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# INNOVATION

SUMMER 2003

VOLUME 2, ISSUE 1

## A new momentum for EU technology

In our lead report this issue, **Phillipe Busquin**, European Commissioner for Research, compares the level of technology research investment in Europe with that taking place in the US. He calls for the strengthening of EU powers in the field of the knowledge-based economy: research, innovation, education and the information society.



Phillipe Busquin, EU Commissioner

Is Europe becoming a technological desert? In the early 1990s, France, Germany and the United Kingdom, Europe's leaders in technology, attracted 45% of cross-border research investment in the developed world, rivalling the US. However, the late 1990's saw a change in fortunes. The European countries' share of cross-border research investment dropped to 35%, whilst USA's portion climbed to 55%.

Statistics show that leading EU companies generally prefer to invest in foreign research. The US and, to an extent, Asia seem to be more attractive options when investing in research. When it comes to starting and especially expanding new technology businesses, the EU also lags behind its American counterparts.

Yet Europe does enjoy a high standard of scientific research. For instance more scientific publications are produced on this side of the Atlantic. However, European research centres simply do not hold sufficient visibility to attract large-scale invest-

ment. Another challenge is that the budget that Member States devote to research is unnecessarily fragmented: fifteen small streams do not converge into a big river.

Europe produces more science and technology graduates than the USA, however the gap between the number of researchers, really working in labs and not in unrelated activities, is widening. There are 5.4 per thousand workers in Europe compared with the US figure of 8.1.

Europe's failings are endangering its potential for long-term growth. The current economic downturn, which is affecting the knowledge-based economy, requires an even stronger response in terms of research efforts. Although major European companies appear to have maintained their overall level of investment in this field, if the slowdown continues, they will not be able to sustain their investment.

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The number of new firms has reached an all-time low. The situation is also bleak for small and medium-sized technology firms. Their opportunities for growth are hampered by a drop in available European venture capital funds, which has slipped by more than a third.

If nothing is done, then European private sector investment in research will continue to fall from its current level of 1.5% of industrial production, compared with 2.1% in the USA. The economic crisis means that it is even more essential to use research to nurture innovation for strong, sustainable growth in the future. Public authorities must therefore take swift action to restore confidence in the knowledge-based economy and make it grow again. This is why I am disappointed that some Member States are cutting back on research spending to address budget constraints, whilst the USA and Japan considerably boost their research spending.

If this trend continues, I believe Europe risks becoming a technological desert. With its fields of excellence and recognised successes, European research seems to be a long way from this, at least for now. But decline is never simple, rather it results from several events. Declining research means that fewer opportunities are created for new research. Other disadvantages are fewer interactions with research conducted elsewhere. Furthermore businesses become less willing to invest in Europe. At a certain point, the gradual decline goes into freefall. Evidence suggests we are approaching this scenario.



However the future is not all bleak. The EU sets world standards in those fields where there is strong integration at European level, such as aeronautics and space. European GSM mobile telephone standard has become a worldwide product and spearheaded further developments in mobile telephony. If we look at Grenoble's microelectronics industry, for instance, we see a cluster, which has benefited from long-term investment and strong partnerships between public research and the private sector, and draws American companies to Europe.

This is why I believe this trend can be reversed. It is crucial that Member States take action to strengthen initiatives proposed by the Commission and approved by their Heads of State and Government three years ago. The March 2000 Lisbon strategy aims to make Europe "the most competitive and dynamic knowledge-based economy in the world by 2010"; another goal is the launch of a "European Research Area" (ERA). Our aim is to make the ERA as important for science and technology as the

internal market is for the economy. Key to this is increasing private research effort and bringing the total European research investment to 3% of GDP in 2010.

Increasing research investment will allow Europe to narrow the gap. Europe currently spends about 1.9% of GDP on research versus the US figure of 2.7%, amounting to a total difference of more than €120 billion a year. The 3% objective is ambitious but realistic and in fact Sweden and Finland already exceed this level. EU programmes can help achieve this target by leveraging other private and public research spending. Technology can make an important contribution to economic growth and quality of life. In conjunction with Member States and industry, the Commission can help to create European technology platforms, bringing together researchers, users and public authorities in most important fields, such as hydrogen or clinical trials for poverty-related diseases (Aids, malaria and tuberculosis).

Success essentially depends on whether Member States are prepared to create a more favourable environment for private research and innovation in Europe. For instance, Member States need to consider finally adopting the proposal for a Community patent, allowing national programmes to finance trans-national partnerships, improving career opportunities for researchers, and helping to set up and fund innovative businesses. Member States must also engage in the necessary public investments, pool them at European level to develop attractive public-private research partnerships with global reach, and increase support for business research, which receives 50% more public funding in the USA.

Action at regional level is also important, as highlighted by the "Four Engines" interregional network (Baden-Württemberg, Catalonia, Lombardy, and Rhône-Alpes) and the German "BioRegios" (leading regions in biotechnology research). The European Commission's role is to propose and promote the necessary reforms. This role should be fully recognised in the future Constitution for Europe. I would like to see a chapter in the Constitution that unifies and strengthens EU powers in the field of the knowledge-based economy: research, innovation, education and the information society.

A great Europe needs an ambitious plan. A flourishing knowledge-based Europe is integral to this.

**Philippe Busquin, European Commissioner for Research**



## He'atid visit DIT

The organisation He'atid was developed in 1995 to address the shortage of skilled leaders in South Africa, particularly in the business sphere. Participants in its leadership development programmes are introduced to leadership, entrepreneurship and community development through exposure to successful and relevant international case studies.



He'atid delegates on their visit to DIT with Sandra Fisher, Manager of the Short Course Centre, 4th from right at the back.

The success of He'atid is due largely to the extensive Follow Up Programme that delegates participate in after their return to South Africa. This assists delegates to adapt and transfer their recently acquired knowledge and skills to their work and community environments. The interventions include regular meetings around the country.

A group of 16 men and women from a range of organisations in South Africa were chosen as delegates for the 2002 leadership programme, which took place in Ireland. Over two weeks the participants were exposed to models of development in business, leadership, entrepreneurship, and local communities. They were also introduced to credit unions, utilisation of donor funding, the development of the tourism sector, leadership in voluntary organisations, reconciliation and project management. Learning consisted of classroom instruction, study visits and a project that delegates designed in Ireland to implement on their return to South Africa.

Training programmes were organised by University of Limerick, and UCD's Smurfit Business School. DIT's Directorate of External Affairs hosted a special workshop for participants at the end of their tour. It's Short Course Centre and the Learning and Teaching Centre collaborated to provide participants with an opportunity to reflect on their learning during their two-week visit.

## HR MANAGERS AND DIRECTORS DATE FOR YOUR DIARY!!

DIT's Industry team is hosting a seminar on the afternoon of the 19th of June, in DIT Aungier St, to highlight the number and variety of training courses being provided to industry throughout its six Faculties. This event is aimed at all companies interested in hearing about DIT's corporate training services. If you would like to attend please contact Mary Homan: tel: 01 402 3403 or email: [mary.homan@dit.ie](mailto:mary.homan@dit.ie)

## DIT student wins bursary

Tourism Ireland has awarded its first ever research bursary to Waldon Mather, a student of DIT's MSc in Tourism Management - taught in DIT, Cathal Brugha St. The bursary is worth €3,000. "The contribution of DIT Cathal Brugha St, through its high calibre of students and standards of academic excellence has been integral in the development of the Irish tourism industry" said Joe Byrne, Director of Market operations, Tourism Ireland. "Tourism Ireland is delighted to provide support for the students through the research bursary and looks forward to making effective use of the findings of the research".



## Business Faculty Focus

### INTRODUCTION FROM THE DIRECTOR

In this issue we focus on the Faculty of Business and look at the range of teaching and research activities taking place within its five Schools and two research centres. Paul O'Sullivan, Faculty Director outlines its links with industry.

Sean Dorgan, Chief Executive of the IDA has strongly argued that future growth and prosperity will require a real partnership between business and higher education. Business has complex and changing needs and the challenges that lie ahead will need not just first rate graduates, but the training resources and R & D potential of higher education.

I believe that DIT has performed well in this regard in the past. We have positioned ourselves close to business and the business professions. We recognise that we cannot produce graduates who will deliver for their firm in isolation and we listen to what business leaders and individual companies are saying to the education sector. Flexibility is the key word. We believe we are different to other 3rd level Institutes because we are flexible and responsive within a timescale that is realistic for our business partners.

At present we are working with:

- 40 companies North and South with whom we have placed quality technology, IT and business graduates. Each of them is developing new processes and technologies within their host company
- two major retail organisations delivering a total management development package to fuel expansion
- a range of SMEs to break down the barriers to effective adoption of e-business processes

In addition, we offer a superb MBA programme that meets general management and sectoral needs. Our Links placement programmes can provide you with quality interns performing to your specification in marketing, management, retailing and IT.



Paul O'Sullivan, Faculty Director

If you would like more details on how the Faculty of Business may be of assistance to you please don't hesitate to contact my office at 01 402 3029.

*Paul O'Sullivan.*

### Companies benefit from expert help

Does your company need to improve your manufacturing process or bring in new technology or products? Fusion can be the solution.

Participants in the Fusion programme 2002 - 2003 come from a wide variety of sectors, including food, engineering and biotechnology. They welcome the opportunity to avail of expertise in the third-level sector in Ireland and have found that the programme increases their performance and competitiveness.

#### How Fusion works

Each company with a technology need is partnered with a college / institute / university department that provides tailored assistance to solve the company's problem. A high-calibre graduate is then recruited and based in the company to carry out work on your project for up to eighteen months.







## Funding

The programme is funded through InterTrade Ireland. It provides the company with substantial support including payment of half the graduate's annual salary (up to stg £22,000), travel and subsistence expenses of stg £3,000 and equipment expenses of stg £3,000.

The partnering college department is also supported by InterTrade Ireland, receiving stg £10,000 for its involvement and a further stg £2,000 in travel and subsistence.

## DIT Postgraduate Diploma

All graduates recruited onto the Fusion programme and based full-time in companies are registered students on the DIT Postgraduate Diploma in Management Practice. This programme gives business skills and management development training to science and technology graduates.



## Want to know more?

Companies or academics that wish to know more about the Fusion programme should contact Rosie Scott in the Faculty of Business (email [rosie.scott@dit.ie](mailto:rosie.scott@dit.ie) or phone 01 402 7052).

## Getting the benefit from e-business

Despite the apparent decline in information and communication technologies (ICT), government policy, state agencies and international practice continue to identify its critical importance as a basis for developing and sustaining competitive advantage. With the improved maturity which now characterises the area, commentators are turning their attention to the process by which organisations incorporate ICT into their activities and transform their organisations in the process.

Although it had a promising start, ICT progress in the SME sector in Ireland has faltered recently. Policy makers therefore have been prompted to investigate barriers to its adoption. Focus has turned to understanding the processes by which SMEs make the transition from what has been termed an 'old economy' to the 'new economy'.

