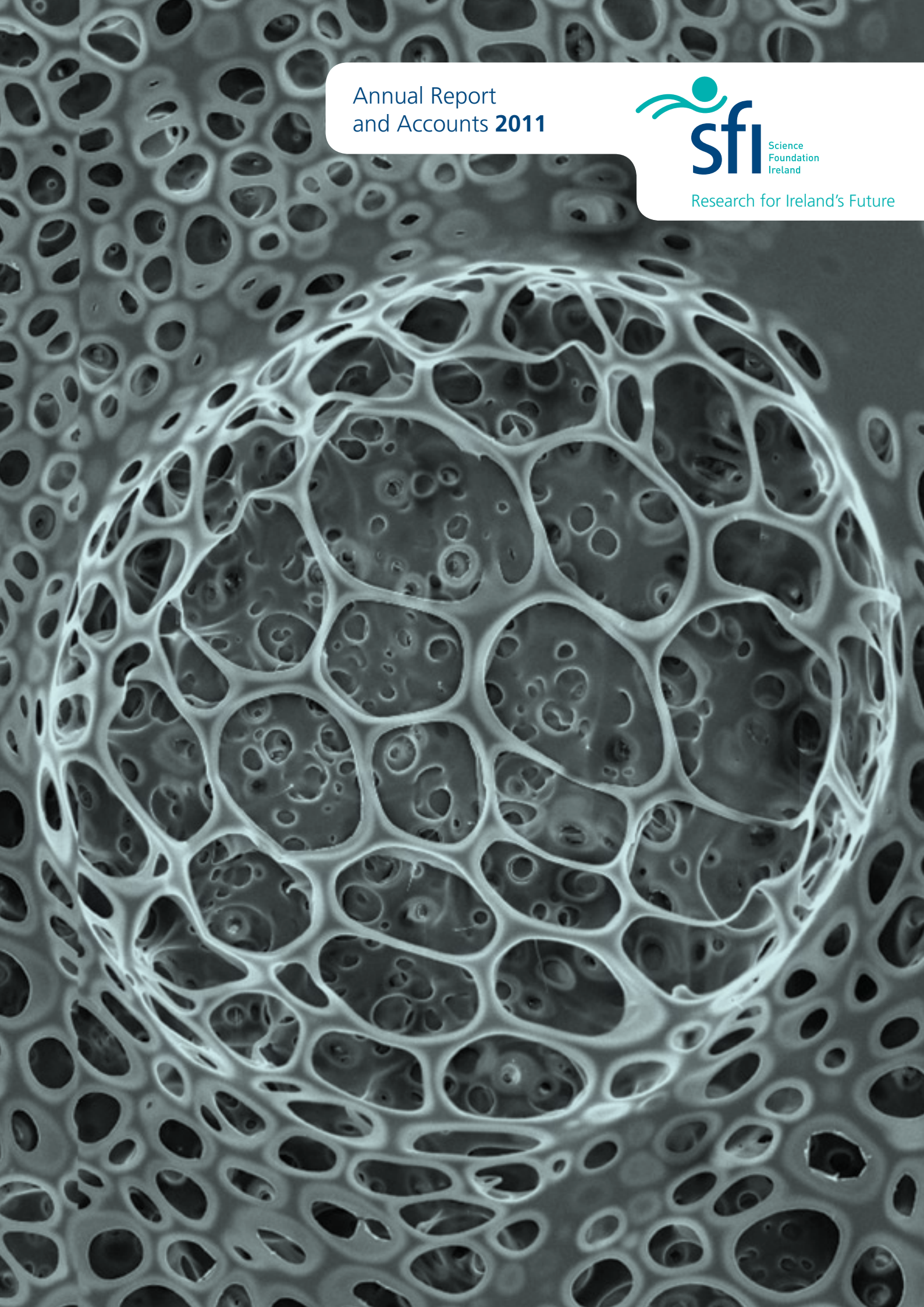
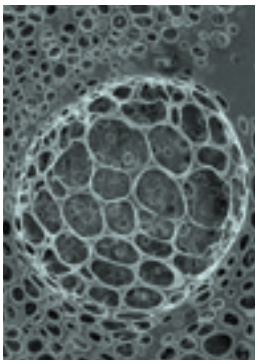
Annual Report and Accounts **2011**

Science Foundation Ireland

Research for Ireland's Future



Front cover image



SFI Image Competition 2011

'The Hive', an image taken by Dr David McGovern in Trinity College Dublin's nanoscience institute, CRANN, of a porous surface of the polymer polylactic-co-glycolic acid (PLGA) was named by Minister for Research and Innovation, Seán Sherlock TD, as the SFI Research Image of the Year for 2011 at the SFI Science Summit 2011.

The SFI Research Image competition offers SFI-funded researchers the opportunity to submit digital images created during the course of their research. The winning image was taken by Dr David McGovern under supervision of Professor John Boland, Principal Investigator at Trinity's School of Chemistry. Thirty four images were submitted for the competition from research groups throughout Ireland.

Contents

SFI Vision:

Ireland will be a global knowledge leader that places scientific and engineering research at the core of its society to power economic development and social progress.

SFI Mission:

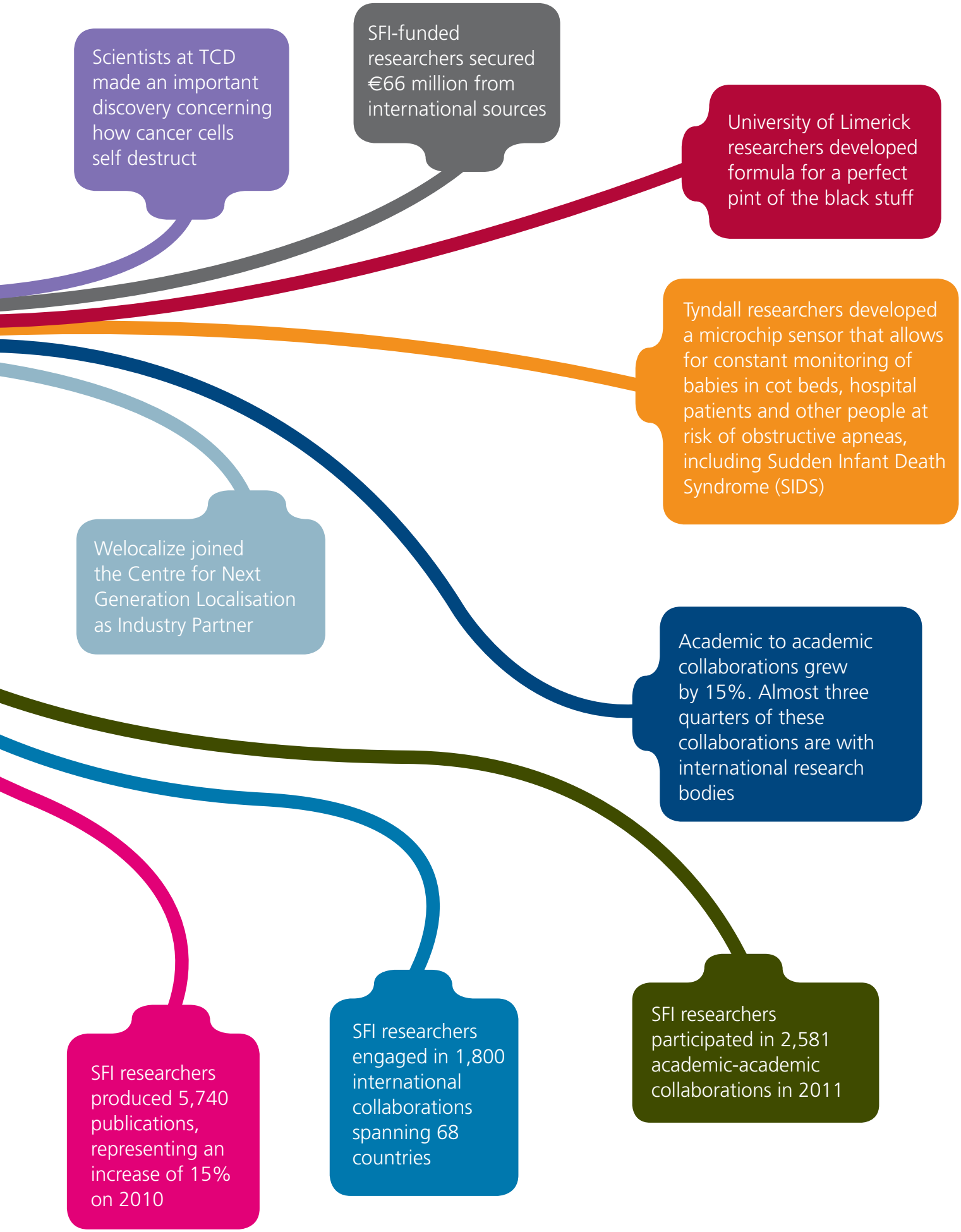
SFI will build and strengthen scientific and engineering research and its infrastructure in the areas of greatest strategic value to Ireland's long term competitiveness and development.

SFI Core Values

SFI is underpinned by the following Core Values

Excellence	We fund internationally recognised world class research.
Engagement	We are committed to SFI's role in Ireland's development and to the research community.
Strategic	We are visionary, plan for the long term, and invest in research with consequences for the benefit of Ireland's economy and society.
Innovation	We are dynamic, collaborative, creative and responsive to the ever changing needs of our stakeholders.
Integrity	We inspire trust by acting fairly, objectively, honestly and transparently in the manner in which we operate and the research that we fund.
Frontier research	We work at the frontiers of research. We advance knowledge, stimulate interdisciplinarity and promote linkages with industry.


CISCO invested €500,000 in partnership with DERI at NUI Galway
SFI funded researchers secured €156 million from non-SFI sources
RCSI researchers developed new class of cancer treatment technology
SFI supports 28 top class research centres, via 9 CSETs and 19 SRCs
583 companies are partaking in 939 linkages with SFI funded researchers
Centre for Telecommunications research awarded €19 million for 5 year programme led by TCD
Investment by SFI has supported Ireland maintain it's place in the top 20 countries in scientific global rankings
Five new awards in biomedical sphere awarded under new co-funding with Johnson & Johnson Corporate Office of Science and Technologly (COSAT)
SFI awards support 2,994 team members
sfi
Delivering Research with Impact
2011 Highlights


Scientists at TCD made an important discovery concerning how cancer cells self destruct
SFI-funded researchers secured €66 million from international sources
University of Limerick researchers developed formula for a perfect pint of the black stuff
Tyndall researchers developed a microchip sensor that allows for constant monitoring of babies in cot beds, hospital patients and other people at risk of obstructive apneas, including Sudden Infant Death Syndrome (SIDS)
Welocalize joined the Centre for Next Generation Localisation as Industry Partner
Academic to academic collaborations grew by 15%. Almost three quarters of these collaborations are with international research bodies
SFI researchers produced 5,740 publications, representing an increase of 15% on 2010
SFI researchers engaged in 1,800 international collaborations spanning 68 countries
SFI researchers participated in 2,581 academic-academic collaborations in 2011

Chairperson's Statement

I am delighted to present SFI's Annual Report and Financial Statements for 2011.

The year 2011 represented something of a new phase in SFI's journey. Commencing its second decade of existence as the Government's science agency, SFI continued apace with strategic investment in research in the fields of science and engineering most likely to generate new knowledge, leading-edge technologies and competitive enterprises.

