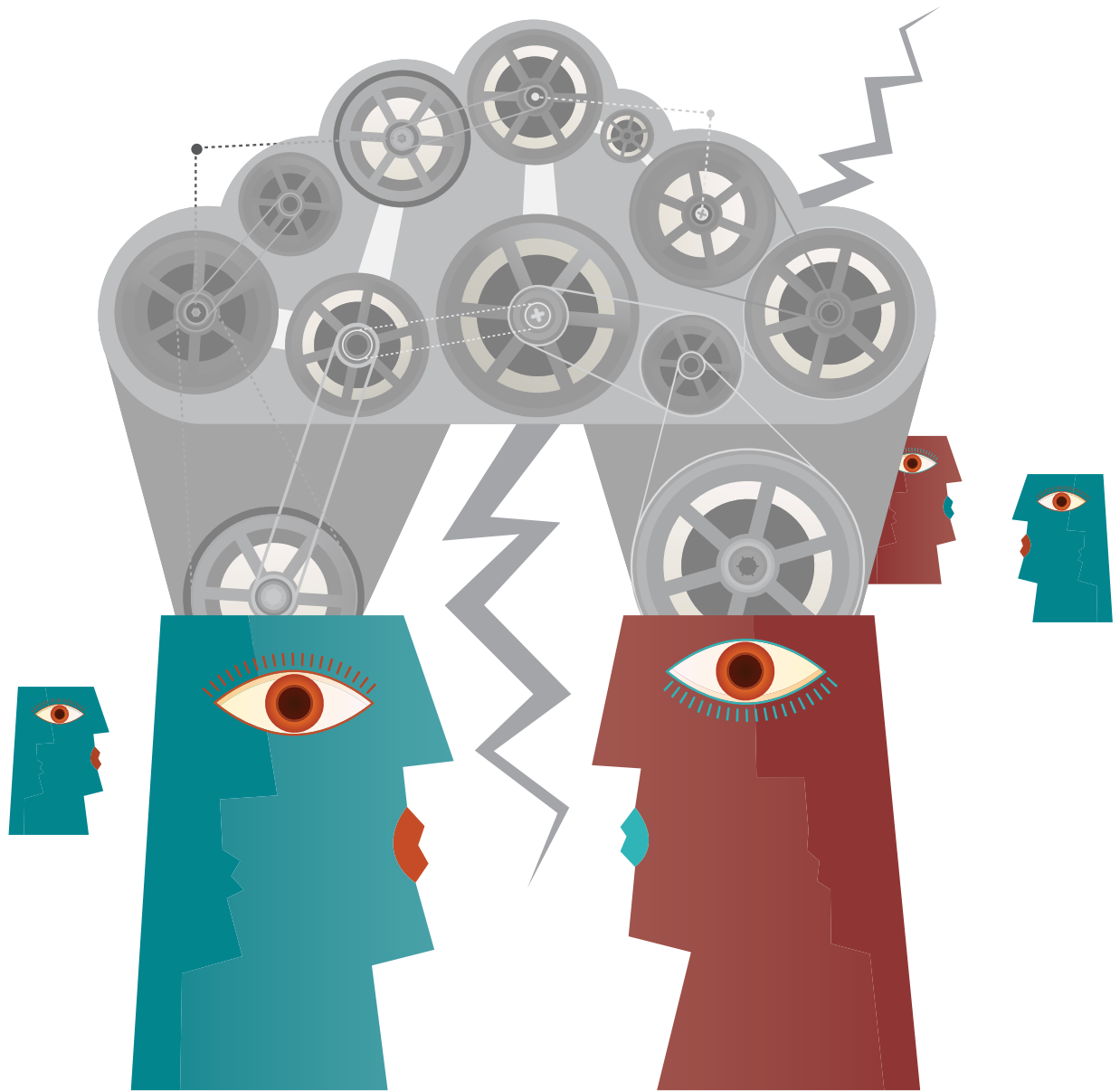


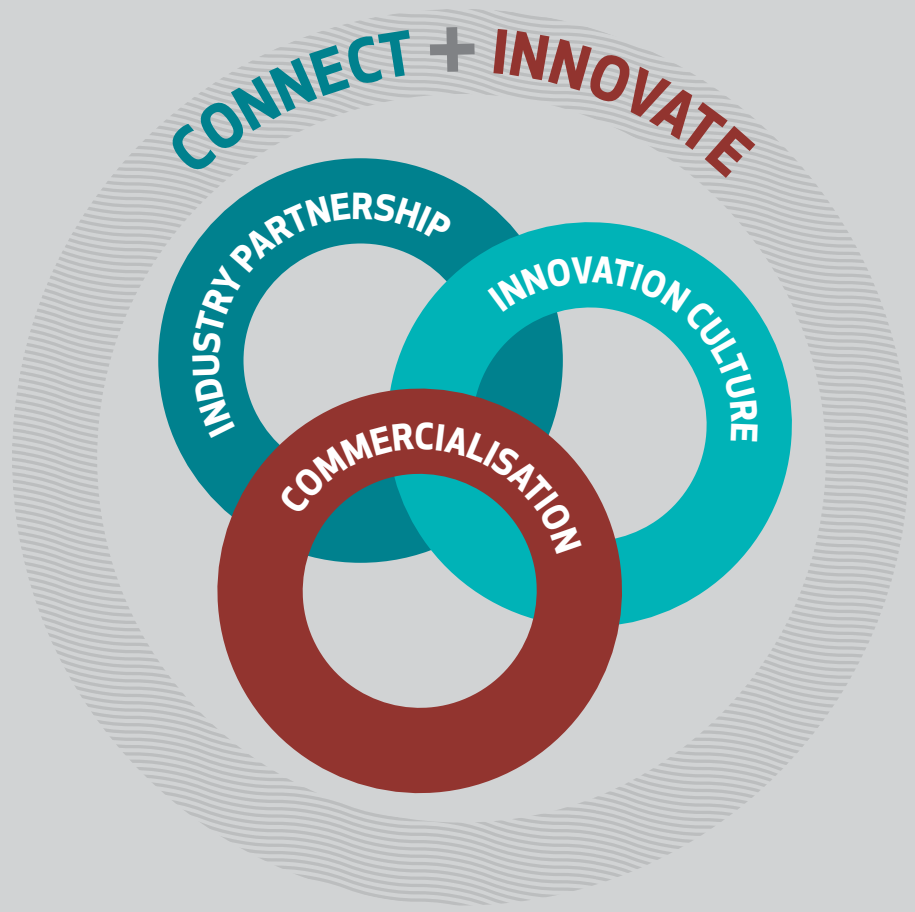


COMMERCIALISATION
NUI MAYNOOTH
CONNECT + INNOVATE



CONNECT
+ INNOVATE

2011 / 2012



INTRODUCTION

THIS BROCHURE SUMMARISES OUR 2011 ACTIVITY AND INTRODUCES OUR PLANS FOR 2012 AND BEYOND.

2011

NUI Maynooth continues to be a national leader in the commercialisation of research and 2011 was another fruitful year for us. Our key performance metrics are outlined overleaf, the highlight being that we completed 7 license deals and created 3 new spin-out companies. Also included is a table of comparison performance metrics. Against international standards of licenses and spin-outs per research expenditure, NUI Maynooth again ranks in the top percentiles. This performance is down to the outstanding research and the desire of our researchers to see their work make not just a scientific impact but an economic one.

The Commercialisation Office continues to focus on 3 pillars of activity:

- Connecting NUI Maynooth researchers with industry and the market place
- Developing a culture of research commercialisation at NUI Maynooth
- Identifying and commercialising the IP developed by NUI Maynooth researchers

The output of these 3 pillars of activity contributes to the growth and development of Ireland's knowledge economy and job creation.

The Office continues to be supported by Enterprise Ireland under their Technology Transfer Strengthening Initiative. Staffing levels remained the same in 2011, with John Scanlan, Director, Owen Laverty and Paul Tyndall, Commercialisation Executives and Lorraine Kane, Office Manager forming the team.

Despite the economic climate, government funded research support remains steady, non-state funded income is increasing and the commercialisation activity pipeline at NUI Maynooth remains strong. Funding conditions will be sustained into the near future, supporting the "curiosity-driven, blue-sky research", funding that is so essential to seeding truly innovative projects.

