

Position Offered: UNIVERSITY GRADUATE

Project: *Development of bioinformatic tools to improve resilience in crops in Mediterranean area*

Technological and scientific fields: Digital Tools for Agriculture

Location: Córdoba, Andalucía, Institute for Sustainable Agriculture, <https://www.ias.csic.es/>

Research Group / PI: Resistance for biotic and abiotic stresses; <https://www.ias.csic.es/investigacion/departamentos/mejora-genetica-vegetal/mejora-vegetal-por-resistencia-a-estreses/elena-prats-perez/> . Elena Prats Pérez

PROJECT SUMMARY

This project's aim to use advanced bioinformatics techniques to identify and promote more resilient crops. The project aims to provide support through the use of these bioinformatics tools to the different IAS-CSIC researchers, with objectives such as:

- Modeling through bioinformatic: to develop computational models to simulate and predict how plants will respond to different environmental conditions.
- Database Searches: Explore genomic databases to identify genes and sequences relevant to resilience to environmental stresses.
- Search for Molecular Markers through genome-wide association studies (GWAS) to identify molecular markers associated with resistance characteristics.
- Study of Structural Variants prior assembly of genomic sequences that allow us to understand the role of these variations in adaptation to the environment.
- Genetic diversity and/or Evolutionary Genomics studies: which allow us to identify useful sources of variability and identify genes that have conferred adaptive advantages.
- Landscape Genomics Studies: which allows us to integrate genomic data with environmental information to understand how it influences the distribution and adaptation of crops.

PROFESSIONAL PROFILE

Minimum requirements:

Graduated in a Science career (e.g. Biochemistry, Biology, Biotechnology, etc.)

Master in bioinformatics

B2 in English

Merits to be considered:

- Knowledge of R, Python, Linux, LaTeX, Perl, etc.
- Experience in data processing, GWAS, sequence assembly and annotation, statistical analysis, population genomics, etc.
- Work experience in the subject of the contract of at least 1 year.
- Knowledge of specific bioinformatics software such as BLAST, Kraken2, Admixture, Structure, SPAdes, MAKER, TASSEL, etc.

WHAT IS OFFERED

The candidate with prior knowledge in bioinformatics will obtain advance, detailed and complete training in bioinformatics and biostatistics, big data analysis, programming, machine learning, etc., including (but not only) courses, stay abroad, work experience etc

Contract conditions:

Indefinite contract for a University Graduate associated with the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (37.000 € - 41.000 €).

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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