A Faculty of Business project - TRAMs (Transition Research & Analysis Model) - is looking at this whole area. The study will involve the analysis of data to examine the

effect of e-business implementation on business process models. The traditional functional view of business as vertically organised activities is being reconfigured towards a framework that fuses business functions into a new business process model. This focus provides four basic strands of critical inquiry for the study - processes connected with:

- > Customer Relationship Management (CRM)
- > Enterprise Resource Planning (ERP)
- > Supply Chain Management (SCM)
- > Human Resource Management (eHRM)

There are three types of research being used:

- (i) baseline research which will generate empirical data
- (ii) longitudinal research which will give deep insight into the re-engineering of business processes over a 26-month period
- (iii) interactive discussion by means of academic work shops and publication to conceptualise and disseminate research findings to industry, academia and policy makers.

If you are interested in learning more about this project please contact John Jameson (see contact details below).



John Jameson,  
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## Competitive edge for retailers in non-food sector

Most people associate supermarkets with contemporary advances in retailing. They have strong branding, multinational penetration, sophisticated logistics, efficient consumer response and use information and communications technology extensively. But what about other retail sectors?

Work has just started on a substantial DIT-funded research project examining the state of non-food sectors of the Irish retail market. The results will be compared with the food sector, including supermarkets, using ten evaluative criteria ranging from the matters mentioned above to overall productivity and competitiveness. Researchers will also evaluate and compare the state of development of these sub-sectors in other parts of Europe and the United States.

The research team is being led by Don O'Riordan, head of the Retail Management Studies department in the Faculty of Business. The project will be carried out by a team of academic staff from the Schools of Management and Retail & Services Management who will plan and carry out the qualitative and quantitative research and analysis. A postgraduate research assistant is currently being recruited to provide



Don O'Riordan Head of Retail Management (left) and Pat O'Neill Head of School of Retail & Services Management

core team support. As the work progresses industry briefing seminars will be held and reports will be issued on various aspects of the findings. The team aims to publish a number of academic papers in refereed journals.

Professor Edward McLaughlin of Cornell University, New York has agreed to act as international evaluator of the main report from the project. His advice will be invaluable. For further details please contact Don O'Riordan, see contact details above.

## Tomorrow's networking skills today

The Cisco Networking Academy Programme provides participants with internet technology skills using an e-learning format allowing those taking the programme to cover elements of the modules in their own time and at a location of their choice.

Over a group of well planned sessions the Networking Academy Programme delivers web-based content, online assessment, performance tracking, and hands-on-lab experience. Those who are successful achieve industry standard certification (CCNA, CCNP and CCIE).

Since the programme's inception in 1996 over 400,000 have enrolled world wide.

The programme started with two networking courses:

- Cisco Certified Networking Associate (CCNA)
- Cisco Certified Networking Professional (CCNP)

It now also delivers another eight modules:

- IT Essentials I : PC Hardware & Software
- IT Essentials II : Network Operating Systems
- Fundamentals of Java Programming
- Fundamentals of Network Security
- Fundamentals of UNIX
- Fundamentals of Voice & Data Cabling
- Fundamentals of Web Design
- Fundamentals of Wireless LANs.

These courses are suitable for integration into educational and training programmes both with industry and academia. They have been delivered both as stand-alone short courses and over a number of weeks as part of a teaching term.

If you are interested in more information please contact Eugene Lynch, see contact details below.

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Eugene Lynch, Cisco Academy.

## Training the entrepreneurs of the future

DIT has successfully attracted EU funding of over €50,000 for entrepreneurship research under the Leonardo programme. The project team will conduct a state-of-the-art literature survey of the methods, tools and measurement systems used in the evaluation of vocational enterprise education and training (covering entrepreneurship, intrapreneurship and enterprising behaviour models). The research will be carried out in Austria, Finland, Germany, Ireland, Norway and Spain.

The survey aims to find out how applicable the evaluation methods are for measuring the short and long-term effects of enterprise education on the accrual of human, social and financial capital to the learners.

The researchers will then carry out qualitative research with key personnel in entrepreneurship development and investigate appropriate and relevant evaluation methodologies for vocational enterprise education and training. This work will be particularly relevant to EU policy makers and to providers of these type of training programmes.

The project leader in DIT is Dr Thomas Cooney (pictured below), see contact details for more information.



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## NATIONAL INSTITUTE FOR TRANSPORT AND LOGISTICS

Ireland's "Centre of Excellence" for supply chain management is DIT's National Institute of Transport and Logistics. Its mission, as defined by the Department of Enterprise, Trade and Employment, is to promote the development of supply chain expertise in Irish business, both private and public, for the benefit of the Irish economy. Supply chain management has been identified by Forfas as a crucial element in the overall ability of businesses to compete successfully in today's environment.

Supported through the National Development Plan, NITL provides training and education, consultancy services and leading research in supply chain management. The NITL KnowledgeBase contains a comprehensive body of information on all aspects of supply chain management, including a number of reports and directories published by NITL. Logistics Solutions is published six times each year, and contains articles from leading practitioners and academics.

Professor Austin Smyth has recently been appointed Director of the NITL. Before this he was the Chair in Transport Economics, Transport Research Institute (Tri), Edinburgh. From 2001-2002 he negotiated the formation of the Transport Research Institute - Northern Ireland Centre (a joint venture between Napier University and the Queen's University of Belfast). Prior to that he was Senior Advisor to the Ove Arup Partnership in London. In 1989 he was appointed to the first Chair in Transport established on the island of Ireland, based at the University of Ulster.

Professor Smyth has almost twenty years experience in research and consultancy worldwide, including EU, US, Eastern Europe, the Middle East and Thailand. A frequent participant in ECMT Round Tables, he is currently preparing a review of key issues including regulation and competition for its anniversary publication due in 2003.

Professor Smyth (pictured right) has acted as external examiner at Salford University, Napier University, Edinburgh and currently the Institute for Transport Studies, Leeds University.







## Management diploma for retailers

As part of our continuing professional development programme for the retail and services industries we have now developed a course tailored to the needs of specific industry segments and to the requirements of individual organisations.



With the retail management diploma programme employers can offer their staff professional development, an internationally recognised qualification and a structured career path. This in turn leads to reduced turnover of key personnel and an efficient, motivated management team.

This exciting new initiative has been welcomed by

companies like Musgraves who want to fast track the competitiveness of their retailing business. Sixty members of their staff based in Dublin and Galway are currently studying for the diploma. The course is being customised for two other international organisations whose staff will begin the course next September.

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A broad range of subjects are covered including: management, finance and human resource management. Depending on the client's requirements other subjects such as security, health and safety in the workplace, premises design and layout, atmospherics, distribution and logistics can be introduced.

This is one of the most significant developments in retail and services management education since the launch of the School's honours degree programme in 1998. For more details contact Michael Quinn, see contact details.

## DIT's MBA Programme

The third group of students on DIT's MBA programme jointly offered by the Faculties of Business and Built Environment started in January. This programme has attracted graduates from leading universities and higher education institutions in addition to DIT alumni. They come from a wide range of disciplines including engineering, manufacturing, business, humanities, marketing, theatre arts, agriculture and hospitality management.

Organon, Schneider Electric, Dublin Dental Hospital, Eircom Ltd., HVB bank, 98FM and the Canadian Embassy are a few of the organisations represented on the first year programme.

It is particularly successful in attracting a strong international student group including Svetislav Filipovic, a mechanical

engineer from Serbia; Oswaldo Quiros, a native of Peru who is a business and economics graduate from TCD and Parveen Shabina, a computer engineer from India. Other international students hail from China, Nigeria and Argentina.

DIT's MBA prepares individuals for senior management posts. It is offered on a part-time basis over two years with lectures on Friday afternoons / evenings and Saturday mornings. Further details can be found on DIT's website: [www.dit.ie](http://www.dit.ie)

Applications for the January 2004 intake for this programme are now being accepted. For further details, please contact Phil Hanlon, Assistant Academic Director, see contact details.



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First year group MBA programme, pictured left



# Services for your business

DIT's Offices of Innovation & Industry Services (OIIS) are the ideal point of contact for organisations interested in developing research links, training programmes and other collaborative initiatives with Ireland's largest and most applied third level institute. Andy Maguire heads up the OIIS in the Faculty of Business where he promotes interaction between faculty staff and its industry clients.:

## Innovating new products and processes

Through the OIIS in the Faculty of Business local enterprises gain access to skilled researchers who help develop and test new product concepts and provide you with access to state of the art equipment.

From pan-European 6th Framework programmes to Enterprise Ireland-funded Innovation Partnerships the OIIS will help you identify a funding programme that suits your business requirements. A quick call to Andy's office will start the ball rolling.

## European links & funding

The Faculty of Business has extensive links with EU 3rd level institutes and a wide range of experience in collaborative research with its EU partners. The OIIS can help establish successful project teams for EU funding applications.

In January of this year, as part of the TII European wide Quality Net initiative, Andy Maguire (on the left) visited Francisco Ferrando (right) of IMPIVA, the economic development agency of Valencia. The Quality Net initiative will highlight the effective means of achieving technology transfer from research institutions to commercial enterprises.



## Staff training and development

As recognised leaders in continuing professional development, DIT and the Faculty of Business provide a range of highly valued and proven programmes, from the traditional classroom scenario through to utilising the latest technologies and distance learning techniques.

## Sectoral studies, conferences, business information..

With well-established schools in the faculty the OIIS also assists in producing sectoral studies to ensure existing programmes remain close to industry's requirements. The office also helps to organise conferences and it is currently planning a retail sector event. It is currently helping to optimise the utilisation of Ireland's latest and most IT-advanced business library facility.

Andy can be contacted at 00 353 1 402 3009 or email: [andy.maguire@dit.ie](mailto:andy.maguire@dit.ie)

## Making International Managers

This September the Faculty of Business is launching an MSc in International Business (MIB), an exciting one-year program dedicated to growing business graduates into the International managers of the future.

The cornerstone of this unique program provides students with the opportunity to undertake real world consulting projects in an international context while at the same time providing high quality consulting services for participating client companies.

The course director, Mary Faulkner,

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envisages a wide range of consultancy projects “anything from analysing international markets, to developing international strategic plans, designing global cost-reduction strategies, carrying out international competitive analysis and performing feasibility studies. We are very open minded once the project has a significant international component”.

Clients for other courses run by the faculty have ranged from some of the world's largest MNCs to small entrepreneurial start-ups and many have come back year after year.

Companies that are interested in participating in the programme should contact Mary Faulkner, see contact details.



## MSc in Strategic Management

The MSc in Strategic Management aims to prepare Business Graduates for a career in Management with the specific aim of accelerating their progression to senior management in the private commercial sector, in the public sector, in consultancy and in various advisory and research roles. The programme is conceived and presented from a resolute general management perspective, and seeks to engender in the graduate a knowledge of the disciplines, thinking and competences necessary to underpin senior management decision making. The part-time programme

has attracted managers from a range of sectors, especially technology companies. The programme will also be offered on a full-time basis from September 2003.

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For more information on the programme please contact Tom Fennell, see contact details.



Course Director Tom Fennell with graduate Cara McGeer from the first cohort to complete the course.

