



NovaUCD Report 2009



The Innovation and Technology Transfer Centre
An Lárionad Nuála agus Aistrithe Teicneolaíochta



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Introduction



UCD has made great strides in both its traditional core functions of education and research and in their mutual reinforcement. Over the period of UCD's new strategic plan, *Forming Global Minds*, the University will develop innovation as the third pillar of its core mission of service to Ireland in the wider world.

The pivotal development in the innovation sphere during the period of this plan will be the UCD-TCD Innovation Alliance. Central to the formation of the Innovation Alliance is a vision of Ireland's economy as one that will be increasingly dependent on the development of an indigenous knowledge-intensive sector.

The Innovation Alliance is comprised of three major strands:

1. A joint venture in business development that will see UCD and TCD bring together their technology transfer and enterprise development activities, which are carried out at UCD by NovaUCD, with ambitious targets for job creation through the formation of spin-out companies, the support of spin-in companies and Irish small to medium enterprises, and the development of substantive and sustainable partnerships with foreign multinational companies.
2. The formation of a new UCD-TCD 4th-level Innovation Academy whose aim is nothing less than the formation of the minds of a new, globally conscious generation of innovative, creative and entrepreneurial graduates who will play the same leadership role for Ireland on the international stage that 20th-century graduates did for the newly independent Ireland.
3. A new partnership with government and its agencies, the business and venture-capital community and other stakeholders with the goal of developing the policies and supports necessary to establish Ireland as a thriving innovation ecosystem.

This alliance is a radical partnership between the education sector, the State and its agencies and the business and venture capital communities with an objective of developing Ireland as a global innovation hub. The Alliance will work to develop a world-class ecosystem for innovation that will drive enterprise development and the creation of sustainable high-value jobs. By forming the Innovation Alliance UCD and TCD recognise the need to evolve and play a powerful role within such an ecosystem.

UCD is therefore positioned to play a major role in the national economic recovery by contributing to *Building Ireland's Smart Economy*, the government's framework for sustainable economic renewal, in particular by developing Ireland's emergence as an 'innovation island'. Under the innovation pillar, UCD's mission is to support, feed and facilitate this shift by translating its knowledge and expertise to the benefit of Ireland's economy and society.

NovaUCD, as the hub of knowledge transfer activities at UCD, will be at the forefront of this contribution and in the development of the Innovation Alliance.

The results contained in this Report demonstrate that NovaUCD has established itself as a national leader in the commercialisation of research and the development of new high-tech enterprises and that it has developed a strong international reputation.

NovaUCD's successes to date would not be possible without the financial support and confidence of its initial public-private partnership involving AIB Bank, Arthur Cox, Deloitte, Enterprise Ireland, Ericsson, Goodbody Stockbrokers, UCD and Xilinx.

Dr Hugh Brady
President
University College Dublin

Foreword



As outlined in *Forming Global Minds* UCD's new strategic plan, UCD has three core objectives for innovation:

1. To maximise the impact of UCD's knowledge and expertise to benefit Ireland
2. To foster a culture of innovation and entrepreneurship at 3rd and 4th levels
3. To foster innovation amongst all UCD staff.

Since the introduction of the Enterprise Ireland Technology Transfer Strengthening Initiative NovaUCD is supporting an increasing level of commercialisation activity arising from UCD research. This includes licensing to established companies and new ventures. By 2014 through the development of the Innovation Alliance with TCD, UCD should witness a step-change in such activities, particularly in the establishment of campus companies. These outcomes will reflect a major shift in the research and innovation culture of the University.

By 2014, UCD's offerings at undergraduate and postgraduate level will be transformed to embed aspects of innovation and entrepreneurship through the Innovation Academy. At 3rd and 4th levels UCD will mainstream courses in innovation and entrepreneurship. This will give all postgraduate students access to a range of transferable skills and a knowledge of business, thus providing them with a wider set of career options beyond their core discipline. Since 2008, courses delivered by NovaUCD, on starting a business and on commercialisation of intellectual property (IP) have been introduced into the structured PhD programme.

The availability of PhD graduates with a knowledge and interest in commercial issues should make a significant impact on the generation of spin-out companies. The promoters of spin-out companies such as Celtic Catalysts and ChangingWorlds were experienced researchers and their PhD students. This model enables the researcher to remain in the University while playing a significant role in the development of the company.

During the period of the new strategic plan, UCD will foster and reward innovation amongst UCD staff through specific inclusion of innovation as a criterion for promotion.

It is now six years since NovaUCD, the Innovation and Technology Transfer Centre, officially opened. While it is recognised that there is a long lead-time involved in commercialising the results of university research, the significant achievements made in UCD in the last number of years justify the faith of the initial sponsors who invested over €11 million in NovaUCD.

During the period 2005 to 2009, 13 new UCD spin-out companies were incorporated and a total of 50 high-tech and knowledge-intensive companies, 33% of which were UCD spin-out companies, have located at NovaUCD. A further 40 promoters of new ventures occupied desk space at NovaUCD.

The increasing strength of the IP pipeline is also encouraging. In the last 5-years, nearly 250 inventions have been disclosed by UCD researchers. In addition, over 120 patent applications have been filed and over 50 licence agreements have been signed with a range of indigenous and international companies.

In 2009 NovaUCD continued to develop its expertise, its comprehensive programmes and its state-of-the-art facilities to support innovators and entrepreneurs in commercialising the output of their research and other knowledge-intensive activities of the University.

Key achievements during the last year include:

- €300,000 generated from commercialisation of research
- Seven new UCD spin-out companies incorporated
- Eighty-five invention disclosures reported

- Forty-seven patent applications filed across all areas of life sciences, engineering and information communication technology including
 - 25 priority patent applications
 - 17 PCT (Patent Co-operation Treaty) applications
 - 5 national/regional patent applications
- Fifteen licence agreements concluded with a range of indigenous and international companies
- Fifteen new ventures completed the NovaUCD 2009 Campus Company Development Programme
- BiancaMed successfully raised €6 million in second round funding
- UCD's most successful licence to date, a BSE (*Bovine Spongiform Encephalopathy*) test, has now earned over €2 million in royalty income
- The NovaUCD 2009 Innovation Award was presented to Nicola Mitchell, founder, Life Scientific and BioScientific Diagnostics
- Twenty-four knowledge-intensive ventures occupying 85% of the incubation space located at NovaUCD at year end.

During 2009 NovaUCD continued its various initiatives to support researchers and entrepreneurs.

- NovaUCD arranged and hosted well over 100 events to increase awareness of intellectual property and other commercial issues and to promote a culture of entrepreneurship and innovation among researchers, students and staff
- Accredited PhD modules in innovation and knowledge transfer were delivered as part of UCD's Graduate Studies' Structured PhD Programme
- Increasing levels of support were provided by NovaUCD and its network for innovators and entrepreneurs in bringing their ideas from the research

laboratory through proof-of-principle and prototype development to successful commercialisation.

NovaUCD was also involved in a number of international organisations including AURIL, Institute of Knowledge Transfer and ProTon Europe. The aim is to enhance the contribution of universities to innovation by increasing the efficiency of knowledge transfer and university/industry collaboration and enhancing the status and recognition of the knowledge transfer profession.

These and other developments are outlined further in this Report.

Dr Pat Frain Director, NovaUCD

Key 2009 Metrics

€300,000 generated from commercialisation of research
7 new UCD spin-outs incorporated
85 invention disclosures
25 priority patent applications
17 PCT patent applications
5 national/regional patent applications
15 licence agreements
24 companies located at NovaUCD
15 new ventures completed NovaUCD's 2009 CCDP

Last Five Year Metrics (2005-2009)

ChangingWorlds acquired for \$60 million
€2.6 million generated from commercialisation of research
50 start-ups availed of NovaUCD's incubation facilities
13 new UCD spin-outs incorporated
247 invention disclosures
88 priority patent applications
53 licence agreements



NovaUCD

NovaUCD, the Innovation and Technology Transfer Centre, is the hub of innovation and knowledge transfer activities at University College Dublin. NovaUCD's vision is to become an international leader in the commercialisation of research and other knowledge-intensive activity for the benefit of the economy and society.

NovaUCD is a purpose-built facility, based on-campus, supported by the NovaUCD private sector sponsors, Enterprise Ireland and UCD. Dr Pat Frain leads a team of 16 professional staff with expertise and experience in technology transfer, new venture formation, communications and continuing professional development.

Since the establishment of NovaUCD in 2003 the level of commercialisation of research-generated intellectual property at UCD has significantly increased. As the level of research and innovation increases in volume and sophistication the implementation of UCD's commercialisation strategy by NovaUCD is of critical importance to enable UCD to fulfill its key strategic objective of contributing to the social, economic and cultural objectives of a knowledge society.

Building on prior successes in technology transfer and campus company development, NovaUCD's support for innovation and knowledge transfer is built around 4 key areas:

- Managing technology transfer
- Incubating start-up companies
- Promoting a culture of innovation and entrepreneurship
- Building partnerships.

