

First in Europe, First in Ireland, First in Innovation

International and National Successes of Professionally Accredited Engineering Degree Courses at Cork Institute of Technology



■ European Student Innovator of the Year 2012: Kieran O'Callaghan, Vision RE™, CIT Mechanical Engineering, First Place and Outright Winner presented by Ms. Vera Egreja Barracho of EBN and Mr. Gilbert Azoulay of AEF. European Student Innovation Finals - Innovact 2012 Reims France. First Irish Winner of European Student Innovator of the Year. Pic: Guillaume Gellert



■ Vision RE™ Multidisciplinary Student Team of Cork Institute of Technology. Etaoin Ni hAilpin Kieran O'Callaghan Norma Downing "Terrain / Obstacle Detection System for the Visually Impaired". Enterprise Ireland / Invest Northern Ireland Cruickshank Intellectual Property Attorneys Most Technologically Innovative Award Winner - Student Enterprise Awards.

THE remarkable success of the Honours Level 8 Bachelor of Engineering Degrees in Engineering offered at Cork Institute of Technology has been confirmed not just by the highly coveted Engineers Ireland professional accreditation and re-accreditation of these courses in 2012, but also by further remarkable International and National student and graduate achievements throughout the year.

This includes European Student Innovator of the Year 2012 First Place and Outright Winner, Engineers Ireland Student Innovator of the Year 2012 National Award, National Council for the Blind of Ireland Grand Prize 2012, GradIreland 2012 Graduate Employee of the Year, Enterprise Ireland / Invest Northern Ireland Academic Innovation Award 2012 and Abbott Ireland Intern of the Year 2012.

FIRST PLACE AND OUTRIGHT WINNER

It was announced on Wednesday 28th March 2012 before a packed auditorium at the European Innovation Finals Innovact 2012 Reims, France, that First Place and Outright Winner of European Student Innovator of the Year 2012, from hundreds of international entries and 42 shortlisted international finalists from 28 European countries, is Kieran O'Callaghan of Cork Institute of Technology. This is the first time that the accolade of First Place Laureate in European Innovation has been won outright by an Irish student:

- First Place European Laureate of Innovation 2012 Kieran O'Callaghan VisionRE™, Cork Institute of Technology Ireland - "Real Time Interactive Obstacle Detection and Navigation Aid for the Visually Impaired"

- Second Place Thibaud Arnault et al WebShell - University of Epita - France - "A New Computing Language to allow Developers to make Web and Mobile Applications in 10 mins instead of 10 days"

- Third Place Modeo Salvatore et al MRS - Material Recovery University of Salerno Italy - "Electromechanical System to Select and Salvage the Waste of the Empty Room (Thermal Evaporation) to maintain Evaporation".

SUSTAINED INTERNATIONAL ACHIEVEMENT

The 2012 successes follow on from a period of sustained International achievement in Engineering Innovation, Design & Entrepreneurship including:

- One European Laureate of Innovation First Place Award – European Student Innovator of the Year 2012 - European Student Innovation Finals - Innovact Reims France (2012)
- One European Science Engineering and Technology Best European Mechanical Engineering Student First Place Babcock Award - SET Finals London UK (2011)
- One European Laureate of Innovation Third Place Award – European Student Innovation Finals - Innovact Reims (2010)
- Two Gold Medals Undergraduate Awards of Ireland and Northern Ireland Engineering/ Mechanical Sciences (2011, 2010)
- Seven First Places and Six Runner Up Finalists in the Institution of Mechanical Engineers Best Medical Engineering and Design and Development of a Biomedical Device Competitions, London (2011, 2010, 2008, 2007, 2006, 2005)
- One Global Student Entrepreneur Finalist Award sponsored by the Entrepreneurs' Organisation in conjunction with Mercedes-Benz Financial at the GSEA Finals in Kansas City, Missouri, USA (2009)
- One SOFE Paris Second Place Award - Institution of Mechanical Engineers (2009)
- One First and One Second Place in the ISEA International Sports Engineering Competition, London
- Two Queen's Silver Jubilee awards for Best Mechanical Engineering Degree Project in Ireland and Britain
- One Genius 2000 Award for Best New Invention at the Nuremburg Inventors' Fair
- Two Society of Manufacturing Engineering Outstanding Young Engineer Worldwide Awards
- Three First Places for Best Published and Presented Paper at the International Manufacturing Conference.

