NEPR 208, Intro. to Computational Neuroscience - 1st Year Neuroscience Core, 2018

April 23 - May 11, M W F 1:15 – 3:05 pm
No Lecture May 7
Makeup lecture Thurs. May 10, 10 am

Lectures are in LKSC101 except May 10 in Fairchild D202

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This module will introduce students to computational and theoretical approaches in neuroscience. Emphasis will be on specific questions and how those questions can be answered with computational methods.

Monday and Wednesday classes will be lecture, and Friday students will work on and discuss problems sets.

Week 1, April 23 – 27
Influence of neural mechanisms on neural activity and response properties

April 23. Neural oscillations, computational approaches and insights (Huguenard)

April 25. Influence of mechanisms on neural coding (Baccus)
              Gain modulation, firing rate homeostasis

April 27. Work on Problem set 1 in class.

Week 2, April 30 - 4
Representation of sensory information in the nervous system

April 10. Neural coding and decoding (Baccus)

April 12. Adaptation and synaptic plasticity (Baccus)

April 14. Work on Problem set 2 in class.

Week 3, May 7 - 11
Storage and retrieval of information in the nervous system

May 9. Simple models of synaptic learning and population dynamics (Druckmann)

May 10. Memory in neural networks (Ganguli). **Thurs. 10 am Fairchild D202**

May 11. Work on Problem set 3 in class.