

PhD fellowships La Caixa INphINIT 2018

Single-Molecule Biophysics

We look for candidates with a bachelor or master degree in **Physical/Biophysical Sciences** or similar with interest in understanding biology from a single molecule biophysical perspective. Alternatively, candidates with background in Biology but with a strong motivation for understanding biophysical processes are also appreciated.

Project description

The project aims to investigate protein machines involved in DNA repair and DNA organisation using single-molecule biophysical approaches based on Magnetic Tweezers and Fluorescence based on TIRF Microscopy and FRET. We have built a series of single molecule setups that have provided us with the tools to investigate multiple DNA-protein interactions and mechanics of nucleic acids. We aim to push this instrumentation forward and to address specific questions such as how human proteins coordinate each stage of double-strand break resection for the faithful repair of DNA, or how the bacterial chromosome is organized by ParB proteins for condensation.

We expect the candidate to integrate in a multidisciplinary team of 10 people and to join the multiple complementary activities we perform at our group at the **National Centre of Biotechnology**, the largest Spanish National Research Council institute, and Centro de Excelencia "Severo Ochoa". The candidate will get specifically trained in the MT and fluorescence techniques but his/her training will be extensively complemented with molecular biology methods, Labview programming, and instrumentation. Of course, the candidate will acquire a profound knowledge of the specific topic of his/her research.

Eligibility criteria and more information:

<https://obrasociallacaixa.org/en/educacion-becas/becas-de-posgrado/inphinit/>

Hosting lab:

Dr. Fernando Moreno-Herrero

Molecular Biophysics of DNA repair nanomachines

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