

Research Studentships (for students of a course that does not award an academic degree)

Applications are open for 1 (one) Research Studentship(s), within the framework of project/R&D institution, Matemática/Análise Numérica e Análise Aplicada (1801P.00957.1.01) CEMAT UIDB/04621/2020 - IST-ID), financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Matemática (Análise Numérica, Optimização e Modelação Matemática)

Admission Requirements:

a) to hold a bachelor or master degree and be enrolled at a course that does not award an academic degree and it is integrated in the educational project of a higher education institution, performed in association or cooperation with one or several R&D units;

b) not to exceed with this contract, including the possible renovations, an accumulated period of two years in this type of studentship, continuously or with interruptions.

Workplan: The candidate will build and apply mathematical models to microbial biodiversity data from the literature. The work will link epidemiological and metagenomic data with ordinary differential equations and dynamical systems theory. Knowledge of the replicator equation and basics of evolutionary game theory is a pre-requisite. Experience with multi-strain epidemiological models, theoretical ecology literature, and/or data science and bioinformatic analysis of metagenomic data will be appreciated. The ideal candidate will have excellent programming skills in Python/Matlab/Mathematica and be fluent in scientific communication in English, both reading, writing with clearly demonstrated previous experience. Academic background should include a formal Master degree in Mathematics/Physics/Computer Science/Computational Biology/Biomedical Engineering or related areas with relevance for the above.

(Present a resume of the activities to carry out, the objectives to achieve, and their relevance for the conclusion of the studies at which the studentship holder is enrolled)

Legislation and Regulations: Statute of Scientific Research Fellow, approved by Law nr. 40/2004, of August 18, as worded by Decree-Law nr. 123/2019, of August 28; FCT Regulation for Research Studentships and Fellowships, available on <https://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2019.pdf> and <https://dre.pt/application/file/a/127230968>.

Workplace: The work will be developed at the Center for Computational and Stochastic Mathematics (CEMAT) of Instituto Superior Tecnico, under the scientific supervision of Dr. Erida Gjini.

Duration: The research fellowship(s) will have the duration of 3 months. It's expected to begin in December 2021 and may be eventually renewed up to the maximum of 4 months.

Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (<http://www.fct.pt/apoios/bolsas/valores>), the amount of the monthly maintenance allowance is € 1 104,64, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following: Curriculum and background evaluation (30%), evaluation of student's previous scientific writing in English, (Master Thesis/ scientific publication/ report), (20%), motivation letter (10%) one letter of recommendation (10%) and individual interview composed of 10 min presentation and 10 min of questions (30%), with the respective weights as indicated.

Composition of the selection Jury: Dr. Erida Gjini, Dr. Jorge Tiago, Dr. Pedro Lima

Announcement/ notification of the results: The final evaluation results will be communicated to all applicants by email.

Deadlines and procedures of complaint and appeal. A complaint may be lodged from the final decision within 15 working days, or an appeal to the Executive Board of IST-ID within 30 working days, both counted from the respective notification

Application deadline and formalization: The call is open from November 25 until December 10, 2021.

It is mandatory to formalize applications with the submission of the following documents:

- i) B1 Form – Fellowship application (<https://ist-id.pt/concursos/bolsas/>);
- ii) *Curriculum Vitae*;
- iii) academic degree certificate, or proof of defense where applicable;
- iv) proof of enrollment at an academic degree course (Master, Integrated Master or PhD) or at a course that does not award an academic degree;
- v) motivation letter;
- vi) (for holders of Bachelor or Master degrees who are enrolled at a course that does not award an academic degree) declaration on honour that the applicant does not exceed with this contract an accumulated period of two years in this type of studentship, continuously or with interruptions.
- vii) One reference letter
- viii) Example of written scientific work in English by the candidate (report/thesis/other).

Applications must be submitted to the email: erida.gjini@tecnico.ulisboa.pt