NovaUCD is located in a magnificent mid-18th century house formerly known as Merville House. NovaUCD is a state-of-the-art facility which was designed specifically to facilitate the development of a community of entrepreneurs and innovators. The concept for the centre was to restore the original house as the centrepiece of a complex of subsidiary buildings that surround it. The buildings are bright, airy and open with high-quality shared and circulation spaces that encourage the formal and informal interactions necessary for the development of our community.

NovaUCD reception room



This conversion to a modern innovation and technology transfer centre was funded by a unique public-private partnership. Six private sector sponsors - AIB Bank, Arthur Cox, Deloitte, Ericsson, Goodbody Stockbrokers and Xilinx contributed 75% of the €10 million raised to develop the first two phases (3,750m²) of the complex.

These sponsors were chosen to bring an appropriate mix of expertise and experience to the support programmes offered by NovaUCD. The balance of funds for the first two phases was contributed by Enterprise Ireland and UCD. Additional 'wet-lab' facilities and equipment to accommodate biotechnology start-up companies was funded (€1.3 million) by Enterprise Ireland and UCD.

A further €12.5 million has been generated in grants and earnings by NovaUCD since its establishment.



NovaUCD foyer

Technology Transfer

NovaUCD works with UCD researchers to identify and capture the intellectual property arising from UCD research programmes. NovaUCD ensures that innovators, entrepreneurs and industry alike can work together to reap the benefits of this intellectual property, whether through licensing to a commercial partner or through the creation of a spin-out company.

NovaUCD's technology transfer operations, which are partially supported with funding provided by Enterprise Ireland under the Technology Transfer Strengthening Initiative, is also responsible for implementing UCD's policies on intellectual property.



Identifying, Protecting and Commercialising Intellectual Property

The increase in research funding over the past number of years, combined with greater awareness of intellectual property issues amongst UCD researchers, has led to an increasing number of invention disclosures submitted, patent applications filed and licences executed. Whenever possible UCD's intellectual property is managed for the benefit of enterprise development in Ireland which may involve licensing to commercial partners or the creation of a start-up company.

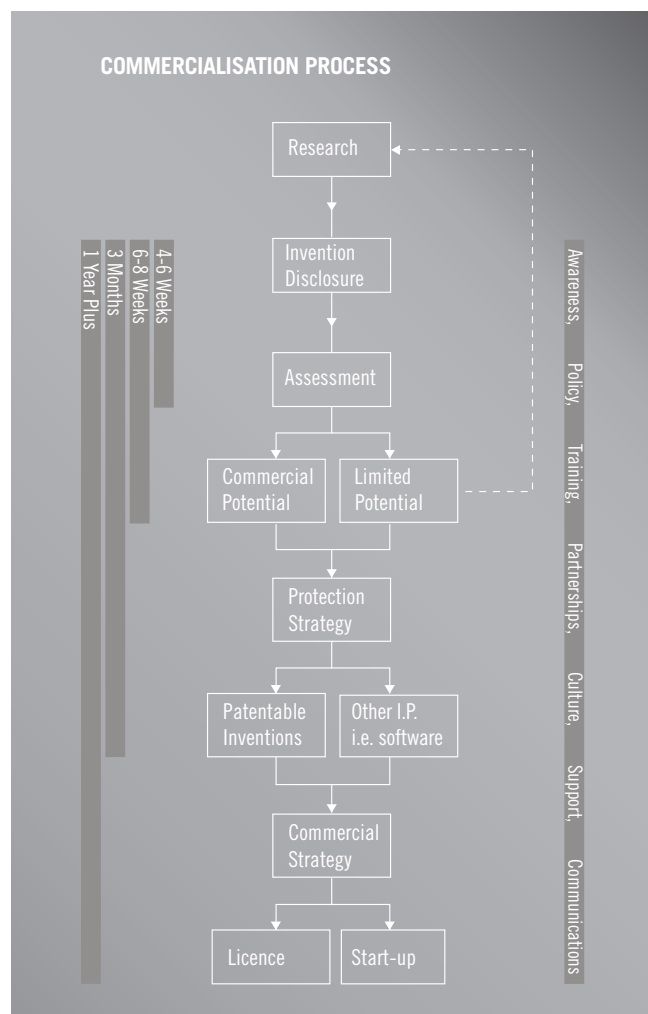
NovaUCD has a structured approach to ensure that an increasing level of intellectual property is identified and appropriately protected. Members of the technology transfer team meet regularly with UCD researchers to provide advice on commercial aspects of research proposals and contracts, to monitor the progress of research projects, to provide

appropriate assistance to the researchers at the different stages of their research projects and to remind researchers of UCD's contractual obligations to funding agencies and companies.

When a UCD researcher has an idea, service or product that they believe has commercial potential, NovaUCD's technology transfer team is on hand to help transform the innovations into licensable opportunities and/or start-up companies.

NovaUCD's innovation and technology transfer process is summarised in Figure 1.

Figure 1: NovaUCD Commercialisation Process



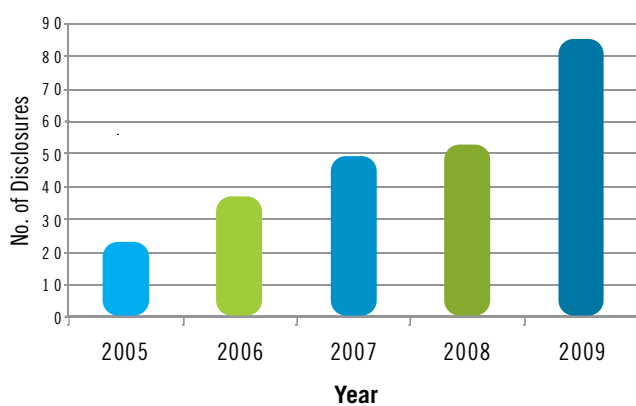
The key steps in this process are:

- Review and assessment of invention
- Protecting the invention
- Development of a commercialisation strategy
- Marketing and licensing of the invention or
- Creating a new company.

UCD 2009 Intellectual Property Metrics

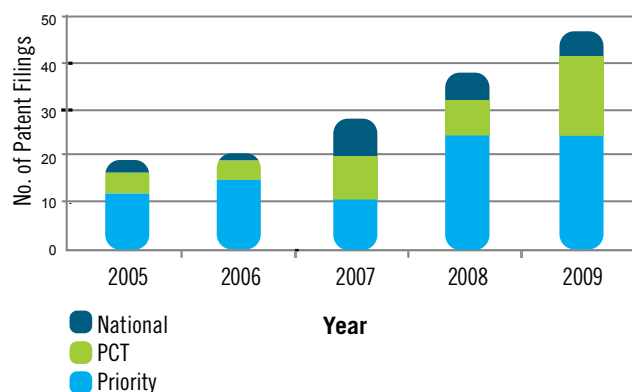
During 2009 a total of 85 invention disclosures were submitted to NovaUCD. This figure reflects a significant increase in the level of intellectual property being disclosed across the University from its research programmes and the increasing commitment to innovation by UCD researchers, Figure 2.

Figure 2: UCD Invention Disclosures (2005-2009)



In 2009 UCD filed a total of 47 patent applications. This figure included 25 priority patent applications (page 12-13) across all areas of life sciences, engineering and information and communication technology, 17 PCT (patent co-operation treaty) and 5 national/regional patent applications, Figure 3.

Figure 3: UCD Patent Filings (2005-2009)



Links with Industry

Bridging the gap between academic research and industry and building relationships with industry is a key element of NovaUCD's commercialisation strategy. During 2009 fifteen licence agreements were executed with a range of indigenous and international companies.

Case Study - Polecat/UCD Licensing Deal

During 2009 Polecat, a market intelligence provider based in Dublin and in the UK, signed an exclusive, worldwide licence for advanced software algorithms developed at UCD and funded by Science Foundation Ireland, to enhance its strategic market intelligence platform.

The advanced software algorithms or machine learning technologies, developed by Professor Pádraig Cunningham and Dr Derek Greene, UCD School of Computer Science and Informatics, are based upon 'unsupervised learning' algorithms, which enable smarter and faster ways to collect and analyse vast amounts of online data from which meaningful knowledge can be extracted.

Polecat's MeaningMine platform analyses statistical and linguistic trends in publically available digital and broadcast media by mining 300,000 articles and 4 million blog posts



Polecat's MeaningMine Platform

daily. Using a combination of data mining and text analytics Polecat can extract dominant themes and emerging trends which enables its clients to be informed, monitor and report on the value of their strategic and communication activities.

Using its current platform Polecat can provide clients with insight into emerging trends, influencer networks, competitive analysis and dominant discussions empowering senior organisational strategists to keep up-to-date with relevant market intelligence data.

