Faculty of Science & Engineering

SFI Awards

In the Science Foundation Ireland, (Centres for Science Engineering and Technology) program, UL have achieved significant successes:

Lero – the Irish Software Engineering Research Centre led by UL was reviewed by an international panel and congratulated on its achievements since it was set up in 2005. SFI have awarded Lero over €16m for its second 5 year period 2011-2015. This is 50% more than the first Lero award in 2005 and will be augmented with a contribution of almost €7m from Lero's industry partners.

The CTVR (Centre for Telecommunications Value Research), led by TCD, and whose Deputy Director is Dr Jeff Punch of UL's Stokes Institute, has been awarded SFI funding of over €19m for the period 2011-2015.

In SFI's SRC (Strategic Research Cluster) program, the Solid State Pharmaceutical Cluster passed its mid-term review with flying colours. The SSPC is widely regarded both in Ireland and internationally as an exemplar of best industry-academic research collaboration. Indeed, it was awarded an additional €1m funding over its initial award of €7m in recognition of new work that was viewed as extremely desirable to pursue.

In SFI's PI (Principal Investigator) program, UL had three successes totalling over €3m. Prof Noel O'Dowd , Prof Ake Rasmuson of MSSI, and Dr Conor Ryan of the CSIS Department were awarded PI grants. In Conor's case, he has the extremely enviable record of now having had three successive PI grants – a major testament to the excellence of his research.

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Coolmore Prize

The Coolmore Prize for Best Final Year Project in the Department of Life Sciences was awarded to James McGregor for his project 'The Effect of Yearling Sale Price on Racing Performance.' James is pictured here with Cathal Murphy, Coolmore Stud.

Critchley Prize

Instituted in honour of the late Dr Robert Critchley, Senior Lecturer in Applied Mathematics (1977-2007), this prize is awarded to the student who obtains the highest QCA in first year in Mathematical Sciences or Financial Mathematics. The 2009/10 prize-winner is David Cleere (Mathematical Sciences).

Pictured (L to R) Susan Critchley, Geraldine Critchley, David Cleere, Mark Burke, Head, Dept of Mathematics and Statistics and Jennifer Critchley.

Robocode Competition

The UL entry in the 2011 national Robocode competition, held at Tipperary Institute, came 2nd in the overall competition. Eight institutions had robots in battle and after the first round of bouts, UL held the number 1 slot but were pipped into second place in the finals. This competition is open to 1st year undergraduates nationwide, both UL team members, Daniel Keohan and Ryan Kerswill, are 1st year Multimedia and Computer Games Development (LM110) students.

XNA Challenge Cup 2011

UL entrants in the XNA Challenge Cup 2011 won in the Best Windows 7 game and Best Original Story categories for their unique implementations of the FROGGER game theme. This competition is open to 2nd, 3rd and 4th year undergraduates nationwide, all our winners are 2nd year Multimedia and Computer Games Development (LM110) students

Best Windows 7 Game

Team PondScum, Team Members are: William Cole-Baker, Raymond Kearney and Gerry-Lee Cullen

Best Original Story

Team CrunchGames, Team Members are Max Vizard and James Heslin

2011 BOC Gases Postgraduate Bursary

Treasa Golden, a postgraduate student in the Department of Chemical and Environmental Sciences, was presented with the 2011 BOC Gases Postgraduate Bursary. Her research focuses on the application of nanotechnology to produce novel catalysts for the reduction of trans fatty acids in hydrogenated vegetable oils. This includes an investigation into the morphological and electronic effects of catalysts on trans selectivity in the hydrogenation reaction. Hydrogenated oils are a component of many food products as they increase shelf life and flavour stability but they generally contain large amounts of trans fats which can lead to coronary heart disease.

Pictured L-R: Mr Gerry Donovan, BOC Gases, Ms. Teresa Golden, and Dr. Catherine Adley, Head, Department of Chemical & Environmental Sciences

Irish Ergonomics Chair

Leonard O'Sullivan, Department of Design & Manufacturing Technology, was recently elected Chairman of the Irish Ergonomics Society.

Birkan Can and Berrak Dag, pictured here with their supervisor Dr Cathal Heavey, graduated with a PhD at the Spring 2011 conferring.

5th PALNET Symposium on Peer Assisted Learning

The 5th PALNET Symposium on Peer Assisted Learning was held at Athlone Institute of Technology on the evening of May 18th and on May 19th 2011, under the theme: Peer Assisted Learning - Empowering Students to Become Successful Learners. The symposium was jointly organised by the Learning and Teaching Unit - AIT (Nuala Harding) and the Regional Peer- Supported Learning Centre (PSLC) – UL (Hussain Mahdi). It was attended by more than 78 participants mainly from higher education institutions in Ireland and UK, as well as a number of participants from Zayed University, Dubai – UAE. The symposium programme involved a total of 15 oral presentations and workshops, including 2 keynotes delivered by Ms Becka Currant, Dean of Students - University of Bradford, and Professor Sarah Moore, Associate Vice President Academic -University of Limerick, and a talk by Dr Muiris O'Connor, Policy and Planning – HEA. In addition, the programme included a number of poster presentations. The symposium also witnessed the re-launch and expansion of the PALNET-Ireland network, which was founded in 2004 by three lead institutions: DCU (Dr. Michael Parkinson), TCD (Dr. Tamara O'Connor) and UL (Dr. Hussain Mahdi), following a successful joint funding application to the HEA Targeted Initiatives programme that year. The network aims to facilitate intra and inter-institutional collaborations and support for promoting and developing all forms of peer-assisted learning that contribute to enhancing student active and collaborative learning across higher education in Ireland. More information on the event is available at: www.pslc.ul.ie.

