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# COLABSQUARE

UT Austin | Portugal International Collaboratory for Emerging Technologies, CoLab

## You can find in this COLABSQUARE edition:



## Top FCT Officials, National Program Director Visit Austin

**Foundation for Science and Technology President Miguel Seabra, Vice-President Pedro Carneiro, Coordinator of the Technology Office Emir Sirage, and UT Austin | Portugal Program National Director Fernando Santana came to UT Austin in early June in support of FCT's International Partnerships Programme.**

After visiting Carnegie-Mellon University in Pittsburgh, the four arrived in Austin on June 4.

Their visit included plans to tour UT's Center for Nano- and Molecular Science, the Texas Materials Institute, the Center for Next Generation Voltaics, and the College of Communication, in addition to meeting with representatives of the City of Austin, downtown.

The officials discussed the new phase of the CoLab program with UT Vice-President of Research Juan Sanchez, Principal Investigator Robert Peterson, and International Director USA Marco Bravo, in addition to meeting with area program directors and representatives Sharon Strover, Donald Fussel, William Beckner, Paulo Ferreira and Heath Naquin.

The visit allowed the members of FCT and National Program Director Santana to get an overview of the University's facilities and resources and discuss key strategies for the second phase of the program with program executives and area heads, as well as meet UT faculty members and some of the program's students currently doing research in Austin.

## Researchers Propose Collaborative Projects

**Researchers submitted proposals to two rounds of calls for projects this spring. In March, the Portuguese Foundation for Science and Technology issued a call for scientific and technological development projects for the UT Austin | Portugal Program, with proposals due in late June.**

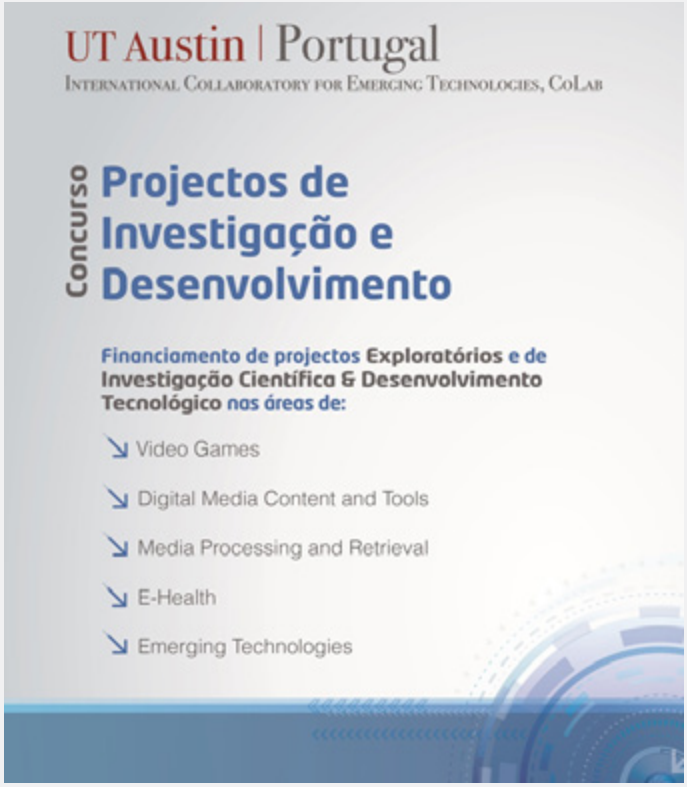
The call encouraged partnership with industry and was designed to attract smaller, highly experimental projects as well as more advanced research initiatives lasting up to 2 years.
Portuguese researchers from a variety of leading universities formed partnerships with faculty across UT Austin, submitting a number of collaborative proposals. The Foundation for Science and Technology is selecting up to five exploratory projects to receive up to €30000 and up to five Strategic Research and Technological Development projects to receive a maximum of €200000 each in funding.
The involvement of PhD students in both types of projects is required; participation in these projects will help launch a new generation of researchers, giving them first-hand experience in collaborating with international teams.

In early June, the UT Austin | Portugal Program announced a second research opportunity, supported with funding from the budget allocated to UT Austin under the CoLab initiative.

Working with Portuguese partners, UT researchers submitted collaborative proposals in the areas of Digital Media, Mathematics, Advanced Computing, and Emerging Technologies.

The application period closed on July 4. The Program expects to fund between five and seven projects, awarding between $50000 to $100000 to successful proposals.

Both the research calls have inspired plans between Portuguese and UT faculty for a diverse array of innovative, highly collaborative projects.




## RESULTS OF THE 2014 COLAB CALL FOR R&D PROJECTS AT UT AUSTIN

The UT Austin | Portugal Program is pleased to announce the research projects that will receive funding from its 2014 Call for R&D Projects at The University of Texas at Austin.
The call funds collaborative research between faculty members and researchers at UT Austin and Portuguese universities in four academic areas:

- Digital Media
- Mathematics
- Advanced Computing
- Emerging Technologies (Nanotechnology)

This call is a complement to the separate FCT call for R&D projects based in Portugal, the results of which will be announced soon.

