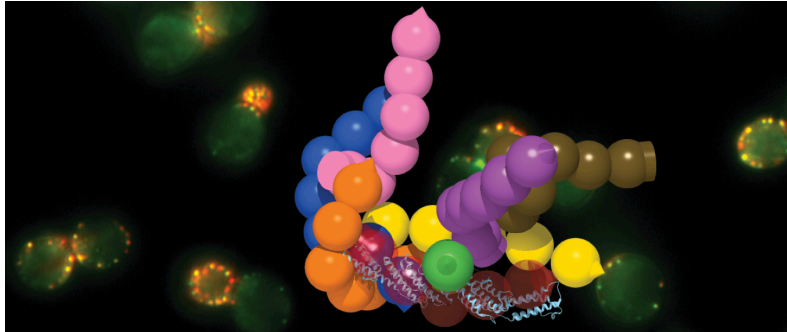


# PhD in “Advanced microscopy of supra-assemblies regulating cell growth”

Oriol Gallego laboratory, DCEXS (UPF), Barcelona ([www.gallegolab.org](http://www.gallegolab.org))



## The project

We look for an enthusiastic PhD student that is willing to develop a new microscopy technique that allows us to understand how cells regulate the expansion of their membranes and how they can adapt this process to grow under different environments. Membrane expansion is essential to control cell growth, the cell surface composition, cell polarity, morphogenesis, cell differentiation and neurobiology. This is a process controlled by large and dynamic protein machines formed by multiple protein complexes that assemble transiently and that act in a coordinated manner. Despite the work of many laboratories, the dynamism and complexity of this process did not allow resolving the mechanism behind the action of such a large protein machinery. To be successful, we will use *Saccharomyces cerevisiae* as a model organism and we will develop new methods that combine light microscopy and electron microscopy. Thus, we will be able to time-resolve the cell machinery with unprecedented 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. As part of the Pompeu Fabra University, the lab is located at the PRBB, one of the strongest scientific campus in south Europe. With state-of-the-art research facilities, 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](mailto:oriol.gallego@upf.edu)) before 30/06/2020.**

## Requirements

- Background in Biophysics, Optical physics, Biomedical Sciences, Biology, Biochemistry, or similar.
- A minimum of 1-year expertise in a research lab is required.
- Expertise in fluorescence microscopy, programming or membrane trafficking is a plus.
- Excellent written and oral communication skills in English.

## The position

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. The student will be part of a newly emerging research lab devoted to study supra-molecular machineries that control cell growth. We are building a team of scientist with different expertise where you are expected to contribute and collaborate. DCEXS research excellence has been recognized with a Maria de Maeztu award and our PhD program is entirely 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.