PhD position in Genome Evolution and Genomic Plasticity
@ University of Munich (LMU) within the Priority Programme "Genomic Basis of Evolutionary Innovations" (GEvol)

3-years position (65%) | E13 TV-L | contact: grath@bio.lmu.de

Project Title:

Regulation of the eusocial genome

Project Description:

Workers of the perennial eusocial *Lasioglossum marginatum* return to their nest.

The research project aims at understanding the extent to which the genetic underpinning of eusociality in the socially variable halicitid bees is attributable to changes in gene regulatory mechanisms. The successful candidate will join the dynamic and diverse Division of Evolutionary Biology at the LMU Munich and will work under the supervision of PD Dr. Sonja Grath in close and direct collaboration with Dr. Antonella Soro and Prof. Robert Paxton, both situated the Martin Luther University Halle-Wittenberg. This is one of several projects focusing on genetic innovations in insects, which will be carried out across Germany as part of the DFG funded Priority Programme "Genomic Basis of Evolutionary Innovations" (GEvol) (http://www.g-evol.com). The main aim of GEvol is to collaboratively and interdisciplinarily exploit new computational and OMICS methods to reveal the history of genomes in insects using comparative genomics and related data such as epigenomics. Being part of this priority program will offer the successful candidate excellent opportunities for networking with leading institutes in evolutionary biology in Germany and abroad and for direct collaboration. The research project includes the use of several state-of-the-art high-throughput-sequencing techniques (RNA-Seq, ATAC-Seq, Cut&Tag, Enzyme-Methyl-seq) and their corresponding computational approaches. A strong interest in fundamental evolutionary questions such as the evolution of eusociality and gene regulation, interest to learn basic molecular techniques, and a strong background in the use and development of bioinformatic tools are essential. Furthermore, we anticipate the candidate to be engaged in the preparation of publications as well as the supervision of BSc and MSc students.

Research Environment:

The position is fixed-term for 3 years within a DFG-funded project. The salary is based on a 65% 13 TV-L scale. We are seeking to fill the position from the earliest possible date. The project is a collaboration between the host lab at the LMU Munich and Antonella Soro and Robert Paxton from the University of Halle. This highly interdisciplinary team provides an excellent research environment for this project. The successful candidate will be hosted at the Division of Evolutionary Biology at the Faculty of Biology of the LMU Biocenter, and be able to join the international Graduate School Life Science Munich (LSM), providing a vibrant environment for PhD students.

LMU Munich is an equal opportunity employer. The University continues to be very successful in increasing the number of female faculty members and strongly encourages applications from female candidates. LMU Munich intends to enhance the diversity of its faculty members. Furthermore, disabled candidates with essentially equal qualifications will be given preference.

Your Qualifications:

MSc degree in Biology, Bioinformatics or in other relevant fields such as Biotechnology, Computer Science or Mathematics. We seek a candidate with bioinformatic and statistical skills to handle and to integrate population genomics, transcriptomics (RNA-Seq) and epigenomics (ATAC-Seq, CUT&Tag, Enzyme-Methyl-Seq) data. Due to the integrative nature of the project, we expect prospective students to enjoy working in a team and sharing data and experiences. Good skills in speaking and writing in English are required. A willingness to get involved in data generation (wet lab) and field work in Germany and the Czech Republic is a plus.

Application:

Please apply by **February 28, 2026** via email to PD Dr. Sonja Grath (grath@bio.lmu.de).

Applications, written in English and sent as a single PDF file, should include: (1) a cover letter that clearly states how your experience and interests match required qualifications, (2) a detailed CV including details about research and publications (if any), and (3) contact details of at least two referees.

References:

Jones et al (2023) Convergent and complementary selection shaped gains and losses of eusociality in sweat bees. *Nature Ecology & Evolution*, *7*(4), 557–569. https://doi.org/10.1038/s41559-023-02001-3

Jones et al (2024) Repeated Shifts in Sociality Are Associated With Fine-tuning of Highly Conserved and Lineage-Specific Enhancers in a Socially Flexible Bee. *Molecular Biology and Evolution*, *41*(11), msae229. https://doi.org/10.1093/molbev/msae229

Kapheim et al (2020) Developmental plasticity shapes social traits and selection in a facultatively eusocial bee. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(24), 13615–13625. https://doi.org/10.1073/pnas.2000344117

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Sabarís et al (2019) Actors with Multiple Roles: Pleiotropic Enhancers and the Paradigm of Enhancer Modularity. *Trends in Genetics*, *35*(6), 423–433. https://doi.org/10.1016/j.tig.2019.03.006