

## ANNOUNCEMENT FOR THE AWARD OF A POST-DOCTORAL RESEARCH FELLOWSHIP

Post-Doctoral research Fellowship - 1 vacancy

60/ECUM/CMAT/2023 – 3MControlSystems

A call for applications is now open for the attribution of one grant of Post-Doctoral research fellowship within the scope of the R&D project “CoSysM3–Mathematical Modelling of Multi-scale Control Systems: applications to human diseases, 2022.03091.PTDC (<https://doi.org/10.54499/2022.03091.PTDC>, financed by national funds (OE) through the Portuguese Foundation for Science and Technology, FCT/MCTES, under the following conditions:

**Scientific Area:** Applied Mathematics and related areas

**Recipient category:** The BIPD are intended for doctorates in the area of Applied Mathematics and related areas, who cumulatively meet the following requirements:

- Holders of a PhD degree obtained in the three years prior to the date of submission of the fellowship application\*\*\*;
- Have carried out the research work that led to the attribution of a PhD degree in an entity other than the host unit “Centre of Mathematics of the University of Minho” \*\*;
- Do not exceed, with the conclusion of the contract in question, including possible renewals, a cumulative period of three years in this type of fellowship, consecutive or interpolated.

Candidates who do not cumulatively meet the requirements described will be excluded.

Other requirements: *Interest on Mathematical Biology*

\*\* Different R&D Units are included, even if located in the same Organic Unit (UOEI) of UMinho (no. 4 and 5 of article 7 of the FCT I.P Research Grant Regulation, in force)

\*\*\*Documents proving the ownership of academic degrees and diplomas, or their respective recognition when they have been awarded by foreign higher education institutions, when applicable for the type of scholarship in the call for applications, may be waived at the application stage, being replaced by declaration of honor of the candidate, with the verification of this condition occurring only in the phase of contracting the scholarship. This statement must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for the purpose of contracting the grant, only the information contained in the latter will be considered. If it is verified that the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path and may, consequently, change the candidate's ranking, the fellowship contracting will not be done.

**Applicants eligibility:** Applicants must comply with the eligibility conditions laid down in article 9 of the Research Grants Regulation of the Portuguese Foundation for Science and Technology (2019).

**Workplan and objectives to be achieved:** The work plan aims to develop innovative mathematical models for the study of human diseases, particularly autoimmune diseases. The emphasis will be on models acting on both the cellular and the population level, incorporating relevant dynamics for the biological description of the considered diseases. The objectives include:

- to develop qualitative analysis of the model to demonstrate its mathematical consistency;
- to studying control problems formulated for the proposed model to decide on therapeutic strategies or decision-making;
- to implement numerical simulations to illustrate the response obtained with the model solution.

The work plan will be developed in collaboration with the members of the CoSysM3 project team.

**Applicable legislation and regulations:** Research Fellowship Holder Statutes, approved by Law no. 40/2004 of August 18, in its current version published by Decree-Law no. 123/2019 of August 28; Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021 and Regulation of Research Studentships and Fellowships (RBI) of the Foundation for Science and Technology, I.P. - in force.

**Host institution and scientific supervision:** The workplan will be carried out in Centre of Mathematics of the University of Minho (CMAT), School of Sciences, University of Minho, located in Gualtar Campus, Braga, and Azurém Campus, Guimarães, under the scientific supervision of Ana Jacinta Pereira da Costa Soares, Associate Professor of the Department of Mathematics, School of Sciences, University of Minho, with the possibility of delegation of supervision or co-supervision by another member of the project team.

**Fellowship duration:** The grant will take place for a period of 12 months, with a provisional starting date on the March of 2024. The fellowship grant may eventually be renewed up to May of 2025, provided that both parts are interested on the renewal of the fellowship.

**Amount of the research grant:** The value stipend (Monthly Maintenance Allowance) is 1.741,00 euros, per month, in accordance with the stipends values published by the Foundation for Science and Technology (FCT I.P.) in the country (Annex I – Monthly Stipends Values for the maintenance allowances of the [FCT Regulation for Research Studentships and Fellowships](#)) and Annex II of the Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, according to the applicable regulation.

