iomE · Faculty of Biology
Organismic and Molecular Evolution

Invitation to the Seminar series in Evolutionary Biology

Tuesday, 24.09.2024

Dr. Hanna Nomoto

(University of Neuchâtel, Switzerland)

Title: Ecological and evolutionary consequences of altered competition in alpine plant communities experiencing climate change

Abstract:

Climate change is expected to challenge the future persistence of populations by rapidly altering species' environments. Climate change not only causes shifts in abiotic factors, such as temperature, but can also modify biotic interactions. Specifically, asynchronous species' range shifts result in novel species assemblages, in which species face competitors with whom they currently do not interact. Although changing competitive interactions can shape species' responses to climate change, research has predominantly focused on evaluating the direct effects of abiotic changes. I investigate ecological and evolutionary consequences in alpine plants facing climate change using a field experiment transplanting whole plant communities downslope along an elevation gradient, thereby exposing plants to both the warmer temperatures and novel competitive environments expected under future climate change. Specifically, I explored (I) the roles of climate warming and novel, low elevation species as drivers of local extinction risk, (II) how warming and changing competitive interactions alter selection regimes and (III) the adaptive potential of alpine plants. My research shows that altered competitive interactions play an important role in driving local extinction risk, altering selection regimes and, consequently, the adaptive potential of alpine plants, highlighting the importance of considering biotic changes when forecasting eco-evolutionary responses to climate change.

Host: Prof. Shuqing Xu

The colloquium (usually) 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!