As Polecat's mining of digital and broadcast media grows and develops, the software tools licensed from UCD, combined with its current technology, will enable it to offer faster and more dynamic market intelligence information to worldwide businesses and global organisations.

Polecat, founded in 2007 by James Lawn and Bronwyn Kunhardt, will continue to work with UCD to further develop this technology.

NovaUCD 2009 Innovation Award

The NovaUCD Innovation Award was introduced in 2004. The Award is presented annually to an individual, company or organisation in recognition of excellence in, contribution or commitment to innovation or in recognition of success achieved in the commercialisation of UCD research or other intellectual activity. Previous Award winners were Professor Mark Rogers (2004), Professor Barry Smyth (2005), Professor Conor Heneghan (2006), Professor Ciaran Regan (2007) and Celtic Catalysts (2008).

The NovaUCD 2009 Innovation Award was presented to Nicola Mitchell, the founder and CEO of two successful life sciences companies, Life Scientific and BioScientific Diagnostics. This was the first time that the Award was presented to the founder of a UCD spin-in company.



Nicola Mitchell, recipient of the NovaUCD 2009 Innovation Award

Nicola established Life Scientific in 1995 with a business idea based on a unique configuration integrating product development with regulatory affairs to enable clients in the agrochemical industry get their products to market more quickly. Life Scientific has now evolved to the point where end-to-end plant protection product development can be carried out from initial concept to commercialisation.

In 2006 Nicola established her second company, BioScientific Diagnostics, to provide expertise in the development, validation and utilisation of immuno and cell-based methods for investigation of biopharmaceuticals and biomarkers.

The companies collectively employ around 40 people, the majority of whom are scientists and 95% of its annual turnover, which reached €3.9 million in 2009, is derived from export sales. The companies have also established strategic links with key industrial players

such as Amgen, Mitsui, FMC, Bayer, GSK and Pfizer. Having evolved from contract product development, Life Scientific is now producing its own products.

Life Scientific currently holds its own product licenses in the UK, Germany, Denmark and Ireland, and Imidasect 5GR, its niche horticultural product, is the UK market leader. Through the re-investment of retained earnings, and with further support from Enterprise Ireland, Life Scientific is currently expanding its R&D activities.

UCD Commercial Opportunities

UCD has a growing portfolio of licensing, collaboration and business development opportunities available for exploitation by industry and campus companies. Examples are listed on pages 14-16. Non-confidential summaries for many of these technologies are available directly from NovaUCD and on the NovaUCD website.

UCD 2009 Priority Patent Applications

Title	Patent Application	UCD Inventor(s)	UCD School of
A method and system for therapeutic exergaming	A US provisional	Dr Brian Caulfield	Public Health, Physiotherapy and Population Science
A method of concentration of a specific low abundance biomolecule	A European priority and a US provisional	Professor Kenneth Dawson	Chemistry and Chemical Biology
An auditory test compensation method	A European priority	Professor Scott Rickard	Electrical, Electronic and Mechanical Engineering with NDRC
Athletic performance	An Irish priority and a US provisional	Dr Emmeline Hill	Agriculture, Food Science and Veterinary Medicine
Bull fertility	An Irish priority	Dr Emmeline Hill	Agriculture, Food Science and Veterinary Medicine
Causal, symptomatic and/or prophylactic therapy of diseases or conditions associated with CNS or PNS demyelination	A US provisional	Dr Keith Murphy	Biomolecular and Biomedical Science
Compounds	A UK priority	Dr Matthias Tacke	Chemistry and Chemical Biology
Digital predistorter for RF power amplifiers	An Irish priority	Dr Anding Zhu	Electrical, Electronic and Mechanical Engineering
Fibrosuppressant biotherapeutics	A US provisional	Professor Catherine Godson	Biomolecular and Biomedical Science
Method and apparatus for stimulating the lower back and abdominal muscles	An Irish priority	Dr Brian Caulfield	Public Health, Physiotherapy and Population Science
Method and apparatus for stimulating pelvic floor muscles	An Irish priority	Dr Brian Caulfield	Public Health, Physiotherapy and Performance Science
Method and systems for analyzing most recently used lists	An Irish priority	Dr Pavel Gladyshev and Yuangdong Zhu	Computer Science and Informatics

Method and system for automatic test pattern generation	An Irish priority	Dr Joao Marques-Silva	Computer Science and Informatics
Method and system for providing inter-gateway mobility support in mesh networks	An Irish priority	Professor Liam Murphy	Computer Science and Informatics
Methods for transforming cells	A US provisional	Dr Donal Brennan	Biomolecular and Biomedical Science with UCSF
Novel fluorescent near-infrared dyes	An Irish priority	Professor Donal O'Shea	Chemistry and Chemical Biology
Phenotyping tumor-infiltrating leukocytes	A US provisional	Dr Fiona Doohan and Tony Wendt	Biology and Environmental Science with Teagasc
Real time information feed processing	An Irish priority and a US provisional	Professor Barry Smyth	Computer Science and Informatics
Retinal imaging systems with improved resolution	An Irish priority	Dr Brian Vohnsen	Physics
Speech synthesis	An Irish and a European priority and a US provisional	Dr Peter Cahill	Computer Science and Informatics with DCU
System and method for multi-source streaming of media content	An Irish priority	Professor Liam Murphy	Computer Science and Informatics
The improvement of gastrointestinal health, immunity and performance by dietary intervention	An Irish priority	Professor John O'Doherty and Professor Torres Sweeney	Agriculture, Food Science and Veterinary Medicine with Bioatlantis Ltd
Wireless communication network	An Irish priority	Dr Chris Bleakley	Computer Science and Informatics
Phase-difference Ambiguity Resolution for a single-frequency signal	A US provisional	Dr Chris Bleakley	Computer Science and Informatics

UCD Technology Transfer Opportunities

Title	Principal Researcher(s)	UCD School of
A tasty and healthy microwaveable cheese product	Professor Dolores O’Riordan, Dr Michael O’Sullivan and Dr James Lyng	Agriculture, Food Science and Veterinary Medicine
A platform technology – assessing the action of molecular targeted drug treatments	Dr Jacintha O’Sullivan, Dr Hugh Mulcahy and Professor Diarmuid O’Donoghue	Education and Research Centre and the Centre for Colorectal Disease, St. Vincent’s University Hospital
Amyloid and Amyloid-like structures as mechanically functional biomaterials	Professor Suzi Jarvis and Dr Anika Mostaert	Physics and Conway Institute of Biomolecular and Biomedical Research
Biofilm control in a membrane bioreactor	Dr Eoin Casey	Chemical and Bioprocess Engineering
Biomarkers for early detection of cardiac disease	Dr John Baugh and Dr Chris Watson Professor Kenneth McDonald (St. Vincent’s University Hospital) and Dr Mark Ledwidge (Heartbeat Trust)	Biomolecular and Biomedical Science
Digital pre-Distortion for RF power amplifier for wireless communication	Dr Anding Zhu and Lei Guan	Electrical, Electronic and Mechanical Engineering
Fibrosuppressant	Dr Madeleine Murphy, Dr Victoria McEaney, Professor Finian Martin and Professor Catherine Godson	Biomolecular and Biomedical Science
Generation of an improved biocatalysts	Dr Kevin O’Connor	Biomolecular and Biomedical Science
High-rate LDPC codes for data storage applications	Dr Marcus Greferath, Ms Cornelia Roessing and Dr Mark Flanagan	Mathematical Science and Electrical, Electronic and Mechanical Engineering

Low power NMR imaging	Dr Marcus Greferath and Professor Bernhard Bluemich (RWTH Aachen University)	Mathematical Science
Markers for disease management and drug adherence	Professor Richard Reilly	Electrical, Electronic and Mechanical Engineering
Methods for producing Polyhydroxyalkanoate (PHA)	Dr Kevin O'Connor	Biomolecular and Biomedical Science
Methylation biomarkers for melanoma	Professor William Gallagher	Biomolecular and Biomedical Science
Novel anti-fungal bacterial strains	Dr Fiona Doohan and Mr Mojibur Khan	Biology and Environmental Science
Novel cytotoxic and anti-angiogenic metallocenes for cancer therapy	Dr Matthias Tacke, Dr Megan Hogan, Dr Brendan Gleeson, Dr James Claffey, Dr Helge Müller-Bunz	Chemistry and Chemical Biology
Power Composer	Dr Chris Bleakley	Computer Science and Informatics
Power saving enhances IEEE 802.15.4 for better networking performance	Dr Xiaoyun Li, Dr Chris Bleakley and Wojciech Bober	Computer Science and Informatics
Promoter sequences for expression from human cells	Professor Therese Kinsella, Dr Anne Marie Gannon, Dr Garret Keating and Dr Libby Turner	Biomolecular and Biomedical Science
Proteomic profiling of p21-mediated anti-Apoptotic and Mitogenic Paracrine effects	Professor William Gallagher, Dr Darren O'Connor and Dr Caroline Currid with Dr Igor Roninson (Orday Institute, New York)	Biomolecular and Biomedical Science
Quantitative image analysis at a subcellular level	Professor William Gallagher, Dr Donal Brennan and Mr Elton Rexhepaj	Biomolecular and Biomedical Science
Rapid diagnostic tests for animal and human parasitic diseases	Professor Grace Mulcahy and Professor John Dalton (Associated Faculty Member)	Agriculture, Food Science and Veterinary Medicine



RECAP	Mr Antonio Ruzzelli, Dr Raja Jurdak and Gregory O'Hare	Computer Science and Informatics
Repositioned therapeutic for treatment of multiple sclerosis	Dr Keith Murphy and Dr Mark Pickering	Biomolecular and Biomedical Science
The Serendipity Engine	Professor Barry Smyth	Computer Science and Informatics
ufxDesign fixed point development tools	Dr Neil Hurley and Dr Guenole Silvestre	Computer Science and Informatics
Wearable posture sensor	Dr Brian Caulfield, Professor Barry Smyth and Lucy Dunne	Public Health, Physiotherapy and Population Science and Computer Science and Informatics

Further details are available via www.ucd.ie/nova

Start-up Companies

NovaUCD now has a proven track record in supporting entrepreneurs and start-up companies from the early feasibility stage through to business development, growth and investment.

