

# 2022 Cognitive & Computational Neuroscience Program Review

Dr. Hal S. Greenwald | October 12-14, 2022 | Arlington, VA -hybrid

Basic Research Innovation Collaboration Center (BRICC)  
4100 N Fairfax Drive, Suite 450 | Arlington, VA 22203

## Agenda Day 1 | Wednesday, October 12, 2022

Time (ET)	Topic	Speaker
8:30	In-person Check-in / Zoom Log in	
9:00	Introduction	
9:15	(YIP) Neural computations and information flow underlying uncertainty evaluation	Megan Peters, UC Irvine/UC Riverside
9:45	The Neural Architecture of Reinforcement Learning in Partially Observable Environments	Sam Gershman, Harvard University
10:15	Biological Algorithms for Learning in the Mammalian Brain	Alison Barth, Carnegie Mellon University
10:45	<b>BREAK</b>	
11:15	(YIP) Computational Architecture of High-level Attention: Reverse-engineering Representations and Goals that Drive seeing in Complex, Dynamic Environments	Ilker Yildirim, Yale University
11:45	Minimal Models of Sensory Perception	Sarah Marzen, Claremont McKenna College
12:15	<b>LUNCH</b>	
13:30	Restoring Access to Memories "Lost" as a Result of Sleep Deprivation	Steve Ramirez, Boston University
14:00	Innate Memory - the Plasticity of Instinct	Tomas Ryan, Trinity College Dublin
14:30	<b>BREAK</b>	
15:00	Cellular Foundations of Memory	Sam Gershman, Harvard University
15:30	A White Matter Cable Theoretic Model of EEG Biorhythms	Pamela Douglas, University of Central Florida
16:00	Discussion	
<b>MEETING ADJOURNED FOR THE DAY</b>		

Agenda Day 2   Thursday, October 13, 2022		
Time (ET)	Topic	Speaker
8:30	In-person Check-in / Zoom Log in	
9:00	Topological Identification and Analysis of Cyclic Features in Neural Population Coding	Chad Giusti, University of Delaware
9:30	Computationally Constrained Control in Complex Causal Tasks	Xaq Pitkow, Baylor College of Medicine/Rice University
10:00	(DEPSCoR) Using Meta-Plasticity to Discover the Biophysics of Learning	Robert Rosenbaum, University of Notre Dame
10:30	BREAK	
11:00	Probing Plasticity of Color Perception with the Oz Vision Platform; (MURI) Probing, Modeling & Reprogramming Visual Perception at the Level of Individual Photoreceptors	Ren Ng, UC Berkeley
12:00	LUNCH	
13:00	(MURI) Single Retinal Ganglion Cells and Sensation	David Williams, University of Rochester
13:30	Title TBA	Proposal 22RT0291 (Grant Pending)
14:00	Visually-guided Primate Predation: A Computational Neuroethology of Visual Search and Targeting in a Complex, Natural Environment	Alex Huk, University of Texas, Austin
14:30	BREAK	
15:00	Sensory, Cognitive, and Transcranial Neuromodulation of Goal Representations	Anastasia Kiyonaga, UC San Diego
15:30	Discussion	
	MEETING ADJOURNED FOR THE DAY	

<b>Agenda Day 3   Friday, October 14, 2022</b>		
<b>Time (ET)</b>	<b>Topic</b>	<b>Speaker</b>
<b>8:30</b>	In-person Check-in / Zoom Log in	
<b>9:00</b>	Cognitive Maps in Rats, Robots & Men: A Brain Inspired, Neuroevolutionary Approach	Jeff Krichmar, UC Irvine
<b>9:30</b>	Title TBA	Proposal 22RT0195 (Grant Pending)
<b>10:00</b>	Behavioral Time Scale Plasticity and Learning in the Mammalian Brain and Emulation Studies in Oxide Devices	Shriram Ramanathan, Rutgers University
<b>10:30</b>	<b>BREAK</b>	
<b>11:00</b>	AFOSR/SOARD Windows on Science - Neuromorphic Computing	Tomás Pérez-Acle, Fundación Ciencia y Vida
<b>11:30</b>	NSF BRAID EFRI (Neuromorphic Computing Solicitation) **Preliminary Proposals Due Oct 13**	Grace Hwang, National Science Foundation
<b>12:00</b>	<b>LUNCH</b>	
<b>13:00</b>	(YIP) Investigating Single-Neuron Mechanisms of Face Coding in the Human Brain	Shuo Wang, Washington Univ. in St. Louis/WVU
<b>13:30</b>	Rapid Measurement of Prefrontal Cortical Activity using Parallelized Diffuse Correlation Spectroscopy	Roarke Horstmeyer, Duke University
<b>14:00</b>	(DURIP) Bio-X Interdisciplinary Research Platform	Brian Kim, University of Central Florida
<b>14:30</b>	(DURIP) Nano-Needle Bioelectronics: Soft Intracellular Electrodes for Mapping the Sub-cellular Neural Code	Krishna Jayant, Purdue University
<b>15:00</b>	<b>MEETING ADJOURNED FOR THE DAY</b>	