## Links gives you quality interns

Most chief executives and managers have a special project which seems to remain forever on the back boiler - an analysis of the sales ledger; a revamp of catalogues or brochures; the creation of a project database; or a product research problem with trade, customers or consumers. You know how valuable such projects would be and are convinced of the value of

the data which would be yielded. But in the day to day demands of business these projects never seem to make it to the top of the priority list.

Other managers may need cover for their administration and sales support routines at peak periods or during staff holidays. Or they may want to free up some of their key people from time consuming tasks for a period.

The Links Programme in DIT's Business Faculty provides an ideal solution to these needs. Now in its thirteenth year, Links has provided short-term placement support to over 200 Irish companies with a dual objective of meeting real business needs while giving third year students of the faculty the opportunity to acquire hands-on business experience.

Students have developed the technical, interpersonal, conceptual and diagnostic skills required to make an effective and valuable contribution to your business during their Links Placement.....and perhaps beyond.

The students from both the BSc in Management & Marketing and the BSc in Retail & Services Management are available from April 7th 2003 and represent a very cost effective resource for carrying out special projects or relieving pressure on your administration staff at peak times. Placements normally last from 4-6 months.

Full details of the programme are available from Stacy MacCarthy, who will be happy to discuss details or call to your company. This may be the opportunity that you have been waiting for. See contact details.

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## **New Aungier Street Market Information Centre & Library**

The new library and learning resource centre at Aungier Street opened for business on September 30th 2002 and is already a hive of activity. Planned as a multi-purpose facility with an emphasis on electronic access to the world of information, IT facilities at the library are state of the art.

A suspended floor houses all power and data connections. Full internet access and a range of software applications are available on 164 public access PCs. A specially designed training room houses 26 PCs with overhead projection. Video, DVD and language learning facilities are available in the AV room and a new print and photocopy center is in full operation.

Approximately one third of reader places are wired for laptop use with power and data facilities. Eight Project Rooms are available for students working on collaborative assignments. The library has a book collection of approximately 60,000 items with subscriptions to 650 journal titles. Feedback from staff and students has been extremely positive and the general consensus is that the library is a facility of which DIT can be justifiably proud.



Aungier Street at night

## **STUDENT PLACEMENT OPPORTUNITIES IN E-BUSINESS & MARKETING**

In-company placement is increasingly recognised as a valuable way of enhancing the learning experience of Business Studies students, while enabling participant organisations to undertake valued work.

The students on this placement programme are in year three of their marketing studies, and have been studying many aspects of e-business from a marketing and management perspective. Core areas would include marketing strategy, e-business design and development & market research and analysis. As such they are interested in a placement in a marketing, sales, and/or administrative function, or indeed involvement in any e-business related project which your organisation might be considering.

Students are available for a period of ten week from January to March.

For further details contact Stacy Mac Carthy - Links Placement Officer at [stacy.maccarthy@dit.ie](mailto:stacy.maccarthy@dit.ie)





## Project Development Centre

The Project Development Centre (PDC), an initiative of the Dublin Institute of Technology, is currently accepting applications from entrepreneurs with technology-based business ideas for participation on their next Hothouse programme, which will begin in May 2003.

Hothouse is aimed at technology based start-ups that have the potential to grow significantly. This year-long programme guides the entrepreneur through the chaotic start-up phase and provides them with the focus and pace necessary to fast track their business development.

The programme offers participants;

- § incubation space and facilities
- § management development training
- § help in raising investment
- § strategic business counselling
- § access to a network of successful entrepreneurs and business experts
- § participants may also qualify for additional support from Enterprise Ireland which could provide them with up to 50% of their current salary.

Based in the invigorating and entrepreneurial environment of Docklands Innovation Park the PDC has always been an innovator in the area of enterprise. Having helped launch over 250 companies during the past ten years, the PDC has a wealth of experience and expertise in the management and delivery of practical programmes for dynamic Irish businesses. The PDC has supported a further 50 companies through its Fast Growth Programme and has provided early stage ventures within its portfolio the opportunity to access

seed funding through the Small Enterprise Seed Fund.

For further information contact the manager, Bernadette O'Reilly, see contact details below.



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DIT Aungier St,  
home of the  
Faculty of  
Business

# Research Support Unit

## Support Unit delivers

**In this special report we introduce you to DIT's Research Support Unit (RSU) established by Steve Jerrams, Head of Research. The unit has been set up to play a leading role in building a research ethos in the Institute.**

Research has many faces in an organisation as diverse as DIT, but this is our strength. We have a wealth of knowledge to draw on from academics at the leading edge of Science and Technology, the Humanities and Social Sciences.

In today's economic climate, Irish industry and commerce needs the competitiveness that good research can provide. The RSU offers a link between industry and academic research. The Unit is working to raise the international profile of our research and is committed to maintaining quality and relevance by subjecting all our research to periodic external review.

Proposal writing courses are run for those bidding for external and internal funding and all proposals are evaluated by panels that include external academic and business experts.

The Unit has been responsible for funding new research and helping existing research teams build up core strengths. The RSU is currently updating all processes and procedures so that DIT researchers are better placed to win external funding and are given effective support in managing projects.

Traditional postgraduate education and the research that underpinned it, now rarely meet the needs of a knowledge-based economy in which technology transfer and intellectual property flow from the interaction between higher education and industry. The Research Support Unit (RSU) was created to foster high quality sustainable research in DIT. To reach this goal, new and existing research is strategically planned to have national and international relevance.

To raise levels of applied research, RSU has funded competitively assessed projects across all disciplines



and

**Dr Steve Jerrams, Head of Research (Development, Consultancy and Intellectual Property).**

faculties in the Institute. In recent months €435,000 has been awarded to a broad range of research initiatives. Projects designed to build strong new research teams, forge links with world-renowned research partners and set up international workshops and symposiums, have flowed from the innovation and creativity of DIT staff.

Additionally, the RSU has supported individual researchers, assisted postgraduates with their expenses, funded European travel and financed exhibitors in research showcases.

The variety of research just starting under new team initiatives is an indication of the breadth of talent in DIT and the opportunities open to undergraduate and postgraduate students.

New groups have been set up to research topics as diverse as Airborne Acquisition of Spatial Data and Retail and Tourism Enterprise. Concurrently, research has begun to determine effects on the human eye from ultraviolet light in collaboration with the Optometry Faculty at the University of Houston, Texas.

Internet video conferencing in partnership with Queens, Belfast and Ryerson University, Toronto, is further internationalising DIT research.

Under a separate initiative the RSU has sponsored an eagerly awaited Advanced Engineering Conference. New funding initiatives are summarised overleaf.



## TEAM RESEARCH SCHEME (TERS)

This scheme was created to support small research teams wishing to embark on a new element of research within well-established disciplines. Applications were invited from all faculties and centres within DIT and eighteen proposals were submitted from new groupings as well as established research teams.

Proposals were required to display national and international relevance, impact on teaching and learning, aims, objectives and targets and proposals for dissemination of the research.

Successful teams will be operational within six months of the award and meet agreed annual targets for research outputs.

Six proposals were chosen for funding of €50,000 each and they are listed below along with the names and phone numbers of the principal investigators.

**Sustainable Energy Research Group**, Anthony Farrell, tel: 00 353 1 402 3679, Faculty of Engineering.

**Enterprise & Innovation Research Unit**, James Urquhart, tel: 00 353 1 402 3111, Faculty of Business.

**DIT Vision Sciences Research Team**, James Walsh, tel: 00 353 1 402 4928, Faculty of Science.

**Geo-spatial Data Research Team**, Kevin Mooney, tel: 00 353 1 402 4001, Faculty of the Built Environment.

**DIT Retail Research Team**, Don O'Riordan, tel: 00 353 1 402 7059, Faculty of Business.

**Tourism Enterprise & Local Development**, Sheila Flanagan, 00 353 1 402 4380, Faculty of Tourism and Food

## INTERNATIONAL COLLABORATION AWARD SCHEME (ICAS)

A key recommendation in the study carried out by the Technopolis Group for Forfás and the Higher Education Authority, ('Benchmarking Mechanisms and Strategies to Attract Researchers to Ireland,' June 2001) calls for an improvement in international networks and the visibility of Irish universities.

DIT is contributing to this improvement by establishing international research partnerships. Two awards were made to researchers who could build strong and far-reaching links with a partner outside the State. The partner could be an

academic, industrial, commercial or research institution, but must already be recognised worldwide as a leader in its field.

Proposals had to demonstrate a clear vision of the intended outcomes of the collaboration, professional planning and high levels of support from the partner institutions. The schemes will be operational in one year, but must meet objectives and still be showing benefits after two years from the date of inception.

The successful schemes listed below were each awarded €10,000:



Dr James Walsh

**Effects of the Ultraviolet Light Field on the Human Eye**, James Walsh, tel: 00 353 1 402 4928, Faculty of Science.

**The Feasibility and Usefulness of Collaborative Broadband Access**, Jen Harvey, tel: 00 353 1 402 7883, Distance Learning Centre.

## NEW WORKSHOP SCHEME (NEWS)

Though DIT successfully hosts a number of international conferences, seminars and workshops, this scheme sought to encourage staff new to event organisation, by providing funding for an international workshop in a research discipline for which DIT was hitherto unrecognised. The successful applicant was awarded a grant of €7000 to assist in preliminary organising costs, and ensuring tangible outcomes could be delivered at the event. Applications were rated on the basis of the proposed structure of the workshop, its relevance, target audience, assessment of its impact and proposals for marketing and disseminating the workshop proceedings.

The award was made to a proposal for a conference in **Design, Nanotechnology & Photonics Manufacturing**. The conference organiser is Neill Gillespie of the Faculty of Engineering who can be reached on 00 353 1 402 3633.

The RSU exists to assist research and researchers in DIT and to forge links with industrial and academic partners in Ireland and abroad, with the aim of supporting innovation in a knowledge-based world.

Bring your ideas to RSU. We are here to help!



## Who's who in RSU?

**DR STEVE JERRAMS,  
HEAD OF RESEARCH  
(DEVELOPMENT,  
CONSULTANCY,  
INTELLECTUAL  
PROPERTY).**



Steve joined DIT three years ago from Coventry University where he lectured in Mechanics of Solids and was Director of the Rubber Research and Technology Unit. He was Research Fellow in the Faculty of Engineering before moving to Central Office.

While Steve is now responsible for managing the Research Support Unit (RSU), planning research strategy and building sustainable research throughout the institute, he still retains his interest in non-linear materials and publishes extensively on elastomeric material behaviour.

Steve has collaborated with numerous prestigious multinational organisations while working in Coventry and Dublin. These include British Aerospace, Lucas Aerospace, Robert Bosch, Triumph Motorcycles, GKN, BTR, Standard Products and the Deutsches Institut für Kautschuktechnologie (DIK).

He has maintained old links and formed new ones with European research partners since joining the Directorate of External Affairs and still has postgraduate research students in England, Germany and Ireland.

Steve is responsible for setting targets for research output, ensuring that DIT's research complies with the highest international standards, coordinating research policy and plans and helping researchers identify and acquire funding.



**PHYLLIS PRENDERGAST,  
PERSONAL ASSISTANT TO  
STEVE JERRAMS.**

Phyllis has worked in Administration in DIT for six years, but took on her current role when the Head of Research was appointed. She came to External Affairs from the office of the Institute's Secretary.

