EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Faculty of Science
Department of Geoscience

Established in 1477, the University of Tübingen is one of Germany's oldest internationally renowned research university with a broad range of academic faculties and disciplines. Today, one of the research focus areas is geoscience and environmental research. We offer an excellent, interdisciplinary and vivid research environment in an international research team and in a vibrant city.

PhD position in Soil Science

The new project is funded by the **DFG Priority Programme Antarctic Research** and will be done together with the GFZ German Research Centre for Geosciences in Potsdam where another PhD position will be hosted. Both positions will closely work together encompassing the fields of Microbiology and Soil Science regarding initial soil development.

In Antarctica, soil development begins immediately after the retreat of the ice and snow. Our previous research has shown that the terrestrial microbiome reacts quickly to environmental changes, and distinct soil structures and aggregates form. We assume that soil formation is initially spatially segmented with microhabitats developing inside and on aggregate surfaces. To better understand the interactions between microorganisms, soil formation, and microhabitats, we aim to analyze aggregate interiors and exteriors separately. We will combine micromorphology, µCT, SEMEDX and NanoSIMS and train machine learning algorithms to examine these spheres in more detail, expanding our knowledge of how initial soil formation and microorganisms are linked together in cold deserts like Antarctica.

Your responsibilities are:

- perform innovative laboratory experiments using Antarctic soil samples for soil simulation experiments to investigate microbial-driven soil formation,
- develop a workflow to combine micromorphology, µCT, SEMEDX and NanoSIMS measurements and train machine learning algorithms on the data,
- operate and analyze state-of-the-art measurements of soil aggregates,
- publish research results in international peer-reviewed journals and present at scientific conferences.

We expect:

- a completed MSc in Soil Science, Geoecology, Agriculture, Earth Sciences, Environmental Sciences, or other closely related disciplines,
- a research interest in extreme environments such as Antarctica and in the application of state-of-the-art laboratory techniques in soil science,
- a strong background in soil science and documented experience of laboratory methods
- basic understanding of microbiology and geo-bio interactions in soils
- ability to work in an interdisciplinary and international teamwork with excellent communication skills in written and spoken English.

The University of Tübingen is committed to equal opportunities and diversity and to increasing the percentage of women in research and teaching and thus encourages women with adequate qualifications to apply. Disabled persons with equal aptitude will be given preferential consideration. The appointment will start on **February 1, 2025**, and be limited to January 31, 2028 (**36 month**). Work place is Tübingen. Salary will be according to the German public service (TVL E13, 67 %). Please send a cover letter, curriculum vitae, copies of certificates, list of publications and names of referees. Please submit all documents as a single PDF file to the secretary of the Chair of Soil Science and Geomorphology, Mrs. Margaretha Baur by **December 9, 2024**. For further information, please contact Prof. Dr. Thomas Scholten.