John Scanlan
Commercialisation Director

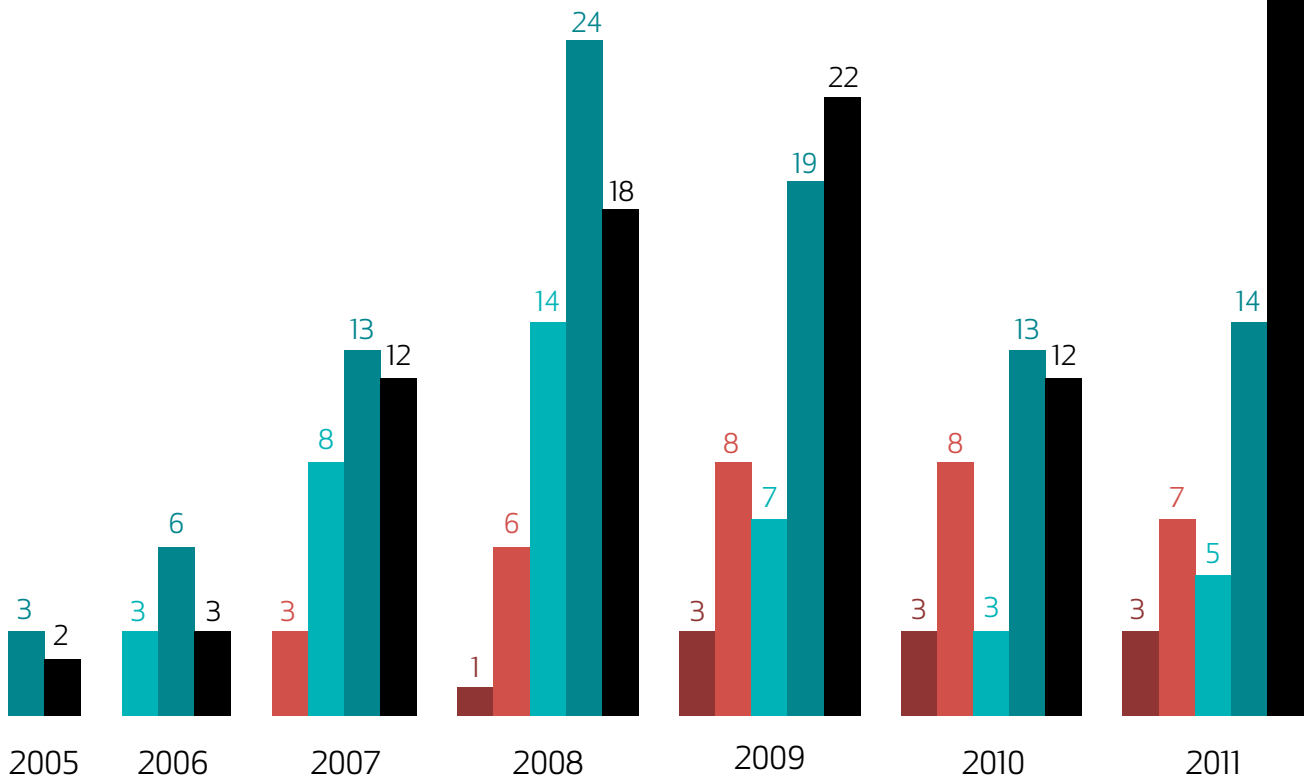
2011 PERFORMANCE METRICS



- 3 NEW SPIN-OUT COMPANIES**
- 7 NEW LICENSE DEALS**
- 5 NEW PATENTS FILED**
- 14 NEW INVENTION DISCLOSURES**
- 41 NEW INDUSTRY LINKS**

2005 - 2011 PERFORMANCE METRICS

- SPIN-OUT COMPANIES
- LICENSE AGREEMENTS
- PATENTS FILED
- INVENTION DISCLOSURES
- INDUSTRY COLLABORATIONS



COMMERCIALISATION ¹ OF NUI MAYNOOTH RESEARCH

2011 SPIN-OUT COMPANY ACTIVITY

NUI Maynooth spun-out 3 new companies in 2011, all based on research work carried out at the University over the last couple of years:

PROFECTOR LIFE SCIENCES

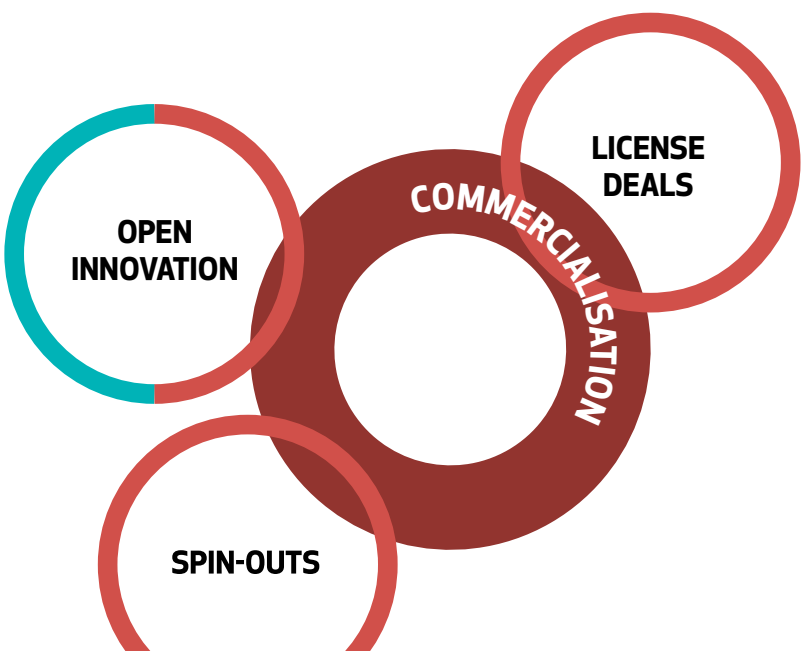
ProFector Life Sciences, founded by Michael Maguire and Shirley O'Dea, Biology Department, NUI Maynooth. ProFector is a technology that transfects cells using a new electrospray process, achieving easier and more cost efficient transfections without the known complications and limitations of competing technologies. ProFector will initially address the niche of primary and adherent cells with a limited access trial programme. The business will bring to market a family of scientific devices addressing an unmet need in the €850m cell transfection market. Several devices have already been designed and tested.

ISAAT TECHNOLOGIES

ISAAT Technologies was founded by Gerry Corley, formally based in the Callan Institute at NUI Maynooth. Currently, software defined radio provides a flexible radio spectrum which has many benefits, not least being the freeing up of valuable bandwidth. Using research funded by EI and SFI, Gerry is bringing an improved transmit and receive hardware solution to this space which will be employed by industry and research institutes globally.

RELATIONAL FRAME TRAINING

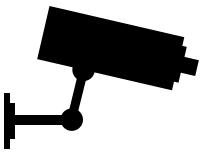
Relational Frame Training was founded by Bryan Roche, Psychology Department, NUI Maynooth. The company provides an online training service which allows users to improve their IQ. Based on years of research Bryan's team have identified important key elements which determine a person's IQ and the online system provides exercises which improve these key elements. The online exercise will go live in 2012.



FUTURE PIPELINE

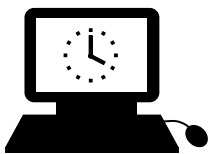
WIRELESS SECURITY CAMERA

We expect 2012 to be another good year for spin-out company creation at NUI Maynooth. There are several projects at maturity stage which we expect to launch this year:



WIRELESS SECURITY CAMERA

A very low powered wireless security camera for remote surveillance where there is no available power. The product is very close to commercial readiness and provides a much needed solution for reliable monitoring in hard to reach and remote locations. A commercial beta trial is underway.



REAL-TIME VIEWING OF REMOTE CONNECTED SENSORS

A method for the real-time viewing of remote connected sensors over a web platform. The Internet of Things (or IoT) describes the revolution already under way with a growing number of

STROKE REHABILITATION DEVICE

WAVE ENERGY TECHNOLOGY

DIABETES CONTROL COMPOUNDS

internet-enabled devices that network and communicate with each other and with other web-enabled gadgets. Things (e.g. objects, environments, vehicles and clothing) will have more and more information associated with them and may have the ability to sense, communicate, network and produce new information, becoming an integral part of the Internet. A widespread Internet of Things has the potential to transform how we live in our cities, how we move, how we develop sustainably, how we age and more.



STROKE REHABILITATION DEVICE

A novel medical device which has the potential to improve post stroke rehabilitation. Following a serious stroke, rehabilitation includes physical therapy to help “reconnect” nerve and brain cells in order to restore function to motion impaired limbs. This device will enhance the outcome of such therapy.

