

Co-evolution in host-parasite systems: feedbacks between ecology and evolution

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Understanding the antagonistic coevolution of hosts and their parasites is vitally important given the major impact that infectious disease has on human health, agriculture and natural systems. Feedbacks between ecology and evolution are central to these interactions, since adaptations due to evolution will alter population densities, which in turn alters the selection pressures. In this talk I will begin by introducing models of host-parasite coevolution and discussing the possible outcomes. I will then add in a further level of realism and complexity by introducing a predator of the host. I will show how the nature of predation has important implications to the host-parasite coevolutionary interaction. Throughout, I will emphasise the importance of accounting for varying population sizes, and place the models in the context of recent experimental studies.