SFI continued its focus on supporting sustainable economic growth in Ireland. A key mechanism for driving economic growth from the research supported by SFI is through linkages with industry. Since it was established SFI has placed a strong emphasis on building these links, I am pleased to report that following on from growth in 2010, there was a 19% increase in the number of linkages with companies in 2011. SFI-supported researchers are working in conjunction with 246 multinational companies and 337 SMEs, helping to create a new environment that is both retaining and creating jobs.

In a commercial context, ten early stage, spin out companies were formed in 2011 - more than double the figure of companies (four) formed in 2010. Furthermore, there were 39 licensed technologies from active awards in 2011, which was an impressive 73% increase on the 22 technologies reported in 2010. Invention disclosures also rose this year, up 10 to 170, while 79 patents were filed this year, compared with 59 in 2010.

SFI researchers reported 5,740 publications for 2011, which was a 15% increase on 2010 and a 41% increase on 2009. Collaborations between academics during 2011 grew by 15% since 2010.

SFI funded researchers were responsible for research breakthroughs in Sudden Infant Death Syndrome, cancer, superbugs, blindness, nano-sensor technology, predictions into epidemics, computer viruses, social media trends, and other areas.

The continued development of SFI's talent pool was repeatedly evident in 2011, with a number of groups and researchers securing funding opportunities from the private sector and international sources such as the prestigious European Research Council and EU 7th Framework Programme. In addition, exceptional research by various SFI-funded researchers was recognised at the highest level, from securing international awards to leading positions in global rankings, with others selected to showcase their work at major international exhibitions.

Preparations for EuroScience Open Forum (Dublin, July 11th-15th 2012) and Dublin City of Science 2012 intensified in 2011, and served to bind the wider scientific community closer together to showcase our proficiencies internationally.

The year ended with the world's first 3D surface anatomy guide for medical and physiotherapy students, surgical trainees and artists being developed, a two-year project co-funded by SFI.

In 2011, SFI was also to the fore of the national debate on how digital and next-generation Internet will manifest themselves in the scientific arena, by hosting high-level, industry-research workshops during the year.

Participation in international events by SFI and its funded researchers increased by 13% in 2011, strengthening our scientific credentials globally. Among the international occasions in which SFI played a key role was the Government's trade mission, led by Minister for Jobs, Enterprise and Innovation, Richard Bruton T.D., to the United States in September.

At home, the annual SFI Science Summit, held in Athlone, was the largest gathering of Ireland's research talent to take place during the year. With its theme being "Shaping the Future Now: New Horizons for Science and Society", the Summit featured keynote addresses from award-winning US scientist, educator and biotech entrepreneur, Dr Corey Goodman, and a foremost pioneer of the internet, computer scientist and historian, Professor John Day.

In 2011, SFI worked closely at home and abroad with its 'Innovation Ireland' sister agencies, IDA Ireland and Enterprise Ireland, the Health Research Board, Higher Education Authority, Teagasc and many others. In addition, SFI continued to enhance its existing relationships with higher education institutions and, in particular, its parent Department of Jobs, Enterprise and Innovation, the Department of An Taoiseach, Government officials and members of the Oireachtas.

I want to thank all those individuals and groups who have been particularly engaged and supportive of science and innovation as a means of recovery and economic growth.

I want to pay tribute to the Board and staff of SFI for their personal and professional dedication in delivering excellent work and results, and in helping the organisation to continually progress throughout 2011. The agency has been responsive to the needs of those in the science community and is wholly committed to ensuring that we build on the achievements of the last ten years. In this context, I want to especially

thank SFI Board Member Mr John Travers for serving as Director-General from 2010-2011and to Dr Graham Love for undertaking the role in the months prior to the appointment in January 2012 of Professor Mark Ferguson.

Science in Ireland is, arguably, more prominent today than ever before. Increasingly, the general public, industry and others are taking notice of what scientific research can deliver, be it in a commercial, social, healthcare or similar context. I hope that you can take time to peruse the contents of this Annual Report and see the impact that Irish-based scientists are having on the world around them and, crucially, the world around all of us.

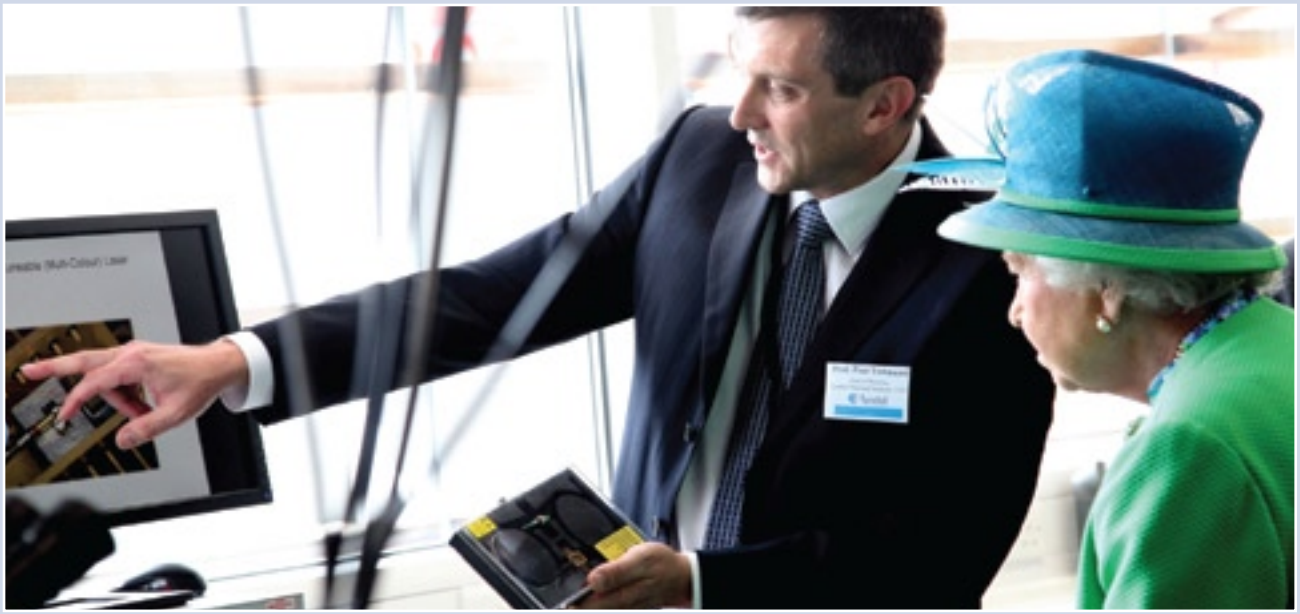
Professor Patrick Fottrell
Chairperson

CASE STUDY 01

Cork scientists ranked as world leaders in probiotic research

Ireland's scientists are punching above their weight on a global stage.

This is according to the independent international ratings agency Thomson Reuters Science Watch global analysis, which tracks trends and performance in research disciplines according to scientific publications. University College Cork weighs in at number 2 in the world for probiotics research, due primarily to publications from researchers in the Alimentary Pharmabiotic Centre. The report is based on overall citations of APC research publications over the past 10 years.



Picture shows Her Majesty Queen Elizabeth II visiting Tyndall National Institute in Cork, where a demonstration was given by Prof. Paul Townsend during the State Visit to Ireland.

Director General's Statement

I am very pleased to present SFI's Annual Report and Financial Statements for 2011.

Upon arriving on 16th January 2012 to take up the position of Director General of SFI, I was immediately struck by the dynamism, the appetite for success, the achievements already made and the sense of unwavering determination that is underpinning the activities of Ireland's scientific community today.

Science started in Europe about 400 years ago, but is now a global phenomenon. Scientific research in the USA expanded greatly in the years after the Second World War with the birth of the National Science Foundation (NSF), upon which Science Foundation Ireland (SFI) is modelled. It is therefore interesting to reflect on the statements and sentiments of that time and how relevant they still are today.

On 17th November 1944, US President Franklin D. Roosevelt wrote in a letter to Dr Vannevar Bush, Head of the Office of Scientific Research and Development:

"New frontiers of the mind are before us, and if they are pioneered with the same vision, boldness, and drive with which we have waged this war we can create a fuller and more fruitful employment and a fuller and more fruitful life...

The information, the techniques and the research experience developed by the Office of Scientific Research and Development, and by the thousands of scientists in the Universities and in private industry, should be used in the days of peace ahead for the improvement of the national health, the creation of new enterprises bringing new jobs, and the betterment of the national standard of living".

Enclosing his famous report 'Science – The Endless Frontier', Dr Vannevar Bush replied in a letter dated 5th July 1945 to President Franklin D. Roosevelt:

"New products, new industries and new jobs require continuous additions to knowledge of the laws of nature, and the application of that knowledge to practical purposes. To create more jobs we must make new and better and cheaper products. We want plenty of new, vigorous enterprises. But new products and processes are not born full grown. They are founded on new principles and new conceptions, which in turn result from basic scientific research".

Ireland is a small country and so it is right that to have the greatest chance of success in internationally leading scientific discovery, innovation and enterprise, it should focus its efforts on a limited number of fields. This overarching need for greater research prioritisation in key sectors and disciplines came sharply into focus over 2011, culminating in the publication of the Report of the Research Prioritisation Steering Group in early 2012, which is now Government Policy and a key pillar of the Government's Action Plan for Jobs.

In the context of how SFI is contributing both to significant achievements in scientific research and directly to Ireland's economic recovery and international reputation, this Annual Report provides a multitude of compelling examples of progress recorded by the organisation in 2011.

As an integral part of the Enterprise ecosystem that endeavours to position Ireland as a great location to research, invest and employ, SFI has continued to fund research and train people that will play a critical role in attracting, retaining, growing and forming companies in Ireland.

Since its establishment, SFI has challenged the traditional demarcation between academia and enterprise, endeavouring to foster a climate of collaboration. I am greatly encouraged, therefore, by the dramatic 158% increase in the number of industry-academic linkages recorded in the last four years among the SFI community. Similarly, the number of companies working with SFI-funded researchers has more than doubled in the same period.

Connecting with existing and new audiences was a priority for SFI in 2011. SFI's engagement with Government departments, semi-state bodies, private foundations, charities and non-Governmental organisations increased by 16% during the year, compared with 2010.

I am particularly heartened by the fact that three-quarters of SFI's academic collaborations in 2011 were with international partners. Speaking to a global audience not only amplifies a researcher's message, but enhances their relationships, experiences and their opportunities for growth in academic and commercial environments.

Looking to the future and the next generation of scientific researchers, there are considerable grounds for optimism. Latest figures (March 2012) from the CAO illustrate a substantial increase (18%) in the number of students opting for science courses in our Irish Higher Education Institutions. Now at unprecedented levels, this demand would suggest that the sustained, strategic investment in our physical and intellectual infrastructure over the past decade, combined with the attraction and growth of science based companies, is impacting directly on how people interpret science as an engaging and viable career opportunity.

SFI's scientific outreach activities to school children and the general public are an important part of developing a more widespread knowledge of scientific research and its societal benefits.

Dublin City of Science 2012, and the hosting of ESOF EuroScience Open Forum, provide a major opportunity to both meaningfully connect science with a greater number of people, and to enable the Irish scientific community to showcase its achievements.

I would like to express my gratitude to SFI staff and stakeholders for their willingness to face and embrace new challenges and opportunities to make an impact nationally and internationally.

I welcome the publication of this SFI Annual Report which documents so much of what this community of committed individuals has achieved in 2011. I believe that this Report should be read, or at the very least, consulted, by everyone with any interest in how our economy functions, and how investment in scientific research and innovation is delivering for today and tomorrow across a range of important areas: including energy, software, data analytics, health, materials science, communications technology, sensors etc.

