

## **Postdoctoral researcher in coral microbiology and bacterial transformation EPFL**

The Laboratory for Biological Geochemistry at EPFL directed by Prof. Anders Meibom is looking for a highly skilled postdoctoral researcher.

### **Motivation and mission:**

Tropical coral reef ecosystems are in global decline due to the effects of global climate change. At the center of this ecosystem collapse is the breakdown of symbiotic interactions within the coral holobiont, the ecological unit comprising the cnidarian host and its microbial associates. In recent years, it has been suggested that the functions and metabolic pathways of diverse symbiont bacterial communities play a major role in the resilience of coral holobionts to thermal stress. Within this project, funded by the Swiss National Science Foundation, we wish to better understand the metabolic contribution of key bacterial functional groups and, with novel genetic and molecular tools, facilitate the localization and characterization of these bacterial communities within the coral holobiont.

The candidate will adapt state-of-the-art tools to genetically transform selected bacterial strains for correlative imaging approaches to visualize the distribution and metabolic activity of bacteria in the intact holobiont. Ultimately, this will permit the study of metabolic inter-kingdom interactions and their role in coral holobiont functioning.

The Laboratory for Biological Geochemistry of Prof. Anders Meibom investigates biological processes at the subcellular level using cutting-edge micro-analytical tools. To this end, we use a suite of isotopic labeling techniques in combination with micro- to nano-scale analytical instruments, including Transmission electron microscopy (TEM), Secondary electron microscopy (SEM), and Ion microprobe Secondary Ion Mass spectroscopy (SIMS). Among the diverse range of projects in our laboratory, we use these technologies to study metabolic interaction between cnidarians (e.g. corals, sea anemones, and jellyfish) and their symbiotic partners, such as microalgae and bacteria.

The successful candidate will also work with colleagues in the Environmental Microbiology Laboratory (EML) at the EPFL, and will be advised by Prof. Anders Meibom and Jr. Prof. Claudia Pogoreutz (CRIOBE; University of Perpignan Via Domitia, France).

### **Keywords and concepts:**

- Bacterial isolation from reef-building corals
- Maintenance and characterization of bacterial cultures
- Construction of genetically transformed bacterial strains
- Coral microbiome manipulation experiments
- Histological preparation of samples for correlative fluorescence and NanoSIMS imaging applications

**Your Profile:**

- A PhD in a relevant discipline (Microbiology, marine Biology, or related; preferentially less than 2 years after obtaining the PhD degree
- Strong experience in bacterial transformation techniques
- Strong experience in regular benchwork in microbiology and molecular biology
- Field-work experience or willingness to perform field-work on tropical coral reefs
- Experience with coral husbandry and/or manipulative aquarium experiments is an asset
- Experience with optical imaging techniques and/or NanoSIMS analysis or willingness to obtain these skills at the LGB
- Excellent oral and written English skills
- French skills are an asset
- Scientific writing skills as reflected in an excellent publication record
- International experience in an asset

**We offer:**

- Opportunity to work on multidisciplinary and cutting-edge projects using microbial transformation and imaging, including NanoSIMS analysis
- Opportunity to access *state-of-the-art* research facilities and laboratory resources
- A competitive Swiss postdoctoral salary
- EPFL is an international and top ranking engineering university, offers a dynamic, stimulating, interdisciplinary, international and friendly working environment, a broad range of scientific training and networking events, and also hosts a vibrant entrepreneurial community
- EPFL is an equal-opportunity employer. Candidates will be recruited based on merit

**Start date:**

As soon as possible, applications will be reviewed starting mid-April.

**Term of employment:**

Fixed-term (CDD)

**Work rate:**

100 %

**Duration:**

1 year, renewable up to 3 years

**Your application should include:**

- Cover letter
- Full CV including publication record
- Contact information of 2 people who can provide letters of reference.

**Contact:** Please submit your application to Mme Michelle Wälti ([michelle.waelti@epfl.ch](mailto:michelle.waelti@epfl.ch)).