The projects will sponsor researchers at UT Austin and at Portuguese institutions and will be supported with funds allocated to The University of Texas at Austin through the CoLab program. Here are the selected projects.

### Phase Transitions and Free Boundary Problems

**University of Texas at Austin:** Luis Caffarelli (PI), Alessio Figalli, Alexis Vasseur, Clint Dawson, Francesco Maggi
**Instituto Superior Técnico (IST):** Juha Videman, Margarida Baía, Farid Bozorgnia (postdoc), Léonard Monsaingeon (postdoc)

**The University of Coimbra:** Dmitry Vorotnikov, José Miguel Urbano (co-PI), Anderson Maia (PhD student)

"Phase transitions and free boundary problems cover a wide range of applications, from segregation dynamics to the evolution of fluid liquid interfaces, tumor growth, ground pollution invasion with obstacles, gas, water and oil flow in porous media and adsorption processes in subsurface environments. This project brings together a significant effort of applied non-linear analysts and numerical and scientific computing experts in the areas of non-linear and non-local Partial Differential Equations. A close synergy between analysts and numerical experts is crucial for its success, which requires the development of new and non- standard numerical techniques for modelling the phenomena under study."

## Roots and Wings: Glocalized Networks and Mobile Media Entrepreneurship in Austin and Lisbon

**University of Texas at Austin:** Wenhong Chen, Sharon Strover, Joseph Straubhaar, Artur Matos Alves, Kye-Hyoung Lee (PhD student), Xiaoqian Li (PhD student), Hogeun Seo (MA student)
**University of Porto:** José Azevedo, Nuno Moutinho, Raquel Meneses, Carlos Figueiredo (PhD student)
**Atlântica University:** Artur Matos Alves

"Synthesizing literatures in sociology, management, and media studies, this project centers on how entrepreneurs in the mobile media industry leverage digital media technologies and glocalized networks for starting up, product development, marketization, and innovation. A cross-disciplinary team with rich experience in entrepreneurship research and practice will use a comparative mixed-method design to collect interview, survey, and digital trace data in Austin and Lisbon. Insights gained will have policy and practical importance."

## MRI-Based Computational Modeling of Blood Flow and Nanomedicine Deposition in Patients with Peripheral Arterial Disease: Insights into Disease Management

**University of Texas at Austin:** Thomas J.R. Hughes, Shaolie S. Hossain
**Instituto Superior Técnico (IST):** Adelia Sequeira

"The main objective of this work is to develop a computational toolset for simulating vascular hemodynamics and predicting the accumulation of nanomedicine in superficial femoral arteries of patients affected by Peripheral Arterial Disease (PAD)."

## Development of Scaffolds for Regenerative Medicine by Molecular Imprinting

**University of Texas at Austin:** Nicholas A. Peppas (PI), Amey Puranik (postdoc), Heidi Culver (graduate student), John Clegg (graduate student)
**University of Minho:** Rui Reis, Manuela Gomes
**University of Porto:** Pedro Granja

"The main goal of the overall project is to design and test new scaffolds for improved regenerative medicine (RM) applications. The specific goals of the work to be conducted by the University of Texas at Austin team are the molecular design of novel biomaterials based on polymeric networks that are produced by molecular imprinting of cells on polymer surfaces. These recognitive biopolymers will be designed, characterized and tested in Austin and they will be used for biological and tissue engineering applications at the University of Minho and the University of Porto."

## Additive Manufacturing of Yttria-Stabilized Zirconia (YSZ) for Dental Applications

**University of Texas at Austin:** Carolyn Conner Seepersad (PI), David Bourell
**University of Aveiro:** Paula Vilarinho

"Additive Manufacturing (AM) is widely used to create molds for casting dental implants and crowns that are customized for individual patients. However, it is not typically used to create permanent dental surfaces directly (without a mold), which would make the process much more efficient. The objective of the proposed research is to design and provide proof-of-concept for an additive manufacturing technique - based on indirect selective laser sintering of nanostructured yttria-stabilized zirconia (YSZ) powders - for fabricating customized ceramic dental components directly, without a mold."

# International Summer School on Parallel High Performance Computing using Accelerators

**This year the *International Summer School on Parallel High Performance Computing using Accelerators*, organized by Alberto Proença and Keshav Pingali took place in Braga, Portugal, and attracted over 50 researchers coming from Galicia (Spain) and from all over Portugal, whose background was either in computer science or computational science and engineering.**

The celebration of St. John's was an excellent opportunity to bring to Portugal researchers in High Performance Computing (HPC), a key subject to support computing sustainability in the most relevant areas in CoLab: the Digital Media and Emerging Technologies.

The former in real-time and high fidelity computer graphics & animation, coupled with the Big Data challenge in social networking, while the latter requires HPC for higher accuracy and shorter computing times to model/simulate most emerging technologies, and in particular the nanomaterials and nanotechnologies.

The event started with a pre-school TACC tutorial in CUDA/GPU programming by **João Barbosa**, on Monday June 23 and later it addressed programmability issues in parallel computing environments that include accelerator units, such as the HPC GPUs from NVidia or the manycore CPU devices from Intel, the Xeon Phi (the accelerators in use at the TACC HPC cluster Stampede, still in #7 at after two years at the TOP500 list).

