

**UT Austin | Portugal** INTERNATIONAL COLLABORATORY FOR EMERGING TECHNOLOGIES, CoLAB



## Welcome Note from UTEN Directors

UTEN (University Technology Enterprise Network) has been born a concept with a vision of improving and accelerating the transformation of Portuguese science and knowledge into economically valuable innovative solutions while addressing societal problems. UTEN's main goal is to catalyze and help build a globally competitive and sustainable cooperative network within Portugal that aggregates entities and individuals concerned with technology transfer and commercialization.

Such a network is being built on the increasingly larger and more effective content-producing nodes – the best laboratories, research groups and tech-based companies. But, the network strongly relies on emergent, still fragile links – the technology transfer offices and the professionals associated to technology transfer and valorization activities.

UTEN | Portugal has been materializing this concept that is turning the vision into a real network, by aligning their activities and initiatives in three main pillars:

- Specialized training in the various aspects of technology transfer: IPR management, licensing, technology rating, etc.
- Undertaking such training – be it under workshop format or through on-the-job internships – in an international multicultural scenario
- Fostering business to early-stage Portuguese companies by facilitating their access to US and European markets.

After a somewhat slow start – because the undertaking was a complex and challenging one while the resources were quite scarce – the generosity and talent of a small team finally produced tangible results: hundreds of participants in international training workshops, technologies from universities and research labs being screened, over 30 technology transfer professionals benefiting from internships in USA and Europe and leading Portuguese tech-based companies being supported in their internationalization process by UTEN.

A few years and many workshops, internships and case-based discussions later, Portugal's challenge in science and technology valorization is certainly not fully addressed, but the solutions at hand look promising and have definitely shown relevant results.

*José Manuel Mendonça*  
Portugal

*David Gibson*  
UT-Austin

# COLAB News Center

## CoLab Digital Media and Advanced Computing meeting at The University of Minho

On Thursday, July 16, 2009 CoLab@Austin Director David Gibson, Digital Media@Austin Program Director Sharon Strover, and Advanced Computing Program@Portugal Director Alberto Proenca met with Digital Media and related faculty at the Centro de Computação Gráfica (CCG) at the University of Minho ([www.ccg.pt](http://www.ccg.pt)). Professor Pedro Branco, department de Sistemas de Informação, presented an overview of the University's Master in Technology and Digital Art ([www.mtad.dsi.uminho.pt](http://www.mtad.dsi.uminho.pt)). After Sharon Strover provided an update of the Digital Media Program, University of faculty gave presentations on their research and teaching activities and contributed to the afternoon discussion on how the CoLab Digital Media Program might integrate more and benefit from the University of Minho's research and teaching programs in digital art, digital media, and computer graphics. These discussions included the following University of Minho professors: Eduardo Pereira Pinto, Executive Director, CCG; Nelson Zagalo, Instituto de Ciências Sociais; Luís Santos, Instituto de Ciências Sociais; Elizabeth Carvacho, CCG; Rui João José, Departamento de Sistemas de Informação.



Alberto Proença, Director of Advanced Computing at Colab@Portugal, Sharon Strover, Director of Digital Media at Colab@Austin and David Gibson, General Program Director at Colab@Austin.

## THE FIRST INTERNATIONAL SCHOOL ON DIGITAL TRANSFORMATION IN PORTUGAL: A Success Story

The International School on Digital Transformation completed its inaugural session in July with great success, bringing together an international contingent of scholars, students, activists, and entrepreneurs. From July 19 to July 24, nearly 75 participants assembled daily for interactive meetings at the Universidade do Porto's Reitoria building. Professor Artur Pimenta Alves of INESC Porto hosted the program, which was directed by Gary Chapman, Sharon Strover and Karen Gustafson of the University of Texas at Austin, and coordinated by Sónia Pinto, Christopher McConnell, and other staff members from both universities.

