

Bachelor/Master thesis topic:
Spider egg sac properties as an adaptation to cold?

Background:

We are currently studying how the European wasp spider, *Argiope bruennichi*, has successfully colonized Northern Europe from the Mediterranean in less than 100 years. The juvenile spiders (spiderlings) spend winter within an egg sac built by their mothers, and can withstand temperatures as low as -30°C. It has long been hypothesized that physical properties of the egg sac protect the spiderlings over winter, but no study has quantified whether or not there are differences in the egg sacs at the northern range edge compared to the core of the native range. We have material collected from Estonia (edge) and France (core), ready for investigation.

What you will learn:

- Skills related to scientific writing and presenting in English and/or German

Methods:

- Microscopy, imaging
- Optional: thermal camera recordings, manipulation of egg sacs before winter and assessment of differential survival of spiderlings

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 California, Trier, Frankfurt, Hamburg, and several departments in Greifswald are involved in the project.

For a noncommittal meeting, please get in touch with:

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