**Keshav Pingali** (UTAustin) opened the sessions presenting an overall view of the computational science algorithms and placing a focus on big data machine learning algorithms, stressing the relevance of graph analytics. From the physical phenomena he deconstructed the key components of both continuous and discrete models to lead the audience to conclude that at the end all heavy computational problems could be solved by one of the following approaches: matrix-vector/matrix-multiplication,

Keshav Pingali

FFT, elimination tree building, mesh generation and refinement (graph algorithms) and spatial decompositions (tree building and traversal).

**Donald Fussel** (UTAustin) followed the road map presented before and focused his presentation on the key subject that really matters for him: interactive graphics and/or computer games. In these application areas the data and algorithm irregularity places a significate burden on programmers to efficiently squeeze all the available performance from the mix of available computing units, namely the multicore CPU devices and the manycore GPU chips.

Donald Fussel

Hence his talk showed the motivation and the main parts of the framework he has been developing in cooperation with UMinho, a Dynamic Irregular Computing Environment (DICE) to address the automatic and efficient partition and load & data balance among available computing resources, together with some performance results that show how well DICE behaves when compared to the best available competing products.

**Mary Hall** (U.Utah) presentation on the second day addressed another relevant field that has been challenging the HPC community in the quest for performance optimization on computer system architectures that are getting increasingly complex: how to efficiently deal with dense and sparse matrices,


Mary Hall

releasing that burden from programmers and transferring it into autotune techniques, both at multicore homogeneous devices, and for GPU-type oriented approaches.

**Jongsoo Park** (Intel) gave a talk more oriented towards an overview of current trends in HPC systems, both at the architectural level and at the way he develop the application software.

This view was obviously biased into the Intel view, which gave the audience an opportunity to listen and discuss some of the Intel strategies for the next generation of MIC devices, namely the new Xeon Phi (Knights Landing), closer to the Xeon organization and moving away from architecture details borrowed from Larrabee.

Days one and two included shorter talks on successful activities on the use of computing accelerators which were placed in between the main lectures.

The event received researchers from different places from Portugal and Spain, and both from computer science and computational science, as can be seen in the agenda at the website: Basilio Fraguela from Coruña (Spain), Dora Blanco from Santiago de Compostela (Spain), Miguel Avillez from Évora (Portugal), and Luís Santos, faculty at U.Minho.


Jongsoo Park

Friday was reserved for the TACC team and his advanced course on the architecture of the Intel Xeon Phi and how to efficiently program and take advantage of this manycore device, including hands-on session on cluster nodes at Stampede, at TACC. The audience interacted considerably with all team members: Carlos Rosales, John Cazes and Lucas Wilson.

After the event ended, the organization team received several emails congratulating both the speakers and the participating audience.

The acquired competences by PG students in computer science were particularly relevant, and nine of them are currently in Summer internships at ICES in Austin, where they will stay till mid-August. The feedback received so far from these interns show how happy they are with the selected projects and how well prepared they fill to be after the training they had back home, at U.Minho.

To relax, all key lecturers and invited speakers joined the organization team for a social dinner with Portuguese gastronomy, local wines and ending with a special Porto wine. Some still claim that this may be the nicest part of their trip to Portugal.

Details of the event, including photos of some lectures, can be found at the Summer School website: (http://www.di.uminho.pt/parua14/).

# CoLab Emerging Technologies program off to a running start

**Nanotechnology and nanoscience have joined the academic areas supported by the UT Austin | Portugal Program. Since 2013, CoLab has been developing a fourth academic initiative in the emerging area of Nanotechnology in addition to the ones established in 2007 (Advanced Computing, Digital Media, and Mathematics).**

The main idea of the UT-Austin | Portugal program in Nanotechnology and Nanoscience is to advance a collaborative vision in nanotechnology research, education, and training, as well as to explore common interests in technology commercialization.

Of special interest is promoting the transfer of new nanotechnologies to industry in Portugal and nurturing the formation of new companies located in Portugal to exploit the latest scientific and technological advances.

The Emerging Technology / Nanotechnologies program will be coordinated by UT Austin (Brian Korgel) and Portugal (Paula Vilarinho) and has two goals:

1. To enhance Portugal's graduate programs and research in nanotechnology by creating seamless exchange opportunities for faculty and students to share new knowledge, ideas, experience, and capabilities;
2. To foster economic development in Portugal by bridging UTEN (the CoLab technology commercialization program) with state-of-the-art nanotechnology researchers, with the aim of creating and instituting new best practices for transferring new nanotechnology to the private sector to target global markets.

