

## FUNDACIÓN BIOFÍSICA BIZKAIA/ BIOFISIKA BIZKAIA FUNDAZIOA

### OFFER – Predoctoral contract in Computational Biophysics: “Cellular Phase Transitions”

Publication date: August 5, 2024

**Deadline: October 30, 2024**

The IBF (Instituto Biofísica) is a joint research centre of the University of the Basque Country (UPV/EHU) and the Spanish National Research Council (CSIC). In partnership with Fundación Biofísica Bizkaia/Biofísica Bizkaia Fundazioa (FBB), the centre focuses on advancing knowledge about the physical and chemical processes underlying biology and disease. With the FBB accredited as a Basque Excellence Research Centre (BERC) by the Basque Government, our institute enjoys a strong national and international reputation, and provides outstanding shared facilities for advanced biophysical and structural biology approaches in a new research building in the main campus of the UPV/EHU, at Leioa.

#### Offer and description of the project

Starting in November/December 2024, we offer a (3-year) predoctoral position at the Theoretical Biophysics Lab, under the supervision of Dr. Daniele De Martino and Prof. Kepa Ruiz Mirazo.

The investigation to be carried out will involve the development of a theoretical framework, taking as a basis the theory of phase transitions in Statistical Physics, to explain complex emergent phenomena in diverse biological cells. More specifically, it will focus on intercellular metabolic exchange networks, including their experimental validation in cancer metabolism and microbial overflow. We are searching for candidates with a solid scientific background, good attitude for team-work, open-minded for interdisciplinary research, strong theoretical/computational skills and motivation to apply them to the life sciences.

Refs: *Nature communications* 9.1 (2018): 2988.; *ACS nano* 17.4 (2022): 3313-3323.; *arXiv:2405.13424*

This is a full-time, 3-year position (potential 1-year extension) supported by The Spanish Ministry of Science, Innovation and Universities. The (FPI) contract will be part of the grant PID2023-146408NB-I00, funded by MCIU/AEI/10.13039/501100011033 and by the FSE+.

#### Required background

The candidate must have a Masters degree in STEM (Science, Technology, Engineering or Mathematics).

Good written and oral communication in English is required.

In addition, candidates must comply with the pre-requisites established in the “Proyectos de Generación de Conocimiento 2023” call of the MCIU.

#### Application procedure

We are an equal opportunity employer, committed to foster diversity. Applications should be addressed through the Biofísica website contact page (<http://biofisika.org/contact/>), adding the following subject: [**Job Application: 124\_DDeMartino**]. It is recommended that applications are made ASAP, since they will be considered upon arrival and may involve one/two interview/s. Applications --in a single pdf file-- must include:

- Curriculum Vitae.
- A personal motivation letter.
- The contact of 2 referees



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### **Evaluation criteria**

Criterion 1 will assess the candidate's academic and scientific track record (up to 50 points), including scientific contributions (up to 45 points) and the impact of stays at prestigious institutions (up to 5 points).

Criterion 2 will evaluate the candidate's suitability for research activities (up to 50 points), considering their prior training, experience, and the added value they will bring to the research project.