Universitat Pompeu Fabra Barcelona
Department of Experimental and Health Sciences

Postdoc position in quantitative live-cell imaging

Understanding the molecular mechanisms that drive life (and those that lead to death) requires structural characterization of the protein machinery sustaining the biology of the cell. Structural biology methods have been largely centered around *in vitro* approaches, which provides high-resolution measurements but limited physiological relevance. In our lab, we have recently developed new **live-cell structural biology** method based on **cell engineering and quantitative live-cell imaging**. Our approach, capable of measuring the separation between fluorophores with up to 2 nm precision, allows us to investigate chemical structures *in vivo*. We used this method to reconstruct the architecture of molecular assemblies directly in living cells (Picco et al, 2017, Cell). With this and other complementary tools, we are now poised to solve long-standing questions in cell biology that were not accessible by other techniques. We would like to incorporate a researcher that follows up this line of research to investigate mechanisms of cell growth. The successful candidate will complement our expertise in the fields of optical physics, quantitative live-cell imaging and/or image analysis.

The position

The position is funded with a 3-year grant of the Spanish Government. The project aims to push the limits of fluorescence microscopy to time-resolve fundamental mechanisms in cell growth. The successful candidate will join the group of Oriol Gallego at the Department of Experimental and Health Sciences (DCEXS) of the Pompeu Fabra University (UPF). The candidate will be part of an emerging research lab devoted to studying supra-molecular machineries that control cell growth. The work will also involve the development of new interdisciplinary techniques in the frontier between cell biology and structural biology. Starting date end-2019/beginning-2020.

Requirements

- Highly motivated, enthusiastic and creative researcher.
- Strong background in optical physics, quantitative fluorescence microscopy and/or image analysis required. PhD in optical physics or quantitative life-cell imaging (other specializations will also be considered).
- Experience in localization microscopy, particle tracking and molecular counting from intensity ratiometric comparison are a plus.
- Experience with Matlab/R/Python
- Excellent written and oral communication skills in English.

The DCEXS

The Department of Experimental and Health Sciences of the Pompeu Fabra University (www.upf.edu/web/biomed) is located at the PRBB (Barcelona, Spain). PRBB, one of the strongest scientific campus in south Europe, is equipped with state-of-the-art

research facilities in a unique scientific environment. The research excellence of our center has been recognized with a Maria de Maeztu award.

References:

Picco, A., Irastorza-Azcarate, …, **Gallego, O**., (2017) "The *in vivo* architecture of the exocyst provides structural basis for exocytosis." **Cell** 168, 400-412.e18.

Application process

To apply, please send your CV, motivation letter and contact details of two referees to Dr Oriol Gallego (oriol.gallego@upf.edu)
Deadline: 31/07/2019