Re-Thinking Technology in Museums 2011: Emerging Experiences

The 3rd edition of the international conference "Re-Thinking Technology in Museums" took place on May 26th and 27th and was hosted by the Interaction Design Centre (Dept. of CSIS) with the collaboration of the Irish Museums Association. The IDC initiated the conference series in 1999 with the goal of bringing together academics and practitioners discussing novel ways of designing the museum experience in light of the presence of interactive technologies. The 2011 event on the theme of "Emerging Experiences" furthered the discussion on novel approaches for understanding people's experiences in museums and galleries, and for designing interactive technologies to support these experiences. Dr. Luigina Ciolfi, Conference Chair, established a partnership with the Irish Museums Association in order to make this event available to museum and heritage professionals in Ireland, thus linking international research and development to local institutions.

A diverse group of speakers including social scientists, museum education and communication experts, curators, exhibition designers, interaction designers and computer scientists from 14 different countries presented a rich programme of papers and demonstrations. Interactive demos were showcased in a special session, "The Innovation Forum", coordinated by the Limerick Chapter of the Interaction Design Association.

The conference papers can be downloaded from: http://www.idc.ul.ie/techmuseums11/

Those who are interested can also follow the conference on Facebook for more information on upcoming publications and related events. http://www.facebook.com/ReThinkingTechnologyMuseum2011

FM2011 Formal Methods Conference

Lero hosted the FM2011 (Formal Methods) Conference in conjunction with the 34th Annual IEEE Software Engineering Workshop (SEW), Communicating Process Architectures (CPA) and COST. The events took place from Monday 20th to Friday 24th of June at the Kemmy Business School. Between the four events Lero hosted 235 delegates from 35 countries. FM2011 was the seventeenth in a series of symposia organized by Formal Methods Europe, The FM2011 Symposium was based around the theme *Formal Methods Come of Age* The goal was highlighting and celebrating advances and maturity in formal methods research, education, and deployment via tool support and industrial best practice, and their role in a variety of industries, domains, and in certification and assurance.

IDATER Online Conference

The 1st IDATER online conference on Graphicacy and Modelling was successfully hosted on the 14th of December 2010 by the Technology Education Research Group at the University of Limerick, in collaboration with the Design Education Research Group in Loughborough University. The event was supported by the Design and Manufacturing Technology (DMT) department at the University of Limerick. The conference aimed to promote discussion on graphicacy and modelling and their role in design and education. The event was well attended at both a national and international level, with external vested parties such as members of the State Examinations Commissions and the Technology Subject Support Service (t4) in Ireland also attending. The keynote speech at the conference was presented by Professor Eddie Norman of Loughborough University (seen below presenting his work on the design of polymer guitars).

The conference established the foundations for key areas of research pertaining to graphicacy and modelling, providing a strong basis for future work. Research emerging from the conference and developed upon since the event will form the basis of a timely and essential book which has since been compiled and is due for publication in early July 2011. The book addresses the apparent dearth in the area of research concerning graphicacy and modelling and their relationship with design. The evident symbiosis between graphicacy proficiency and strong design solutions is explored in the book, along with interrelated influential variables such as sketching ability, visual communication skills, pedagogy, observational drawing, epistemic values, and parametric modelling techniques. The book also importantly, provides context for the reader, highlighting the historical influences on graphical education through a chronological breakdown of significant developments in the area since the formation of a formal second level education system. The book is also significant in that it represent a substantial collaborative initiative across two international third level institutions and research groups. The book is co-edited by Dr. Niall Seery of the Design and Manufacturing Technology department and the Technology Education Research Group (TERG) here at UL, with Professor Eddie Norman of Loughborough University. Dr. Seery's work in the area of graphical education has earned international prominence and resulted in the invitation to host the IDATER conference in UL

UN Economic Commission for Africa Address

In recognition of his work in spearheading attempts to bridge the global "digital divide", one of Ireland's leading researchers in software localisation was invited to address the United Nations Economic and Social Council. Mr Reinhard Schäler of the Science Foundation Ireland-funded Centre for Next Generation Localisation (CNGL) at University of Limerick spoke at the Second Meeting of the Committee on Development Information, Science & Technology (CODIST-II) of the UN's Economic Commission for Africa, which took place from 2-5 May in Addis Ababa, Ethiopia. Mr Schäler addressed senior officials and experts from African member states on the theme "Localisation as an Industrial Strategy".