The main elements of the NovaUCD's support programme for entrepreneurs and start-up companies includes:

- Advice and assistance on all aspects of new venture formation including:
 - Feasibility study
 - Project development
 - Building the entrepreneurial team
 - Developing the business model
 - Financial planning and management
 - Preparing business plans
 - Company formation
 - Access to sources of finance
 - Business growth
- Advice for entrepreneurs and researchers on ideas with commercial potential:
 - Academic entrepreneurs - The Campus Company Development Programme, a business start-up programme which has run annually since 1996
- Other supports:
 - Clinics and advice from the NovaUCD sponsors and other organisations covering areas such as legal issues, banking, finance, marketing, sales, patenting, licensing and new venture formation
 - The NovaUCD Network of professional business contacts including seed and venture capital funds
 - Training and workshop programmes
 - Introduction to industry networks such as WirelessLAB and the European Connected Health Campus
 - Introduction to UCD's research expertise and facilities.

Facilities

NovaUCD provides incubation and other related facilities for entrepreneurs, campus companies and knowledge-based ventures.

NovaUCD offers 14 desk spaces for individuals who are at the early stages of forming a company allowing them to undertake feasibility studies. NovaUCD also contains 50 incubation and bio-incubation units for high-tech knowledge-intensive companies.



Office at NovaUCD

The incubation units at NovaUCD range in size from 15m² to 64m². The bio-incubation units are equipped with power and water supply, sinks, fume hoods and benching as well as voice and data points. Shared facilities available include fridge freezers, de-ionised water, ice machines, dishwashers etc. Companies locating in these laboratories are facilitated in accessing the full range of technology and general facilities available in UCD.



Bio-incubation space at NovaUCD

Other facilities and services include a wireless network, a permanent boardroom which seats 22, numerous seminar and meeting rooms, a café, a dedicated server room and reception services.

Academic Entrepreneurs - NovaUCD Campus Company Development Programme

The NovaUCD Campus Company Development Programme (CCDP), which has run annually since 1996, is the main support programme run by NovaUCD for academic entrepreneurs who are spinning-out campus companies. This annual Programme, which in 2009 was delivered in association with Enterprise Ireland, offers a mix of monthly workshops, mentoring and one-to-one consultancy. It is delivered by NovaUCD staff, with the support of the NovaUCD Sponsors and other outside experts.

The CCDP is designed to assist academic entrepreneurs in the establishment and development of knowledge-intensive enterprises by providing the skills necessary to transform ideas into commercially feasible ventures.

In the last fourteen years 156 new ventures and 235 individuals have completed the Programme. Current NovaUCD client companies which previously participated on the Programme include Berand Neuropharmacology,

BiancaMed, Celtic Catalysts, ChangingWorlds and RendezVu.

Equinome, a new biotech company, was the overall winner of the 2009 NovaUCD CCDP and received the NovaUCD 2009 start-up award and a cheque for €5,000. The Awards ceremony was held in UCD's William Jefferson Clinton Auditorium with Deirdre Somers, CEO, Irish Stock Exchange as the guest speaker.



Dr Emmeline Hill and Jim Bolger, co-founders, Equinome

Equinome, which is located in NovaUCD, is developing genetic tests to optimise decision-making in the breeding and racing of Thoroughbred horses. Equinome, incorporated during 2009, was established by Dr Emmeline Hill, a leading horse genomics researcher in UCD's School of Agriculture, Food Science and Veterinary Medicine, in partnership with Mr Jim Bolger, a leading Irish race horse trainer.

The Thoroughbred horse breeding and racing industry is an international, multi-billion euro business. While over 100,000 Thoroughbred foals are registered globally each year, breeding techniques have remained relatively unchanged for hundreds of years. Breeders currently rely on combining successful bloodlines together, hoping that the resulting foal will contain the winning combination of genes which have contributed to the success of the bloodlines to date.

Until now, whether those winning genes have or have not been inherited, can only be surmised by observing the racing and breeding success of the horse over a period of three to seven years after its birth.

Two other ventures participating on this year's Programme, **Novocept** and **bettie™** received runner-up awards, prizes of €3,000 and €2,000 respectively and six-months free desk space in NovaUCD.

Novocept is developing a suite of bioinformatic software packages for the biotechnology and pharmaceutical industries to assist them in reducing the time and costs involved in producing new drug candidates and in the re-design of industrial enzymes.

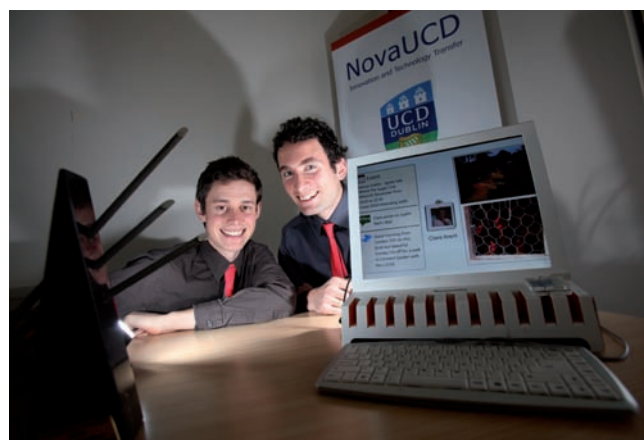
The promoters of Novocept are Dr Jens Erik Nielsen and Dr Michael Johnston from UCD's School of Biomolecular and Biomedical Science, Dr Gianluca Pollastri and Dr Ian Walsh from UCD's School of Computer Science and Informatics, and Dr Martin Peters.



Dr Michael Johnson, Dr Martin Peters and Dr Ian Walsh, three of the co-founders of Novocept

bettie™ (www.bett.ie) is a new communications device designed specifically for the ageing population which allows older people keep up-to-date and stay in touch more easily with family and friends.

The promoters of **bettie™** are Ben Arent, an interaction designer and Zoran Škrba, a senior software engineer, in UCD's School of Computer Science and Informatics, working in the TRIL (Technology Research for Independent Living) Centre.



Ben Arent and Zoran Škrba, co-founders, Bettie

A fourth new venture, **Nanalytic Laboratories**, received a special commendation award of six-months free desk space at NovaUCD.

Nanalytic Laboratories is a new specialist imaging and material analysis venture. It is being established to provide imaging and material analysis for both the Research and Development and Quality Assurance departments of companies in the semi-conductor, medical device, aerospace, pharmaceutical and related technology sectors.

The promoter of Nanalytic Laboratories is Dr Ian Reid, research manager of the Science Foundation Ireland funded Nano Imaging and Material Analysis Centre in UCD's School of Chemical and Bioprocess Engineering.



Other NovaUCD 2009 CCDP New Ventures

Agri-Time is developing real-time, practical management support tools, delivered over the internet on mobile phones and computers, to assist farmers in running and managing their farms.

Promoters: Professor Nick Holden, Agnieszka Piwowarczyk and Marian Hennessy, UCD School of Agriculture, Food Science and Veterinary Medicine.

Anura Therapeutics is developing a novel process for the identification of potent bioactive peptides for drug discovery.

Promoter: Professor Stephen Pennington, UCD School of Medicine and Medical Science.

BedrockMaths is developing a suite of multi-media, web-based interactive assessment, teaching and learning support systems to assist students who have difficulties in learning mathematics.

Promoters: Máirín Barry and Dr Ruichao Wang, UCD School of Education.

BoFinn Diagnostics will provide a bulk tank milk testing service to the dairy industry for the rapid and inexpensive diagnosis of infectious diseases.

Promoter: Dr Mary Sekiya, UCD School of Agriculture, Food Science and Veterinary Medicine.

