

Gatsby Tri-Center Meeting 2018
June 17 -19

Center for Theoretical Neuroscience
Columbia University

Jerome L. Greene Science Center
9th Floor Conference Room (L9-065)
3227 Broadway
New York, NY
10027

Sponsored by The Gatsby Foundation
Special Thanks to Sarah Caddick & Gary Wilson

<https://ctn.zuckermaninstitute.columbia.edu/gatsby2018>

Sunday, June 17

- 3.00 Reception, preload slides
- 4.00 **Maneesh Sahani** (UCL)
Ghosts from the past: The DD(P)C and the Helmholtz Machine
- 4.30 **Stefano Fusi** (CU)
The Geometry of Abstraction in Prefrontal Cortex and in the Hippocampus
- 5.00 **Ella Batty** (CU)
Encoding and Decoding Retinal Responses Using Artificial Neural Networks
- 5.30 **Sam Gershman** (Harvard, Special Guest)
Believing in Dopamine
- 6.30 **Yonathan Lowenstein** (HU)
Thoughts About Choice Engineering
- 7.00 Catered rooftop dinner, weather permitting

Monday, June 18

- 8.15 Breakfast, preload slides
- 9.00 **Scott Linderman** (CU)
Discovering Structure in Neural and Behavioral Data
- 9.30 **Yoram Barak** (HU)
Velocity Coupling of Attractor Networks
- 10.00 **Peter Latham** (UCL)
Inter-Area Communication
- 10.30 Coffee break
- 11.00 **Genevra Allen** (Rice, Special Guest)
Graphical Models and Tensor Decompositions for Large-Scale Neural Data
- 12.00 **Ester Vertes** (UCL)
Message Passing in Non-Linear State-Space Models Using Distributed Neural Codes of Uncertainty
- 12.30 Lunch
- 2.00 **Daphna Weinshall** (HU)
Curriculum Learning by Transfer Learning: Theory and Experiments with Deep Networks
- 2.30 **Robert Guangyu Yang** (CU)
Towards Studying Human-Level Cognition with Neural Networks Trained for Many Tasks

Mark di Suvero Studio tour and dinner

- 3.15 Meet in JLG lobby for the charter bus to Mark di Suvero's studio, bus departs at 3.30pm
- 3.30 Travel to Mark di Suvero's studio, Spacetime CC, in Long Island City
3040 Vernon Blvd, Long Island City, NY 11102 (718-545-7142)
- 4.30 Arrive at Studio
Optional: Socrates Sculpture Park (5 mins walk from Studio)
32-01 Vernon Blvd, Long Island City, NY
- 5.00 Reception, tour, and meet Mark di Suvero
- 6.00 Dinner
- 8.00 Ferry, subway, or taxi back to Manhattan
Ferry departure times are 7.49pm, 8.19pm, 8.49pm

Tuesday, June 19

- 8.15 Breakfast, preload slides
- 9.00 **Haim Sompolinsky** (HU)
Computing with Neural Manifolds
- 9.30 **Naoki Hiratani** (UCL)
A Communication Theory on Evolution and Development of Invertebrate Olfactory Systems
- 10.00 **Ashok Litwin-Kumar** (CU)
Randomness and Structure in Neural Representations for Learning
- 10.30 Coffee break
- 11.00 **Ricardo Monti** (UCL)
A Probabilistic Model for Learning Latent Factors & Their Connectivities From High-Dimensional Data
- 11.30 **Noga Zaslavsky** (HU)
Efficient Compression in Color Naming and its Evolution
- 12.00 Lunch
- 2.00 **Noam Saadon-Grosman** (HU)
The "Creatures" of the Human Cortical Somatosensory System
- 2.30 **Dougal Sutherland** (UCL)
Efficiently Estimating Densities and Scores with Kernel Exponential Families
- 3.00 **Shizhe Chen** (CU)
Online Experimental Design for Automated High-Throughput Neural Circuit Mapping
- 3.30 **Idan Segev** (HU)
Innate Structural Motifs in Cortical Circuits

Center for Theoretical Neuroscience

Larry Abbott, Co-Director

Ken Miller, Co-Director

John Cunningham

Stefano Fusi

Ashok Litwin-Kumar

Liam Paninski

Zuckerman Mind Brain Behavior Institute Columbia University

Jerome L. Greene Science Center

Quads 5D and 6D

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