

Position Offered: POSTDOCTORAL RESEARCHER

Project: *Climate-smart agriculture: harnessing molecular solutions from microalgae and plants*

Technological and scientific fields: Biotech; Climate change and biodiversity

Location: Bellaterra, Calatufa, CRAG, <https://www.cragenomica.es/>

Research Group/PI: Plant transformation and Genome Editing platform/ E. Monte/ L. M. Lois

PROJECT SUMMARY

In the current climate change scenario, preserving food sovereignty needs to tackle key challenges: (1) Design of crops with improved stress and global warming performance, which requires breaking crop transformation barriers, increasing genetic diversity studies, and a more efficient use of synthetic biology tools and CRISPR technology; (2) Crop production with reduced use of fertilizers. This transition needs the implementation of AI-tools for advancing in crop-design and biostimulant development. In biomedicine, AI models have been used for designing guide RNAs (gRNAs) for CRISPR-Cas systems. These approaches consider multiple factors, including genomic context, Cas protein type, desired mutation type, specificity, and the potential impacts of genome editing on gene function and cell phenotype. This project aims to develop state-of-the-art technology for designing climate change resilient crops and sustainable crop management.

PROFESSIONAL PROFILE

Minimum requirements:

- Hold a PhD in Biotechnology, Biochemistry or equivalent.
- Proficiency in English and Spanish

Merits to be considered:

- Willingness to learn new experimental/computational techniques. Motivation and commitment.
- Ability to design, execute and write up experimental work independently and to troubleshoot failed experiments.
- Ability to deal with quantitative aspects of plant growth and development.
- Ability to work effectively as part of a team or independently as required.
- Good time management skills, ability to prioritize and meet deadlines.
- Able to communicate effectively with supervisors and collaborators.
- An understanding of the issues of confidentiality and acting accordingly.

WHAT IS OFFERED

In this project, AI and machine learning solutions will be applied to accelerate the development of plant varieties better adapted to complex environmental conditions and to identify new microalgae strains with beneficial agricultural properties. Computational algorithms will be generated to assist from gene editing design, to sustainable agrochemical development, and plant performance assessment based in phenomics. For this purpose the candidate will receive 160 ECTS training including genome editing and computational skills, secondments in leading research institutes and transversal skills (leadership, science communication, technology transfer, ethics, career development, among others).

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

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