Cernam is a specialist digital investigations company developing unique software products in the area of online investigations.

Promoter: Owen O'Connor, NovaUCD client company.

GliúMara is utilising biomimetic technology to produce adhesives that provide strong, rapid and biocompatible adhesion to wet surfaces for biomedical applications.

Promoters: Dr Anika Mostaert and Professor Suzi Jarvis, UCD School of Biology and Environmental Science and UCD School of Physics.

Insite Analytics is developing automated, real-time analytics software to improve the performance of retail units in retail locations such as large shopping centres and department stores, by analysing shopper movements and behaviour.

Promoters: Ross Shannon, Adrian Clear and Dr Aaron Quigley, UCD School of Computer Science and Informatics.

Inviver is developing novel diagnostics and vaccine products for infectious diseases in the veterinary health industry.

Promoters: Dr Jarlath Nally and Pablo Rojas, UCD School of Agriculture, Food Science and Veterinary Medicine.

Retinostics is developing a novel ultra-high resolution scanning laser ophthalmoscope for diagnostics of the human eye retina.

Promoters: Dr Brian Vohnsen and Dr Diego Jose Rativa-Millan, UCD School of Physics.

TraceHunter is developing easy-to-use, highly automated tools to revolutionise computer forensic investigations.

Promoters: Dr Pavel Gladyshev, Yuandong Zhu and Joshua James, UCD School of Computer Science and Informatics.

VIDAS is developing peer-to-peer video distribution technologies for more efficient use of computer networks.

Promoters: Dr Sean Murphy, Dr Hamid Nafaa and Professor Liam Murphy, UCD School of Computer Science and Informatics.

NovaUCD Enterprise Support

The level of support for client companies from the NovaUCD Network has continued to develop in the last year. The NovaUCD private sector sponsors and other organisations provide a mix of expertise (e.g. accounting, financial, legal, sales, marketing and strategic management) to complement the NovaUCD team in supporting innovators and entrepreneurs in bringing their ideas from the research laboratory through proof-of-principle and prototype development to successful commercialisation.



Main seminar room at NovaUCD

NovaUCD Companies

Twenty-eight innovative new ventures, occupying 39 incubation units, or ~90% of the available incubation space, are currently located in NovaUCD. Several of these companies are commercialising research specifically undertaken at UCD while the remaining start-ups have located in NovaUCD in order to interact more closely with UCD.

Sixteen client companies have now graduated from NovaUCD and moved on to new premises. It is an important element of NovaUCD's strategy to continuously refresh our community of entrepreneurs and to have the capacity at all times to take on new projects.

Current NovaUCD Companies

Advanced Diagnostics Laboratory – is Ireland's first commercial and diagnostic laboratory for animal health and toxicology

AER – is a leading Irish biofuels company

AIB Seed Capital Fund – provides venture capital for companies at the seed and early stages of development

Amdocs-ChangingWorlds – is the market leader in customer experience systems innovation, enabling world-leading service providers to deliver an integrated, innovative and the intentional customer experience

Aonta Technologies – provides carrier grade voice conferencing solutions to conferencing service providers, telcos and enterprises



David Seavers and Derek Moore, co-founders, Aonta Technologies

AP EnvEcon – provides products and services including high-quality systems and analytical solutions for public and private-sector level responses to environmental and economic policy challenges

Berand Neuropharmacology – is a pre-clinical drug research company that offers a full spectrum of in-vivo neuropharmacology and pre-clinical neurobiology services, resources and expertise

BiancaMed – is a health technology company which offers leading health technology solutions for monitoring everyday living

bioMérieux – develops and evaluates in-vitro diagnostic tests for use in food, pharmaceutical and veterinary microbiology laboratories

BioScientific Diagnostics – is a contract research organisation providing outsourcing services to the drug development industry, with a specific focus on diagnostics, biomarkers and biopharmaceutical product characterisation

Biosensia – is a point of care in vitro diagnostics company that has a novel point of care platform

Biosystems Engineering – provides specialist services and research capabilities to the agricultural, food processing, renewable energy and environmental protection sectors

Celtic Catalysts – has developed ground-breaking chemistry that enables its clients in the pharmaceutical, biotech and fine chemicals industries to realise significant manufacturing cost savings

Cernam – is a specialist digital investigations company focusing on online investigations

Credit Expo Research – a credit risk management company which has developed a patented empirical credit risk management methodology

Doco System Solutions – develops document management software solutions for global markets

Enzolve Technologies – develops and manufactures specially-designed enzymes, using proprietary technologies, for applications in healthcare, fine chemical and life science markets



Stuart Cranmer, CEO, Enzolve Technologies

Evolution – is a software development house specialising in bespoke e-work/workflow and HR systems

HomeInstead Senior Care – provides comprehensive home care services for the elderly

Ionic Business Systems – provides a range of technology products including website design, implementation and hosting

LogScreen – is a managed security solutions provider providing event or activity log management services to small and medium-sized enterprises on the basis of business process outsourcing

OncoMark – focus is centred on the development and application of biomarker panels, particularly in the areas of oncology and drug development

Q-Validus – is a leading provider of international certification and management services

RendezVu – has developed a next generation learning platform to provide immersive education for languages and other subjects using virtual world and gaming technologies

SmartBuilder Software – is developing mobile software for use on building and engineering sites

Socowave – is a leading innovator of wireless access technologies and products

Tethras – is developing web-based localisation tools for Smartphone application developers.



Brian Farrell, co-founder, Tethras

NovaUCD Graduate Companies

A total of 16 companies have now graduated from NovaUCD. The companies which graduated during 2009 are:

Duolog Technologies – is a leading developer of EDA solutions for the IC (integrated circuit) design industry

gsmExchange – is an online trading platform for the GSM and telecommunications industry

Java Clinical Research – is a contract research organisation specialising in providing a complete clinical trial service to the pharmaceutical and biotechnology industries

Lightwave Technologies – provides real-time web-enabled energy saving solutions for commercial buildings.

NovaUCD Company Success Stories

Several NovaUCD client companies have experienced success during the last year.

Alternative Energy Resources (AER), the alternative energy company which supplies bioethanol to the Irish market and is developing algae-fuel technology for the worldwide market, was awarded the national ‘Rising Star’ Award at the 2009 Deloitte Technology Fast 50 Awards.



Mark Webster, Sunday Business Post, John Travers, AER and James Grier, Ulster Business

The Fast 50 Programme, now in its 10th year in Ireland, ranks the 50 fastest growing technology companies, operating for a minimum of 5-years, in the Republic of Ireland and Northern Ireland. The ‘Rising Star’ Award recognises younger technology companies with the fastest growth over the past three years.

AER, chaired by John Teeling, was founded in 2006 and John Travers is CEO.

During 2009 **BiancaMed**, a leading medical technology company and a UCD spin-out company received an additional €6 million in funding. This second round funding was led by pan-European venture capital firm Seventure Partners. This is the first time that Seventure has invested outside of continental Europe. Three of BiancaMed’s

existing investors ePlanet Ventures, Enterprise Ireland and ResMed also participated in this round.

BiancaMed was co-founded in 2003 by Dr Philip de Chazal, Dr Conor Hanley and Professor Conor Heneghan, as a spin-out from UCD's School of Electrical, Electronic and Mechanical Engineering.

During 2009, **Duolog Technologies** the NovaUCD-graduate Collaborative Design Automation™ company, acquired, in a combined cash and equity deal, the technology and products of Beach Solutions as part of its global expansion strategy.

Beach Solutions was a privately held, UK-based, Electronic Design Automation (EDA) company established in 1998 which offered register management solutions for System-on-Chip (SoC) design. Having raised over £6 million in venture capital funding Beach researched and developed innovative products used by major semiconductor companies in Europe, US and Asia. With this new acquisition Duolog has established a significant presence in the key Asian market

Duolog Technologies was co-founded in 1999 by Ray Power and Mark O'Donovan.

Enzolve Technologies, the UCD life sciences spin-out company, formally launched its first CE-marked diagnostic test during 2009 which screens for PKU (phenylketonuria) in newborn babies.

Enzolve's PKU test, based on engineered enzyme technology, has several advantages over the tests currently available on the market. It is easier, faster and more convenient to use and the results are more reliable. The Enzolve PKU kits are also more cost effective and are available in two formats containing sufficient materials to allow up to 400 or 1,000 newborns to be tested.



Enzolve Technologies' PKU test kit

The PKU test is the first in a suite of products, called NeoScreenPak, which Enzolve is developing to screen for a variety of metabolic disorders in babies. Enzolve's PKU test underwent extensive evaluation by the National Standard Authority of Ireland on behalf of the Irish Medicines Board to assure that best practice was undertaken in the design and development of the product which resulted in it being granted the CE Mark.

Enzolve Technologies, was co-founded in 2002 by Professor Paul C. Engel and Dr Suren Aghajanian as a spin-out from UCD's School of Biomolecular and Biomedical Science.

