Faculty of Science & Engineering

Faculty Newsletter

Volume 3, Issue 1, Summer 2010

UL Wins RoboCode 2010

RoboCode is a game where teams use Java to program one or more robot tanks to battle in an arena against each other. The little graphical tanks need to be programmed to avoid being hit. They need to be smart enough to move around an arena without any kind of manual control. The competition is targeted at 1st year students across all third level institutions. More information can be found at: http://www.robocode.ie/

Pictured (L to R) Max Vizard Ray Kearney, William Cole-Baker

This year's winners were:

William Cole-Baker (Multimedia and Computer Games), ,
Ray Kearney (Computer Systems) and
Max Vizard (Multimedia and Computer Games),

These students were mentored by Dr. Chris Exton, Computer Science & Information Systems Department.

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Christer Karlsson Best Paper Award

John Nicholas (PhD student with M&OE and the ERC) and Dr Ann Ledwith, along with Prof John Bessant (University of Exeter) won the Christer Karlsson Best Paper Award at the 17th International Product Development Management Conference in Murcia, Spain, from June 14-15. Their paper was entitled 'Search Strategies for Discontinuous and Radical Innovation in Established Companies' and was selected from 160 presented at the conference. John and Ann are pictured above with their awards. More information about the conference is available on: http://www.eiasm.org/frontoffice/event_announcement.asp?event_id=625#2056

BOC Post Graduate Bursary

Áine Munroe, Department of Chemical & Environmental Sciences receives the BOC Gases Post Graduate Bursary from Mr. Gerry Donovan., BOC. Also pictured are Dr. Catherine Adley, Head, Chemical & Environmental Sciences and Mr Jon O'Halloran, Project Manager, Solid State Pharmaceutical Cluster, UL.

Golden Mouse Award

A research team led by Lero Chief Scientist Professor Bashar Nuseibeh won the prestigious CHI 2010 'Golden Mouse Award' for the best research video at the recently held ACM Conference on Human Factors in Computing Systems (CHI 2010) in Atlanta, USA. The award winning video presented a novel approach to eliciting user responses to futuristic technologies, called 'ContraVision', which involved the construction of symmetric positive and negative depictions of a technology in use. CHI 2010 was attended by over 2,400 attendees, and received over 1,300 submissions of research papers and notes. In addition to the award winning video, Bashar and colleagues co-authored and presented one of the small number of accepted research papers.

Engineering Excellence Award

Bryan Whelan Project Engineer and Prof Tom Cosgrove, UL , receiving their Engineering Excellence award from Dr Chris Horn, President, Engineers Ireland for their Paper on Thomond Park.

XNA Ireland Challenge Cup

Congratulations are due to the UL entrants in the XNA Challenge Cup who on Wednesday 10th March at Tipperary Institute won in the following categories for their unique implementations of the PAC-MAN game theme:

Best in Animation: Maria Casey & Seamus Ryan.
Best in Visual Engineering: Stephen Carty & Kristofer Harte

Maria Casey and Seamus Ryan receive their award from Microsoft's Michael Meagher.

Michael Meagher, Microsoft and Stephen Carty

ICI Presidential Award

Prof Peter Childs, Dept of Chemical & Environmental Sciences received his presidential medal from the Institute of Chemistry of Ireland for his period of office 2005-7.

Science Speak 2010

Niall Mitchell, David Connolly, Aine Munroe, Catriona Dowling Richard O'Hanlon, Carol Quish, Daniel Hayes

The UL Science Speak competition 2010 took place on Friday 11th March with 8 postgraduates presenting. The winner of this year's competition was Mr Richard O'Hanlon. The competition judges were Ms Christine Brennan, Ms Bernie Quilligan and Mr Jim Dalton who had the very difficult task of selecting the winners from a very impressive group of people.

Young Entrepreneur Award

UL researcher, Dr Lisa O'Donoghue is this year's third-level winner of the Young Entrepreneur Award.
Dr. O'Donoghue claimed the prize for her recycling equipment developer for LCD displays in worldwide markets called Automated LCD Recycling (ALR). Currently no device exists in the market to address the recycling of millions of LCD screens. This system allows LCD monitors to be safely disposed of into valuable computer waste, providing a sustainable and eco-friendly solution.

Dr. O'Donoghue was one of more than 120 participants from the Institute of Technology, Tralee (IT,Tralee) and the University of Limerick (UL) who took part in the Young Entrepreneur Programme this year, a joint initiative between IT, Tralee, Shannon Development and entrepreneur Jerry Kennelly.

The country's newest entrepreneurs were chosen by a panel of leading business people including Michael Dawson, CEO of Gift Voucher Shop; Nicola Byrne, MD and founder, 11890; Terry Mc Wade, Deputy CEO Royal College of Surgeons; Eddie Buckley, MD Aspen Connect and Jerry Kennelly.

President's Medal

In recognition of his contribution to UL, the President's Medal was presented to Professor Michael H. B Hayes at a reception held in the President's House on June 15th.

Literature Award

Tomasz Tkaczyk, Noel O'Dowd and Kamran Nikbin received the *Sam Y. Zamrik Literature Award for the Outstanding Technical Paper, ASME Journal of Pressure Vessel Technology* for 2010. Their paper was entitled "Fracture Assessment Procedures for Steel Pipelines Using a Modified Reference Stress Solution".

Funding Award

Dr. Michael Connelly, ECE Department, received €408,000 from the Science Foundation Ireland Principle Investigator Programme for his project 'Quantum-dot Semiconductor Optical Amplifier based All-Optical Signal Processing for Ultra High-Speed Photonic Systems'

Success for UL Construction Management & Engineering Students in HSA Competition

L-R: Alan Dormer (CME student), Jim Lyons . (Chairman of HSA), Kate Organ (CME student) Martin O Halloran, Chief Executive, HSA, Sean Tiernan (CME student)

A team of innovative final year Construction Management and Engineering students recently came together of their own accord and entered a team into the Health & Safety Authority's first "Safety in Design" national competition, which is aimed at undergraduate teams from construction-related degree programmes in Irish third level institutions.

