



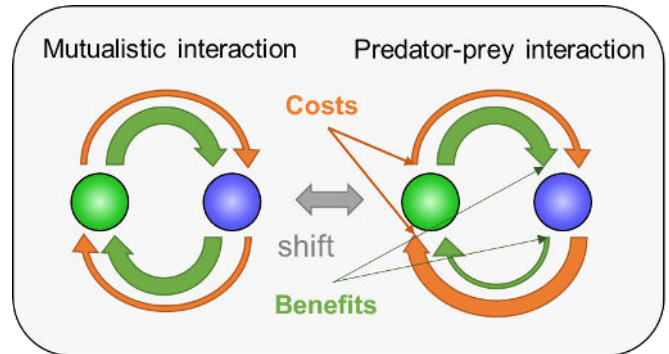
Open PhD position in Theoretical Ecology

4-years position (75%) | E13 TV-L | Potsdam close to Berlin



Project Title: Modelling context-dependent shifts in the forms of symbioses

Project Description: Symbiotic interactions - representing prolonged physical associations of several species - are common in natural systems and can determine population dynamics, species persistence and ecosystem functioning, as demonstrated for example in coral reefs and plant-pollinator networks. Symbiotic interactions can take different forms including parasitism, mutualism and competition. Depending on the underlying costs and benefits of the symbiotic interaction, the form of symbiosis may shift



between different types of species interactions, e.g. mutualism and predator-prey interaction (see figure). While recent work has shown that the costs and benefits of symbioses depend on the densities of the symbiosis partners, we currently lack an understanding of how the form of symbioses depends on species traits and the overall food web context. This is particularly important as individuals and populations may adapt their traits to altered environmental conditions and as the food web structure may strongly vary across time and space. Hence, we want to improve general theory in community ecology by accounting for context-dependent changes in the form of symbiosis including the species' potential to adapt to altering conditions in a food web context.

The project is embedded into a network of experimental and theoretical working groups across Germany, conducting regular workshops and meetings promoting international networking. The prospective PhD student will join the [working group](#) of **Prof. Dr. Ursula Gaedke**, jointly supervised by **Dr. Toni Klauschies**. The prospective PhD candidate has the opportunity to closely interact with an experimental PhD student addressing the same overarching topic in our working group and related research groups on Campus. They can join the [Potsdam Graduate School](#) (PoGS) allowing for a broad interdisciplinary training of soft skills and early career development. The unique location of our campus in Park Sanssouci is part of a historical place in Potsdam providing a fruitful scientific environment and good working atmosphere.

Your qualification: MSc degree in Ecology or other relevant subjects such as Physics, Mathematics or Environmental Science. We are seeking enthusiastic and committed candidates who enjoy ecology and mathematics with good quantitative skills in theoretical ecology and mathematical modelling. The successful candidate is expected to implement and analyze numerically differential equation models with a modern programming language such as Python, MatLab or Mathematica. Very good English writing and communication skills are expected, German is an asset but not essential.

Application: To apply, please send the following documents as a single PDF to gaedke@uni-potsdam.de (the position is open until it is filled)

- Cover letter, including a statement of motivation and from when on you would be available
- Detailed curriculum vitae including a description of your pre-knowledge in (theoretical) ecology, programming and former research activities
- Certifications of education
- If possible, provide letters of recommendation from previous supervisors