

NOTICE FOR SCIENTIFIC INITIATION SCHOLARSHIP (5 vacancies)

Resume:

A tender is open for the attribution of a Scientific Initiation Scholarship to students enrolled in a higher technical professional course, a bachelor degree, an integrated master's or a master's degree within the scope of the project Apoio Especial Verão com Ciência 2022, taking place at LEAF – Linking Landscape, Environment, Agriculture and Food Research Centre, of the Instituto Superior de Agronomia, financed by National Funds through Fundação para a Ciência e a Tecnologia, I.P., to develop research activities in ongoing projects in LEAF under the following conditions:

1. TYPE, DURATION OF THE SCHOLARSHIPS and EXPECTED BEGINNING PERIOD OF THE SCHOLARSHIP

The tender is intended for the attribution of five Scientific Initiation Scholarship for a length time of one month, not renewable, scheduled to start on September 2022.

2. WORK PLAN AND WORKPLACE:

The work plan of each scholarship is as follows:

Scholarship 1: Study of morphological and epigenetic dynamics during the development of chestnut buds

Characterization of the dynamics of different epigenetic marks in chestnut buds at different phenological stages, from dormancy induction to floral induction.

Tasks to be performed: 1- Morphological analysis of buds collected throughout the year by histological analysis: paraffin embedding of buds previously collected throughout the year; histological sections and general tissue staining for morphological analysis; 2- Detection of epigenetic marks by immunodetection: the main epigenetic marks (DNA and histone methylation and histone acetylation) will be detected with specific antibodies in previously chosen buds; 3- Imaging and signal quantification by fluorescence microscopy: the spatial-temporal distribution patterns of epigenetic marks will be analysed and quantified in chestnut buds in different phenological phases.

The work plan will take place in the Laboratories of the Main Building of the Instituto Superior de Agronomia, under the scientific supervision of Prof. Leonor Morais Cecílio.

Scholarship 2: Ecosystems' services in horticulture: the role of native species of mirids

To characterise the development and reproduction parameters, predation rates, prey and host preferences and damage caused to different plant organs by the mirid *Dicyphus cerastii* Wagner. The grant holder will work in the various ongoing tasks.

The work plan will take place in the Laboratories of the Main Building and in the Insectary of the Higher Institute of Agronomy, under the scientific supervision of Prof. Elisabete Figueiredo and Rita Morais.

Scholarship 3: FISH chromosomal mapping of ribosomal genes in diploid and polyploid *Limonium* species

Mapping and characterization of ribosomal loci on pachytene meiotic chromosomes by fluorescence *in situ* hybridization (FISH) using plants from the *Limonium ex-situ* ISA collection. Tasks to be carried out: the successful candidate will make smear preparations of meiotic chromosomes in pachytene, after fixation of the anthers and subsequent enzymatic digestion. The FISH procedure will be performed, and the analysis will be done by fluorescence microscopy. The work plan will take place in the Laboratories of the Main Building of the Instituto Superior de Agronomia, under the scientific supervision of Prof. Ana Caperta and Prof. Wanda Viegas.

Scholarship 4: Characterization of the distribution patterns of epigenetic marks in meiocytes of sexual and apomictic species

Characterization, in species with different ploidy levels, of the distribution patterns of distinct epigenetic marks during microsporogenesis in floral buds of plants from the *Limonium ex-situ* ISA collection.

Tasks to be performed: the successful candidate will perform cytological analyses and, for such, will collect floral buds at specific stages of development, subsequent isolation of anthers for fixation. The fixed material will be go through enzymatic digestion for the preparation of smears to be used for immunodetection with purified polyclonal antibodies, according to previous protocols. The work plan will take place in the Laboratories of the Main Building of the Instituto Superior de Agronomia, under the scientific supervision of Prof. Ana Caperta and Prof. Wanda Viegas.

Scholarship 5: Nutritional characterisation and digestive use of poultry and pig feed incorporating the microalgae Chlorella and Spirulina as sustainable foodstuffs

To investigate the effects of incorporating the microalgae Spirulina and Chlorella in the diet of animals, namely on the animal productive performance and digestive use of these feeds. The successful candidate will carry out laboratory determinations (dry matter, protein, fat, fiber, ash, etc.) on animal feed and excreta, and carry out the determination of the nutritional use of such feed. Tasks to be carried out: 1 - determination of dry matter content; 2 - determination of protein content; 3 - determination of ash content; 4 - determination of fiber content and 5 - determination of fat content.

The work plan will be carried out at the Agriculture and Animal Production Section of the the Instituto Superior de Agronomia, under the scientific supervision of Prof. André M. de Almeida.

3. SUBMISSION OF APPLICATIONS

Applications must be formalized, obligatorily, by sending an application letter, with the reference "Verão com Ciência" and the number of the scholarship the candidate is applying for (i.e., Scholarship 1, Scholarship 2, Scholarship 3, Scholarship 4, Scholarship 5), accompanied by the following documents: Curriculum vitae; motivation letter; proof of enrollment in a higher technical professional course, a bachelor degree, an integrated master's or a master's degree during the academic year 2021/2022; copy of certificate of qualifications and other supporting documents considered relevant, namely the copy of certificate of courses and workshops undertaken. The email subject should read as follows: "Application Verão com Ciência LEAF" followed by the number of the scholarship the candidate is applying for.