Payment is made on the 23rd of each month, through bank transfer to the Bank Identification Number of the fellow identified in the contractualization process.

**Other components of the research grant:** (define the other components of the research grants, in accordance with the no. 5 of the article 18º of the FCT Regulation for Research Studentships and Fellowships, no. 950/2019 of 16-12-2019 or article 21º of the Regulation of Research Fellowships of the University of Minho (RBIC), accordingly with the regulations applicable).

**Other benefits:** Reimbursement of Voluntary Social Security (Social Security contributions), corresponding to the 1st level of discounts (*for research grants with a total duration 6 months or higher*) and personal accident insurance.

**Exclusivity regime:** The grantee will perform the activities under exclusivity, as foreseen in article 5º of the Research Fellow Statutes and applicable regulations.

**Selection panel:** (identify the selection panel President and the effective and substitute members)

**President:**

Ana Jacinta Pereira da Costa Soares, Associate Professor, Centre of Mathematics (CMAT), School of Sciences, University of Minho.

**Vogais efetivos:**

- Carolina Paula Baptista Ribeiro, Assistant Professor, Centre of Mathematics (CMAT), School of Sciences, University of Minho;
- Cristiana João Soares da Silva, Assistant Professor with Habilitation, Iscte-Instituto Universitário de Lisboa, and Integrated Member of the Center for Research and Development in Mathematics and Applications (CIDMA) of the University of Aveiro (UA).

**Vogais Suplentes:**

- Paula Cristiana Costa Garcia da Silva Patrício, Associate Professor, Center of Mathematics and Applications (NOVAMATH), Faculty of Sciences and Technology of Universidade Nova de Lisboa;
- Romina Travaglini, Junior Researcher, Istituto Nazionale di Alta Matematica “Francesco Severi”, University of Parma, Italy, and Integrated Member of Centre of Mathematics (CMAT), School of Sciences, University of Minho.

The first effective member will substitute the President of the selection panel in case of impediment, being nominate the first substitute member in the place of the first effective member.

**Criteria and procedures for applications assessment and selection:** The applications assessment will focus on the candidate's Merit, following evaluation criteria, valued on a scale of 1 to 5 values.

**A. Applicant Merit - AM (90%):**

**A.1:** Academic path (considering the classifications of academic degrees), with a weighting of 60%;

**A.2:** Personal curriculum (considering professional and scientific background), with a weighting of 30%;

**A.3:** Motivation letter, and two recommendation letters by recognized mathematicians, with a weighting of 10%.

The merit classification (AM) of the applicant's merit with the achieved through the following formula:

$$AM = (A1 \times 0,6) + (A2 \times 0,3) + (A3 \times 0,1)$$

Candidates classified in the first 3 (three) positions, who obtain a minimum classification of 4 in the **AM** criterion, will be admitted to the Interview phase, the Jury proceeding to the evaluation of the following sub-criteria.

**B. Interview – INT (10%):**

**B.1:** interpersonal skills (10%);

**B.2:** Demonstrated knowledge in the area (50%);

**B.3:** Motivation, commitment and interest in the work plan (30%);

**B.4:** Linguistic competences (10%).

The Jury also decided to proceed with the evaluation of the Interview, according to the following levels:

- High – 5 values;
- Good – 4 values;
- Sufficient – 3 values;
- Reduced – 2 values;
- Insufficient – 1 value.

The Interview classification (INT) will be obtained by applying the following formula:

$$\text{INT}=(\text{B1}\times 0,1) + (\text{B2}\times 0,5) + (\text{B3}\times 0,3) + (\text{B4}\times 0,1)$$

The final classification (FC) of Applicant Merit (AM) and Interview (INT) will be obtained by applying the following formula:

$$\text{FC}=(\text{AM}\times 0,9) + (\text{INT}\times 0,1)$$

The academic degrees and diplomas documents, or their respective recognition when awarded by foreign higher education institutions are not mandatory in the application phase, being replaced by a declaration of honor of the candidate with the contents of academic results. The documents of academic qualification or respective recognition will be required in the contracting phase and must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for contracting the grant, only the information contained in the latter will be consider. If the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path, which can change the candidate's ranking, the fellowship won't be contracted.