OTHER RECENT NATIONAL STUDENT SUCCESSES INCLUDE:

- One GradIreland Graduate Employee of the Year First Place Award Mansion House Dublin (2012)
- One NCBI Inclusive Technology Showcase Grand Prize Wood Quay Dublin (2012)
- Nine Engineers Ireland Innovative Engineer of the Year Awards sponsored by Siemens (2012, 2011, 2009, 2008, 2007, 2006, 2005, 2004, 2003)
- Two MEETA Asset Management and Maintenance National Awards (2011, 2006)
- Three Abbott Ireland Intern of the Year Awards (2012, 2011, 2009)
- Two Enterprise Ireland / Invest Northern Ireland Academic Innovation Awards (2012, 2009)
- One Engineers Ireland Excellence Awards - Inaugural "Best in Class" Engineering Education Award (2011)
- One Engineers Ireland Excellence Awards - ESB Award for Outstanding Contribution to



■ Enterprise Ireland / Invest Northern Ireland Academic Innovation Award Winner 2012. Senior Lecturer Sean F. O'Leary of Cork Institute of Technology with Ms. Gillian Slattery of Enterprise Ireland and Mr. Frankie McCourt, Invest Northern Ireland. Think Outside The Box Finals Dublin.



■ National Council for the Blind of Ireland Grand Prize 2012 presented to CIT Mechanical Engineering Student Kieran O'Callaghan by Minister Pat Rabbitte



■ Enterprise Ireland / Invest Northern Ireland Student Ireland Student Finalist Award Winners 2012. CIT Multidisciplinary Group Wheelchair Enablement Device PyraAid™ represented by John Roberts, Alan O'Reilly, Laura Hannon, Sandra Hayes, Siobhan Hickey, Think Outside The Box Finals Dublin 2012



■ Enterprise Ireland / Invest Northern Ireland Student Finalist Award Winners 2012. CIT Multidisciplinary Group Muscle Stress Indicator MSI represented by Rebecca Lyall, Colm Keane, Declan Cotter, Richard O Sullivan, Sean Leahy with Mr. Tom Hayes, Head of Micro Enterprises and Small Business, Enterprise Ireland, at the Think Outside The Box Finals Dublin



■ CIT Mechanical Engineering Graduate Connor Barry (Abbott) pictured with Dr David Foster, GradIreland, wins Graduate Employee of the Year 2012 at the GradIreland Awards, Mansion House, Dublin



■ Engineers Ireland Student Innovator of the Year 2012 National Award Winner. CIT Mechanical Engineering Student Martin Evans "Design and Development of an Advanced Scrum Machine in conjunction with Munster Rugby"

Engineering (2011)

- One Engineers Ireland Excellence Awards - Chartered Engineer of the Year (2011)
- Three Cruickshank Most Technologically Innovative Project First Place €7,500 Award (2009, 2008, 2007)
- One Inaugural Enterprise Ireland / Invest Northern Ireland Young Entrepreneur of the Year Solving Problems for Industry €7,500 Award (2009)
- Six Enterprise Ireland / Invest Northern

Ireland Award of Merit Awards (2012, 2010, 2009, 2008, 2007)

- Enterprise Ireland / Invest Northern Ireland Young Entrepreneur of the Year First Place €10,000 Award
- Three Enterprise Ireland I.Mech.E Speak Out for Engineering Awards
- Two HP Invent Awards for Best Science/ Engineering/IT project in Ireland
- Three William Eccles Institution of Production Engineers National Awards



■ **CIT Mechanical Engineering Graduate Connor Barry (Abbott) GradIreland Award Winner 2012 demonstrates his 2010 Final Year Capstone project on Contact Lens Detection carried out in conjunction with Bausch and Lomb**



■ **CIT Prize for Innovation Award Winners 2012 - CIT Entrepreneurs of the Year - First Place €4,000. CIT Multidisciplinary Group Innovative Drink Cooler System CoolCounter™ Cian Hurley, Daniel Goulding, Shane Fogarty, Mohamed Moulay-Slimane, Ann Cullinane, Darren Dawson**



■ **Abbott Ireland Intern of the Year 2012 - Eoin Lyons CIT Biomedical Engineering. Eoin was presented with the Abbott Intern of the Year Crystal Trophy and €1,000 bursary by Ms. Kelly Henry, Talent Acquisition Specialist, Abbott Ireland at a glittering ceremony at the Abbott stand at the 2012 CIT Career Fair**



■ **CIT Prize for Innovation New Market Entry Award Winners 2012. CIT Multidisciplinary Group - Innovative Hurley Grip - GripToStick™ represented by Sarah Radwan, Eoin Dee, Marie Shine**



■ **Munster Players Denis Leamy, Donncha O'Callaghan, Christy Condon, Mick O'Driscoll and James Coughlan Scrum Down at the CIT / Munster Rugby Student Project Centerpiece Stands, 2012 Cork Mechanical, Manufacturing and Biomedical Engineering Exhibition.**



■ **Munster Rugby Players and Staff assess scrum engagement feedback from the Award Winning Advanced Scrum Machine developed by CIT Mechanical Engineering Student Martin Evans**

IN TOUCH WITH MUNSTER RUGBY

Crouch, Touch, Pause, Engage is a well known instruction delivered by rugby referees before scrum engagement. The modern game places an ever increasing pressure on rugby teams to improve scrum performance – hence the need to determine a reference to allow pack and individual team member performance comparison and incremental improvement.