Exceptionally, in duly justified situations, proof of enrolment in a cycle of studies or courses that do not lead to an academic degree may be delivered up to the date of the effective contracting;

If the degree has been granted by a foreign higher education institution, it will have to be recognized by a Portuguese higher education institution by the Directorate-General for Higher Education (DGES, only in case of automatic recognition), under the terms of Decree-Law no. 341/2007, of 12 October, regulated by Notice no. 227/2017, of July 25 and updated by Decree-Law No. 66/2018, published in the Diário da República, 1st series, No. 157, of August 16, 2018. For getting more information about this, we suggest consulting the DGES portal (<http://www.dges.gov.pt>). It may be waived its presentation in the application, being replaced by the applicant's declaration of honour, stating that the candidate has completed the academic degree by the deadline for the application, with the verification of this condition only in the contractual phase of the scholarship.

The applications must be sent to Joana Costa via email: joanacosta@isa.ulisboa.pt

The application will be open from 19th to 25th July 2022

4. SCHOLARSHIP RECIPIENTS

Students enrolled in a higher technical professional course, a bachelor degree, an integrated master's or a master's degree, for the purpose of starting their scientific training.

- Scientific area: Biology, Agronomic Engineering, Forestry and Natural Resources Engineering, and Animal Production Engineering
- With skills in laboratory work (basic skills). In the specific case of scholarships 3 and 4, the candidates should have previous knowledge on cytogenetics and previous experience on the topic. For scholarship 5, the candidates should be enrolled in Agronomic or Animal Production Engineering.
- Other requirements: Good English communication and team work skills

5. FUNDING AND SCHOLARSHIP COMPONENTS

The grant will be financed by National Funds through Fundação para a Ciência e a Tecnologia, I.P., within the scope of the project Apoio Especial Verão com Ciência.

The amount of the monthly allowance is 486,12 €, according to the table of values of monthly allowances, set out in Annex I of Regulation No. 950/2019 (https://www.fct.pt/apoios/bolsas/docs/Tabela_Valores_SMM_LOE_2021.pdf).

The payment will be made via bank transfer.

6. EVALUATION CRITERIA

Selection Procedure: Academic and scientific curriculum (60%) and motivation letter (40%)

7. EVALUATION

Composition of the Assessment Committee:

- (President of the Assessment Committee)
- Prof. Ana D. Caperta, Instituto Superior de Agronomia, Universidade de Lisboa
- Doctor Dalila Espírito-Santo (Vogal/suplente), Instituto Superior de Agronomia, Universidade de Lisboa
- Prof. Leonor Morais Cecílio, Instituto Superior de Agronomia, Universidade de Lisboa
- Prof. Madalena Lordelo, Instituto Superior de Agronomia, Universidade de Lisboa

- Prof. Maria Manuela Abreu (Vogal), Instituto Superior de Agronomia, Universidade de Lisboa
- Prof. Elisabete Figueiredo (Substitute member), Instituto Superior de Agronomia, Universidade de Lisboa

8. DISCLOSURE OF RESULTS

Form of advertising/notification of results: The final results of the evaluation of each scholarship separately will be publicized, through a list ordered, alphabetically, by final grade, posted in a visible and public place of the Instituto Superior de Agronomia, with the candidate being approved notified via email.

9. TERMS AND PROCEDURES FOR PRIOR HEARING, CLAIM AND APPEAL

Considering the exceptional nature of the support to be granted and the short duration of the scholarships, the prior hearing, claim and appeal period is waived, pursuant to article 12, number 5, and article 124, paragraphs a) and c) following the Administrative Procedure Code.

10. SCHOLARSHIP AGREEMENT MODEL AND FINAL REPORTS

10.1 - The scholarship contract must include:

- a) The identification of the scholarship holder and the scientific advisor or coordinator;
- b) The identification of the host and financial entities;
- c) The applicable legislation, Regulation No. 950/2019;
- d) The plan of activities to be developed by the scholarship holder;
- e) Indication of the duration and start date of the grant.

10.2 - The scholarship contract will be made in writing and a copy will be sent to the Foundation for Science and Technology, IP for inclusion in the national register of scholarship holders.

10.3 - The Scholarship Holder Status is automatically granted with the signing of the contract, always referring to the start date of the scholarship.

10.4 - The scholarship holder must submit to ISA, within 60 working days after the end of the scholarship, in electronic format, a final report of their activities containing the activities developed and results obtained, including communications, publications and scientific creations resulting from the developed activity, and respective URL addresses, accompanied by the opinion of the supervisors.

11. NON-DISCRIMINATION AND EQUAL ACCESS POLICY

No candidate may be privileged, benefited, harmed or deprived of any right or exempt from any duty due, in particular, to ancestry, age, sex, sexual orientation, marital status, family situation, economic situation, education, origin or social condition, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological convictions and union membership.

12. APPLICABLE LEGISLATION AND REGULATIONS:

Statute of the Scientific Research Fellow, approved by Law no. 40/2004, published in Diário da República no. 194/2004, Series I-A, 2004-08-18, in the wording given by Decree-Law no. 123/2019, of August 28 and FCT Scholarship Regulation - Regulation No. 950/2019, of December 16, 2019 (<https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt>).

18th july - The President of the Instituto Superior de Agronomia, Professor António Guerreiro de Brito.