CODIST-II is bringing together more than 1,000 member state delegates and other experts to explore the extent to which African countries have harnessed innovation to enhance industrial development on the continent. Delegates are reviewing challenges pertaining to the ICT, Science, Innovation, Geo-Information, and Libraries and Information Services sectors, and will advise the UN's Economic Commission for Africa (ECA) in these areas.

Explaining how localisation has the potential to contribute to the economic and social progress of developing countries, Mr Schäler says, "Localisation – the process of adapting digital products, services and content to the needs of global users – can play an important role in helping to bridge the global digital divide. Localisation enables companies to launch their products in markets for which their original product would not be suitable. For this reason, it is a value-adding multiplier of the software industry. However, the true potential of localisation goes beyond opening up business opportunities across the globe. Many communities on the planet find themselves on the wrong side of the so-called "digital divide", with vital hygiene, health, food, educational and other information not available in their local languages. Localisation technologies and processes have the potential to make a considerable contribution to bridging this divide."

ICMR Launch

Dr Cathal Heavey of the Enterprise Research Centre (ERC) is collaborating with the Enterprise Processing Research Centre (EPRC) of Dublin City University on two Industry-led projects with the Irish Centre for Manufacturing Research (ICMR) (www.icmr.ie), which was launched on 20th May. The research involves two strands: sustainable modelling and management of the variability. The companies involved in these strands are Seagate, Intel, Analog Devices, De Puy, Boston Scientific and Bombardier. The Sustainable Model Based Decision Support Systems strand introduces a means for rapid modelling manufacturing systems for analysis prior to implementation of decisions. Such models improve responsiveness to rapidly changing market environment. The In-line Variability Management strand aims to mitigate the impact of system structure and operational decisions on the variability of the manufacturing performance. This is performed by establishing adaptive models of the root causes and quantifying their impact factory-wide in a timely fashion to achieve manufacturing goals. The ICMR has recently been granted a €5 million budget to apply innovation to manufacturing.

Richard Burton Minister for Jobs, Enterprise and Innovation at the Launch of the ICMR

82ND EUROPEAN STUDY GROUP WITH INDUSTRY

The 82nd European Study Group with Industry – a week-long intensive problem-solving challenge involving industry and academic collaboration organised by 'Mathematics Applications Consortium for Science and Industry' (MACSI) and hosted by University of Limerick was formally opened by Dr Thibaut Lery, Science Officer at the European Science Foundation on Monday 27th June 2011. Speaking at the opening Dr Lery said, "Mathematics is key to innovation, a catalyst for discoveries, a home for diversity and collaboration".

Professor Brian Fitzgerald, Vice President Research, Dr Martina O'Sullivan, MACSI, Dr Thibaut Lery, European Science Foundation, Dr Rory Jordan, Science Foundation Ireland.

Study Groups involve six or seven industrialists presenting problems to an audience of academics: mostly mathematicians but other scientists are welcome to participate. The participants work together to formulate the problems as mathematical questions (nearly always the hardest part) and to analyse the resulting equations. At the end of the study group presentations summarising results are given and, afterwards, written reports are sent to participants. Submitted problems can be anything---a now legendary study group problem investigated optimal conditions for penguin egg incubation---and, crucially, do not have to be formulated in mathematical language. The success of the study group format is a testament to the power and range of applicability of mathematics, but also speaks volumes about the willingness of academic mathematicians to engage in meaningful dialogue with industry.

Some of the problems worked on this year involved: roll coating technology with DSM, efficient usage of O-negative blood with the Mid-Western Regional Hospital and demand side management with Crystal Energy. For academics the study groups provide an excellent opportunity to work on industrial mathematics problems outside of their usual areas of research with researchers from postgraduates to professors. The highly interactive nature of these events allows participants to exchange ideas and form long lasting collaborative links with other academics and companies to a much greater extent than with a regular conference. For industry study groups offer the opportunity of calling on the combined and varied expertise of leading specialists in industrial mathematics to make significant progress on problems in a short space and time. They kick start the research process and provide answers quickly at minimal cost. For further details see: http://www.macsi.ul.ie/esgi82/

Guest Speakers

MSSI

MSSI hosted two Distinguished Lecturers. Professor Thomas Bein, University of Munich delivered two lectures entitled *'Mesoporous Titania Nanostructures for Hybrid Solar Cells'* and *'Dynamics of Guest Molecules in Nanoscale Channel Systems'* on 20 and 21 January 2011 respectively.

Professor Naír Rodríguez-Hornedo, University of Michigan delivered two lectures entitled *'Cocrystal Solubility and Thermodynamic Stability: Pharmaceutical Implications'* and *'Engineering Cocrystal Thermodynamic Stability and Eutectic Points via Micellar Solubilization and Ionization'* on 28 and 29 June 2011 respectively.