Martin was given carte blanche to increase - through redesign / remanufacture and virtual instrument development - the functionality of an existing intermediate level scrum machine to the level of an advanced machine with data acquisition and scrum performance measurement capabilities. Hence Crouch, Touch, Pause, Engage and Measure.

The 26th Cork Mechanical, Manufacturing

and Biomedical Engineering Exhibition, which took place on April 26th 2012, featured a major Centrepiece Stand detailing CIT Student Projects in conjunction with Munster Rugby, including Advanced Scrum Machines, Lineout Training Aid and Gym Motion Tracking System Design/Development.

CIT Mechanical Engineering Student Projects being carried in conjunction with Munster Rugby and the visit of members of the Munster Team to view and assess these projects at the 2012 Cork Mechanical, Manufacturing and Biomedical Engineering Exhibition is now featured (titled: CIT Showcase Rugby Equipment) on the Munster Rugby Website at: www.munsterrugby.ie/news/10431.php.

The 2012 exhibition featured over 190 Industrial and Research and Development Stands including projects in conjunction with Pfizer Ireland Pharmaceuticals, Eli Lilly SA,

Novartis Ringaskiddy, Janssen Pharmaceutical, Bord Gais, Stryker Orthopaedics, MSD, Astellas Ireland, Millipore Ireland, GE Healthcare Ireland, WWS, Holfeld Plastics, Abbott Ireland, Stryker Ireland, ERAS ECO, SR Technics, PM Group, Medical Engineering Design and Innovation Centre (MEDIC), Cork University Hospital, Munster Rugby, Dalmar Ireland, Mycrosports, Bol Chumann na hEireann, Leisureworld, The Naval Service, EEG/TEC Nimbus, Dairymaster, Zimmer, SchuF Valve Technology GmbH, Mark Eire, O'Donnell Engineering, RadBoost, CIT Engine Test Cell Centre and a large number of Multi-Discipline Start-Up Innovation Projects.

AWARD WINNING

At the Engineers Ireland Excellence Awards 2012 Dublin, CIT Mechanical Engineering Graduate Alan Bateman, Automation and Control Engineering Manager at Janssen Pharmaceuticals, was presented on behalf of Janssen Supply Chain (Ireland) with the Engineers Ireland Continuing Professional Development (CPD) Company of the Year Award.

Cork-based multinational Janssen's overhaul of its business model ensured more than 500 hi-tech jobs were sustained across its two locations, Little Island and Ringaskiddy, in Cork. The Engineers Ireland CPD Company of the Year Award aims to recognise and reward the successful and sustainable achievement of an engineering employer's strategic vision through the use of best practice CPD initiatives.

CIT Mechanical Engineering Graduate Danny Johnston, Engineering Manager, OpenHydro Technology, was part of a four man team from OpenHydro presented with the Engineers Ireland Technology of the Year Award.

OpenHydro designs and manufactures marine turbines to generate renewable energy from tidal streams. This award highlights Irish innovation in technology that clearly demonstrates a real impact on society, coupled with an actual or future contribution to society.

CIT Mechanical Engineering Graduate Eoin O'Donovan, Technical Operations and Maintenance Manager for Renewables at Bord Gáis Energy, was short-listed to just six very impressive finalists for Engineers Ireland Chartered Engineer of the Year 2012 from over 450 nominated engineers nationwide and internationally.

Eoin O'Donovan joined Bord Gáis Energy in 2010 from SWS Energy, where he was responsible for developing the wind operations team. Prior to SWS, Eoin worked for Pharmaceutical Multinational, GlaxoSmithKline, as a plant reliability engineer. Eoin's project concerned the Delivery of a Sustainable Operations and Maintenance Management Model in the Wind Industry.

The winners of the GradIreland Graduate Recruitment Awards were announced on Wednesday 25 April 2012 at a gala dinner in The Mansion House in Dublin. Voted for by students and judged by an independent panel of industry experts, these awards recognise Ireland's most popular recruiters across a range of employment sectors.

CIT Mechanical Engineering Graduate Connor Barry of Abbott was adjudged GradIreland Graduate Employee of the Year 2012 and presented with the premier award at the Mansion House event attended by 500 of Ireland's most respected employers, third level careers services and professional bodies.

