

CONFERENCE

THEORIZING AND MODELING IN NEUROSCIENCE

Organized by Schmid College, Crean College,
the MPP Program, and the Brain Institute

January 16 - 17, 2025

Chapman University
Argyros Forum 212

CONFERENCE WEBSITE
AND REGISTRATION:



THEORIZING AND MODELING IN NEUROSCIENCE

Thursday, January 16

Argyros Forum Boardroom 212

8:15 - 9:15 a.m. **Coffee and Breakfast in Argyros Forum 201**

9:15 - 9:30 a.m. MICHAEL IBBA
(Chapman University)
Introductory Remarks

SESSION 1: NEUROSCIENCE AND ARTIFICIAL INTELLIGENCE

9:30 - 10:30 a.m. JAMES L. MCCLELLAND
(Stanford University)
"Comparing Human and Artificial Intelligence: Functions, Computations,
and Architectures"

10:30 - 11 a.m. **Coffee Break in Argyros Forum 201**

SESSION 2: BEYOND THE BRAIN

11 a.m. - 12 p.m. SARKIS MAZMANIAN
(California Institute of Technology)
"The Gut Microbiome Modulates Motor Symptoms in Parkinson's Disease
Models"

12 - 1 p.m. MICHAEL LEVIN
(Tufts University)
"Neuroscience Beyond Neurons: How Somatic Bioelectricity Implements an
Unconventional Intelligence"

1 - 2 p.m. **Lunch in Argyros Forum 201**

SESSION 3: SOCIAL AND EMOTIONAL PERSPECTIVES

2 - 3 p.m. CAROLYN PARKINSON
(University of California, Los Angeles)
"The Brain in the Social World: Integrating Approaches from Neuroscience,
Psychology and Social Network Analysis"

3 - 4 p.m. RALPH ADOLPHS
(California Institute of Technology)
"Functionalism, Emotion, and the Brain"

4 - 4:30 p.m. **Coffee Break in Argyros Forum 201**

SESSION 4: NEUROIMAGING SIGNALS AND THEIR MEANING

4:30 - 5:30 p.m. URI MAOZ
(Chapman University)
"A Spiking-Neural-Network Model for Slow Ramping in the Human Brain"

5:30 - 6:30 p.m. ADINA L. ROSKIES
(University of California, Santa Barbara)
"Inference in Neuroimaging and the Problem of Cognitive Ontology"

7 p.m. **Dinner at O SEA**
109 S Glassell St, Orange, CA 92866

8:15 - 9:15 a.m. **Coffee and Breakfast in Argyros Forum 201**

SESSION 5: NEURAL CIRCUIT MODELS

9:15 - 10:15 a.m. JEAN PETITOT
(Ecole des Hautes Etudes en Sciences Sociales)
"Geometrical Models for the Functional Architecture of the Visual Area V1"

10:15 - 11:15 a.m. WILLIAM NEWSOME
(Stanford University)
"Dynamical Systems as Mechanistic, Explanatory Models in Neuroscience"

11:15 - 11:45 a.m. **Coffee Break in Argyros Forum 201**

SESSION 6: MEMORY

11:45 a.m. -
12:45 p.m. MICHAEL A. YASSA
(University of California, Irvine)
"Episodic Memory in Aging and Alzheimer's Disease"

12:45 - 1:45 p.m. **Lunch in Argyros Forum 201**

SESSION 7: PERCEPTION

- 1:45 - 2:45 p.m. MEGAN PETERS
(University of California, Irvine)
"Towards Quantifying Qualitative Experience: Introspective Psychophysics"
- 2:45 - 3:45 p.m. AARON SCHURGER
(Chapman University)
"Transient Stability in Attractor Networks as a Mechanism for Perceptual Decision Making"
- 3:45 - 4:15 p.m. **Coffee Break in Argyros Forum 201**

SESSION 8: CAUSALITY

- 4:15 - 5:15 p.m. LAUREN N. ROSS
(University of California, Irvine)
"The Circuit Concept in Neuroscience: Causation, Constraints, and Computation"
- 5:15 - 6:15 p.m. FREDERICK EBERHARDT
(California Institute of Technology)
"Causal Modeling in Neuroscience"
- 6:30 p.m. **Reception with Hors d'Oeuvres and Champagne in Argyros Forum 201**