

PROSPECTIVE PHD

# Computational Cardiac Modeling Electro-mechanics + Fluid Dynamics

Join a multi-physics PhD project on electrophysiology, nonlinear mechanics, and fluid-structure interaction.

Modeling

Numerics

Physiology

FSI

We expect to open a PhD position in our group, subject to final grant approval. The project builds on an active collaboration with UCLouvain and aims to simulate coupled heart dynamics in the left atrium.

*Target audience: highly motivated MSc students with a strong quantitative profile.*

## YOU WILL WORK ON

- cardiac electrical wave propagation
- nonlinear tissue mechanics
- fluid dynamics inside a heart chamber
- numerical methods for coupled FSI

## IDEAL PROFILE

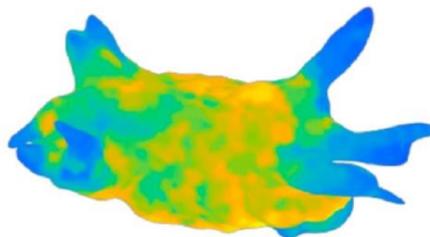
- MSc in applied math, physics, or engineering
- interest in scientific computing and modeling
- coding skills (Python, MATLAB, or C/C++)
- curiosity for physiology and multi-physics

## SCIENTIFIC AIM

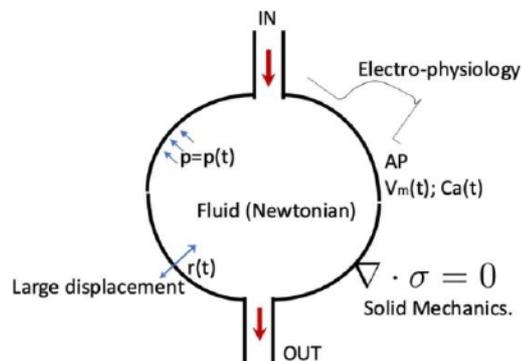
### Aim: “simple-full model” of the left atrium

Simplify the geometry and include the full dynamics :

Fluid inlet : 4 Pulmonary veins (O2 blood)



Fluid outlet : Mitral valve (towards LV)



## Interested? Get in touch now

Prof. Jean Bragard | UNAV, Pamplona  
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Main  
webpage