

# Position Offered: PREDOCTORAL RESEARCHER

## Project: *Bioinformatics applied to the study of the sunflower-broomrape interaction*

**Technological and scientific fields:** Computational Biology (Bioinformatics)

**Location:** Córdoba, Andalucía, Instituto de Agricultura Sostenible (IAS-CSIC) (<https://www.ias.csic.es/> )

**Research Group/PI:** Mejora genética de cultivos oleaginosos anuales / Begoña Pérez Vich

### PROJECT SUMMARY

The project aims to address the resolution of biological and agronomic problems through the use of bioinformatics and high-performance computing. It is designed to give a new bioinformatic approach to the ongoing studies of the research group on the genetic characterization of avirulence genes in sunflower broomrape, a parasitic plant that constitutes the main biotic threat to sunflower cultivation. The primary objective is to study populations of broomrape from different races present in Spain using bioinformatic approaches with massive genomic and transcriptomic data to understand the mechanisms the parasite uses to overcome the resistance present in sunflowers and, consequently, to establish novel control strategies based on molecular targets. The project will be carried out within a pioneering research group at the global level in genetic studies of sunflower broomrape and in the development of molecular and genomic tools for the species, such as the sequencing and annotation of its genome.

### PROFESSIONAL PROFILE

#### Minimum requirements:

- Required academic qualifications: (i) Bachelor's degree or equivalent, preferably in Biology, Biotechnology, Genetics, or Biochemistry, and (ii) University Master's degree in Bioinformatics, Agri-food, Biotechnology, or equivalent.
- Proficiency in Spanish and English.

#### Merits to be considered:

**Knowledge in:** (i) Linux operating system, (ii) programming languages, such as Python and/or Perl, and (iii) bioinformatics software.

### WHAT IS OFFERED

Integration into a world-leading research group in the area of research where the project is being conducted, as well as solid training in bioinformatic and molecular analysis and its application in biotechnology research. This training is supported by a comprehensive Training Plan consisting of (i) 100 ECTs corresponding to research work, (ii) 40 ECTs from training stays (two stays at LIPME, CNRS/INRAE, Toulouse, France), (iii) 90 ECTs of training in digital competencies (Diploma of Specialization in Bioinformatic Analysis, UPO Sevilla, and Master's in Advanced Bioinformatic Analysis, UPO Sevilla, online), and (iv) 24 ECTs of complementary training (seminars, conferences).

#### Contract conditions:

Predoctoral Researcher contract of 4 years' duration. Gross annual salary of 23,871.33 €.

**Start of contract: before 31 December 2024**

### PRINCIPAL INVESTIGATOR CONTACT

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