

Evolution in structured populations

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All natural populations are structured to some extent. A major challenge in theoretical evolutionary ecology is to take into account this structure when modelling the feedback between ecological and evolutionary dynamics. In this talk, I will discuss the impact of spatial structure and class structure on evolution. First, I will present some theoretical insights on the evolution of parasite virulence in spatially structured host populations at both short- and long-term scales. Second, I will discuss how intrinsic differences between different classes of individuals can be taken into account using the concept of reproductive value. In particular, I will present a dynamical generalisation of reproductive value that sheds light on the interplay between demography and selection.