelty processing in cannabis use and psychotic-like experiences

Ethan Campbell[1] (ecampbell@unm.edu), Jeremy Hogeveen; [1]University of New Mexico

Topic Area: OTHER

E157 - Spontaneous brain activity during sleep reduces subjective and objective visual recognition misalignment

Fumiaki Sato[1] (fumiaki.sato@riken.jp), An Saotome[1], Ryosuke Katsumata[1], Mami Yamaji[1], Takeru Matsuda[1,2], Masako Tamaki[1,3]; [1]RIKEN Center for Brain Science, Japan, [2]The University of Tokyo, Japan, [3]RIKEN Cluster for Pioneering Research, Japan

Topic Area: THINKING: Problem solving

E158 - How You Rest May Determine Your Best: Prefrontal Cortex Resting State Activity as a Predictor of Problem-Solving Ability

Siena DeAngelo[1] (siena.deangelo@bruins.belmont.edu), Baie Ensio[1], Emily Stripling[1], Cristina Posada[1], Carole Scherling, PhD[1]; [1]Belmont University

Topic Area: THINKING: Problem solving

E159 - Effects of Alpha and Gamma Band EEG Oscillations Over Prefrontal Cortex on Creative Cognition Using Transcranial Alternating Current Stimulation (tACS)

Necla Ece Yilmaz[1] (neclaece@gmail.com), Sevinch Rakhmonova[1], Aaron Kucyi[1], John Kounios[1], Evangelia G. Chrysikou[1]; [1]Drexel University

Topic Area: THINKING: Problem solving

E160 - Do Learning Preferences Predict Fixation to Pictorial Examples in Design Problem Solving?

Leah Downie[1] (ld922@drexel.edu), Dong Ho Kim[2], Alexandra E. Kelly[1], John Gero[3], Evangelia G. Chrysikou[1]; [1]Drexel University, [2]Northwestern University, [3]University of North Carolina at Charlotte

Topic Area: THINKING: Problem solving

E161 - Neural Differences in Categorization Learning Can Predict Fixation to Examples During Problem Solving

Evangelia G. Chrysikou[1] (lilachrysikou@gmail.com), Alexandra E. Kelly[1], Dong Ho Kim[2], Julie Milovanovich[3], John Gero[3]; [1]Drexel University, [2]Northwestern University, [3]University of North Carolina at Charlotte

Topic Area: THINKING: Problem solving

E162 - Creative Idea Generation in Hypnagogia

Nia McClendon[1], Alissa Gomez[1], Mark Beeman[2]; [1]Northwestern University

Topic Area: THINKING: Problem solving

E163 - A Cross-Linguistic Analysis of Aphasic Speech

Sreekar Baddepudi[1], Josh Van Zak[2]; [1]Evergreen Valley High School, [2]Cambridge University

Topic Area: LANGUAGE: Other

Poster Session F

Tuesday, April 1, 2025, 8:00 – 10:00 am, Back Bay Ballroom/Republic Ballroom

F1 - The effect of mindfulness on emotion regulation and theta power in parents.

Rachel Eubanks[1], Bailey Shea[1], Bridget Cho[1], Brianne Coulombe[1], Laura Jelsone-Swain[1]; [1]University of South Carolina Aiken

Topic Area: EMOTION & SOCIAL: Emotion-cognition interactions

F2 - Influence of aging on medial frontal and hippocampal contributions to interactions between new and old route memories

Paulina Maxim[1], Scott D Moffat[1], Thackery I Brown[1]; [1]Georgia Institute of Technology

Topic Area: EXECUTIVE PROCESSES: Development &aging

F3 - Modeling biophysically interpretable meso-scale latent dynamics with filtered point processes

Patrick Bloniasz[1] (pblonias@bu.edu), Shohei Oyama[1], Emily Stephen[1]; [1]Boston University

Topic Area: METHODS: Electrophysiology

F4 - Human sleep spindles are directed by excitatory non-invasive brain stimulation

Jude Thom[1] (jude.thom@linacre.ox.ac.uk), Bernhard Staresina[1]; [1]Department of Experimental Psychology, University of Oxford

Topic Area: METHODS: Electrophysiology

F5 - Cortical Signatures of Hippocampal Ripples in Human Sleep

Pin-Chun Chen[1] (pcchen.sleep@gmail.com), Jenny Stritzelberger[2], Katrin Walther[2], Hajo Hamer[2], Bernhard Staresina[1]; [1]University of Oxford, [2]Universitatsklinikum Erlangen

Topic Area: METHODS: Electrophysiology

F6 - Assessing Consciousness and its Cognitive Correlates in Alzheimer's Disease with the TMS-EEG Perturbation Complexity Index

Brenna Hagan[1,2] (haganb@bu.edu), Stephanie S. Buss[3], Peter J. Fried[3], Mouhsin M. Shafi[3], Katherine W. Turk[1,2], Kathy Xie[1,2], Recep A. Ozdemir[3], Andrew E. Budson[1,2]; [1]Center for Translational Cognitive Neuroscience, VA Boston Healthcare System, [2]Alzheimer's Disease Research Center, Boston University School of Medicine, [3]Berenson-Allen Center for Noninvasive Brain Stimulation, Beth Israel Deaconess Medical Center

Topic Area: METHODS: Electrophysiology

F7 - Comparison of ERP inverse solutions using MRI-informed versus standard forward models

Mark Pflieger[1] (mark.pflieger@gmail.com), Kathryn Toffolo[2], John Foxe[2]; [1]San Diego State University, [2]University of Rochester Medical Center

Topic Area: METHODS: Electrophysiology

F8 - Improving the robustness of oscillation detection

Kieran Pawluk[1] (kpawluk@ualberta.ca), Tamari Shalamberidze[1], Jeremy Caplan[1]; [1]University of Alberta

Topic Area: METHODS: Electrophysiology

F9 - The effects of adverse childhood experiences on alpha wave reactivity using EEG

Emily Stripling[1] (emily.stripling@bruins.belmont.edu), Kristie Stephens[2], Dara Olopade[3], Aram Akbari, Emma Chacon, Karlie Souder, Liam Fienberg, Smyth Harper, Michael Oliver; [1]Belmont University

Topic Area: METHODS: Electrophysiology

F10 - Assessing reliability of resting-state EEG metrics in school-age children using a naturalistic paradigm

Madhumita Nambiar[1], Devin Kearns[2], Fumiko Hoeft[1], Silvia Siu-Yin Clement-Lam[1]; [1]University of Connecticut, [2]North Caroline State University

Topic Area: METHODS: Electrophysiology

F11 - Concurrent multimodal imaging reveals that EEG measures of excitation/inhibition balance are compatible with MRS-based measures

Aaron Cochrane[1] (aaron_cochrane@brown.edu), Luke Rosedahl[1],

Takeo Watanabe[1], Yuka Sasaki[1]; [1]Brown University

Topic Area: METHODS: Electrophysiology

F12 - Investigating electrophysiological brain network dynamics and mechanisms underlying executive deployment during novel learning

Julia K Dabrowska[1] (julia.dabrowska@univ.ox.ac.uk), Alexander Fraser[1], Bethan Grimes[1], Mats WJ van Es[1], Mark W Woolrich[1], Gaia Scerif[1]; [1]University of Oxford

Topic Area: METHODS: Electrophysiology

F13 - The Connectivity Crisis

Ole Jensen[1] (ole.jensen@psych.ox.ac.uk), Hyojin Park[2], Oscar Ferrante[2]; [1]Department of Experimental Psychology, Department of Psychiatry, University of Oxford, [2]Centre for Human Brain Health, University of Birmingham

Topic Area: METHODS: Electrophysiology

F14 - Developmental trajectories of EEG rhythmic oscillatory activity in children 2-44 months of age

Haerin Chung[1,2] (haerin.chung@childrens.harvard.edu), Winko W. An[1,2], Charles A. Nelson[1,2,3], Carol L. Wilkinson[1,2]; [1]Boston Children's Hospital, [2]Harvard Medical School, [3]Harvard Graduate School of Education

Topic Area: METHODS: Electrophysiology

F15 - Protecting memory from misinformation: Using EEG to explore encoding-related neural responses during exposure to misinformation

Sophia Grekin[1,2] (sgreki01@tufts.edu), Himanshu Chaudhary[1,2], Wuhib Solomon[2], David Distefano[2], Ayanna Thomas[1], Elizabeth Race[2]; [1]meta-Cognition and Applied Memory Lab, Tufts University, [2]Integrative Cognitive Neuroscience Lab, Tufts University

Topic Area: METHODS: Electrophysiology

F16 - Functional Characterizations of CACNA1G variants Associated with Genetic Generalized Epilepsy

Athar sharifi[1,2] (athr.sharifi@gmail.com), Hang Lyu[1], Epi25 collaborative, Holger Lerche[1], Yuanyuan Liu[1]; [1]Dept. of Neurology and Epileptology, Hertie Institute for Clinical Brain Research, University of Tubingen, Germany, [2]Dept. of Molecular Medicine, University of Padua, Padua, Italy