Give Phyllis a call if you have any questions about research administration, internal funding schemes, research committees and procedures. She is also responsible for the day-to-day running of the RSU and is its first point of contact whether you are an industry client, academic researcher or research student.

**CATHERINE MCGARVEY, RESEARCH  
ACCOUNTANT**



Catherine has been responsible for Research Accounts within DIT for the last six years. During this time research activity in the institute has burgeoned and demands on academic researchers have multiplied. As a result, Catherine has built up a team of experienced accounts staff.

Her team (see overleaf) is responsible for setting up projects, verifying all costs statements and financial reports to external funders, producing statutory accounts, processing payments, placing staff on research payroll, raising sales invoices for all external income and introducing and commissioning state of the art financial systems.

### Contact details

**All RSU staff are based in  
Central office at: DIT,  
Fitzwilliam House  
30 Upper Pembroke Street  
Dublin 2.**

**Steve is in Room 301  
tel: 00 353 1 402 7537  
fax: 00 353 1 402 3393  
email: [stephen.jerrams@dit.ie](mailto:stephen.jerrams@dit.ie)**

**Phyllis is in Room 303  
tel 00 353 1 402 3428  
fax: 00 353 1 402 3393  
email: [phyllis.prendergast@dit.ie](mailto:phyllis.prendergast@dit.ie)**

**Catherine is in Room 105A  
tel: 00 353 1 402 3331  
fax: 00 353 1 402 3432  
email: [catherine.mcgarvey@dit.ie](mailto:catherine.mcgarvey@dit.ie)**





## Accounts staff



Jonny Lee is responsible for development centres, project queries, and statutory accounts.

Contact him at  
tel: 00 353 1 402 7512  
or email  
jonny.lee@dit.ie.

Gareth O'Neill looks after sales invoices and processing of receipts.  
Contact him at  
tel: 00 353 1 402 3414  
or email:  
gareth.oneill@dit.ie



Debbie McCarthy is responsible for project set-up, budgets and 'Agresso.'  
Contact her at  
tel: 00 353 1 402 7518  
or email:  
debbie.mccarthy@dit.ie

Elaine Hopkins handles cheque requisitions and research staff payroll set-up.  
Contact her at  
tel: 00 353 1 402 3359  
or email:  
elaine.hopkins@dit.ie



## EU/INTERNATIONAL AFFAIRS OFFICER



Marie Kennedy established DIT's EU/International Office in 1995. Her aim was to provide a "one stop shop" to help DIT staff organise and manage externally funded projects. The Office is in the Directorate of External Affairs, in Pembroke Street.

Marie has worked on EU funded projects since the 1980's and has been involved in the management of a diverse range of educational, training and research projects including: COMETT, ADAPT, NOW, YOUTHSTART, HORIZON, ERASMUS, and 3rd, 4th, 5th and 6th European Framework programmes for Research and Development.

Many of these programmes have changed since the Office was set up. She now deals with contract management of projects including those funded by NDP, SFI, Enterprise Ireland, Skillsnet, TSR, Leonardo da Vinci and so on. The Institutional contract for the SOCRATES programme is also managed through this office and ERASMUS grants are awarded to both staff and students through this mechanism.

The International Office provides the following services to all DIT staff:

- Liaison with EU, international organisations and institutions
- Information on all EU projects, national (NDP/EU) and internationally funded programmes for research, training and education
- Advice and assistance in the sourcing of funds and preparation of project proposals including financial statements and budgets
- Project management and support service to project directors/managers during the lifetime of projects
- Institutional coordination of the SOCRATES programme and allocation of grants to students and staff.

The Office is currently working with the Heads of Research and Innovation and Industry Services to update policies and procedures to assist researchers in the management of current and future funded projects. Contact Marie at:  
tel: 00 353 1 402 3341, email: marie.kennedy@dit.ie



## THE SUSTAINABLE ENERGY RESEARCH GROUP (SERG) - A TERS-FUNDED PROJECT

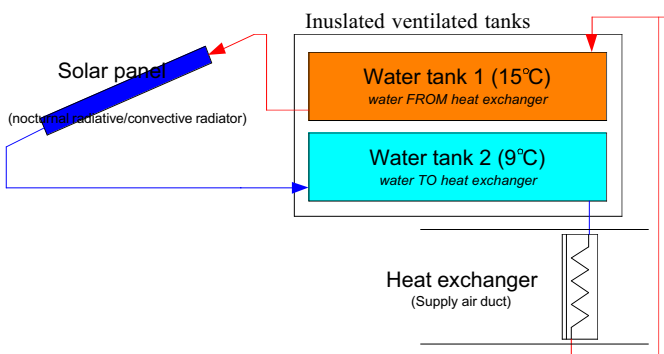
The main objective of this research group is to focus on low energy built environment projects. This collaboration will draw together staff members actively involved in low energy systems design (building services), low energy architecture (civil and architectural), and sustainable development (MSc & ME taught courses).

The unit builds on existing expertise and resources and develops new ones by collaborating across different countries. Researchers from Spain, Germany, Norway, Sweden, Poland and Croatia have already been identified as partners for the group. It will focus initially on the design of a low energy cooling system for buildings - which forms part of a major low energy system research project currently under way (LECH-VAD).

The initial project aim is to develop a kit suitable for installing in new or existing multi-storey buildings to reduce energy requirements and green house gas emissions. This is an alternative renewable technology to conventional refrigerant-based mechanical air-conditioning.

The system will achieve this goal using night cooling/solar heating and rainwater as the cooling medium. The water is chilled at night by a combination of radiative and convective means and heated by day using modified 'hybrid' solar panels. The water is stored in cooling and heating tanks for respective functions. A simple heat exchanger circuit is attached and draws cool/heated water as required. The system in cooling mode is illustrated below.

PRODUCT KIT: heat exchanger/cooling components



The product used will enter a niche market for energy saving (renewable) technologies, such as solar water/air heaters and heat pumps currently available.

The product will significantly reduce running costs and CO<sub>2</sub> emissions associated with air conditioning systems, and will target the building services industry as a value added technology.

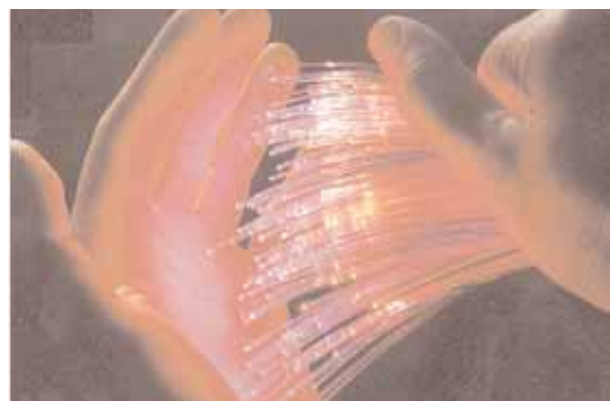
It will be commercialised through the establishment of an Energy Research Group at DIT, which will evolve into a start-up company/centre of excellence with strong networking with Irish 3rd-level institutes and industry. Existing SMEs in Ireland will develop and grow through supplying components and interaction with the company.



The team is being led by Anthony Farrell. Having worked with DIT for 10 years and completed the Technician Cert, Diploma and Degree in Building Services Engineering, Anthony undertook a Masters Degree in Sustainable Development. He has always had a keen interest in sustainability and low energy building design.

Anthony began as a DIT research assistant in the Timber Development Centre in 2000 and also undertook research for the Energy Research Group in UCD. In 2002 he returned to DIT as a lead researcher on a major project in the Faculty of Engineering, DIT Bolton Street. He is now a lead researcher of the TERS scheme, with the main aim of establishing a 'Sustainable Energy Research Group' (SERG) on the Bolton Street Campus. The group heralds an interfaculty collaboration between Engineering and Science on the Bolton St and Kevin St sites.

For more details contact Anthony Farrell:  
tel: 00 353 1 402 3679  
email: [anthony.farrell@dit.ie](mailto:anthony.farrell@dit.ie)



Optical Communications ~ One of DIT's core research skills



## The Interface Project - an ICAS-funded proposal

One of the projects funded under the Research Support Unit's International Collaboration Award Scheme is being co-managed by John Mayock and Dr Jen Harvey, Head of Distance Learning. Here, Jen summarises the aims and objectives of the research and brings us up to date on progress so far.

With new developments in learning technologies and improved connectivity and internet access there is great potential for Higher Education Institutions (HEI's) to deliver programmes to students both on and off campus.

The Interface project aims to evaluate a new core technology (the Access Grid - AG) as a research tool and an interactive virtual environment to support off campus student collaborative projects. It consolidates an international partnership between DIT and two universities: Ryerson University, Toronto and Queens University, Belfast. The Rogers Centre at Ryerson is developing the project technology where it is available in experimental form.

AG multi-cast video conferencing technology allows research teams separated by great distances to collaborate on the same project simultaneously. It has also been used as a medium for distance collaboration between artists. AGs are supported by international collaborative research and there are currently over 130 locations participating in this including a European Access Grid. The low cost of this technology is an important feature and software is freely available from the open-source partners collaborating in its development.

Interface is a two-phase project. In the first phase a feasibility study is being carried out. A research assistant (Donal Siggins) has been recruited by DIT to carry out some of the initial work. The three partners in the project have a broad range of experience in the use of leading edge information and communication

technologies (ICTs). In particular they have expertise in using video-conferencing systems to support learning and teaching. The second phase of the project will build on their work in this area leading to a cross-institutional collaborative project.

The DIT project managers, John Mayock and Dr Jen Harvey met with Dr Michael Murphy and Many Ayromlou the Ryerson partners, in Dublin, last January to exchange project ideas (see picture). In the second phase of Interface, DIT Fine Art students and Communication and Design students at Ryerson will participate in collaborative work focussing on the nature of place and site-specific art.

During this phase the researchers will explore the pedagogical usefulness of collaborative broadband access. The potential of the Access Grid for making art within a shared space environment will also be evaluated. The collaboration between students from different disciplines and from different international locations will be supported by the project.

At the end of the project the research will be evaluated to see how useful the 'shared space environment' was in supporting and developing a learning community, enhancing course development and 'pooling' resources from diverse institutions. A report based on student and staff evaluation of the project will be available later in the year.

For information on Access Grid technology see: <http://www-fp.mcs.anl.gov/fl/accessgrid/>



Project team (l to r) John Mayock, Dr Michael Murphy, Dr Jen Harvey, Many Ayromlou

Contact details:  
Dr Jen Harvey  
Head of Distance Learning  
DIT  
14 Upper Mount St  
Dublin 2  
tel: 00 353 1 402 7883  
email: [jen.harvey@dit.ie](mailto:jen.harvey@dit.ie)



## APPLIED VISION SCIENCES RESEARCH TEAM A TERS-FUNDED PROJECT

This original research involves a broad range of scientific disciplines such as Optometry, Physics, Chemistry, Environmental Science, Molecular Biology, Medicine and Psychology.

