

Teaching, research and practice – we connect

## PhD student Applied Microbiology

School of Life Sciences FHNW, Institute for Ecopreneurship

**Your tasks:** Microbial communities play key roles in many ecosystems that are often exposed to anthropogenic drivers of global change such as antibiotics or hydrocarbon and metal pollution. These stressors force populations and entire ecosystems to evolve differently than those that are less or unaffected. It is discernible as a chance to identify potential microbial pollutant degrader. We are looking for a PhD candidate who will perform applied microbiology research within the Horizon Europe project NYMPHE. More specifically, to work on microorganism-based solutions for the degradation of environmental pollutants in wastewater and soils/sediments.

- cultivation, isolation, and analysis of microbial communities and pure cultures that are able to degrade pollutants, including antibiotics, hydrocarbons and microplastics (i. e., setting up diverse enrichment cultures)
- establishment of lab scale membrane bioreactors for the screening of evolutionary efficient microbial degraders
- analysis of resistance and resilience of established microbial consortia under the influence of multiple environmental factors
- analysis of microbial communities based on molecular methods (qPCR, etc.) and different sequencing approaches (16S rRNA sequencing, metagenomics)
- analysis of potential degradation pathways of respective pollutants based on -omics and radio-tracing coupled with mass spectrometric methods
- optional: 3D bioprinting of microbial communities in environmental exposure matrices

The position is initially limited for 1 year with the prospect of a 3 year extension.

### Your profile:

- MSc in microbiology or related fields
- strong experience in cultivation of various microorganisms and microbial communities, excellent knowledge about microbial metabolism
- high knowledge and experience in a broad range of methods in molecular biology (DNA/RNA, PCR, qPCR, etc.)
- ideally first experience with microbial community analysis (e.g., 16S rRNA sequencing) or a strong willing to learn it
- interest in biochemical analysis of degradation compounds
- an open-minded team player, who would like to contribute to bio-based solutions and face the challenge of successful bioremediation methods

**Your prospects:** The FHNW School of Life Sciences offers state-of-the-art technical, laboratory and office facilities. Contributing to the school's highly motivating working environment – which is second to none – are its collaboration with a large number of companies and institutions in Switzerland and abroad, a widely varied programme of scientific events, and daily contact with young students in research and teaching. The FHNW is also committed to equal opportunities and the compatibility of private and professional life.

**Starting date at the earliest possible date. Workplace: Muttenz**

**Will you soon belong to our team?** Please submit your application online via the respective announcement on [www.fhnw.ch/offene-stellen](http://www.fhnw.ch/offene-stellen) to Marco Titzmann, HR Assistant. For further information please contact Dr. Marcel Suleiman, Postdoctoral Researcher, E-Mail: [marcel.suleiman@fhnw.ch](mailto:marcel.suleiman@fhnw.ch).

