1135-92-2679 **Timothy C Reluga*** (`treluga@psu.edu`). *The Importance of being Atomic: Ecological Invasions as Random Walks.*

A number of arguments over the sensitivities of ecological invasion speeds to stochasticity, density-dependence, dimension, and discreteness persist in the literature. The standard mathematical approach to invasions is based on Fisher's analysis of traveling waves. In this talk, I will consider an alternative theory based on the premise that living organisms are essentially discrete and invasions are best interpreted as random walks. Using a density-dependent invasion model in a stationary environment with atomic individuals where reproduction and dispersal are stochastic and independent, I show 4 key properties of invasions: (1) greater spatial dispersal stochasticity quickens invasions, (2) greater demographic stochasticity slows invasions, (3) negative density-dependence slows invasions, and (4) greater temporal dispersal stochasticity quickens invasions. The talk concludes with a complete classification of invasion dynamics based on dispersal kernel tails. (Received September 26, 2017)