The Applied Vision Sciences Research Team, led by Dr James Walsh of the School of Physics, in DIT's Faculty of Science, Kevin Street, calls on researchers across a broad range of disciplines within DIT, Ireland and abroad. By supporting and developing the DIT element of the research, the school will be in a position to apply to larger funding schemes such as the HEA, SFI and the US National Eye Institute (NEI) as principal investigators leading broad based research centred in DIT.

The Team's research has a depth of experience in ocular science but initially the emphasis will be on James's work establishing the causes of solar radiation-induced ocular disease and methods of prevention. The Team's current research establishes a basis for anyone interested within DIT, or outside, to carry out ocular science related research and to join the team at any time.

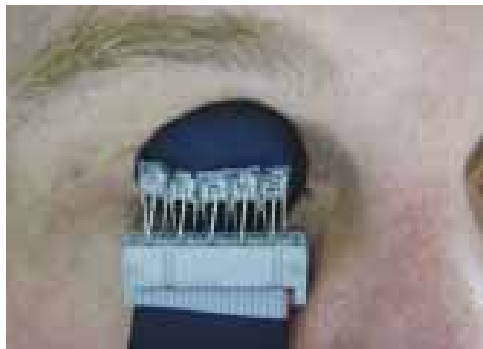


fig 1

It will also provide the school with equipment, materials and expertise that will be invaluable to the other emerging ocular sciences research groups. A new clinical training facility for the Optometry course is being established on New Bride Street (adjacent to Kevin Street). Support of optometric and related visual sciences research will enhance the profile of optometry research within DIT, facilitating the expansion of post-graduate research. This is a very opportune time for DIT to fund novel research in Optometry, with the arrival of a new Head of Department, Dr Peter Hendicott, who is an important part of the team.

Current projects are:

1. Development of the next generation of instrumentation for the in vivo quantification of solar UV incident on the ocular surface, is underway, see figures 1 (above) and 2 (above right). Recent research by

James, and others, has shown that some degenerative eye conditions occur predominantly at the nasal edge (limbus) of the cornea due to the reflection of UV from facial features and by tangential refraction through the cornea from the opposite side, see figure 3 (below).

“We are working on a rigorous examination of the relative contribution of these mechanisms to the in vivo ocular UV flux and an investigation of the biological effects of the UV dose received”, says James. “A new generation of novel photodiode sensor arrays are being constructed to measure the solar

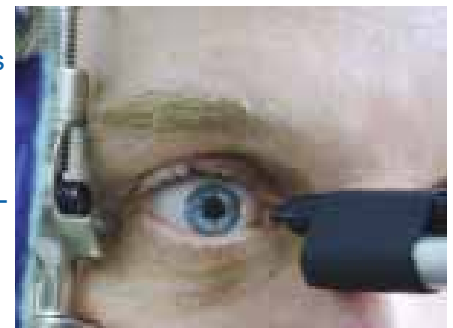


fig 2

UV field across the external ocular surface, quantify the dose received and relate it to the dose given to ocular cell cultures in a controlled UV light box environment. In addition, a novel spectrometer front-end set-up is being designed and constructed to measure the spectrum and dose of radiation reflected onto and refracted across the cornea.”

The researchers are designing, constructing and validating these novel instrument set-ups and rigorously applying them to environmental and clinical situations. This instrumentation will also be used to measure the UV attenuation at the ocular surface achieved by ocular protective devices. The current research is being carried out in collaboration with James and his

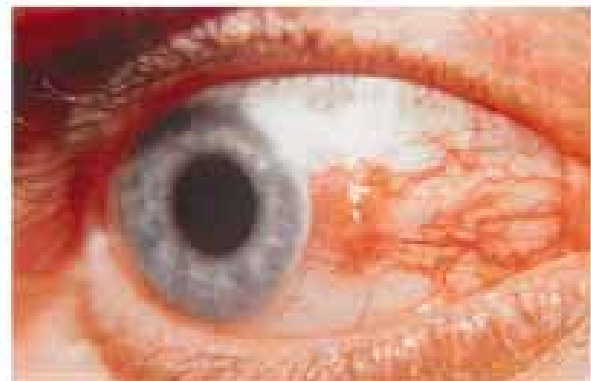


fig 3

optometry research colleague Linda Moore, by a DIT Scholarship-funded graduate student, David Fleming.





2. Further expansion of the preliminary research is being carried out into the quantification of UV-blocking characteristics of contact lens materials. Research into these characteristics has been advanced by Linda and James. The next stage involves the modelling of UV environmental data to measure the efficiency of these contact lens materials in affording ocular protection. This commercially useful information will be applied in the assessment of viability of affording protection factors to contact lens materials.

3. Novel research is ongoing into the measurement of the visual effects associated with attenuation of visible light by ocular UV-protective devices such as sunglasses. More specifically, colour vision, visual acuity, contrast sensitivity, depth perception, accommodation and convergence aspects of visual processing will be studied using conventional and specialised methods of optometric testing.

For these studies, colleagues in the research laboratories and optometry clinics in DIT, Beaumont Hospital, Rand Afrikaans University and the University of Houston have unique access to cell culture facilities and contact lens wearers. Lenses can be evaluated before and after a period of use. In addition, James has expertise in the optical modelling of ocular components and proposes to design ray-tracing models of the reflective and refractive components of ocular incident UV. Linda's experience in the optometric assessment and management of elite sports participants will further serve to strengthen studies into clinical applications of instrumentation and models developed in the proposed research.

The commercial potential of the research is in the development of models to predict the sun protection factor afforded by existing contact lenses, the measurement of the actual protection factor of existing lenses and those based on novel lens polymers developed as part of this research.

Research into the current development of topical treatments for the curing of UV-related ocular disease as a result of existing UV studies should be noted. However, this research is proprietary and the immediate potential large demand for such a product can only be alluded to.

For more information on this project contact:  
Dr James Walsh  
DIT Faculty of Science  
Kevin St  
Dublin 2  
tel: 00 353 1 402 4928  
email: james.walsh@dit.ie

## RSU PROMOTES IRISH RESEARCH AND INNOVATION INTERNATIONALLY

The Research Support Unit has assembled a strong team to take a leading part in an international conference devoted to the industry-research-academia nexus, to be held in San Francisco in August.



The team and their roles are:

International chair: Steve Jerrams, Head of Research, DIT

Moderator: John Donovan, Head of Innovation and Industry Services, Faculty of Applied Arts

Discussion Group Leader: Martin Lyes, Divisional Manager, Science and Innovation, Enterprise Ireland  
Panellist: Jim Urquhart, Head of Graduate School of Business, DIT

Discussion Group Leader: James Walsh, Research Strategist, Faculty of Science, DIT.

The Conference addresses, among other topics, the important issues of Conflict of Interest, Intellectual Property in an International Collaboration, Industry - University Contracting, Export Controls, University Research and Technology Transfer.

For more information or an application form, contact Steve Jerrams on (01) 402 7537 or email: [stephen.jerrams@dit.ie](mailto:stephen.jerrams@dit.ie).

### Enhancing the Partnership in a Global Economy



2003 AUGUST 17-19  
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Sponsored by the National Council of University Research Administrators  
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*"Ireland is now competing at the forefront of research in science and technology."*

Erich Bloch  
Former Director, U.S. National Science Foundation

# Ireland invests in great scientists...

## Science Foundation Ireland,

the national foundation for excellence in scientific research, has already committed an investment of approximately €200 million in over 90 research projects in Ireland. Through this investment, SFI will support both the retention of outstanding scientists in Ireland and the attraction of their leading international counterparts to work in Ireland.

Each year under its various programmes, SFI has a number of calls for proposals from scientists and

engineers in the fields that underpin biotechnology and information and communications technology. The Foundation also accepts unsolicited proposals throughout the year. We also support SFI-backed researchers in building research partnerships with industry.

In addition, SFI funds research workshops and conferences held in Ireland as well as distinguished research visitors.

SFI chooses recipients of these diverse grants through merit review by distinguished scientists. Individual awards normally range from €100,000 to more than €1.0 million per year. Centres awards range up to €5.0 million per year for up to ten years.

For more information on SFI's programmes see [www.sfi.ie](http://www.sfi.ie)



*built for science*



## Science Foundation Ireland

Wilton Park House, Wilton Place, Dublin 2, Ireland  
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email [info@sfi.ie](mailto:info@sfi.ie) [www.sfi.ie](http://www.sfi.ie)



## THE FUTURES ACADEMY

As a result of a perceived lack of forward vision and strategic thinking in many sectors of Irish social and economical life, The Futures Academy at DIT was established in January 2003 to provide both a research and consultancy forum for promoting and encouraging the concept of 'future-proofing' policy and strategy decisions.

Ireland is only just coming to terms with the concept of holistic, social, environmental and economic planning. This is perhaps most evident in the built environment, but this type of planning needs to establish a stronger foothold in the fields of finance, social welfare, transport and a variety of other areas of strategic policy analysis and business planning.

The creation of The Futures Academy at Dublin Institute of Technology, for the first time in Ireland furnishes Irish public and private sectors with expertise and networks within which to develop and instigate future-proofing in their own disciplines and industries. The business plan for the first year includes the following ambitions:



Dr Lorcan Surr, Head of DIT's The Futures Academy

1. To secure participation in a major research project where futures methods can be applied to a field of strategic planning policy
2. To hold a landmark conference on 'Imagineering Ireland' aimed at utilising a futures approach to achieve sustained economic prosperity for Ireland
3. To conduct a 'Horizon Scanning Exercise' providing a filter of key trends shaping the future of the world for the Irish context
4. To undertake 'Wind Tunnel Testing' of selected European and national policy proposals to future-proof them for local implementation
5. To develop a Future Studies teaching module for incorporation into programmes across DIT, and probably elsewhere in Ireland.

Although formed under the auspices of the Dublin Institute of Technology, and initially funded by its Research Support Unit, The Futures Academy is not an academic exercise. With staff of high quality professional and academic backgrounds, The Futures Academy is a very pragmatic, down-to-earth research and consultancy service. Through the experience of its staff, it recognises the need for government and industry alike to be provided with useful, practical, comprehensible information; not simply any old information, but that, which can make a positive difference to everyday policy and practice. The information provided is also not merely a derivate of academic textbooks with a smattering of management hyperbole, but is based on research and information procured from a variety of professional and experienced stakeholders in any given practice or industry. This is a vital aspect of the work of The Futures Academy: the advice given is professional, realistic and implementable.

The staff of The Futures Academy understands the pressures under which both the private and public sectors operate. Through their own experiences in a variety of fields and roles, they have the ability to access, process and provide advice on the potential for company and departmental strategies; in effect, to 'future-proof' present-day decisions against the uncertainties of tomorrow. The Chairman of the Futures Academy is Professor John Ratcliffe, Director of the Faculty of the Built Environment. John has been involved in futures thinking and research for the last decade and has built up a considerable expertise and knowledge-base of information on all aspects of futures. The Head of the Futures Academy is Dr Lorcan Surr. Lorcan is a past graduate of DIT, and comes from a surveying and urban design/planning background. He was working in environmental consultancy until his appointment in DIT.

