

Poster Session

1. **Sara J.M.A. Knauz**, Nathan Torunsky, Wilma Koutstaal – *Contributions of Stimulus Properties in Revealing Alexithymia: An Analytic Paradigm with Categorized Pictures*
2. **Daniel Guest**, Emily Magnan – *The role of pitch and harmonic cancellation in concurrent speech segregation*
3. **Libby Ferland** – *Enhanced Conversational Interaction for Assistive Technology for Elderly Users*
4. **Sahar Aseeri**, Victoria Interrante – *The Influence of Avatar Representation and Behavior on Communication in Social Immersive Virtual Environments*
5. **Don Thorpe**, Brian Engdahl, Apostolos Georgopoulos – *Neural network functional connectivity distinguishes current mild TBI from recovered mild TBI*
6. **Maria E. Linn**, Matthew N. Petrucci, Sommer L. Amundsen Huffmaster, Colum D. MacKinnon – *Expression of rigidity differs between Parkinson's disease with and without REM sleep without atonia*
7. **Akin Campbell**, Svetlana Yarosh – *Collaboration Pals: Creating More Opportunities for Intergenerational Relationships With Engaging Technology*
8. **Amanda R. Rueter**, Solomon Demmessie, Philip Burton, Aldo Rustichini, Colin DeYoung – *Exploring individual differences in fMRI: A genetic moderation of the association between externalizing behavior and activation during cognitive tasks*
9. **Kara Kedrick**, Wilma Koutstaal – *Tracing the trajectory of curious minds: A new multi-dimensional approach*
10. **Ruth Rath**, Hannah Walter, Ruixuan Li, Hayley Pierce-Ramsdell – *The role of chromaticity in postural control mechanisms*
11. **Matthew Waggenspack**, Kristi Oeding - *Evaluation of Current Hearing Assistive Technology*
12. **Douglas Addleman**, Rebecca Lubar - *Improving Campus Culture for People with Sensory Impairments through Accessible Social Activities*
13. **Erin O'Neill**, John Basile - *The Nature of Communication Barriers for Hearing-Impaired Patients in Current Clinical Practice: A Proposed Study*
14. **Sanaz Khosravani**, Arash Mahnan, I-Ling Yeh, Yang Zhang, Peter Watson, Juergen Konczak - *Effect of Laryngeal Vibration on Voice Quality and Somatosensory-Motor Cortical Activities in Spasmodic Dysphonia*
15. **Daniel Guest**, Emily Magnan - *Sensory loss in the classroom*
16. **Cathy Chen**, Nicola Grissom - *Female enhancements in learning strategy and neural activation in a mouse decision-making task*
17. **Benjamin Fischman** - *Data-Driven Support for Substance Addiction Recovery Communities*
18. **Hannah J. Walter**, Ruixuan Li, Jeffrey B. Wagman, Thomas Stoffregen - *Adaptive perception of changes in affordances for walking on a ship at sea*

Center for Cognitive Sciences

SPRING RESEARCH DAY 2018

April 20, 2018, 9:00 AM – 4:00 PM

402 Walter Library
University of Minnesota

Invited Speaker



Dr. Tobias Egner

Psychology & Neuroscience, Duke University

Learning Cognitive Control: Mechanisms of Adapting Attentional Set to Changing Demands

When routine behavior runs into trouble, “cognitive control” processes are recruited to bring information processing in line with current demands. For instance, encountering an almost-accident on our commute will reinforce our attentional focus on the traffic and away from the radio. How does the brain accomplish this? In this talk, I will present behavioral, neuroimaging, and neurostimulation data that delineate the cognitive and neural mechanisms underlying our ability to adapt to changing task demands. Specifically, I will present a “control learning” perspective that views cognitive control as being guided by associative learning mechanisms, exploiting statistical regularities in our environment to anticipate the need for control. Control learning not only adapts attentional sets to changing demands over time but can also directly associate appropriate top-down attentional states with specific bottom-up cues, and even transfer them across linked stimuli. This type of learning holds the promise of combining the speed of automatic processing with the flexibility of controlled processing, and could form the basis of novel interventions in clinical conditions that involve impaired cognitive control.

Program

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| 9:00 – 9:10: | Victoria Interrante - Opening Remarks |
| 9:10 – 9:30: | Jean-Baptiste Quillien - Science and Playing Board Games: A Story of Implicit Transfer |
| 9:30-9:50: | Link Swanson - Unlearning to See: Linking the Perceptual and Clinical Effects of Psychedelic Drugs |
| 9:50 - 10:10: | Mari Gades - Withdrawal-potentiated startle does not predict individual differences in morphine self-administration in rats |
| 10:10 –10:20: | Break |
| 10:20 –10:40: | Douglas A. Addleman - The influence of attentional selection history of auditory spatial attention |
| 10:40 –11:00: | Chieh Kao - Modulatory Effects of Emotional Prosody on Neural Sensitivity to Speech Discrimination in Second Language Learners |
| 11:00 – 12:00: | Keynote Speaker Dr. Tobias Egner - Learning Cognitive Control: Mechanisms of Adapting Attentional Set to Changing Demands |
| 12:00 – 1:00: | Lunch |
| 1:00 – 2:00: | Poster Session |
| 2:00 – 2:20: | Tatyana M. Matveeva - Transmembrane protein 35 (TMEM35) modulates pain and drug-seeking behavior |
| 2:20 – 2:40: | Mai Al-Khatib - Emotional Resonance in a Second Language in the Context of Decision Making |
| 2:40 – 2:50: | Break |
| 2:50 – 3:10: | Ruixuan Li - Effects of a virtual horizon on standing body sway at sea |
| 3:10 – 3:30: | Thomas Christie - Learning Effects Arise from Task-Indexed Adaptive Coding |
| 3:30 – 3:50: | Brian M. Sweis - Cell-type- and projection-specific plasticity in the infralimbic to accumbens shell circuit is causally linked to foraging but not deliberative valuation algorithms |
| 3:50 – 4:00: | Victoria Interrante – Closing Remarks |