

## Computational Journal Club, 2016-2017

### Fall 2016

- Aug 29 John Lisman (Brandeis)  
*The rise and demise of spike-timing dependent plasticity*
- Sep 2 (Fri) John Beggs (University of Indiana)  
*High-degree neurons feed cortical computations*
- Sep 8 (Thurs) Dan Merfeld (Harvard Medical School)  
*A confidence model for vestibular psychophysical thresholds*
- Sep 12 Jonathan Touboul (Harvard Medical School)  
*Singularities in the functional organization of the cat visual cortex, and their possible organizing principles*
- Sep 19 Chris Harvey (Harvard Medical School)  
*Dynamics of population codes across cortex during navigation-based decision tasks*
- Sep 26 Daniel Acker (Paradis Lab)  
Review of: *Optogenetic dissection of ictal propagation in the hippocampal-entorhinal cortex structures*, Lu et al., Nat Comm 7:10962 (2017)
- Oct 10 Paul Miller (Brandeis)  
*Dynamical systems, attractors, and neural circuits*
- Oct 17 Volen Retreat
- Oct 25 (Tues) Roshan Nanu (Jadhav Lab)  
Review of: *Thalamic control of sensory selection in divided attention*, Wimmer et al., Nature 526:705 (2015)
- Oct 31 Suman Guha (Jadhav Lab)  
Review of: *Theta-Gamma Coding Meets Communication-through-Coherence: Neuronal Oscillatory Multiplexing Theories Reconciled*, McLelland D and VanRullen R, PLoS Comput Biol 12:e1005162 (2016)
- Nov 7 Peter Bex (Northeastern University)  
*A unifying model of orientation crowding in peripheral vision*
- Nov 21 Paul Miller (Brandeis)  
Review of: *Computational principles of synaptic memory consolidation*, Benna and Fusi, Nat Neurosci 19:1697 (2016)
- Nov 28 Jake Hinman (Boston University, Hasselmo Lab)  
*Entorhinal and striatal representations of space*

- Dec 12 Robert Ajemian (MIT)  
*How can motor memories for sensorimotor skills persist robustly despite perpetual synaptic drift and decay?*
- Spring 2017**
- Jan 12 (Thurs) Bolun Chen (Boston College, Mirollo Lab)  
*New approaches to coupled oscillator systems*
- Jan 13 (Fri) Nirak Kadakia (UCSD, Arabanel Lab)  
*Nonlinear methods for estimating biophysical neural systems*
- Jan 23 Steve Van Hooser (Brandeis)  
Review of: *Orientation selectivity and the functional clustering of synaptic inputs in primary visual cortex*, Wilson et al Nat Neurosci 19:1003 (2016)
- Jan 30 John Lisman (Brandeis)  
The need for dendritic NMDA spikes for timing-dependent associative LTP
- Feb 6 Gene Tunik (Northeastern)  
Muscle-cortical mapping via TMS
- Feb 13 Daniel Powell (Brandeis, Marder Lab)  
Review of: *Dendritic trafficking faces physiologically critical speed-precision tradeoffs*, Williams et al, eLife 5:e20556 (2016)
- Feb 27 Mark Harnett (MIT)  
*Cellular and circuit mechanisms for associative computations in retrosplenial cortex*
- Mar 6 Mark Zielinski (Jadhav Lab)  
Review of: *Hippocampal awake replay in fear memory retrieval*, Wu et al, Nat Neurosci 20:571 (2017)
- Mar 13 Fernando Fernandez (Boston University)  
*Intracellular spontaneous activity in somatosensory cortex indicates unbalanced excitatory inputs*
- Mar 20 Michael Hasselmo (Boston University)  
*Modeling goal-directed behavior based on grid cells*
- Mar 27 Leandro Alonso (Rockefeller University)  
*Criticality in neural dynamics*
- Apr 3 Ryan Young (Jadhav Lab)  
Review of: *Vectorial representation of spatial goals in the hippocampus of bats*, Sarel et al., Science 355:176 (2017)

Apr 19 (Wed)

Shen Wang (Van Hooser Lab)

Review of: *GABAergic neurons in ferret visual cortex participate in functionally specific networks*, Wilson et al., *Neuron* 93:1058 (2017)

Apr 24

Steve Ramirez (Harvard Center for Brain Science)

*Artificially activating memories to alleviate psychiatric disease-like states*