

## **PhD on the diversity, ecology and evolution of Cyanobacteria (University of Liège)**

The Laboratory of Cyanobacterial diversity, phylogeny and biogeography within the research unit 'InBios-Centre for Protein Engineering', Department of Life Sciences (ULiège, Belgium) is recruiting a new PhD student. The PhD student will be engaged in the recently started project HabitAnt: 'Past and future habitability in Antarctic lakes: succession, colonization, extinction, and survival in glacial refugia', funded by [BeISPO BRAIN-BE](#).

### **Context**

Coupled climate and earth-system models predict increased temperatures and altered precipitation patterns in vast regions of Maritime and coastal Continental Antarctica. These changes will likely result in more extensive glacial melt and the expansion of ice-free areas, increasing connectivity between regions, and changes in their hydrology. These projected environmental changes are expected to cause biotic homogenization between regions, the extinction of certain taxa, and the spread of invasive species. Recent research has shown that terrestrial and lacustrine biota in the Antarctic are more globally distinct and biogeographically structured than previously believed. These observations come from evidence of high levels of endemism and narrow distributional ranges due to the long-term survival and diversification of taxa in isolated glacial refugia.

The students will use fossil DNA in selected lake sediments and develop molecular phylogenies of focal cyanobacterial taxa to study the processes that contributed to the present-day diversity of microorganisms and invertebrates in Antarctic lakes. The processes studied include the long-term persistence of biota in glacial refugia, and extinction, colonization, diversification and biological succession in response to past climate and environmental changes.

### **Job description**

The job duties include:

- Extraction of fossil and modern DNA, and the development of DNA libraries for high-throughput sequencing.
- Isolation of new strains and development of multi-gene molecular phylogenies of focal cyanobacterial taxa.
- Bioinformatics and statistical analysis of metagenomics datasets.
- Write scientific publications and present the results at international conferences.

The University of Liège (Uiège) with its more than 23000 students and 5500 staff members is fully part of the European and International higher education and research area. It has links with over 1000 institutions world-wide and is integrated in international academic and scientific networks. ULiège also

qualifies for ECTS and HR Strategy for Researchers (HRS4R), labels granted by the European Commission, which guarantees the quality of the training and administrative support given to exchange bachelors, master's students, PhD-candidates and Post-doc researchers. Liège is also a lively city, with a dynamic cultural life. We offer:

- a full-time 4-year position as a PhD-student at ULiège (start autumn 2021)
- A dynamic, challenging, and stimulating research environment
- high-quality training to develop hard and soft skills,
- opportunities to participate in sampling campaigns to Antarctica and international scientific conferences,
- a competitive salary and social benefits

### **Profile of the candidate**

- You hold a Master's degree in Sciences: Biology, Biochemistry, Bioengineering, or Bioinformatics. Holders of a PhD degree cannot apply.
- You obtained excellent grades in your bachelor and MSc degree.
- Practical experience in the application of DNA markers in environmental samples and bioinformatic analyses of high-throughput sequencing datasets is an asset.
- You preferably have practical experience in the isolation, cultivation, characterization and/or preservation of microbial strains.
- You have programming skills in bash or another scripting language, and R.
- You have good communication and writing skills and have an excellent knowledge of written and spoken English. You like to carry out outreach activities.
- You are self-critical, you work with rigor and attention for detail, and you work accurately in the wet lab.
- You combine being a team player with a strong sense of autonomy and responsibility. You are capable of developing, planning and organizing your own research work and meeting deadlines imposed by the project
- You are willing to participate in sampling campaigns and apply for additional funding when eligible.

### **How to apply**

All applications must be received no later than 15/11/2021 at 23:59 (CET) to Annick Wilmotte ([awilmotte@uliege.be](mailto:awilmotte@uliege.be)) with the following documents attached as one file:

- application letter
- curriculum vitae
- a transcript of the required degree
- names and contact details of at least two reference persons (including the MSc thesis supervisor)

Attention: Late applications are not accepted. As University of Liège maintains an equal opportunities and diversity policy, everyone is encouraged to apply for this position.

More information: Dr Annick Wilmotte ([awilmotte@uliege.be](mailto:awilmotte@uliege.be), +32 (0) 4 366 33 87).  
[https://www.cip.uliege.be/cms/c\\_6288624/en/cyanobacterial-diversity-phylogeny-and-biogeography-bccm/ulc-culture-collection-of-cyanobacteria](https://www.cip.uliege.be/cms/c_6288624/en/cyanobacterial-diversity-phylogeny-and-biogeography-bccm/ulc-culture-collection-of-cyanobacteria)