Friedrich Schiller University Jena seeks to fill the following position at the German Centre for Integrative Biodiversity Research (iDiv) in Leipzig at the earliest possible date:

**Postdoctoral Researcher (f/m/d)**

**on “Macroecology of networks and ecosystem functions”**

initially limited until 30 September 2021, with prolongation dependent upon successful renewal of DFG funding for iDiv (evaluation in spring 2021)

full-time employment

Salary: up to Entgeltgruppe 13 TV-L if the personal requirements are fulfilled

The FSU Jena seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply. Severely disabled persons are encouraged to apply and will be given preference in the case of equal suitability.

**Background**

The German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig is a National Research Centre funded by the German Research Foundation (DFG). Its central mission is to promote theory-driven synthesis and data-driven theory in this emerging field. It is located in the city of Leipzig and it’s a central institution of the Leipzig University, jointly hosted by the Martin-Luther-University Halle-Wittenberg, the Friedrich Schiller University Jena and the Helmholtz Centre for Environmental Research (UFZ). The highly integrated research centre also includes the synthesis centre sDiv (https://www.idiv.de/sdiv.html), a seminar series with weekly talks by internationally high-ranking speakers and the graduate school yDiv (https://www.idiv.de/ydiv.html). Postdoc research at iDiv thus has ample opportunities for inspiration, support and collaboration. More Information about iDiv: www.idiv.de.

Theory in Biodiversity Science (EcoNetLab) is one of the research groups at iDiv. The research topics covered include (i) describing natural communities by network models comprising the species and their interactions, (ii) predicting interactions between species and their strengths by traits, (iii) understanding metacommunity structures as spatial networks of habitat patches linked by dispersal, and (iv) developing quantitative movement models based on species’ traits. These complex models are used to understand environmental and anthropogenic constraints on biodiversity as well as the consequences of biodiversity changes for ecosystem functions. We offer an international, English-speaking research environment with regular integrative group activities and members with background in ecological theory, synthesis, advanced statistics and modeling. Our scientific networks offer ample opportunities for collaborations within iDiv as well as with international research groups. More information on the working group is available under www.idiv.de/econetlab.

**Research topic**

While ecological networks and ecosystem functions have mostly been described for local communities, interactions between environmental gradients and species traits constrain the larger-scale species pool. Interactions between these ecological processes that occur at different spatial scales have rarely been made. The planned postdoc project aims at filling this gap by covering the following topics:

- Understanding the constraints of macroecological patterns in environmental variables, species distributions and their interactions in driving the structure and dynamics of local food webs. This work will be based on empirical analyses of a global database of food webs and species interactions (GATEWAY) and dynamic population models integrating macroecological processes and local species interactions.
- Upscaling interaction and movement models to biogeographic spatial scales to develop mechanistic models of species distributions and their response to global change.
- Developing statistical and mathematical models predicting the interplay of ecological processes across spatial scales (local habitats, metacommunities and biogeography) in determining ecosystem functions.
**Job description**

This postdoc project will be based on ecological synthesis and theory. The former is primarily based on establishing and maintaining ecological data bases and statistical analyses. The latter implies formalizing ecological processes as quantitative, equation-based models to predict and understand patterns in networks, species traits and ecosystem functions across spatial scales. In detail, this includes:

- maintaining and updating databases including GATEway (food webs and species traits);
- downloading and analyzing environmental data from global data bases;
- statistical analyses and syntheses of ecological databases;
- collaboration with and support of other macroecological projects at iDiv including the synthesis center sDiv;
- conceptual and mathematical formulation of ecological processes that link spatial scales;
- write scientific papers on the project in internationally peer-reviewed journals;
- present the research at national and international meetings.

**Requirements**

We are searching for applicants with interest in conceptual thinking about ecosystems (marine, freshwater and terrestrial), a clear drive to analyze large databases and interest in developing quantitative models. Knowledge in programming languages (e.g. R or another interpreting language) are necessary for the project, skills in more advanced programming languages such as C are advantageous but not strictly necessary. The following points describe the expected profile:

- PhD degree in biology, ecology, physics or a similar discipline;
- knowledge of ecological theory, network science and macroecology is important;
- experience in ecological synthesis, work with large databases is desirable and advanced statistical analyses is desirable;
- skills in creating simple programming structures and modeling ecological systems or ecological networks such as food webs, mutualistic networks or meta-communities are advantageous;
- knowledge of C, C++ or a similar fast programming language is helpful;
- excellent communication skills in English – writing and speaking.

Kindly send your application, quoting the reference number 129/2020, via our application portal at [https://apply.idiv.de](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)**

Prof. Dr. Ulrich Brose
Deutscher Platz 5e, D-04103 Leipzig

Submission deadline is 30 June 2020.

All applications should include:
- Cover letter 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 BSc/ MSc and PhD certificate or equivalent

Queries concerning the application process should be directed to hr@idiv.de, for project-related questions, please contact Prof. Dr. Ulrich Brose (ulrich.brose@idiv.de).

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. The position is offered with reservation of possible budgetary restrictions.

Please note that applying via email is not entirely secure under data protection law. The sender assumes full responsibility.

Please consider our application information: [http://www.uni-jena.de/stellenmarkt_hinweis.html](http://www.uni-jena.de/stellenmarkt_hinweis.html).

Please also note the information on the collection of personal data on: www.uni-jena.de/Universität/Stellenmarkt/Datenschutzhinweis.