**Disclosure of results:** The provisional results of applications, based in the selection panel minutes, will be send to the applicants by email until 90 working days from the applications deadline.

If case of unfavourable results, the candidates have a period of 10 working days to comment, if desired, in a prior hearing to interested parties, pursuant to articles 121 and 122 of the Code of Administrative Procedure (DL no. 4 / 2015 of January 7th).

**Complaint and appeal procedures:** The final results of the evaluation will be published through an ordered list (*alphabetically, by final grade obtained*), posted in a visible and public place of the host unit, as well as by email to all applicants, enclosing for that purpose, the minutes of the jury deliberations.

The selected candidate must inform its willingness to accept the grant, in writing. In case of rejection, the fellowship will be awarded to the next candidate in the ordered list of applicants.

The final decision can be contested within 15 working days, by sending to the President of the jury the corresponding claim. Interested parties may also submit an optional hierarchical appeal, addressed to the Pro-Rector for Research and Projects, Professor Sandra Paiva.

**Constitution of a selection reserve list:** The applicants ranked in the next positions on the ordered list will be included in a selection reserve list, which can be used until 30 of September of 2024.

**Application deadline and submission:** The tender is open for a period of **10 working days**, counting from the date of publication of the advertisement on the Euraxess portal.

Applications must be formalized, mandatorily, by sending an application letter accompanied by the following documents:

- curriculum vitae;
- certificate of qualifications or declaration of the candidate. either of which indicating the grades obtained in the completed Curricular Units;
- motivation letter, highlighting both the interest in Mathematical Biology and the commitment and interest in the work plan;
- two recommendation letters from experts in the field of Mathematics;
- other documents considered relevant to the assessment of the scientific and professional background.

Applications must be sent by email to **bolsas@ecum.uminho.pt**, in courtesy copy to **cosysm3@gmail.com**, indicating the reference of the call for applications in the subject line, which is **60/ECUM/CMAT/2023- 3MControlSystems**. Applications submitted by other means will not be accepted.

Recommendation letters should be sent by the authors via email to **bolsas@ecum.uminho.pt**, in **courtesy copy to cosysm3@gmail.com**, indicating the reference of the competition in the subject line, which is 60/ECUM/CMAT/2023-3MControlSystems.

**Fellowship contractualization:** The fellowship will be attributed by signing a fellowship contract between the University of Minho and the fellow, accordingly with the contract minute (annex IV of the Regulation of Research Fellowships of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, as indicated in 2.4 of the FCT document: [“Rules for Granting and Management of Grants within the scope of R&D projects, including infrastructure projects, the multi-annual financing program for R&D units and other FCT financing instruments \(Version 2021\)”](#).

The contract may only be concluded after all the documentation required is collected, which must take place within a maximum period of 6 months [including evidences of doctoral degree our it's recognition in Portugal, under Decree-law no. 66/2018 of august 16th].

Once all the documentation has been received, the contracting entity has a period of 60 working days to conclude the scholarship contract. Once received, the fellow must return the contract duly signed within 15 working days.

The activities under the fellowship contract can only began after proper authorization by the contracting entity.

**Term and cancellation of fellowship contracts:** Without prejudice to the other causes provided the fellowship regulations (FCT and UMinho) and in the Statute of the Research Fellow, the fellowship ends with the completion of the work plan, as well as with the expiration date for which it was granted or renewed.

At the end of the fellowship, the grantee is obliged to present a Final Report of the work carried out, in accordance with the objectives and evaluation criteria defined with the scientific advisor, within 30 days after the end of the scholarship.

The **final report** must be prepared in accordance with Annex I of the Scientific Research Fellowships Regulation of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021.