

## Terms of Reference for the Call for Research and Development Projects

### UT Austin-Portugal Program

### International Collaboratory for Emerging Technologies, CoLab



## ABSTRACT

This document provides relevant information to the Call for Research and Development Projects for the UT Austin | Portugal Program , issued by the Fundação para a Ciência e a Tecnologia (FCT).

### 1 - Project Areas

In the Framework of the “International Collaboratory for Emerging Technologies, CoLab”, UT Austin | Portugal Program, the Foundation for Science and Technology, FCT, opens a call for the funding of Joint Research and Development Projects in the subject areas specified below by the Program and announced in the website [www.utaustinportugal.org](http://www.utaustinportugal.org). The call is directed to integrated teams of specialists and researchers in areas related to Digital Media, and supports two types of projects, Exploratory and Strategic. Researchers from the areas of computer science and mathematics with interests in the target areas are encouraged to prepare proposals with media researchers. In assembling a proposal, applicants should note the need to include members from multiple universities (including the University of Texas at Austin). We also encourage applicants to carefully develop their proposals in accordance with the outlines below. For the purposes of coordinating with University of Texas personnel, videoconferencing facilities are available.

#### Type 1 - Exploratory R&D Projects interactive and Advanced Digital Media

This call for Research and Development projects encourages the submission of high risk, exploratory research projects in interactive and advanced Digital Media, bringing together new research ideas and experts working in various related areas. These smaller projects are of more limited duration (see below), and should emphasize graduate student involvement. Proposed research areas include (but are not limited to):

- Environmental music;
- Digital imaging techniques and applications;
- Generative art and its applications;
- Data visualization;
- Strategic uses of digital media in social and/or cultural contexts;
- Contextual and content-driven use of digital interfaces;
- Behavioral analysis based on sensor networks and location-based data;
- Human-computer partnerships and their outcomes for creating new knowledge, new models of research and analysis, and new forms of culture;
- Molecular electronics and digital media;
- Multi-sensorial displays;
- Interfaces using new display technologies;
- Real time video simulations;
- Online video editing;



- Interactive info-graphics;
- Unlimited video archiving;
- Regeneration/repurposing of old media for new purposes;
- Balance between trust and privacy.

## **Type 2 - Strategic Research and development projects in Interactive and Advanced Digital Media**

This second category of R&D projects is open to the submission of research work oriented towards three strategic areas of CoLab. The three areas include:

- The Future of Television;
- The Future of News;
- Interactive Media Environments / Serious Games.

In each area only the highest quality and most comprehensive project(s) will be approved. Projects must involve at least two distinct research groups in Portugal, include the participation of PhD students, and close collaboration with at least one other research group at The University of Texas at Austin and, if appropriate, a relevant company. The participation of industry is optional, although it would be preferable to include a related industry operating in Portugal or in Austin, (and preferably an industry affiliate of the UT-Portugal program). All projects must address sustainability issues. Research approaches that use data visualization and imaging are encouraged.

**The Future of Television** - Proposals should address research topics that reflect and reach beyond the current state of digital media and the directions in which the television industry is heading. As the environments of “screens” that make video content available to users in daily life multiply, the notion of television and its industrial forms is evolving. Possible research areas may include: the evolving technological infrastructure and best practices in networked production; consumer behavior and attitudes with “new” media forms; adoption and penetration rates of key technologies in the production and distribution environments and models for gathering future data; new formats/interfaces/distribution platforms; possible roles for Internet-based distribution models; business and economic performance indicators in new platform environments; and reaching and engaging audiences/users in new ways. Visualization and imaging techniques for working with relevant data may represent one avenue of investigation.

**The Future of News** - Proposals should address research topics in areas relevant to the evolution of news. As with television, models for news creation, circulation and distribution, and consumption are changing rapidly. If news is to maintain its currency for democracy and public life, new models for business, news/information creation and distribution must emerge that meaningfully intersect news consumption patterns. Possible research topics might include: New tools for news production; collaborative news production; data mining (in archives, the Internet and user behavior); archiving and information management for news purposes; novel methodologies for managing large datasets (for example, with compressive sampling); automatic tools for handling news in multiple formats (text, audio and video); advertising; using infography in news; the role of social networks in news creation and circulation; how business models can adjust to new consumer behavior in information/news acquisition.

Research questions may include some of the following: How do users collectively create and filter the stream of news information? What problems (cognitive, search and retrieval, etc.) do they face? What is the relationship between journalism as a profession and the growing contributions from blogs and other informal news sources? What new challenges do collective modes of news production create and which strategies might meet those challenges? How will technology-driven changes in advertising markets reshape the news media landscape? How might new tools for visualizing and artfully presenting large data sets reduce the need for human intermediaries between facts and news consumers? What new kinds of questions can professional journalists ask and answer using digital technologies? Which new business models are appropriate for the news industry, and what are their strengths and weaknesses? What is the nature and impact of viral distribution patterns? How has news consumption changed over the past five years, and why? Visualization and imaging techniques for working with relevant data may represent one avenue of investigation.