**Although the Emerging Technologies program was formally launched only in October 2013, a number of significant activities took place in January through May of this year.**

**In January, a kickoff meeting at the University of Aveiro brought together researchers in emerging technologies from UT Austin and five Portuguese universities to share detailed presentation of R&D activities at their institutions and to discuss possible areas of collaboration.**

The meeting produced terms of reference for the first Emerging Technologies Project Call planned for 2014. The scope of the call was determined to be:

1. Biomedical systems, molecular recognition, scaffolds, biomaterials, tissue engineering, stem cells, nanomedicines, intracellular trafficking, theranostics
2. Nanoparticle systems, nanoparticle assemblies, modelling and optimal design, in situ microscopy, stimuli responsive materials and surfaces, optical and/or magnetic tuning
3. Additive manufacturing, multifunctional nanocomposites, devices with integrated multifunctionality, high throughput, complex (hierarchical) structures, customized (bio)reactors, "printers manufacturers"

**In April, the collaboration was broadened with a cross-disciplinary brainstorming session at the University of Aveiro which included researchers from the other CoLab areas.** Nine professors in Advanced Computing and Digital Media disciplines from four Portuguese universities joined seven nanoscience and nanotechnology researchers to discuss possible projects.

**In May, the conversation was carried to institutions across Portugal in a nanotechnology roadshow of workshops and meetings. Paula Vilarinho of the University of Aveiro and Brian Korgel of UT Austin gave talks and met with students and researchers at seven universities and research facilities:** the International Iberian Nanotechnology Laboratory (INL), Instituto Superior Técnico (IST), the University of Aveiro, the University of Minho, the University of Porto, Innovnano (Coimbra), and Hovione (Loures).

On the basis of these meetings, plans are underway for a busy 2014-2015 year including the following activities:

- White Paper: Nanosciences and Nanotechnologies in Portugal
- Meetings with Portuguese companies and R&D groups
- Visits by Portuguese faculty and PhD students to UT Austin
- Workshop on Nanotechnologies / preparation for the Project Call (2015)
- International meeting on Emerging Technologies (May 2015, to be confirmed)
- For more detail, please see the full report by Paula Vilarinho: Emerging Technologies Report of Activities (January - May 2014).

For more detail, please see the full report by Paula Vilarinho: http://utaustinportugal.org/uploads/news/colab-2014-et-spring.pdf

Paula Vilarinho

Brian Korgel

# Digital Media Summer Institute Concludes

**The last course of the 2014 Digital Media Summer Institute has just wrapped up. This year, the program featured two courses in Porto and two in Lisbon, each lasting approximately two weeks.**

UT Austin professors Randolph Bias and Joan Hughes taught in Lisbon in May. Bias, a member of the School of Information and a recognized authority on usability, led a two-week class on Usability and User-Centered Design. The course included remote meetings with prominent experts in usability and HCI, and required participants to create individual projects. Students learned about psychological frameworks in usability studies, engineering methods in user-centered design, and reasons to apply usability engineering in software development. Teaching and Learning with the Internet, taught by learning and technology expert Joan Hughes of the UT College of Education, led students in exploring the potentials of Internet-based tools such as web applications in educational contexts including instruction, professional development, and research. It was the first time teaching in the Summer Institute for both faculty members.

In June, the Summer Institute launched in Porto with a course on Research Methods, taught by Sharon Strover. The comprehensive course was broken into two parts and included both first year and more advanced doctoral students. Readings and discussions were designed to assist the participants in developing methodologies for their own research projects, and covered a range of perspectives including survey research, experiments, and ethnographic approaches. Bruce Pennycook led the second Summer Institute course in Porto, Game Design and Development, in collaboration with U. Porto professor of Informatics Engineering António Coelho. The course included both theoretical and applied components, examining the elements of what makes a game good and also giving participants the opportunity to create and present projects of their own, working in teams.

Randolph Bias Class

Bruce Pennycook Course


## Students and Entrepreneurs Go To Boot Camp

**The Digital Media Program offered an intensive Entrepreneurial Boot Camp in Lisbon on June 4 and 5. Attendees included doctoral students from the Universidade Nova de Lisboa and the Instituto Superior Técnico, some of whom had already embarked on entrepreneurial projects with their colleagues. The program emphasized creative teamwork and adaptability in a fast-paced environment.**

Veteran digital media entrepreneurs Lane Becker, co-founder of online customer service community platform Get Satisfaction, and Michael Agustin, co-founder of game design engine maker Game Salad, led the program. Both have extensive experience in the Austin and the San Francisco tech startup scenes, from prototyping to seeking investors and forming and managing companies. The two days of the boot camp were packed with activity as participants worked intensively to develop new products and pitches, incorporating feedback from their peers and guidance from the program leaders. Teams were given the opportunity for networking and briefly relaxing on Thursday night at a dinner with Becker, Agustin, and UNL faculty members. The following morning, Boot Camp participants presented their projects to several members of the entrepreneurial community including two representatives of Espirito Santo Ventures, the top venture capital organization in Portugal, one member of the Lisbon Startup Initiative, and two representatives of Portuguese digital media companies.


## Game Designer Warren Spector Visits Lisbon

**Acclaimed US video game designer and industry veteran Warren Spector met with digital media students in Lisbon in May. Attracting a standing room-only crowd at the Universidade Nova de Lisboa, Spector spoke about design and spent a few hours viewing demonstrations from game production students, including four who work with U. Porto Informatics Engineering faculty member António Coelho.**

During his brief stay in Lisbon, he also visited the Tagus Park campus of Instituto Superior Técnico and met with Game Development students there. Spector has been active in the game industry for over three decades–during his career, he has served as an executive producer, creative director, and studio head. He is best known for his groundbreaking work in game design, especially for role-playing titles including Deus Ex, which was identified as one of the best PC games of all time by leading game magazine PC Gamer. Spector lives in Austin and has recently joined the University of Texas as head of the new Game Academy post-baccalaureate certificate program at UT, launching in Fall 2014.