I look forward to continuing success with excellent SFI-funded research discoveries / inventions / creations leading to important economic and societal impact, both in Ireland and internationally.

Professor Mark W.J. Ferguson
Director General,
Science Foundation Ireland

CASE STUDY 02

Layers for better plastics and computers

Smaller, faster computers, more efficient batteries and greener plastics could be on the way if we can use tiny flakes or nanolayers of certain materials.

Prof Jonathan Coleman and his team at the Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), based at Trinity College Dublin, have developed a method to split these materials into billions of such layers.

One example is graphene, atom-thick sheets of carbon with immense strength and the ability to conduct electricity. Prof Coleman figured out how to use a soapy solution to turn cheap lumps of graphite into billions of precious graphene layers.

These flakes could be added to plastics to make them stronger while keeping them light. However, they have many other applications in areas such as electronics and sensing. Prof Coleman is now applying the method to other materials that could have a role in storing or generating energy.

His publication record earned him a place in the top 100 materials scientists of the decade worldwide between January 2000 and October 2010, as compiled by Thomson Reuters.

Prof Jonathan Coleman receiving the SFI Researcher of the Year Award 2011 from Mr Seán Sherlock TD, Minister for Research and Innovation.

TRINITY COLLEGE DUBLIN
COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH
THE UNIVERSITY OF DUBLIN

CRANN

Future Skills - CRANN Graduates

CASE STUDY 03

PhD students working in CRANN acquire a diverse range of skills in their time at the institute.

They work under the supervision of Principal Investigators who are international experts in topics such as molecular self assembly and magnetic materials, key research areas for next generation electronic devices. They acquire skills in using state-of-the art microscopy instrumentation and clean-room processes. Students are embedded in a culture which is placing increased focus on moving research from the lab to industry, and the commercialisation of technologies through licensing or spin-outs.

Highly skilled PhD graduates are required to meet the needs of advanced manufacturing in companies such as Intel Ireland. Intel has recognised within CRANN's PhD students their excellence in training, along with their exposure to cutting edge infrastructure and industrial collaborations. In 2011, a graduate from CRANN was recruited into Components Research in Oregon, and has returned to the institute as an Intel Researcher-in-Residence. This was the first Components Research staff placement from Intel USA in Ireland. In addition, Intel Ireland recruited 15 PhD graduates from CRANN in 2011.

CRANN

Achievements

Since it was established, SFI has delivered on a significant number of key milestones, including:

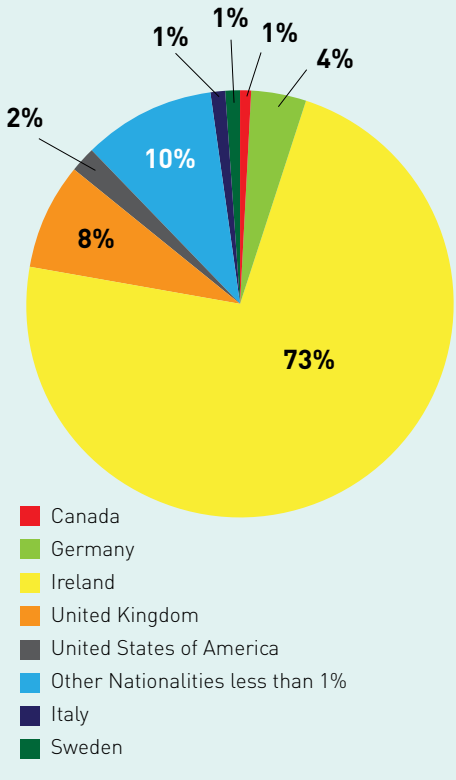
- the development of a credible base of world-class research teams across the Irish higher education sector;
- an increase in scientific publications – both in numbers and in quality;
- an increase in the number of linkages between industry and academic researchers;
- an increase in the number of licences, patents and discoveries that are captured as having potential commercial interest; and
- the development of completely new models of research at the interface between academia and industry in the SFI Centres for Science, Engineering and Technology (CSETs) and Strategic Research Clusters (SRCs).

SFI Building Ireland's Human Capital

Having a highly skilled workforce remains a vital component of Ireland's competitive offering internationally. SFI continued its focus on buliding a community of highly skilled people. SFI now supports approximately 3,000 researchers in Ireland's higher education institutes, led by over 300 lead scientists.

23% of SFI award holders are non-Irish. The international nationalities most represented include the UK (8%), Germany (4%) and the USA (2%). 47% of SFI-funded team members are non-Irish.

Nationality of Award Holders in 2011



SFI Focusing on Research Excellence

A focus on excellent research is critical if Ireland is to continue to build an effective research base that will contribute to economic development. Publications and citations provide a key indicator of the excellence of the research funded. SFI investment is a vital component in building Ireland's reputation as a location for high quality research.

Through SFI investment, Ireland has ascended the international ranking of scientific research capability. Ireland has moved from a position of 36th in 2003, to a consolidated position inside the top 20 countries. Particular strengths have emerged in niche fields, with world rankings of 8th in materials science (important to semiconductor industry) and 3rd in Immunology (important in healthcare industry).

Publications Table of Country Ranking 2011 (Thomson Reuters)

Listed by Citations per Paper	
1	SWITZERLAND
2	DENMARK
3	USA
4	NETHERLANDS
5	SCOTLAND
6	ENGLAND
7	SWEDEN
8	BELGIUM
9	FINLAND
10	GERMANY
11	CANADA
12	AUSTRIA
13	ISRAEL
14	NORWAY
15	WALES
16	FRANCE
17	AUSTRALIA
18	ITALY
19	NORTHERN IRELAND
20	**IRELAND**

A total of 5,740 peer reviewed publications were reported in 2011 by SFI-funded researchers from active awards. This represents an increase of 15% on 2010. 3,351 publications were attributed to SFI funding and 2,389 were attributed to other funding sources. In addition, there were 713 publications reported from inactive awards. 31% of publications (1050) have a named co-author with an address other than Ireland.

SFI Working with Industry

SFI was established to drive investment in academic research that would have a sustainable economic benefit. One of the methods for transferring this benefit is through academic-industry partnerships. SFI has a number of specific programmes that support this process, in particular the CSET and SRC programmes.

Over the years, SFI has placed a strong emphasis on building these links between industry and academic, and the number of industry-academic linkages has more than doubled in two years. Industry linkages with SFI researchers reached 1,035 at end 2011 - up 19% from 867 in 2010. Many companies have multiple linkages with a range of SFI-funded researchers and this is strong evidence of the maturing of the SFI investment across the higher education sector.

SFI researchers were working with 583 companies (as compared with 482 in 2010) to conduct joint research - a rise of 21% or an additional 101 companies working with SFI researchers.

Mr Richard Bruton TD, Minister for Jobs, Enterprise & Innovation and Mr Seán Sherlock TD, Minister for Research & Innovation attend the SFI 'Science & Industry: Working Together for Economic Recovery' *breakfast forum. The event brought together over 120 leading industry and researcher personnel to showcase elements of the top class research taking place across Ireland.*

Tyndall National Institute develop revolutionary respiratory detection microchip

CASE STUDY 04

A research team at the Tyndall National Institute, UCC, Cork, led by Dr Domenico Zito have developed a microchip sensor that can detect a person's respiratory rate without any contact with the person under observation.

The chip allows for constant monitoring of babies in cot beds, hospital patients and other people at risk of obstructive apneas including, Sudden Infant Death Syndrome (SIDS). It can be used also for the early detection of sudden sleep of vehicle drivers.

The sensor technology also enables several other important applications such as facilitating patients being monitored in their home, sending data in real-time to GPs and first-aid medical staff in hospitals. It can also be used for fitness (fatigue) monitoring and personalised healthcare for independent and healthy living. Despite its applications to the biomedical field, the microchip sensor can be applied to other civil applications requiring contactless detection of moving objects.

Tyndall

The number of relationships with multinational companies (MNCs) increased by 14% and involved 246 MNCs in 2011. There was a 27% increase in the number of linkages with small-medium enterprises (SMEs). There are now 337 SMEs working with SFI researchers. This is the largest growing category of companies working with SFI researchers and represents a 38% increase in the number of SMEs working with SFI-Funded Researchers in 2010. Over half (56%) of all these collaborations have legal agreements in place.

There were also 96 linkages reported with government departments/semi-state bodies and private foundations, charities and NGOs.

Industry-Research Linkages in 2011 by Company Type

	Total Linkages	Unique Companies
Multinational Corporation (MNC)	515	246
SME	424	337
Government Departments or Semi-State Bodies	73	38
Private Foundations/Charities/ Non Government Organisations (NGO)	23	21
Total by Award	**1035**	**642**

There is now a strong focus on commercialisation of research emerging from SFI-supported research groups. In 2011, researchers reported a number of commercial outputs, including:

- 10 early stage spin out companies
- 170 Invention Disclosures
- 79 Patents Filed
- 27 Patents Awarded
- 21 Standards Contributed To
- 39 Licensed Technologies

SFI CSETs and SRCs

SFI has constructed 28 large, industry-connected centres (9 CSETs and 19 SRCs) that have engaged with over 325 companies, to pursue industrially relevant research.

CSETs

Cork

→ *Alimentary Pharmabiotic Centre (APC), UCC*

Galway

→ *Digital Enterprise Research Institute (DERI), NUI Galway*

Dublin

→ *Centre for Research on Adaptive Nanostructure & Nanodevice (CRANN), TCD*

→ *Centre for Telecommunications Research (CTVR), TCD*

→ *Biomedical Diagnostic Institute (BDI), DCU*

→ *Next Generation Localisation (CNGL), DCU*

→ *Systems Biology Ireland, UCD*

→ *CLARITY, UCD*

Limerick

→ *Lero - Irish Software Engineering Research Centre, UL*

Strategic Research Clusters (SRCs)

Cork

→ *Information and Communication Technology for Sustainable and Optimised Building Operation (ITOBO), UCC*

→ *Photonics – Integration "From Atoms to Systems" (PiFAS), Tyndall NI*

→ *FORME - Functional Oxides and Related Materials for Electronics, Tyndall NI*

Limerick

→ *Solid State Pharmaceuticals Cluster, UL*

Galway

→ *Network of Excellence for Functional Biomaterials (NFB), NUIG*

→ *Alimentary Glycoscience Research Cluster (AGRC), NUIG*

→ *Regenerative Medicine Institute (REMEDI), NUIG*

Maynooth

→ *Strategic Research in Advanced Geotechnologies (StratAG) NUIM*

Waterford

→ *Federated, Autonomic Management of End-to-end Communication Services (FAME) WIT*

Dublin

→ *Reproductive Biology Research Cluster, UCD*

→ *Advanced Biomimetics for Solar Energy Conversion, UCD*

→ *Sustainable Electrical Energy Systems (SEES), UCD*

→ *The Irish Drug Delivery Research Network (IDDN), UCD*

→ *Clique SRC UCD*

→ *Financial Mathematics Computation Cluster (FMC2) UCD*

→ *Immunology Research Centre (IRC), TCD*

→ *Irish Separation Science Cluster, DCU*

→ *Molecular Therapeutics for Cancer Ireland (MTCI), DCU)*

→ *Precision, DCU*

SFI Researchers

- Academic - Industry linkages up **19%**
- **27%** increase in the number of linkages with SMEs
- SFI researchers involved in **1,035** linkages with industry
- SFI researchers were working with **583** distinct companies

SFI hosts events to showcase supported research to industry in Ireland. In October 2011, a special software industry-focused showcase was hosted by SFI and the Irish Software Innovation Network (ISIN). The joint SFI-ISIN initiative was held to further strengthen links between personnel in the scientific research community and those in the software industry.