LRC

As part of the LRC's Engagement with the Localisation Industry, the LRC organised a number of talks by representatives from different companies as follows:

Xlated by Ms. Valeria Varano, Project Manager and Giuseppe Nuzzolese, General Manager

Engineering and Quality at McAfee Ireland by Gary Harte, McAfee

The Future of Localisation Technology by Enda McDonnell, Director of Alchemy Software Development

MT - where it currently fits in Localisation by Fred Hollowood, Director Research & Deployment at Symantec

SAUL

Leading landscape architects Lorenz Dexler, Topotek1, Berlin and Olivier Phillipe, Agence TER, Paris gave lectures to SAUL students, faculty and the interested public in March & April as part of SAUL/AAI Landscape Lecture series.

Architect Dirk Dension gave a public lecture in May entitled "working and teaching in the modernist legacy". Dirk practices in Chicago and teaches at IIT

One Island Project

The One Island project is a project by The Intelligence Unit (IU) at The School of Architecture at The University of Limerick that aims to adjust the way people imagine and visualize the physical form of society created by those who live on it through defining the living space of the island of Ireland. Ireland is a compact island. Island Life, and the Living Space we've created on it is a basic conditioning aspect of this society. Research on the Island, about it's living space, is about creating new ways of understanding what we have done. The kind of living space we have created of the island is unique; we know very little about it, this island and what exactly we've done to it

Fundamentally this research project lifts all of the boundaries that define the extent of disciplinary / governance / infrastructure remit, and looks at 'Living Space' the way people experience it – as one continuous place. Lifting the boundaries allowed the region to be analysed at a variety of levels simultaneously; transportation (movement), energy, education, land use, nature, environment. In this synthetic way of looking at how the physical environment interacts with itself, and society in general, some new ideas will develop.

The IU will create new visual data describing Ireland's Living Space. Research will centre around two counties as pilot sites, Mayo and Fingal. Additional data from the surrounding counties will also be used. The chosen sites have conditions which vary greatly, and share some similarities. Fingal County contains Ireland's major airport, while Mayo County is the site of a new and highly controversial natural gas pipeline.

IU Project Leaders: Merritt Bucholz, Peter Carroll IU Collaborators: Eleanor Moloney, Eugene O'Callaghan, Cornelia Foley, Danny Holland, Eamonn Kelly, David Williams, Jim Murphy, John Byrne

Guide to Good Practice

In 2009 The National Standards Authority of Ireland (NSAI: www.nsai.ie) published its first standard on innovation and product development – Guide to Good Practice in Innovation and Product Development Processes. The guide was developed by NSAI, leading innovators, academics and trade and industry experts such as Enterprise Ireland, TCD, UCD, NUIM, Fujitsu, Engineers Ireland and Schneider Electric. The document outlines an innovation management process and the minimum requirements an organization needs for successful innovation. The guide provides a step by step guide on investigating and developing opportunities from ideas to production and market launch. Two years on the NSAI committee that developed the guide are now working on updating and re-publishing it. Dr Ann Ledwith has recently been appointed to chair this committee.

http://www.nsai.ie/Our-Services/Standardization/About-Standards/NSAI-SWiFT/NWA-1.aspx

Structured PhD Programmes

MSSI was awarded €2.5m HEA PRTLI 5 Strand 2 funding for its participation in three four-year Structured PhD Programmes which will commence in September 2011.

The programme in Biomedical Engineering and Regenerative Medicine will be delivered by a core partnership of institutions: National University of Ireland Galway, University of Limerick (MSSI) and University College Cork, linked with a wider consortium of institutions nationally and internationally, including Queen's University Belfast, Georgia Institute of Technology, The Mayo Clinic, USA and the Irish Medical Devices Association (IMDA). This programme will provide a combination of world-class research and focused clinical and industrial interaction, the latter facilitated by the direct involvement of IMDA with its membership of over 100 medical technology companies in Ireland.

The programme in Nanoscience and Nanotechnologies will be delivered by the INSPIRE consortium: University of Limerick (MSSI), Cork Institute of Technology, Dublin City University, Dublin Institute of Technology, National University of Ireland Galway and University College Cork. INSPIRE is the Irish national consortium in nanoscience and nanotechnology, providing a shared research infrastructure and national curriculum.

The programme in Earth and Natural Sciences is offered by University of Limerick (MSSI), University College Dublin, Trinity College Dublin and National University of Ireland Galway. This PhD programme is innovation-focused and provides students with a set of disciplinary skills and multidisciplinary knowledge focused at the interface of energy and environment.

Research Fellow

Marie Travers has been accepted as a research fellow at BioInnovate Ireland following the completion her M.Sc. in Software Engineering at the University of Limerick. BioInnovate Ireland Fellowships are Fellowships based on medical device innovation and product design. The programme is a national, inter-institutional initiative and is modelled on the prestigious and internation-ally-recognized Biodesign programme offered at Stanford University, Palo Alto, California.

Marie completed her M.Sc. dissertation under the supervision of Dr. Jim Buckley (Lero/CSIS) on the topic of 'Interface Identification during Component Recovery' where she designed, developed and evaluated a lightweight prototype tool (The MNC tool) that facilitated the partitioning of interfaces based on mnemonic cues in the method names of recovered components.