Warren Spector and Nuno Correia

## UT Austin Digital Media at Austin's SXSW Festival

**The attendance and worldwide reach of the SXSW festival continues to grow; this year over 37000 people from 83 countries attended SXSW Interactive, while nearly 6000 participants from 36 countries attended SXSWedu. As in past years, several members of the UT Austin-Portugal Digital Media Program took part in the events.**

A panel titled "Gigabit Coming to Austin" featured in the Interactive component of the festival addressed the anticipated impact of Google Fiber and other gigabit Internet service on the city's entrepreneurship and education sectors.

Sharon Strover, who collaborates with UT professors Joe Straubhaar and Wenhong Chen on the project, was in attendance, while Chen spoke on the panel.

Professors Heitor Alvelos and José Azevedo, both of U. Porto, visited Austin for SXSWedu, a conference on innovation in education and learning which precedes the festival.

They were accompanied by Nuno Moutinho of the U. Porto Faculty of Economics. Visiting researcher Cláudia Silva contributed to the SXSWedu panel "Learning with Digital and Participatory Maps," presenting some of her dissertation research drawn from her experiences working with different community groups in Austin.

Under the supervision of her co-advisor Joe Straubhaar, Silva has been helping children and adults in these community groups learn to create location-based stories with digital media, using an application called Historypin.

## ZON Winner Sebastião Santana Interns at Austin Production Studio

**Sebastião Santana [http://sebastiaosantana.dunked.com/] recently completed a semester-long internship at Austin media company Elephant Productions. Santana came to Austin as an affiliate of the team that won the Prémio ZON Criatividade em Multimédia prize in 2011 for "Ginjas", a digital animation project.**

This award gave Santana, a graduate of Lisbon Polytechnic Institute, the opportunity to spend a few months as an intern in Austin.

Before coming to Elephant Productions, Santana produced work in a variety of formats including music video, photography, and digital illustration as well as animation, and worked on a variety of freelance projects in Portugal.

At Elephant Productions, Santana and two UT students created a TV commercial campaign for local nonprofit organization Leap of Joy, an afterschool program focusing on dance.

He also volunteered as stage crew at the SXSW Music Festival, served on the production teams of graduate student films in the Radio-TV-Film Department, and toured coastal California before returning home to Portugal.

# DIGITAL MEDIA DOCTORAL STUDENTS' NEWS

## Digital Media PhD Students Develop Research at UT

**Several Digital Media doctoral students spent part of the spring semester in Austin working with co-advisors and developing their research projects.**

Rodrigo Carvalho Breakdown project

Under the supervision of professor Bruce Pennycook, **Rodrigo Carvalho** [www.visiophone-lab.com] of U. Porto spent four months pursuing his study of the relationships between visual representation, sound, and movement at UT.

His research includes a comprehensive history of existing projects that explore these areas and also a practical component focusing on the creation of innovative tools for audiovisual interactive systems.

Carvalho came to Austin with the intention of working on projects with other students. Describing his expectations for his stay, he stated "One of my main goals was to get the opportunity to collaborate in multidisciplinary projects with local students, which I could later user as case studies for my research."

With the assistance of his co-advisor, he contributed to two primary projects: "Breakdown," an audiovisual interactive dance performance produced with dual-degree program doctoral student Yago de Quay and UT graduate student Sunny Shen, was featured in an annual University showcase "Ears, Eyes,+ Feet." Carvalho also took part in a project on wearable technologies developed in collaboration with graduate student in the Costume Technology program at UT, and plans to draw upon these collaborative projects as case studies in his dissertation.

**Rita Sá** [http://www.rita-sa.com/index.html] of UNL also spent nearly three months in Austin studying collaborative work in digital media, approaching the topic through the lens of hackerspaces. After connecting with organizers of ATX Hackerspace during her exploratory trip in 2013, Sá returned to further develop her research a year later. With extensive experience as a digital animator and illustrator, Sá studies the intersection of art and technology in open community environments, making ATX Hackerspace a fitting site for her research in Austin. Shortly before her departure,

Rita Sá

she presented the animation "Individually Collaborative," an Open Art project that was produced with participation from members of the hackerspace.

The third returning visitor, **Paulo Fontes** of U. Porto, spent a few weeks in June developing his research on guerilla marketing with UT co-advisor Brad Love of the Advertising and Public Relations Department. Fontes first come to Austin on an exploratory visit in 2012, and is particularly interested in how these innovative marketing strategies can be used to strengthen the public's interest in science. In Austin, he worked toward finalizing the design of his formal study, which will rely on test marketing campaigns followed by interviews.

Fontes, Sá, and Carvalho joined ongoing visiting researchers Gustavo Magalhães of U. Porto and Cláudia Silva of UNL, who have both been pursuing extensive research at UT and will continue to do so into the fall semester.

