

# NatureTwins – Restorative and Sustainable Tourism with Nature Digital Twins in Madeira (2025.03169.MAD)

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## Call for Applications for a Research Grant

The **NatureTwins – Restorative and Sustainable Tourism with Nature Digital Twins in Madeira** project aims to promote an innovative model of sustainable, inclusive and science-based tourism using Digital Twin technology applied to natural ecosystems on the island of Madeira, Portugal. The project integrates biodiversity mapping, real-time environmental monitoring and the development of immersive experiences, with the objective of balancing environmental conservation with the quality of the visitor experience. Detailed digital replicas of selected natural sites will be developed and integrated into a platform that combines ecological, meteorological and tourist flow data, enabling adaptive ecosystem management and the promotion of responsible behaviours. The project contributes to the enhancement of the natural heritage of the Autonomous Region of Madeira and to the transition towards more sustainable tourism practices.

### General information about the grant

- **Host institution:** University of Madeira – Insect Collection of the University of Madeira (UMACI)
- **Scientific area:** Biology (preferred), Ecology, Natural Sciences, Biological Sciences, Environmental Engineering or related fields
- **Type of grant:** Research Grant
- **Regime:** Full-time (35 hours per week)
- **Place of work:** Island of Madeira, Portugal
- **Expected start date / Duration:** April 2026, 12 months
- **Monthly value:** €1,309.64 (in accordance with the current FCT, I.P. grant table)

## What we offer

- The opportunity to work in ecosystems of high ecological relevance, including the Laurel Forest of Madeira, classified as a UNESCO World Natural Heritage Site since 1999;
- Integration into a pioneering project in Madeira, the first to apply the Nature Digital Twin approach to sustainable tourism;
- Scientific experience in a biodiversity hotspot (Macaronesia), characterised by a high rate of endemism;
- Fieldwork along the levadas of the island of Madeira, a unique, complex and still poorly studied ecosystem;
- Integration into a multidisciplinary team combining Ecology, Biology, Conservation, Environmental Management and Technology;
- Scientific and technical supervision by the Insect Collection of the University of Madeira (UMACI) and the Laboratory of Ecology and Systematics;
- Scientific and logistical support for field and laboratory work from the project team;
- Possibility of contributing to technical reports, scientific communications and publications, as a co-author with the project team.

## Candidate Profile

We are seeking a highly motivated candidate for fieldwork in natural environments, with an interest in biodiversity, conservation and ecological monitoring, and availability to join an interdisciplinary research project that combines science and technology.

### General requirements (mandatory)

- Master's degree in Biology (preferred), Ecology, Natural Sciences, Biological Sciences, Environmental Engineering or related fields;
- Relevant experience in fieldwork and/or Ecology;
- Good communication in Portuguese and/or English, both spoken and written;
- Availability to start duties on the expected date.

## Preferred requirements

- Familiarity with or interest in Entomology;
- Previous experience in scientific research projects and/or nature conservation;
- Ability to adapt to new challenges and methodologies;
- Autonomy, sense of responsibility and ability to work as part of a team;
- Experience in the use of statistical analysis and GIS software (namely R and QGIS);
- Competent use of standard IT tools from a user perspective.

## Work plan

The candidate will carry out the activities within the scope of the *Nature Twins* project, actively contributing to its scientific and technological objectives and integrating into the activities of a multidisciplinary team. The work plan includes, namely:

- Systematic collection of ecological data along the levadas of the island of Madeira to be digitised;
- Sampling, collection and identification of insects and plants;
- Analysis of environmental parameters, including water and soil quality;
- Monitoring of environmental conditions relevant to ecosystem conservation and management;
- Photographic recording of flora and fauna species;
- Collaboration with other team members in integrating collected data into the real-time monitoring platform;
- Contribution to the development of an integrated solution combining environmental monitoring, simulation and immersive experiences, applied to sustainable tourism management.

## Institutional framework

The fieldwork component will be carried out along the levadas in the northern part of the island of Madeira. The laboratory component will take place at the Laboratory of Ecology and Systematics of the University of Madeira and at the Insect Collection of the University of Madeira (UMACI) (<https://entomoteca.web.uma.pt/>), under the scientific supervision of Professor Dora Aguín-Pombo.

## Selection methods

Selection will be based on the following criteria:

### 1. Curricular evaluation (60%)

- Academic background and suitability for the grant profile (30%)
- Relevant previous experience (20%)
- Motivation video (10%)\*

\*The motivation video must have a maximum duration of **1 minute** and will be assessed based on clarity of motivation, suitability for the project and communication skills.

### 2. Interview (40%)

## Selection committee

- **Chair:** Professor Dora Aguín-Pombo, PhD
- **Member:** José Manuel Martins Neto dos Santos
- **Member:** Hugo Venceslau Silva

## Submission of applications

The deadline for submitting applications is 20th February 2026.

Applications must be formalised by sending an email to [aguin@staff.uma.pt](mailto:aguin@staff.uma.pt), with the following documents:

- Updated *Curriculum Vitae*;
- Academic qualification certificate(s);
- Motivation video.

Failure to submit any of the required documents will result in exclusion from the selection process.

**Dates of online interviews:** 23 to 27 February 2026