

Department of Mathematics and Statistics Colloquium

Using applied mathematics to gain insight into neural network dynamics

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Abstract: We will motivate the need for advancing our understanding of brain function and continue with the classic Nobel-Prize winning work of Hodgkin and Huxley who used equations to describe spikes or action potentials of the squid's giant axon. Next, we will present frameworks that I have worked in, and how theoretical results can connect with experimental predictions. In particular, we will use the phase oscillator framework highlighting results from past work and some recently published results. The goal of this general talk is for everyone to have a better idea of how mathematicians and theorists have contributed to our understanding of the brain.

Monday, October 5 at 3:45 in Roop 103
refreshments at 3:30