HeyStaks Technologies, the UCD spin-out company, was declared the overall winner of the inaugural, Europe-wide, UNICA Entrepreneurship Competition for Students and Young Researchers and received a prize of €20,000. HeyStaks has developed a revolutionary social Web search platform which enables searchers to better organise and easily share the resources they find while searching and browsing the Web.

UNICA, a network of 42 universities from European capital cities, invited each university, including UCD, to nominate one entry for this competition, sponsored by the Cyprus Research Promotion Foundation.

The winner was announced, following Dragons' Den-style presentations by three short listed finalists to a five-person judging panel, during UNICA's 2009 General Assembly, held in early November, in the Université Pierre et Marie Curie, Paris.

HeyStaks Technologies was also among the nine companies shortlisted for the 2009 David Manley Emerging Entrepreneur Award.

HeyStaks Technologies was co-founded in 2008 by Dr Peter Briggs, Dr Maurice Coyle and Professor Barry Smyth as a spin-out from UCD's School of Computer Science and Informatics. Dr Briggs and Dr Coyle are currently UCD postdocs in CLARITY, the Science Foundation Ireland funded Centre for Sensor Web Technologies, a joint initiative between DCU, Tyndall National Institute and UCD.

RendezVu, the NovaUCD based e-learning venture, was declared overall winner of the 2009 David Manley Emerging Entrepreneur Award. In addition to the award, a €10,000 in cash prize, RendezVu was also presented with "The Gift of Time", a mentoring and business advice package valued at €100,000 from leading experts in finance, law, accountancy, management consultancy, payroll & accounts software, corporate and brand identity and public relations.

There is currently no convenient way for most students learning languages to practise their language skills other than travelling to foreign destinations which can be expensive and impractical. To address this issue in the learning environment RendezVu has developed a next generation learning platform to provide immersive education for languages and other subjects using virtual world and gaming technologies.

The David Manley Emerging Entrepreneur Awards was established in 2003 and nurtures the enterprising spirit in Business, the Arts and in the Social community. During the year RendezVu also won the Dublin regional final of the Bank of Ireland 'Bright Ideas Challenge' Competition.



Garrett Hussey and Paul Groarke, co-founders, RendezVu

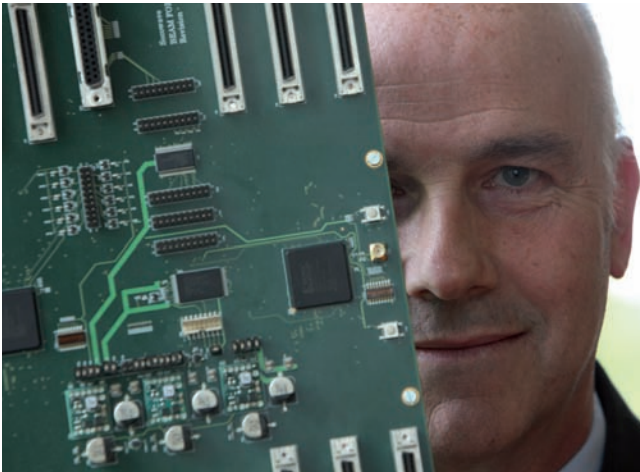
In addition to an award, RendezVu received a cash prize of €5,000, along with a mentoring and training package from the Dún Laoghaire-Rathdown County Enterprise Board valued at €5,000.

RendezVu, the overall winner of NovaUCD's 2008 Campus Company Development Programme, was co-founded in 2008 by Paul Groarke and Garrett Hussey.

During 2009 **Socowave** announced that it had made a wireless technical breakthrough which is now attracting the attention of global wireless infrastructure vendors. The breakthrough has the potential to transform how cellular network operators deliver video-rich services to mobile customers, in the future.

Socowave's pioneering active panel antenna technology will enable faster internet access for cellular users. In addition, this new technology will significantly reduce the wireless industry's carbon footprint by enabling future networks to be designed with fewer base station sites. This will reduce base station electricity consumption by up to 50%.

Socowave, which is supported by Enterprise Ireland, has a technical design centre, at the National Software Centre, Cork. The technology underlying Socowave's breakthrough is based upon a pioneering base station system



Joe Moore, founder, Socowave

architecture controlled digitally over fibre optic cable which incorporates some enabling technology licensed from NUI Maynooth and UCD.

Socowave was founded in 2008 by Joe Moore.

Visor, the Irish software company and NovaUCD graduate, and developer of accountsIQ, an internet-based online accounting platform, completed a €3.5 million funding round during 2009.

Data Electronics Investments (DEI), the investment arm of Data Electronic Services (DES), the Data Centre and IT Managed Services provider, led the round with support from existing investors Enterprise Equity, AIB Seed Capital Fund and industry veteran Gerry McKeown.

The funding will facilitate Visor's continued international expansion and product development plans through to profitability. As part of its investment, DES will provide a Service Continuity Guarantee to underwrite the provision of the accountsIQ service.

Visor has developed accountsIQ into an innovative online accountancy platform which allows accountants, franchisors and businesses with multiple locations to

access their accounts and business records via the Internet in real time with total security and minimal overhead costs.

Visor was established in 2004 by Tony Connolly.

Culture of Innovation and Entrepreneurship

The development of a culture of innovation and entrepreneurship is critical for the successful identification and commercialisation of intellectual property at UCD. By promoting awareness and embedding the ethos of innovation, knowledge transfer and commercialisation within the research community, NovaUCD is encouraging the seeds of valuable intellectual property which can be harnessed at a later stage for the benefit of all stakeholders.



NovaUCD ceiling rose

NovaUCD has arranged over 750 events since 2003 to assist in creating this culture by increasing the awareness of entrepreneurship, innovation and technology transfer among the next generation of entrepreneurs and innovators. These events, which are aimed at researchers, staff and students, cover all aspects of commercialisation including intellectual property identification, protection and exploitation, commercialisation and new venture formation.

Transferable Skills Training

NovaUCD's Continuing Professional Development (CPD) Programme offers specialised training courses for graduate students, researchers, technology transfer professionals and senior executives and managers from industry who wish to develop their professional skills in the management and exploitation of research results and innovative concepts.



Dr Eddie O'Connor, Mainstream Renewable Power, prior to speaking at a NovaUCD 2009 'Entrepreneurs Live!' seminar

Courses Offered

- Postgraduate education, accredited PhD modules
- Bespoke training courses for researchers, technology transfer professionals and industry.

Postgraduate Education

A complete accredited training module appropriate for graduate students participating in a structured PhD programme is available from NovaUCD. This module covers the management process required to transform an innovative idea into a commercial opportunity or business proposition. A fundamental understanding of the different forms of intellectual property (IP) is provided and students are guided through the stages and processes involved in

the creation, capture, management and commercialisation of IP.

Bespoke Training Courses

NovaUCD has also developed detailed training material (course book, workbook, case studies), which provides the foundation for seminars and workshops on key topics relevant to innovation and technology transfer and supports the development and delivery of specialised training courses to organisations for training of:

- Researchers and principal investigators
- Technology transfer professionals
- Company R&D, licensing and IP managers.

Specific Training Topics

- The role of the researcher in the innovative process
- IP policy and national guidelines for management of IP
- The different forms of IP
- Patents and the patent system
- Managing the capture, reporting and protection of IP
- Evaluating and valuing IP
- Developing a business plan
- Negotiating and licensing IP
- Preparing agreements for disclosure of information, R&D cooperation, evaluation and exploitation of IP.

Training Outcomes

On completion of the training courses participants will be able to demonstrate a thorough understanding of:

- The commercialisation process
- Conduct research using best laboratory practice
- Implement processes for managing technology transfer
- Assess the most appropriate routes to market
- Value and market research outputs and make the business case to potential funders
- Prepare a technology offer
- Negotiate and conclude collaborative research and licensing agreements
- Advise researchers and their colleagues on how to manage and exploit the commercial potential of research projects.



Charlotte O'Kelly, TechWorks Marine, prior to speaking at a NovaUCD 2009 'Entrepreneurs Live!' seminar

SUSSED! UCD's €10K Entrepreneurship Competition

During 2009 NovaUCD established and organised a new competition called, SUSSED!, UCD's €10K Entrepreneurship Competition. The overall objective of the competition, was to transform business ideas emerging from students and early-stage researchers at UCD into business plans and commercial enterprises.