Topic Area: METHODS: Electrophysiology

F17 - Cognitive reserve moderates the relationship between the aperiodic component of EEG signal and cognitive performance in older adults

Julia A. Sinople[1], Elena K. Festa[2], William C. Heindel[2], Laura E. Korthauer[1,3]; [1]Brown University Health, [2]Brown University, [3]Warren Alpert Medical School of Brown University

Topic Area: METHODS: Electrophysiology

F18 - Physiological Health vs. Cognitive Function: The Role of Blood Pressure, Heart Rate, and Pulse Oximetry

Sinead Mukolo-Villegas[1], Deya Rassul[1], Emily Stripling[1], Michelle Johnson[1], Ashley Brooks[1], Emma Sells[1], Hannah Johnson[1], Michael D. Oliver, Ph.D.[1]; [1]Belmont University

Topic Area: METHODS: Electrophysiology

F19 - The neural dynamics of acute coma recovery after severe traumatic brain injury using invasive electrocorticography

Rajanikant Panda[1] (rajanikant.panda@ucsf.edu), Kevin Bao[1], Narayan Sankaran[2], David Caldwell[1], Matheus Otero[1], Anthony Mefford[1], Roxanne Simmons[1], Britta Lindquist[1], Vishnu Karukonda[1], Anthony DiGiorgio[1], Phiroz Tarapore[1], Lawrence Chyall[1], Edward Chang[1], Claude Hemphill[1], Geoffrey Manley[1], Michael Huang[1], Edilberto Amorim[1]; [1]University of California San Francisco, [2]University of San Francisco

Topic Area: METHODS: Electrophysiology

F20 - Age-related differences in aperiodic neural activity and its role in listening effort

Sarah J. Woods[1] (sarah.woods@psych.utah.edu), Jack W Silcox[1], Brennan R. Payne[1]; [1]University of Utah

Topic Area: METHODS: Electrophysiology

F21 - Examining the extent of neural population overlap for music and speech using noise as a reference stimulus

Alejandra E Santoyo[1], Kristina C Backer[1], Antoine J Shahin[1]; [1]University of California, Merced

Topic Area: METHODS: Electrophysiology

F22 - Novel approach for detection of topographic outliers for spatiotemporal EEG analyses

Jiong Yan Yap[1] (jiongyan@usc.edu), Delara Aryan[1], Sahana Nagabhushan Kalburgi[2]; [1]University of Southern California, [2]Children's Hospital Los Angeles

Topic Area: METHODS: Electrophysiology

F23 - Removing neural signal artifacts with autoencoder-targeted adversarial transformers (AT-AT)

Benjamin Choi[1] (benchoi@college.harvard.edu); [1]Harvard University

Topic Area: METHODS: Electrophysiology

F24 - Observable differences in electrophysiological markers of respiratory vagal nerve stimulation in deep breathing mindfulness training.

Dr Alexandra Roach[1] (alexandraro@usca.edu), Rayne Szilveszter[1], Jordyn Kellogg[1], Malia Patten[1], Star Boyd[1]; [1]Univ of South Carolina Aiken

Topic Area: METHODS: Electrophysiology

F25 - Dynamic Formation of a Posterior-to-Anterior Peak-Alpha-Frequency Gradient Driven by Two Distinct Processes

Marcia Grabowecky[1] (grabowecky@northwestern.edu), Max Kailler Smith[1], Satoru Suzuki[1]; [1]Northwestern University

Topic Area: METHODS: Electrophysiology

F27 - Longitudinal study of concussion-related diffusion MRI changes in college athletes: modeling tracts via hierarchical generalized additive models

Nathan Muncy[1] (nmuncy2@unl.edu), Aron Barbey[1]; [1]University of Nebraska-Lincoln

Topic Area: METHODS: Neuroimaging

F28 - Cross-Modal Transformation of Structural Similarity Networks into Functional Connectomes for Behavioral Prediction

Yae Ji Kim[1], Minchul Kim[2], Marvin M. Chun[3], Kwangsun Yoo[1,4]; [1] Sungkyunkwan University, [2]Kangbuk Samsung Hospital, [3]Yale University, [4]Samsung Medical Center

Topic Area: METHODS: Neuroimaging

F29 - Novel Optical Parallelized Diffuse Correlation Spectroscopy Distinguishes Subtle Task-Specific Prefrontal Cortical Activity

Akhilesh Chegu[1] (akhilesh.chegu@duke.edu), Lucas Kreiss[1], Paul McKee[1], Melissa Wu[1], Roarke Horstmeyer[1], Scott Huettel[1]; [1]Duke University

Topic Area: METHODS: Neuroimaging

F30 - Characterizing neural and behavioral signatures of normal cognition using TD-fNIRS Across the Adult Lifespan

Julien Dubois[1], Ryan M. Field[1], Erin M. Koch[1], Zahra M. Aghajan[1], Naomi Miller[1], Katherine L. Perdue[1], Moriah Taylor[1]; [1]Kernel, Culver City, CA, USA

Topic Area: METHODS: Neuroimaging

F31 - Neural synchrony network disruptions in Alzheimer's disease revealed with MEG imaging

Pooja Prabhu[1], Kiwamu Kudo[1,2], Leighton Hinkley[1], Faatimah Syed[3], Anne Findlay[1], Bruce Miller[3], Joel Kramer[3], John Houde[4], Keith Vossel[3,5], Kamalini Ranasinghe[3], Srikantan Nagarajan[1]; [1]Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, CA, USA, [2]Medical Imaging Business Center, Ricoh Company Ltd., Kanazawa, Japan, [3]Memory and Aging Center, Department of Neurology, University of California San Francisco, San Francisco, CA, USA, [4]Speech Neuroscience Laboratory, Department of Otolaryngology—Head and Neck Surgery, University of California San Francisco, San Francisco, California 94143, USA, [5]Mary S. Easton Center for Alzheimer's Disease Research, Department of Neurology, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA 90095, USA

Topic Area: METHODS: Neuroimaging

F32 - BrainPowerX - A New Empirical Algorithm for Power Calculation for fMRI

Fabricio Cravo[1], Stephanie Noble[1,2]; [1]Northeastern University, [2]Yale University

Topic Area: METHODS: Neuroimaging

F33 - Dynamic Volitional Respiratory Modulation Increases Large-Scale Brain Network Integration

Jude Hammoud[1] (jhammoud@mgh.harvard.edu), Suk-tak Chan[2], Kenneth K. Kwong[3], Clemens C. Bauer[1,4,5,6], David Magone[7], Susan Whitfield-Gabrieli[6], Karestan Koenen[8]; [1]Center for Precision Psychiatry, Massachusetts General Hospital, [2]Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, [3]Department of Radiology, Massachusetts General Hospital, Harvard Medical School, [4]Department of Psychology, Northeastern University, [5]Department of Brain and Cognitive Sciences and McGovern Institute for Brain Research, Massachusetts Institute of Technology, [6]Department of Psychiatry, Harvard Medical School, [7]Down Under School of Yoga, Boston, MA, [8]Department of Epidemiology, Harvard T.H. Chan School of Public Health, Harvard University

Topic Area: METHODS: Neuroimaging

F34 - Development of a Diagnostic Model for Mild Cognitive Impairment Using Brain Functional Connectivity

Chisho Takeoka[1] (takeoka.chisho904@mail.kyutech.jp), Tetsushi Yada[1], Toshimasa Yamazaki[2], Yoshiyuki Kuroiwa[3], Kimihro Fujino[3], Toshiaki Hirai[3], Hidehiro Mizusawa[4]; [1]Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology, [2]Office for Career Support, School of Computer Science and Systems Engineering, Kyushu Institute of Technology, [3]University Hospital, Mizonokuchi Teikyo University School of Medicine, [4]National Center of Neurology and Psychiatry

Topic Area: METHODS: Other

F35 - Spirit in Physics: Structuring and Quantifying Human Spirit Using the Vector Space

Jun Kawasaki[1] (root@junkawasaki.com), Kazuki Tainaka[2], Tomonori Takeuchi[3]; [1]Graduate School of Medical and Dental Sciences, Niigata University, [2]Brain Research Institute, Niigata University, Japan, [3]Department of Biomedicine, Aarhus University, Denmark

Topic Area: METHODS: Other

F36 - Effect of Transcranial Photobiomodulation on Clinical Symptoms, Quality of Life, and Brain Connectivity Alterations in Dementia with Lewy Bodies

Anne Botzung[1,2] (abotzung@unistra.fr), Eléna Chabran[1], Malvina Billères[3], Marjorie Dole[3], Antoine Robinet[3], Olivier Bousiges[1], Paulo Loureiro De Sousa[1], John Mitrofanis[3], Blanc Frédéric[1,2]; [1]ICube Laboratory UMR 7357, Université de Strasbourg, CNRS, Strasbourg, France, [2]Centre Mémoire de Ressources et de Recherche (CM2R), Départements de neurologie et gériatrie, Hôpitaux Universitaires de Strasbourg, Strasbourg, France, [3]Université Grenoble Alpes, Fonds de Dotation Clinatec, Grenoble, France

