

Applied Dynamical Systems Seminar

**Dr. Amy Hurford,
Memorial University**

**Thursday, February 4, 2016
12-1pm, HH-3017**

The Effect of Climate Change on Population Density: Insights Using Integro-difference Equations and Metabolic Theory

Abstract:

Whether a population can keep pace with climate change depends on the species' reproductive rate, its dispersal ability, and the speed of climate change. We extend previous results by mechanistically deriving temperature-dependent niches based on the Metabolic Theory of Ecology.

We use numerical simulations to show that species with low sensitivity to high temperatures are most affected by climate change. These species may fail to keep pace with climate change, lag further behind their fundamental niche, and suffer bigger decreases in their population size and range as a result of climate change.

This is joint work with Peter Molnar (University of Toronto – Scarborough) and Christina Cobbold (University of Glasgow).