The aim of the competition is to provide an environment where undergraduate students can collaborate and work together to enhance, develop and embed their knowledge and understanding of health and safety in construction. Students are required to take on the role of a team commissioned to design and build a student services building on the fictional "JP O'Leary Business College" campus. Various challenges had to be addressed including examining the impact of design on after-care maintenance, site-specific risk assessments and preparing traffic management plans.

At the final held in Dublin's Ashling Hotel on Thursday 25th March, six short-listed teams battled it out to win the first prize of €3,000. The process included a technical presentation followed by panel interview sessions with industry experts from the Health & Safety Authority, the Society of Chartered Surveyors, and John Sisk & Son Ltd. The UL team came third in what was an entirely student-led initiative by UL students Sean Tiernan, Kate Organ and Alan Dormer to take part. The UL team was in fact the only university team to have made it to the finals, and it was noted by the judges that the team showed a great depth of knowledge of the process of incorporating health and safety into the design and also the phased construction of the competition project.

Chief Executive of the Health and Safety Authority, Martin O'Halloran said, "We were delighted to see such a strong interest in the competition from undergraduates across different construction-related disciplines. Our aim with this competition is to prepare future construction professionals, by giving them an opportunity to work together to find solutions to the kind of challenges that they will come across every day in the workplace."

SAUL win Architectural Association of Ireland 2nd Year Student Competition 2010

The brief for this annual Irish intervarsity competition amongst architectural schools in the country set the following challenge:

'In the anticipation of a recovery, it is clear that ideologies that have driven global market economics, consumerism and travel are no longer valid. In the age where natural resources are 'visibly' strained and the notion of a self regulating population due to limited resources is more evident than ever, where the Dubai effect of addressing the eventual depletion of oil may be outdated even before it goes on line, how can architecture strategically re-position its modus operandi?'

Students were asked to propose the reuse of Dublin port following the port's exodus from city centre. It was to be taken into consideration that the housing market is saturated and will be for some years to come. The proposal was to be infrastructural and hence productive (i.e. not a nice park). How could this area contribute to the sustainable development of Dublin? How could the proximity of the Port Tunnel impact the redevelopment of the area? The proposals were to factor in the proximity of the Poolbeg Power Plant and the Incinerator at Poolbeg as well as the proximity of the bay and the nature reserve along the Poolbeg Peninsula. Students were also to consider the implication of the relocation of the port for those workers who have lived in the area, is there a reuse that would provide alternative employment?

Roisin Heneghan, Shih-Fu Peng & John McLaughlin very much enjoyed the judging process, and commented that there was a good degree of variety in all the entries. They were also genuinely impressed with 2nd Year student's ability to engage with a complex brief at such a grand scale, especially given the short amount of time the students had. The School of Architecture at The University of Limerick (SAUL) gained first place, second place, one of two honourable mentions and three exhibited entries as follows:

First Place: Patrick Mooney - School of Architecture University of Limerick

Second Place: Jim Murphy - School of Architecture University of Limerick

Third Place: Sean McGee - Queen's University Belfast

Honourable Mentions (in no particular order):

Jennifer Duffy - Dublin Institute of Technology

Aidan O'Dea - School of Architecture University of Limerick

Selected for Exhibition

Georgina Daly - School of Architecture University of Limerick

Clare O'Callaghan - School of Architecture University of Limerick

Paul O'Shea - School of Architecture University of Limerick

An exhibition of the competition entries will be held in Dublin and in other venues throughout the country over the coming months.

PRTLI €12 Million Funding is Secured by UL

Major research funding of over €12 million was awarded to UL through the PRTLI funding allocation. Most of this will go towards the expansion of the Materials and Surface Science Institute for the establishment of a National Centre for Applied Materials Research at UL as well as significant support for advanced UL research programmes under the programme for Research in Third Level Institutions (PRTLI) Cycle V.

It is anticipated that the National Centre for Applied Materials Research will assist in the provision of incentives to multinational companies to locate future research and development capacity in Ireland by creating the research infrastructure to allow industries to embed their research and development activities here.

Dr. Trevor Young, Dept MAE, Prof. Brian Fitzgerald, VP Research and Prof Don Barry, UL President.

Irish Centre for Composites Research

Conchur O Bradaigh, joint MD EireComposites, Dr Trevor Young, University of Limerick and Tanaiste Mary Coughlan T.D.

The University of Limerick (UL) has been selected by Enterprise Ireland (EI) and the Industrial Development Agency (IDA) to lead and support four national centres of excellence announced on Wednesday 10 March, by the Tánaiste and Minister for Enterprise, Trade and Employment Mary Coughlan TD. UL will host the Irish Centre for Composites Research with initial funding of €5 million and will co-host Competence Centres for BioEnergy, Microelectronics and IT innovation. Enterprise Ireland has already ring-fenced €32 million in funding for the initial five centres and it anticipates investing a further €24 million over the next five years across the nine centres.

University of Limerick President, Professor Don Barry welcomed the announcement saying; "The University of Limerick has an excellent track record in research in the key areas of composites, energy, ICT and microelectronics and our significant involvement in four of the five centres of excellence announced today is testament to the quality of our researchers in these fields. We welcome UL's leading role in the Irish Centre for Composites Research and look forward to continuing partnerships in the three other competence centres of bioenergy, microelectronics and IT innovation."