Topic Area: METHODS: Other

F37 - The potential moderating role of estrogen in effects of transcranial direct current stimulation on working memory

Samantha Walsh[1], Alexandra Gaynor[1]; [1]Montclair State University

Topic Area: METHODS: Other

F38 - Trial-level representational similarity analysis

Shenyang Huang[1] (shenyang.huang@duke.edu), Cortney M. Howard[1], Ricardo Morales-Torres[1], Matthew Slayton[1], Paul C. Bogdan[1], Roberto Cabeza[1], Simon W. Davis[1]; [1]Duke University

Topic Area: METHODS: Other

F39 - Clinical Correlation of Stereopsis to Dementia Diagnosis in a Memory Clinic

Rui Huang[1] (rui.huang@thealzcenter.org), Surya Sunil[2], Viviana Obando[3], Malini Nair[4], Anil K Nair[5]; [1]Alzheimer Disease Center

Topic Area: METHODS: Other

F40 - 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

F41 - Preliminary Exploratory Analysis of Autistic Camouflaging using Machine Learning

Dan Kingsley[1] (dkingsl2@gmu.edu), Goldie McQuaid[1], Allison Jack[1]; [1]George Mason University

Topic Area: METHODS: Other

F42 - Reducing Bias in Autism Spectrum Disorder Diagnostic Procedures Through Machine Learning

Georgia Agoritsas[1] (gagoritsas@outlook.com); [1]The Bronx High School of Science

Topic Area: METHODS: Other

F43 - Does scientific research reflect the diversity of mental experience?

Douglas Forrest[1] (douglas.forrest@ubc.ca), Desmond Wood-Anderson[1], Andre Zamani[1], Caitlin Mills[2], Kalina Christoff Hadjiilieva[1]; [1]University of British Columbia, [2]University of Minnesota

Topic Area: METHODS: Other

F44 - Shared genetic etiologies between type 1 diabetes and neurobiological traits

David Alagpulinsa[1,2], Priscilla Priscilla Saarah[1,2], Zehra Syeda[1,2], Ziang Xu[1,2], Yikai Dong[1,2], Samira Asgari[3,4], Andrew DeWan[5,6]; [1]Yale Center for Molecular and Systems Metabolism, Yale University School of Medicine, New Haven, CT, USA., [2]Department of Comparative Medicine, Yale University School of Medicine, New Haven, CT, USA., [3]Institute for Genomic Health, Icahn School of Medicine at Mount Sinai, New York, NY, USA., [4]Department of Genetics and Genomic Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, USA., [5]Center for Perinatal, Pediatric and Environmental Epidemiology, 60 College Street, Yale School of Public Health, New Haven, CT 06510, United States., [6]Department of Chronic Disease Epidemiology, Yale School of Public Health, 60 College Street, New Haven, CT 06510, United States.

Topic Area: METHODS: Other

F45 - Slow wave stimulation using a smartwatch improves sleep quality

Nathan W Whitmore[1] (nathanww@media.mit.edu), Wei Ting Samantha Chan[1], Abigail Dulski[1], Anita Podrug[1], Nelson Hidalgo[1], Nnamdi Obi[1], Varun K. Viswanath[2], Viswam Nathan[2], Pattie Maes[1]; [1]MIT, [2]Samsung Research America

Topic Area: METHODS: Other

F46 - Beyond Traditional Factor Analysis: Exploring Latent Variable Modeling Strategies to Capture BrainHealth Index Trajectory.

Quentin Coppola[1] (coppola.q@northeastern.edu), Marc Yanguez[1], Jeffrey Spence[2], Lori Cook[2], Mark D'Esposito[3], Sandra Chapman[2], Susanne Jaeggi[1], Aaron Seitz[1]; [1]Northeastern University, [2]University of Texas, Dallas, [3]University of California, Berkeley

Topic Area: METHODS: Other

F47 - Familiarity with everyday naturalistic scene categories in adults and children

Sanjivan Loganathan[1] (sanjivan.loganathan@mail.utoronto.ca), Sagana Vijayarajah[1], Margaret Schlichting[1]; [1]University of Toronto

Topic Area: METHODS: Other

F48 - Precision Brain Modeling Reveals a Bifurcation Mechanism and Local Circuitry Underlying Individual Differences

Matthew Singh[1,2], ShiNung Ching[3], Todd Braver[3]; [1]University of Illinois, Urbana-Champaign, [2]The Beckman Institute for Advanced Science and Technology, [3]Washington University in St. Louis

Topic Area: METHODS: Other

F49 - Activating the Path to Recovery: TMS-Evoked Functional Connectivity Response Predicts Clinical Changes in Closed-Loop Accelerated rTMS for Depression

Gavin Doyle[1], Jayce Doose[1], Hengda He[2], Spiro P. Pantazatos[2], Xiaoxiao Sun[2], Chichi Chang[2], Sara Hashempour[1], Ruxue Gong[1], Linbi Hong[2], Corbin Ping[1], Jacob Eade[1], Christian Finetto[1], Brendan Murney[1], Abby Williams[1], Mark S. George[1], Robin Goldman[3], Paul Sajda[2], Lisa McTeague[1]; [1]Medical University of South Carolina, [2]Columbia University, [3]University of Wisconsin-Madison

Topic Area: METHODS: Other

F50 - Use and efficacy of commercially available tES devices: A systematic review and meta-analysis

Sara Anne Goring[1] (sara.goring@tufts.edu), Marissa Marko Lee[1], Sydni M. Nadler[2], Madelyn Sandone[1], Tad T. Brunyé[3,1]; [1]Center for Applied Brain and Cognitive Sciences, Tufts University, Medford, MA, USA, [2]Department of Psychology, Tufts University, Medford, MA, USA,, [3]U.S. Army DEVCOM Soldier Center, Natick, MA, USA

Topic Area: METHODS: Other

F51 - Influence of social context and musical structure in processing musical conversations

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Topic Area: PERCEPTION & ACTION: Audition

F52 - Decoding speech and music from intracranial recordings: evidence for domain-general representations of sound in the human brain

Jérémie Ginzburg[1,2] (jeremie.ginzburg@mcgill.ca), Émilie Cloutier Debaque[2], Arthur Borderie[2], Laurence Martineau[3], Paule Lessard Bonaventure[3], Robert J Zatorre[1], Philippe Albouy[2]; [1]Montreal Neurological Institute, McGill University, Montreal, Canada, [2]CERVO research center, Laval University, Québec, Canada, [3]Centre Hospitalier Universitaire, Laval University, Québec, Canada

Topic Area: PERCEPTION & ACTION: Audition

F53 - Do listeners access abstract morphological representations while processing speech? A representational similarity analysis of event-related potentials

Chiung-Yu Chang[1] (chiungyuchan@umass.edu), Alexandra Jesse[1], Lisa D. Sanders[1]; [1]University of Massachusetts Amherst

Topic Area: PERCEPTION & ACTION: Audition

F54 - Effects of Theta-Band Amplitude Modulation on Sustained Attention

Corinna Parrish[1], Arun Asthagiri[1], Psyche Loui[1]; [1]Northeastern University

Topic Area: PERCEPTION & ACTION: Audition

F55 - Reduced habituation to tones in FXS compared to TD and ASD

Winko An[1] (anwenkang@gmail.com), Michael Khela[1], Meagan Tsou[1], Carol Wilkinson[1]; [1]Division of Developmental Medicine, Boston Children's Hospital

Topic Area: PERCEPTION & ACTION: Audition

F56 - Neural correlates of predictive speech processing in noise

Tugba Lulaci[1] (tugba.lulaci@ling.lu.se), Pelle Söderström[1,2], Mikael Roll[1]; [1]Lund University, [2]The National Acoustic Laboratories, Sydney, Australia

Topic Area: PERCEPTION & ACTION: Audition

F57 - Across- but Not Within-Category Speech Discrimination Is Associated with Individual Phonological Awareness

Heesu Yun[1] (yun.he@northeastern.edu), Monique Montoute[1], Lauren Voso[1], Brynn Siles[1], Carlie Chukrallah[1], Tess Latham[1], Pradyumna Lanka[1], Frances Earle[2], Zhenghan Qi[1]; [1]Northeastern University, [2]University of Delaware

Topic Area: PERCEPTION & ACTION: Audition

F58 - Function of the auditory cortex characterized with its intrinsic dynamic coactivation patterns estimated in individuals

Maria Hakonen[1,2] (mhakonen@mgh.harvard.edu), Kaisu Lankinen[1,2], Parker Kotlarz[1,2], Jonathan Polimeni[1,2,3], Tori Turpin[1], Jianxun Ren[4], Danhong Wang[1,2], Hesheng Liu[4,5], Jyrki Ahveninen[1,2]; [1]Athinoula A. Martinos Center for Biomedical Imaging, [2]Massachusetts General Hospital / Harvard Medical School, [3]Harvard-MIT Program in Health Sciences and Technology, [4]Changping Laboratory, [5]Biomedical Pioneering Innovation Center, Peking University

