NEPR 208, Computational Module - 1ˢᵗ Year Neuroscience Core

May 9 – May 27, M W F 1:15 – 3:05, Alway, M208

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This module will introduce students to computational and theoretical methods 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, May 9 – 13
Influence of neural mechanisms on neural activity and response properties

May 9. Influence of mechanisms on neural coding (Baccus)
                    Gain modulation, firing rate homeostasis and dendritic computation

May 11. Neural oscillations, computational approaches and insights (Huguenard)

May 13. Work on Problem set 1 in class.

Week 2, May 16 - 20
Representation of sensory information in the nervous system

May 16. Neural coding and decoding (Baccus)

May 18. Optimality (Baccus)

May 20. Work on Problem set 2 in class.

Week 3, May 23 - 27
Storage and retrieval of information in the nervous system

May 23. Short and long term plasticity in synapses (Baccus)

May 25. Memory in neural networks (Ganguli)

May 27 Work on Problem set 3 in class.