One of the School's primary purposes was to foster a network of professional relationships, collaborations, and friendships among emerging and established researchers, teachers, and activists in the areas of community informatics, e-government, copyright, and related topics surrounding digital media. The daily schedule included



Gary Chapman talks to ISDT students

three highly interactive presentation and discussion periods, several hours of free time in the afternoons, and communal dinners where School faculty, staff, and students became better acquainted as colleagues. Many participants used the free afternoons for smaller meetings of participants with like interests and on one day, a Bar-Camp-style gathering. The School's participants included university professors, graduate and undergraduate students, government workers and community organizers, coming from a number of countries such as Portugal, the United States, the United Kingdom, Sweden, the Philippines,

Indonesia, and the Republic of Macedonia. The program featured a broad range of distinguished speakers including Katrin Verclas of MobileActive, an international organization focused on the use of mobile phones and community organization; Micah Sifry, co-founder of the Personal Democracy Forum; social networking researcher Jorge Martins Rosa of the Universidade Nova de Lisboa; and cultural and media studies expert Siva Vaidhyanathan of the University of Virginia. A complete list of the School's faculty and areas of interest may be found on [www.digitaltransformationschool.org](http://www.digitaltransformationschool.org).

## ■ 16 PORTUGUESE STUDENTS enroll in 3-week NSF Sponsored Summer School Classes and Workshop on Financial Mathematics at the University of Texas at Austin, July 19 - August 8, 2009

The three-week NSF Sponsored program on financial mathematics is for advanced undergraduate and 1st year graduate students.

- The first two weeks contain 4 short courses, each consisting of 3-4 one-and-a-half-hour lectures. The lectures are complemented by tutorial sessions in the afternoon conducted by senior graduate students from The University of Texas. In addition, the students will work on group projects dealing with mathematical problems from financial theory and practice.



Portuguese Math students spend 3 weeks at NSF sponsored Summer School.

- The last week will be a workshop that aims to give an overview of current research activities in financial mathematics and related fields

Prerequisites for the course were advanced calculus, linear algebra and undergraduate probability. Familiarity with elementary stochastic processes and fundamental financial concepts was also recommended.

Participation of the Portuguese students was facilitated by Diogo Gomes, CoLab Mathematics Program Director in Portugal along with Daniel Abreu, Assistant Professor, University of Coimbra. At UT-Austin workshop organizers were Professors Gordon Zitkovic and Thaleia Zariphopoulou. Classes and workshop tutors were Kathy Davis, Gerard Brunick, and Mihai Sirbu all at UT-Austin. Please refer to <http://www.ma.utexas.edu/rtg/school2009/>

## ■ THE 6TH SOUND, Music and Computing Conference brought international experts to Porto

The 6th Sound, Music and Computing Conference was held at Casa da Musica, July 22-25. Fabien Gouyon was the Chair and served as the Chair of the Scientific Committee and Carlos Guedes was the Chair of the Music Committee. An unprecedented number of submissions of papers, posters and compositions resulted in a compelling mix of new research and new experimental computer music pieces. SMC 2009 had the highest registration numbers of any prior SMC conference with attendees from all over Europe, the US and even some from Japan and China. Concerts ranged from multi-player theater pieces to custom hardware "hacking" pieces to more traditional fixed media and instrumental works. The late night concerts were held in the downtown bar, Passos Manuel, which added a clubby atmosphere to the program.

Bruce Pennycook (UT Austin) had the the honour of delivering one of the three keynote sessions along with experimental designer composer Atau Tanaka (UK) and research scientist José Carlos Principe (USA). Pennycook's talk, "Who will turn the knobs when I die", explored the transient nature of electro-acoustic live performance music which he illustrated with his own compositions and the devices and software he has built over the past several years to realize each work. This talk led to many lively discussions with composer/inventors from other centers who are also concerned with the performance and preservation of their own works. Bruce also participated as a composer with a recent work for fixed media called Sketches and as a panelist on interactive and algorithmic music chaired by Carlos Guedes.

Overall, the conference was a huge success and the organizers of SMC 2010 in Barcelona, Spain have adopted the model developed by Gouyon and Guedes for their event. Of course, the city of Porto and the stunning Casa da Música venue made the entire event all the more enjoyable.

## ■ POST-DOCTORAL Academy in Mathematics took place in Lisbon, in July

The UT Austin | Portugal Program (CoLab) has joined forces this summer with the Carnegie - Mellon | Portugal Program in the organization of a Post-Doctoral Academy in Mathematics. The academy was held at Instituto Superior Técnico, in Lisbon, during July 7th and 8th.