Topic Area: PERCEPTION & ACTION: Audition

F59 - Perceptual similarity predicts item recognition errors but not serial order errors in auditory working memory

Abigail Noyce[1] (anoyce@andrew.cmu.edu), Will Yuhang Li[1,2], Eli Bulger[1], Barbara Shinn-Cunningham[1]; [1]Carnegie Mellon University, [2]University of Wisconsin

Topic Area: PERCEPTION & ACTION: Audition

F60 - Examining the relationship between behavioral and neural indices of nonnative speech perception

Meli R. Ayala[1] (aayala@udel.edu), Ali Solbi[1], F. Sayako Earle[1]; [1]University of Delaware

Topic Area: PERCEPTION & ACTION: Audition

F61 - Complex impact of stimulus envelope on motor synchronization to sound

Yue Sun[1], Georgios Michalareas[2], Oded Ghitza[3], David Poeppel[1,4,5,6]; [1]Ernst Struengmann Institute for Neuroscience, Frankfurt am Main, Germany, [2]Max Planck Institute for Empirical Aesthetics, Frankfurt am Main, Germany, [3]Boston University, [4]New York University, [5]Center for Language, Music, and Emotion (CLaME), New York, USA, [6]Music and Audio Research Laboratory (MARL), New York, USA

Topic Area: PERCEPTION & ACTION: Audition

F62 - Sound Tracking and Localization in Blind Athletics

Hannah Creely[1] (hncreely@live.carlow.edu), Jennifer Roth[1], Clara Cheng[1]; [1]Carlow University

Topic Area: PERCEPTION & ACTION: Audition

F63 - Sensorimotor Engagement Facilitates Regularity Detection During Auditory Scene Analysis

Berfin Bastug[1] (berfin.bastug@esi-frankfurt.de), Yue Sun[1], Erich Schroeger[3], David Poeppel[1,2]; [1]Ernst Struengmann Institute for Neuroscience, Frankfurt am Main, Germany, [2]Department of Psychology, New York University, [3]Wilhelm-Wundt-Institute of Psychology, Leipzig University, Leipzig, Germany

Topic Area: PERCEPTION & ACTION: Audition

F64 - Joint Connectivity between Sensorimotor and Auditory-Reward Networks During Resting State and Music Listening

Kai Yi (Kaye) Han[1] (han.kaiy@northeastern.edu), Corinna Parrish[1], Jinyu Wang[1], Psyche Loui[1]; [1]Northeastern University

Topic Area: PERCEPTION & ACTION: Audition

F65 - Perceptual Judgments of Auditory Fractal Stimuli

Mahboubeh khoddam[1] (mkhoddam@uoregon.edu), Richard Taylor[2], Margaret Sereno[1]; [1]Integrative Perception Lab, Department of Psychology, University of Oregon, Eugene, OR, United States, [2]Material Science Institute, Department of Physics, University of Oregon, Eugene, OR, United States

Topic Area: PERCEPTION & ACTION: Audition

F66 - Mu-band suppression reveals auditory-motor predictions after short motor training in non-musicians

Oscar Bedford Vilarrubias[1] (oscar.bedford@mail.mcgill.ca), Alberto Ara[1], Jérémie Ginzburg[1,2], Philippe Albouy[2], Robert Zatorre[1], Virginia Penhune[3]; [1]Montreal Neurological Institute, [2]CERVO Research Center, [3]Concordia University

Topic Area: PERCEPTION & ACTION: Audition

F67 - Effect of Modality on Categorical Speech Perception Task Performance

Lily Yan[1], Frances Earle; [1]University of Delaware

Topic Area: PERCEPTION & ACTION: Audition

F68 - PRoMiSS: Psychedelics and the Role of Music in Set and Setting

Riddhima Chandra[1] (rchand23@jh.edu), David Rosen[1], Frederick Barrett[1,2,3]; [1]Center for Psychedelic and Consciousness Research, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, [2]Department of Psychological and Brain Sciences, Johns Hopkins University, [3]Department of Neuroscience, Johns Hopkins University School of Medicine

Topic Area: PERCEPTION & ACTION: Audition

F69 - A Spike in Entropy Precedes the Mismatch Negativity; Linking Entropy and Prediction Error

Michael Angyus[1] (michaelangyus@gmail.com), Fernando Rosas[4,1], Pedro Mediano[1,2], Robin Carhart-Harris[3,1]; [1]Imperial College London, [2]University of Cambridge, [3]University of California San Francisco, [4]University of Sussex

Topic Area: PERCEPTION & ACTION: Audition

F70 - Reduced Mismatch Negativity in Children with Autism Spectrum Disorder

Virginia A. Rosenberger[1,2], Winko W. An[1,2], Brooke E. Keough[1,2], Noah Crane[1,2], Leena Gupta[1,2], April R. Levin[1,2], Charles A. Nelson[1,2,3]; [1]Boston Children's Hospital, [2]Harvard Medical School, [3]Harvard University

Topic Area: PERCEPTION & ACTION: Audition

F71 - How do harmonic relationships affect grouping of sounds?

Julia M. Leeman[1] (julia.leeman@duke.edu), Cynthia D. King[1], Jennifer M. Groh[1]; [1]Duke University

Topic Area: PERCEPTION & ACTION: Audition

F72 - Non-global Absolute Pitch possessors - A specific cognitive process?
Ébano Resende de Souza[1]; [1]Austrian Academy of Sciences

Topic Area: PERCEPTION & ACTION: Audition

F73 - The missing pulse revisited: Comparing dynamic models with expert listeners
Edward Large[1] (edward.large@uconn.edu), Tylor Harlow[1], Mina Golmohammadi[1], Charles Wasserman[1], Heather Read[1]; [1]University of Connecticut

Topic Area: PERCEPTION & ACTION: Audition

F74 - Evoked Spectral Power in EEG decodes Musical Pitch Imagery in Auditory Cortex in EEG
Miyoung Chung[1] (miyoung.chung@mail.mcgill.ca), Andrea R. Halpern[2], Robert J. Zatorre[1]; [1]Montreal Neurological Institute, [2]Bucknell University

Topic Area: PERCEPTION & ACTION: Audition

F75 - Auditory masking release indexes human click-based echolocation performance
Haydée G. García Lázaro[1] (haydee@ski.org), Santani Teng[1]; [1]The Smith Kettlewell Eye Research Institute

Topic Area: PERCEPTION & ACTION: Audition

F76 - Neural Responses to Disturbances of Musical Phrase in Musicians and Non-Musicians: an ERP Study
Emma Barnard[1] (emmarose1213@gmail.com), Grit Herzmann[1]; [1]The College of Wooster

Topic Area: PERCEPTION & ACTION: Audition

F77 - Modeling target search in blind echolocators using a Kalman Filter with realistic exploratory behavior simulations
Sofia Krasovskaya[1] (skrasovskaya@ski.org), James M. Coughlan[1], Aarshil Patel[1], Santani Teng[1]; [1]The Smith-Kettlewell Eye Research Institute

Topic Area: PERCEPTION & ACTION: Audition

F78 - The Effects of Repeated Exposure on Musical Reward
Harley Glassman[1] (hglassman@torontomu.ca), Frank Russo[1]; [1]Toronto Metropolitan University

Topic Area: PERCEPTION & ACTION: Audition

F79 - Exploring the relationship between age-related hearing loss and the neural correlates of speech processing
Sara Jani[1,2] (sara.jani@mail.utoronto.ca), Claude Alain[1,2]; [1]University of Toronto, [2]Rotman Research Institute at Baycrest Hospital, Toronto, Ontario, Canada

Topic Area: PERCEPTION & ACTION: Audition

F80 - Metric expectations drive auditory-motor connectivity: a combined TMS-EEG study
Giorgio Lazzari[1] (giorgio.lazzari01@universitadipavia.it), Connor Spiech[2], Oscar Bedford[3,4,5], Marcel Farrés-Franch[3,4,5], Virginia Penhune[2,4,5], Carlotta Lega[1]; [1]University of Pavia, Pavia, Italy, [2]Concordia University, Montreal, Canada, [3]Montreal Neurological Institute, McGill University, Montreal, Canada, [4]Montreal Laboratory for Brain, Music and Sound (BRAMS), [5]Centre for Research in Brain, Language and Music (CRBLM)

Topic Area: PERCEPTION & ACTION: Audition

F81 - Speeding up cognitive development: metacontrol instructions foster adult-like event segmentation in adolescents
Xianzhen Zhou[1] (xianzhen.zhou@ukdd.de), Foroogh Ghorbani[1], Astrid Prochnow[1], Christian Beste[1,2,3]; [1]TU Dresden, Germany, [2]German Center for Child and Adolescent Health (DZKJ), Germany, [3]Shandong Normal University, China

Topic Area: PERCEPTION & ACTION: Development & aging

F82 - Changes of brain activity across development during implicit learning of temporal regularity
Wei Tang[1] (wt1@iu.edu), Pradyumna Lanka[2], Zhenghan Qi[2]; [1]Indiana University Bloomington, [2]Northeastern University

