Position Offered: POSTDOCTORAL RESEARCHER

Project: *Development of tools and algorithms for the processing and integration of large-scale spatial and single-cell transcriptomics data, utilizing high-performance computing and artificial intelligence*

Technological and scientific fields: Massive data and information processing technologies, high-performance computing, medical imaging, data analysis and integration, artificial intelligence, computational biology, image analysis and computer vision, edge computing

Location: Granada, Andalusia, Institute of Parasitology and Biomedicine "López-Neyra". https://www.ipb.csic.es

Research Group/PI: Genetic Basis of Autoimmune Diseases. Javier Martín, https://www.ipb.csic.es/departamentos/javiermartin.html

PROJECT SUMMARY

Bioinformatics plays a fundamental role by closely aligning with the most recent technological advances, with analyses and results relying on advanced tools and algorithms. Bioinformatics not only facilitates the management of these data but also drives innovation in personalized medicine and fosters interdisciplinary collaboration, a key piece in the advancement of science. This project aims to develop new methods and algorithms capable of analyzing and integrating a vast volume of biomedical data related to single-cell transcriptomic analysis and the latest spatial transcriptomics. The project encompasses numerous themes, such as: mass data processing technology, FAIR principles (Findable, Accessible, Interoperable, and Reusable), high-performance computing, analysis of medical images using artificial intelligence, and integration of multidimensional data.

PROFESSIONAL PROFILE

Minimum requirements:

The following essential requirements must be met: PhD degree from an official doctoral program in: Biochemistry or Molecular Biology or Biomedicine, or Biotechnology or Fundamental and Systems Biology or Information and Communication Technologies.

Merits to be considered:

- Demonstrable experience of 5 or more years in the field of bioinformatics and programming (R, Python, etc.).
- Demonstrable experience of 5 or more years in statistics (correlation, linear models, survival analysis, statistical tests).
- Knowledge in machine learning techniques and big data in bioinformatics. Use of Nextflow for scientific computing in containers.
- Proficiency in the analysis of single-cell transcriptomics samples (scRNASeq), metatranscriptomics, or spatial transcriptomics.
- Participation as Principal Investigator (PI), Co-PI, or research member in a research project.
- Scientific publications in the field of bioinformatics and omics data analysis.

WHAT IS OFFERED

This project will facilitate the analysis of large volumes of data from an innovative platform for biomedical research, allowing for the addressing of complex biological questions and the development of new therapeutic approaches. Additionally, it will promote the training of researchers in advanced bioinformatics and data analysis techniques, ensuring that the CSIC remains at the forefront of research. **It includes a training plan of 240 ECTS credits** (over the 4 years of the contract), encompassing the completion of a master's degree, various courses, and two research stays.

Contract conditions:

Indefinite contract for a Postdoctoral Researcher associated to the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (41.000 € - 52.000 €).

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

Email: javiermartin@ipb.csic.es. Phone: +34958181669

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