**AMY HURFORD**, Memorial University

*Skewed temperature dependence affects range and abundance in a warming world*

In response to climate warming, range shifts have occurred in almost all major taxa, but it remains poorly understood why some species respond positively, for example increasing their range sizes, while others respond negatively. We hypothesize that skewness in the relationship between temperature and fitness will affect species' responses to climate change. Asymmetric fitness curves arise due to the relative strength of temperature dependence in positive and negative components of fitness, and although empirical evidence suggests that cold-skewed fitness curves are common, the strength of the skew can vary dramatically between species. We formulate a moving habitat integrodifference model that combines net reproduction and dispersal to test if differences in fitness curve skewness may explain differences in range size, abundance, and lag arising due to climate warming. We find that climate warming will adversely affect populations with cold-skewed, positively affect populations with warm-skewed, and have relatively little or mixed effect on populations with symmetric fitness curves, and that the degree of the skew will further magnify each of these effects. These results are robust to different choices of growth and dispersal functions and parameters, and are a necessary step towards understanding species' responses to climate change more generally. This research is in collaboration with Christina Cobbold and Peter Molnar.