Topic Area: PERCEPTION & ACTION: Development & aging

F83 - Altered motion inhibition, but not face detection, in **preclinical familial Alzheimer's disease**
Hannah Vidu[1] (hannahvidu@gmail.com), Kayla Kilmer[1], Alex Badillo-Cabrera[2], Diana Munera[2], Ana Baena[3], Nikole Bonillas Felix[2], David Aguillon[3], Yakeel Quiroz[2], Daniel Norton[1]; [1]Gordon College, [2]Massachusetts General Hospital, [3]University of Antioquia

Topic Area: PERCEPTION & ACTION: Development & aging

F84 - Running out of time: Timescale changes across neurodevelopment
Olivia Dance[1] (odance@ucsd.edu), Dillan Cellier[1], Bradley Voytek[1,2]; [1]University of California, San Diego, [2]Halıcıoğlu Data Science Institute

Topic Area: PERCEPTION & ACTION: Development & aging

F85 - Age differences in the neural correlates of perspective change may contribute to spatial memory deficits in old age
Sabina Srokova[1] (sabinasrokova@arizona.edu), Carol Barnes[1,2], Arne Ekstrom[1,2]; [1]Psychology Department, University of Arizona, [2]Evelyn F. McKnight Brain Institute, University of Arizona

Topic Area: PERCEPTION & ACTION: Development & aging

F86 - Reduced Prefrontal EEG Complexity During Speech and Music Listening Reveals Subjective Cognitive Decline

Matthew King-Hang Ma[1] (khmma@polyu.edu.hk), Manson Cheuk-Man Fong[1,2], Yun Feng[1], 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: PERCEPTION & ACTION: Development & aging

F87 - Developmental differences in the dimensionality of task-related brain activity

Erica Busch[1] (erica.busch@yale.edu), Nicholas Turk-Browne[1]; [1]Yale University

Topic Area: PERCEPTION & ACTION: Development & aging

F88 - State-dependent effects of multifocal transcranial magnetic stimulation on paired associative plasticity in the motor network.

Taylor A. Finkelstein[1], Joseph A. Deluisi[1], Taraz G. Lee[2], James A. Brissenden[2], Stephen F. Taylor[3], Thad A. Polk[2], Michael Vesia[1]; [1]University of Michigan

Topic Area: PERCEPTION & ACTION: Motor control

F89 - High-definition transcranial direct current stimulation of the primary motor cortex modulates the planning and execution of movement sequences

Tara D. Erker[1], Jake J. Son[1,2], Thomas W. Ward[1,3], Yasra Arif[1], Peihan J. Huang[1,3], Jason A. John[1], Kellen M. McDonald[1,3], Nathan M. Petro[1], Grant Garrison[1], Hannah J. Okelberry[1], Kennedy A. Kress[1], Giorgia Picci[1,3], Elizabeth Heinrichs-Graham[1,2,3], Tony W. Wilson[1,2,3]; [1]Boys Town National Research Hospital, [2]University of Nebraska Medical Center (UNMC), [3]Creighton University

Topic Area: PERCEPTION & ACTION: Motor control

F90 - Who turned the light on? How avatar's embodiment modulates sense of agency in virtual reality.

Marika Mariano[1] (marika.mariano@unimib.it), Giulia Stanco[1], Caterina Negrone[1], Niccolò Raffa[1], Massimo Montanaro[1,2], Emanuele Sapio[1,2], Alessandro Gabbiadini[1,2], Laura Zapparoli[1,3]; [1]Psychology Department and NeuroMi – Milan Centre for Neuroscience, University of Milano-Bicocca, Milan, Italy, [2]Mibtec – Mind and Behavior Technological Center, University of Milano-Bicocca, Milan, Italy, [3]IRCCS Orthopedic Institute Galeazzi, Milan, Italy

Topic Area: PERCEPTION & ACTION: Motor control

F91 - Task-dependent reaction time impairments under cognitive fatigue

Kathleen J. Peters[1], Anthony N. Carlsen[1]; [1]University of Ottawa

Topic Area: PERCEPTION & ACTION: Motor control

F92 - Ketamine reduces variability in firing frequency and modulates firing rate in the motor thalamus

Yana M. Surtchev[1] (yana.mms@gmail.com), Gabe Holguin, Audrey White, Krystina Jorgensen, Andrew K. Tapia, Zoe H. Huestis, Sydney H. Marean, Katelyn Boone, Carol A. Barnes, Torsten Falk, Stephen L. Cowen; [1]University of Arizona

Topic Area: PERCEPTION & ACTION: Motor control

F93 - Using Motor Performance of the SISL Task to Identify Psychosis-Related Clinical Risk

Ziyan Y. Han[1] (ziyanhan2026@u.northwestern.edu), Y. Catherine Han[1], Katherine S. F. Damme[2], Vijay A. Mittal[1], Paul J. Reber[1]; [1]Northwestern University, [2]The University of Texas at Dallas

Topic Area: PERCEPTION & ACTION: Motor control

F94 - Me or Us? Mine or Yours? Here or There? Neural and behavioral responses of prediction in Joint Action

Rosari Naveena Selvan[1,2], Minghao Cheng[2], Anoushiravan Zahedi[1], Florentin Wörgötter[2], Ricarda I. Schubotz[1]; [1]University of Münster, [2]University of Göttingen

Topic Area: PERCEPTION & ACTION: Motor control

F95 - HD-tDCS of the left primary motor cortices upregulates alpha power in the motor circuitry during eyes-closed rest

Yasra Arif[1] (yasra027@gmail.com), Maggie Rempe[2], Nathan Petro[3], Hannah Okelberry[4], Jason John[5], Grant Garrison[6], Kennedy Kress[7], Kellen McDonald[8], Giorgia Picci[9], Tony Wilson[10]; [1]Institute for Human Neuroscience, Boys Town National Research Hospital

Topic Area: PERCEPTION & ACTION: Motor control

F96 - Motor Planning in Posterior Parietal Cortex is Critical in Motor Learning

Hidetaka Hibino[1] (h.hibino@northeastern.edu), Anna Akbas[2], Bailey Uitz[1], Jacob Kogan[1], Terrence Murphy[3], Mathew Yarossi[1], Robert Sainburg[3], Eugene Tunik[1]; [1]Northeastern University, [2]Academy of Physical Education in Katowice, [3]Pennsylvania State Univeristy

Topic Area: PERCEPTION & ACTION: Motor control

F97 - Differences in the timing of action preparation in people who stutter

Irene Echeverria-Altuna[1,2], Birtan Demirel[2], Sage Boettcher[2], Kia Nobre[1,2], Kate Watkins[2]; [1]Yale University, [2]University of Oxford

Topic Area: PERCEPTION & ACTION: Motor control

F98 - Motor Prediction Sharpens Early Visual Representations of Action Outcomes Independent of Prior Expectations

EDWARD ODY[1], Tilo Kircher[1], Benjamin Straube[1], Yifei He[1]; [1]University of Marburg

Topic Area: PERCEPTION & ACTION: Motor control

F99 - The influence of auditory pitch contour on timing manual interception of moving targets

Haleh Mahmoudi[1] (haleh.mahmoudi@uga.edu), Deborah A. Barany[1]; [1]University of Georgia

Topic Area: PERCEPTION & ACTION: Motor control

F100 - 4 trials is not enough: More but not less audio-visual experience strengthens audio-tactile correspondences in children

Shibo Cao[1] (shibo.cao001@umb.edu), Rong Tan[1], Vivian M Ciaramitaro[1]; [1]University of Massachusetts Boston

Topic Area: PERCEPTION & ACTION: Multisensory

F101 - Efficacy and mechanisms of virtual reality treatment of phantom leg pain. A clinical trial study.

