CIC nanoGUNE
nanoscience cooperative research center

SUMMER INTERNSHIPS 2017

TITLE: MEchanopharmacology

DESCRIPTION (Objectives, tasks, materials, equipment…):

Mechanical forces are common in biological systems and dominate numerous perturbations that are relevant to human physiology and diseases. For example, muscles, blood vessels, ligaments and skin, are all composed of elastic proteins that resist considerable mechanical loads. Also, cardiac diseases, mechanical injuries, arthritis, cancer and even viral and bacterial infections have a strong mechanical component. However, very little is known about how force regulates all these biological process at the molecular level. In our laboratory we apply single-molecule force spectroscopy and molecular biology techniques to investigate the mechanics of proteins that are exposed to mechanical forces. We are interested in cell-surface proteins that are related to diseases such as, viral and bacterial infections, neural disorders and cancer. Our research is novel and represents a new way of looking into the molecular aspects of numerous diseases. We aim to develop a new research field with a strong implications in medicine: mechanopharmacology.

SUPERVISOR: Dr. Raul Pérez-Jiménez

SHORT DESCRIPTION OF THE GROUP: The Nanobiomechanics group is focused on atomic-force microscopy to study the mechanical features of proteins. The group is led by Dr. Perez-Jimenez and uses advanced molecular-biology techniques and cutting-edge force spectrometers to investigate the role of mechanical forces in biology.

More info: http://www.nanogune.eu/nanobiomechanics

TIMETABLE: to be determined

COMMENTS: Internship duration from 1.5 to 2 months (to be discussed).
Applicants should send an email to jm.pitarke@nanogune.eu including their academic record.
More info: http://www.nanogune.eu/summer-internship
Deadline for applications: 5 February 2017