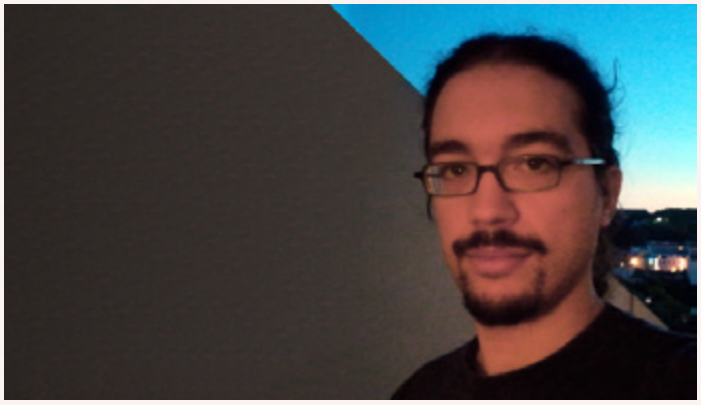
Paulo Fontes

## PhD Visitors Explore Austin

**Four Digital Media doctoral students came to Austin on exploratory visits in the spring semester, each spending a week touring University facilities, attending classes, and meeting with faculty members across campus as well as familiarizing themselves with the local community. The students represented diverse areas of research, including entrepreneurship, digital art, documentary filmmaking, and integrative health.**

Jaqueline Silva

**Jaqueline Silva** [http://www.jaquelinesilva.pt/], a first year student from the UNL who studies entrepreneurship and gender, arrived in March during SXSW. This gave her the opportunity to see the city at its most energetic, in addition to attending class sessions led by faculty members of Sociology, Journalism, and Advertising. She also met individually with professors including Sirrka Jarvenpaa and Emily Amanatullah of the Business School, Rosental Alves of Journalism, and Brenda Berkalaar of Communication Studies.



Pedro Ângelo

**Pedro Ângelo** [http://dataflower.org/], a third-year doctoral student at U. Porto, became acquainted with the local digital art community, including the ATX Hackerspace, during his visit and met with faculty including Don Fussell of the Real-time Graphics and Parallel Systems Lab, Bruce Pennycook, Director of Digital Art at the College of Fine Arts, and Luis Francisco-Revilla and Rob Turknett of the Texas Advanced Computing Center.

In late April, first-year U. Porto student **Patricia Nogueira** came to UT Austin to attend the Cine Las Americas festival, where her documentary "3 Horas para Amar" was screened. She also met with faculty members, including Nancy Schiesari

Patrícia Nogueira and Filipa Cardoso

of Radio-TV-Film, about the role of the user/spectator in interactive documentary. Nogueira was accompanied by **Filipa Cardoso**, also a first-year Digital Media student at U. Porto. Cardoso is studying how use of digital media may impact wellbeing and consciousness. She met with was Kristin Neff of the Department of Educational Psychology, as well as faculty members specializing in neuroscience.


Jean Lauer from Cine Las Americas festival organization with Patrícia Nogueira

## Digital Media Visiting Researchers and Students Have Productive Semester

**The Digital Media doctoral program's long term Austin visitors have spent a very productive semester giving papers at conferences, working on national projects, and doing performances and workshops around the country.**

**João Beira** [http://www.datagrama.tv/] and **Yago de Quay** [http://www.yagodequay.com/] of U. Porto, both pursuing doctorates at UT Austin, were awarded an artistic residency from February 27-March 1 at the 14th Biennial Arts and Technology Symposium at Connecticut College, where they presented their research project and performance "Biomediation."

The project explores the psychology of immersion and emotions, based on computer vision technology and data sets based on brain activity. Using an electroencephalograph headset, the cognitive and emotional process of the performer is transformed in real time into audiovisual compositions, with a depth sensor tracking the performer's movements.

The two also led workshops during the Symposium. "Biomediation" was one of only three commissions for a new work chosen to premiere at the event.

BioMediation project

De Quay also worked with visiting research Rodrigo Carvalho on an interactive audiovisual dance performance, "Breakdown," [http://www.youtube.com/watch?v=cTavnUFt-g] which was presented in May at Ears, Eyes + Feet, an annual showcase of innovative work by composers, choreographers, and video artists at UT Austin.

Working in collaboration with two UT students, Carvalho managed the visual aspects of the work, while De Quay contributed to the dance, voice, and music components.

**Cláudia Silva** [http://silvaclaudia.com/], a visiting researcher and doctoral student from UNL, presented research at the International Symposium on Online Journalism (ISOJ), which took place at UT April 4-5. The meeting, which usually occurs annually, attracts journalists, industry professionals, and scholars from around the world; this year participants included representatives from Google, The New York Times, and Al Jazeera.

Silva's presentation approached her research area, locative media, from a historical perspective. Titled "Back to the Future of News: Looking at Locative Media Principles in the Pre-News Era," it explored the development of newspapers in 16th and 17th century Europe and offered a new theoretical connection between the history of news and locative media.