Elite Force Teams up with Civil Engineering at UL

An elite force of engineering faculty and cadets from the U.S. Military Academy at West Point, USA came to Limerick to share with hundreds of primary school students the excitement and joy that engineering and science has to offer.

The University of Limerick hosted Colonel Stephen Ressler, Professor of Civil & Mechanical Engineering at the US Military Academy, along with two further West Point Engineering Faculty members and seven military cadets. The party visited seven schools around Limerick over a two week period presenting a high energy extravaganza to show how civil engineers use maths and science to design the structures that are part of our everyday lives.

The students were involved in in-class activities that demonstrate some basic science and maths concepts that engineers use in practice. The children also used interactive computer programmes to design structures and this is followed by building and testing their designs in the playground.

Schools participating in the ten day extravaganza included; Corpus Christi, Our Lady of Lourdes, Our Lady Queen of Peace, Ahane NS, Model School, Milford NS and Gaelcholáiste Luimnigh - the only secondary school involved and who postponed their summer holidays by one day in order to be part of this exciting fair!

"This project provides us with a wonderful opportunity to contribute to the youth of Ireland through engineering outreach," says Colonel Stephen Ressler, Professor of Civil Engineering and head of the West Point team. "But I must also emphasize that the youth of Ireland are contributing wonderfully to the development of our seven cadets. This is a fine learning experience for all of us."

Photographic videos from the various events can be found on the civil engineering blog www.ul.ie/civileng

Photo caption - 5th class children from the Model School apply the "law of the lever" to cross their bridge.

Computer & Video Game Localisation Summer School

The 2011 LRC Internationalisation and Localisation Summer School took place at the University of Limerick from 30 May to 02 June 2011. Computer and Video Game localisation was the theme of the event and, over the four days, numerous industry experts contributed their time and expertise to ensure that the Summer School was a great success.

This special event, supported by the Centre for Next Generation Localisation (CNGL), provided 38 eager participants with a unique opportunity to experience a different side of the localisation industry and gain insight into one of the most exciting and fastest growing areas of the localisation industry: games localisation.

Representatives from Big Fish Games, Enzyme Testing Labs, Guerilla Translations, Keywords International, Language Automation Inc., Microsoft Games Studios, Mi'pu'mi games and OnLegends gave talks and workshops that were both interesting and engaging.

These speakers gave participants an insider view of the processes behind the scenes of the game industry. They also demonstrated how the different elements of the localisation process are carried out at some of the most innovative companies in the industry.

The LRC & CNGL would like to thank Kilgray Translation Technologies & PopCap Games for their support of the Summer School

Formula 1 for Schools Competition

The Department of Design and Manufacturing Technology (DMT) and the B.Tech. (Ed) in M&ET programme hosted this year's regional final of the F1 in Schools competition on 26 February. The event involved 15 Schools from all over the south and west of the country with 22 Teams with 124 people participating. F1 in Schools is a multi-disciplinary challenge in which teams of students aged 9 to 19 deploy CAD/CAM software to collaborate, design, analyse, manufacture, test, and then race miniature gas powered balsa wood F1 cars. Student teams compete against each other in a National Championship to determine the best-engineered and fastest car in Ireland. The event is sponsored by F1 teams such as Williams and Honda and worldwide the competition is run every year in 30 countries and involves 9 Million students.

Its main objective is to help change perceptions of engineering, science and technology by creating a fun and exciting learning environment for young people to develop an informed view about careers in engineering, Formula One, science, marketing and technology. Not only do the teams need to design and race their cars, they also need to form a racing team that mimics the functions of a real life F1 team. They come up with a corporate image, design team clothing and graphics, get sponsorship from local businesses. As regards the car itself, the body is designed using 3D solid modelling CAD, wind tunnel tested using simulation software and manufactured. using CNC equipment either in the school or in a college or University. Team members are appointed roles such as engineering manager, marketing manager, designer etc.

On the day, in addition to racing their CO2 powered cars, the teams made multimedia presentations to panels of judges outlining their work as a team. The cars are scrutinised by a panel of judges on the day. D+MT were delighted to be able to organise the event in conjunction with the Faculty of Science and Engineering and look forward to hosting it again in future. In many ways it is a counterpart of engineering as practiced in Irish industry today. For more information see the following web sites: http://www.f1inschools.co.uk/page--index.html and http://www.f1inschools.ie/public/index.html

DESIGNed11

'DESIGNed', the annual Product Design and Technology showcase held in May, once again exhibited the innovative product designs of the PD+T students. This year's exhibition presented the work of 16 students with ideas ranging from a *universal swimming pool access device* to a *redesigned hurling helmet.* High quality representational models and large format graphic presentations demonstrated the products and their innovative concepts and features. The exhibition was opened by the President of UL, Professor Don Barry.