This post-doctoral academy was a two-day event that brought

together all of Mathematics' post-docs of the UT Austin | Portugal Program, as well as the Carnegie Mellon | Portugal Program and where two leading mathematicians, L. Caffarelli (UT Austin) and P. Souganidis (U. Chicago), gave two advanced courses. The main topic of the Academy was Applied Analysis and Partial Differential Equations.

## ■ PORTUGUESE ADVANCED COMPUTING SUMMER 2009 Interns & Faculty Visitors

On July 13-14, 2009 - 8 Portuguese Interns, 3 PhD students (Miguel Monteiro, Rui Goncalves and Diogo Neves), and faculty Joao Luis Sobral and Luis Paulo Santos arrived at UT-Austin. The faculty and PhD students spent 5-days working on FCT funded research projects with UT-Austin cooperating faculty Chandrajit Bajaj and Keshav Pingali, CoLab AC Program Director. Following is a list of the Portuguese graduate student interns and their UT-Austin supervising professors as well as a brief description of their research:

- Matheus Almeida and Rui Silva (supervised by Ron Elber)
- João Barbosa (supervised by Paul Navratil)
- Vanio Ferreira and Pedro Araujo (supervised by C. Bajaj)
- Edgar Sousa and Pedro Monteiro (supervised by Keshav Pingali)
- Eduardo Cruz (supervised by Robert van de Geijn)



Two FCT funded Advanced Computing research projects which the faculty and students are working on follow:

Research #1P: Patient specific cardiovascular modeling and

analysis, starting from high resolution volumetric medical imaging. We develop spatially realistic physiological models of the human heart and vasculature, with its pathologies and malformations. Our long term goal is the development of a semi-automated software framework for accurate structure elucidation from imaging, geometric processing for high fidelity finite element models with quantified uncertainties, as well as the physics simulations of pulsatile blood flow through the heart and vasculature models. Our comprehensive Portugal-UT Austin team plans to develop and deploy state of the art techniques for key geometric and biophysics modeling and analysis steps that are essential for the ultimate development of this computational framework. Research Team: Adelia Sequeira, Alexandra Moura, Alberto Gambaruto, João Janela, Juan Acebron, Jorge Campos, David Rodrigues, Rita Sousa, Carlos Mota Soares, Helder Rodrigues, José Carlos Pereira, José Manuel Pereira, Renato Natal Jorge, João Tavares, Tom Hughes and Chandrajit Baja.

Research Project #2: Over the past thirty years, the parallel programming community has invented many tools and techniques for parallel programming of computational science applications like FFTs and finite-differences that are organized around dense matrices. However, new applications such as data-mining and social network analysis involve "irregular" computations that are performed on large, sparse graphs and trees. We know very little about how to write parallel programs for these kinds of irregular applications. The Portugal-UT Austin team is studying the use of optimistic parallel execution and program refinements to address this problem. Research Team: Joao Luis Sobral, Luis Paulo Santos, Don Batory and Keshav Pingali are working on the problem of programming multicore processors.

## ■ SUMMER INSTITUTE 2008 Digital Documentary project "Special Delivery" wins prize at video competition

The 2008 Summer Institute's Digital Documentary project "Special Delivery" has won the award "Gente da minha Terra" (People from my hometown) at the 4th Video Competition organized by INATEL.

The award, 750 euro worth, was given to "Special Delivery" for the sensitive approach of a character in a daily context put together with good technical quality. The video shows a little of the "hidden Lisbon" by showing the daily morning routine of Lisbon's bread makers.

Congratulations!

## ■ DIOGO CABRAL (PhD Scholarship Student) presents paper at Interact 2009

Diogo Cabral, Digital Media PhD Scholarship student of the UT Austin | Portugal Program, will present his paper "Pen-based Video Annotations: a proposal and a prototype for Tablet PCs" at this year's Interact conference.

The paper will talk about how pen computing or pen-based technology can be considered one of the most natural and intuitive computer input interface for humans. Diogo will cover how the combination of digital video and pen-based technology can support a new approach for electronic paper by associating handwritten notes and drawings with video segments.

The paper aims to present a proposal for pen-based video annotations and a prototype for Tablet PCs, implementing this concept, particularly dynamic pen-based video annotations combined with real-time video tracking.

To know more about this presentation or Interact 2009 please visit the conference's official website at [www.interact2009.org](http://www.interact2009.org).

