Chair of Ecological Microbiology

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) is offering a position (planned starting date by April 1st, 2020) as:

PhD student (f/m/d)
on Rhizosphere Microbiomes of Agricultural Plants

The position is available 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 the rhizosphere, 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 the new BMBF-funded project “RhizoTraits”. The central hypothesis of the project is that old landraces of maize and wheat are more resistant to climate change (e.g. drought) than modern, yield-optimized varieties because of a higher plasticity of rhizosphere traits. A comparative approach is chosen to elucidate the role of rhizosphere microbes in drought tolerance. The research objectives include:

- A systematic comparison of rhizosphere microbiota for a number of highly bred varieties vs. old landraces of maize and wheat. The contribution of rhizosphere microbiomes to plant stress resistance is to be elucidated.
- Analyses will include basic proxies of microbial biomass and activity, as well as advanced next-generation sequencing of bacterial and of fungal rhizosphere microbiome components.
- Quantitative traits of rhizosphere microbiomes involved in securing C-allocation from the plant will be analysed with the help of plant-mediated stable isotope probing ($^{13}$CO$_2$-SIP).

Your profile: You have a completed Masters’ degree in microbial or molecular ecology, soil microbiology or other closely related fields. A background in molecular microbiome analyses and biogeochemical analytics can be demonstrated. Experience in next-generation sequencing and stable isotope approaches are of benefit. You are highly motivated and enjoy working in a team as well as independently. Candidates with a good written and spoken English as well as a driving permit for field sampling campaigns in Bavaria are preferred.

Our offer: We offer a modern, well-equipped and diverse Environmental Microbiological research infrastructure. The working atmosphere is characterized by a culture of active participation and interdisciplinary interaction. The RhizoTraits project involves close interactions with other research groups at the University of Bayreuth and across Bavaria. Active involvement in workshops and meetings of the consortium are encouraged.

Remuneration: the successful applicant will be enrolled in accordance with public service agreements (EG 13 65% TVL). The position is available for a period of at least three years. Handicapped applicants will be given preference if equally qualified. The University of Bayreuth aims to increase the proportion of women in science and particularly invites applications from female candidates.

Please send your complete application, incl. a motivation letter, your CV, certificates with transcripts of grades, list of publications (if available) and 2 reference persons as one joint PDF to: tillmann.lueders@uni-bayreuth.de. Deadline for application is 29.02.2020, but selection will proceed a.s.a.p. Informal inquiries are welcome by e-mail or by phone (+49 (0) 921 555 640). Check us out @ https://www.bayceer.uni-bayreuth.de/mik/

Recent rhizosphere microbiome-related papers from our group: