

## PHD POSITION TO APPLY TO THE SPANISH FPU PROGRAM

### Research Project –**Interactions between dissolved organic matter and heterotrophic bacterial communities across the terrestrial marine interface**

**PhD Supervisors:** Cristina Romera Castillo and Clara Ruiz González

**Centre:** Institut de Ciències del Mar (ICM-CSIC)

### Project description

Hundreds of organic compounds dissolved in the ocean make up the dissolved organic matter (DOM) pool, which contains as much carbon as the atmospheric CO<sub>2</sub> pool. In the coastal ocean, a large fraction of this DOM pool is of terrestrial origin and reaches the ocean through rivers, runoff or other less studied hydrologic pathways such as the submarine groundwater discharge. Heterotrophic marine bacteria have an important role on the fate of this DOM conditioning if it is respired back to CO<sub>2</sub>, transferred to higher trophic levels in marine food webs or if it is sequestered during centuries in the ocean, and this depends on the chemical composition of the DOM pool. This project will explore how bacterial communities react to DOM of different origins and how the chemical composition of DOM structures aquatic bacterial communities. To do so, it will study the interactions between DOM and heterotrophic bacteria across the land-ocean transition zones. Chemical characterization of the DOM will include techniques such as optical spectrometry and HPLC. Bacterial communities will be analysed through different molecular techniques including DNA sequencing. The thesis will combine chemistry and microbiology and will include lab experiments and field work (e.g. participation in oceanographic cruises).

### Requirements of the candidate

- \*Degree in Marine Sciences, Environmental Sciences, Chemistry, Biology or any related field.
- \*High academic record (university degree > 8)
- \*To be enrolled in a PhD program at a Spanish university or being studying an official master degree that gives access to a doctoral program.
- \*Fluency in written and spoken English

\*High motivation to learn about different disciplines and to work hard, team working skills, travel availability.

\*Programming skills will be valued (R, Matlab, Python)

## Hosting research team

The PhD student will join a young, dynamic and very motivated team which is composed of other PhD students, master students and postdocs. It will also count with the interaction and collaboration of other groups from the Marine Science Institute as well as from national and international institutions. The PhD student will participate in the meetings, seminars and other scientific activities that usually take place in the ICM.

## How to apply

- At the first step, the applicant will be evaluated based on the university degree. If appropriate, selected candidates could be invited for an interview. In case you are interested, please contact ASAP the PI of the project attaching your CV and your transcript record.
- At the second step, selected applicants, together with the PhD project, will be evaluated for a final selection.

---

*Applications to the FPU scholarships must be submitted through [the following official link](#). The period of application is **from 22 November to 17 December 2021**. Interested candidates, please contact the Principal Investigators:*

***Cristina Romera Castillo email : [crisrc@icm.csic.es](mailto:crisrc@icm.csic.es)***

***Clara Ruiz González email : [clararg@icm.csic.es](mailto:clararg@icm.csic.es)***

---