1146-35-451   **J. Goddard II**, **Quinn A. Morris*** (`morrisqa@appstate.edu`), **S. Robinson** and **R. Shivaji**.
An exact bifurcation diagram for a reaction–diffusion equation arising in population dynamics.

In this talk, we will discuss the exact bifurcation diagram and stability properties for a steady state model arising in population dynamics encapsulating assumptions regarding the patch/matrix interfaces, such as patch preference and movement behavior. Specifically, we analyze We analyze the positive solutions to

$$\begin{cases} -\Delta v = \lambda v(1 - v); \Omega_0, \\ \frac{\partial v}{\partial \eta} + \gamma\sqrt{\lambda}v = 0; \partial\Omega_0, \end{cases}$$

where $\Omega_0 = (0, 1)$ or is a bounded domain in $\mathbb{R}^n$, $n = 2, 3$, with smooth boundary and $|\Omega_0| = 1$, and λ, γ are positive parameters. (Received January 28, 2019)