## ■ COLAB MATHEMATICS SUMMER SCHOOL and Workshop on Kinetics and Statistical Methods for complex particle systems

The Mathematics Summer School took place at the Complexo Interdisciplinar of the University of Lisbon, from July 13th to 17th and was followed by a workshop, featuring talks at a more advanced level from July 20th to 24th. Over 65 people registered to attend the event. The event was funded by CoLab Austin/Portugal program, with contributions from CMAF, CIM and Carnegie Mellon University. Many of the international participants were funded by their home institutions.

The week of July 13th to 17th featured lectures by E. Carlen (Rutgers Univ.), P. Degond (Univ. P. Sabatier, Toulouse, France), I.M.Gamba (The Univ. of Texas at Austin), M. Katsoulakis (Univ. of Massachusetts, Amherst) and R. Pego (Carnegie Mellon Univ.). The lectures covered emerging topics in kinetic and statistical modeling from analytical, numerical, and probabilistic viewpoint. These issues are related to dynamical properties of complex systems with connection to natural and biological sciences such as statistical modeling of rapid granular flows, coalescence-breakage models for jet-bubble flows, mixtures undergoing chemical reactions, multi-agent systems in opinion dynamics, swarming behavior in social animals, traffic networks and economic models related to information sharing in large populations, as well as applications to climate modeling via stochastic methods. The Summer school counted with more than 35 registered graduate students and post-doctoral participants from national and international affiliations. The lectures notes of the five courses are posted at [http://kinetic.ptmat.fc.ul.pt/lecturenotes\\_frame.html](http://kinetic.ptmat.fc.ul.pt/lecturenotes_frame.html).

The following week workshop featured lectures on recent progress in this field of research. There were 32 invited lectures and 3 postdoctoral presentations. The workshop was



highlighted by the participation of distinguished scientists based in Europe and the USA as well as a strong representation from Portuguese academic institutions.

On July 23rd Dr Antonio Camara delivered a public lecture titled 'Digital Media and Mathematics'. The keynote focused on emerging applications of discrete and continuum Mathematics ranging from game theory and optimization strategies as well as statistical and continuum evolution modeling applied to interactive traffic flows, field game strategies and chemical reactions and evolution.

All lectures were held at the 'Complexo Interdisciplinar of the University of Lisbon' and they were well attended by the international group, the workshop participants and Lisbon University members.

The two week event was organized by Maria C. Carvalho, Fabio Chalub, Irene M. Gamba, Diogo Gomes, Robert Pego and Rui Vilela Mendes. For more information please visit the event official website at <http://kinetic.ptmat.fc.ul.pt/>.

## ■ THE UTEN CORNER S&T COMMERCIALISATION UTEN | Portugal brings ICTPI'09 to Porto

**UTEN Portugal**  
University Technology Enterprise Network

The 12th Edition of the International Conference on Technology Policy and Innovation (ICTPI'09) was the highlight of the 2009 UTEN | Portugal series of events focused on technology transfer and commercialization. UTEN chose the Casa da Música, one of Porto's most emblematic and innovative buildings, as venue for the conference that took place from 12 to 14 July. ICTPI'09 gathered over 150 participants from Asia, Europe and America and from both the academic and business worlds in order to discuss: "Science, Technology and Knowledge Networks – long term growth strategies to face the financial crisis". The proposal, as emphasized by José Manuel Mendonça (UTEN | Portugal Scientific Director and the Conference Chair), was to "challenge us in developing strategic responses to the crisis that integrate long-term concerns, by involving research and



development, higher-education and science-based innovation". On Sunday, 12 July, session chairs, keynote speakers and participants had the opportunity to get acquainted with each other during a City Tour and a Douro River Cruise.

The conference started on 13 July with a remarkable Plenary Session. Under the theme "Fostering S&T and knowledge networks to face the financial crisis", this

session included three world class names: Pier Carlo Padoan, Deputy Secretary General, OECD ("Innovation and the financial crisis. Consequences and opportunities."), Heinrich Flegel, Vice-President for R&D, Daimler AG ("Sustainable Strategies for Manufacturing in Europe") and James Utterback, Sloan School of Management, MIT ("Design-Inspired Innovation").

Another key moment of the Conference was the afternoon's Plenary Session: "Critical Infrastructures and the need for S&T based innovation", when Charles Wessner, Director of Technology, Innovation and Entrepreneurship at the National Academy of Sciences (USA) presented a paper on "President Obama's New Technology Initiatives and the Valley of Death".

On 14 July, the final day of the conference, all the attentions were on the afternoon's Plenary Session – due to its relevant and current theme "Looking at urban environments: greening the city with knowledge". At the Closing Remarks, José Manuel Mendonça and David Gibson were accompanied by Manuel Heitor, Secretary of State for Science, Technology and Higher Education (Portugal).

All three of them expressed great satisfaction with the outcome of the 12th Edition of ICTPI'09 and considered that it had not only addressed the most critical issues regarding technology transfer and commercialization, but also pointed out major directions for the future.

#### Parallel Sessions

The ICTPI'09 conference has also offered the participants the opportunity to choose between a wide range of parallel sessions. "New Frontiers in Science and Technology", "Industrial Policy", "Entrepreneurship, incubators, venture capital", "Technology Transfer: metrics and indicators", "Innovation strategies", "Entrepreneurship, Science Parks and

Technopoles". "Human Factors and Knowledge Networks", "The role of Universities", "User-driven innovation" were among the themes that participants were invited to discuss and improve their knowledge on.

Key Note Speakers from MIT, CMU, UTAustin, Univ. of Florida, Cambridge and Delft Universities, INSEAD and other reputed institutions, have also been chairing sessions as well as enriching the discussions.

#### UTEN Round-Tables

Besides being the main organizing entity, UTEN played a vital role in this conference, with a UTEN Round-Table taking place in each of the Parallel Sessions. Early-stage Technology-based

Start-ups, Mature Technology-based Start-ups and Licensing were the three core themes brought up into discussion. These round-tables have also included the most relevant testimony of the CEOs of Portuguese global technology based start-ups, such as ALERT Life Sciences Computing, MOG Solutions, We Adapt and Biotechnol, leaving a clear message that the transformation of the economical and industrial fabric is already undergoing change towards the science-based innovation activities that will dominate society in the future.

UTEN | Portugal sponsors - FCT and INPI - have been the main sponsors of ICTPI'09 Conference, which has been organized with the strong involvement of INESC Porto and the University of Porto.



## ■ UTEN@AUSTIN Visits University Administrators at Partner Institutions

From March 15 to 17, 2009, UTEN@Austin staff and a senior UT-Austin team visited with administration from UTEN partner universities in Portugal. The purpose of the visits was to review their institutions' technology transfer offices and to discuss long-term program sustainability and relationships. Representing UTEN@Austin and the University of Texas at Austin were Dr. Steve Nichols, Professor of Mechanical Engineering and former Associate Vice-President of Research; Meg Wilson, MSTC Faculty, IC\_Institute; and Cliff Zintgraff and Eli Mercer, Program Managers for UTEN@Austin.

The UTEN Team met with Prof. Fernando Tavares Rocha, Vice-Rector from the University of Aveiro and visited the University of Coimbra to meet with Prof. Pedro Manuel Saraiva and with Prof. Rosa Maria Ferreira and members of Adventech, a Coimbra spin-off commercializing water treatment technologies. On Friday, July 17, the UTEN team met with Prof. Fernando Santana, Faculty Dean at the Faculty of Science and Technology, New University of Lisbon and later with Prof. Maria Amélia Martins-Loução of the University of Lisbon and Nuno Silva, Manager of the Technology Transfer Office.

During the meetings, various follow-up actions were identified to build on progress-to-date and advance plans for long-term sustainability of UTEN programs. These follow-up actions will focus on technology transfer office strategy, university policy regarding technology transfer and commercialization, technology portfolio assessment, market-based technology assessment, and long-term sustainment of programs and relationships.



The UTEN@Austin team meets with Prof. Saraiva of the University of Coimbra.

## ■ PORTUGUESE TT officers start internships in Texas

In July, the following 6 competitively selected and FCT supported TT Officers began their Internships in Texas:

1. Isabel Alte da Veiga, from Inovisa at the University of Aveiro, is interning with Brett Cornwell at Texas A&M's OTC as well as the Norman Borlaug Institute for International Agriculture (<http://borlaug.tamu>). She will learn skills related to running a TTO focused on agricultural technologies and then apply that knowledge in Portugal to create a national Agro-Food TTO. She will also learn valuable lessons to apply to her university's project in creating a knowledge and technology pole in Mozambique.

2. Dina Celeste Rodrigues Chaves, INPI and UNL, is beginning her Internship at The Austin Technology Incubator ([www.ati.utexas.edu](http://www.ati.utexas.edu)). Her chief aim is to commercialize paper-e technology, which consists of electronic components overlain on a normal sheet of paper. This innovative technology holds large potential for use in the manufacture of versatile and disposable electronic devices.

3. Miguel Moura, INPI is beginning his Internship at South Texas Technology Management ([www.utsystem.edu/sttm/index.shtml](http://www.utsystem.edu/sttm/index.shtml)) and Incell ([www.incell.com](http://www.incell.com)), San Antonio. He will work extensively with STTM's interim director, John Cole, and Licensing Associates John Fritz and Sean Montgomery. He will apply his extensive skills in patent examination and licensing to assist STTM. He will also work with Mary Pat Moyer and Jim Janowiak at Incell.



4. Marlos Henrique da Silva, University of Aveiro, is working with Max Green at the OTC at UT-Austin ([www.otc.utexas.edu](http://www.otc.utexas.edu)). He will learn about the internal procedures of TTOs through "hands-on" exposure and also network with experts in the field of technology commercialization.

5. David Resende, University of Aveiro, is conducting his internship at IC\_Institute with the goal of conducting technology commercialization and business development while studying TT and commercialization at each of the UTEN Partner institutions and others in Texas.

6. Pedro Silva, TecMinho is conducting his internship at UT-Austin's OTC working with Ray Atilano. His work will focus on the skills needed to create a formal industry liaison program for TecMinho. He will also learn valuable skills related to the commercialization of research.

Each of the Interns has several Portuguese technologies to pursue US commercialization opportunities with the Texas mentors and co-operating institutions with an emphasis on business development — licensing or spin-outs — for US and international markets.

On July 23rd the Texas Interns conducted an Epsilon discussion on the book Art of the Start with their colleagues in Portugal and UTEN@Austin managers Eli Mercer and Jonathan. (See photo) A second discussion on the book The Anatomy of Persuasion will take place on August 4.

## ■ ONGOING OPPORTUNITIES

### Digital Media:

#### INTERNSHIP OPPORTUNITIES IN AUSTIN COMPANIES (DIGITAL MEDIA)

We have recently updated our internship program and encourage graduate students and early-career professionals interested in gaining hands-on experience working at Austin-based companies to apply. The program includes airfare to Austin, housing for up to 3 months, health insurance, and visa fees. We also list interns as "visiting researchers" at the University of Texas, which grants them access to the university library system, gyms, and other campus amenities as well as the city bus system. Those interested in applying can find more information about the program, including application procedures at <http://colab.ic2.utexas.edu/dm/internships/>

Applications may be submitted at any time, but the minimum time for processing and placement is 4 months, so those interested must plan ahead. Internships will last a minimum of 6 weeks, and interns will be placed at digital media companies in Austin. During their time in Austin, interns will not only have the opportunity to learn about the digital media industry through their internship assignment, but will also be able to participate in professionalization and leadership training with University of Texas students enrolled in the Digital Media Leadership Program.

#### Useful links

<http://digitaltransformationschool.org/2009/>

[www.ati.utexas.edu](http://www.ati.utexas.edu)

[www.austin-chamber.org](http://www.austin-chamber.org)

<http://colab.ic2.utexas.edu/dm/>

[www.utenportugal.org](http://www.utenportugal.org)

[www.utaustinportugal.org](http://www.utaustinportugal.org)

[www.fct.mctes.pt](http://www.fct.mctes.pt)

[www.utexas.edu](http://www.utexas.edu)

[www.ic2.org](http://www.ic2.org)

We want to hear from you! Want to share your doubts and concerns about something you read? Want to see other topics featured in next month's newsletter? Want to contribute with articles or art? Please send all your feedback to [sofia.santos@fct.mctes.pt](mailto:sofia.santos@fct.mctes.pt).

UT Austin | Portugal

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