In May 2011, SFI and Pharmachemical Ireland (PCI) hosted a collaborative forum with the University of College Cork's School of Pharmacy, which provided a platform for leading edge research activity in areas such as process analytical technology (PAT), chemometrics, process modelling and converging technologies to be demonstrated to leading figures in Ireland's pharmaceutical industry. The forum was attended by 85 people including senior representatives from the pharmachemical industry in Ireland and SFI researchers.

SFI Contributing to Ireland's International Reputation

SFI researchers contribute significantly to building Ireland's international scientific reputation. Ireland now has a truly global scientific reach given that SFI-funded researchers [in 2011] engaged in 1,800 international academic collaborations spanning 68 countries. This is clear evidence that Ireland is extending its scientific reach and influence. There has been a very large increase in the number of collaborations with non-EU partners, and this has now surpassed the EU-non Irish category to become the largest cohort. Almost 90% of these international collaborations are to facilitate joint research/publication. This has resulted in the SFI researchers generated 1,050 co-author publications with internationally based researchers.

Academic Collaborations in 2011 by Region

	Total from SFI Funding	Other Funding Sources
Ireland	672	26.0%
EU (non-Irish)	1128	43.7%
Non-EU	781	30.3%
Total	**2581**	**100.0%**

CASE STUDY 05

Optimisation for Patient-Focused Health Service Delivery

The Health Service faces an ever increasing challenge to deliver an effective and efficient service to patients.

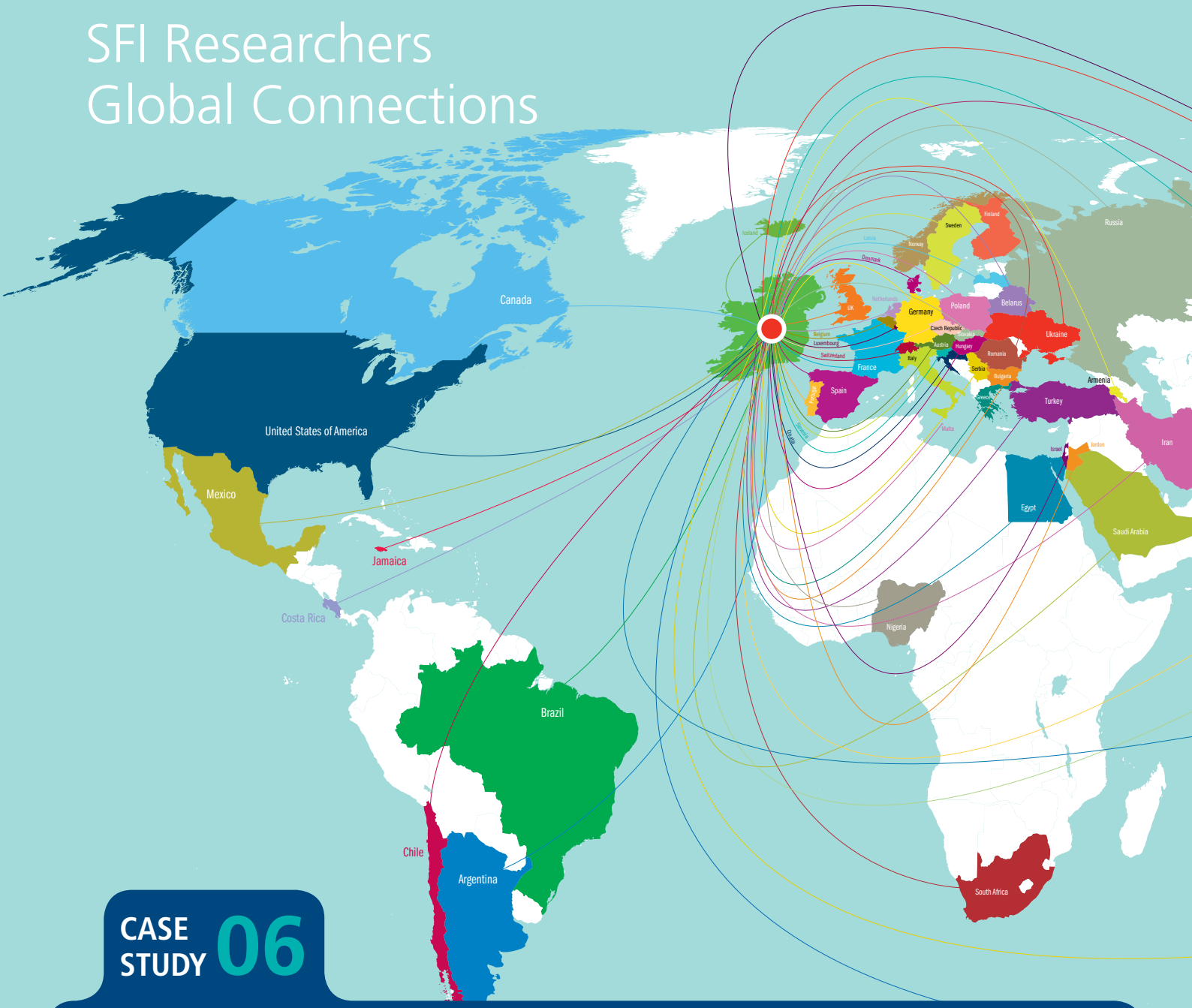
The collaboration between the Cork Constraint Computation Centre (4C) at University College Cork (UCC) and the Health Services Executive (HSE) has provided a unique opportunity to examine various models for service optimization. The collaboration has focused on access to diagnostics, specifically radiology services, which are a platform service and a central fulcrum in the efficient running of any hospital service.

The HSE have set ambitious targets to improve access to services and eliminate waiting lists in radiology. This collaboration is contributing to the solution required to eliminate these waiting lists.

UCC

Cisco announced an investment of €400,000 with the Digital Enterprise Research Institute (DERI) in NUI Galway, to further develop its enterprise social networking and collaboration platform Cisco Quad. An additional €100,000 will be invested in a strategic research agreement between Cisco and DERI for a project titled: "Advances in real-time date integration, recommendations and social network analysis for the Social Semantic Enterprise" (ADVANSSE). Pictured are (l-r) Mike Turley (CEO, DERI, NUI Galway), Mike Conroy (general manager, Cisco Galway), Keith Griffin (senior technical leader Cisco Quad – Galway), and Stefan Decker (director, DERI, NUI Galway).

SFI Researchers Global Connections

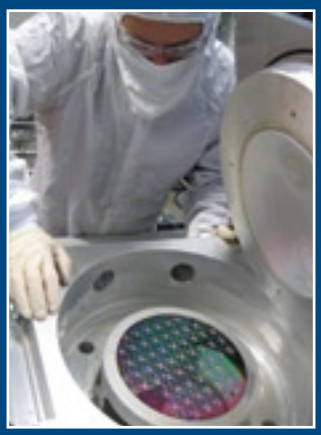


CASE STUDY 06

Precision Spin Out commercialises breakthrough defect inspection technology

Emanating from research conducted at The Precision Cluster which develops the scientific and technological knowledge for manufacturing applications using Plasmas, Sonex Metrology have developed a product that will provide a rapid, low cost and non-destructive means of detecting mechanical defects which could save manufacturers many millions of Euro.

In a typical semiconductor fabrication plant, the manufacturing process to make one wafer takes 4-6 weeks, but the product cannot be functionally tested until the last few days of that process and a defect anywhere in the process is extremely costly. The technology focuses on detecting mechanical defects in semiconductor and solar cell wafers that are likely to lead to catastrophic failures such as wafer breakage and delamination. This photoacoustic technology is unique as it is non-destructive, does not have to touch the wafer and can detect problems on the surface and deep in the silicon below opaque layers. These unique features make the technology very suitable and competitive for in-line process manufacturing.



Sonex which is based at DCU Invent is designated an Enterprise Ireland (EI) High Potential Start Up (HPSU). The company has been supported by EI and has won their 2011 Commercialisation Award. Team members are Michael Cunningham, Prof Patrick McNally, Dr Stephen Daniels and Dylan Fitzgerald.

CASE STUDY 07

CLARITY Darts Ahead

Researchers CLARITY are using new advances in intelligent wearable sensor technologies to improve accuracy and reproducibility in darts tournaments.

CLARITY postdoctoral fellow Michael Walsh, and his colleagues based at Tyndall National Institute and Cork Institute of Technology, have teamed up with darts pro William O'Connor, to investigate how darts players perform targeted throwing using wearable sensor technology in order to be able to improve scoring performance. Among the sensors used are custom-built state-of-the-art wireless inertial measurement units (WIMUs) which measure tilt, force, speed and throw timing and an optical 3D motion capture system used for benchmarking.

Traditionally for highly precise sports such as darts biomechanical information is captured using a camera based 3D motion capture system.

The team have developed a low cost wearable sensor technology that allows these measurements to be taken anywhere and anytime.

CLARITY

- SFI Researchers/teams participated in **5,251** international events
- SFI Researchers are linked with companies in **29** countries
- SFI Researchers are engaged in **1,800** international academic linkages
- SFI Researchers partners are based in **68** countries

Exploiting Regenerative Medicine Market

CASE STUDY 08

To exploit opportunities in the rapidly expanding regenerative medicine market, Orbsen Therapeutics Limited was formed in 2006 as a spin out company to develop and commercialise new intellectual property built up by researchers at the SFI-funded Regenerative Medicine Institute (REMEDI) at the National University of Ireland, Galway.

Over that period, Orbsen Therapeutics have focused on developing proprietary technologies designed to isolate pure and defined stromal cells populations from a range of species. The multi-species element of the Orbsen technology will enable researchers to move seamlessly from the research laboratories to the clinic.

These new isolation methods are especially valuable with the emergence of stringent new guidelines from the EMA (Europe) and BSI (Britain) relating to the need to use defined and purified cells in any cell therapies. Orbsen's technologies will enable development of therapies that are in compliance with these new regulatory guidelines.

NUI Galway OÉ Gaillimh

REMEDI

Breakdown of Location and Member Roles at International Events in 2011

	Ireland	EU (excl Ireland)	Outside EU	Total
Host	126	56	37	219
Programme Committee Member	78	175	112	365
Invited Speaker	298	593	383	1274
Paper Presented	309	703	397	1409
Poster Presented	427	485	346	1258
Meeting Participant	340	288	98	726
Total	**1,578**	**2,300**	**1,373**	**5,251**

SFI undertook a number of significant international events/ showcases during 2011:

- The American Association for the Advancement of Science annual meeting took place in February 2011 in Washington D.C. SFI participated in the conference, in conjunction with the Chief Scientific Advisor to the Government, Prof. Patrick Cunningham.
- Ireland/India Research Seminar, Bangalore - In March 2011 SFI intensified its international collaborations by co-hosting a series of symposia in Bangalore, India, with the Indian Institute of Science (IISc) and India's National Centre for Biological Sciences (NCBS). The symposia, covered specialised areas under three themes: information security, neuroscience and plant biology, and featured formal presentations by SFI-funded researchers based at Cork Institute of Technology, Dublin City University, Waterford Institute of Technology, University College Dublin, University of Limerick, Trinity College Dublin, University College Cork and NUI Galway. In addition to the symposia, IDA Ireland is facilitated meetings between companies based in India and the visiting Irish researchers to encourage further collaboration.

SFI Research Delegation to Bangalore, India.

