UNIVERSITY OF COLOGNE



Foto: Simon Wegener

Faculty of Mathematics and Natural Sciences

PhD position in Biogeochemistry/Soil Biology (f/m/x)

Soil microbial nutrient stoichiometry and soil–atmosphere exchange in river floodplains

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

Floodplains are dynamic, valuable ecosystems increasingly threatened by river regulation, land use, and climate change. The University of Cologne's project "The Rhine Floodplain – a Biogeochemically Coupled System under Stress" investigates how altered hydrology affects sediment dynamics, biodiversity, food webs, microbial processes, and greenhouse gas emissions. The position is co-supervised between the University of Cologne and Forschungszentrum Jülich.

YOUR TASKS

- Conduct field measurements of greenhouse gas and VOC (volatile organic compounds) emissions along hydrological gradients in the floodplain
- Perform laboratory measurements of VOC samples using thermal desorption gas chromatography coupled with mass spectrometry (TD-GC-MS)
- Carry out nutrient addition experiments (C, N, P) to assess microbial nutrient limitation and its effects on microbial biomass, respiration, carbon-use efficiency, and enzyme allocation
- Integrate microbial stoichiometric responses with gas flux data to identify how nutrient constraints regulate carbon partitioning and climate-relevant emissions
- Collaborate within an interdisciplinary team spanning biology, geosciences and atmospheric science.
- Present your research results at international conferences and publish them in peer-reviewed journals

YOUR PROFILE

- Master's degree in Environmental Sciences, Biogeochemistry or a related field; experience with using analytical chemistry instrumentation (GC-MS) is desired
- Excellent experimental skills
- Knowledge of statistics and programming
- Excellent written and oral presentation and communication skills in English (C1 equivalent)
- Driving experience and driving licence for cars
- Ability to work independently in the field
- Self-motivated and structured working style
- Working and living at the field station, work at the University of Cologne and forschungszentrum Jülich requires a high amount of flexibility

WE OFFER

- Exciting research in an interdisciplinary project with 2 other PhD students and a postdoc
- A diverse working environment with equal opportunities
- Support in balancing work and family life
- Flexible working time models
- Extensive advanced training opportunities
- Occupational health management offers

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is available from 1 February 2027 on a part time basis with 25,89 hours per week. The position is to be filled for a fixed term until 31 January 2030. If the applicant meets the relevant wage requirements and has the appropriate personal qualifications, the salary is based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications (without a photo) under https://jobportal.uni-koeln.de. The reference number is Wiss2611-05.
The application deadline is 15 December 2026.
For further inquiries, please contact Professor Dr Eva Pfannerstill (epfanner@uni-koeln.de) or Professor Michael Bonkowski (m.bonkowski@uni-koeln.de) and take a look at our FAQs.

HR EXCELLENCE IN RESEARCH