



## JOB OFFER

### Post-doc molecular biology and bioinformatic: DNA metabarcoding - phytoplankton

4 months – will be reconducted in 2023

1<sup>st</sup> september to 31 décembre 2022

- > Develop a molecular identification method for phytoplankton using high-throughput DNA sequencing (DNA metabarcoding)
- > 4 month contract in post-doc: september-december 2022, will be reconducted the following years
- > Internal project in partnership with OFB (Office Français de la Biodiversité)
- > place : UMR Carrtel, Thonon les Bains

## YOUR MISSION

### ■ Framework :

The person will carry out his mission at the INRAE CARRTEL laboratory in Thonon-les-Bains, under the direction of an engineer and a research director and in collaboration with technicians. His/her mission will be carried out in the framework of a research contract between INRAE and the OFB (French Office of Biodiversity) entitled "Phytoplankton of overseas water bodies: development of monitoring tools based on DNA".

### ■ Work context:

This recruitment will enable to fulfill a temporary mission of a research engineer (post-doc) mobilizing knowledge in molecular biology, DNA metabarcoding and bioinformatics for a INRAE-OFB project. The person will work with scientists from two research units (UR EABX: C. Laplace-Treyture, UMR Carrtel: A. Bouchez, I. Domaizon, F. Rimet) with a good experience in these fields (phytoplankton, diatoms, fish, macroinvertebrates, lake ecology, molecular biology and metabarcoding, lake monitoring). The fixed-term contract will be held in UMR Carrtel (Thonon), from September 1 to December 31, 2022 (likely to be extended in subsequent years).

### ■ Missions:

Phytoplankton is an ecological indicator used to assess the ecological quality of lakes. The current method used is based on microscopic identifications, which is long and tedious. We propose to develop a method to identify phytoplankton based on short DNA fragments -metabarcoding- to automate and accelerate the identification.

The project started in 2020 and will continue for the next 2 years. The person who will be recruited will develop a method to analyze phytoplankton based on DNA metabarcoding: it will need to be simple and operational in the field, and will allow to propose robust tools for the evaluation of ecological status applicable to the water bodies of the DOM and metropolitan France.

### ■ Main activities:

The person will be responsible of the following tasks:

- Use and improve a pipeline (molecular biology and bioinformatic) already tested last year. The tests will be carried out on a large set of lakes in oversea areas and in mainland France. The person will be in contact with the different Water Agencies, Water Offices, DREAL and DEAL of oversea and metropolitan France.

- To manage the sending of material to different private offices working in the different metropolitan basins and in the overseas areas. The person will organize bringing back the samples, carry out extractions, PCR, preparation of libraries, sending to sequencing platforms and bioinformatic analysis.
- Compare microscopy and metabarcoding results. The microscopic inventories will be provided by the private offices in charge of monitoring. The metabarcoding inventories will be produced by the person recruited.
- Write annual reports for managers and for the users of method. He will write articles in peer-reviewed journals.

## PERSON WE ARE LOOKING FOR

### ■ Recommended education:

- PhD, good skills in R, bioinformatic, molecular biology

### ■ Preferred skills:

- Good skills in molecular biology, high throughput sequencing
- In-depth knowledge in bioinformatics, phylogeny: for example DADA2 (R), Mothur
- Knowledge in the field of microbial ecology, aquatic bioindication

### ■ Preferred experience:

- A lab experience would be appreciated

### ■ Desired skills :

- Ability to carry the values of INRAE
- Leadership and critical thinking skills
- Ability to work in a team

### ↘ Terms of reception

- Place : UMR Carrtel, INRAE, Thonon, France
- Contract : Fixed term contract, research engineer
- Contract duration: 4 months (12 months extension in 2023)
- Start date: 1st september 2022
- Salary (indicative): between 2200 and 2500 € depending on experience

### ↘ How to apply

Send a letter of motivation and a CV to Frederic Rimet

■ e-mail : frederic.rimet@inrae.fr

■ Post mail : UMR Carrtel INRAE, 75 bis avenue de Corzent, 74200 Thonon les Bains, France  
<https://www6.dijon.inrae.fr/thonon/>

✗ Application deadline: June 15, 2022

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