For further details, contact: Dr Lorcan Surr, The Futures Academy, DIT Bolton Street, Dublin 1. tel: 01 402 3738  
email: [lorcan.surr@dit.ie](mailto:lorcan.surr@dit.ie)



## Concept to commerce

DIT's Offices of Innovation and Industry Services (OIIS) ran an outreach to industry conference on March 6th in DIT Kevin Street. The audience of just over 100 (mainly industrialists, venture capitalists, patent agents and policy makers) learned about collaborative R&D projects both past and present that DIT researchers and industry partners were involved in. David McWilliams, journalist and broadcaster introduced and chaired the event.

Sean Dorgan, CEO of the IDA was the keynote speaker. He emphasised the importance of developing a knowledge-based Irish society for its continued economic and technological growth. He said that the role of the educational sector was critical and was pleased to see DIT's commitment to this by organising events such as these. He agreed to highlight this commitment to incoming industries.

Dr Kevin Cullen, Director of Business Development and Operations in the University of Glasgow's Research and Enterprise Unit, spoke about University / Industry interaction in Glasgow. He stressed the need for clear objectives and activities and to distinguish between Outreach and Outcome projects. "Both are consistent with the University strategy but everyone must be clear on what qualifies for which type of activity and support and encourage it where this meets the agreed criteria", said Dr Cullen.

In the first of two case studies Adrian Ryder, managing director of Magnesia International, described how he developed stable magnesium hydroxide suspensions in collaboration with DIT. The Phisomag process as it is known is currently being licensed in South America where a large production plant is planned. As well as technical issues, he discussed the management of the project and aspects of Intellectual Property.

Dr Mark Davis from DIT's School of Electronics and Communications Engineering presented the second case study from the researchers point of view. He collaborated with Bantry Technologies Ltd to produce a product launched recently at the 3GSM World Congress 2003 (see p21 for more information). Both projects were funded by Enterprise Ireland, the first under the Applied Research Grants Scheme (ARGS) and the second under the

Innovation Partnership Scheme a successor of the ARGS. They were good examples of the benefits of collaboration to both industry clients and academics. Pat O'Brien, Manager of the Innovation Partnership Programme followed with a detailed tour of the scheme.

The second half of the conference featured short contributions from ten academics and centre managers from across the Institute. In a first for DIT, academics and centre managers were asked to give five-minute pitches on their current research interests.



Dr Declan Glynn (l) Director of External Affairs, and Dr Sean Dorgan, CEO, IDA at the Concept to Commerce conference

Dr Ursula MacEvelly reviewed biological projects in the food, marine and allied sectors. Paul Ashall spoke about solvent recovery and process optimisation. Anthony Farrell described his work in low energy heating, cooling, ventilation and daylight. Dr Bing Wu outlined the expertise available in the School of Computing including healthcare informatics, bio-informatics, IT for strategic management and assistive technologies and E-learning. Dr Gary Henehan highlighted the industry-relevant expertise available in the School of Food Science and Environmental

Health including genetic engineering and shelf-life of packaged vegetables.

Dr Eugene Coyle told the audience about current research in control systems and electrical engineering and his recent patent application on computer assisted language learning. Dr Yuri Panarin spoke about optical switching - a key part of the next generation of optical based networks. Dr Suzanne Martin described her work in optical feedback for diode lasers and emphasised the application of optical systems in non-destructive quality control testing. Charlie Pritchard demonstrated the interactive 3D Gallery developed by the DIT Digital Media Centre. He took the audience on a very realistic tour of the National Gallery for whom the product was developed. Dr James Walsh spoke about the measurement of UV radiation and its effect on the human eye. He also discussed novel UV blocking hydrogel contact lenses and the development of peptides as non-invasive topical treatments. Full details are available on the Industry and Innovation section of DIT's website ([www.dit.ie](http://www.dit.ie)).





## Optical switching

DIT's Applied Optoelectronics Centre is now over half way through its Strand III funded project 'Liquid crystal switching for all optical networks' involving three members of DIT's academic staff, a post doctoral researcher and a post graduate student. All optical switching - the Holy Grail in optical communications - negates the need for some of the complex electronics in modern day telecommunications systems. To that end the project intends to build a demonstrator optical switch using Liquid Crystals similar to those used in the common digital watch.



A simple optical switch using a visible light source has been demonstrated with a liquid crystal cell controlled by a voltage. Current research is concerned with the move to a higher wavelength in the near infra-red region. A paper "Optical switches using electro-optical effects in liquid crystals" was presented at the SPIE (the International Society for Optical Engineering) Opto Ireland Conference in September 2002. Further details can be found at [www.aoc.ie](http://www.aoc.ie) or by calling Thomas Freir @ 00 353 1 402 4659.

## Innovation scoreboard

The European Commission published the European Innovation Scoreboard for 2002 in December. The scoreboard provides a focus on high-tech innovation in Europe, using 17 indicators to establish relative performance of countries within the EU as well as between EU, Japan and the US.

While the survey shows many positive trends for innovation within EU, it nevertheless highlights that the EU still lags behind both the US and Japan in many aspects of Innovation. Where comparable international data is available, Japan leads the EU in 8 out of 10 indicators, while the US leads in 7.

Within Europe, the most innovative countries are Sweden, Finland, Denmark and the Netherlands, all of which compare favourably internationally. The country Table for Ireland (below) shows that we featured strongly in the area of Science and Engineering graduate output and value-add in high tech manufacturing, but less well in the areas of patent performance, life-long learning, and current R&D performance.

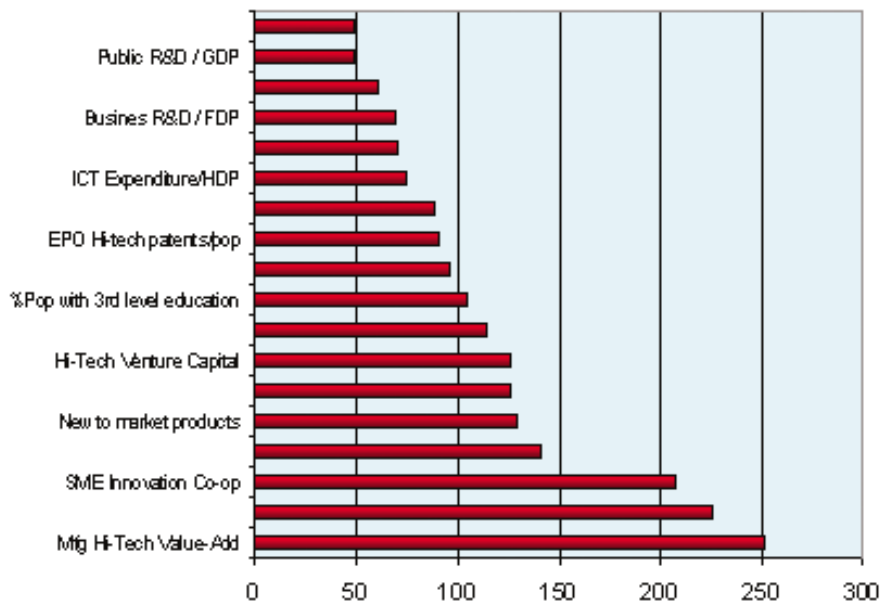


AOC staff at the SPIE Opto Ireland conference, 2002.

## FOOD INDUSTRY SKILLS

A new report on future skills needs in the food processing sector has highlighted skills gaps. The report indicates that while there are high-profile best practice firms, the food processing sector in Ireland is characterised, in general, by a deficit in strategic planning and human resource planning in particular. It found that there is evidence of this deficit not only in the curricula of third-level courses but also in on-the-job training courses currently available. "This current imbalance in course programme content is something that needs to be addressed with some urgency," stated Dr Daniel O'Hare, chairperson of the Expert Group on Future Skills Needs, at the launch of its report "Demand and Supply of Skills in the Food Processing Sector". For more information see [www.forfas.ie](http://www.forfas.ie).

European Innovation Scoreboard 2002



When announcing CSET funding awards recently, Dr William C Harris, DG, of SFI, said "SFI has focused such considerable resources on these awards because building top-class research teams between academia and industry is one of the most important steps any country can take in building a lasting indigenous research base and generating ideas, products, and jobs based on knowledge. More importantly, our future depends on the harnessing of ideas and the creativity of talented researchers in Ireland."



## DIT and ESB collaborate

In 1995 the Electricity Supply Board's (ESB) Generation Services Department approached DIT's National Maintenance Centre (NMC) to find out if DIT could accredit training courses for team members and team leaders employed in the ESB's 16 thermal power stations in Ireland.

The ESB wanted to run these courses on its own premises and have its own staff provide the tuition. To add value to the courses and to ensure they were being run to a high standard they also wanted DIT to certify the syllabus and provide quality assurance input when the courses were actually running.

In 1996 DIT's Quality Assurance Committee examined the ESB's application for accreditation and agreed that a formal association between the two was possible and the idea should be pursued.

A Joint Course Committee was set up with representatives from the ESB and DIT with the purpose of producing a submission document. Together with the ESB training programme structure this was submitted to a validation panel. In all, two submissions were made and both courses were accredited following the Institutes stringent quality assurance procedures:

### **Certificate in Power Plant Technology (Plant Operations)**

### **Certificate in Power Plant Technology (Plant Manager)**

These courses have been designed to prepare students for specific tasks in ESB power stations. Therefore their first and foremost objective is to train participants to undertake their duties as team members and team leaders in power generating stations.

The most significant aspect of this development is that

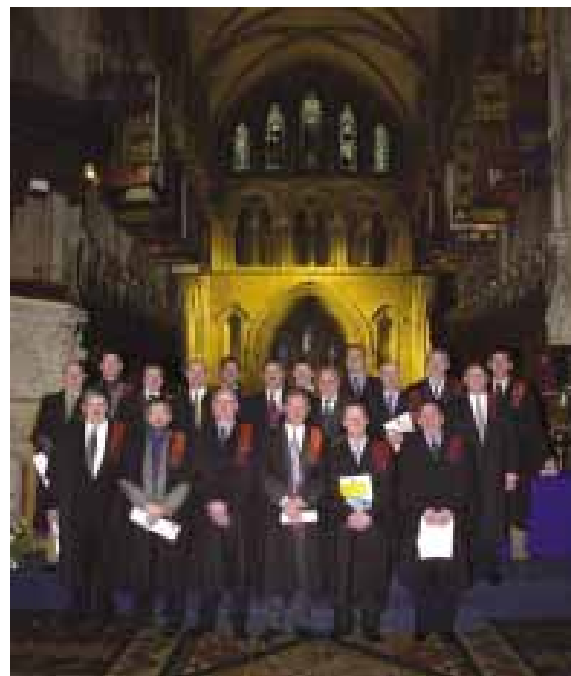
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Centre Manager  
National Maintenance Centre  
Dominick Court,  
41 Dominick St. Lower,  
Dublin 1, Ireland.  
tel: 00 353 1 8729084  
fax: 00 353 1 8729126  
email: amurphy@nmc.ie

whilst the ESB trainees are enrolled as DIT students all of the training and education is provided by the ESB itself on its own premises. DIT provides the quality assurance input through monitoring of the delivery and assessment and then DIT award the accreditation certificates for students who successfully complete the four year course.