Women in Engineering Bursary Awards 2009/2010

The Women in Engineering Bursary Awards are presented to the highest CAO points female entrant onto Engineering programmes in UL. On 5th March, Prof Kieran Hodnett presented Fiona Malone, BE Biomedical Engineering, Kate Sedas-Nunes, BSc Product Design & Technology, Deidre Ryan, BE Civil Engineering and Niamh Brennan, BE Electronic Engineering with a cash prize of €750.00 each.




From L to R: Niamh Brennan , Fiona OBrien, Kate Sedas-Nunes & Deidre Ryan

Funding Received for Student Active Learning in Science (SALIS)

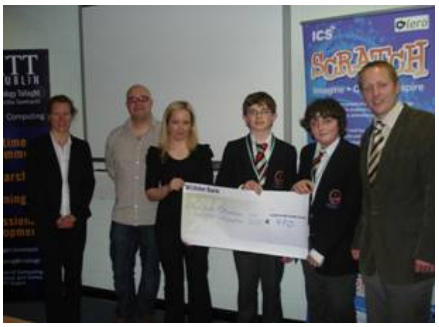
Congratulations to Dr. Peter Childs (Associate Director of the NCE-MSTL and Adjunct Senior Lecturer in the Department of Chemical and Environmental Sciences) and Ms. Sarah Hayes (Projects Officer for Teaching and Learning – Physical Sciences, NCE-MSTL) who have been successful in securing funding (€721,789) to develop a programme for Student Active Learning in Science (SALIS) under the EU Tempus programme. The goal of the project is to create structures in the beneficiary countries with the primary aim to enhance student active learning of science in secondary schools. Structures are to be established for the implementation of low-cost-techniques for students' lab-work in schools and the training of science teachers in the use of low-cost-techniques and their respective application in inquiry-type learning.

Pictured are the Members of the SALIS project at the 20th Symposium on Chemistry and Science Education (May 27 – 29th), hosted by the University of Bremen, Germany. From left to right: Dr. Silvija Markic (Germany), Dr. Peter Childs (Ireland), Dr. Marika Kapanadze (Georgia), Ms. Sarah Hayes (Ireland), Professor Ingo Eilks (Germany), Dr. Claus Bolte (Germany). The countries involved in SALIS are Georgia (lead partner – Ilia State University), Ireland (University of Limerick), Germany, Israel, Bulgaria and Moldova. Science Education has always a high priority for the Faculty of Science & Engineering but this is the first time the Faculty has succeeded in being awarded a major international project of this type.

Limerick's Colaiste Chiarain wins Scratch Final!

The Scratch Competition Munster final, judged by Oisín Cawley and Padraig O'Leary took place in UL on Thursday May 13th. The National final took place in IT Tallaght on Saturday May 22nd. The day was a great success seeing a dozen students from around Ireland battle it out for the coveted prize. The Scratch competition was sponsored by the Irish Computer Society. Oisín Cawley and Sadhana Desphande from Lero were members of the judging panel. The winning prize of €750 was awarded to Coláiste Chiaráin, Croom, Co. Limerick for their project "Ultimo Dance", an impressive game and dance mat combination. 2nd prize went to Alex Plunkett from Scoil Uí Mhuirí Dunleer, Co. Louth for Avalanche". 3rd prize was awarded to Eoin Rock and David Kelly from St. Clare's Comprehensive, Manorhamilton, Co. Leitrim for "Star Wars". National Final projects are available for viewing on http://scratch.mit.edu/galleries/view/83422

Holly O'Sullivan and Roy Sheehan, Carrigaline Community School, Cork being judged by Sadhana Desphanda – Lero, David Higgins –IT Tallaght, Keith McManus - IT Sligo and Oisin Cawley - Lero.



Clare McInerney-Lero, Stephen Howell-IT Tallaght, Gillian Harty-Irish Computer Society, Competition Winners Conor Foy, Matthew Mulqueen and teacher Mr. Conor Power from Coláiste Chiaráin Croom, Co. Limerick

1st UL/DIT Postgraduate Seminar

The 1st UL/ DIT Postgraduate seminar covering common interest research areas took place in DIT on 12th January 2010. The postgraduate students are jointly funded, and carry out their research work at the two institutions, and will graduate with a joint Masters/PhD. Students are co supervised by at least one supervisor from each institute.

The outcome of the initial research was presented in the following areas:

- Optimisation of Plasma-Sprayed Molybdenum-Base Wear Resistant Coatings through Computational Techniques
- Conducting Polymer Electrochromic Materials Utilising Room Temperature Ionic Liquids
- Porosity Control and Optimisation of Bioceramics using Rapid Prototyping
- Diagnosis of Wireless Networks used in Assistive Technology
- Bioelectric Signal Analysis of Assistive Devices

The presentations can be found under the Research heading at the following web page http://www.moe.ul.ie/

A number of joint publications have also been produced. It is hoped to cement further collaborative projects with DIT in the future.

Distinguished Lecture Speakers

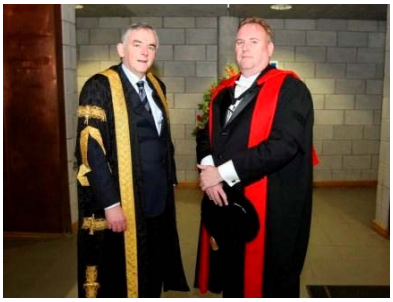
Professor Dr. Tsu-Wei Chou, Pierre S. du Pont Chair of Engineering at the University of Delaware recently visited UL as part of the Materials and Surface Science Institute (MSSI) Distinguished Lecture Series. The lecture series welcomes leading international experts to share their research findings and are open to the public.

