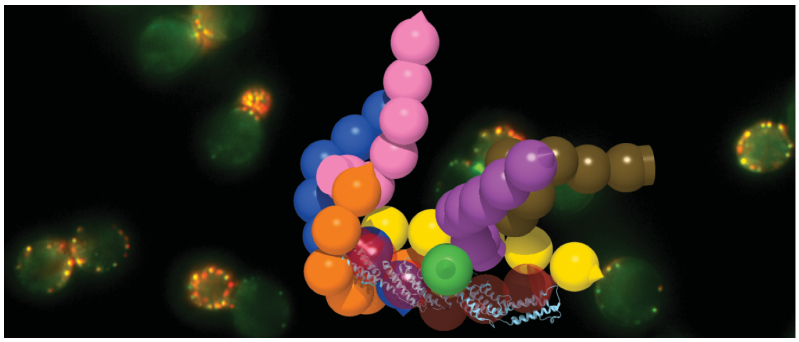
PhD in "Advanced microscopy of supra-assemblies regulating cell growth"

Oriol Gallego laboratory, DCEXS (UPF), Barcelona (**www.gallegolab.org**)



The project

This is a 4-year PhD position in the group of Oriol Gallego at the department of Experimental and Health Sciences (DCEXS) of the Pompeu Fabra University. **Estimated starting date: September 2021.**

We look for a young researcher interested in advanced microscopy techniques and that is eager to investigate how cells regulate their plasma membrane to adapt the cell growth under different environmental conditions. Cells need to modulate the properties of their plasma membrane during proliferation, metastasis, cell polarity, morphogenesis and cell differentiation. However, despite the work of many laboratories, the mechanism regulating the plasma membrane during these processes is enigmatic. To be successful, we will develop new methods that combine light microscopy, genetics and electron microscopy. Thus, we will be able to interrogate the cell machinery with unprecedented spatial and temporal resolution. The development of this technology will be done together with other members of the lab and in collaboration with groups in Switzerland and Australia.

The lab

Ours is an interdisciplinary research in the frontier of cell biology, biophysics, computational modelling and structural biology. We develop methods of fluorescence microscopy that allow the structural analysis of molecular assemblies in vivo. We then integrate the structural and biophysical measurements in computational models, which allows us to solve questions in cell biology that were not accessible by other techniques (Picco *et al*, 2017, Cell; Irastorza-Azcarate *et al*, 2019, Structure). We are well equipped, with have our own microscope for live-cell imaging and single molecule localization microscopy. DCEXS research excellence has been recognized with a Maria de Maeztu award and our PhD program is entirely in English. As part of the Pompeu Fabra University, the lab is located at the PRBB, one of the strongest scientific campus in south Europe. With all the state-of-the-art research facilities necessary, PRBB offers an ideal scientific and international environment.

How to apply

To apply, please send your CV, motivation letter and contact details of two referees to Dr Oriol Gallego (oriol.gallego@upf.edu).

Requirements

-Background in Biophysics, Optical physics, Biomedical Sciences, Biology, Biochemistry, or similar.
-Previous expertise in a research lab is required.
-Expertise in fluorescence microscopy, programming or membrane trafficking is a plus, but it is not essential.
-Excellent written and oral communication skills in English.

Selected references

- Picco, A., … **Gallego, O.**, (2017) "The *in vivo* architecture of the exocyst provides structural basis for exocytosis." **Cell** 168, 400-412.e18.
- Irastorza-Azcarate, I., … **Gallego, O.**, (2019) "Live-cell structural biology to solve biological mechanisms: the case of the exocyst" **Structure** 27, 886-892.