



# Junior Theoretical Neuroscientist's Workshop

Thursday, July 10, 2025

## Workshop Agenda

**8:30 - 9:25 AM** Breakfast

**9:25 - 9:30 AM** Welcome Remarks

**9:30 - 10:00 AM** Intro to Center & Research Talk *Dmitri Chklovskii*

**10:00 - 10:30 AM** Talk 1: *Benjamin Ruben*

*Sparse Hebbian Learning Permits High-Capacity Pattern Separation in Cerebellar Ensembles*

**10:30 - 11:00 AM** Talk 2: *Michelle Miller*

*Homeostatic Plasticity Enables Robust and Flexible Learning of Synaptic Weights*

**11:00 - 11:30 AM** Break

**11:30 - 12:00 PM** Talk 3: *Dimitra Maoutsa*

*Identifying Plasticity Mechanisms Underlying Context-Dependent Neural Responses in Cortical Circuits*

**12:00 - 12:30 PM** Talk 4: *William Podlaski*

*A Spike-by-Spike Account of Low-Dimensional Population Dynamics*

**12:30 - 2:30 PM** Lunch / Posters

**2:30 - 3:00 PM** Talk 5: *Hadi Vafaii*

*Brain-like Variational Inference*

**3:00 - 3:30 PM** Talk 6: *Gengshuo Tian*

*A Nonlocal Variational Framework for Optimal Neural Representations*

**3:30- 4:00 PM** Break

**4:00 - 4:30 PM** Talk 7: *Christopher Kym*

*Sketching Principles of Coding in Hippocampal-Entorhinal Attractor Networks*

**4:30 - 5:00 PM** Talk 8: *Audrey Teasley*

*Statistical Field Theory for Compartmental Neural Networks with Stochastic Spike Emission*

**5:00 – 7:00 PM** Reception,  
Rooftop of 162 Fifth Ave (12th Fl.)



## Junior Theoretical Neuroscientist's Workshop

Friday, July 11, 2025

### Workshop Agenda

**8:30 - 9:30 AM** Breakfast

**9:30 - 10:00 AM Talk 9:** *Christina May*

A compact multisensory representation of self-movement can support estimations of an external world variable

**10:00 - 10:30 AM Talk 10:** *Lakshmi Govindarajan*

*Perception in Context: Toward Realistic Models of Sensory Feedback*

**10:30 - 11:00 AM** Break

**11:00 - 11:30 PM Talk 11:** *Aditi Jha*

*Characterizing Goal-driven Dynamics Underlying Naturalistic Behavior*

**11:30 - 12:00 PM Talk 12:** *Harsha Gurnani*

*Feedback Control of Recurrent Circuits Imposes Dynamical Constraints on Learning*

**12:00 - 2:00 PM** Lunch / Posters

**2:00 - 2:30 PM Talk 13:** *David Skroll*

*Universally Controversial Stimuli Reveal that Adversarial Robustness Improves DNN Prediction Accuracy across the Entire Human Auditory Cortex*

**2:30 - 3:00 PM Talk 14:** *Eghbal Hosseini*

*Universality of Representation in Biological and Artificial Neural Networks*

**3:00- 3:20 PM** Break

**3:20 - 3:50 PM Talk 15:** *Ram Dyuthi Sristi*

*Contextual Feature Selection with Conditional Stochastic Gates*

**3:50 - 4:20 PM Talk 16:** *Ari Benjamin*

*A Connectionist Model of Neuromodulation*

**4:20- 4:40 PM** Break

**4:40 - 5:40 PM** Plenary speaker

**6:00 PM** Dinner @ [Portale \(126 W 18th Street\)](#)