



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



External Job Announcement Reg.-Nr. 4-11528/23-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 biosciences, 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

"Drivers of soil micro-eukaryote richness (nematodes, protists) in a tree diversity experiment" (P6G-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:

It has been shown that beneficial soil biota are an important driver for over-yielding of species-rich plant communities, while plant monocultures decline in productivity over time due to the accumulation of soil pathogens. In addition to fungi and bacteria, nematodes and protists play an important role in this process. Nematodes represent 80% of all animal individuals on Earth, occupying a wide range of trophic levels (i.e. herbivores, bacterivores, fungivores, predators), and thus, have a strong impact on plants. Together with fungi, protists dominate soil eukaryotic diversity, while some are important plant pathogens (e.g., Oomycota). Despite the close interactions between these micro-eukaryotes and plants, it is poorly understood how plant diversity influences the composition and diversity of nematodes and protists, and how this in turn affects plant growth. As such research is particularly underrepresented in tree diversity experiments, this will be investigated in the BEF-China experiment. The project aims to (1) determine the composition and diversity of the nematode and protist communities using next-generation and long-read sequencing as well as classical microscopy, and to (2) determine the underlying mechanisms responsible for the different micro-eukaryotic communities along the tree diversity gradient, with a particular focus on the role of root exudate quantity and quality as well as changes in soil properties. The project is supervised by Dr. Peter Dietrich (Assistant Professor at MLU; peter.dietrich@botanik.uni-halle.de; https://www.botanik.uni-halle.de/geobotanik/peter_dietrich/).

Tasks:

- Task 1: to take soil (and root) samples in different tree neighborhoods, extract nematodes, measure root exudates
- Task 2: to identify nematodes and soil protists by next-generation sequencing and classic microscopic analyses, establish a method for long-read sequencing
- Task 3: to analyse the impact of the tree species composition on nematode and soil protist communities, identify underlying drivers (root exudates, soil properties)

The doctoral researcher will team up with the fellow on the Chinese side. 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 on international conferences.

Requirements:

- A completed scientific University degree (Diploma/ M.Sc.) in a project-related field (e.g. ecology, environmental sciences)
- Very good ecological knowledge and great interest with regard to forest and soil biodiversity research
- Good quantitative and statistical skills in R are essential
- Experience in nematology, microscopy techniques and next-generation sequencing are advantageous
- 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 fieldwork, 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. Peter Dietrich (peter.dietrich@botanik.uni-halle.de).

Please submit your full application dossier in English with registration number 4-11528/23-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.