Mating success in *Argiope bruennichi* across a latitudinal gradient

Background: We are currently studying reproductive output/investment and life-history traits in the European wasp spider, *Argiope bruennichi,* along a gradient from south-west to north-east in Europe, from Southern France to Estonia. Preliminary data suggest that the total reproductive investment (number of eggs laid) decreases with increasing latitude; however, female body size also decreases with increasing latitude. Therefore, the reproductive investment is similar, relative to body size.

Plans: In order to gain further insight into how mating and reproduction vary across the European range of the species, you will investigate the genitalia of females collected in a transect from Southern France to Estonia. *Argiope bruennichi* males plug the genitalia of females after copulation by breaking off their embolus inside the female insemination duct, allowing you to determine whether the female had mated or not (based on the presence or absence of a mating plug). These data will then be compared with total eggs laid and the hatching rate of offspring. You can start any time.

Scope: This project will be integrated within the *Argiope bruennichi* project of the **RESPONSE** graduate school. 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.

What you will learn:

- planning and conducting a scientific project
- working in a team environment
- troubleshooting
- presentation skills

Methods:

- anatomical dissection
- Microscopy, imaging

For a noncommittal meeting, please get in touch with:

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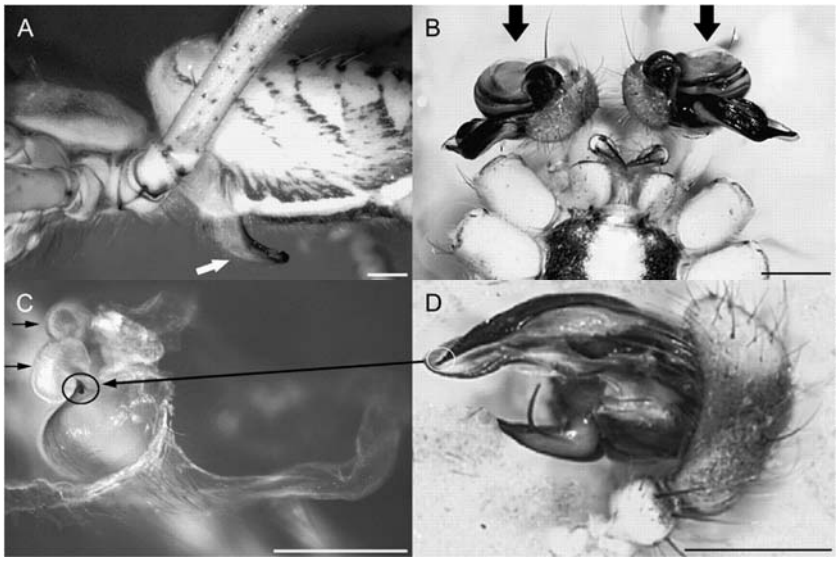

(**A**) Female (lateral view) with scapus (arrrow).
(**B**) Male (ventral view) with paired pedipalps (arrows).
(**C**) Dissected and macerated female genitalia (lateral–dorsal view of scape) with embolus tip stuck in insemination duct (circle, arrows show paired spermathecae).
(**D**) Right pedipalp. Encircled embolus tip can break off. Scale bar 500 µm.
(Nessler, Uhl & Schneider, 2007)