

# 2022 Computational Cognition & Machine Intelligence Program Review

Dr. Hal Greenwald | November 2-4, 2022 | Arlington, VA -hybrid

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

## Agenda Day 1 | Wednesday, November 2, 2022

Time (ET)	Topic	Speaker
8:30	In-person Check-in / Zoom Log in	
9:00	Introduction	
9:15	Automatically Inferring Human Machine Interaction Properties and Predicting and Adapting to their Violation	Sebastian Elbaum, UVA
9:45	Empowering the Problem Solving Team through a Computer-Human Partnership	Jonathan Cagan, Carnegie Mellon University
10:15	Counterfactuals and Multiple Rewards: Inducing and Explaining Good Team Behavior for Effective Agent-Human Teaming	Kagan Tumer, Oregon State University
10:45	<b>BREAK</b>	
11:15	(YIP) Towards Preference-Aware Autonomy: Specification, Synthesis, and Interactive Planning	Jie Fu, Worcester Polytechnic Institute/Univ. of Florida
11:45	Optimizing Autonomous and Human-Assisted Experimentation in Materials Development	Mark Pitt, Ohio State University
12:15	<b>LUNCH</b>	
13:30	Discovering Optimal Strategies for Bounded Agents	Tom Griffiths, Princeton/UC Berkeley
14:00	Reasoning for Social Autonomous Agents	Ken Forbus, Northwestern University
14:30	<b>BREAK</b>	
15:00	Toward Cognitive Realism in Game Theoretic Models of Social Behavior	Alan Wagner, Penn State University
15:30	(YIP) Supporting Information Foraging by Utilizing Agents' Collective Foraging Behavior	Sandeep Kuttal, Univ. of Tulsa/NC State Univ.
16:00	Discussion	
<b>MEETING ADJOURNED FOR THE DAY</b>		

<b>Agenda Day 2   Thursday, November 3, 2022</b>		
<b>Time (ET)</b>	<b>Topic</b>	<b>Speaker</b>
<b>8:30</b>	<b>In-person Check-in / Zoom Log in</b>	
<b>9:00</b>	Learning to Plan in Hybrid Spaces	Leslie Kaelbling, MIT
<b>9:30</b>	Adversarial Multi-Unit Planning	Brayden Hollis, AFRL/RI
<b>10:00</b>	Explaining the Space of Plans	Amanda Coles, King's College London
<b>10:30</b>	<b>BREAK</b>	
<b>11:00</b>	Cognitive Skills: Integrating Situated Learning with Global Symbolic Planning	Sergey Levine, UC Berkeley
<b>11:30</b>	(YIP) Robust Maximum Entropy Planning, Learning and Control in Uncertain Environments	Jason Pacheco, University of Arizona
<b>12:00</b>	<b>LUNCH</b>	
<b>13:00</b>	Great Computational Intelligence, Mature and Further Applied	Selmer Bringsjord, Rensselaer Polytechnic Institute
<b>13:30</b>	Learning in Large-Scale Models of Biological Cognition	Chris Eliasmith, University of Waterloo
<b>14:00</b>	Visual Perception and Reasoning: Integrating Cognitive Programs, Working Memory, Attention Control and Visual Processing	John Tsotsos, York University
<b>14:30</b>	<b>BREAK</b>	
<b>15:00</b>	Exploiting Memristors and the Local Activity Principle	Leon Chua, UC Berkeley
<b>15:30</b>	Discussion	
<b>MEETING ADJOURNED FOR THE DAY</b>		

<b>Agenda Day 3   Friday, November 4, 2022</b>		
<b>Time (ET)</b>	<b>Topic</b>	<b>Speaker</b>
<b>8:30</b>	<b>In-person Check-in / Zoom Log in</b>	
<b>9:00</b>	Interactive Task Learning	John Laird, University of Michigan
<b>9:30</b>	A Human-Machine Symbiotic System for the Extraction of High-Level Behaviors from a Macroscopic View of Swarms	Panos Artemiadis, Univ. of Delaware/Arizona State Univ.
<b>10:00</b>	Flexible and Resilient Autonomous Systems	Katia Sycara, Carnegie Mellon University
<b>10:30</b>	<b>BREAK</b>	
<b>11:00</b>	Title TBA	Proposal 22RT0538 (Grant Pending)
<b>11:30</b>	Networked Nonlinear Decision-Making: Opportunism, Explanations, and Learning Echo-Chambers	Eugene Santos, Dartmouth
<b>12:00</b>	<b>LUNCH</b>	
<b>13:00</b>	Advanced Hyperdimensional Mathematics for Adaptive Information Processing	Mohsen Imani, UC Irvine
<b>13:30</b>	Applications of Quantum Probability Theory to Human-Machine Communication Networks	Jerome Busemeyer, Indiana University
<b>14:00</b>	<b>MEETING ADJOURNED</b>	