Elisabetta Ambron[1] (eli.ambron@gmail.com), Rand Williamson[2], Jing-Sheng Li[3], Maxim Karrenbach[3], Erik Rombokas[3], Laurel Buxbaum[2], H. Branch Coslett; [1]University of Pennsylvania, [2]Jefferson Moss Rehabilitation Research Institute, [3]University of Washington

Topic Area: PERCEPTION & ACTION: Multisensory

F102 - Uncovering multimodal narrative integration in the brain using functional connectivity multivariate pattern analysis

Chelsea Ekstrand[1] (chelsea.ekstrand@uleth.ca), Christina Haines[1], Joshua Craig[1], Keva Klamer[1], KiAnna Sullivan[1], Peter Seres[2]; [1]University of Lethbridge, [2]University of Alberta

Topic Area: PERCEPTION & ACTION: Multisensory

F103 - Attention is required for visual modulation of early auditory speech processing

Yun ZOU[1] (yunzou@umass.edu), Lisa D. Sanders[1], Alexandra Jesse[1]; [1]University of Massachusetts Amherst

Topic Area: PERCEPTION & ACTION: Multisensory

F104 - Effects of Additional Information, Musical Context and Virtual Reality on the Emotional Affect Induced by Art

Magdalena Nikolova[1] (mnikolov@ramapo.edu), Justin Haskoor[2], Can Ozger[3], Naseem Choudhury[4]; [1]Ramapo College of New Jersey

Topic Area: PERCEPTION & ACTION: Multisensory

F105 - Examining Learned Associations Between Contextual Cues and Stress-Inducing Experiences

Ella Reinders[1] (ellar2@umbc.edu), Olivia Edoigiawerie[1], Tyler Nguyen[1], Maya Tondravi[1], Se Rin Lee[1], Eden Beyene[1], Tara LeGates[1,2]; [1]University of Maryland, Baltimore County, [2]University of Maryland School of Medicine

Topic Area: PERCEPTION & ACTION: Multisensory

F106 - Integrating Context and Time in Perceptual Decision-Making: Insights from Peripheral Focused Ultrasound Stimulation

Doga Dogan[1] (ddogan6@gatech.edu), Aya Rezeika[2], Audrey Leroux[1], Tansu Çelikel[1]; [1]School of Psychology, Georgia Institute of Technology, [2]Donders Institute for Brain, Cognition and Behavior, Radboud University

Topic Area: PERCEPTION & ACTION: Multisensory

F108 - Neural mechanisms of biological motion perception in deaf native signers and hearing non-signers

Carolyn Gershman[1] (cdg60@georgetown.edu), Ted Supalla[1], Anna Seydell-Greenwald[1,2], Barbara Landau[1,3], Elissa L. Newport[1,2]; [1]Center for Brain Plasticity and Recovery, Georgetown University Medical Center, [2]MedStar National Rehabilitation Hospital, [3]Department of Cognitive Science, Johns Hopkins University

Topic Area: PERCEPTION & ACTION: Multisensory

F109 - Effect of place of articulation and phonemic restoration on the Audio-Visual Time Flow Illusion

Achint Sharma[1], Heather Bortfeld[1], Antoine J Shahin[1], Kristina C Backer[1]; [1]University of California, Merced

Topic Area: PERCEPTION & ACTION: Multisensory

F110 - Tactile word form responses in parietal cortex of proficient blind braille readers

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Topic Area: PERCEPTION & ACTION: Multisensory

F112 - Evaluating the Neurophysiological Evidence for Cross Modal Expectations using Alpha Oscillations

Soukhin Das[1] (skndas@ucdavis.edu), Mingzhou Ding[2], George (Ron) Mangun[1,3]; [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]Department of Neurology, University of California Davis

Topic Area: PERCEPTION & ACTION: Multisensory

F113 - The Effects of Physical Effort on Time Perception

Li Yang[1] (lyang147@ucr.edu), Rachel Francis[1], Rawan Gabr[1], Brynna Marich[1], Weiwei Zhang[1]; [1]University of California, Riverside

Topic Area: PERCEPTION & ACTION: Other

F114 - Time-resolved EEG decoding of neural text representations during naturalistic braille reading

Pushpita Bhattacharyya[1] (pushpita@ski.org), Ryan Tam, Peter Orsmond, Sadie Hicks, Santani Teng; [1]Smith-Kettlewell Eye Research Institute

Topic Area: PERCEPTION & ACTION: Other

F115 - Exploring the Effect of VR-based Social Interaction Tasks on Face Perception

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Topic Area: PERCEPTION & ACTION: Other

F116 - Neural Correlates of Self-Motion Perception Training in Older Adults

Fred Mast[1] (fred.mast@unibe.ch), Andreas Szukics[1], Matthias Ertl[1,2]; [1]University of Bern, [2]University of Lucerne

Topic Area: PERCEPTION & ACTION: Other

F117 - Neural complexity and extended cessations: A source-localized MEG-EEG analysis of the advanced meditative endpoint, nirodha samapatti

Kenneth Shinozuka[1] (kennethshinozuka@gmail.com), Matthew Sacchet[2]; [1]University of Oxford, [2]Harvard Medical School

Topic Area: PERCEPTION & ACTION: Other

F118 - Stimulus expectations drive conditioned olfactory hallucinations

Lauren Wolters[1], Xiaolin Qiao[1], James Howard[1]; [1]Brandeis University

Topic Area: PERCEPTION & ACTION: Other

F119 - Neural representations underlying sound-shape associations

Josh Dorsi[1] (jxd5826@psu.edu), Simon Lacey[1,2,3], Lynne Nygaard[4], Krish Sathian[1,2,3]; [1]Penn State Health Milton S. Hershey Medical Center, [2]Penn State College of Medicine, [3]Penn State College of Liberal Arts, [4]Emory University

Topic Area: PERCEPTION & ACTION: Other

F120 - Task-based fMRI analysis of symbol form areas in 6-8 year-old children

Amelia C. Murray[1] (ameliacmurray@gmail.com), Zoha Arif[1], Emily M. Harriott[1], Sophia Vinci-Booher[1], Laurie E. Cutting[1], Eric D. Wilkey[1]; [1]Vanderbilt University

Topic Area: PERCEPTION & ACTION: Other

F121 - Neural bases of the bodily self revealed by electrical brain stimulation in 354 epileptic patients

Zoé Dary[1,5] (zdary@bwh.harvard.edu), Stanilas Lagarde[2,3], Samuel Medina Villalon[2,3], Hugo Dary[4], Elodie Garnier[3], Jacques Léonard[5], Fabrice Bartolomei[2,3], Christophe Lopez[5]; [1]Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, USA, [2]INS, Institut de Neurosciences des Systèmes, Aix Marseille University, INSERM, Marseille, France, [3]Epileptology and Cerebral Rhythmology Department, APHM, Timone Hospital, Marseille, France, [4]Center for Magnetic Resonance in Biology and Medicine (CRMBM), CEMEREM, CHU, APHM, Timone Hospital, Marseille, France, [5]Aix Marseille Univ, CNRS, Centre de Recherche en Psychologie et Neurosciences (CRPN), Marseille, France

Topic Area: PERCEPTION & ACTION: Other

F122 - Investigating the role of human mediodorsal thalamus in odor-guided behavior

Jared Newell[1] (jarednewell@brandeis.edu), Lauren Wolters[1], James Howard[1]; [1]Brandeis University

Topic Area: PERCEPTION & ACTION: Other

F123 - The Tool-use Network Supports Actions Independent of the Acting Body Part

Florencia Martinez Addiego[1], Yuqi Liu[1,2], Kyungji Moon[1], Elizabeth Shytle[1], Lénia Amaral[1], Caroline O'Brien[1], Sriparna Sen[1], Maximilian Riesenhuber[1,3], Jody C. Culham[4,5], Ella Striem-Amit[1]; [1]Georgetown University Medical Center, [2]Institute of Neuroscience, Key Laboratory of Primate Neurobiology, CAS Center for Excellence in Brain Sciences and Intelligence Technology, Chinese Academy of Sciences, [3]Center for Neuroengineering, Georgetown University, [4]Department of Psychology, University of Western Ontario, [5]Brain and Mind at Western, Western Interdisciplinary Research Building, University of Western Ontario

Topic Area: PERCEPTION & ACTION: Other

F124 - Additive versus Multiplicative Temporal Dilation of Dynamic Visual Stimuli

Kezhen Qi[1] (kezhenqi2028@u.northwestern.edu), Alejandro Cruz[1], Abigail Yiru Liu[1], Marcia Grabowecky[1], Satoru Suzuki[1]; [1]Northwestern University

Topic Area: PERCEPTION & ACTION: Other

F125 - Formation of cognitive maps in AI agents through reinforcement learning using visual information: place cells and head-direction cells

Aoto Kidachi[1] (g21230078e@edu.teu.ac.jp), Masayuki Kikuchi[1]; [1]Computer Science Program, Department of Computer and Media Science, Graduate School of Bionics, Tokyo University of Technology

Topic Area: PERCEPTION & ACTION: Other

F126 - Neural correlates of reinforcement learning in the human cerebellum

Juliana E. Trach[1] (juliana.trach@yale.edu), Samuel D. McDougle[1,2]; [1]Yale University, [2]Wu Tsai Institute

Topic Area: PERCEPTION & ACTION: Other

F127 - Using MVPA to disentangle the role of familiarity and predictability in rhythm perception

Jessica Grahn[1,2] (jgrahn@uwo.ca), Joshua Hoddinott[1]; [1]Centre for Brain and Mind, Western University, [2]Department of Psychology, Western University

Topic Area: PERCEPTION & ACTION: Other

F128 - N400 amplitudes are sensitive to image memorability distinct from recognition performance

Will Deng[1] (wuyizhe2@illinois.edu), Kara Federmeier[1]; [1]University of Illinois Urbana-Champaign

Topic Area: PERCEPTION & ACTION: Vision

F129 - Predictions do not modulate the perception and time-resolved representation of objects

Phuong Dang[1] (phuong.dang@uqconnect.edu.au), Margaret Moore, Amanda Robinson, Jason Mattingley; [1]The University of Queensland, [2]Queensland Brain Institute, [3]School of Psychology, [4]School of Psychology and Queensland Brain Institute