Connor graduated with a First Class Honours Bachelor of Engineering Degree in Mechanical Engineering at Cork Institute of Technology in 2010, thereafter securing a place on the highly selective Abbott Ireland Professional Development Programme. Connor has completed three of his four rotations on this programme and is currently working on assignment as a global buyer in the Abbott Nutrition Supply Chain in Columbus, Ohio, the first Irish Professional Development Programme recruit to be offered such a global assignment. Connor's previous rotations were as a process development engineer and quality engineer in Abbott Vascular's Irish operations.

The 2012 International and National successes clearly signpost the Cork Institute of Technology Bachelor of Engineering Degrees as unrivalled centres of excellence in Engineering education and a Mecca for ambitious and innovative engineering students.

HOW HAS THIS REMARKABLE SUSTAINED INTERNATIONAL AND NATIONAL SUCCESS ARISEN?

The CIT Honours Engineering degrees are centered on a strong hands-on design core in all four years of these professional courses - this design ethos was highly commended by a recent Engineers Ireland re-accreditation panel.

Students undertake design projects from literature research, analysis, experimentation and validation right up to prototype production and commercial evaluation / business plan development. Many of the International and National Adjudication panels have averred to the integrated structure of the CIT engineering projects as a critical element in setting them apart from other university competitors.

A strong innovation and entrepreneurship ethos is encouraged within the CIT Engineering student body and links have been developed with students from other disciplines including ground-breaking multi-discipline team projects in liaison with Accounting, Management and Marketing students.

From student concept, current issues and needs are assessed and addressed through applied engineering design solutions under the supervision of a young and vibrant staff via oral and written presentations and round-table student/staff fora.

HANDS-ON

The success of the hands-on design approach is highlighted annually by the Cork Mechanical, Manufacturing and Biomedical Engineering Exhibition (190 stands in 2012). The exhibition serves as a very important academic and educational milestone, exposing the students to peer, family, general public



■ The CIT Staff and Student Mizen to Malin Vintage Car Rally for Suicide Aware supported by Munster Rugby, raising over €17,000 at the most recent rally, proved a very popular stand for CIT Chemical Engineering students, Mai Twomey, Suzanne Creagh, Adeola Odugbose and Marlene Clark at the 2012 Cork Mechanical, Manufacturing and Biomedical Engineering Exhibition



■ CIT Prize for Innovation Best Project Stand Award Winners 2012. CIT Multidisciplinary Group - Vehicle Detection and Warning System - Road Network Solutions RNS™ represented by Shane Carey, Keith Merrigan, Evan Collins, William O'Mahony, Agnieszka Leja, Daniel O'Donovan



■ CIT Prize for Innovation Most Innovative Entry Special Commendation Award Winners 2012. CIT Multidisciplinary Group - Spectacles Demister Device Development - FogOff™ represented by Gerard Kelleher, Cathal Gorey, Gerard Kelleher, Kenneth O'Connell, Owen Laffan, Catherine Hussey, Daniel Allen, Cathal Hogan



■ Engineers Ireland Excellence Award Winners and Finalists 2012 CIT Mechanical Engineering Graduates Danny Johnston, Engineering Manager, OpenHydro Technology, Alan Bateman, Automation and Control Engineering Manager, Janssen Pharmaceuticals, Eoin O'Donovan, Technical Operations and Maintenance Manager for Renewables, Bord Gáis Energy pictured with CIT Head of School of Mechanical, Electrical and Process Engineering Matthew Cotterell and Senior Lecturer Sean F. O'Leary

and industrial review.

The development of spoken, written and computer based communication skills is also incorporated within the learning outcomes of all four years of the CIT Honours Engineering degrees.

Technical expertise available from Apprentice, Technician, Honours Degree, Masters and PhD levels is harnessed to create an integrated educational structure within the CIT Engineering model. The CIT integrated approach equips engineering students and graduates with the technical, managerial and personal skills to effectively communicate and direct staff at all skill levels in contrast to the traditional university graduate, whose exposure to industry and other skill levels is often very limited.

The CIT Engineering model has proven itself on many occasions over the past 20 years, has led to a great flowering of Irish engineering educational achievement and has established CIT as a premier world class engineering educator.

To conclude, a continuous design core, a strong innovation ethos, product development from student concept to prototype manufacture and optimisation, multi-discipline teamwork, business plan development, communication and exhibition skill enhancement and a unique engineering education model have all combined to create a critical mass leading to the remarkable International and National successes over a sustained period of the students and graduates of CIT's Honours Engineering degrees.