

Computational & Life Sciences/ Center for Comprehensive Informatics Spring 2009 Seminar Series

3/20/2009

3:00pm

Dr. Larry Abbott

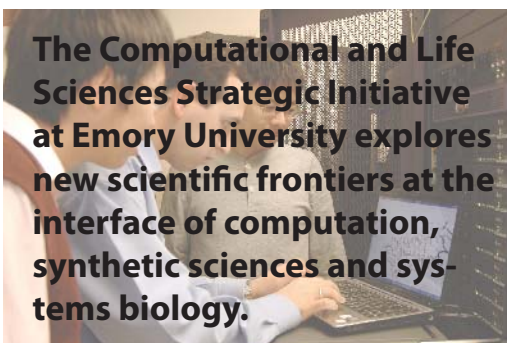
Columbia University

Location: White Hall, Room 103

“Sense from Chaos: Controlling Chaotic Activity in Neural Networks”

Abstract:

Large, strongly coupled neural networks tend to produce chaotic spontaneous activity. This might appear to make them unsuitable for generating reliable sensory responses or repeatable motor patterns. However, this is not the case. Inputs can induce a phase transition, leading to responses uncontaminated by chaotic "noise". Likewise, appropriately trained feedback units can control the chaos, resulting in a wide variety of repeatable output patterns. These issues will be discussed accompanied by examples, comparisons with experimental data and demonstrations.



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