

The Institute of Evolutionary Biology seeks: Postdoctoral Fellows (2 positions)

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. IBE is a center member of Barcelona Biomedical Research Park (PRBB).

Description Group/Unit

About the [Metazoa Phylogenomics Lab](#):

The overarching goal of the lab 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, transcriptomic and proteomic data through the lens of phylogenomics. Our interest often transcends the level of phylum to understand animal genome evolution at a macroevolutionary scale. The lab is part of the Biodiversity Program at IBE. 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:

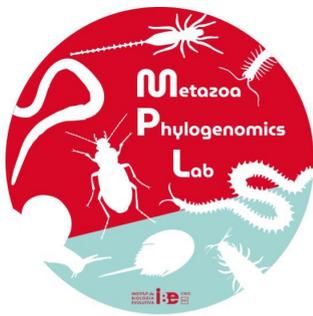
These positions are funded by an ERC Starting Grant to shed light on the genomic basis of terrestrialization.

Land animal evolution: genomic landmarks on the path to terrestrial life (SEA2LAND)

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. The project will test the hypothesis that animals are equipped with a highly plastic 'terrestrialization genetic toolkit' that facilitated their adaptation to the extreme environmental conditions in terrestrial ecosystems. We

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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? Moreover, we will study two case examples of critical processes common to all terrestrial animals -breathing and protection against UV light- to illuminate what molecular and biochemical changes allowed terrestrial animals to breathe and repair their DNA after UV light damage. To achieve this, we will (i) identify the gene repertoire orchestrating the extreme physiological and metabolic changes in aquatic and terrestrial lineages, (ii) characterize the dynamics of these genes to understand the role of gene loss, duplications and horizontal gene transfer, and (iii) discover the adaptive mutations that led respiratory pigments and DNA repair proteins to gain their functions via molecular engineering techniques to resurrect their ancestral 'paleophenotypes'. This project will deliver fundamental insights into a core question in evolutionary biology: what shaped the land animal genetic toolkit. Furthermore, it will provide insights into the evolution of key proteins relevant to human health and industry.

About the positions

We are seeking to appoint two postdoctoral fellows with expertise in at least one of the following fields:

- (i) Evolutionary genomics / Computational biology**
- (ii) Proteomics / Protein engineering**
- (iii) Single cell 'omics' / Spatial transcriptomics**

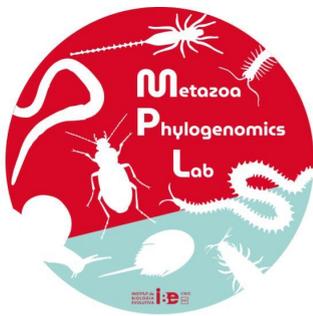
We are also open to recruit scientists with other profiles to explore transdisciplinary research venues. If your profile does not match these areas but you are very excited about the project, please feel free to apply as well and describe in your motivation letter how you could contribute to the project, or feel free to contact me directly to chat about it.

Candidates requisites are as follows:

- PhD in evolutionary biology, computational biology, bioinformatics or a related field, or a Masters degree with at least 3 years of experience.

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- Excellent programming skills in languages commonly used in bioinformatics (eg, Python or R)(if interested in evolutionary genomics/computational biology position), and/or
- Proven wet lab or analytical skills in proteomics, protein engineering and/or single cell 'omics' or spatial transcriptomics.
- Creative mindset.
- High motivation and efficiency; ability to work independently and as part of a team.
- Proficiency in English (oral and written).

What do we offer?

- The position is available for an initial period of 12 months, with the possibility of further renewal for a total duration of 2 or 3 years.
- Starting date is expected in September - December 2022 or as soon as possible afterwards.
- Salary depending on experience and qualifications.
- Location in Barcelona (Passeig Marítim de la Barceloneta, 37 – 49)

Application process

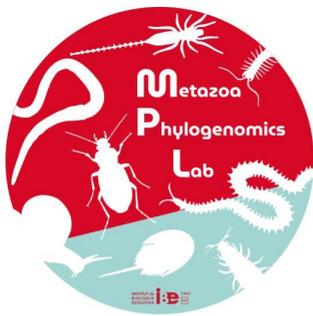
If you are interested in the position, please send your CV and motivation letter to this link: <https://forms.gle/BtUx29VwhJNh7gwQA>. Please include name and contact information of three references.

IMPORTANT: Please name your documents as follows: '**CV_your_name.pdf**' and '**Motivation_letter_your_name.pdf**'. Please include name and contact information of three references.

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The application deadline is **31th May 2022**. 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.

If you have any inquiries, please feel free to contact Rosa Fernández (rmfernandezgarcia00@gmail.com).

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