**Interactive media environments / Serious Games** - Proposals should address research topics on the technologies and forms of application of interactive media environments / serious games, particularly in education and culture. Topics may include areas such as 3D, mobility, location-awareness, massively multiplayer online games (MMOGs), interactive boards, game strategies and paradigms for user-defined games for culture and education. New ways to use and think about computer-based tools as well as emerging social (individual and group or collective) behaviors may figure into research in this domain. This program area also seeks research on collaborative knowledge building in interactive environments. Demonstrations of serious games for educational purposes may represent one fruitful avenue for investigation. Emerging technologies (hardware, software) that enhance or extend new qualities of interactivity also may be supported. Human-computer partnerships and their outcomes for creating new knowledge, new models of research and analysis, and new forms of culture may represent an exciting research domain. Data visualization and imaging approaches or inquiries may be integrated into significant questions in this domain.

## 2 - PARTICIPATING ENTITIES

**For Exploratory Projects:** The Principal Investigator should hold a PhD degree and the proposed research must involve at least two distinct research groups in Portugal and collaboration with a research team(s) at The University of Texas at Austin. The proposed research project must include young researchers in Portugal, preferably with PhD students associated with the UT Austin-Portugal Program. Participation of researchers working across multiple disciplinary approaches is encouraged. Faculty members from The University of Texas at Austin must be involved in the development of research proposals.

**For Strategic Projects:** Applications must come from projects with two or more research teams of public or private national institutions in Portugal, together with a research team from The University of Texas at Austin and must have the participation of PhD students. The participation of companies is encouraged, especially companies working in Portugal or/and in Austin, and preferably industrial affiliates of the UT Austin|Portugal Program. The Principal Investigator should hold a PhD degree. The proposed research project should include young researchers in Portugal, preferably PhD students associated with the UT



Austin|Portugal Program. Faculty members from The University of Texas at Austin are expected to be involved in the development of research proposals. All projects should have a sustainability plan.

### **3 - ELEMENTS OF THE PROPOSAL**

The research proposal must include a literature review that highlights the contemporary state of the research in the proposed area, indicate the positioning of the proposed project in the current research domain, and include explicit statements regarding how the proposed project will contribute to knowledge. The proposal should include specific research questions and provide indicators of the intended outcomes of the research (How would one know if the research was successful? What is a reasonable number of expected publications?). The proposal must contain a detailed research design and/or methodology indicating how the research will be carried out. A procedure for assessing the outcome (an evaluation, for example) should be included.

Pre-proposals are welcome but are limited to three pages in length. Pre-proposals will be accorded special attention and feedback provided to improve the likelihood of research proposal acceptance. Pre-proposals are due no later than 15 of October 2009. It is expected that proposal preparation will occur with intensive participation from research teams across universities. As noted above, videoconferencing may aid in the planning process.

### **4 - FUNDING**

FCT's public funding will cover human resources, funding for missions, general spending and equipment expenditures. Special relevance will be given in projects that include private co-funding.

The projects are funded by the Ministry of Science, Technology and Higher Education (MCTES).

#### **Exploratory**

The expected duration of each project should be between 12 and 24 months and the budget for each project in Portugal should not exceed 50K€. Funding for The University of Texas at Austin's faculty members will be provided through CoLab at The University of Texas at Austin and is primarily designed to fund graduate student assistance alongside some ancillary (e.g., travel) costs.

#### **Strategic**

The expected duration of each project should be between 18 and 36 months and the budget for each project in Portugal should not exceed 250K€, for The Future of Television, The Future of News and Interactive Media Environments/Serious Games areas. Large capital costs will not be approved.

Funding for The University of Texas at Austin's faculty members will be provided through CoLab at The University of Texas at Austin and is primarily designed to fund faculty participation and graduate student assistance alongside some ancillary (e.g., travel) costs.

Regulations governing access to funding are available at:

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



## 5 - APPLICATION SUBMISSION

The call will be open from September 7th 2009 (9:00 am, GMT+0), until December 11th 2009 at 17:00pm (Portuguese time).

Applications should be submitted electronically (in English) at the website <https://concursos.fct.mctes.pt/projectos>, starting on September 7th 2009.

**No other forms of submission will be accepted.**

## 6 - EVALUATION AND SELECTION METHODOLOGY

All teams will have their proposals screened by the UT Austin team coordinators with help of external referees appointed by them.

The evaluation and selection process is based on the following criterion:

- The project's relevance with the subjects defined for each area;
- Scientific merit, relevance, originality and expected results of the proposed project;
- Scientific merit and productivity of the research teams and their qualifications to execute the project;
- Ability to execute the work plan and within a reasonable budget and timeline;
- Ability to integrate the Portuguese research centers, (particularly PH.D. students), and/or involve companies.

Special consideration will be given to the following aspects:

- Involvement of undergraduate and graduate researchers in training;
- Consortia spanning two or more Portuguese universities or R&D institutions;
- Funding and participation from industrial partners.

No applications will be accepted from coordinators that are in a situation of unjustified unfulfillment of the requirements with the FCT, regarding the presentation of the Report for the Project's execution and the return of unspent money.

## 7 - ADDITIONAL INFORMATION

For more information on this call, please visit the Program's official website ([www.utaustinportugal.org](http://www.utaustinportugal.org)) or send your questions to the directors of your interest areas: [dm.colab@fct.mctes.pt](mailto:dm.colab@fct.mctes.pt) (for Digital Media).