

## PhD opportunity / DFG Priority Program “Biodiversity Exploratories” (f/m/x)

You're interested in digging deeper into how the land-use intensity of grassland ecosystems influences the belowground biodiversity and their potential to utilize root or litter derived carbon? Then this exciting PhD opportunity is for you!

The project is part of the **Biodiversity Exploratories** (<https://www.biodiversity-exploratories.de/de/>), an Infrastructure Priority Programme (SPP 1374) funded by the Deutsche Forschungsgemeinschaft (DFG; German Research Foundation). Within the Biodiversity Exploratories, scientists from different disciplines from all over Germany and Europe join forces to address crucial questions of biodiversity and land use intensity and how these are interrelated with ecosystem change.

The **Department for Comparative Microbiome Analyses** aims at identifying key microbiota, which trigger our health to develop strategies to promote the abundance of those microbiota in urban and indoor environments. The human microbiome is a key component for our health. It is strongly influenced by environmental microbiota, which interact with the microbiome of barrier organs like skin or respiratory system. As a consequence, the reduced microbial diversity in the environment, resulting from climate- and global change, strongly impacts human– environment interactions, resulting in an increase in environmental diseases and infections. According to the planetary health concept the prevention of such diseases requires strategies which increase biodiversity in the environment. We identify key microbiota from the environment, which trigger our health, develop strategies to promote the abundance of those microbiota in urban and indoor environments and analyze consequences for our health.

### Your responsibilities:

The project “**Feedback loops between land use intensity, microbial diversity and easily available nutrients on the amount and degradation of phenolic C sources (FeeLoo)**” aims to understand how land use intensity and diversity loss influences the quality of phenolic compounds in soil and the microbial potential to degrade them. To identify key degradation pathways and the involved microbes the PhD candidate has to conduct metagenomics sequencing, bioinformatics data analysis from samples derived from field and <sup>13</sup>C-labeling experiments. Therefore, molecular lab analysis, planning and conducting field sampling campaigns and incubation experiments are central parts of the PhD work. The microbiological analyses will be complemented by soil chemical and potential enzyme activity analysis performed by our cooperation partners at the University of Bonn and the Max Planck Institute for Biogeochemistry in Jena.

### Your qualifications:

We are looking for a highly motivated and co-operative person with a strong background in microbial ecology. The ideal candidate will have demonstrated his/her ability to successfully carry out research and communicate the results in a Master program. Skills in microbiological methods like PCR, DNA/RNA extraction, isolation and cultivation techniques are mandatory. Previous experience in field and laboratory experiments will be considered a plus. The

applicant should be able to independently plan and undertake field and laboratory experiments and coordinate the work with other partners of the priority program. Field campaigns of several days at different sites in Germany are required. Experience in data management, statistics, bioinformatics and R is preferred. A strong command of English is indispensable. In addition, the applicant should possess a valid B driver's license to reach all sampling sites independently.

**What we offer you:**

- work-life balance
- flexible working hours & working-time models
- continuous education and training
- 30 days annual leave
- on-site health management service
- home office options
- on-site nursery & holiday care
- elder care
- company pension scheme
- discounted public transport ticket

Munich, with its numerous lakes and its vicinity to the Alps, is considered to be one of the cities with the best quality of life worldwide. With its first-class universities and world-leading research institutions it offers an intellectually stimulating environment. Provided that the prerequisites are fulfilled, a salary level up to E 13 is possible. Social benefits are based on the collective agreement for the federal public service (TVöD). The position is limited to 3 years. To promote diversity, we welcome applications from talented people regardless of gender, cultural background, nationality, ethnicity, sexual identity, physical abilities, religion and age. Qualified applicants with physical disabilities will be given preference. If you have obtained a university degree abroad, we require further documents from you regarding the recognition of the degree. **Please request the recognition as early as possible.** The PhD student will be further involved in a structured Graduate School Program to improve scientific and soft skills and will confer his/her doctorate at the Technische Universität München.

**Your application:**

We are looking forward to receiving your comprehensive online application (CV, statement of research interests, contact details of two academic references, academic transcripts) until July 5th, 2023. Applications are reviewed on a rolling basis until the position is filled. Please send your application as a single PDF by email with the subject "PhD FeeLoo" to Dr. Stefanie Schulz ([stefanie.schulz@helmholtz-munich.de](mailto:stefanie.schulz@helmholtz-munich.de)). The position starts as soon as possible.