Position Offered: POSTDOCTORAL RESEARCHER

Project: *Phenotypic modeling through computation of massive complemented genomic data and its applications to forest genetic resource conservation and breeding in the face of global change*

Technological and scientific fields: Digital tools for agriculture, livestock and aquaculture; Climate change and biodiversity; Computational Biology; Artificial intelligence; Data analysis and integration

Location: Madrid, Madrid, ICIFOR-INIA, https://www.inia.es/unidades/Institutos%20y%20Centros/ICIFOR/Pages/Home.aspx

Research Group/PI: Population Genetics and Evolution Group / PIs: Juan José Robledo Arnuncio and Ricardo Alía, https://www.inia.es/investigacion/forestal/Ecolog%C3%ADa%20y%20Gen%C3%A9tica/Gen%C3%A9tica%20de%20poblaciones%20y%20evoluci%C3%B3n/Pages/Home.aspx

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PROJECT SUMMARY

Based on the computational analysis of massive genomic and phenotypic data sets from several forest tree species, we will evaluate the genomic architecture of phenotypes of ecological and economic interest (biomass, resistance to biotic and abiotic factors, etc.) and train genomic selection models to predict related phenotypic values. Results will be transferred to public and private stakeholders involved in forest genetic resources conservation and breeding.

PROFESSIONAL PROFILE

Minimum requirements:

- PhD in Genetics, Computational Biology, Forest Sciences or similar
- Proficiency in English language
- Experience in bioinformatics, statistical genetics or computational modeling

Merits to be considered:

- Experience in genomics, especially in the analysis of the genetic architecture of complex phenotypic traits and in the usage and development of genomic prediction models
- Knowledge of Bayesian statistics, programming and AI algorithms
- Experience in handling and analysing big data sets
- Experience in forest genetics
- Availability to carry out research visits in international labs
- Profiency in Spanish language.

WHAT IS OFFERED

Collaboration with interdisciplinary team (molecular and quantitative geneticists, evolutionary ecologists, ecophysiologists) with extensive international contacts (EUFORGEN and EVOLTREE networks, EU FORGENIUS and OPTFOREST projects, etc.) and continuous outreach activity (e.g. project with MAPAMA in forest genetic resources conservation and breeding). Analysis of available genomic and phenotypic data, obtained from natural populations and genetic trials. Use and development of AI-based models in collaboration with the group. Access to high-performance computing facilities (CESGA and DRAGO). Training plan in digital skills, dissemination, mentoring and leadership, with a total of 240 ECTS, with at least six months of international research visits.

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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