



The University of Bayreuth has an internationally competitive and interdisciplinary profile in research and teaching in the fields of ecology, environmental sciences and molecular biosciences. The **Chair of Ecological Microbiology (Prof. Dr. Tillmann Lueders)** offers currently a

**Phd Position Soil Microbiology (m/f/d), TV-L E 13 (65 %)
Controls of Carbon and Energy Turnover in Soil Microbiomes**

The position is **available from Nov. 1st, 2021**, or as soon as filled, for a duration of three years. The Chair of Ecological Microbiology investigates fundamental questions about the control of biogeochemical and ecological processes within complex microbiomes in terrestrial habitats. Our research is focussed on topics such as **groundwater microbiology**, **microbial interactions in soils**, and the **ecology of microbial biofilms** in the subsurface. Our work is based on innovative combinations of fine-scale biogeochemical analysis, quantitative microbiology, next-generation sequencing, and the detection of stable isotopes in biomarkers.

Your tasks: We are looking for a highly motivated PhD candidate to work in a DFG-funded project within the newly funded DFG Priority Programme SPP 2322 "SoilSystems" (<https://www.uni-trier.de/universitaet/fachbereiche-faecher/fachbereich-vi/faecher/bodenkunde/soilsystems/start>). This exciting and interdisciplinary project aims at understanding the thermodynamics of microbial C-utilization and the mechanisms of long-term C-stabilization in soils. Soils are one of the most important sinks for globally increasing CO₂. The specific project objectives include:

- To resolve **microbial carbon use efficiency (CUE) and kinetics** in soil as controlled by substrate chemistry
- To quantify **substrate-independent microbial growth and carbon utilization** in soil via cutting-edge H₂¹⁸O DNA-Stable Isotope Probing (SIP)
- To generate a **data-driven bioenergetic model** of microbial C utilization in soil

Your profile: You have a completed Master's degree in microbial or molecular ecology, soil microbiology or other closely related fields. A background in molecular microbiome analyses and/or biogeochemical analytics is expected. Experience in next-generation sequencing and stable isotope labelling are of benefit. You are highly motivated and enjoy working in a team as well as independently. The successful candidate should have good spoken and written English skills.

Our offer: We offer a modern, well-equipped and diverse Environmental Microbiology research lab. The working atmosphere is characterized by a culture of active participation and interdisciplinary interaction. The project involves collaboration and close interactions with several other research groups within the SoilSystems SPP across Germany. Active involvement in workshops and meetings of the consortium are strongly encouraged.

Remuneration: The successful applicant will be enrolled in accordance with public service agreements (TV-L, E 13, 65%). The position is available for three years.

The University of Bayreuth values the diversity of its employees and is explicitly committed to the goal of gender equality. Women are strongly encouraged to apply. Applicants with children are very welcome. The University of Bayreuth is a member of the Best Practice Network "Familie in der Hochschule e.V.", and has successfully participated in the HRK audit "Internationalization of the University". Persons with severe disabilities will be given preferential consideration if equally qualified.

Please apply **online** via the [Applicant portal Uni Bayreuth](#) selecting "SoilSystems" from the drop-down menu and attach a motivation letter, CV, certificates with transcripts of grades and a list of publications (if available). Please name also 2 reference persons. **Deadline for application is October 15th, 2021**, but selection will proceed as soon as possible.

The documents will be deleted after the position has been filled in accordance with data protection requirements.

Informal inquiries are welcome by e-mail (tillmann.lueders@uni-bayreuth.de) or by phone (+49 (0) 921 555 640).

Check us out @ <https://www.bayceer.uni-bayreuth.de/mik/>

Recent soil microbiome-related papers from our group:

Hünninghaus, M., Dibbern, D., Kramer, S., Koller, R., Pausch, J., Schloter-Hai, B., Urich, T., Kandeler, E., Bonkowski, M., Lueders, T., 2019. Disentangling carbon flow across microbial kingdoms in the rhizosphere of maize. *Soil Biol Biochem* 134, 122–130.

<https://doi.org/10.1016/j.soilbio.2019.03.007>

Zhang, L., Lueders, T., 2017. Micropredator niche differentiation between bulk soil and rhizosphere of an agricultural soil depends on bacterial prey. *FEMS Microbiology Ecology* 93, fix103. <https://doi.org/10.1093/femsec/fix103>

Beulig, F., Urich, T., Nowak, M., Trumbore, S.E., Gleixner, G., Gilfillan, G.D., Fjelland, K.E., Küsel, K., 2016. Altered carbon turnover processes and microbiomes in soils under long-term extremely high CO₂ exposure. *Nature Microbiology* 1, 15025.

<https://doi.org/10.1038/nmicrobiol.2015.25>