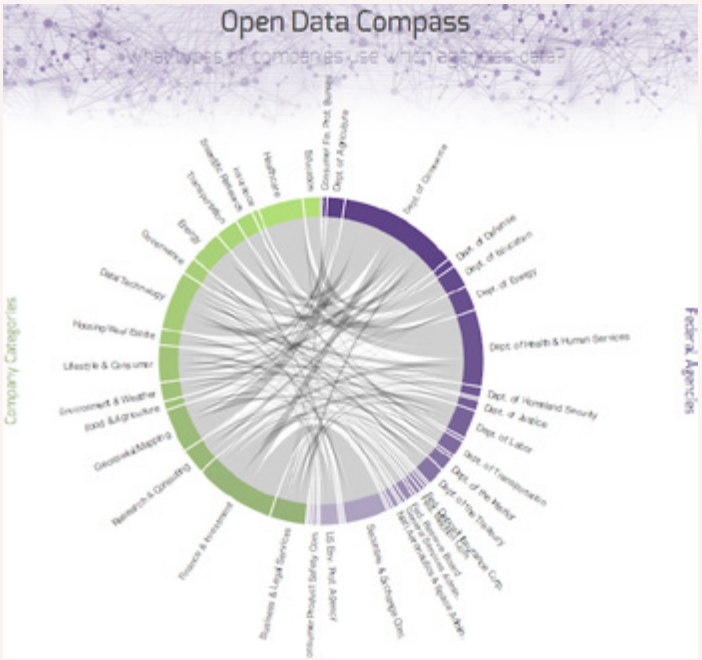
Silva commented, "I was glad to see that many journalists from different places such as Brazil, France, and India approached me after the talk to learn more about the concept. Taking into account the novelty of my research topic, it was a great opportunity to present it in the ISOJ 2014, which received people from over 45 countries all eager to learn about new technologies and news."

Cláudia Silva at ISOJ

The Symposium also addressed emerging topics in the journalism profession such as the use of drones for information gathering, wearable technologies, and new ways to measure audience engagement.

Another long-term visiting researcher, **Gustavo Magalhães** of U. Porto, has been researching open data and government around the US, including a stint with nationwide nonprofit Code for America in San Francisco last summer.

This spring, Magalhães contributed to New York University's GovLab Open Data 500 [http://www.opendata500.com/] initiative, helping to gather information on 500 companies that use open data as a primary resource.




Gustavo Magalhães Open Data Compass Research

This research, which provides a basis for estimating the economic value of open data and may encourage the development of new companies, was presented at the Center for Open Data Innovation in April in Washington, DC.

The GovLab program also held an inaugural roundtable at the US Department of Commerce in June. One of the study's products is an interactive chart showing what business sectors, such as transportation or finance, use which US government agencies' data.

João and Yago won one of only three commissions for a new work to be premiered at The Ammerman Center for Arts and Technology - 14th Biennial Arts and Technology Symposium at Connecticut College, February 27, 28 and March 1, 2014.

In this photo João Beira and Yago de Quay, UT Austin | Portugal multimedia PhD candidates with Jean Lambert-wild at the

University of Texas at Austin, Student Activity Center Black Box Theater (Jan 14, 2013).
Jean and Yago participated in an international theater residency with Comédie de Caen, Future Perfect (NYC), Fusebox Festival (Austin) and software developers from San Francisco and Shreveport.

## Digital Media student Marta Ferraz wins E3 Forum award

At the MIT Portugal E3 Forum ("Education Employment and Entrepreneurship") held in Lisbon on May 22-23, UT Austin | Portugal Digital Media student Marta Ferraz won the People's Choice Award in the "Most Innovative" category for her company, BioHybrid Robotics: (http://www.biotechbodies.com/).

Marta's work was recently covered by Portuguese media. The complete video from the Portuguese TV channel "TVI" can be seen at:
http://www.tvi24.iol.pt/videos/video/14173354/1?utm_source=twitterfeed&utm_medium

## Global Startup Program success stories

**Abyssal (www.abyssal.eu) develops integrated Subsea Navigation Solutions for Remotely Operated Vehicles (ROVs).**

The company's software, Abyssal OS, was developed after years of working with ROV pilots, subsea contractors, and oil & gas companies. Abyssal OS features advanced 3D technology, augmented reality, and precise navigation. These features allow it to operate safely in the world's harshest aquatic environments, at depths up to 6,000 meters, or about 4 miles, while superior visualization for the ROV pilot helps reduce "down time" (time underwater), and thus decrease operational expenses. Headquartered in Matosinhos, Portugal, the company is led by Manuel Parente and Rafael Simão.

In February this year, Abyssal entrepreneurs Manuel Parente and Rafael Simão made an accelerated tour of the US oil and gas industry – landing in New Orleans and proceeding through Houston and finishing in Austin. It wasn't their first attempt at promoting Abyssal in the United States. "A year ago we visited these same places and tried to break into this market on our own, without success," admits Parente.

"Interest would be expressed when we were in a meeting, but nothing would happen after that," adds Simão.

While they hoped the UTEN program with the IC² Institute would prove helpful to entering the US market, their expectations had to be re-scaled. Max Green was UTEN mentor for the Abyssal team.

