Biomedical Signal Interpretation
& Computational Simulation

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# 1 Predoctoral position (3-year PhD Scholarship)

## Positions and project

The Biomedical Signal Interpretation and Computational Simulation (BSICoS) group at the University of Zaragoza (Spain) seeks 1 Predoctoral Researcher to work on data science, statistical genetics, bioinformatics and computational modeling of coronary artery disease (CAD), with the aim of including genetic variations in the models.

The position is part of project *STRATEGIC* (PID2021-128972OA-I00) from the Spanish National Call 'Proyectos de Generación de Conocimiento 2021', led by Dr Ana Mincholé and Dr Julia Ramírez, funded by the Spanish Research and Innovation Ministry.

*STRATEGIC* aims at accurately characterizing CAD based on electrocardiogram (ECG) morphological clusters to address sudden cardiac death (SCD) risk stratification and optimizing the tailored treatment of CAD patients. We have access to different databases such as UK Biobank with more than 100,000 patients and two different clinical databases with a 5-year follow-up: a cohort of ~2,000 CAD patients and a cohort of ~1,000 heart failure patients (50% with CAD).

The candidates will be involved in 1) unravelling the genetic and cellular mechanisms underlying the ECG; 2) developing human-based computational models informed by anatomy, electrophysiology and genetics.

## Qualifications

The predoctoral candidate must hold a BSc or MSc in Engineering, Mathematics or Physics. Strong oral and written communication skills in English are desirable.

## The I3A Institute at University of Zaragoza

The Aragon Institute of Engineering Research (I3A), https://i3a.unizar.es/es, within the University of Zaragoza, comprises more than 500 researchers and a vibrant environment for multidisciplinary research. BSICoS group, https://bsicos.i3a.es/, is a leading group expert in the development of data science and, modeling and simulation of cardiac electrophysiology to aid in the diagnosis, prognosis and treatment of cardiovascular diseases and conditions.

## Application

Applicants are required to send a cover letter and a 2-page CV to Dr Ana Mincholé (minchole@unizar.es), or Dr Julia Ramírez (Julia.Ramirez@unizar.es).

The **closing date** for applications is 15 July 2022. Interviews are expected to be held in the week commencing on July 25th.

The candidate is expected to start on September 1st, or as soon as possible thereafter.