

**Stony Brook University  
The Graduate School**

Doctoral Defense Announcement

**Abstract**

Noise and Oscillation in Simple Gene Networks

By

**David Lepzelter**

Gene networks are a subject of increasingly intense study. Understanding the means by which organisms regulate their cells and the basic production mechanisms of cells is of immense importance. However, the means for studying these systems are still being developed. Monte Carlo simulations are common and accurate, but tend to make answering important and overarching questions impractical. This thesis examines other ways to look at the solutions to the stochastic equations which are involved in gene networks. It examines the intrinsic noise in these networks, and the important theme of coherent biological oscillation.

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