

Invitation to the Seminar series in Evolutionary Biology

Tuesday, 18.06.2024

Prof. Dieter Ebert

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Title: Does coevolution continue forever?

Abstract: Hosts evolve to minimize the fitness reduction caused by parasites, while parasites optimize the exploitation of their hosts. In coevolutionary models of this process high genetic specificity in host–parasite interactions is assumed. The widely cited Red Queen model suggests that the corresponding host resistance and parasite infectivity genes coevolve under balancing selection, potentially forever. Our work on the planktonic crustacean *Daphnia* and its bacterial pathogen *Pasteuria* confirmed that their coevolutionary dynamics are well described by the Red Queen model. In my presentation, I combine a series of experimental and genomic studies with particular focus on the scale of coevolution, ranging from the short-term effects of selection observed across months to the long-term consequences for genome structure revealed by comparative genomics across species. The underlying genetic architecture of host resistance and parasite infectivity will serve as the guiding principle in this presentation across time scales. Our data are consistent with the predictions of the Red Queen model on the temporal and spatial levels of inference, giving a comprehensive picture of how balancing selection in form of Red Queen dynamics can shape long-term coevolution for at least several million years.

Host: Prof. Shuqing Xu

The colloquium takes place on Tuesdays at 12:15 pm until approx. 1:15 pm in the BZ 1 lecture hall (HS 00.187). Talks are given in English. Everyone interested is welcome!