Titre: Doctoral Student SNSF in Microbial Geochemistry

Identifiant de demande de recrutement **20477** - Publié - (Doctorant·e) - (Géosciences et environnement) - (Temps plein) - (Faculté des géosciences et de l'environnement) - (Corps intermédiaire)

Introduction

UNIL is a leading international teaching and research institution, with over 5,000 employees and 17,000 students split between its Dorigny campus, CHUV and Epalinges. As an employer, UNIL encourages excellence, individual recognition and responsibility.

Presentation

We invite applications for a **4-year Doctoral Student SNSF position in Microbial Geochemistry** in the Environmental Microbiogeochemistry Lab in the Institute of Earth Surface Dynamics (IDYST) at the University of Lausanne. The newly launched research group headed by Prof. Berg specializes in the application of interdisciplinary approaches – borrowing methods from the fields of biology, geology, and chemistry – to solve complex environmental questions related to biogeochemical cycling. Steady-state concentrations of certain redox species may arise from the balance between continuous oxidation and reduction reactions, and although concentration changes cannot be measured, their rapid turnover can play a key role in the environment and sustain highly active and diverse microbial communities. This project will **focus on the role of microbial sulfur cycling in the formation of mineral signatures in ancient earth to modern-day ecosystems.** The PhD project will be co-supervised by Prof Jasmine Berg and Prof Johanna Marin-Carbonne.

Job information

Expected start date in position : 01.04.2023 or upon agreement
Contract length : 1 year, renewable maximum 4 years
Activity rate : 100%
Workplace : Lausanne Mouline (Geopolis building)

Your responsibilities

Sulfur redox cycling exerts a significant impact on the global organic carbon reservoir and the oxidation state of the atmosphere. Microbial metabolisms involving sulfur are thought to be extremely ancient, thus playing an important role in shaping the surface chemistry of early Earth. These ancient metabolic reactions are known to leave stable isotope signatures in mineral byproducts such as pyrite, along with organic sulfur compounds, enabling us to trace their origin and extent in the environment. To correctly interpret sulfur isotope signatures found in the rock record, isotope fractionation processes must be experimentally constrained. Experiments closely resembling natural systems with complex microbial communities and experimental diagenesis will be performed along with observations of natural systems in the field. Techniques to be used may include and are not limited to anaerobic microbial cultivation, spectrophotometry, chemical distillation, XRD, SEM-EDX, ICP-MS, and DNA sequencing.
We value curiosity, creativity, and the drive to discover new things. You are expected to have a strong mastery of the English language.

Your qualifications

- MSc degree (or equivalent) in microbiology, chemistry, biochemistry, or related domain.
- Strong background in redox chemistry
- Experience in bioinformatics or programming is a plus.
- Excellent written and spoken English skills. French in an asset, but not required.
- Able to work both independently and collaboratively in an international, interdisciplinary environment

What the position offers you

We offer a nice working place in a multicultural, diverse and dynamic academic environment. Opportunities for professional training, a lot of activities and other benefits to discover.

Contact for further information

Prof. Jasmine Berg
jasmine.berg@unil.ch
Prof. Johanna Marin Carbonne
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Your application

Deadline : 30.11.2022
We look forward to receiving your online application in PDF format including the following documents:

- Cover letter specifying your interest for this position and previous related experience
- Curriculum vitae with contact information for at least two professional references

Only applications through this website will be taken into account.

We thank you for your understanding.

Additional information

UNIL is committed to equal opportunities and diversity.
www.unil.ch/egalite
UNIL supports early career researchers.
www.unil.ch/graduatecampus