Topic Area: PERCEPTION & ACTION: Vision

F130 - Reading words versus seeing font or handwriting style: a study of hemifield processing

Helena Ghorbani[1], Gulcenur Ozturan[1], Andrea Albonico[2], Jason J S Barton[1]; [1]University of British Columbia, Vancouver, Canada, [2]University of the Fraser Valley, Abbotsford, Canada

Topic Area: PERCEPTION & ACTION: Vision

F131 - Expectation dynamically modulates the representational time course of objects and locations

Margaret Moore[1] (margaret.moore@uq.edu.au), Amanda Robinson[1], Jason Mattingley[1,2]; [1]University of Queensland, [2]Canadian Institute for Advanced Research

Topic Area: PERCEPTION & ACTION: Vision

F132 - Chronic cannabis use modulates gamma functional connectivity with V1 during visual entrainment

Lauren K. Webert[1] (lauren.webert@boystown.org), Nathan M. Petro[1], Seth D. Springer[1], Jason A. John[1], Lucy K. Horne[1], Hannah J. Okelberry[1], Ryan Glesinger[1], Maggie P. Rempe[1], Tony W. Wilson[1]; [1]Boys Town National Research Hospital, Omaha, NE

Topic Area: PERCEPTION & ACTION: Vision

F133 - Distinct fMRI Pattern Effects of Error- and Uncertainty-Based Event Model Updating

Tan Nguyen[1] (n.tan@wustl.edu), Jo Etzel[1], Matthew Bezdek[2], Jeffrey Zacks[1]; [1]Washington University in St. Louis, [2]Elder Research

Topic Area: PERCEPTION & ACTION: Vision

F134 - Effects of forward and backward masking on feedforward and feedback processing: evidence from time- and frequency-resolved EEG decoding

Yusuke Nakashima[1] (yusuke_nakashima@brown.edu), Yuka Sasaki, Takeo Watanabe; [1]Brown University

Topic Area: PERCEPTION & ACTION: Vision

F135 - Unfamiliar distractors disrupt visual search through a combination of forward and backward masking

Ryan E.B. Mruczek[1], Michael J. Lesofsky[1], Mariam A. Ayad[1]; [1]College of the Holy Cross

Topic Area: PERCEPTION & ACTION: Vision

F136 - Behavioral correlates of sensory and choice information tuning with (un)confirmed expectations

Gabriela Iwama[1,2,3] (gabriela.iwama@uni-tuebingen.de), Randolph Helfrich[2,3,4]; [1]University of Tübingen, [2]International Max Planck Research School for the Mechanisms of Mental Function and Dysfunction, [3]Hertie Institute for Clinical Brain Research, [4]University Hospital Tübingen

Topic Area: PERCEPTION & ACTION: Vision

F137 - Fixation-related ERPs (fERPs) to moving stimuli during visual search: Effects of training but not of neurostimulation (rDLPFC HD-tDCS)

Jason R Taylor[1] (jason.taylor@manchester.ac.uk), Stephen J Ball[1], Johan Hulleman[1], Gorana Pobric[1]; [1]University of Manchester

Topic Area: PERCEPTION & ACTION: Vision

F138 - The intention to predict upcoming events modulates prediction error but not visual processing

Chen Frenkel[1] (chen.gueta1@mail.huji.ac.il), Leon Deouell[1]; [1]the Hebrew University

Topic Area: PERCEPTION & ACTION: Vision

F139 - Understanding the representational geometry of psychological and neural spaces across multiple similarity dimensions.

Johan Alejandro Gamba[1] (j.gambasegovia@ufl.edu), Vincent Taschereau-Dumouchel[2], Megan A. K. Peters[3], Brian Odegaard[1]; [1]University of Florida, [2]University of Montreal, [3]University of California

Irvine

Topic Area: PERCEPTION & ACTION: Vision

F140 - Swinging into faster learning: Larger motor movements can enhance category learning

Luke Rosedahl[1] (luke_rosedahl@brown.edu), Takeo Watanabe[1]; [1]Brown University

Topic Area: PERCEPTION & ACTION: Vision

F141 - Representational gradient of the hippocampal long axis extends beyond memory to visual processing

Benjamin Chaloupka[1], Troy Houser[1], Dagmar Zeithamova[1]; [1]University of Oregon

Topic Area: PERCEPTION & ACTION: Vision

F142 - Generalization Gradients in Deep Vision Models: Insights **from Shepard's Universal Law**

Daniel Carstensen[1] (daniel_carstensen@brown.edu), Steven M. Frankland[2], Serra E. Favila[1]; [1]Brown University, [2]Dartmouth College

Topic Area: PERCEPTION & ACTION: Vision

F143 - Investigating Bifurcation Dynamics and Neural Correlates of Consciousness Using EEG and Report/No-Report Paradigms

Kimiya Kasraeian[1] (kkasraei@ucsc.edu), Jason Samaha[1]; [1]UCSC

Topic Area: PERCEPTION & ACTION: Vision

F144 - XRPsys: A Portable Platform for Low-Vision Assessment and Intervention

Peige Wang[1] (wang.peig@northeastern.edu), Abraiz Azhar[2], Dean Thurston[1], Michele Bevilacqua[3], Bas Rokers[2], Lorella Battelli[3], Aaron Seitz[1]; [1]Northeastern University, [2]New York University Abu Dhabi, [3]Harvard Medical School

Topic Area: PERCEPTION & ACTION: Vision

F145 - Hierarchical prefrontal contributions to perceptual decision-making

Xinxu Shen[1] (tul04056@temple.edu), Ioannis Pappas[2], Sirawaj Itthipuripat[3], Ruedeerat Keerativittayayut[4], Chayanon Pamarapa[4], Chaipat Chunharas[5], Ian Ballars[1]; [1]University of California, Riverside, [2]University of Southern California, [3]King's Mongkut University of Technology Thonburi, [4]Chulabhorn Royal Academy, [5]Chulalongkorn University

Topic Area: PERCEPTION & ACTION: Vision

F146 - A computational study of subordinate-level processing in faces and objects utilizing the expertise hypothesis

HSUAN-KAI WENG[1] (ba06107064@tmu.edu.tw), Christoph Dahl; [1]Taipei Medical University

Topic Area: PERCEPTION & ACTION: Vision

F147 - Gaze reinstatement during naturalistic viewing and memory retrieval in children, adults and artificial intelligence models

Iryna Schommartz[1,2] (schommartz@psych.uni-frankfurt.de), Bhavin Choksi[3], Gemma Roig[3,4], Yee Lee Shing[1,2]; [1]Department of Psychology, Goethe University Frankfurt, [2]IDeA – Center for Individual Development and Adaptive Education, [3]Computer Science Department, Goethe University Frankfurt, [4]Center for Brains Minds and Machines, Massachusetts Institute of Technology

Topic Area: PERCEPTION & ACTION: Vision

F148 - Comparing the Multidimensional Mental Representations of Object Images and Object Nouns

Laura M. Stoinski[1,2,3] (stoinski@cbs.mpg.de), Tongue Zhuang[1,4], Chris I. Baker[5], Martin N. Hebart[1,4,6]; [1]Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig 04103, Germany, [2]University of Leipzig, Leipzig 04103, Germany, [3]International Max Planck Research School on Cognitive NeuroImaging (IMPRS CoNI), [4]Department of Medicine, Justus Liebig University, Giessen 35390, Germany, [5]Section on Learning and Plasticity, Laboratory of Brain & Cognition, National Institute of Mental Health, Bethesda, MD 20814, USA, [6]Center for Mind, Brain and Behavior, Universities of Marburg, Giessen and Darmstadt

Topic Area: PERCEPTION & ACTION: Vision

F149 - Predictive power of the divisive normalization model of numerosity perception

Joonkoo Park[1] (joonkoo@umass.edu), Jenna Croteau[1], Michele Fornaciai[2], David E. Huber[3]; [1]University of Massachusetts Amherst, [2]Université Catholique de Louvain, [3]University of Colorado Boulder

Topic Area: PERCEPTION & ACTION: Vision

F150 - Computational Mechanisms of Temporal Anticipation in Perception and Action

Gal Vishne[1,2] (gal.vishne@mail.huji.ac.il), Leon D. Deouell[1], Ayelet N. Landau[1,3]; [1]The Hebrew University of Jerusalem, [2]Columbia University, [3]University College London

Topic Area: PERCEPTION & ACTION: Vision

F151 - Neural investigation of color coherence in numerosity perception

Shimin Hu[1] (shiminhu@umass.edu), Joonkoo Park[1]; [1]University of Massachusetts Amherst

Topic Area: PERCEPTION & ACTION: Vision

F152 - Neural oscillations indicate cue combination in navigation

Yu Karen Du[1] (ydu366@uwo.ca), Jennifer E. Sutton[2], Blake E. Butler[3]; [1]University of Western Ontario