EU Commissioner for Research, Innovation and Science, Máire Geoghegan-Quinn, met with some of Ireland's successful scientific researchers to have recently secured prestigious EU funding through the European Research Council (ERC) 'Starting Grant'. Pictured in Dublin's Science Gallery were (L-R), John Nolan (Waterford Institute of Technology); John Travers, Science Foundation Ireland; Seán O'Riain (NUI Maynooth); EU Commissioner for Research, Innovation and Science, Máire Geoghegan-Quinn; Jennifer Claire McElwain (University College Dublin); Carola Schulzke (Trinity College Dublin); and Eoin Casey (University College Dublin).

- President McAleese Visit to Barcelona, Spain - As part of her visit to Barcelona, Spain in March 2011 President Mary McAleese opened an Enterprise Ireland conference and workshop which was organised for client companies targeting the Spanish pharmaceutical market. The programme included a number of short presentations, followed by one-to-one meetings. Dr Ruth Freeman, SFI, made a presentation entitled Research for the Pharmaceutical Industry at the event.
- In May 2011, SFI together with the IDA Ireland and Enterprise Ireland attended the BIO International Convention in Washington. The event, represents the world's largest gathering of the biotech community, showcasing and connecting the people, companies and biotech-based innovations that help to improve life for the future. The agencies attended BIO 2011 to showcase Ireland's world class research landscape, its clusters of biopharma, pharma and medical technology companies, and its business friendly environment.
- Ireland at MIT: showcasing the next generation – In July 2011 Michael Lonergan, Consul General of Ireland and David Greaney, Chairman of Irish Network Boston arranged a seminar "Ireland at MIT: showcasing the next generation" at the Museum of Science, Boston. The event was moderated by Kevin Cullen of the Boston Globe and was attended by approximately 150 representatives from industry and academia. Dr Ruth Freeman, SFI, presented at the event.

Leveraging Additional Funding

In 2011, SFI researchers reported securing €156 million of funding from non-SFI sources.

SFI-funded researchers secured €66 million from international sources, mainly from the EU. In addition, €16million was secured from the private sector.

Amount of non-SFI Funding secured by SFI Funded Researchers in 2011 (by Source, amounts in €s)

	External Funding Leverage €
EU	56,203,077
Enterprise Ireland	20,166,029
HEA	18,995,365
Private Enterprise	16,572,804
IRCSET	8,537,973
Charity/Non-Profit Organisation (Irish)	8,511,685
HRB	7,839,278
Other Irish Government Source	3,153,911
Other International Government Source	3,132,193
Wellcome Trust	2,821,960
Department of Agriculture Fisheries and Food	1,805,780
Charity/Non-Profit Organisation (International)	1,420,932
EPA	1,380,350
Other International Interest Organisation	1,358,380
NIH	1,274,198
Other Sources	853,709
Teagasc	714,100
NSF	617,500
DCENR	614,010
Marine Institute	40,000
Total	**156,013,234**

Linguistics Olympiad helps to address Language Skills Deficit of Irish Students

CASE STUDY 09

The Centre for Next Generation Localisation (CNGL) continues to challenge secondary school students from across Ireland to test their logic and language skills with a novel competition designed to help address Ireland's language skills deficit.

The All Ireland Linguistics Olympiad (AILO) tasks students to develop their own strategies for solving problems in fascinating real languages from around the globe. In solving the problems, students hone their analytical, language and lateral thinking skills; skills which are vital to the success of Ireland's localisation sector. AILO has attracted over 650 participants from schools in almost every county in Ireland.

Ireland is currently experiencing significant demand for multilingual graduates across diverse industries. Among these is the €680 million localisation sector, which enables companies to adapt digital products, services and content to the needs of global users. The language skills and computational thinking fostered by AILO are essential to this process.

CNGL Centre for Next Generation Localisation DCU

SFI Communicating Science

SFI as the primary investor in scientific and engineering research in Ireland, recognises the need to engage with all stakeholders, in particular the general public, to increase the awareness and understanding of the relevance of science to the problems both economic and social we face today as a society. Significant progress has been made in public engagement in recent years by SFI and the Researchers it supports.

In 2011, 310 SFI researchers engaged in public outreach activities. Actions undertaken included over 684 public demonstrations/lectures, over 657 schools visits and over 1,172 media interactions.

The nine SFI CSETs each have extensive education and outreach activities across different groups in society, from primary pupils to the general public and industry. Activities include schools competitions, computer games, websites, lab and school visits, public lectures and teaching packs.

The *SFI Speakers for Schools* programme provide free visits to schools where SFI researchers and team members deliver talks and demonstrations to pupils. During 2011, 68 SFI researchers from 12 HEIs throughout the country were registered to give 144 different talks throughout the programme.

Pictured at the Science Summit 2011 was keynote speaker, and multiple award-winning US scientist, educator and biotech entrepreneur, Dr Corey Goodman. Over 300 of Ireland's leading scientific researchers attended the high level strategic think-in on the theme "Shaping the Future Now: New Horizons for Science and Society".

Pictured at the Irish Times Innovation Cities Roadshow held in November 2011 in the Aula Maxima, The Quadrangle, NUI Galway were Dr John Breslin, DERI, NUI Galway, Co-founder Boards.ie and Dr Graham Love, Director Policy & Communications Science Foundation Ireland.

In 2011, the SFI Conference & Workshops programme supported 55 separate events with an investment of over €500,000. The programme supports conferences bids, conferences, academic-industrial workshops and events to raise public awareness.

Examples of activities supported include:

- International Conference on Pervasive Computing Technologies for Healthcare 2011
- IEEE Sensors 2011
- Photonics Ireland Conference 2011
- Young Life Scientists Ireland (YLSI) Symposium 2011
- 3rd NUI Maynooth Wave Energy Workshop
- 18th European Chemical Vapour Deposition Conference

Science Raps 2011 Winners *- Students from Colaiste an Spioraid Naoimh, Bishopstown, Cork were the winners in the senior category of the APC Science Raps 2011 competition. Pictured with the Deputy Lord Mayor of Cork, Tony Fitzgerald L-R: Dave O'Neill, Eoghan Callanan, James Carr, Luke Delaney, John Spillane, Marc McCarthy and Dr Catherine Buckley at the Discover Science Exhibition.*

CASE STUDY 10

Mathematical Technique which will better predict the spread of epidemics

University of Limerick based researcher, Professor James Gleeson has invented a new mathematical technique which analyses and predicts the outcome of dynamic changes on large scale networks.

This new technique will provide more accurate prediction of a diverse range of spreading phenomena such as epidemics, computer viruses and social media trends. Professor Gleeson's paper entitled 'High-accuracy approximation of binary-state dynamics on networks' has been published by leading science journal, Physical Review Letters. The model can be applied to examine the spread of diseases such as H1N1 (swine flu) by understanding the complex networks within society. The airline network, for example, tells us how many people fly to and from each airport in the world every day, and these travellers are often the primary spreaders of epidemics and pandemics.

Professor Gleeson is the co-director of the Mathematics Applications Consortium for Science and Industry (MACSI) at the University of Limerick.

CASE STUDY 11

'Mini-pill' may help prevent blindness

Professor Tom Cotter and his team in the Biochemistry Department at UCC have shown that the active component (Norgestrel) of the contraceptive 'Mini Pill' prevents the loss of sight in mice that have degenerative eye conditions that normally lead to blindness.

People who suffer from the genetic condition Retinitis Pigmentosa lose their sight because the light detecting cells in their eyes called photoreceptors begin to die by the time they reach their mid-twenties.

In a screening of 1,200 commonly used drugs, Professor Tom Cotter and his team discovered that Norgestel did more than just provide contraception in mouse models used to study blindness. It also prevented the loss of the light detecting cells and the sight of the mice was retained when the animals were given the drug at a similar concentration used for contraceptive purposes. The scientists hope to begin a study to see if the protective effects of the contraceptive 'Mini-pill' that are seen in animal models are also experienced by humans. The research was supported by SFI, Enterprise Ireland and Fighting Blindness Ireland.

UCC

SFI New Awards 2011

382 new awards were approved across 13 programmes, led by 20 research bodies. Total payments to research bodies in 2011 were €154 million. Examples of projects approved in 2011:

- €19.5 million, together with an industry contribution of almost €4.8 million, was approved for the Centre for Telecommunications Research (CTVR). CTVR is funded under the SFI Centres for Science, Engineering and Technology programme for a five year term to 2016. The centre specialises in designing wireless and optical networks for the future. Industry partners include Alcatel-Lucent/ Bell Labs Ireland, Xilinx Research Labs Ireland, Socowave, Eircom/Meteor, Intune Networks, NXP and MA/Com. Headquartered in Trinity College Dublin, CTVR draws together researchers from six other universities and research institutions, including National University of Ireland, Maynooth, Dublin Institute of Technology, Dublin City University, Tyndall National Institute in Cork, University College Cork and University of Limerick.
- Four projects valued at €3 million were approved under the Translational Research Award programme. The programme is a joint HRB and SFI initiative focused on bringing scientific researchers and clinicians closer together to deliver health benefits to patients.
- €44 million investment for 44 Principal Investigator' (PI) awards. The PI research teams will directly support close to 300 high-quality jobs over the next five years. The awards are in a broad range of scientific areas such as cancer, early diagnosis of the childhood cancer Neuroblastoma, lung disease, investigation of therapeutic interventions for Alzheimer's disease, Huntington's disease, improved crop and plant cell productivity, graphics for gaming, resource management in data centres, advanced telecoms networks, autonomic management of smart cities, wave energy, and energy conversion and storage devices. Thus far over 20 industry partners are connected to the successful projects in some shape or form, amongst them are Inercept Pharma Ltd., Pevion Biotech Ltd, Sigmoid Pharma (Ireland), Nestle, Kerry Group, Alimentary Health, Intel Labs Europe, IBM, Alcatel-Lucent/BLI, Aquamarine Power (Edinburgh), Infineon, Disney Research, ESBI, France Telecom and Howard Science (UK).
- €15 million will be awarded over the next four years for 79 research projects under the Research Frontiers Programme to 15 research bodies. The funding is supporting the development of Ireland's human capital by providing employment and

training to 94 researchers, mainly PhD students. Amongst the successful projects to be funded are cutting edge research related to optical sensors, energy/solar cells, cyber security, renewable gas, high-speed wireless communication interfaces and an integrated volcanic ash forecasting system. Also included are a number of health research projects linked to Cancer, Inflammatory Bowel Disease, Schizophrenia, Inflammation of the brain, Urinary Incontinence, Type-2 Diabetes and Cystic Fibrosis.

→ €1.6 million was awarded to 27 early stage researchers projects through the Technology Innovation Development Award (TIDA). The respective projects have each displayed significant potential for the commercialisation of research. TIDA is run in partnership with Enterprise Ireland, with all award recipients working closely with Enterprise Ireland on key principles such as feasibility, awareness of commercialisation, prototype build, industrial processes and encouragement of multi-disciplinary convergence.

Mr Seán Sherlock TD, Minister for Research and Innovation, attended a showcase of work by the latest scientific researchers to be funded through Science Foundation Ireland's (SFI) 'Principal Investigator' (PI) programme. A €44 million investment for 44 PI research teams was announced that will provide support for close to 300 high quality jobs over the next five years. Pictured were Dr Fiona Doohan from UCD with her project on characterisation of novel stress tolerance mechanisms in plants and Minister for Research and Innovation Mr Seán Sherlock TD.

CASE STUDY 12

Healthcare Innovation Programme Award

Five new research projects in the biomedical sphere were awarded funding under an innovative new research programme funded by the Johnson & Johnson Corporate Office of Science and Technology (COSAT) and SFI.