REAL-TIME VIEWING OF REMOTE CONNECTED SENSORS

AUTOMATED TOLLING SOLUTION

BIOSENSOR TECHNOLOGY TO PRE-SELECTED ANALYTES

RF POWER AMPLIFIER

HR EXPERT SYSTEM

INFLAMMATORY BOWEL DISEASES THERAPEUTICS

SENSORS FOR KEY BIOCHEMICAL COMPOUNDS

Further down the line we expect to see new licensing and spin-out opportunities emerge from existing NUI Maynooth commercialisation projects that we are currently developing:

- A suite of sensors for measuring key biochemical compounds specific to neurological, hepatic, metabolic and cardiac function. Measuring these analytes in real-time offers huge scope for improved diagnosis and treatment for patients. Focused on developing biosensors for real time clinical use, allowing cheaper, real-time diagnosis and treatment monitoring.
- A HR expert system for determining the effectiveness and suitability of training programmes for staff.
- An RF power amplifier, which takes a new approach to the amplification of digital signals to the power level required to broadcast and significantly reduces the efficiency of base stations and their flexibility to broadcast at various frequencies.
- An automated tolling solution for tolled roads.
- A system for allowing runners and their friends to interact during a race, providing rich functionality to the competitor and the followers.
- An exciting biosensor technology with high sensitivity and selectivity to pre-selected analytes. We have already identified a number of potential applications across several industries, including some with very significant public health benefits.
- Our Centre for Ocean Energy Research is developing technology for wide application in the growing wave energy market. The platform includes a tool for assessment and improvement of wave energy conversion technology and a set of control strategies for optimising power output from individual wave energy devices and for arrays of such devices. The plan is to develop this into a services based company, supplying expertise, design and consulting to the market chain of wave energy companies.
- A novel set of compounds, which have the potential for control of Type 2 diabetes.
- Inflammatory bowel diseases (IBDs) are often controlled by a combination of medications. Usually anti-inflammatory medications are used followed by medications that suppress the immune system. In the most severe cases, surgery may be required to remove all or parts of the colon and small intestine. We developed a number of therapeutics and validated inflammation targets.

LICENSING DEALS

In addition to executing new licence deals and creating new companies, we continue to support the license deals and spin-out companies in our portfolio that were completed in previous years.

The companies and the new technologies we licensed to them include:

EDWARDS LIMITED

Edwards are a leading global supplier of vacuum pump equipment to semiconductor and thin film manufacturing fabs. Optimal maintenance of such equipment can save time and money and result in improved performance and up-time. We licensed software development tools for vacuum pump maintenance optimisation to Edwards, the technology having been developed by Shane Butler and John Ringwood in Electronic Engineering.

ISAAT TECHNOLOGIES

We licensed electronic hardware and associated software to implement radio transmitter and receiver daughter boards for Software Defined Radio (SDR). The research was funded by the Centre for Telecommunications Value-chain Research (CTVR) and Enterprise Ireland (EI). SDR radio boards are characterized by wide tuning ranges, wideband baseband inputs and outputs, and by software reconfigurable functions such as gain, output power, operating frequency and filtering.

BLUE BOX SENSORS

Blue Box continue to advance in selling sensors for measuring key biological parameters in vivo and in real-time. We licensed both a lactate sensor, for measuring the energy metabolism biomarker lactate

in animals and a glutamate sensor, for measuring the neurotransmitter glutamate in animals, both with specific application in drug discovery. The technology was developed by M Dalton, J Lowry and F Bolger.

RELATIONAL FRAME TRAINING (RFT)

RFT is software that improves IQ – RFT's first product will be named SMART (Strengthening Mental Abilities with Relational Training). This product, and those to follow, is used to increase general intelligence as measured by standard intelligence tests. Users will take the training in an online environment which will be launched 2012.

ACCUPLEX

The dearth of new antimicrobials coming to market, combined with the ever increasing concerns over antimicrobial resistance necessitates new avenues for antimicrobial drug discovery. Prevention of the generation or secretion of siderophores offers a new target for antimicrobial discovery. The licence covers reagents and assays for detection of siderophores in biological matrices.

IGEOTECH

License of GPS/Video Synchronisation Hardware which supports previously licensed technology to iGeotech to support their initial product offering. iGeotech will be offering B2B and consumer services in the field of video/GPS synchronisation.

NUI Maynooth spinouts to date include Socowave, Blue Box Sensors, Beemune, iGeotech, AniScan, Mutebutton, Cerebeo, ISAAT, RFT and ProFactor. Our office continues to support these companies.

