

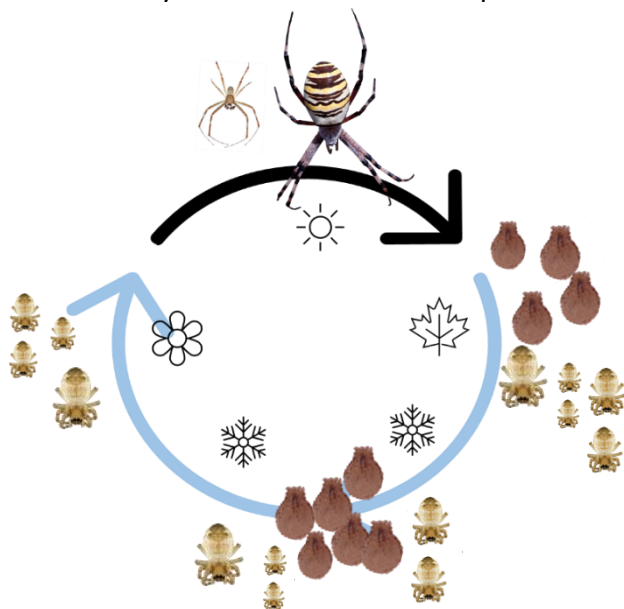
Bachelor oder Master Thesis:

Populationsspezifische Effekte der Überwinterungstemperatur einer sich ausbreitenden, paläarktischen Art: Überleben, Entwicklung und Kondition

In this project, you will study the effects of winter temperature on development and survival in an invertebrate predator. The target species is the European wasp spider *Argiope bruennichi*, which has successfully colonized Northern Europe from the Mediterranean in less than 100 years.

Here we focus on to how strongly the development of the eggs depends on ambient temperature, i.e. how temperature speeds up, delays or even impedes development.

Inside the egg sac, hatching occurs already in autumn. The hatched postembryos molt again inside the egg sac after which they are called first instar spiderlings. These first instar spiderlings eventually emerge from the egg sac in spring. Our preliminary data suggest that hatching and molting inside the egg sac strongly depends on the autumn temperature. Colder or warmer autumns are therefore suspected to have a strong impact on individual development. In the face of the expected harsher cold and heat spells due to climate change, we like to simulate the effects in the laboratory. We will use egg sac from German population that are subjected to winter conditions of different temperatures. Egg sacs will be inspected over the course of winter and developmental stage and differential survival will be monitored. This project will allow us to make predictions on the effect of winter temperature on ontogenetic trajectories that are likely crucial for individual reproductive success and can effect persistence of the species.



What you will learn:

- Knowledge on arthropod diapause and ontogenetic development
- Implementing climate change scenarios in experimental set-ups
- scientific project management
- scientific writing and presenting in English and/or German

Scope: This project will be integrated within the *Argiope bruennichi* project of the RESPONSE graduate school. The focus is on how this spider species can adapt to novel/changing environments. The larger scale project is highly collaborative, combining experimental biology, genomics, microbiology and metabolomics. Researchers from Seattle and Trier, and several departments in Greifswald are involved in the RESPONSE project.

Please get in touch with:

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