

# Position Offered: UNIVERSITY GRADUATE

Project: *Development of a Platform for the Multiomic Analysis of the Response to Climate Change in Photosynthetic Organisms, the green microalgae Raphidocelis subcapitata as a case study of biotechnological interest.*

**Technological and scientific fields:** Climate change and biodiversity/ Data analysis

**Location:** Sevilla, Andalucía, Institute of Plant Biochemistry and Photosynthesis, <https://www.ibvf.us-csic.es>

**Research Group/PI:** Biología y biotecnología de sistemas en microalgas/Inmaculada Couso Liañez y Francisco J. Romero Campero/(<https://www.ibvf.us-csic.es/l1g6-biotecnolog%C3%AD-de-microalgas>)

## PROJECT SUMMARY

Regarding the climatic emergency conditions (temperature and CO<sub>2</sub> levels), we aim to integrate multi-omics data that includes transcriptomics, proteomics and metabolomics in the microalga *Raphidocelis subcapitata* under different conditions of temperature and CO<sub>2</sub> availability. This microalga is well known for its adaptation to toxic conditions, which represents a biotechnological advantage for its continuous large-scale cultivation. Our objective is to analyze the presence of genes related to the biosynthesis of InsPs and transcription factors that have a fundamental role in the response of this organism to changes in temperature and carbon availability. Finally, we intend to develop a web tool where this data can be consulted in a simple and accessible way based on the tools developed in our group (ALGAEFUN, PHARAOHFUN). The selected candidate will be part of a training process that includes the MADOBIS master's degree from the US-UNIA, with specific teaching on topics related to omics and systems biology that it will be complemented by external stays (USA), (UK) and specialization courses.

## PROFESSIONAL PROFILE

### Minimum requirements:

Graduated in Biochemistry/Biology and good level in English (written and spoken)

### Merits to be considered:

Use of the R language and knowledge of Python, Machine Learning and Big Data. Demonstrable experience in the cultivation of microalgae and molecular biology.

## WHAT IS OFFERED

The work will be carried out in the context of a multidisciplinary research group that have extensive experience in omics approaches and biological validations for the study of different processes in photosynthetic microorganisms. We offer an excellent work environment where we have very close supervision of the students and we offer them the opportunity to participate in national and international projects. This training will consist of about 320 ECTS credits between technological activities, digital training (master's degree) and complementary training (courses and stays).

### Contract conditions:

Indefinite contract for a University Graduate associated with the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (37.000 € - 41.000 €).

**Start of contract: before 31 December 2024**

## PRINCIPAL INVESTIGATOR CONTACT

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