PhD Position (f/m/d/x) in Plant-Insect-Microbe Interactions at the Excellence Cluster Future Forests, University of Freiburg

PhD position (0.75%), fixed-term until 2029/09/30 (third-party funded)

Remuneration according to TV-L 13

Starting date: earliest 2026/04/01 (or by arrangement)

The Excellence Cluster Future Forests at the University of Freiburg invites applications for a PhD position in the project **"Effects of drought and herbivory on tree physiology and microbial endophytes – a case study on *Quercus petrea*"** at the Chair for Forest Entomology and Protection.

We seek highly motivated natural scientists with a keen interest in the ecology and co-evolutionary dynamics of plant-insect-microbe interactions to join our international research group at the Chair for Forest Entomology and Protection (https://uni-freiburg.de/enr-forento/), which is part of the interdisciplinary Excellence Cluster Future Forests.

Background of the project: Hot droughts and increasing herbivory are causing stress and mortality to trees in temperate forests worldwide. However, the interaction between herbivory, microbial symbionts (both from plants and insects) and abiotic stress factors on plant physiology and growth has not yet been thoroughly researched.

Aims: This project aims to combine studies in the forest with experimental approaches in greenhouses to study the interaction between sessile oak trees (*Quercus petrea*), abiotic stress and a newly arrived, invasive herbivore, the oak lace bug (Hemiptera: *Corythucha arcuata*). In controlled experiments the PhD candidate will measure (i) bug fitness, (ii) the effects of herbivory and hot drought on the physiological stress response, (iii) tree growth, as well as changes (iv) in microbial symbiont communities.

The Excellence Cluster Future Forests at the University of Freiburg is an interdisciplinary research center dedicated to questions of adaptation and transformation of forests and their societal use in the face of global change. Future-oriented research on the complex interactions between forests and society is conducted here with outstanding international visibility, supported by the German Research Foundation. Future Forests brings together more than 50 researchers from four faculties as well as non-university partner institutions.

Your Tasks

- Independent scientific research in the field of Forest Entomology, Microbiology, Molecular Biology, Bioinformatics (Amplicon Sequencing) and Plant Sciences
- Collaboration with interdisciplinary and international research teams
- Participation in a structured doctoral program provided by the cluster, contribution to regular seminars, and progress reports
- Contribution to scientific publications and presentations at national and international conferences
- Active involvement in and contributions to cluster activities, workshops, and outreach events
- Participation in teaching and supervision of BSc and MSc students

Your Profile

- Completed university degree (M.Sc. or equivalent) in (Forest) Entomology, Microbiology, Plant Sciences, Evolutionary Biology, Molecular Biology or Bioinformatics
- Due to the interdisciplinary nature of the project, successful candidates must be willing to become acquainted with methods from the fields above.
- Experience working with insects, plants or microbes.
- Proficiency in English and a good team spirit are a must.
- Ability to work independently and as part of an interdisciplinary team
- Experience in scientific writing (publications) is an advantage
- Knowledge on basic molecular methods, statistics (R skills), and bioinformatics are a plus.

We Offer

- An exciting research project to build on a scientific career
- A cooperative and highly ambitious research group, in a stimulating interdisciplinary environment with internationally renowned researchers at the newly established Excellence Cluster Future Forests
- Structured support and supervision for your scientific and career development
- A diverse, collaborative, and inclusive research community, including initial University and cluster-specific onboarding support
- Opportunities for further education, attendance at conferences, and professional networking
- Flexible working hours and support with work-life balance
- Salary according to TV-L 13
- A financial budget for project-specific expenses as well as for career development activities

The University of Freiburg is dedicated to the principles of equal opportunity and diversity and welcomes applications from all qualified candidates regardless of gender, nationality, ethnic and social background, religion/belief, disability, age, or sexual orientation.

Application

Please upload your application (Cover letter outlining what motivates you about the advertised position/research area and what previous experience qualifies you the position (up to 1,500 words), Curriculum Vitae with list of publications (if applicable), Certified copies of your university degree(s) with grades (BA and MA certificate / Diploma certificate and transcript), Short summary of your master's (up to 250 words), Work sample (chapter from recent thesis or journal article, up to 5,000 words), Suggestion of two referees with contact details) by 15.1.2026 to the application portal of the University of Freiburg: https://uni-freiburg.de/en/job/00004720/

For important project related questions you may contact Prof. Dr. Peter Biedermann (peter.biedermann@forento.uni-freiburg.de) or Dr. Vienna Kowallik (vienna.kowallik@forento.uni-freiburg.de) and Angela Haury (angela.haury@forento.uni-freiburg.de) for organisational requests.