Universitat Pompeu Fabra Barcelona | Master in Bioinformatics for Health Sciences

Master project 2024-2025

Personal Information

Supervisor	Jesus Lozano-Fernandez
Email	jesus.lozano@ub.edu
Institution	Department of Genetics, University of Barcelona
Website	http://jesuslozanofernandez.weebly.com
Group	Deep Evolution Lab

Project

Computational genomics

Project Title:

Establishing methods to study synteny to understand early animal evolution

Keywords:

genome assembly, phylogenomics, early animal evolution, synteny, phylogenetic methods

Summary:

In this project, the student will have access to a set of newly generated non-bilaterian animal chromosome-scale genome assemblies made by the host lab. Their role will be testing and developing new methodologies to study micro- and macrosynteny (gene order) between animal phyla. The goal is to use these results as a proof of shared evolutionary history amongst groups.

References:

-SCHULTZ, Darrin T., et al. Ancient gene linkages support ctenophores as sister to other animals. Nature, 2023, vol. 618, no 7963, p. 110-117. -GIACOMELLI, Mattia, et al. Resolving tricky nodes in the tree of life through amino acid recoding. Iscience, 2022, vol. 25, no 12. -LOZANO-FERNANDEZ, Jesus. A practical guide to design and assess a phylogenomic study. Genome Biology and Evolution, 2022, vol. 14, no 9, p. evac129.

Expected skills:

Interest in evolutionary biology. Experience in handling large datasets. Ideally, some experienc

Possibility of funding:

To be discussed

Possible continuity with PhD:

Yes

Comments:

The lab is located in the Faculty of Biology of the University of Barcelona. We are a young research team with a group of multidisciplinary (zoologists, bioinformaticists,...) international members. We are open to remote/hybrid work model. Currently, we have 2 active grants, so there are chances of continuing the research with a funded PhD.