



The Institute of Evolutionary Biology seeks: PhD students

The Institute of Evolutionary Biology (IBE) is a joint Institute of the Spanish National Research Council (CSIC) and Pompeu Fabra University (UPF), located in Barcelona. IBE's research is focused on the processes and mechanisms that generate biodiversity and on understanding the genetic basis of evolution. The IBE is a member of Barcelona Biomedical Research Park (PRBB).

The Biology and Ecology of Abundant Protists Lab: The BEAP Lab's (<https://www.beaplab.org>) goal is to isolate, culture and subsequently characterize the cell biology, behavior and ecosystem relevance of the most abundant unknown protists on earth. Protists are single-celled and colonial microbial eukaryotes which, due to their size (generally between a few micrometers and a few hundred micrometers) are a critical part of the food webs in all of earth's ecosystems. In addition, protists form the backbone of the eukaryotic tree of life, meaning that studies of protists inform our understanding of the evolution of eukaryotic cell biology, gene content and species diversity.

Project description: Which are the most abundant protist species in the world's sunlit oceans, and what roles do they play in global marine ecology? We seek motivated, curious PhD students to join our team to answer these questions, by isolating abundant, unknown protist species and transforming them into new model organisms to study ocean ecology and evolution. First, we will collect marine water samples, isolate novel target species, and characterize their cell biology, behavior, life history and interspecies interactions with time-lapse and fluorescence microscopy. Next, we will use single-cell techniques to sequence and assemble their genomes/transcriptomes in order to provide an initial glimpse of their metabolic potential. Finally, we will interrogate global metatranscriptomic data sets to build hypotheses about each new species' ecological characteristics, and then test these hypotheses in our lab cultures, with the goal of describing how these globally abundant protists influence oceanic ecosystems. Along the way, we hope that discoveries we make on these currently unknown organisms will influence our understanding of eukaryotic evolution and diversity.

Specific Tasks

- Collection of water samples and isolation of eukaryotic cells in growth cultures
- High-throughput growth screening by light microscopy
- Description of new species via fluorescence/time-lapse microscopy and DNA sequencing
- Single-cell transcriptome/genome sequencing, assembly, binning and analysis
- Directed laboratory experiments to test hypotheses derived from global ocean gene expression analyses

Requirements

- Master's degree in biology (international students with Bachelor's degrees are welcome to apply; please contact us for more information)
- Experience with light microscopy and standard molecular biology techniques (cell culture using sterile technique, PCR, cloning, DNA and RNA isolation, sequencing, etc.)
- Curious, self-motivated, organized and highly team-oriented

Funding





What do we offer?

Fully-funded PhD positions as part of a 5-year European Research Commission (ERC) project.

Starting date: Between 1 September, 2021 and 1 March, 2022

Salary: 21.954€ annual gross salary

Location: Mediterranean Marine and Environmental Research Center (CMIMA), Passeig Marítim de la Barceloneta 37-49, Barcelona

Application process

Application deadline: 15 March, 2021

Interested candidates should e-mail Daniel Richter (daniel.richter@ibe.upf-csic.es) with the subject line “PhD student position” and (1) their CV, (2) a motivation letter describing their interest in the project, and (3) contact information of two potential references.

We are committed to promoting equity in academia. Persons from groups that have been historically excluded from academia are strongly encouraged to apply.

Funding



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