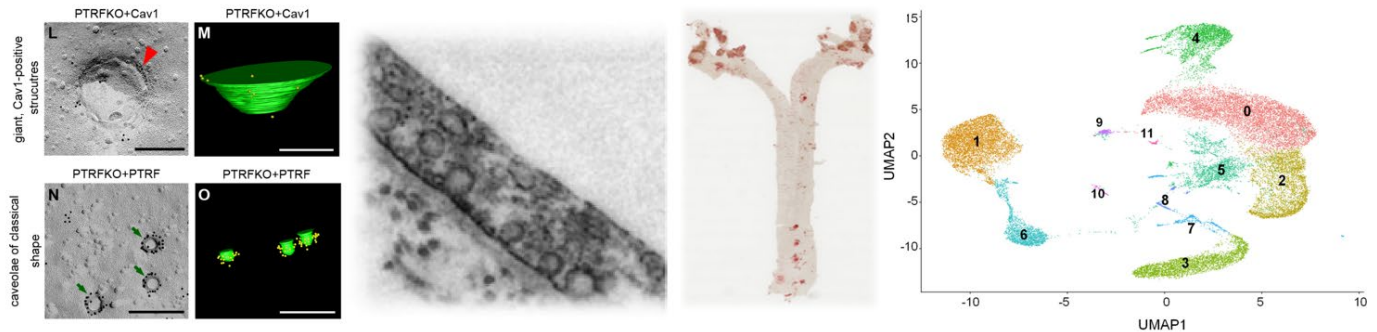


4-year PhD position to study “Mechanotransduction in Cardiovascular Disease” (former FPI fellowships)



The **cardiovascular system** represents a paradigm to understand the key but poorly explored role of **mechanical forces in disease**. Current therapies against **atherosclerosis** (#1 cause of death worldwide through stroke and heart failure), such as cholesterol-lowering drugs, have a limited efficacy in reversing or even fully stopping atherosclerotic lesions. Importantly, plaques develop specifically at regions exposed to **disturbed flow shear patterns**, typically inner curvatures and bifurcations. Sensing of such flow patterns (**mechanosensing**) by endothelial cells (ECs) and its subsequent propagation across the arterial wall (**mechanotransduction**), driving its remodeling and the onset of atherosclerosis, its poorly understood. The **Mechanoadaptation and Caveolae Biology Lab** at CNIC, led by **Miguel Ángel del Pozo** offers a **4-year PhD contract** associated with the grant **PID2023-146414OB-I00** funded by AEI (former FPI fellowships).

The selected candidate will investigate **dolines**, mechanosensing and mechanotransduction cellular structures we recently discovered (see **references below*), and their role in **EC flow sensing** and **arterial wall remodeling** from molecules, cells and tissues to *in vivo* disease models. The project will involve working within a multidisciplinary team and leading international collaborators, combining **state-of-the-art cell biology, genome-editing, microscopy, quantitative interactomics, gene-modified disease mouse models, and advanced non-invasive imaging**.

Links of interest: Mechanoadaptation & Caveolae Biology [Lab](#) at CNIC; [Doline 3D reconstruction](#); [AtheroConvergence](#); [Pubmed](#); [EMBO](#) Member; [ORCID](#).

Eligibility Requirements: Bachelor and Master’s degrees in Life or Health Sciences, with a strong academic record.

We are seeking **highly motivated** candidates interested in pursuing a **PhD in cardiovascular physiopathology**, with passion for **discovery** of **basic novel concepts** in the **frontier between physics and biology**. Previous knowledge in imaging, extracellular matrix biology, proteomics, biophysics, or mouse models will be positively valued.

How to Proceed: Interested candidates need to send a **letter of motivation, CV** and **contact details of 2 references** to madelpozo@cnic.es and acipres@cnic.es stating “**FPI Candidate-MAP**” in the subject.

Selected Recent Publications:

1. MCM Aboy-Pardal, [...] R García & MA del Pozo. *Nat Commun* accepted.
2. * FN Lolo [...] B Qualmann, M Arroyo & MA del Pozo. (2023) *Nat Cell Biol* (1):120-133.
3. FN Lolo, [...] X Trepas, P Roca-Cusachs, & MA del Pozo. (2022) *eLife* Oct 20;11:e82348.
4. M García-García, [...] D Görlich, A Echarri & MA del Pozo. (2022) *Nat Commun* 13(1):1174
5. L Albacete-Albacete, [...] & MA del Pozo. (2020) *J Cell Biol* Nov 2;219(11):e202006178.
6. A Echarri, [...] C Lamaze, RG Parton & MA del Pozo. (2019) *Nat Commun* 10, 5828
7. R Moreno-Vicente, [...] & MA del Pozo. (2018) *Cell Rep* 25(6):1622-1635.e6
8. S Minguet, [...] M Reth & MA del Pozo. (2017) *Nat Immunol* (10):1150-1159
9. RG Parton & MA del Pozo. (2013) *Nat Rev Mol Cell Biol* Feb;14(2):98-112
10. JG Goetz, [...] & MA del Pozo (2011) *Cell* Jul 8;146(1):148-63