

Alternative mating strategies:

Development of genitalia and possible adaptations to precocious mating

Background: In a current study, we analyse the causes and consequences of matings between males and immature female in spiders of the brown widow *Latrodectus geometricus*. We are particularly interested in the evolution of alternative mating strategies: males either mate with adult females that are cannibalistic or mate with immature females that are not. The immature females in *L. geometricus* show developed genitalia even before the final moult to adulthood (see MicroCT reconstruction below). This might be an adaptation to precocious mating and if so, would suggest that females benefit from mating at an early stage.

Plans: In the current project, you will compare the findings on *L. geometricus* with the developmental process in another spider from the same family: *Parasteatoda tepidariorum* (Gewächshausspinne) that does not show sexual cannibalism. *P. tepidariorum* has become a model species in developmental biology but little is known about the development of the genitalia during ontogeny. You can start any time.

Scope: This project will also be valuable for a planned consortium project on the evolution of sex differences in spiders. This larger scale project will combine behavior, ecology, developmental biology and gene expression studies and is currently developed in collaboration with researchers from Hamburg, Göttingen and Oxford.

What you will learn:

- planning and conducting a scientific project
- troubleshooting
- presentation skills

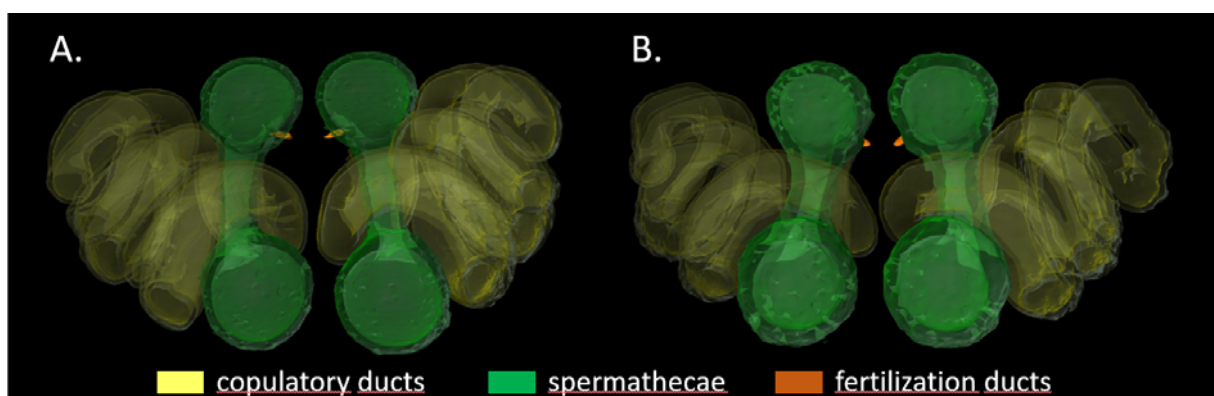
Methods:

- Paraffin histology
- 3D reconstruction and Micro Computer Tomography
- Scanning electron microscopy



For a noncommittal meeting, please get in touch with:

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Internal genitalia of immature (A) and adult (B) female of *Latrodectus geometricus* (Sentenská et al. in prep.).