



ational Master in Ph

PROPOSAL FOR A MASTER THESIS

Dates: April 1st, 2016 – September 30th, 2016

Laboratory : Single molecule biophotonics, ICFO-Institute of Photonic Sciences

City, Country : Castelldefels (Barcelona), Spain

Title of the master thesis: Dynamic organization of intracellular membranes using super-resolution nanoscopy

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Summary of the subject (maximum 1 page):

The master student will be part of a **multidisciplinary project** at the interface between physics, biology and photonics. The research will focus on the quantitative study of the dynamic organization of intracellular membranes using super-resolution nanoscopy tools. The student will perform experiments to investigate how intracellular membranes are functionally compartmentalized in small dynamic domains. This is a fundamental topic in cell biology with strong impact in the biomedical research, since defects in the formation of these membrane domains are linked to a variety of neurological and immunological disorders. The student will acquire and quantitatively analyze super-resolution nanoscopy images, and he/she will also be involved in the development of a quantitative biophysical model of membrane domain formation.

Keywords: Super-resolution nanoscopy, biophotonics, membrane biophysics

Additional information:

* Required skills : We are looking for an interactive person having a keen interest in applying biophotonic tools to study a fundamentally relevant biological problem. Positively valued will be any experience in biophysics and in programming (Matlab, Mathematica, ImageJ, etc).