

The Institute of Evolutionary Biology seeks a: PhD student

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

Description Group/Unit

The overarching goal of the Metazoa Phylogenomics Lab (www.metazomics.com) is to understand how animals reshape their genomes to generate their vast diversity and to adapt to the different environments. For that, we generate and interrogate genomic and transcriptomic data through the lens of phylogenomics. Our favorite creatures are arthropods and annelids, but our interest often transcends the level of phylum to understand animal genome evolution at a macroevolutionary scale. We are committed to maintaining a respectful, inclusive, and friendly working environment for all staff and students, as well as promoting your personal and career development.

Project description

All animals share a common origin: a marine one. To conquer land from marine environments, animals radically changed the way they breathe, reproduce, move or smell. And they did it multiple times in the history of Earth, with terrestrial animals massively outnumbering aquatic ones. Understanding terrestrialization is therefore key to comprehending animal biodiversity and biological adaptation. Despite the relevance of such an episode, the genetic underpinnings orchestrating terrestrialization in animals are largely unexplored. We will focus on two pivotal questions: which genes facilitated life on land and how do they differ between aquatic and terrestrial animals?, and how did animals reshape their genomes to adapt to dry land through time?

Duties:

- Experimental identification of the gene repertoire orchestrating the extreme physiological and metabolic changes in aquatic and terrestrial animal lineages through genomics, transcriptomics and differential gene expression.
- Characterization of the dynamics of these genes to understand the role of gene gain, loss, duplication and horizontal gene transfer through comparative genomics.



- Discovery of the adaptive mutations that led respiratory pigments and DNA repair proteins to gain their functions via protein engineering techniques to resurrect their ancestral ‘paleophenotypes’.

Candidate requisites

- Master’s degree in evolutionary biology, computational biology, bioinformatics or a related field (international students with Bachelor’s degrees are welcome to apply; please contact us for more information).
- Experience with programming in languages commonly used in bioinformatics (such as Python or R), fluency with Linux shell scripting and high performance computing.
- Curious, self-motivated, organized and highly team-oriented.
- Proficiency in English (oral and written).
- A background in computational and evolutionary biology is desired.

What do we offer?

We offer a fully-funded PhD position (4 years) as part of an ERC Starting Grant project ‘Land animal evolution: genomic landmarks on the path to terrestrial life’.

Starting date: September 2021 - January 2022

Salary: 21.954€ annual gross salary

Location: Institute of Evolutionary Biology, Passeig Marítim de la Barceloneta 37-49, Barcelona

Interviews will be held in early June either in person or via video conference depending on travel needs and current restrictions; no particular preference will be given to candidates who are able to interview in person. We are committed to diversity and especially encourage women and members of underrepresented communities to apply.

Application process

If you are interested in the position, please e-mail Rosa Fernández (rmfernandezgarcia00@gmail.com) with the subject line “PhD student position” and (1) your CV, (2) a motivation letter describing your interest in the project, (3) a copy of your transcripts (academic degree), and (4) contact information of two potential references. The application deadline is 31st May 2021.

Questions? Feel free to contact Rosa Fernandez (rmfernandezgarcia00@gmail.com).

