

The **Jena School for Microbial Communication (JSMC)** is an ambitious Graduate School with over 130 doctoral and postdoctoral scientists. We offer structured, interdisciplinary PhD and career training programs based on top-level fundamental research. They conceptually combine different research areas to a comprehensive picture of microbial communication. The '**Cluster of Excellence 'Balance of the Microverse'**' studies the fundamental principles underlying microbial community interactions and functions in diverse habitats, ranging from oceans and groundwater to plants and human hosts.

The research group of Martin Kaltenpoth at the JSMC and the 'Cluster of Excellence "Balance of the Microverse"' invites applications for a

Doctoral Researcher (TV-L E13, 65%) in Insect Symbiosis

commencing in September 2026 or upon agreement. We offer a part-time position (65%) at the Max Planck Institute for Chemical Ecology, offered as a fixed-term position for 3 years.

This PhD project investigates how ancient nutritional symbionts can be replaced by new microbes, focusing on a newly discovered symbiosis this is in the process of such a transition. Using a beetle species complex that harbors both an ancient Gamma-proteobacterial symbiont and a newly acquired bacterium (*Paraburkholderia*), the project will retrace the molecular and evolutionary steps of symbiont turnover. It will combine genomic, transcriptomic, and functional approaches to identify genomic changes associated with the onset of symbiosis and determine how hosts differentially regulate responses to old versus new symbionts. The work will further assess how individual symbionts and specific host and bacterial genes contribute to digestive functionality and host fitness. By studying this rare transitional system, the project aims to uncover general mechanisms that enable hosts to escape the evolutionary constraints of long-term symbioses through symbiont replacement and horizontal gene transfer.

Your responsibilities:

- Perform laboratory experiments, confocal microscopy, and bioinformatics analyses towards your doctoral research project
- Analyse project results, generate figures for publications, and write scientific manuscripts for publication
- Present your results at local, national, and international meetings and conferences
- Work closely together with other experimental and computational researchers in the research group and within the Cluster
- Assist with training and supervising other researchers (e.g. student assistants, BSc students)
- Contribute to the friendly, welcoming, and collaborative environment in our team

Your profile:

- A MSc in biological sciences (e.g., evolutionary biology, zoology, microbiology, molecular biology, bioinformatics) or closely related disciplines. Candidates in the final stages of obtaining their MSc are also encouraged to apply
- Desired methodological skills include entomological bioassays, molecular biology approaches (e.g. DNA/RNA work, protein heterologous expression), phylogenetic reconstructions, expertise in (fluorescence or electron) microscopy, and/or experience in analyzing genomic/transcriptomics datasets
- A high level of curiosity, self-motivation, enthusiasm and attention to detail
- A cooperative personality actively seeking to contribute to our interdisciplinary and inclusive Microverse community
- Excellent written and spoken English communication skills



We offer:

- A highly communicative atmosphere within an energetic and interdisciplinary scientific network
- The Jena School for Microbial Communication offers a structured and interdisciplinary doctoral training program based on top-level fundamental research and provides comprehensive mentoring programs and soft skills courses
- Jena – City of Science, a young and lively city with a vibrant local cultural agenda
- A dedicated management team, providing support and information on non-scientific subjects, such as onboarding and family life, and organising individualised career development programs, and events on topics like mental health and communication
- Remuneration based on the provisions of the Collective Agreement for the Public Sector of the Federal States (TV-L) at salary scale E13 — depending on the candidate's personal qualifications—, including a special annual payment in accordance with the collective agreement

The 3-year doctoral researcher position (TV-L E13, 65%) will be funded through the JSMC through the Thuringian State government (2026-2028) and subsequently through the Excellence Strategy of the German Federal and State governments (2029). The University of Jena and the participating research institutes are equal opportunity employers. Part-time contracts can be discussed. Candidates with severe disabilities will be given preference in the case of equal qualifications and suitability. The employment contract will be with the Max Planck Institute for Chemical Ecology.

To promote gender equality in science, applications by women are particularly welcome. Candidates with severe disabilities will be given preference in the case of equal qualifications and suitability.

Are you eager to join us? Then, apply by **April 26, 2026**, using our online portal.

[Online application](#)