The College of Arts & Sciences

Department of Mathematical Sciences

Candidate Colloquium

Christopher Heggerud

University of California, Davis

Tuesday, January 30, 2024

Swift Hall, Room 819

4:00 – 5:00 pm

Transient dynamics and regime shifts in ecological systems

In the mathematical biology literature the study of steady-state or asymptotic dynamics is often made the focal point. However, many ecological issues and experiments involve a much shorter time scale. This mismatch suggests that the mathematical study of transient dynamics is of significant interest for both understanding and predicting population dynamics. Additionally, population dynamics often have an explicit dependence on resources and resource dynamics. In this talk I will discuss resource explicit population modeling and show how the study of transient dynamics leads to significant insights both mathematically and ecologically. I will illustrate how resource dynamics can be influenced by human interactions resulting in several possible ecological regime outcomes. Furthermore, I will discuss how we can predict the occurrence of a transient dynamic from ecological data using Empirical Dynamical Modelling.

Refreshments will be served 3:15 – 3:45 pm in the Faculty Lounge
4118 French Hall West

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