Friedel Wolff, Translate.ord and Josep Davila, University of Barcelona were just two of the Distinguished Lecture Speakers who presented at the Localisation Research Centre, CSIS Department

Inaugural Lectures

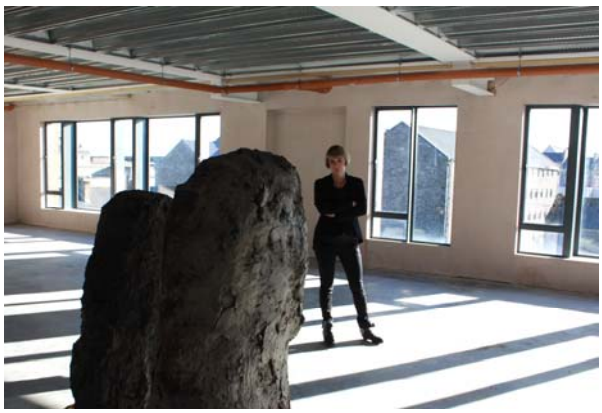
Two inaugural lectures were hosted by the Faculty during the Spring Semester. The first, on 24th May by Prof Ake Rasmuson, Professor of Chemical Engineering and Industrial Chemistry, was titled 'Chemical Engineering in a Changing World' and the second on 25th January by Prof Mike Hinchey, Director, Lero - The Irish Software Engineering Research Centre titled 'Evolving Critical Systems'

Pictured L-R: *Prof Kieran Hodnett, Dean, Prof Don Barry, UL President , Prof Åke Rasmuson, Prof Paul McCutcheon, Vice President Academic & Registrar, Dr Catherine Adley, Head of Department of Chemical and Environmental*



UL President Professor Don Barry with Professor Mike Hinchey

Ev+a Curator



SAUL staff member Elizabeth Hatz, was given the prestigous honour of being invited to curate ev+a 2010 in Limerick.

Hatz is an architect and lecturer with a well established role at SAUL, the School of Architecture at the University of Limerick, and also has a great, heartfelt regard for the City of Limerick. EV+A stands for Exibition of Visual Arts and is Ireland's pre-eminent art event. It has been running for 34 years in Limerick. This year the show displayed 59 artists from 14 countries at 11 different venues in Limerick, including Bourne Vincent Gallery at UL, LSAD, George's Quay, St Mary's Cathedral, City Hall, LIT, Hunt Museum, informal sites around the city centre, Social Wellfare Offices etc. 14 of the artists were specially invited and the main HUB for the show was a 5 storey tall, unoccupied office block on the corner of Thomas Street and Catherine street with stunning views across the city and far out towards the hills and hinterlands. On the theme of "Matters", alluding to the three meanings of the word, Hatz assembled artists works of all kinds; installations, films, sculptures, paitings, prints, "happenings" etc.

Road to Commercialisation Seminar

The road to Commercialisation seminar took place on May 18th. Prof Kieran Hodnett introduced the programme. Case Studies on LearnOpt (Ideas Project) was presented by Connie Connell/ Prof. Eamonn Murphy and Paragen by Conor Ryan.

Mr. Richard Morrison, Enterprise Ireland: Industrial Technologies Commercialisation

Keynote Speaker: Brian Caulfield, Business Angel: Funding Innovation in 2010

ULimagine: Kieran MacSweeney

Chemistry in Action 90th Edition

Dr. Peter Childs, CES celebrated the 90th edition of Chemistry in Action, a monthly magazine for second level teachers in Ireland and the UK and 30 years of its publication.

Women in Mathematics Day; Ireland

Only 16% of women undergraduates choose to study science and engineering; for men, the figure is more than double. (Source: HEA statistics, 2008 intake.) Mathematics is the key to science, technology and engineering and these subjects will play a vital role in Ireland's economic recovery. Women are in danger of being left out.

Inspired by the "Women in Mathematics Day" organised by the London Mathematical Society (LMS), Joanna Mason organised a similar event in UL this Spring, the first day of its kind in Ireland. Speakers from both mathematics and mathematics education research were invited to reflect the research interests of both MACSI and the NCE-MSTL.

The meeting followed a similar format to the LMS day: four keynote talks by experienced academics, six contributed talks by postgraduate students and young researchers, and a lunchtime poster session. The day was opened by Olivia Gill (UL) a mathematics education expert, and manager of the Mathematics Learning Centre in UL. First keynote speaker, Ailish Hannigan (UL), a statistician by trade, gave a personal and inspirational account of her career in mathematics to date.

She was followed by Catherine Paolucci (NUIG) who gave what can only be described as a performance of her experiences in mathematics education! Particular highlights were her rendition of her students' ``Pi song" and the tshirts they had printed, emblazoned with ``Don't Drink and Derive - know your limits..."

Dana Mackey (DIT) an applied mathematician, who is motivated by real-world applications of mathematics, opened the afternoon session. She accessibly described several of her research projects, drawing attention to the fact that seemingly disparate areas such as plasma physics, holography and biotechnology can all be described by very similar mathematics. She also provided an entertaining proof as to why striped animals can never have spotted tails.

Our final keynote speaker, Dolores Corcoran (SPCD) had been `volcanoed' in Africa, and we are very grateful that she managed to rearrange her plans to fly into Shannon the morning of the conference so she could give her talk in the afternoon. An expert in mathematics teacher education at first level in Ireland, she gave an engaging account of her experience, entitled ``Women into Mathematics Can Go: a Cinderella goes to school tale."

Contributed talks, interspersed through the day, ranged from Maria Gonzalez, a MACSI postgraduate, sharing her passion for both teaching and kidney modelling, to Sandra Healy, an engineer at Analog Devices describing her experiences of working in industry whilst studying for a PhD part time. It was fascinating to hear about different people's mathematical backgrounds, and how they have chosen their careers. All talks were of extremely high quality; topics were diverse, but it was clear that all speakers shared a real passion for mathematics.