CONNECTING INDUSTRY ² AND NUI MAYNOOTH

INDUSTRY LINKS

2011 saw NUI Maynooth form 21 new partnership contracts with 41 industry contacts. These links are based on research collaborations and range from collaborations with SME's under the Enterprise Ireland Innovation Vouchers Programme to collaborations with multinational companies on specific issues which NUI Maynooth has research excellence. NUI Maynooth now has over 75 ongoing industry collaborations across all disciplines which are an indication of the outward facing culture at NUI Maynooth. The Innovation Value Institute (IVI) has an additional 75 active industry links.

CONNECT EVENT 2011

NUI Maynooth hosted its "Connect 2011" event in April at Carton House. The event focused on relationship development providing an opportunity to showcase our research expertise. Guest speakers presented with short briefings on themes of innovation, technology commercialisation and economic growth in tough markets. We showcased our research expertise with over 20 departments representing NUI Maynooth. We welcomed over 200 Irish SME executives and entrepreneurs to the biennial networking event which provided the opportunity to connect and develop new partnerships, meet research collaborators, network with other SMEs and learn about vital funding. NUI Maynooth continues to open its doors to the business community as it is acutely aware that both nurturing and developing good business ideas are essential to Ireland's economic recovery. Partnerships established at NUI Maynooth Connect can act as a stepping stone to help generate employment, increase exports and raise revenue.

MARKET PARTNERS

Successful technology transfer or commercialisation is based on the execution of three key tasks; selection of projects with good commercial potential, execution on those projects and securing sufficient capital funding to bring the technology to market. Getting the first two right tend to make the last one easier, and we therefore focus most of our efforts on the first two. Given that we have a commercialisation team of three, having expertise in many fields and being market informed in those fields is practically impossible, so we must rely on external partners to help in the selection and execution of worthwhile projects. We call this team our market partners and the concept might be called "Technology Transfer 2.0" in reference to it being a new model and one that relies on well developed networks.

Our extended team of market partners continues to be a vital part of our commercialisation process. The team now includes more than 100 professionals in various roles such as product development, marketing, legal, IP, business owners, clinicians, investors from organisations of all sizes from small companies to multinationals. This group remain our sounding block to help ensure the commercialisation projects we focus on are "market-informed" and we continue to deliver solutions to "problems that are worth solving".

SEEDING INNOVATION ³ AT NUI MAYNOOTH

GSE2 - INNOVATION AND COMMERCIALISATION RESEARCH

The Commercialisation Office ran its Generic Skills GSE2 programme in November 2011, following its successful launch in 2010. The module is entitled “Innovation and Research Commercialisation” and the aim is to equip researchers with the skills required to commercialise the outcome of their research, to provide them with the ability to interact with industry and to improve their skills to innovate and act with an entrepreneurial mindset.

The course covers the basics of intellectual property, technical marketing, product development, spin-out company formation and research commercialisation contracts. Also included are workshops and exercises, including preparation of a marketing pitch, culminating in a group business plan presentation. These are very useful in informing the student how to present their ideas as a business opportunity rather than as just interesting science, a practical approach which then complements their academic training.