Three awards were presented on the night; Denis O'Keefe of Logitech presented The Logitech Designer of the year prize to Kevin O'Sullivan for his product 'Encore[tm]' an innovative new heart valve delivery system which has also gained him a co-patent. The second prize was awarded to Cathy O'Neill for her practical and innovative camping shower, 'Clean Camping'. This year the ProCAD 1st Year Designer of the Year award was presented to Jamie Wade by Cormac Lyons of ProCAD.

The showcase event also marked the official opening, by the President Don Barry, of the Product Design and Technology studio space. The new studios are located in the lower ground floor of the foundation building and provide the students with a purpose built product design facility.

Kevin O'Sullivan with President Don Barry

UL SCIENCE & ENGEERING SUMMER CAMP 27th—30th June, 2011

Over 100 secondary school students from all over Ireland recently took part in the University of Limerick "Science & Engineering Summer Camp". The camp is designed for students currently studying their Junior Certificate, Transition Year or Fifth Year and this year's theme was 'Energy'. Professor Kieran Hodnett, Dean of the Faculty of Science & Engineering, UL said; "Our aim, in offering the Science & Engineering Summer Camp, is to provide students with experience of different disciplinary areas such as chemistry, physics, biology, electronics and engineering design. This allows them to base their decisions on their future careers and course of study on very real and personal experience."

The Science & Engineering Summer Camp 'experience' offers participants the opportunity to work in state-of-the-art laboratories and engage in a fully interactive, action-packed programme giving them invaluable insights into exciting areas and explore future career opportunities. Students explored elements of science and engineering such as chemistry, physics, biology, materials and electronics. John Bird, Faculty of Science & Engineering and event organiser said; "This year's Summer Camp involves a number of different disciplines and a connecting theme of Energy was chosen to identify various energy needs and how these can be approached in interactive laboratory sessions where secondary school students gain 'hands on' practical experience."

SSPC Summer School

In June, the Solid State Pharmaceutical Cluster hosted its inaugural two-day Summer School in Pharmaceutical Crystallisation. The School, which was comprised of lectures by academic and industrial speakers as well as workshops, focussed on fundamental topics relating to the crystallisation of pharmaceutical compounds, in particular particle engineering, process crystallisation and API/formulation interface.

Textiles that Kill MRSA

In March, the EU funded BioElectricSurface Project which is coordinated by Dr Tofail Syed, MSSI, announced the development of a unique way of producing textiles that kill the superbug MRSA (Methicillin Resistant Staphylococcus Aureus). The BioElectricSurface Research Team has used nanomaterials on textiles used in hospital drapes, bed linens and upholstery. Nanomaterials, which are a thousand times smaller than a human hair, are known to possess extra-ordinary properties that the team has harnessed to develop this technology to fight MRSA.

IComp Consultative Meeting

In mid-May 2011, the Irish Centre for Composites Research (IComp), which is an EI and IDA Competence Centre initiative, hosted a consultative meeting in Portlaoise between the industrial members of IComp and academics from across Ireland. The IComp Director and Technology Leader, Dr Terry McGrail, organized the event in order to establish an all-Ireland strategy to ensure that Government support for IComp is used to the maximum benefit of Irish industry working in partnership with Academia. The meeting was successful in establishing relationships between all parties involved with IComp, identifying skills, expertise and equipment in academic institutions across Ireland relevant to composites and agreeing on the main topics of industrial research for IComp core funding.

Mathematical Modelling Summer School

UL hosted the 2011 Mathematical Modelling Summer School from 20th – 24th 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.

Mathematical modelling is the science of developing models of processes of scientific, engineering, economic or industrial interest. These models can then be used to identify the key factors in the process or to suggest ways in which the process can be controlled or improved.

The summer school offers an insight into the world of mathematical modelling. The students take part in solving practical problems and explore the uses of maths to solve real industrial problems. Summer School organiser, Dr Martina O'Sullivan of MACSI said; "Mathematical modelling is key to the development of a smart economy in Ireland. It is hard to think of any technology in which mathematics is not in some way inextricably involved. Weather prediction, climate change, flood prevention, electricity, water supply, sewage treatment, roads, buildings, airline scheduling, supermarket restocking, they all involve mathematics at some fundamental level."

This year's Summer School included seminars on financial modelling and trading complemented with a visit to UL's virtual trading floor. Presentations on problem solving and applications of maths ranging from art to aviation were also an integral part of the course. Dr Jean Charpin, Research Fellow at MACSI explained the importance of mathematics in everyday life; 'Mathematics does not reduce to solving a set of complex equations, it interacts with other subjects such as physics, biology, computing, engineering, art and many more. During the 'mathematics in the real world' workshop, students get the opportunity to apply the mathematics they know to problems they are familiar with. It emphasises the relevance of the subject in everyday life'.