"We had four meetings that first day in New Orleans," he describes, "and at the end of the day I said: Guys, let's talk." That first-day discussion transformed the Abyssal business model from one pursuing a $500 million total addressable market, to a potential market of $850 million annually.

This market potential could be shifted by making two strategic changes: 1) moving from a purchase-based model to a rental & service-based model (preferred by the oil and gas industry); and 2) by identifying a new performance level to their product offering (also preferred by the market) to enable realtime onshore monitoring of ROV data, in addition to their current offering of two product levels: one to serve the pilot and another to serve the client.

"When we started the UTEN program we expected the IC² Institute team to be hands on, but didn't expect to get the results we have so quickly… We now have three potential partnerships to consider. Our expectations have been surpassed by a thousand fold."

**Celfinet (http://www.celfinet.com/) has been in business since 2003 in the cellular broadband market.**
They enrolled in the UT Austin | Portugal program to facilitate the launch of a new business software solution Vismon – developed after receipt of customer and operator

feedback during the London Olympics where they played a leadership role in cellular network operations.

Celfinet transformed their solution offerings to extend beyond engineering capabilities to software allowing operator-free optimization through a Multivendor Network Performance Manager based on BSS counters that is tailored to GSM/DCS, UMTS and LTE technologies (http://www.celfinet.com/Products).

The leadership of Celfinet learned of the Biz.pt program while taking coffee with a friend in Porto. Initially, they did not think they would qualify for the program because were already a mature, 10 year old company.

But upon meeting Marco Bravo and Max Green during August 2013, they learned that the Biz.pt program was purposed to accelerate startups, but also established Portuguese companies looking for product acceleration in new geographies. Celfinet was admitted to the 2013-2014 cohort and they work closely with the Biz.pt team to position the new version of Vismon Manager in the US and other non-European markets. Their one-year program ends in December 2014.

"The level of brain power that exists at IC² Institute and gravitates around it -- is absolutely amazing." – Luis Varela
Celfinet's intial dream was to start in Silicon Valley and achieve a big Wall Street Payoff. Originally they did not think Austin was a fit for them. But after spending weeks in Austin, as their US hub, and working with the Biz.pt team, they found the culture in Austin is more focused on technology commercialization, and the successful entrepreneurs here are much more willing to help new businesses than those in Silicon Valley.

"After a quarter of a year in the program, we are closer to real opportunity than we thought we would be, but much less prepared to take advantage of the opportunity." – Alexander Victorino

The Biz.pt program is excited to see what Celfinet will accomplish in 2014.

Celfinet entrepreneurs at work with IC² staff members

# Events

## IBERGRID 2014

September, 8th, Aveiro
IBERGRID 2014 is the 8th edition in the IBERGRID conference series, organized since 2007 in the context of the joint research and development agreements between Portugal and Spain in the field of distributed computing infrastructures for e-Science. The 2014 edition is held in the Campus of the University of Aveiro, in Portugal.
**More information at:** http://www.ibergrid.eu/2014/

## Futureplaces // 7th edition

15-18 October, 2014, Porto, Portugal.
**More information at:** http://www.futureplaces.org.

## PhyCS 2015 - 2nd International Conference on Physiological Computing Systems

11-13 February, 2015, ESEO, Angers, Loire Valley, France
**Paper Submission deadline:** September 9, 2014
**More information:** http://www.phycs.org/

# Ongoing Opportunities

## Call for collaborative projects between the "Fundação de Amparo à Pesquisa do Estado de São Paulo" (FAPESP) and the Portuguese Foundation for Science and Technology

The Prize intends to acknowledge a work of outstanding excellence in the domain of the Philosophy of Science, either regarding general epistemological problems or particular scientific areas. Science is here understood in a broad sense to include mathematics, computer science, medicine, economics and the social sciences, as well as the natural sciences such as physics, chemistry and biology.
**More information at:** http://www.fct.pt/apoios/premios/fernando_gil/index.phtml.en

## Fernando Gil International Prize 2015

The Prize intends to acknowledge a work of outstanding excellence in the domain of the Philosophy of Science, either regarding general epistemological problems or particular scientific areas. Science is here understood in a broad sense to include mathematics, computer science, medicine, economics and the social sciences, as well as the natural sciences such as physics, chemistry and biology.
**More information at:** http://www.fct.pt/apoios/premios/fernando_gil/index.phtml.en

## The Falling Walls Lab

The Falling Walls Lab is a new challenging, inspiring and interdisciplinary format for young bright minds. It offers the opportunity to excellent young academics and professionals to present their outstanding ideas, research projects and initiatives.
Each participant is asked to present his/her work in 3 minutes.
All disciplines are welcome: from agriculture, medicine, economics, engineering to the humanities.
**Deadline for application:** 21st September
**More information at:** http://www.falling-walls.com/

More opportunities can be found at FCT website: http://www.fct.pt/concursos/

**Useful links**

www.utaustinportugal.org http://www.fct.pt www.utexas.edu www.ic2.org
www.ati.utexas.edu www.austin-chamber.org http://colab.ic2.utexas.edu/dm/ www.utenportugal.org

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