Title: The nanomechanics of single living cells

- short description of the project with objectives and methodology

The project aims to study a single cell as physical system, in particular, to understand the response of a local region of cell to a force. To connect the mechanical response of the cell's to its structure and to glimpse the connection between the mechanical state and the cell's physiology.

Techniques: Atomic force microscopy-based methods and finite element simulations.

- information about the director of the TFM and the research group, contact information, web-page,...

Webpage: https://www.icmm.csic.es/forcetool/

Director: Garcia applies a **combined** theoretical and experimental approach to develop advanced **force microscopes** for the characterization of materials in its broader sense (inorganic, biomolecules, tissues, devices). A key feature of RG's approach is that nanoscale control and device performance should be compatible with operation in **technological** environments (air or liquid). He has made major contributions to the development of the **most popular** AFM method (tapping mode AFM). RG has pioneered the field of **multifrequency** AFM. He is the **inventor** of bimodal AFM, which is the most sophisticated nanoscale characterization tool. He has founded the Multifrequency AFM conferences. He has also contributed to the development and applications of **scanning probe lithography** for nanoscale patterning and device fabrication. RG is pioneering the development of **3D-AFM** as a high resolution method to characterize **solid-liquid** interfaces. His inventions are **commercialized** by Oxford Instruments and Asylum Research.