Melanie Schwab and Maria Jacob

Neasa Ni Bhriain inside a giant bubble
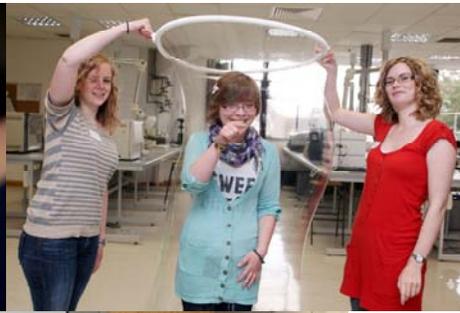
Summer School 2011 Group

Science & Engineering Flexible Learning

Springboard

UL was recently awarded 100 places under the SpringBoard initiative, a programme funded by the Department of Education and Science to provide free 3rd level education to people who have been unemployed for more than 6 months. Ninety of these places are on courses offered by the Faculty of Science + Engineering, with 50 places on the Level 8 Certificate in Science + Engineering. This course was developed by Dr Ann Ledwith and the Science + Engineering Flexible Learning Committee. It offers students the choice of a core discipline from 15 different science and engineering options in areas such as Environmental Management, Mobile Networks & Security and Computer Engineering. It is a 1-year part-time programme. Each semester students take 3 modules from their core discipline and one elective module, during the summer semester they have the choice of an innovation & entrepreneurship module or an industry based project. The course is aimed at people with Level 7 or 8 qualifications who wish to reskill in order to gain employment. An information evening on 29th June was well attended and to date there have been more than 75 applications for the programme

RED Programme

The RED Programme (Re-Employment & skills Development) was a UL accredited six month training course (January - June 2011). Originally aimed at those made redundant by DELL and associated supplier companies (Banta, Sercom, etc), this programme was a huge success helping to secure employment for 70% of the participants.

Devised by the Enterprise Research Centre, the Programme received full support from the University of Limerick with both Kieran Hodnett (Dean of the Faculty of Science & Engineering) and Donal Dineen (Dean of the Kemmy Business School) lending their full support; providing staff and all necessary resources.

Participants received a Level 6 Certificate in Technical, Industry & Employment Skills. Funded by the EGF (European Globalisation Fund), all forty participants also followed a common stream which aimed to develop a set of TIES (Technical, Industrial & Employment Skills). A key part of the programme was the industrial placement phase. Participants joined local enterprises for eight weeks. The recent End of Programme event was attended by VIPs including Maria Byrne, Lord Mayor of Limerick, and Kieran O'Donnell TD. The popularity of the Programme has created much interest from local industry who are seeking a mechanism to access quality employees, while unemployed professionals have a means to return to the workforce and begin a new career. RED V2 will begin in September 2011 and is funded jointly under Skillnets and Springboard

Attending the End of Programme Event were L-R

Michael Hennessy, UL, Eamonn Murphy, UL, Ann Ledwith, UL,
Lord Mayor Marie Byrne, Kieran O'Donnell TD and Ronan O'Boyle, UL

Cybercamp 2011

The University of Limerick recently hosted a series of 3 day summer camps, UL Cybercamp 2011. The aim of the Cybercamp is to give 2nd level students the opportunity to learn, use and experience new technology in a fun and engaging way. Over the three weeks in June 50 students from 24 schools around the country took part in this year's camp. During each camp, students worked in teams to build their own games, animations or music projects, construct and program robots, build an FM transmitter for audio and solve problems. ICT Learning Centre manager, Clem O'Donnell said; "By introducing students to a broad range of introductory software and electronic subjects in an engaging way at this stage of their education, our hope is that they leave Cybercamp better informed about which areas of this dynamic growth sector they may wish to study in the future".

Following on from the success of the first such camp last year, this was again a great joint effort involving staff from CSIS, ECE, the ICT Learning Centre and Lero. The University of Limerick is grateful to the Higher Education Authority for supporting the UL Cybercamp 2011

Students & tutors from week 1 of UL Cybercamp .

Students & tutors from week 2 of UL Cybercamp

Final Year Project Showcase

The B.Tech (Ed) Programme Management Committee and the Department of Design and Manufacturing Technology held a display of Final Year Project work from the B.Tech (Ed) Technology teacher education programmes 28th April. There were over one hundred final year projects covering a wide range of topics from robotics to guitar making. The event was attended by a large number of people from the UL campus as well as personnel from the Department Education and Skills. We were delighted to have Liam Lee present as a special guest. Liam retired over twenty years ago after a long career in Technology Teacher education. He was one of the original architects of the programmes whose work was on display.