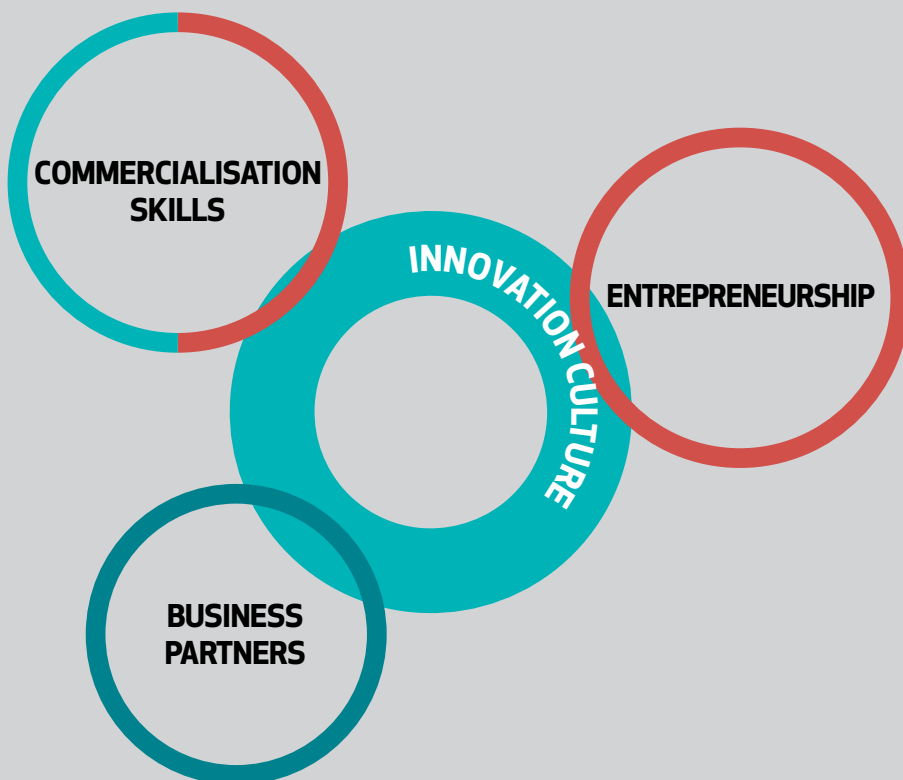
The current economic climate requires that graduates have the know-how, competencies and confidence to set-up and deliver new commercial opportunities. Our detailed case-studies and practical workshops facilitate this in a relaxed hands-on environment.

STUDENT ENTREPRENEUR COMPETITION

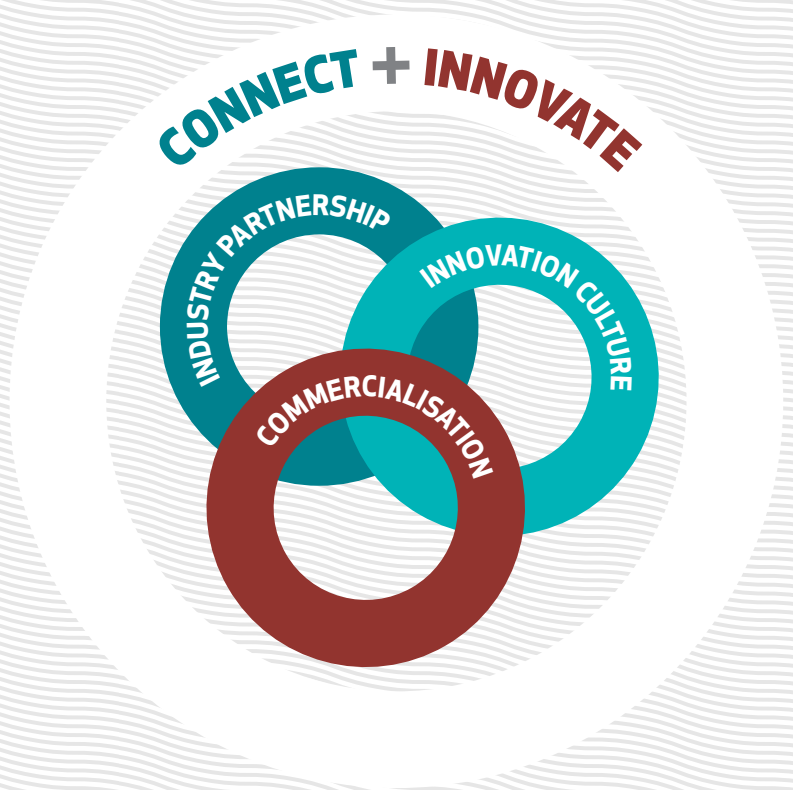
The NUI Maynooth Student Entrepreneur Competition is now in its fifth year and continues to grow year on year in both the numbers participating and the quality of competitor ideas. The first competitive round of the competition commenced in January 2012, with the competitors pitching their concepts in front of an internal judging panel. The groups were mentored and pitched again, after which a number were selected for the following round where external business people review the business plans and pitches. Four competitors were selected for the final, for an open-to-the-public Dragon’s Den format final. The total sponsored prize fund on offer is €10,000, with €6,000 earmarked for the winning team/competitor.

BUSINESS INCUBATION CENTRE

NUI Maynooth is developing a Business Incubation Centre (BIC) which will facilitate spin-in and spin-out companies. The BIC will be part of an ICT hub comprising several linked buildings, promoting industry-academic links and acting as a locus for entrepreneurial activity and commercialisation.



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