Bioengineering & ECE Seminar Series

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“Where are the switches on this thing? Modeling how neural networks gate information”

From ecosystems to the social scene at Union, to the neural network you are using to read this abstract - networks are everywhere we look. A current mystery in network science is how the individual units of a network can send and receive information to one another, while at the same time switch on and off entire portions of the network. In this talk I will focus on some recent theoretical investigations into what are known as network switches. These switches combine the non-linear dynamics at units with the connectivity of the network to gate information while at the same time process that same information. The particular focus of the talk will be brain networks where it can yield new insights into normal functions such as memory recall or disease states such as seizures. The wider view of network switches will also be discussed as it applies to the spread of rumors in social networks, the genetic control of development, and dynamics of classroom learning.

Tuesday, October 28, 2014, 12:55pm
Lippman Hall 017

* Lunch will be provided *