



The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University



Matthew Johnston

SJSU

Extinction and Persistence
in Discrete Chemical Reaction Networks
SEPTEMBER 30, 2015, MH320

Abstract: Well-mixed biochemical reaction networks are often modeled as either a deterministic system of ordinary differential equations, which tracks continuous molecular concentrations, or as a stochastic continuous-time Markov chain, which tracks discrete molecular counts. Recent work has focused on describing the class of systems for which the long-term behaviors of these two modeling frameworks do not agree — in particular, when an extinction event may occur in the stochastic model but not in the deterministic model. New results will be described.

Background: A basic understanding of linear algebra and differential equations is beneficial, but not required.

About the speaker: Matthew D. Johnston received his Ph.D. from the University of Waterloo (Canada) in 2011. He recently completed a three-year postdoctoral appointment at UW-Madison and joined the mathematics faculty at SJSU this fall. His research is in mathematical biology and dynamical systems, with an emphasis on network-based modeling techniques.

SNACKS IN MH331B AT 2:30 PM

TALK STARTS AT 3 PM

For more information, see our full schedule at:

<http://www.math.sjsu.edu/~hsu/colloq/>