The first students enrolled on these courses in 1997 and graduated at a DIT graduation ceremony in 2001.

The course consists of Classroom Modules, On-the Job Modules and Competency Modules. Lecture formats are used in the Classroom Modules and the theoretical knowledge acquired is examined by the traditional written and oral examination methods. However the largest proportion of time is allocated to the acquisition of knowledge and skills by Hands-On applications on simulators or on the actual power plant on site.

The rigorous and wide-ranging competency testing programme ensures the graduates achieve the learning objectives of the course. The theoretical knowledge is examined by written examinations, its practical application by oral examinations after on-the-job training and finally the competency of the operator to perform particular tasks is assessed after the competency modules.



Graduates of the course at their conferring ceremony



# Fun with funding

## Ireland

The question most dreaded by any research manager is the one that follows an academic's conversion to the notion 'that there might be something to this research lark after all!' "OK I'm convinced, where do I get the money?" must be the most terrifying words known to managers.

Seriously though, the search for adequate research funding is one that never ends and in the present climate, is getting harder and harder. However, one still needs to keep in mind that the funding situation now, in 2003, is immeasurably better than it was even 5 years ago. With the recent cuts in some research budgets, there still remains enough funding to sate even the thirstiest researcher with one big proviso. That proviso is that you are most likely to be working in the areas of IT or Biotechnology or their related disciplines.

Traditionally, for the natural sciences, there have been two funding agencies in Ireland, The National Research Support Fund Board (NRSFB, operated by Enterprise Ireland) and the Irish Research Council for Science, Engineering and Technology (IRCSET). In the present climate, the funding for IRCSET has virtually dried up but the NRSFB remains committed to running the programmes it has successfully developed over the years.

There has been some repositioning to eliminate confusion between the stated objectives of some programmes (especially between the Research Innovation Fund and the Advanced Technologies Research Programme). Their budget remains virtually intact.

However, all is not sweetness and light. IRCSET co-funded the basic science programme last year. This meant that for the first time, the Irish Basic Science Programme operated to accepted international norms. This is not the case this year. Now the involvement of IRCSET in the basic science programme is confused. This confusion is particularly insidious in that the NRSFB programmes will support the so-called National Priorities making life much more difficult for other areas.

Science Foundation Ireland continues to fund excellent research by excellent researchers and is positively encouraging applications from the IT sector. However, its cousin, the grandly titled "Programme for Research in Third Level Institutions" appears to have collapsed completely despite desperate reassurances to the contrary. We shall not see its like again.

In the case of the humanities and social sciences, the major funding agency here is the Irish Research Council for the Humanities and Social Sciences (IRCHSS). This year they

have confirmed that their budget for 2003 is of the order of €8m to be divided up over six programmes. The IRCHSS is not the only body funding humanities research. Health Boards, the Health Research Board and the Arts Council all fund this kind of work as long as the work comes within their various remits.

## The EU

The European 6th Framework Programme (FP6) made its first 42 calls in December and plans to spend some €17bn on research in Europe over the next few years. The FP6's major aim is to build European leadership in research and contribute to the development of a "European Research Area". Researchers and SMEs should be thinking of getting involved in FP6 projects if only to make sure that they have a profile in Europe.

## Finding Funding

'OK but you still haven't told me how to get funded'. Well the first task must be to identify the programme for you. DIT has developed a comprehensive funding website for its staff. It describes and lists as many funding programmes that can be crammed in to it. Currently, the database driven website holds details of almost 200 funding opportunities, a research calendar and various other tools that will allow the user to quickly identify programmes that may be relevant to them.

For information on EU-funded projects the CORDIS website has a huge amount of information. See p20 for some tips on getting around the site and advice on useful sections.

One very overlooked source of research funding is the public tendering process and we have that in two flavours here. The first is the Irish public tendering process where public agencies and departments must put work (above a certain value) out to tender. Several research active public agencies (EPA for example) use this route to source research work.

Irish tenders are available on-line at <http://www.e-tenders.gov.ie> where you will need to register. The second flavour is a similar offering from the EU. Their TED website (Tenders Electronically Daily) lists all the tenders put out by the EU and by member states. Both sites are updated daily.

Failing all of the above, DIT's Faculty SL3R's or HIIS's should be able to help you and before you know it, your research managers can relax, safe in the knowledge that the nightmare has passed.

Dr John Donovan, HIIS, Faculty of Applied Arts.



## EU snippets

### Greek foresight conference

The integration of the EU's internal market in the sector of research and technology is the result of the recent political agreement on the Community patent, which was achieved at the Competitiveness Council on 3rd March 2003 in Brussels, within the framework of the Greek Presidency. The European Patent Office will play a central administrative role, since it will be responsible for examining applications and for granting Community patents. The National Patent Offices (NPOs) of Member States will also have an important role to play, namely in advising potential applicants on Community patents, receiving applications and forwarding them to the EPO, disseminating patent information, etc.

### Communication on innovation

"Innovation is viewed as a multi-dimensional concept, which goes beyond technological innovation to encompass, for example, new means of distribution, marketing or design. Innovation is thus not only limited to high tech sectors of the economy, but rather an omnipresent driver for growth." so said Erkki Liikanen, EU Commissioner for Enterprise and Information Society at the launch of a new Communication on Innovation Policy, focusing on "entrepreneurial innovation". The full text is available at: <http://www.cordis.lu/innovation-policy/communications>

### Technology offer

David Luigi Fuschi, of GIUNTI Interactive Labs Srl, Italy, is interested in collaborating further on an "edutainment" project developed with EU funding. The idea behind the project was to construct an online, interactive multiplayer gaming platform that served educational purposes. Set in a 3-D environment, which helps bring the setting to life, the interaction takes place within the Palace of Urbino. The game is called Renaissance Court. Further details from [d.fuschi@giuntilabs.it](mailto:d.fuschi@giuntilabs.it)

### Call for proposal

The EC has published a prior information notice for calls to tender for various innovation studies. The call will be divided into six lots:

- Entrepreneurial innovation in the future Member States: challenges and issues at stake for the creation of clusters of innovative firms.

- Transnational dimension in the monitoring / evaluation of innovation-related programmes and agencies. Issues at stake towards good governance.
- Innovation and public procurement. Review of issues at stake.
- Patterns of organisational change in European industry: ways to strengthen the empirical basis of research and policy.
- Innovation performance in selected industrial sectors of the European Union. Analysis and issues at stake in light of the third Community Innovation Survey and other empirical data.
- Linkages between innovation and trade policies, and 'good practices' in spreading innovation globally through trade and Foreign Direct Investment (FDI). The scheduled date for the start of the procedure is May /June 2003.

### Role of 3rd level in knowledge economy

Read the European Commission's communication "The role of universities in the Europe of Knowledge at: <http://dit.ie/DIT/industry/news/km2003/>

### Action Plan for research

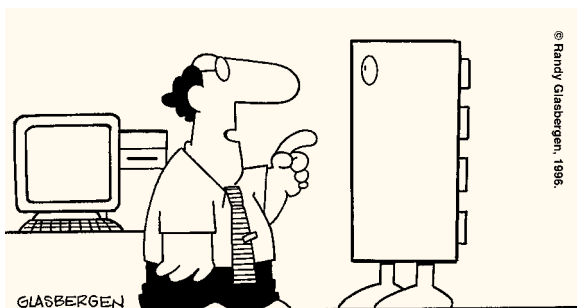
A new Action Plan to boost research efforts in Europe was launched at the end of April. It contains a roadmap with detailed measures to encourage public and private players across Europe to upgrade their research effort. It sets out initiatives to increase the level of investment in research in the EU from 1.9% to 3% of EU GDP. Meeting the 3% objective is expected to create 0.5% additional growth of GDP and 400,000 additional jobs every year after 2010. Key actions include setting up European technology platforms, strengthening links between industry and public research, redirecting public spending towards research and innovation, making research careers more attractive and developing better fiscal incentives for research.

See: [http://europa.eu.int/comm/research/era/3pct/index\\_en.html](http://europa.eu.int/comm/research/era/3pct/index_en.html)

### Belgian research website

The Belgian government's scientific and technical information service (STIS) has launched a new portal for research and innovation. [www.research.be](http://www.research.be) provides visitors with a gateway to the main websites dedicated to Belgian research and innovation, either at a national level, or within the framework of European or international cooperation. STIS also intends the portal to strengthen the European Research Area (ERA).

The portal provides information in French, Dutch and English, and is aimed at researchers in Belgium and abroad, as well as policy makers, public administrations, managers, enterprises and the users of scientific results.



**"I want everyone at the meeting to dress up like Lego blocks. Then we can see exactly how each team member interlocks with the other team members in the project."**





## CORDIS a mine of information

CORDIS (Community Research and Development Information Service) is detailed, massive and comprehensive. Starting life around the time of the 4th Framework Programme, CORDIS has become the oracle of research information in Europe. While all the answers to questions about EU R&D, Innovation and Technology can be found here, finding them is not that simple.

CORDIS (<http://www.cordis.lu/>) is one of the largest websites within the Europa group of websites. The Sixth Framework Research Programme gets its own site at <http://www.cordis.lu/fp6/>. The amount of information makes the site cumbersome and difficult to use. However there are some tricks.

One of the most useful features is the RAPIDUS notification engine. RAPIDUS allows you to flag particular kinds of information that you would like to be told about.

However, you must register with CORDIS at [http://www.cordis.lu/en/src/g\\_060\\_en.htm](http://www.cordis.lu/en/src/g_060_en.htm) to use the service. Once you have registered turn to [http://www.cordis.lu/en/src/i\\_014\\_en.htm](http://www.cordis.lu/en/src/i_014_en.htm) and set up your own search profile. The weekly email newsletter with short descriptions related to the material you have selected will be emailed to you.

One very useful feature is the "What's New" section of the website. This is updated at 11:00 CET every weekday and provides a quick way to get breaking news as it happens. The 'newsy' news site is at <http://dbs.cordis.lu/news/en/home.html> whereas <http://www.cordis.lu/fp6/wnew.htm> provides information that is directly relevant to Framework 6.

If you are interested in being part of an EU research project then have a look at <http://www.cordis.lu/fp6/partners.htm> for help in finding a partner. Indeed, you should register with the service so that somebody can find you.

In June 2002, the Commission held a call for Expressions of Interest. They had 15,000 submissions and have made these available on line at [http://eoi.cordis.lu/search\\_form.cfm](http://eoi.cordis.lu/search_form.cfm). This forms a very useful archive of potential partners and projects that will be of interest to DIT staff.

Why not sign up as an FP6 evaluator at [http://www.cordis.lu/experts/fp6\\_candidature.htm](http://www.cordis.lu/experts/fp6_candidature.htm) Often being an evaluator gives you an insight into what the Commission is looking for in a proposal and being an evaluator is also a superb networking opportunity. CORDIS is daunting but worth the effort. DIT's SL3R/Faculty HIIS can help with any CORDIS-related queries.

## INNOVATION RELAY CENTRES

The European Commission has published a call for proposals for the management of 'innovation relay centres' (IRCs) under FP6's 'research and innovation' activity.