Financial support from the Institute of Mathematics and its Applications, the Irish Mathematical Society, the UL Science and Engineering Faculty, as well as MACSI and the NCE-MSTL meant we could pay for speakers' travel expenses, ensured free registration for all participants, and also allowed us to provide several travel bursaries for postgraduate students.

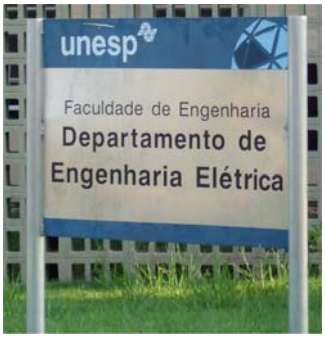
We were delighted that nearly 50 participants from across Ireland attended, including researchers, second-level teachers and members of Project Maths. Feedback was overwhelmingly positive; every participant would attend a similar meeting in the future. We intend to make the meeting an annual event and plans for next year are already in the pipeline, keep an eye on www.macsi.ul.ie/wimdi.

We plan to incorporate participants' feedback and include a session on careers - which we hope will attract more undergraduates to the meeting. We will also include discussion groups on specific topics to appeal to mathematicians from different areas. If you have any suggestions for speakers for next year, or topics for focus sessions we would be delighted to hear from you.

International Collaboration in Brazil

For two weeks in November 2009, Ian Grout, ECE Department was based in Brazil within the City of Ilha Solteira (São Paulo State). The following article gives an interesting account of Ian's stay.

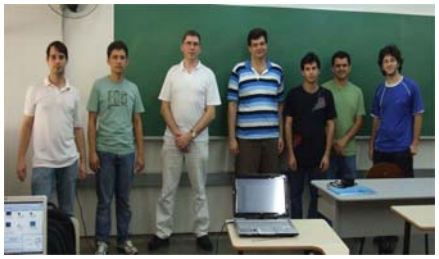
To give an indication of exactly where I was, if you find São Paulo City (approximately 400 km south-west of Rio de Janeiro) and then go north-west to the western edge of São Paulo State, you will find the city. It is an eight hour drive from São Paulo City to Ilha Solteira through some outstanding countryside. I wrote this article in the last couple of days of my visit. I have been kindly hosted (as in a previous visit) by Professor Alexandre César Rodrigues da Silva of the Department of Electrical Engineering within the State University of São Paulo (UNESP), based here in the Ilha Solteira campus. The Brazilian hospitality really cannot be beaten and their barbeques have to be experienced.



Department of Electrical Engineering in Campus III (for those interested in energy, the campus is situated next to a large hydroelectric power station).

Meeting with Prof. Dr. Marco Eustáluis de Sá – Director UNESP Ilha Solteira campus (centre) and Prof. da Silva (right).

This visit was planned and undertaken as part of an on-going international collaboration with UNESP which started in 2004. Prof. da Silva also visited the Department of Electronic and Computer Engineering here in UL in 2005 on a one-year sabbatical and our collaboration in electronic system design and environmental sensor system design are continuing.



With the students on the digital IC test course

My visit was planned to have two parts. Firstly, during the first week here I was based in Campus III (a new facility for teaching and research for the dedicated use of the Faculty of Engineering). Campus III was set-up as a purpose created facility and the move from the city centre campus to the new campus was completed just a few weeks ago. This is an indication of the importance of electrical/electronic engineering disciplines over here. The main activity during the first week was to teach a masters course in digital integrated circuit (IC) test engineering which I run each year here in Ilha Solteira. Fortunately, I am able to teach this course in English as my Portugese is rather limited to the basic essentials (well, the essentials for engineers anyway).

Another key activity during the first week was to complete the plans for visiting the **Pantanal** region (which is a UNESCO World Heritage Site) to the north-west of here (we stayed in the border area with Bolivia) with one of the geography researchers based in the Universidade Federal do Mato Grosso do Sul (Prof. Sakamoto is based at the Três Lagoas campus 60 kms from Ilha Solteira). There would be four researchers undertaking the visit: two from Ilha Solteira (Alexandre and Tércio, one of the PhD students working with Alexandre), one from Três Lagoas (Prof. Sakamoto) and myself. We needed to finalise the plans to go into the **Nhecolândia** region of the Pantanal in order to gather electronic sensor readings from the area around one of the Salinas located in the heart of the Pantanal. The geographers are monitoring the effects of climatic change on the Salinas and Pantanal environment as a whole. Given that we were also planning to install and evaluate some newly developed environmental monitoring electronics, we had some arranging to do. This was also to be my first visit into the Pantanal, so this was to be more of an adventure than work.

International Collaboration in Brazil (contd)

On leaving for the Pantanal (at 8am on Sunday morning), we firstly travelled to Miranda (the gateway to the Pantanal) via Três Lagoas (across the hydroelectric power station (Usina Jupiá)) and through Campo Grande (with a stop for lunch). From Miranda, then onto Passo do Lontra (the road then becoming a dirt track for the last 11 kms) where we were to base ourselves for the research expedition. This is a research facility where scientists and engineers can work on projects related to the Pantanal and is used as a base to travel further into the Pantanal region – away from towns or cities and an area populated only by the farmers.

Miranda (gateway to the Pantanal)

The last part of the journey to the research base at Passo do Lontra

The journey from Ilha Solteira to Passo do Lontra took us nine hours and after a rest overnight, we had two days of activity. The first day was a further journey to Corumbá where we met with representatives from Embrapa – the government research organisation who operate a research facility on one of the farms in the heartland of the Pantanal which we were to visit. It was necessary for us to obtain permission to access the farm and run our experiments, but also it gave us an opportunity to discuss further our future plans with the scientists in Embrapa.