Stephen Dunne built a full featured CNC milling machine / router – supervisor Dr Seamus Gordon
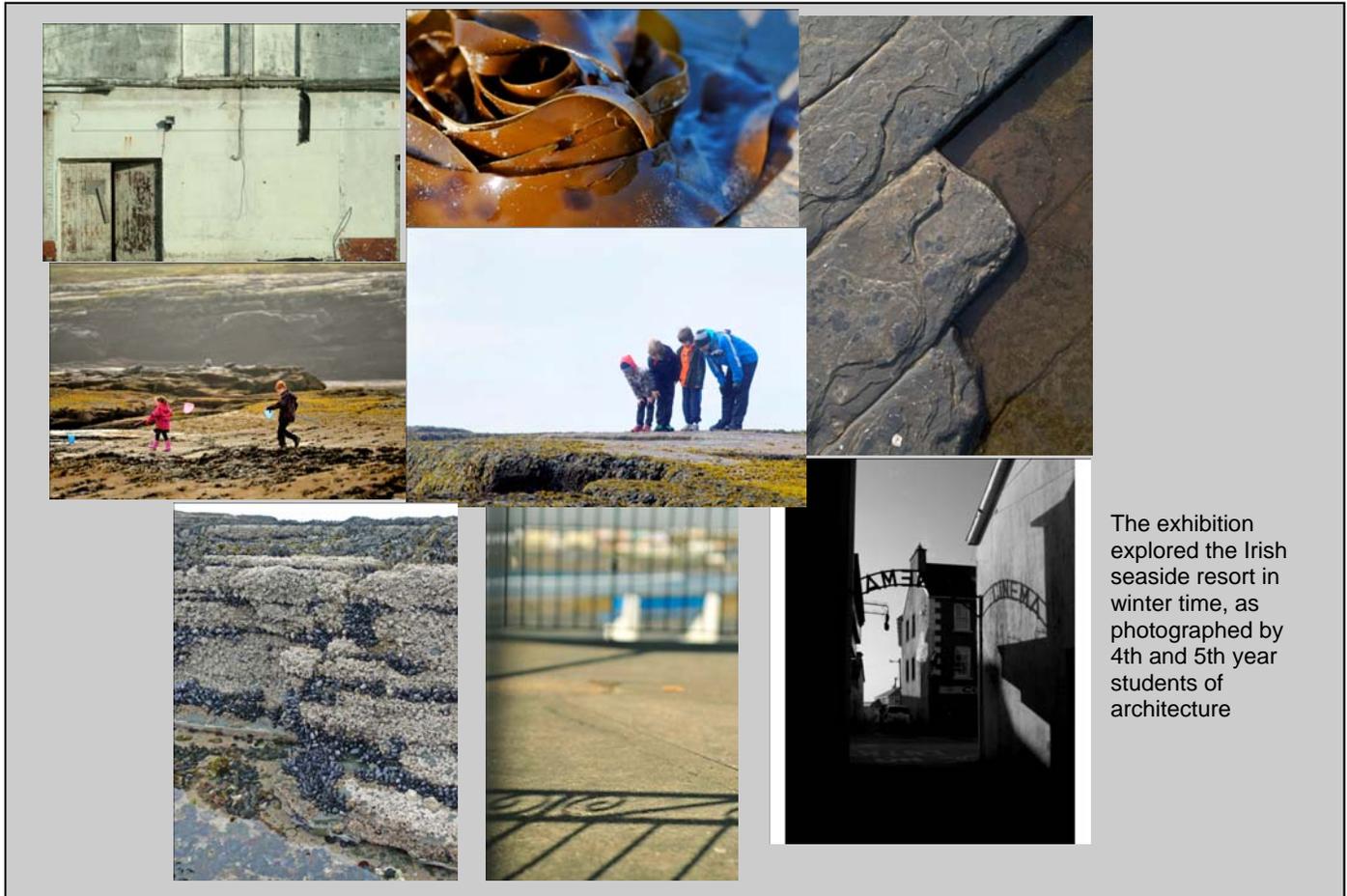
Mark Barrett is pictured along with his remote controlled crawler robot – supervisor Dr Niall Seery

David Kinnane with his self designed and made Guitar - supervisor – Mr Trevor Hickey From Left to right: David Kinane, Patrick Cronin, David Bowen (front) and Daniel Dennehy

'Cois Farraige' Photography Exhibition

The exhibition explored the Irish seaside resort in winter time, as photographed by 4th and 5th year students of architecture

Condolences

The Faculty would like to extend its condolences to the following:

Prof Stephen O'Brien, Dept Mathematics & Statistics & MACSI, on the death of his mother, Joan O'Brien.

Dr. Edmond Walsh, Stokes Institute, Dr. Pat Walsh, Dept CEMS and Dr. Vanessa Egan, Dept MABE on the death of their mother and mother-in-law, Breda Walsh.

Dr. Gabriel Leen, Dept ECE, on the death of his mother, Philomena Leen.

Dr. Erzeng Xue, Dept CES, on the death of his father.

Mr. Tommy Byrnes, Dept DMT, on the death of his son David.

Prof. Jeff Punch, Dept MABE & Stokes Institute, on the death of his father Michael J Punch.

Prof Kieran Hodnett, Dean Faculty of Science & Engineering on the death of his first cousin Prof Frank Hodnett, formerly Dept M&S.

Dates for your Diary

Summer Conferrings	-	22 - 26 August 2011
Autumn Semester	-	05 Sept. - 02 Dec, 2011
S&E Faculty Boards:	-	5 October 2011
		23 November 2011
		11 January , 2012
		25 April 2012
Graduate Experience Evenings:	-	20 October 2011
		03 November 2011
		17 November 2011
		1 December 2011
Design Week	-	31st Oct. - 6th Nov. 2011
Science Week	-	13th - 20th Nov. 2011