The main tasks of the IRCs will be to:

Promote the transnational transfer of technologies and knowledge.

Stimulate the capacity of firms to adopt new technologies.

Promote the transnational dissemination and exploitation of the results of Community research.

Provide other key services which help promote or facilitate innovation and transnational technology transfer.

Pursue possible synergies between the IRCs and the Innovating Regions in Europe (IRE) network.

Develop new methods and/or measures to facilitate the development of the European Research Area.

Specific services provided by the IRC would include but not

be restricted to: promotion of the IRC service in the region; technology audits; database development; search for external technologies; promotion and dissemination in the IRC region of external technology opportunities; identification and promotion of local technologies; one-to-one assistance services; organisation of technology transfer events; networking and joint transnational actions with other IRCs.

The IRCs will concentrate on SMEs as the principal target group, but other organisations will be included, such as universities, research centres and, where appropriate, larger companies, as well as professional and trade associations, technology brokers and development agencies. Special attention will be paid to less-favoured regions.

In specifying the instruments to be used in these areas, the call requests the use of specific support actions. Proposers are advised to consult the full call text at the address below in order to find out the particular instruments requested for each area. The total indicative budget for this call is 74 million euro over four years. The deadline for submitting proposal documents is 2 July 2003.

[http://fp6.cordis.lu/fp6/call\\_details.cfm?CALL\\_ID=60](http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=60)



## DIT researcher in new product launch

Bantry Technologies has recently developed a new innovative solution targeting corporate mobile users. This solution was recently launched under the commercial name VirtuoSign™. The development of this project has been made possible through a technical cooperation between Bantry Technologies and the Dublin Institute of Technology. The project has been jointly funded by Enterprise Ireland and Bantry Technologies via the Innovation Partnerships Program driven by Enterprise Ireland.

The project addressed the following problem. Keeping in touch with the office today is an absolute priority for corporate mobile users. However, although some operations can be dealt with just a phone call, other more sensitive actions (validation of internal procedures, signature of contracts, etc) require the physical presence of the decision maker(s). But they are typically the ones who are out of the office most of their time.

This implies delays in the decision process and therefore slows down the reactivity of the company.

VirtuoSign™ provides a solution that enables mobile users to validate in a very secure manner critical decisions or commitments at a corporate level. Even far away from their desk, they remain an active link within their company's decision chain.

The mobile authentication system defined by the VirtuoSign™ offer uses symmetric cryptography to verify

message authenticity, message integrity and to provide data encryption. Each message sent between the corporate central server and the user's mobile phone contains a Message Authentication Code (MAC) generated using a secret key shared between the server and the secure module embedded in the mobile phone (the SIM card). Each message must be authenticated to determine if it comes from a trusted and identified source before being processed by the system.

The solution was officially launched during the 3GSM World Congress 2003 in Cannes, France, in February. Bantry Technologies will be demonstrating the solution during the exhibition and expect a warm welcome from the industry.



"Security is a key factor in the development of data services for nomadic computing" said Patrick Biget, Chief Technology Officer with Bantry Technologies. "VirtuoSign™ is just an example of the variety of services that will help corporate mobile users to be ever more efficient and productive in a challenging business environment" he added.

"The VirtuoSign™ project is an excellent example of how the Innovation Partnerships Programme encourages and supports collabora-

tive links between academia and industry in Ireland" said Dr Mark Davis, the project director and lecturer in communications engineering at the Dublin Institute of Technology, Kevin Street. The two researchers on the VirtuoSign™ project are both engineering graduates from the DIT having undertaken a final year engineering project on a m-commerce application with the support and assistance of Bantry Technologies.

## ENTERPRISE IRELAND'S COMMERCIALISATION FUND

Enterprise Ireland recently launched its Commercialisation Fund and projects from the first call are being assessed. The fund has three phases aimed at serving the spectrum of requirements for the commercialisation of new knowledge gained from publicly funded research in colleges and other not-for-profit research organisations.

The Proof of Concept phase provides supports to test out ideas with commercial potential in short-term projects (typically one year). The Technology Development phase offers significant support to bring the technology to exploitation over a two to three year project. The Business Development phase is made

available to researchers to exploit technology through a campus enterprise.

Full details are available on the Enterprise Ireland website ([www.enterprise-ireland.com](http://www.enterprise-ireland.com)) or from

Barry Fennell - Proof of Concept phase +353 1 808-2562.

Monica Flanagan - Technology Development phase +353 1 808 2000.

Bernadette Dooley - Business Development 00 353 1-808 2010.



## INNOVATION AND FRAMEWORK 6

The Sixth Research Framework Programme (FP6, 2002-2006) provides the Commission's principal financial instrument for enhancing European innovation. Unlike previous Framework Programmes, FP6 does not include a discrete 'innovation programme'. Instead, innovation-related activities are distributed throughout Work Programmes 1 and 2 - Integrating and strengthening the European Research Area (WP1) and Structuring the European Research Area (WP2).

They remain under the management of the Directorate-General for Enterprise, and will build on the equivalent actions of FP5. A very significant proportion of FP6's innovation-related work concerns the trans-regional, trans-sectoral and cross-disciplinary networking of public authorities, economic actors and social partners - the stakeholders who together form Europe's innovation community.

The European Trend Chart on Innovation brings together those who formulate and implement innovation policy measures in particular fields. Paxis is forging lasting networks of 'regions of excellence' in the field of support for the creation of innovative firms. The Gate2Growth initiative is building networks of investors and business service providers. The Innovating Regions in Europe network promotes practical links between EU and candidate country regions for the transfer of good practice in the area of innovation support schemes.

The network of Innovation Relay Centres offers practical assistance to companies and research bodies in the development of transnational technology partnerships. In addition, a new action line will introduce a variety of innovative measures specifically to address the networking of players and users and to encourage interaction between them.

## industry.development@dit.ie

Margaret Whelan is DIT's Head of Industry Development. She has a team of six Head's of Innovation and Industry Services (see list below) to help with all industry-related enquiries. If you are not sure which one to contact simply email [industry.development@dit.ie](mailto:industry.development@dit.ie) or look at our website: <http://www.dit.ie/industry>.

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## TECHNOLOGY TRENDS

Every year Red Herring, the US technology business magazine publishes its top ten future technology trends. This is what it predicted for the year 2003:

### **Wireless**

“Until now, wireless local area networks have been just another grass roots, hobbyist technology - the purview of home-networking enthusiasts and risk-taking IT managers. But all of that will change in 2003, as the major international wireless carriers roll out high-speed local networks. Paradoxically, this both threatens and assures the future of 3G - the heretofore heir to the wireless throne.”

### **Hardware / software**

“The technologies around virtualisation, an umbrella term for a collection of technologies that allow a corporation's IT infrastructure to exist as one seamless unit, get their finishing touches and become all the rage for chief information officers worldwide”.

### **Venture capital**

“The coming year will look like 1990, with just 50 funds raising \$2.5 billion, or less than 5 percent of what they raised in 2000. But guess what? There won't be a shakeout in venture capital. That said, pity the late-stage companies.

### **Semiconductors**

“Chips will become the first line of defense in the battle to increase security for cell phones, personal digital assistants, firewalls, virtual private networks, and other technology products”.

### **Nanotechnology**

“A backlash against nanotechnology - and the small science's unintended consequences - will gather steam and slow the pace of commercialization. The backlash will spawn a new discipline: nanoethics”.

### **Financial reporting**

“Forget about last-ditch lobbying by Silicon Valley companies; 2003 will be the year tech firms are finally forced to include stock options as expenses in financial reports. The result? Short term: disaster. Long term: less of a disaster”.

### **Telecommunications**

“The worst is yet to come in the telecom sector. Companies that have spent the past 12 months clawing their way out of bankruptcy will only go bankrupt again, killed by the continued decline in bandwidth prices”.

### **Biotechnology**

“In 2003, the fight against bioterrorism will help pull the biotechnology industry out of the funk that has been hampering start-up activity, deal flow, valuations, and patent filings”.

### **Broadcasting**

“Radio stations will start broadcasting their signals in digital format. Only a handful of electronics nuts will buy the first batch of radios that receive these signals. But they'll kick off a 10- to 15-year transition that will result in 24/7 all-digital radio - and a host of new interactive services. TiVo for radio, anyone?”

### **Broadband**

“Despite some nasty debt, cable companies will soon control how consumers access the Internet, watch television, and even use their phones - beating the Baby Bells at their own game”.





## COMMUNITY LINKS

DIT's Community Links programme addresses educational disadvantage in Dublin's Inner City and beyond. The following projects are managed by the programme:

LEAP (Lifelong Educational Access Programme) provides a support structure to students from backgrounds that are generally under-represented in 3rd level.

The St Joseph's Wind Band Project in Ballymun is a partnership programme between DIT, Ballymun Comprehensive School and the Department of Education with the Axis Community Arts Centre likely to play a large part in the future. Three part-time specialist teachers teach brass and percussion and the recorder. A project manager organises the rota, arranges concerts and liaises with the school.

The Dublin Inner City Schools Computerisation Project (DISC) is a joint project between DIT and Fujitsu Siemens, Hewlett Packard, the National Centre for Technology in Education and the Dublin Inner City partnership. The aim of the project is to upgrade 48 schools to full multimedia capacity together with co-ordinated basic IT training for teachers and the evaluation of educational software.

Pathways through Education works with post-primary schools in Dublin's inner city. The main focus of the project is to improve young people's self-esteem, confidence and motivation.

The Educational Awareness Programme aims to increase the awareness of the benefits of 3rd level education and to remove any misconceived notions of third level. DIT students volunteer to commit themselves to the programme for a year and visit pupils in schools taking part in LEAP.

Finally, DIT's Governing Body awards studentships to support disadvantaged students attending DIT on a full-time basis. For information on any of these programmes please contact Dr Tommy Cooke: tel 00 353 1402 3312, email: [thomas.cooke@dit.ie](mailto:thomas.cooke@dit.ie)



Three members of the Ballymun Wind Band

## And Finally . . .

An online survey has indicated that, amongst its respondents, women are more superstitious than men, and young people are more likely to run away from black cats or avoid walking under ladders than old people. Indeed levels of superstition were found to be surprisingly high, even among those with a scientific background.

Carried out during National Science Week in the UK by psychologist Dr Richard Wiseman, the survey also revealed that three out of four respondents felt the need to touch wood.

'This is a self-selecting sample, so we need to treat the results with some caution,' said Dr Wiseman. 'However, they have given a real insight into the world of superstitions and what people believe. It also appears that the rise in science and technology has not stopped people holding unusual beliefs.'

Touching wood was the most popular superstition among the group sampled, followed by crossing fingers, avoiding ladders, not smashing mirrors, carrying a lucky charm and having superstitious beliefs about the number 13.

Superstitious people tend to worry about life, have a strong need for control, and have a low tolerance of ambiguity. In addition to gauging how superstitious people were, the survey also asked people about their own idiosyncratic beliefs. Amongst the more unusual were:

"I always avoid staying in the bathroom once the toilet has been flushed".

"When a clock has matching numbers, such as 12:12, I have to say 1212 out loud".

"Whenever I see a hearse, I touch my collar until I see a bird!"

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