From Parthenogenesis to Range Limits: Insights from the Stepping-Stone Model

I will talk about two projects that I am currently working on. Both projects stem from a model that I developed to explore the emergence of geographical parthenogenesis, which is the phenomenon describing patterns where clonal reproduction is favoured at the range limits of a species whereas sexual reproduction is favoured in the center of the range. In both projects, I consider haploid individuals distributed according to a stepping-stone model of population structure. In this one-dimensional environment, I assume that the phenotypic optimum changes linearly and that stabilizing selection occurs in each deme. In one project, I consider all individuals to reproduce clonally and examine how many species (or clones) can be packed across the environmental gradient. In the second project, I use the infinitesimal model of inheritance instead of a polygenic quantitative trait to examine its impact on the prediction of species' range limits.