

Job advertisement

Vacancy ID: 423/2020

Closing date: 14 February 2021



FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA



iDiv

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

TreeDi



Friedrich Schiller University is a traditional university with a strong research profile rooted in the heart of Germany. As a university covering all disciplines, it offers a wide range of subjects. Its research is focused on the areas Light—Life—Liberty. It is closely networked with non-research institutions, research companies and renowned cultural institutions. With around 18,000 students and more than 8,600 employees, the university plays a major role in shaping Jena's character as a cosmopolitan and future-oriented city.

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) seeks to fill the position of a

Doctoral Researcher on the project P9G-2: "Modelling generalized diversity interactions" (m/f/d)

commencing on 01 June 2021.

The work place will be at the **German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig in the city of Leipzig.**

Research topic:

The growth of trees depends on resource conditions, tree identity, traits, and local neighborhood interactions with other trees. Animals that move between trees can mediate these interactions. The research environment of TreeDi provides a unique database on tree species growth under different environmental conditions and other neighboring trees. As the relative contributions of these various constraints on tree growth are typically challenging to disentangle empirically, this project will employ systematic modeling approaches for gaining a mechanistic understanding of tree-tree interactions when embedded in a complex environment. This PhD project aims at (i) developing statistical models of tree-tree interaction networks, (ii) revealing which tree species traits and environmental conditions drive the interaction strengths in these networks, and (iii) integrating these binary networks in spatially-explicit models of complex food webs. The methods include linear, non-linear, and Bayesian models (in R) and differential-equation (ODE) based modeling of complex networks (in C or Julia). The project is supervised by [Prof. Dr. Ulrich Brose](#) (Professor for Biodiversity Theory at iDiv; ulrich.brose@idiv.de).

Your responsibilities:

- Developing Bayesian models of tree-tree interaction networks
- Analyzing the dependence of tree-tree interaction strengths on tree traits and environmental conditions.
- Integrating tree interaction networks in spatially-explicit models of complex food webs.

The doctoral researcher will team up with the fellow on the Chinese side, who will study in parallel tree growth models. Supervision and assistance will be provided by a Joint German-Chinese PhD Advisory Committee (PAC), combining empirical and theoretical expertise. TreeDi fosters early experience in

independent research and encourages to become engaged in synthesis, making use of available data from previous projects.

Your profile:

We are searching for applicants interested in conceptual thinking about ecosystems, a drive to develop quantitative models, and an interest in natural communities' complex structures. Basic knowledge in programming languages (e.g. R or another interpreting language) is necessary for the project. Skills in more advanced programming languages such as C or Julia are advantageous but not strictly necessary.

The following points describe the expected profile:

- M.Sc. or equivalent degree in a project-related field (e.g. in biology, ecology, physics)
- Knowledge of ecological theory is important
- Good quantitative and statistical skills in R are essential, skills in creating simple programming structures are necessary
- knowledge of C, C++, or a similar fast programming language is advantageous
- Experience in modeling ecological systems or ecological networks such as food webs, mutualistic networks, or meta-communities is desirable
- Fluent in English communication in writing and speaking. Knowledge of German and/or Chinese is an advantage
- Motivated to be a proactive team player in an international research consortium
- Flexible and well organized, hands-on mentality
- Applicants must be prepared to spend time in China

We offer:

- Work in a dynamic, international and interdisciplinary environment
- Opportunities to develop and advance scientific networks
- Cutting edge research in modern facilities
- Doctoral researchers at TreeDì benefit from the participation in the TreeDì qualification programme
- Participation in and presentations on international conferences
- Family-friendly working environment with flexible working hours
- Remuneration based on the provisions of the Collective Agreement for the Public Sector of the Federal States (TV-L) at salary scale 13 — depending on the candidate's personal qualifications—, including a special annual payment in accordance with the collective agreement

The position is limited to 3 years. The employment is part-time at 65%. (26 hours/week)

Queries concerning the application process should be directed to Dr. Stefan Trogisch (stefan.trogisch@botanik.uni-halle.de), for project-related questions, please contact Prof. Dr. Ulrich Brose (ulrich.brose@idiv.de).

Submission deadline is 14 February 2021. Selected candidates will be invited to the online joint recruitment symposium in March 2021 (22-23 March 2021).

All applications should include:

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

Candidates with severe disabilities will be given preference in the case of equal qualifications and suitability.

Are you eager to work with us? Kindly send your application, quoting the vacancy ID 423/2020, via our application portal at <https://apply.idiv.de>. While we prefer applications via this portal, hard-copy applications may also be sent to: *German Centre for Integrative Biodiversity Research – iDiv (Halle-Jena-Leipzig), HR Department, Puschstr. 4, 04103 Leipzig.*

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.

Since all application documents will be duly destroyed after the recruitment process, we ask you to submit only copies of your documents.

For further information for applicants, please also refer to [www.uni-jena.de/Job portal](http://www.uni-jena.de/Job_portal) (in German).

Please also note the information on the collection of personal data at

https://www4.uni-jena.de/en/jobs_information_collecting_personal_data-path-18.27.html.