

# Position Offered: UNIVERSITY GRADUATE

## Project: *High resolution agroclimatic variables for field trials and adaptation of cereal crops (CLIMACER)*

**Technological and scientific fields:** Climate change and biodiversity, platform of climate services, high-throughput data processing, data integration and analysis, computational biology

**Location:** Zaragoza, Aragón, Estación Experimental de Aula Dei-CSIC, <https://www.eead.csic.es>

**Research Group/PI:** Computational and Structural Biology, **Bruno Contreras Moreira**, <https://eead-csic-compbio.github.io>; Erosion and Soil and Water Evaluation, **Santiago Beguería Portugués**, <https://www.csic.es/en/investigation/research-groups/erosion-and-soil-and-water-evaluation>

### PROJECT SUMMARY

Understanding how crops respond and adapt to climate change is critical to ensuring food security and agricultural sustainability. Despite the existence of climatic data repositories, it is still challenging to calculate agroclimatic variables appropriate to the phenology of each crop, such as days of vernalization of winter cereal crops. This hinders the development of effective adaptation strategies. CLIMACER project addresses these limitations with two objectives. The 1<sup>st</sup> consists on developing open source tools for customized calculation of high-resolution agroclimatic indices based on public data, which will be used in two case studies of genotype-environment association with barley and Sinapis alba populations sequenced in previous projects. The 2<sup>nd</sup> is to compile a FAIR database that will aggregate cereal trial data from the GENVCE network along with agroclimatic indices for diverse trial locations.

### PROFESSIONAL PROFILE

#### Minimum requirements:

- Fluency in Spanish and English.
- Science university degree (computer science, biology, biochemistry, maths, physics, ...).
- Programming and scripting languages.

#### Merits to be considered:

- R and/or Python programming skills.
- Software development skills (API creation, source code repositories, etc).
- Document digitalization skills (OCR).
- Database management and/or data science skills.
- Bioinformatics and/or geo-information science skills.

### WHAT IS OFFERED

A training program will be customized for the hired person, with two alternative paths: a) enrolling on a **Master's program**; or, b) attending **courses** on scripting, bioinformatics, computer programming and data science. We also plan for the hired person to c) attend **conferences** on climatology, geoscience and genomics, d) organize a **workshop** in collaboration with CIHEAM Zaragoza to teach how to use the resulting API and d) to take part in **research secondments** for training in diverse national and international labs from 2025 to 2027.

#### 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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