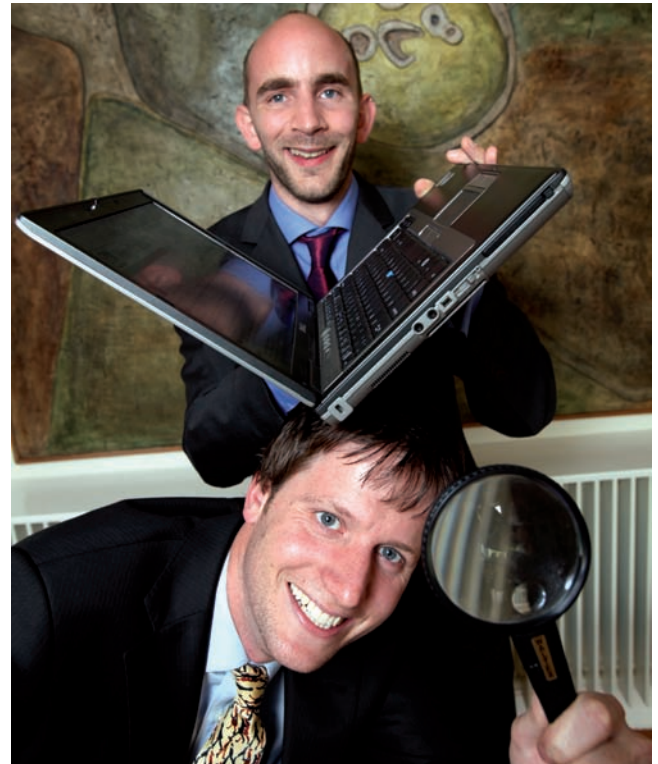
The overall winner of the competition was HeyStaks Technologies, which is developing a suite of online tools to make it easier for internet users to organise and share their internet search experiences without having to leave their favourite search engine.

On winning the competition, HeyStaks was presented with a cheque for €5,000, 6-months free incubation space in NovaUCD and access to professional support in further developing their new venture. HeyStaks also went forward to represent UCD in the Europe-wide UNICA Entrepreneurship Competition for Students and Young Researchers and was the eventual winner of this Competition.

Two other teams, XIT and OlympOzone, received runner-up prizes of €3,000 and €2,000 respectively in addition to 6-months free incubation space in NovaUCD.

XIT is developing a web-based travel planning application that allows users to more easily plan and share their travel experiences. XIT's application sources information from multiple websites and social networks and can make recommendations inspired by previous trips made by friends and colleagues.

The software creates a portable itinerary that can be used in hardcopy or on a mobile handset. XIT's software also allows users to share their experiences after their trip or holiday.



Maurice Coyle and Peter Briggs, co-founders, HeyStaks Technologies

Kevin O'Shaughnessy, a postgraduate student in UCD's National Institute of Technology Management, is XIT's team leader.

OlympOzone's business idea is to provide a viable alternative to the use of chlorine in swimming pools in Ireland. OlympOzone aims to be the primary supplier and installer of Ozone water treatment systems in Ireland. The use of Ozone technologies to disinfect and treat swimming pools does not have any of the negative health side-effects associated with chlorine by-products. It is also more cost efficient and more environmentally friendly than using chlorine.

Sinéad Quinn, OlympOzone's team leader is a former competitive swimmer. She is also a lifeguard and swimming instructor and an undergraduate Cell and Molecular Biology

student in UCD's School of Biology and Environmental Science. OlympOzone's other team members are fellow UCD undergraduate students Gavin Duffy and Liam Cody who are studying Biochemistry and Botany respectively.

The members of the SUSSED! Judging Panel, who picked the winners following 'Dragons' Den' pitches by the six short listed finalists were; Eamonn Fallon, Managing Director and co-founder, Daft.ie; Dan Maher, founder, Nua Venture; Nicola Mitchell, Managing Director and founder, Life Scientific; Dr Brian Kelly, CEO and co-founder, Celtic Catalysts and Dr Pat Frain, Director, NovaUCD.

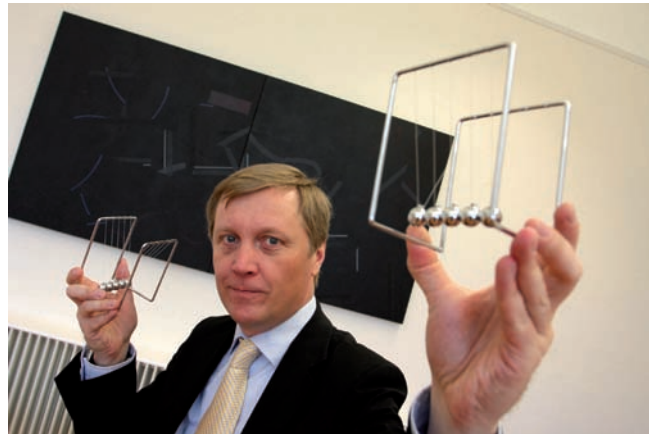
The other three shortlisted finalists were Coast 2 Coast Coaching, FlyFit and SustainableMeter.

InterTradelreland All-island Innovation Programme

Companies must take a twin approach to innovation to survive and grow in the current economic climate. That was the message from renowned innovation expert Professor Erkkö Autio, Chair of Technology Transfer and Entrepreneurship at Imperial College London, who delivered the inaugural InterTradelreland Innovation Lecture at UCD last April.

His lecture entitled *How to Build Momentum for Innovation* was organised by NovaUCD and took place in a packed William Jefferson Clinton Auditorium.

According to Professor Autio, as the global economic momentum has faded, firms can no longer 'ride the waves' created by others. They need to build their own momentum for innovation. In addition to identifying market needs and adapting their products or services to meet those needs, firms must also find ways of prompting the market to lock-in to their innovations ahead of others. If this successful two-way adaptation is achieved, spectacular growth may follow, even in challenging times.



Professor Erkkö Autio, Imperial College London

While visiting NovaUCD Professor Autio also facilitated a workshop for technology transfer professionals entitled *Issues Facing Technology Transfer Offices within the University Environment*. He also delivered a Master Class for SMEs entitled *How to Build and Sustain Momentum for Rapid International Growth* which focused on issues relating to early and proactive internationalisation.

The innovation lecture and other events were delivered as part of the InterTradelreland All-island Innovation Programme.

This Programme, a partnership between InterTradelreland, Queen's University Belfast, NovaUCD and NUI Galway, aims to promote and encourage innovation across the island of Ireland. The Programme enables international expertise and best practice innovation to be shared with business leaders, students, academics, knowledge transfer professionals and policy makers across Ireland via innovation lectures, seminars and master classes.



UCD engineering students and members of UCD's kite club, Justin Perry and Christina Connolly with Sean Gallagher.

NovaUCD Open Day

NovaUCD held a very successful Open Day in March as part of the Dún Laoghaire-Rathdown 2009 Enterprise Week. The aim of the Open Day was to give budding high-tech entrepreneurs an opportunity to discover the unique services, supports and facilities available to them at NovaUCD.

The guest speaker at the NovaUCD Open Day was Sean Gallagher, co-founder, Smarthomes and a 'Dragon' on RTE 1's "Dragons' Den" TV Programme. His message to all entrepreneurs and business owners was to aim to 'fly higher' despite the current economic climate.

Innovation Dublin

Innovation Dublin, a week long festival of workshops, events and showcases highlighting and encouraging innovation and creativity in Dublin took place last October. Innovation Dublin an initiative of the Creative Dublin Alliance, involved Dublin's local authorities, business groups, colleges, including UCD, organisations and individuals.

The Creative Dublin Alliance is a network of diverse leaders that meet to discuss and implement solutions in response to the challenges that Dublin faces as an internationally competitive city region. The aim of this Alliance is to progress new levels of innovation and in collaboration with all key parties, to promote Dublin as a creative and world-class city.

NovaUCD, as the Innovation and Technology Transfer Centre, co-ordinated UCD's 35 events which took place during the week.

'Entrepreneurs Live!'

NovaUCD, with the support of Dún Laoghaire-Rathdown County Enterprise Board ran 10 seminars during 2009 in the extremely popular 'Entrepreneurs Live!' Seminar Series.



Andrew Parish, Wavebob, John Travers, AER and André Fernon, SolarPrint prior to speaking at a NovaUCD 'Entrepreneurs Live!' seminar

The aim of the seminars is to promote a spirit of entrepreneurship among the academic, research and student population at UCD. The seminars involve well known entrepreneurs who talk about their experiences of setting up and running their own business, emphasising the highs and lows encountered on their entrepreneurial journey, and highlighting the lessons they have learnt along the way. During each seminar, attendees have the opportunity to participate in a lively question and answer session with the guest entrepreneur.

Speakers at this year's seminars included Dr Peter Daly, Cleantech Ireland, Dr Hugh Henry, Bord na Móna, Jacques Lefebvre, DataKraft and Brendan O'Regan, Zenith Technologies.

By the end of 2009, a total of 76 well known entrepreneurs have taken part in this NovaUCD seminar series. The series continues to attract large audiences and to stimulate a lively and enthusiastic debate between the speakers and the students. There is clearly a growing culture of entrepreneurship on UCD's campus which augurs well for UCD's ability to generate new ventures and high-tech employment for UCD graduates in the future.

