

## PhD student positions on

### “Survival and resuscitation mechanisms of desert soil bacteria”

The Wobken Group in the Division of Microbial Ecology (<https://microbial-ecology.net>), Centre for Microbiology and Environmental Systems Science (<https://dmes.univie.ac.at>) at the University of Vienna is accepting applications for PhD student positions.

**Project background:** Microorganisms in drylands have to endure long periods of drought, interrupted by unpredictable and very short periods of rain. Dormancy - an inactive state or a state of reduced metabolic activity - has long been regarded as a prerequisite for desert soil microorganisms to survive such drought periods. However, as dormancy cannot be sustained indefinitely, phases of resuscitation must also play an important role for long-term survival of desert soil microorganisms and thus for maintaining microbial diversity in one of the harshest environments on the planet.

In this project, we are investigating the desiccation survival mechanisms of soil microorganisms and the molecular mechanisms of resuscitation. This will be achieved by applying genome-resolved metatranscriptomics of desert soil microbial communities, building upon knowledge gained by our recent metagenomic investigation of biological soil crusts from the Negev Desert, Israel. *In situ* community transcription patterns will be combined with single-cell activity assays, employing a recently developed heavy water-NanoSIMS assay to detect anabolically active cells, and process measurements.

We are offering **4-year PhD student positions** in an interdisciplinary, international, and dynamic team of environmental microbiologists and microbial ecologists. These positions provide the opportunity for the candidates to be creative and innovative, and to work in a multidisciplinary project involving various cutting-edge methods. Applicants must have the ability to work independently and in a team, have excellent management and communication skills and should be highly motivated and committed to pursuing research in soil microbial ecology.

#### Required qualifications:

- A MSc degree in microbiology, molecular biology or a related biological discipline, or a degree in ecology with a focus on microbial ecology .
- Being highly motivated with a strong interest in microbial ecology and microbial survival.
- Practical background in molecular techniques.
- Experience in microbial community analyses e.g. via 16S rRNA genes; experience in genome/-omics analysis will be highly favored, interest in such analysis is expected.
- Additional bioinformatics skills such as working knowledge of R and scripting languages, as well as a solid knowledge of statistical data analysis would be of additional advantage, but are not mandatory.
- Proficiency in spoken and written English is mandatory. The ability to communicate and work in a team is essential.

**What we offer:**

- Highly topical research at the intersection soil microbial ecology, microbial physiology and bioinformatics.
- Combination of omics-data analysis with lab-based experiments and field work.
- A diverse and stimulating work environment at the Centre for Microbiology and Environmental Systems Science, in the Department of Microbiology and Ecosystem Science.
- Participation in the Doctoral School in Microbiology and Environmental Science.
- Access to diverse facilities for state-of-the-art analyses and unique instruments for single-cell activity assays.

The salary is according to the salary scheme of the University of Vienna (PhD students 0,75 FTE). The University pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity (<http://diversity.univie.ac.at/>). The University lays special emphasis on increasing the number of women in senior and in academic positions. Given equal qualifications, preference will be given to female applicants.

**Mode of application:** Your application should consist of a letter of motivation (1-2 pages), your CV including a publication list (if applicable), university certificate(s) including grades and two letters of recommendation. The letter of motivation should address the stated qualifications for the position, research interests and relevant experience. Please send your application as a PDF file to [dagmar.woebken@univie.ac.at](mailto:dagmar.woebken@univie.ac.at) with the subject: **PhD-Position Survival and Resuscitation**.

**Starting date:** The review of applications will begin on April 17, 2023, with the positions to start as early as June 1, 2023, or as soon as filled.

For further information please visit the homepage of our centre <https://dmes.univie.ac.at> or Dagmar Woebken's personal webpage <https://microbial-ecology.net/people/dagmar-woebken>.