The Healthcare Innovation Programme Award (HIPA), which was established by SFI with the support of COSAT, is aimed at encouraging biomedical exploration in the specific areas of immune-modulated inflammatory diseases, including osteoarthritis, rheumatoid arthritis, graft-vs-host disease, psoriasis, lung disease, renal disease, inflammatory bowel disease and neurodegenerative diseases. The five projects were:

- Abhay Pandit, NUI Galway (Nanosphere Mediated Delivery of Extracellular SOD to the pulmonary epithelium in the acutely injured lung);
- Cliona O'Farrelly, Trinity College Dublin (Soluble CD1d: a novel regulator of iNKT cells and potential immunotherapeutic agent);
- Justin McCarthy, University College Cork (Evaluation of selective gamma-secretase inhibitors as novel modulators of IL-1β-and TNFa - mediated inflammatory disease);
- Rhodri Ceredig, NUI Galway (Feasibility of automated whole blood screening to evaluate novel immunomodulators extracted from natural by-products);
- Ruaidhri Carmody, University College Cork (TNFa -and inflammatory bowel disease: a role for Escherichia coli).

Organisation Structure*

SFI Board

- **Board Sub-Group on Programme Grants**
- **Management Development and Remuneration Committee**
- **Audit Committee**
  - Head of Audit & Compliance
    Mr Jeremy Twomey

Office of Director General

Director General
Prof Mark Ferguson

Chief Operations Officer
Mr Donal Keane

Finance and Operations

Director
Dr Graham Love

Policy & Communications

Director
Prof Fionn Murtagh

Information, Communications & Emergent Technologies Directorate

Director
Dr Paul Dodd

Industry Collaborative Programmes

Director
Dr Stephen Simpson

Lifesciences

Director
Dr Ruth Freeman

Enterprise & International Affairs

*This is the organisational structure following the appointment of Prof Mark Ferguson as Director General in January 2012.
Please see note 11 on page 28, with regard to the appointment of Director General.

Board Members

1. **Prof Patrick Fottrell**
Chairperson, Science Foundation Ireland

2. **Prof Mark Ferguson**
Director General, Science Foundation Ireland

3. **Dr Jim Mountjoy**
Deputy Chairman, Science Foundation Ireland

4. **Mr Sean Aherne**
Vice President of Operations, Boston Scientific Limited, Tullamore

5. **Mr Tom Boland**
Chief Executive Officer, Higher Education Authority

6. **Dr Rita R. Colwell**
Chairman, Canon US Life Sciences, Inc.
Distinguished Professor, University of Maryland College Park and Johns Hopkins University Bloomberg School of Public Health

7. **Ms Bernie Cullinan**
Chief Executive Officer, Clarigen

8. **Dr Pat Duane**
Senior Research and Development Leader, Medtronic Inc.

9. **Mr Peter MacDonagh**
Research Consultant

10. **Dr Martina Newell-McGloughlin**
Director, University of California Systemwide Biotechnology Research and Education Program, Co-Director, NIH Training Program in Biomolecular Technology

11. **Mr Martin Shanagher**
Assistant Secretary, Innovation and Investment Division, Department of Jobs, Enterprise and Innovation

12. **Mr John Travers**
Business and Economic Consultant

Irish-Based Researchers Create 3D Surface Anatomy Guide

CASE STUDY 13

A 3D surface anatomy guide for medical and physiotherapy students, surgical trainees and artists has been developed in Ireland through a unique collaboration between anatomists, artists and engineers.

The two year project has resulted in an on-line 3D guide which shows the motions of muscles and the sites of structures from the surface inwards. It shows how, by using movement, colour, illustration and 3D technology, anatomists, engineers and artists can collaborate to teach the body from the outside in. The project combined artistic representation, engineering expertise and anatomical accuracy into a four hour teaching programme and will shortly be part of the curriculum/training for medical students in Dublin, Bahrain and Kuala Lumpur.

The project was a partnership between anatomists Dr. Valerie Morris and Prof Clive Lee from the Royal College of Surgeons (RCSI), engineers David Corrigan and Anil Kokaram from Trinity College (TCD) and artists Mick O'Dea RHA, and Una Sealy, ARHA from the Royal Hibernian Academy (RHA).

RCSI

TRINITY COLLEGE DUBLIN | THE UNIVERSITY OF DUBLIN
COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH

Statutory and Other Notices

1. Board Members – Register of Interests

The Board operates to the best practice corporate governance principles and in accordance with the guidelines set out in the Code of Practice for the Governance of State Bodies, as issued by the Department of Finance, both in its activities and in its use of committees. In accordance with these guidelines, SFI Board Members register their interests in other undertakings with the Secretary.

2. Ethics in Public Office Acts, 1995 and Standards in Public Offices Act, 2001

SFI became subject to the Ethics in Public Office Acts 1995 and 2001 on the 1 January 2005. SFI has complied with the provisions of the Act.

3. Freedom of Information Act, 1997 and Freedom of Information (Amendment) Act, 2003.

SFI became a prescribed body under the Freedom of Information Act, 1997 from 31 May 2006. SFI complies fully with the Act. Requests for information under this Act should be addressed to the FOI Officer, SFI, Wilton Park House, Wilton Place, Dublin 2.

4. Prompt Payment of Accounts Act, 1997

SFI comes under the remit of the Prompt Payment of Accounts Act, 1997, which came into effect on 2 January 1998, and the European Communities (Late Payment in Commercial Transactions) Regulations, 2002, which came into effect on the on 7 August 2002. It is the policy of SFI to ensure that all invoices are paid promptly. Specific procedures are in place that enable it to track all invoices and ensure that payments are made before the due date. Invoices are registered daily and electronic payments are issued as required to ensure timely payments. There were no late payments during 2011.

Name of Director	Notes	Attendance at Board Meetings (7 meetings)
Prof Pat Fottrell (Chairman)		7 out of 7
Dr Jim Mountjoy (Deputy Chairperson)		7 out of 7
Mr Sean Aherne	Participation by conference call from overseas for 1 Board meeting	6 out of 7
Mr Tom Boland		6 out of 7
Dr Rita Colwell (1)	Participation by conference call from overseas for 3 Board meetings	4 out of 7
Ms Bernie Cullinan		6 out of 7
Dr Pat Duane	Participation by conference call from overseas for 1 Board meeting	7 out of 7
Dr Graham Love		2 out of 2
Mr Peter MacDonagh		7 out of 7
Dr Martina Newell McGloughlin (1)	Participation by conference call from overseas for 1 Board meeting	4 out of 7
Mr Martin Shanagher		7 out of 7
Mr John Travers		7 out of 7

5. Board Meetings/Attendance

The SFI Board normally consists of 12 members appointed by the Minister for Jobs, Enterprise & Innovation, as set out in Section 8 of the Industrial Development (Science Foundation Ireland) Act 2003.
This number includes the Director General. However, due to the appointment of Board member John Travers as Interim Director General from December 2010 to October 2011, total Board membership was reduced to 11 for this period. The quorum for the SFI Board is five members. Six scheduled and one special SFI Board meetings were held in 2011 as follows:

Date	Venue	Number of Attendees
24 January 2011	Board Room, Wilton Park House	10/11
21 March 2011	Board Room, Wilton Park House	9/11
16 May 2011	Board Room, Wilton Park House	11/11
5 September 2011	Board Room, Wilton Park House	9/11
19 September 2011	Glandore Business Centre, Fitzwilliam Hall	10/11
24 October 2011	Board Room, Wilton Park House	9/12
12 December 2011	Wilton Room, Wilton Park House	12/12

(1) Due to commitments made prior to their reappointment, Dr Colwell and Dr Newell-McGloughlin were unable to attend two of the four remaining meetings to the end of the year (see a below).

a) In accordance with Sections 9(3) and 9(4) of the Industrial Development (Science Foundation Ireland) Act 2003 relating to Board Membership, the following Board members were chosen for retirement in July 2011 as the longest serving members:

- Dr Rita Colwell; and
- Dr Martina Newell-McGloughlin

b) Both members were reappointed effective from 25 July 2011.

Members of Committees of the Board 2011
Board Sub Group on Programme Grants

Dr Martina Newell-McGloughlin (Chairperson), Mr John Travers (January to October 2011), Dr Graham Love (October to December 2011), Mr Peter MacDonagh, Dr Gary Crawley, Dr Rita Colwell and Dr Eucharia Meehan.

SFI Audit Committee

Dr Jim Mountjoy (Chairman), Mr Aidan Hodson, Mr Sean Aherne, Ms Bernie Cullinan, Dr Pat Duane and Mr Tom Boland.

Management Development and Remuneration Committee

Prof Patrick Fottrell (Chairperson), Mr Sean Aherne, Mr Martin Shanagher and Mr John Travers.

Board Sub Committee Meetings

1. The Audit Committee held six meetings.
2. The Board Sub Group on Programme Grants held four (virtual) meetings.
3. The Management Development and Remuneration Committee held four meetings.

CASE STUDY 14

Scientists Develop Formula for a Perfect Pint of the Black Stuff!

Scientists at the University of Limerick have employed the power of applied mathematics to solve the long standing problem of creating a perfect creamy head on a pint of stout poured from a can.

This research could potentially mean significant financial savings for stout producers who currently must include a high cost widget in each can of stout, which releases a jet of gas into the can as it is opened in order to create froth.

Professor Stephen O'Brien and the research team of Dr William Lee at UL's Mathematics Applications Consortium for Science and Industry group (MACSI), have uncovered a new technique for bubble creation in canned stout that could supersede the widget.

6. Employment Equality Acts, 1998 and 2004

SFI wholeheartedly supports the principle of equal opportunities in employment. It opposes all forms of discrimination on the grounds of colour, race, nationality, sexual orientation, ethnic or national origin (and/or area of origin), religion, gender, marital status, age or disability. SFI's commitment to implementing equal opportunities is reflected in its policies, practices and procedures, e.g. recruitment, promotion, training, use of non-discriminatory language in company documents and publications. The objective is to ensure that all staff are selected and treated only on the basis of their abilities, knowledge and qualifications.

7. Safety, Health and Welfare at Work Act 1989

In accordance with the above Act, SFI in consultation with Forfás implements appropriate measures to protect the safety, health and welfare of all employees and visitors within its offices.

8. Clients' Charter

SFI has published a Clients' Charter setting out its commitment to a high quality of service. This Charter includes a procedure for dealing with complaints. In 2011, no complaints were received under the Charter.

9. Annual Energy Efficiency Reporting by Public Sector Bodies

Under Statutory Instrument (SI) 542, 2009 the public sector has specific energy reporting obligations. SFI's offices are located in Wilton Park House, Wilton Place, Dublin 2. The building facilities are managed by Forfás. In each area relevant to energy usage and services to the building, SFI is satisfied that Forfás endeavours to employ the most energy efficient and environmentally friendly means available. In compliance with the SI, Forfás' annual report and statement of accounts 2011 includes details of energy usage in the building, actions undertaken in 2011 to improve the energy performance in the building and proposed actions for further improve in the energy performance in 2012.

10. Board Expenses

The total Board expenses for 2011 were

Expenditure Heading	€
Foreign Travel	€19,438
Domestic Travel	€1,962
Accomodation/Subsistence/Incidental expenses	€3,695

11. Director General Remuneration

Mr John Travers was appointed as Director General of SFI with effect from 6 December 2010 pending the appointment of a Director General on a permanent basis. Mr Travers received a salary as Director General of €78,195 up to 17 October 2011 when he stepped down from the role. Dr Graham Love was appointed as Director General of SFI with effect from 18 October 2011 pending the appointment of a Director General on a permanent basis. Dr Graham Love received a salary as Director General of €31,464 up to 31 December 2011. Dr. Love also received Board Fees of €459 for the period 18 October 2011 to 31 October 2011 when, under revised "One Person One Salary" remuneration arrangements, public servants no longer receive Board Fees in addition to their salary payments. Dr Love stepped down as Director General on the 15 January 2012. Prof Mark Ferguson was appointed Director General on a permanent basis with effect from 16 January 2012.