With the sun and heat, sometimes you just need to

Corumbá city (next stop Bolivia)

Once we had the necessary permissions to access the Embrapa Farm, we returned to Passo do Lontra in order to prepare for the next day expedition to the farm.

On the Tuesday morning, we left at 6.45am and undertook a four hour drive through rough terrain on dirt roads. At this time of year, the Pantanal should be flooded (in the wet season) and if this was the case, we would not have been able to undertake the trip. This year however, the land is dry and the roads are still accessible, if somewhat slowly and only in a robust 4x4 (no Ferraris here).

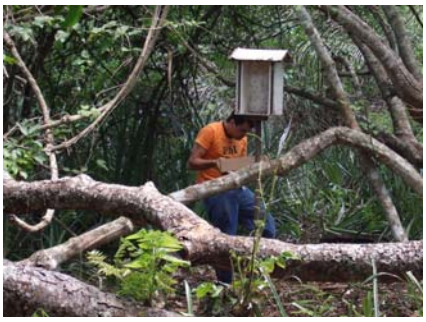
En-route to the experiments

Up close and personal with the alligators (there were hundreds in and around the lake)

International Collaboration in Brazil (contd)

On arrival at the Salinas on the Embrapa Farm, then the work could begin to extract data from the currently installed sensor systems and to install a new sensor system design (installed for evaluation to assess its performance and robustness in the difficult conditions (temperature, humidity and the animals trying to eat the electronics)).

The environment for the electronics to work in



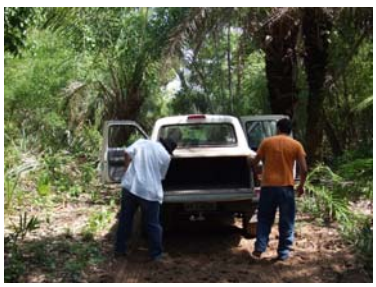
Checking the experiments around the Salinas

The researchers from UNESP also undertook field trials on wireless access to the sensor electronics through the undergrowth, tree and Salinas areas. It is a stunningly beautiful place in the world and an incredible experience to see it first-hand. It is also amazing to sense the environment – the heat, humidity, animals, plants and sounds. It is also an incredibly difficult place to work in, so our activities needed to be planned with precision and undertaken in the shortest possible time.

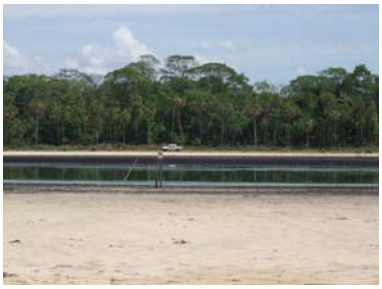
After five hours of experimentation in the high temperatures and difficult terrain conditions, we returned to Passo do Lontra to review and assess our findings before finally returning to Ilha Solteira on the Wednesday. We also returned with equipment that required further analysis and repair.

Back here in Ilha Solteira, this afternoon I will be talking to the PhD research students in Campus III and seeing their research activities. Then this evening, I am giving a seminar to postgraduate students from the Universidade Federal do Mato Grosso do Sul on Limerick and our collaborative research here in Brazil. On Saturday, it is then back to Limerick and a dramatic change in climate – replacing shorts and summer clothing for the Limerick winter clothing.

Lastly, I would like to thank Alexandre, Tércio, Prof. Sakamoto and the staff at UNESP for their organization, financial support, hospitality and interpreter skills which make every visit to Brazil a positive experience to remember.



On arrival - Alexandre and Tércio setting up the equipment



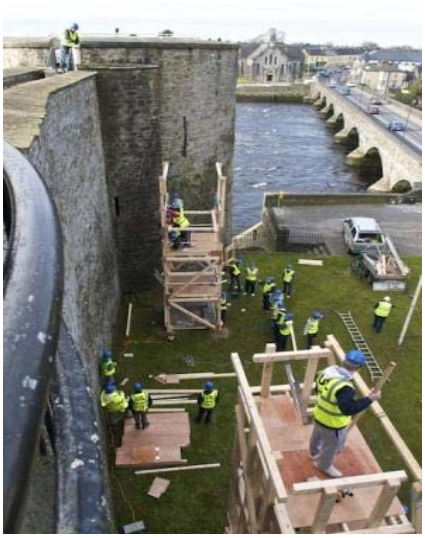
Experiments in the Salinas

Field Trip

Civil Engineering @ University of Limerick Year 2 students were intrigued by folklore and geology of the North Mayo coastline during their recent field trip.

The class learned how the seastack was formed after St Patrick banished the pagon god Cromduff following his pilgrimage to Croagh Patrick the local geology boasts Ireland's oldest Rocks at 1.8 billion years and a visit to the cliffs at Dún Briste provided an excellent context for learning about soil mechanics and the design of foundations.

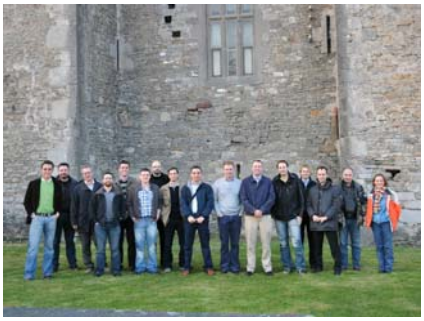
Engineers Week of Wonder 2010



The Faculty of Science and Engineering organised a number of events during the week of the 9th—13th February as part of the Engineering Week of Wonder. Over 125 secondary school students participated in highly interactive, fun filled E-Factor Workshops, including designing CD covers, testing velocity with high speed cameras and testing robotics. Engineers Ireland provided tee-shirts as prizes for best group in each workshop, while the Faculty Office provided prizes of book tokens for overall winners of the quiz.

