

## 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 the optimization of non-invasive and early sudden cardiac death (SCD) risk stratification, clinical diagnosis and disease prognosis via the integrative use of artificial intelligence (AI), signal processing, statistical genetics, bioinformatics and electrophysiological knowledge.

The position is part of project *SUDDEN* (CNS2023-143599) from the Spanish National Call 'Proyectos Consolidación Investigadora 2023', led by [Dr Julia Ramirez](#), funded by the Spanish Research, Innovation and Universities Ministry.

*SUDDEN* aims at identifying electrocardiogram (ECG) and genetic markers of SCD risk in individuals without known cardiovascular disease and to investigate their mechanisms and their association with SCD risk in different populations through a combination of data analysis, statistical genetics and AI. We have access to different databases such as UK Biobank with ~500,000 participants, as well as clinical databases.

The candidate will be involved in 1) identifying genetic variants associated with AI-based ECG indices of SCD risk and 2) investigating their clinical utility in the early prediction of SCD risk. As part of *SUDDEN*, the candidate will be involved in an international collaboration with Prof [Patricia Munroe's team](#), Queen Mary University of London, London, United Kingdom.

### Qualifications

The candidate must hold a BSc or MSc in Engineering, Statistics, Mathematics or Bioinformatics and an interest in developing expertise in programming, statistical genetics and bioinformatics. 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 Julia Ramirez ([Julia.Ramirez@unizar.es](mailto:Julia.Ramirez@unizar.es)).

The **closing date** for applications is March 8th 2024. Interviews are expected to be held in the week commencing on March 11<sup>th</sup>.

The candidate is expected to start on April 1<sup>st</sup> 2024, or as soon as possible thereafter.