Annual Financial Statements 2011

31 December 2011

Report of Comptroller & Auditor General

Report for presentation to the Houses of the Oireachtas

I have audited the financial statements of Science Foundation Ireland for the year ended 31 December 2011 under the Industrial Development (Science Foundation Ireland) Act 2003. The financial statements, which have been prepared under the accounting policies set out therein, comprise the Accounting Policies, the Income and Expenditure Account, the Balance Sheet, the Cash Flow Statement and the related notes. The financial reporting framework that has been applied in their preparation is applicable law and Generally Accepted Accounting Practice in Ireland.

Responsibilities of the Members of the Board

The Board is responsible for the preparation of the financial statements, for ensuring that they give a true and fair view of the state of Science Foundation Ireland's affairs and of its income and expenditure, and for ensuring the regularity of transactions.

Responsibilities of the Comptroller and Auditor General

My responsibility is to audit the financial statements and report on them in accordance with applicable law.

My audit is conducted by reference to the special considerations which attach to State bodies in relation to their management and operation.

My audit is carried out in accordance with the International Standards on Auditing (UK and Ireland) and in compliance with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of Audit of the Financial Statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements, sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of

- whether the accounting policies are appropriate to Science Foundation Ireland's circumstances, and have been consistently applied and adequately disclosed
- the reasonableness of significant accounting estimates made in the preparation of the financial statements, and
- the overall presentation of the financial statements.

I also seek to obtain evidence about the regularity of financial transactions in the course of audit.

In addition, I read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements. If I become aware of any apparent material misstatements or inconsistencies I consider the implications for my report.

Opinion on the Financial Statements

In my opinion, the financial statements, which have been properly prepared in accordance with Generally Accepted Accounting Practice in Ireland, give a true and fair view of the state of Science Foundation Ireland's affairs at 31 December 2011 and of its income and expenditure for the year then ended.

In my opinion, proper books of account have been kept by Science Foundation Ireland. The financial statements are in agreement with the books of account.

Matters on which I report by exception

I report by exception if

- I have not received all the information and explanations I required for my audit, or
- my audit noted any material instance where moneys have not been applied for the purposes intended or where the transactions did not conform to the authorities governing them, or
- the information given in Science Foundation Ireland's Annual Report for the year for which the financial statements are prepared is not consistent with the financial statements, or
- the Statement on Internal Financial Control does not reflect Science Foundation Ireland's compliance with the Code of Practice for the Governance of State Bodies, or
- I find there are other material matters relating to the manner in which public business has been conducted.

I have nothing to report in regard to those matters upon which reporting is by exception.

Gerard Smyth
For and on behalf of the
Comptroller and Auditor General

Date: 8 June 2012

Statement of Board Members' Responsibilities

For 2011 Annual Financial Statements

Section 24 (2) of the Industrial Development (Science Foundation Ireland) Act, 2003 requires Science Foundation Ireland to keep, in such form as may be approved by the Minister for Jobs, Enterprise and Innovation with the consent of the Minister for Public Expenditure and Reform, all proper and usual accounts of money received and expended by it and, in particular, to keep in such form as aforesaid all special accounts as the Minister may from time to time direct. In preparing those financial statements, Science Foundation Ireland is required to:

- select suitable accounting policies and apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that Science Foundation Ireland will continue in operation;
- disclose and explain any material departures from applicable Accounting Standards.
- The Board is responsible for keeping proper books of account which disclose with reasonable accuracy at any time its financial position and which enable it to ensure that the financial statements comply with the overall requirements of Section 24 of the Industrial Development (Science Foundation Ireland) Act, 2003. These books of account are located at the Foundation's headquarters, Wilton Park House, Wilton Place, Dublin 2. The Board is also responsible for safeguarding its assets and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

On behalf of the Board:

Patrick Fottrell
Chairman

Date: 28 May 2012

Prof. Mark Ferguson
Director General

Date: 28 May 2012

Statement on Internal Financial Control

On behalf of the Board of Science Foundation Ireland I acknowledge our responsibility for ensuring that an effective system of internal financial control is maintained and operated.

The system can only provide reasonable and not absolute assurance that assets are safeguarded, transactions authorised and properly recorded, and that material errors or irregularities are either prevented or detected in a timely period.

The Board has taken steps to ensure an appropriate control environment is in place by:

- Clearly defining and documenting management responsibilities and powers;
- Establishing formal procedures for monitoring the activities and safeguarding the assets of the organisation;
- Developing a culture of accountability across all levels of the organisation.

The Board has also established processes to identify and evaluate business risks by:

- Working closely with Government and various Agencies to ensure that there is a clear understanding of Science Foundation Ireland goals and support for the Agencies' strategies to achieve those goals.
- Requiring senior management to put in place risk assessment and risk management processes.
- Carrying out regular reviews of strategic plans both short and long term and evaluating the risks to bringing those plans to fruition.
- Setting annual targets for each area of our business followed by regular reporting on the results achieved;

The system of internal financial control is based on a framework of regular management information, administration procedures including segregation of duties, and a system of delegation and accountability. In particular it includes:

- A comprehensive budgeting system with an annual budget which is reviewed and agreed by the Board;
- Regular reviews by the Board of periodic and annual financial reports which indicate financial performance against forecasts;
- Setting targets to measure financial and other performance;
- Formal project management disciplines.
- clearly defined capital investment control gudelines.

Science Foundation Ireland has established an Internal Audit function, in accordance with the Framework set out in the Code of Practice on the Governance of State Bodies, which reports directly to the Audit Committee. An annual Internal Audit work plan is agreed by the Audit Committee. The work of internal audit is informed by analysis of the risks to which the body is exposed. The Audit Committee meets six times a year and reviews the outcome of the specific internal audits and the ongoing adequacy and effectiveness of the system of internal financial control. These reports highlight deficiencies or weaknesses, if any, in the system of internal financial control and the recommended corrective measures to be taken where necessary.

A Risk Management Committee, made up of the Senior Management team, meets on a regular basis to review and manage risks identified throughout the Foundation. These risks are ranked and updated on a comprehensive SFI Risk Register, which is reported as a standing item on the SFI Audit Committee agenda. In addition, the Management Committee, at its weekly meeting, reviews high level decisions and discussions to determine if new risks arise therefrom and add these to the Risk Management Committee agenda.

The Board's monitoring and review of the effectiveness of the system of internal financial control is informed by the work of the Internal Auditor and the Audit Committee which oversees the work of the Internal Auditor, the control exercised by the Executive managers within SFI who have responsibility for the development and maintenance of the financial framework, and comments by the Comptroller and Auditor General in his management letter.

I confirm that the Board conducted a review of the effectiveness of the system of internal financial controls for 2011.

Signed on behalf of the Board

Patrick Fottrell
Chairman

Accounting Policies

The basis of accounting and significant accounting policies adopted by Science Foundation Ireland are as follows;

1) Basis of Accounting

The Financial Statements have been prepared under the historical cost convention in the form approved by the Minister for Jobs, Enterprise and Innovation with the consent of the Minister for Public Expenditure and Reform under the Industrial Development (Science Foundation Ireland) Act 2003. The Financial Statements are prepared on an accruals basis, except where stated below and are in accordance with generally accepted accounting practice. Financial Reporting Standards, recommended by the Accounting Standards Board, are adopted as they become effective.

2) Income Recognition

Income from Oireachtas Grant and Grant refunds represent actual cash receipts in the year.

3) Fixed Assets

Fixed Assets are stated at cost less accumulated depreciation. Depreciation is calculated in order to write off the cost of fixed assets over their estimated useful lives (see Note 6).

4) Capital Account

The Capital Account represents the unamortised funds utilised for the acquisition of Fixed Assets and is written down in line with the depreciation policy for these assets.

5) Foreign Currencies

Monetary assets and liabilities denominated in foreign currencies are translated at the exchange rates ruling at the Balance Sheet date. Revenues and costs are translated at the exchange rates ruling at the dates of the underlying transactions. The resultant surpluses or deficits are dealt with in the Income and Expenditure Account.

6) Superannuation

Science Foundation Ireland is established as an agency of Forfás in accordance with Section 6 (1) of the Industrial Development (Science Foundation Ireland) Act, 2003. Staff employed at the Foundation are legally employees of Forfás and are seconded to the Foundation, consequently, under Sections 2 and 3 of the Second Schedule of the Industrial Development Act, 1993, Forfás is responsible for all employee pension entitlements. Forfás prepares and administers pension schemes for the granting of pension entitlements to its staff including staff seconded to Science Foundation Ireland. Forfás is also responsible for pension reporting requirements, including those set out under FRS 17.

7) Operating Leases

The rentals under operating leases are accounted for as they fall due.

8) Research Grant Payment

Amounts paid to Research Bodies on foot of research grants awarded are charged to the Income and Expenditure account in the year of issue.

Income and Expenditure Account

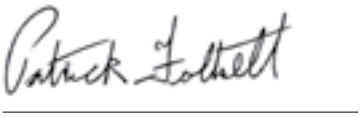
For the year ended 31 December 2011

	Notes	**2011 €'000**	2010 €'000
Income			
Oireachtas Grant	1	**166,642**	158,705
Other Income	2	**252**	148
		166,894	158,853
Expenditure			
Pay	3	**4,175**	4,328
Administration Expenses	4	**3,434**	3,925
IReL (E Journals) Subscription	5	**5,000**	-
Depreciation	6	**114**	121
Grants	7	**154,049**	150,135
		166,772	158,509
Operating Surplus for the Year		**122**	344
Contribution to the Exchequer	15	**(20)**	-
Net Surplus for the Year		**102**	344
Balance at beginning of Year		**337**	126
Transfer (to) Capital Account	8	**(23)**	(133)
Accumulated Surplus at end of Year		**416**	337

There are no recognised gains or losses, other than those dealt with in the Income and Expenditure Account.

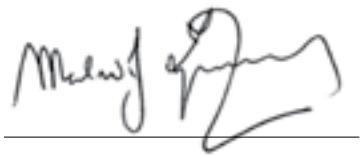
The Accounting Policies, Cash Flow Statement and Notes 1 to 16 form part of these Financial Statements.

On behalf of the Board:



Patrick Fottrell
Chairman

Date: 28 May 2012



Prof. Mark Ferguson
Director General

Date: 28 May 2012

Balance Sheet

As at 31 December 2011

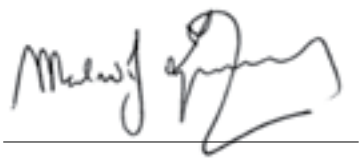
	Notes	**2011** **€'000**	2010 €'000
Fixed Assets			
Tangible Fixed Assets	6	**439**	416
Current Assets			
Cash at Bank		**465**	538
Accounts Receivable	9	**111**	111
		576	649
Accounts Payable	10	**160**	312
Net Current Assets		**416**	337
Net Assets		**855**	753
Represented By:			
Capital Account	8	**439**	416
Income and Expenditure Account		**416**	337
		855	753

The Accounting Policies, Cash Flow Statement and Notes 1 to 16 form part of these Financial Statements.