Also as part of the week, a group of Civil Engineers from UL re-enacted the Siege of Limerick attacking King John's Castle from siege platforms designed and constructed by the 2nd year students as part of their Problem Based Learning Steel and Timber Design Module. Local schoolchildren defended the Castle vigorously and , contrary to the events of 1691, the siege forces were routed and retreated ignominiously. Limerick's honour has been restored at last.

MAE Department Host EU Meeting



The Mechanical and Aeronautical Engineering Department were delighted to host a large EU Framework 7 project meeting at Limerick during 2010. Delegates from major Aerospace companies, including Airbus and EADS, and European research institutes, including DLR and NLR, gathered for the two day event which aimed to enhance the development of next generation carbon fibre composite fuselages for aircraft. The EU project is called MAAXIMUS, the largest EU project in FP7 so far, and is funded at 67M€ with 57 partners. Dr. Conor McCarthy from the MAE department is leading the composites testing research activity in this project and says "*It is wonderful to host high profile industrialists at UL. The partners in the project were very happy to spend two days on our beautiful campus and we all had a great evening at the medieval banquette at Bunratty. However, the partners were not so happy to spend a further seven days at Limerick due to the volcanic ash!*". The meeting was officially opened by the VP of Research, Prof. Brian Fitzgerald, on the 15 of April 2010.

Irish Mathematical Olympiad

An Irish Mathematical Olympiad Team consisting of six secondary students will be travelling to Astana, the capital of Kazakhstan in early July to participate in the 51st International Mathematical Olympiad. In preparation for this event two training camps were held in Limerick, the first in early June in Mary Immaculate College of Education and the second in late June after the Leaving Certificate in UL.. One of those on the team is Kieran Cooney from Charleville CBS who has attended classes in UL for the last two years. Kieran is the third person from his school to participate in the International Mathematical Olympiad. Those involved in the training camps were Jim Leahy, Mark Burke, Eugene Gath and Gordon Lessells (UL) Bernd Kreussler (MICE) along with some from the other Irish Universities.

UL Equality & Diversity Committee Update

Dr. Ita Richardson is the Faculty representative on the University of Limerick Equality and Diversity Committee which is chaired by Prof. Paul McCutcheon. She also sits on the committee's task force on Gender/Martial Status/Family Status/Sexual Orientation. This task force organised the recent talk on Men's Health which was given by Dr. Noel Richardson from IT Carlow's Centre for Men's Health Research & Training. The most recent Dignity and Respect policy is available at www.ul.ie/hr and the committee has been evaluating employee training courses on Dignity and Respect. Results from the recent Policy and Procedures for Workplace Dignity and Respect at the University of Limerick Questionnaire are being compiled.

Mathematicians & Industry Study Group

The 75th European Study Group with Industry – a week-long intensive problem-solving challenge involving industry and academic collaboration organised by Mathematics Application Consortium for Science and Industry' (MACSI) and hosted by University of Limerick was formally opened by the Minister for Enterprise, Trade and Innovation , Batt O' Keeffe T.D. on 28th June. Over the five days, mathematicians and other scientists, were presented with a series of wide-ranging problems from participating industry representatives, and presented their solutions at the end of the week. Companies who submitted a particular challenge to the Study Group were Vistakon, Intel, Rusal Aughinish, Boston Scientific, Pfizer, Carton Bros and National Centre for Biomedical Engineering and Science at NUI Galway.

Annual Chemical Demonstration Workshop

Teachers Anthony Sweeney, Tipperary and Susan Burke, Limerick at the Annual Chemical Demonstration Workshop run by the Department of Chemical & Environmental Sciences at the University of Limerick in June 2010. The event is organised by Dr Peter Childs and Sarah Hayes for Irish Science Teachers and Science Educators and attracts nationwide participants annually.

UL hosts Mathematical Modelling Summer School

UL hosted the 2010 Mathematical Modelling Summer School from 21st – 25th June.

50 students, ranging from 16 – 18 years of age from around the country took part in the residential Summer School organised by MACSI, the Mathematics Applications Consortium for Science and Industry and funded by Science Foundation Ireland.

The summer school offers an insight into the world of mathematical modelling and includes site visits to some of MACSI's industrial partners; RUSAL Aughinish, Vistakon and Analog Devices. Another aspect of the course involved students solving practical problems and exploring the uses of maths to solve real industrial problems.

Laboratory Practicals for Secondary School Pupils

Leaving Cert Biology Students get to Grips with Practical Experiments in the Department of Life Sciences

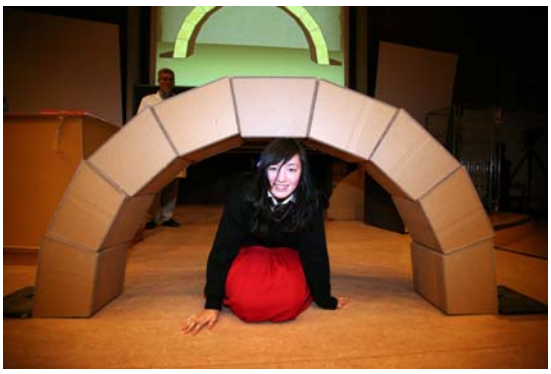
Some 500 Leaving Certificate Biology students from all over Munster were welcomed to the Department of Life Sciences laboratories during January. Faculty and staff provided students with the opportunity to conduct all laboratory practicals set on the Leaving Certificate Biology curriculum.