Communications and Partnerships

Communications

NovaUCD communicates key messages to internal and external stakeholders, both nationally and internationally, through the media, by hosting visiting delegations, organising key events and attending conferences and exhibitions. The primary focus is to support NovaUCD's vision and to assist in achieving NovaUCD's objectives through the use of internal and external communication tools and media. This includes managing NovaUCD's strategic marketing activities, media relations, public relations, internal communications and event management activities.

International Visitors to NovaUCD

During 2009 NovaUCD hosted 29 visiting national and international delegations from around the globe. These delegations included government, university and local state agency representatives, industrialists and others interested in innovation and technology transfer. These delegations came to NovaUCD to learn of UCD's experiences of supporting innovation and technology transfer on a university campus and to learn how an Innovation and Technology Transfer Centre such as NovaUCD has been developed, operates and to learn of its successes.

Black Swans in a Perfect Storm

Professor Malcolm Gillis, former President of Rice University, Texas delivered a special lecture at NovaUCD, during a visit to UCD in June. The title of his lecture, which focused on the worldwide financial meltdown during the period 2007-2009, was *Black Swans in a Perfect Storm*.



Professor Malcolm Gillis, Rice University

According to Professor Gillis, currently a Professor of Economics at Rice University a flock of black swans appeared on the financial scene in 2007 – 2009.

In his special lecture, Professor Gillis examined six root causes of what he called The Perfect Financial Storm and the interplay between them: Excessive leverage; perverse pathological incentives for banks and other financial institutions; misguided and lax financial regulation; poor applications of good economic theory; financial engineering carried to extremes; and investor gullibility.

Plug and Play Tech Center, Silicon Valley

Saeed Amidi, President and CEO, Plug and Play Tech Center, one of the biggest technology centres in Silicon Valley, visited NovaUCD in January and delivered a keynote seminar.

His seminar focused on global acceleration opportunities for high-tech start-up companies and provided an overview of the funding situation in the Valley. In addition to delivering his key note seminar Saeed met with members of NovaUCD's community of entrepreneurs.



Saeed Amidi, Plug and Play Tech Center

Located in multiple campuses (Palo Alto, Sunnyvale and Redwood City) in the heart of Silicon Valley, the Plug and Play Tech Center is a community of over 200 technology start-up companies. Since its inception in January 2006 the center has helped the startups raise in excess of \$400 million in venture funding. The start-up companies have created a cumulative value of \$2 billion.

Saeed Amidi is himself a serial entrepreneur and a seasoned executive with over 20 years of experience in founding, operating, and growing successful companies.

European Connected Health Campus

During 2009 NovaUCD became an alliance programme member of the European Connected Health Campus (EHC). The EHC aims to transform healthcare delivery by enhancing the quality and effectiveness of care with changing demographics, clinical priorities and focus on patient expectations. It brings together clinicians, researchers, innovators, policy developers, investors and a wide range of specialist enterprises.

WirelessLAB

WirelessLAB, a new innovation network for Ireland's wireless technology community was announced in

2009. It is being established to foster and stimulate the development of an innovation environment for Ireland's wireless technology community.

WirelessLAB's objectives include the development of a collaborative network which encourages interactions between members, the promotion of Ireland as a centre of excellence for wireless technology and providing members with networking opportunities and a platform to increase their visibility within Ireland and internationally. WirelessLAB also aims to assist in building active links between relevant academic researchers and the wireless industry throughout Ireland.

A key collaborative activity for WirelessLAB will be the establishment of special interest groups (SIG), or industry-led technical forums. The SIGs will be designed to keep members up-to-date with the latest developments in key areas and to assist them in exploring new business opportunities. WirelessLAB members will also participate in networking events designed to share information and encourage co-operation between members.

In addition to access to WirelessLAB's SIGs and networking events, members will also be able to participate in Cambridge Wireless' networking and SIG events. Established SIGs are already active in areas such as wireless healthcare, games development and wireless sensing.

Joe Moore, founder of Socowave, is the driving force behind WirelessLAB and is the network's first chairman. WirelessLAB will be initially located in NovaUCD where Socowave is headquartered.

The other members of WirelessLAB's founding board are Professor Tony Fagan, UCD School of Electrical, Electronic and Mechanical Engineering, Dr Conor Hanley, co-founder and CEO, BiancaMed, Dr Sam Samuel, Executive Director of Bell Labs Ireland and UK, Alcatel Lucent and Professor William Scanlon, ECIT, Queen's University Belfast.

International Knowledge Transfer Networks

Dr Pat Frain, Director of NovaUCD was the Chair of ProTon Europe during 2009. ProTon Europe is the pan-European network of knowledge transfer offices, national knowledge transfer associations and companies affiliated to universities and other public research organisations. ProTon Europe has over 250 direct member institutions in 28 European countries employing some 2000 knowledge transfer professionals. Dr Frain was the first Irishman to chair ProTon Europe.

ProTon Europe was established in 2002 to promote innovation by increasing the effectiveness and efficiency of knowledge transfer and university-industry collaboration across Europe. Through the representation of national associations at a European level ProTon Europe offers its members an opportunity to develop, inform and influence European policy relating to knowledge transfer.

ProTon Europe also supports the professional development of knowledge transfer offices across Europe through the exchange of best practice, staff exchanges, the delivery of appropriate training and networking.

Personnel

Dr Pat Frain is the Director of NovaUCD and leads a team of professional staff with expertise and experience in technology transfer, new venture formation, communications and continuing professional development.

The members of the NovaUCD team and their contact details are given below.

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Facilities	Thomas Hamill	Facilities Manager	t: 00-353-1-716 3717 e: thomas.hamill@ucd.ie
	Joanne Lombard (am) Marie Caffrey (pm)	Reception	t: 00-353-1-716 3700 e: nova.reception@ucd.ie

* Stephen O'Sullivan and Gerry Delaney were external consultants to the NovaUCD 2009 Campus Company Development Programme.

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twitter: www.twitter.com/novaucd

linkedin: www.linkedin.com/e/gjs/149865

Location Map and Directions

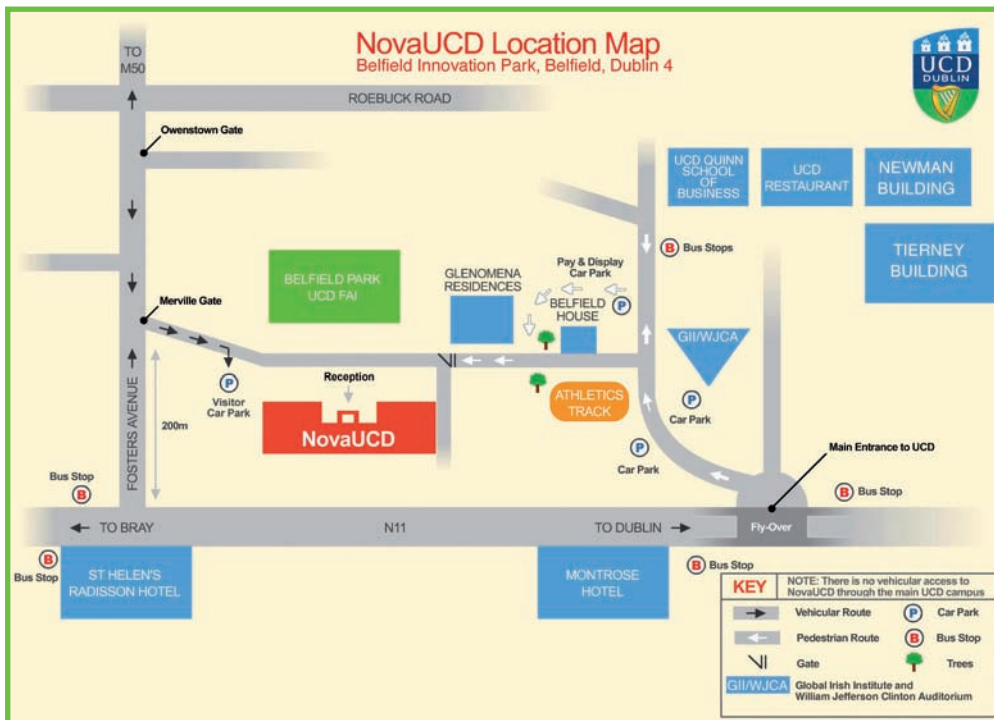
The vehicular entrance to NovaUCD is located on Fosters Avenue, approximately 200m from the Stillorgan dual carriageway (N11). The road from this gate leads directly towards NovaUCD. Car parking for visitors is on the right hand side of the road, before reaching NovaUCD. The main entrance to the NovaUCD Reception is through the front door of the building as indicated in the map below.

Visitors may also park in one of the University car parks and approach NovaUCD on foot.

For further information contact:

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 Communications
 NovaUCD
 Belfield Innovation Park
 UCD, Belfield, Dublin 4.

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ARTHUR COX

Deloitte.



ERICSSON 

Goodbody 

 XILINX®

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