Doctoral Researcher Position (PhD): Consequences of genomic changes during the evolution of ant slavery

Join our international team as a graduate student to investigate the consequences of genomic changes during the evolution of dulotic social parasitism. Follow up on the recent discovery that slavemaking ants have convergently lost odorant receptors and investigate the ability of these ants to perceive odors. **What are the consequences of these changes for their behavior and processing of odorant information in the brain?** This innovative project combines behavioral and neurobiological experiments as well as gene expression and bioinformatics analyses. Our aim is to reveal whether hosts can perceive more odors than slavemaking ants, by performing odor perception screens using antennal electrophysiology. We will examine antennal transcriptomes to uncover shifts in the expression of odorant receptor genes. Our goal is also to study brain anatomy to determine whether the loss of odorant receptor genes has led to a reduction in glomeruli in the antennal lobes. Finally, slavemaker specific candidate genes will be identified and functionally characterized through the use of RNAi and behavioral screens.

Work in an international team with neurobiologist Carlotta Martelli, evolutionary biologists Jürgen Heinze and Barbara Feldmeyer, and bioinformatician Erich Bornberg-Bauer, and direct supervisor Susanne Foitzik. Funding is secured over 3 years, and the position could potentially be extended. You will be integrated into the GenEvo graduate program (https://www.genevo-rtg.de/), which provides a close-knit community of graduate students and molecular and evolutionary biology training and methodological courses such as on bioinformatics.

Applications are open until October 1, 2023. To apply, please send a letter of motivation, CV with publication list, and contact information for two reviewers to Susanne Foitzik at foitzik@uni-mainz.de.