

German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig



External Job Announcement Reg.-Nr. 4-4980/25-D

The DFG-funded International Research Training Group GRK 2324 "TreeDì - Tree Diversity Interactions: The role of tree-tree interactions in local neighbourhoods in Chinese subtropical forests" (www.treedi.de) invites applications for the following position:

# Postdoctoral Researcher (m/f/d) on the project

# "Worldwide synthesis of responses of leaf fungi to local tree diversity" (P10G-3)

(starting date: 01 August 2025, limited until 31 May 2027 (with possible contract extension), full-time employment, salary will be up to Entgeltgruppe 13 TV-L if the personal requirements and tasks are fulfilled, work place will be located at Martin Luther University Halle-Wittenberg)

## Research topic:

Across all forest biodiversity-ecosystem functioning experiments worldwide, some of the key findings were that tree diversity often improves the survival and growth of trees, brought about by both selection and complementary effects of the tree species, while also other trophic levels, such as soil microbes play a role in mediating diversity effects. A particular importance of higher trophic levels is the effects foliar fungal pathogens and endophytes have on the producers, as they either damage plant tissues or affect the host trees in various ways. Moreover, foliar pathogens and endophytes might interact with leaf herbivory. A greater understanding of these interactions would very much advance our understanding under which conditions tree diversity in forests is suppressing or increasing disease risk or herbivory damage, which would have important implications for forestry globally. The underlying reason for the equivocal patterns observed so far are probably confounding factors, such as host density, apparency of hosts natural enemies and the pathogens', endophytes' and herbivores' degree of specialization. This points to the importance of the environmental context of the specific experiment analysed. The aim of the project is (1) to compile data on leaf fungal pathogen and whole endophyte composition from several TreeDivNet experimental sites, (2) to relate leaf fungal pathogen and endophyte composition and derived variables (diversity, fungal identity effects etc.) to tree diversity and environmental covariates, and (3) to relate ecosystem functions (e.g. productivity) to leaf fungal pathogen and whole endophyte composition. The project is supervised by Prof. Dr. Helge Bruelheide (Professor for Geobotany at MLU; helge.bruelheide@botanik.uni-halle.de; www.botanik.uni-halle.de/geobotanik/helge\_bruelheide)

## Tasks:

- Task 1: to sample leaves in different tree neighbourhoods from different TreeDivNet sites
- Task 2: to identify leaf fungal species, by both next-generation sequencing and microscopic analysis
- Task 3: to establish a meta-analytical framework testing the relationships between tree diversity and various aspects of leaf endophytes, such as damage, abundance, diversity and fungal identity as well as ecosystem functions, such as productivity
- Task 4: to analyse the impact of climate and soil conditions across experiments

The postdoctoral researcher will team up with the fellow on the Chinese side (group of Prof. Xiaojuan Liu), who focuses on herbivory. Moreover, the work will also include scientific exchange with other working groups, participation in the TreeDì qualification programme, and presentations on international conferences.





#### **Requirements:**

- A completed scientific University degree (Diploma/ M.Sc.) in a project-related field (e.g. biology, ecology, environmental sciences)
- Very good ecological knowledge and great interest with regard to forest biodiversity research
- Extensive expertise in mycology, botany, microscopy techniques, next- and third-generation sequencing
- Good quantitative and statistical skills in R, in particular on bioinformatics pipelines for metagenomics
- Fluent in English communication in writing and speaking; German language skills advantageous
- Proven experience in the supervision of students; first teaching experiences would be advantageous
- Experience in interdisciplinary and international networks
- Motivated to be a proactive team player in an international research consortium
- Flexible and well organized, enthusiasm to do science, hands-on mentality
- Fieldwork experience in tree diversity experiments would be advantageous

Applications from disabled persons, including those of equal status (as certified by the Bundesagentur für Arbeit / Federal Employment Agency), will be given preferential consideration if they are equally suitable and qualified. Women are strongly encouraged to apply. Applications from individuals of all nationalities are explicitly welcome. Applicants with a degree that was not obtained at a German university must submit a Statement of Comparability for Foreign Higher Education Qualifications from the Central Office for Foreign Education (ZAB) (https://www.kmk.org/zab/central-office-for-foreign-education) as proof of equivalence upon conclusion of the employment contract. You can find ways to apply for a financial grant for this under: https://www.anerkennung-in-deutschland.de/html/de/pro/anerkennungszuschuss.php#.

Queries concerning the application process should be directed to Dr. Stefan Trogisch (<u>stefan.trogisch@botanik.uni-halle.de</u>), for project-related questions, please contact Prof. Dr. Helge Bruelheide (<u>helge.bruelheide@botanik.uni-halle.de</u>).

Submission deadline is 31 May 2025.

#### All applications should include:

- Cover letter in English describing motivation for the project, research interests and relevant experience
- complete curriculum vitae including names and contact details of at least two scientific references
- digital copy of MA/BA/Diploma and PhD certificates

Kindly send your application, quoting the reference number 4-4980/25-D with the required documents to Martin Luther University Halle-Wittenberg, Prof. Dr. Helge Bruelheide, 06099 Halle, preferably by e-mail (one pdf document) to <u>helge.bruelheide@botanik.uni-halle.de</u>.

The position is offered with reservation of possible budgetary restrictions. Application portfolios will not be returned, application costs will not be reimbursed.