Students were given the opportunity to carry out and practice all of the experiments on the syllabus including their course work as a lot of secondary school laboratories don't have the facilities to allow this. The departments faculty and technical team as well as post graduate students and final year BSc (Ed) Science students who will be qualified as second level science teachers at the end of this semester, presented in the laboratories and conducted experiments with the students.

"It is a great opportunity for our students to really get to grips with the practical experiments which will be examined in the Leaving Certificate. They are far more likely to understand and remember the steps of each experiment having had the opportunity to actually carry it out practically. The facilities are second to none in UL as is the help the students get from the faculty," said Mary Nolan, Biology Teacher, Scoil Mhuire, Ennistymon, Co Clare. The students were given information on all academic programmes offered by the Faculty of Science and Engineering at UL.

Collapse Scene Investigation Lecture

Civil Engineering @ University of Limerick hosted over 300 primary and secondary school students from Limerick aged 10-14 years who took part in a Collapse Scene Investigation inspired, interactive lecture delivered by Col. Stephen Ressler of West Point Military Academy, USA.



This high-energy event required students to work in teams to investigate the hidden cause of the famous engineering disaster of the incomplete Beauvais Cathedral in Northern France. In the race to build the tallest cathedral of the 13th century, the builders of Saint-Pierre de Beauvais pushed the technology to the limits. In 1284, only twelve years after completion, part of the choir vault collapsed, along with a few flying buttresses.

Using live demonstrations involving large scale models, Col. Ressler traced the history of the Beauvais construction project.

Students from Gael Cholaiste Luimnigh, Milford National School, Ahane National School, St Clement's College and Model National School took part in the investigation. By working in teams the students discussed theories on arch construction and built models to understand what caused the famous arches of the Beauvais Cathedral to fail.

2010 UL Cybercamp

Students and tutors from week four of the camp

The 2010 UL Cybercamp was a great success this year. For four weeks in June, 63 students from 25 schools participated in a 3-day workshop. The camps ran from 9:30 to 4:30 every day. The goal of the camp was to give students the opportunity to learn, use and experience new technology in a fun and engaging way. Students covered Scratch, Digital Music, Arduinos and Sensors, Robotics, Greenfoot and HTML sessions over the three days. Students were awarded certificates, t-shirts and USB keys at the end of each week. This was a great joint effort involving staff from CSIS, the ICT Learning Centre and Lero and lots of fun was had by all involved.

Tyndall Lecture

On Wednesday 27 January 2010, the National Centre for Excellence in Mathematics & Science Teaching & Learning in conjunction with the Institute of Physics hosted a lecture for secondary school students and teachers titled 'Physics in Action'. The lecture was given by Dr. Cathal Flynn, Dublin Institute of Technology.

UL Explore Science & Engineering Summer School 2010

During the month of June 120 young people travelled from throughout Ireland to participate in the **University of Limerick Explore Science & Engineering Summer School 2010**. Students from Portlaoise, Kilkenny, Galway, Cork, Clare, Limerick, Tipperary and other areas took part in this year's interactive action-based programme which provided participants an unique opportunity to explore many exciting aspects of science, engineering and technology. Activities included discovering the physics of light, the magic of chemistry in the making of ice-cream, use of forensic science techniques in solving mysteries, participants got the opportunity to design and build their own space rocket to name a few of the activities covered in the programme. The Summer School gives participants a taste of campus student life while participating in hands-on laboratory experiments in a fun-filled and safe environment

Secondary students participating in electronics and design work-shops during the UL Explore Science and Engineering at UL.

Northside Learning Hub Annual Showcase

The Northside Learning Hub in conjunction with the Shannon Consortium hosted their Annual Showcase in the Millenium Theatre, LIT on 25th May, 2010. The morning included a number of shows for primary schools situated in the northside area of Limerick. Among the shows was a live band, kick boxing displays by the resident club, Science Magic Show, Karate displays and much more including interactive videos produced by the pupils themselves. Limerick Institute of Technology BSc Mechanical Engineering students were also awarded certificates from LIT for their work on a motor mechanic workshop. Susan Bourke, BSc Ed Physics and Chemistry, UL and Katerina Moran BSc Ed Biology and Chemistry, UL were presented with the President's Volunteer Programme Award for their voluntary work on a 'Science is Fun' project by Dr Michael Connelly, Assistant Dean, Academic Affairs.

Leo Kirby, Chemical & Environmental Science, UL presenting the Science Magic Show

Susan Bourke receiving her award from Dr. Michael Connelly

2010 ULAA Alumni Lecture

The CEO of one of the world's largest engineering and construction companies and graduate of UL, Dr. Hugh O'Donnell gave the 2010 ULAA Alumni lecture in April. An Honours Graduate of Mechanical Engineering from 1987, Dr. O'Donnell joined the global Kentz Corporation in 1991 and was named CEO in 2001. Dr. O'Donnell was named the Ernst & Young International Entrepreneur of the Year in 2009 and in 2008 he received the prestigious UL Alumni Award for Outstanding Contribution to Business. The title of his lecture was 'Irish Culture Driving International Business - The Story of Kentz'.

Retirements

Best wishes are extended to the following who retired recently:

David Burns, and Liam Bannon, CSIS
Damian Moore, ECE

Dates for your Diary

Summer Exam Board—10th June, 2010.

S&E Conferring— Tuesday 24th August, 2010

ORIENTATION DAYS—Tuesday 31st August—3rd September, 2010

FIRST SEVEN WEEKS LAUNCH—6th September, 2010, ULCH Atrium.

AUTUMN SEMESTER—6th September, 2010 to 26th November, 2010

OPEN DAYS— Tuesday 12th October– Wednesday 13th October, 2010.

S&E FACULTY BOARDS—Wednesday 27th October, 2010 and Wednesday 1st December, 2010.