Topic Area: PERCEPTION & ACTION: Vision

F154 - Adaptive inhibitory feedback mechanisms for perceptual learning

Zsofia Zavecz[1] (zz501@cam.ac.uk), Ye Gu[1], Joseph Ziminski[2], Diana Rotaru[3], Yuan Gao[4], Chie Takahashi[1], Uzay Emir[5], Zoe Kourtzi[1]; [1]University of Cambridge, [2]Sainsbury Wellcome Centre, [3]Columbia University, [4]Zhejiang University, [5]University of North Carolina at Chapell Hill

Topic Area: PERCEPTION & ACTION: Vision

F155 - The human brain's functional connectome specifies hierarchical and non-hierarchical visual cortical processing

Alexandros Tzalavras[1,2] (at1159@rutgers.edu), David E. Osher[3], Carrisa Cocuzza[1,2], Lakshman N.C. Chakravarthula[1,2], Ravi D. Mill[1], Kirsten L. Peterson[1,2], Michael W. Cole[1]; [1]Center for Molecular and Behavioral Neuroscience, Rutgers University Newark, [2]Behavioral and Neural Sciences PhD Program, [3]Department of Psychology, The Ohio State University

Topic Area: PERCEPTION & ACTION: Vision

F156 - Generative modeling tools for characterizing human higher visual cortex

Margaret M Henderson[1] (mmhender@cmu.edu), Andrew F Luo[1], Sungjoon Park[1], Michael J Tarr[1], Leila Wehbe[1]; [1]Carnegie Mellon University

Topic Area: PERCEPTION & ACTION: Vision

F157 - Generalization and Specificity of Offline Performance Gains in Visual Perceptual Learning

Theodore LaBonte-Clark[1] (theodore_labonte-clark@brown.edu), Teruaki Kido[1], Takeo Watanabe[1], Yuka Sasaki[1]; [1]Brown University

Topic Area: PERCEPTION & ACTION: Vision

F158 - Increased visual motion inhibition associated with higher levels of diurnal cortisol

Daniel McDonough[1], Erin Ferguson[1], Rebecca Manley[1], Ainsley Thierren[1], Rachael Walsh[1], Craig M. Story[1], Daniel J. Norton[1]; [1]Gordon College

Topic Area: PERCEPTION & ACTION: Vision

F159 - Face perception differentially contributions to individual differences in face recognition ability depending on how it is measured

Tayan Zhang[1,2] (zhangtayan@gmail.com), Alison Campbell[1,2,5], Jeremy Wilmer[4], Laura Germine[3], Joseph DeGutis[2,3]; [1]Boston University, [2]Boston Attention and Learning Laboratory, [3]Harvard Medical School, [4]Wellesley College, [5]Boston University Chobanian and Avedisian School of Medicine

Topic Area: PERCEPTION & ACTION: Vision

F160 - Electrophysiological and Behavioral Indices of Numerical Perception and Cognition

Jean Ee Tang[1] (jt2615@tc.columbia.edu), Yuexin Li, Paul Smith, Janiece Spitzmueller, Mischa (Yuri) Gushiken, Christofer Tobing, Peter Gordon; [1]Teachers College, Columbia University

Topic Area: PERCEPTION & ACTION: Vision

F161 - Investigating overlap in representations of non-symbolic quantities: Number, area, and fire

Justin Bonny[1] (justin.bonny@morgan.edu), Micah Russell[1]; [1]Morgan State University

Topic Area: PERCEPTION & ACTION: Vision

F162 - Reduced visual evoked potentials in children with autism spectrum disorder

Brooke E. Keough[1,2], Winko W. An[1,2], Virginia A. Rosenberger[1,2], Noah Crane[1,2], Leena Gupta[1,2], April Levin[1,2], Charles A. Nelson[1,2,3]; [1]Boston Children's Hospital, [2]Harvard Medical School, [3]Harvard University

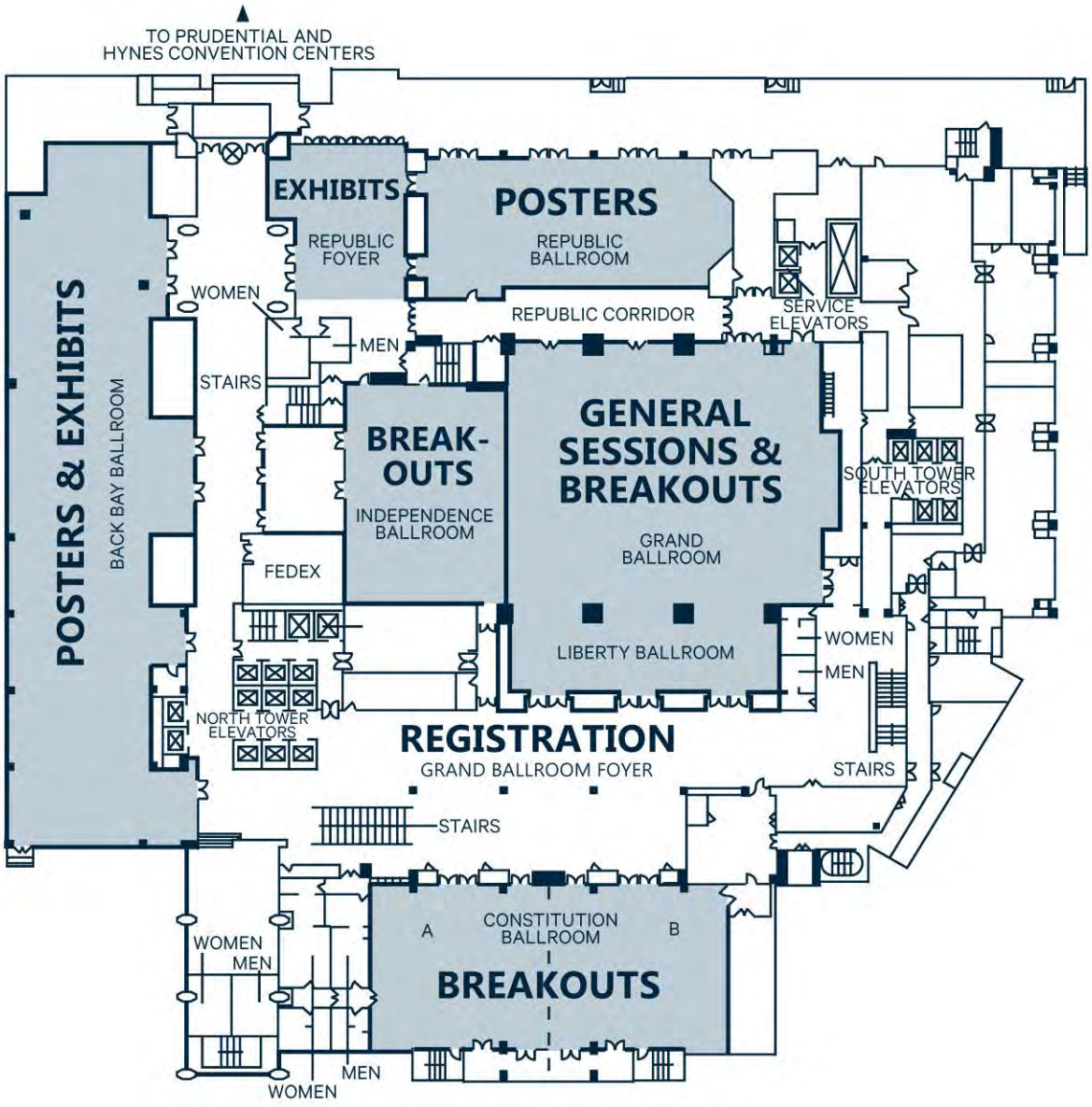
Topic Area: PERCEPTION & ACTION: Vision

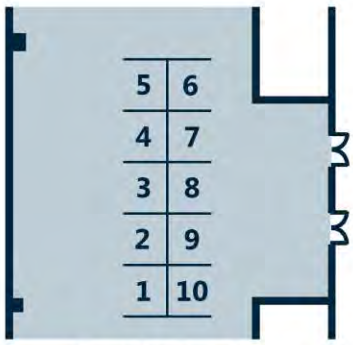
F163 - Predictive Coding dynamics enhance model-brain similarity

Bhavin Choksi[1] (choksi@uni-frankfurt.de), Manshan Guo[1,2], Sari Saba-Sadiya[1], Radoslaw Cichy[2], Gemma Roig[1]; [1]Goethe University, Frankfurt, [2]Freie Universität, Berlin

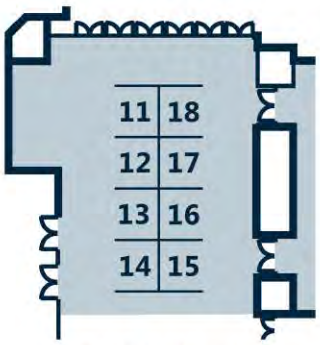
Topic Area: PERCEPTION & ACTION: Vision

Sheraton Boston Hotel Floorplan





Exhibits in Back Bay Ballroom



Exhibits in Republic Foyer

Exhibit Hall Floorplan