

**UT Austin|Portugal and CMU|Portugal Programs in
Mathematics**

Terms of Reference for the 2009 Calls for Proposals

This document provides information relevant to the Call for Proposals for the UTAustin|Portugal and CMU|Portugal Program in Mathematics by the Fundação para a Ciência e a Tecnologia (FCT).

Regulations governing access to funding are available at:

<http://alfa.fct.mctes.pt/apoios/projectos/regulamento2008>

The announcement of the opening of each call is available at:

http://alfa.fct.mctes.pt/apoios/projectos/concursos/uta_cmu-math/2009

Themes. This call will open in selected areas of application of mathematics, namely:

- Advanced Materials, including composites, micro and nano-structures and biological structures, variational and numerical methods.
- Interfaces, front propagation and image processing, including variational models, numerical methods, applications to geophysics, environmental sciences, computational medicine, visualization, vision and image recognition;
- Applications to basic sciences including mathematical physics, computational chemistry and mathematical biology;
- Mathematical finance and stochastic network models, including risk modeling, utility based valuation, stochastic optimal control, stochastic networks, including analysis of complex large-scale networks, diffusion approximations, measure-valued processes and large deviations, as well as computational issues.
- Information and communication technology, including security information, sensor networks and human-computer interaction.

All projects should have a strong component from core areas of Mathematics. High quality projects in non-applied areas of Mathematics will also be considered for funding.

Successful competitive proposals will involve a collaborative effort between (at least) two Portuguese research teams from different legally

defined institutions and (at least) one research team from either the University of Texas at Austin or Carnegie Mellon University.

Duration of activity. A typical proposal should cover research efforts for a period of three years. Funding for years 2 and 3 will be conditional on the progress achieved by the team as determined upon review by the Boards of the UTAustin | Portugal and Carnegie Mellon | Portugal programs.

Funding. Up to four projects will be funded, with a maximum of 300kEuros per project for the beneficiaries from research units and universities in Portugal. The participating researchers from Carnegie Mellon University will be funded by the Information and Communication Technologies Institute at Carnegie Mellon University. The participating researchers from the University of Texas at Austin will be funded by the International Collaboratory for Emerging Technologies at the University of Texas at Austin. The involved companies will not be funded by FCT.

Eligible applicants. Each proposal must be submitted by a consortium of at least two research groups associated with different Universities, Associate Laboratories, Research Centers, State Laboratories or any other public or private research institutions in Portugal, and at least one research team from Carnegie Mellon University or the University of Texas at Austin. It is expected that post-docs and students enrolled in the PhD programs of the UT Austin | Portugal and Carnegie Mellon |Portugal programs, as well as students of the first and second cycle under the Bologna declaration, be integrated in the research activities carried out at the research units and the involved companies. Beneficiaries must have a recognized curriculum vitae in the areas relevant to the execution of the project. Priority will be given to proposals that include the effective participation of industrial partners, materialized in the form of human resources at companies and the commitment of financial or material resources. Each researcher with a PhD can only be involved in at most one proposal.

Where to apply. Applications must be submitted online through the FCT website <https://concursos.fct.mctes.pt/projectos> following the Announcement of the Call for Proposals.

Deadline for receipt of full applications. November 13th, 2009 (17h00 Lisbon time).

Requirements. Full applications must fulfill the following requirements:

- Be written in English
- Include an overview of proposed research emphasizing how the proposal meets the objectives of the UT Austin | Portugal and/or Carnegie Mellon | Portugal programs. Emphasize also the nature and expected outcomes of the collaborative work. State clearly the aims of the team as a whole and indicate the specific role played by each member in achieving the goals of the team. Explain the advantages of conducting the proposed studies as a collaborative effort (do not exceed three pages, 11 point font).
- Include a detailed outline of the proposed research, including preliminary results (do not exceed seven pages, 11 point font). The detailed presentation must delineate the specific contributions of each member of the team.
- Include the CV and publication list of the principal applicant and each co-applicant (for each applicant, maximum of 2 pages, 11 point font, including a list of up to 10 of the most relevant papers).

Review of applications. Applications will be reviewed by a Review Committee of independent experts, from nations other than Portugal, organized by FCT. The Review Committee will be responsible for evaluating the merit of each proposal.

The selection for funding is based on the following criteria:

1. Relevance of the project towards obtaining comparative advantages for Portugal, in accordance with the objectives stated in the strategic plan of the Carnegie Mellon | Portugal program and UT Austin | Portugal.
2. Scientific merit, relevance, originality, and expected results of the proposed research;
3. Scientific merit, scientific productivity and collaboration potential of the research groups and their qualifications to carry out the project;
4. Ability to integrate post-docs and PhD students (involved or to be involved in the Carnegie Mellon | Portugal program or UT Austin program), as well as undergraduate students in the work to be carried out at the research units and the involved companies;
5. Degree of involvement of companies in the proposed research and transfer of the research outcomes to the industry;
6. Rationale for the proposed research and budget.

Grant applications will be assessed on a strictly competitive basis by an international panel of independent experts. If requested, salary support for principal investigators will be limited to no more than 10% of the principal investigator's then current salary. Travel support will be provided to allow all the researchers from the UT Austin and Carnegie Mellon teams to meet annually with their counterparts in Portugal and to participate in the Annual Retreat to be held in Portugal; these meetings and the Annual Retreat will be essential to ensure active networking among all the participants of the program.