



iDiv

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

TreeDi



External Job Announcement
Reg.-Nr. 4-12260/23-D

Modern, interconnected, conscious of tradition: Martin Luther University Halle-Wittenberg (MLU) is the oldest and largest university in the State of Saxony-Anhalt with a history dating back more than 500 years. Today more than 20,000 students are enrolled at the university. MLU's core research areas are in the nanosciences and bio-sciences, the Enlightenment, as well as in social and cultural research. The university is also home to a range of small disciplines, some of which can be found nowhere else in Germany. The university has excellent national and international ties, and works closely together with leading research institutes, industry, and more than 250 universities around the world.

The Martin Luther University Halle-Wittenberg, in cooperation with the DFG-funded International Research Training Group GRK 2324 "TreeDi - Tree Diversity Interactions: The role of tree-tree interactions in local neighbourhoods in Chinese subtropical forests" (www.treedidi.de) and the German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, invites applications for the following position, starting 01 June 2024, limited to 3 years:

Doctoral Researcher (m/f/d) on the project "Rhizosphere and root microbes" (P7G-3)

as part-time employment (65%).

The salary will be up to Entgeltgruppe 13 TV-L, if the personal requirements and tasks are fulfilled.

The research topic:

The rhizosphere is composed of a wide range of soil microorganisms characterized by different ecosystem functions, thereby influencing belowground ecosystem processes and aboveground plant diversity and community compositions. Previous studies in the BEF China platform revealed that in sub-tropical forest ecosystems plant mycorrhizal type and tree diversity level individually and interactively influence the tree-tree interaction zone rhizosphere microbial community composition and their inter-kingdom co-occurrence patterns. In nature, however, forests are characterized by the coexistence of understory (shrubs) and overstory (trees) plants, where tree-shrub interactions also modulate the tree-tree interactions. Despite these recent advances in our knowledge of the role of tree-tree interaction on the rhizosphere microbiomes, there is a limited knowledge on the impact of shrub species on the shrub rhizosphere and shrub-tree interaction zone soil microbiota. Using a tree species quartet (TSQ) design with a shrub growing at the center, this project will (1) investigate the shrub species rhizosphere and shrub-tree interaction zone soil microbiota and their metagenome profiles across tree diversity levels, (2) assess the interplay between shrub species, neighboring tree species diversity, and other biotic and abiotic environmental factors in shaping the composition of the overall microbial community, core-microbiomes, and differentially enriched communities, and (3) relate the rhizosphere microbial inter-kingdom co-occurrence patterns and functional gene profiles to plant traits and the overall TSQ functional dissimilarity. The project is supervised by Dr. Tesfaye Wubet (Senior scientist in Environmental Genomics, Department of Community Ecology, UFZ; <https://www.ufz.de/index.php?de=37874>).

Tasks:

- organize and lead coordinated soil sampling campaign and processing of samples at field station.
- analyze the temporal shrub rhizosphere and shrub-tree interaction zone soil microbiomes and their meta-genomic profiles using meta-barcoding and shotgun sequencing techniques
- test the changes in microbial community composition and their meta-genomic profiles in response to shrub species identity and local neighborhood plant diversity,
- relate the soil microbiome intra- and inter-kingdom co-occurrence network patterns and functional gene profiles to plant traits and the overall tree species quartet functional dissimilarity.

The doctoral researcher will team up with the fellow on the Chinese side, who will study in parallel the root associated mycorrhizal and endophytic microbiomes. Supervision and assistance will be provided by a Joint German-Chinese PhD Advisory Committee (PAC), combining empirical and theoretical expertise. All TreeDì fellows will have to submit their PhD thesis as a cumulative thesis, comprising at least three chapters in the form of first author papers in international peer-reviewed journals, of which at least one paper has to be accepted or published at the time of thesis submission. TreeDì fosters early experience in autonomous research, and thus, encourages to become engaged in synthesis, making use of available data from previous projects. Moreover, the work will also include scientific exchange with other working groups, participation in the TreeDì qualification programme, and presentations at international conferences.

Requirements:

- A completed scientific University degree (Diploma/ M.Sc.) in a project-related field (e.g. microbial ecology or environmental sciences)
- Very good ecological knowledge and great interest with regard to forest biodiversity research
- Experience in molecular microbial ecology, and experience in next-generation sequencing and data processing
- Good multivariate statistical skills in R and bioinformatics knowledge are essential
- Fluency in English (writing and speaking)
- A clear drive to do science
- Motivation to be a proactive team player in an international research consortium
- Flexibility and good organizational skills, hands-on mentality
- Applicants must be prepared to spend substantial time (approx. 2-4 months per year) in China for field-work, lab visits and courses
- Willingness to work under subtropical field conditions; fieldwork experience would be advantageous

The Martin Luther University Halle-Wittenberg gives priority to applications from severely disabled candidates with equivalent qualifications. Women are particularly encouraged to apply. Applicants with a degree that was not obtained at a German higher education institution must submit a Statement of Comparability for Foreign Higher Education Qualifications from the Central Office for Foreign Education (Zentralstelle für ausländisches Bildungswesen) to prove equivalence. This Statement can also be submitted after successful completion of the hiring process.

Queries concerning the application process should be directed to Dr. Stefan Trogisch (stefan.trogisch@botanik.uni-halle.de), for project-related questions, please contact Dr. Tesfaye Wubet (tesfaye.wubet@ufz.de).

Please submit your full application dossier in English with registration number 4-12260/23-D by 3 January 2024. Applications should be submitted on the website <https://apply.idiv.de>. Application portfolios submitted by post will not be returned, application costs will not be reimbursed. Selected candidates will be invited to a recruitment symposium taking place at iDiv in Leipzig on 4-5 March 2024.

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 certificates

This announcement is subject to possible budgetary restrictions.

iDiv is committed to establishing and maintaining a diverse and inclusive community that collectively supports and implements our mission to do great science. We will welcome, recruit, develop, and advance talented staff from diverse genders and backgrounds.