On behalf of the Board:

Patrick Fottrell
Chairman

Date: 28 May 2012



Prof. Mark Ferguson
Director General

Date: 28 May 2012

Cash Flow Statement

For the year ended 31 December 2011

	Notes	**2011** **€'000**	2010 €'000
Reconciliation of Surplus for Year to Net Cash Flow from Operations			
Surplus for Year		**102**	344
Bank Interest	2	**(3)**	(12)
Depreciation Charge	6	**114**	121
(Increase)/Decrease in Accounts Receivable	9	**(0)**	(47)
Increase/(Decrease) in Accounts Payable	10	**(152)**	108
Net Cash Flow from Operations		**61**	514
Cash Flow Statement			
Net Cash Flow from Operations		**61**	514
Returns on Investment and Servicing of Finance			
- Bank Interest	2	**3**	12
Cash Flow before Capital Expenditure		**64**	526
Capital Funding			
- Purchase of Tangible Fixed Assets	6	**(137)**	(254)
Increase/(Decrease) in Cash		**(73)**	272
Reconciliation of Increase in Cash to Cash at Bank			
Movement in Cash for the Year		**(73)**	272
Cash at Bank at 01 January		**538**	266
Cash at Bank at 31 December		**465**	538

Notes to the Accounts

For the year ended 31 December 2011

1 **Oireachtas Grant**	**2011**	2010
	€'000	€'000
Pay	**4,287**	4,503
Administration Expenses	**3,555**	4,202
E Journals Subscription	**5,000**	-
Research Grants	**153,800**	150,000
	166,642	158,705

Under Section 11 of the Industrial Development Act, 1993, as amended by Section 4 (a) of the Industrial Development Act, 2009, the aggregate amount of grants made by the Minister to Forfás and its Agencies, to enable them to discharge their obligations and liabilities shall not exceed €7,000,000,000. At 31 December, 2011 the aggregate amount so approved was €4,292,451,754.

2 Other Income

Bank Interest	**3**	12
EU Nano Science Fund*	**160**	-
Johnson & Johnson Services Inc - Co Fund of Healthcare Innovation Award Programme (HIPA)	**-**	73
Health Research Board - Co Fund US/Ireland R & D Partnership*	**69**	63
IT Carlow - Refund on expired Award (Extra Exchequer Receipt, see Note 15).	**20**	-
Total	**252**	148

* Contributions received as part funding of NanoScience and US/Ireland programmes are included in Total Grant payments expended in 2011 of €154,049,000.

3 Pay

Pay Costs comprise:		
Wages and Salaries	**3,854**	3,991
Social Welfare Costs	**311**	327
Superannuation Costs	**10**	10
Total	**4,175**	4,328
Sanctioned Positions	**50**	54
Full Time Employed (at year end)	**44**	49

Science Foundation Ireland deducted pension levies from staff of €261,718 (2010: €286,898) which were paid over to the Department of Jobs, Enterprise and Innovation.

Notes to the Accounts

For the year ended 31 December 2011

4(a) Administration Expenses	**2011**	2010
	€'000	€'000
Board Members' Remuneration and Expenses - (see below)	**135**	186
Programme Management	**855**	1,061
Facilities	**832**	876
Professional Fees	**241**	262
Public Engagement	**85**	85
Publications and On Line Content	**123**	180
Events and Sponsorship	**499**	474
IT Support & Infrastructure	**296**	337
Travel & Subsistence Costs	**109**	152
HR Management	**123**	97
Office Furniture & Equipment	**11**	16
General Office Expenses	**105**	184
Audit Fee	**20**	15
Total	**3,434**	3,925

4(b) Board Remuneration and Expenses	**2011**	2010
Board Remuneration		
Board Members		
Sean Ahearne	**11,340**	13,463
Tom Boland	**-**	-
Rita Colwell	**11,307**	12,600
Bernie Cullinan	**11,340**	13,463
Patrick Fottrell (Chairman)	**19,440**	21,600
Peter MacDonagh	**11,340**	12,600
Martina Newell McGloughlin	**11,307**	12,600
James Mountjoy	**11,340**	12,600
Martin Shanagher	**-**	-
John Travers*	**11,340**	12,600
Pat Duane	**11,812**	3,220
Frank Gannon	**(577)**	11,723
Don Thornhill	**(355)**	7,108
Graham Love**	**459**	-
	110,093	133,577
Board Members Expenses	**25,095**	51,958
	135,188	185,535

Board Fees for 2011 take account, where relevant, of deductions for a retrospective reduction in Fees of 5% payable in respect of 2010 and subsequent years. This reduction was advised to Science Foundation Ireland by the then Department of Enterprise, Trade & Employment in January 2011. Prof. Frank Gannon and Dr. Don Thornhill repaid the arrears due to SFI as they were no longer members of the SFI Board in January 2011.

Notes to the Accounts

For the year ended 31 December 2011

4(b) Board Remuneration and Expenses continued

Board Members expenses in 2011 amounted to €25,095, broken down as €19,438 in respect of foreign travel, primarily in relation to the attendance at Board meetings of three overseas Board members, two of whom are based in the United States, and €1,962 in relation to domestic travel and mileage.The balance of €3,695 relates to accomodation, subsistence and incidental expenses.

* Mr. John Travers was appointed as Director General of SFI with effect from 6 December 2010 pending the appointment of a Director General on a permanent basis. Mr. Travers received a salary as Director General of €78,195 up to 17 October 2011 when he stepped down from the role.

** Dr. Graham Love was appointed as Director General of SFI with effect from 18 October 2011 pending the appointment of a Director General on a permanent basis. Dr. Graham Love received a salary as Director General of €31,464 up to 31 December 2011. Dr. Love also received Board Fees of €459 for the period 18 October 2011 to 31 October 2011 when, under revised "One Person One Salary" remuneration arrangements public servants no longer receive Board Fees in addition to their salary payments. Dr. Love stepped down as Director General on the 15 January 2012.

Prof. Mark Ferguson was appointed Director General on a permanent basis with effect from 16 January 2012.

		2011	2010
		€'000	€'000
5	**IReL (E Journals) Subscription**	**5,000**	-

IReL is a funding initiative which provides access to electronic journals and databases to the 7 Universities, RCSI and to a lesser extent to the 14 Institutes of Technology. This funding allows IRIS Electronic Information Services, the consortium which administers the initiative, to purchase electronic resources for use by the Universities and Institutes of Technologies.

The Department of Jobs, Enterprise and Innovation assumed responsibility for payment of part of the annual subscription to IReL in 2011 and made that payment (€5m) through SFI to IRIS, which is based at University College Dublin.

6 Tangible Fixed Assets

	Computer Equipment €'000	Computer Software €'000	Computer Software Development €'000	Motor Vehicles €'000	Fixtures & Fittings €'000	**Total €'000**
Cost						
At 1 January 2011	644	383	293	47	197	**1,564**
Additions	65	-	72	-	-	**137**
Disposals	-	-	-	-	-	**-**
At 31 December 2011	709	383	365	47	197	**1,701**
Depreciation						
At 1 January 2011	544	383	-	35	186	**1,148**
Charge for Year	95	-	-	12	7	**114**
Disposals	-	-	-	-	-	**-**
At 31 December 2011	639	383	-	47	193	**1,262**
Net Book Amount						
At 1 January 2011	100	-	293	12	11	**416**
Net Movement for Year	(30)	-	72	(12)	(7)	**23**
At 31 December 2011	70	-	365	0	4	**439**

Notes to the Accounts

For the year ended 31 December 2011

6 Tangible Fixed Assets continued

The cost of Tangible Fixed Assets is written off in equal instalments over their expected useful lives as follows:

(i)	Computer Equipment & Computer Software	3 years
(ii)	Motor Vehicles	4 years
(iii)	Fixtures & Fittings	5 years

Note: Computer Software in Development is only depreciated when ultimately commissioned.

7 Grants	**2011**	2010
	€'000	€'000
(a) Analysis of Grants Paid		
Biotechnology Grants	**74,869**	69,550
Information and Communications Technology Grants	**76,161**	70,384
Research Frontiers Grants	**3,019**	10,201
Total	**154,049**	150,135

Grants are payable to Irish third level institutions to carry out world class research projects.

(b) Grant Commitments (including Charles Parsons)*		
Outstanding Grant Commitments as at 01 January	**361,474**	399,686
Grants Approved during the year	**104,787**	122,898
Decommitments during the year	**(18,190)**	(10,975)
Grant Payments made in the year	**(154,049)**	(150,135)
Refund on expired Award paid over to Exchequer (see Note 15)	**20**	-
Outstanding Commitments as at 31 December	**294,042**	361,474

* The Charles Parsons Energy Awards, formerly under the Department of Communications, Energy and Natural Resources (DCENR) were transferred to the Department of Jobs, Enterprise and Innovation (DJEI) in December 2009, at which time Science Foundation Ireland were requested to formally manage and administer the awards.

Under the agreed instalments final payments on these awards amounting to €3,936,000 are due in 2013.

8 Capital Account	**2011**	2010
	€'000	€'000
At 1 January	**416**	283
Transfer from Income & Expenditure Account		
- To fund Fixed Asset acquisitions	**137**	254
- Cost of Disposals	**-**	(90)
- Amortised in line with asset depreciation	**(114)**	(121)
- Depreciation on Disposals	**-**	90
Net Movement	**23**	133
At 31 December	**439**	416

Notes to the Accounts

For the year ended 31 December 2011

9 **Accounts Receivable**	**2011**	2010
	€'000	€'000
General Debtors	**8**	14
Prepayments	**103**	97
Total	**111**	111

10 **Accounts Payable**		
General Creditors	**10**	1
Accruals	**145**	248
Interagency Balance	**5**	63
Total	**160**	312

Interagency Balance relates to the balance owed by Science Foundation Ireland to Forfás at 31 December 2011, being the difference between the amount of money paid to Forfás by Science Foundation Ireland and the actual money spent by Forfás on behalf of Science Foundation Ireland.

11 Commitments under Operating Leases

Science Foundation Ireland is a tenant of Forfás in Wilton Park House and currently has no commitments under operating leases on the building, but pays rent to Forfás as a contribution to the lease costs incurred by Forfás.

12 Taxation

Section 227 of the Taxes Consolidation Act, 1997, provides an exemption from tax on the income of non-commercial state bodies except where interest is subject to tax at source (e.g. DIRT). The net amount of such income is credited to the Income & Expenditure Account.

SFI is liable to employer taxes in Ireland and complies with related withholding, reporting and payment obligations.

13 Board Members - Disclosure of Transactions

In the normal course of business, Science Foundation Ireland may enter into contractual arrangements with undertakings in which Science Foundation Ireland Board Members are employed or otherwise interested. Science Foundation Ireland has adopted procedures in accordance with the guidelines issued by the Minister for Public Expenditure and Reform in relation to the disclosure of interests by Board Members and these procedures have been adhered to by Science Foundation Ireland during the year.

14 Contingencies and Legal Actions

There are no contingencies or legal actions which require specific provision in the Financial Statements.

15 Contribution to the Exchequer

In accordance with public finance procedures receipts in respect of grant refunds and surpluses on pay and administration activities, to the extent that they exceed the Foundations expenditure requirements are refundable to the Exchequer.

	2011	2010
	€'000	€'000
Research Grant Refunded - IT Carlow	**20**	-
Total	**20**	-

16 Approval of Financial Statements

The Financial Statements were approved by the Board of Science Foundation Ireland on 28th May 2012.

Grant Commitments and Payments Analysis 2011

2011 Payments by Programme

	€'000
Investigators	51,973
CSET	32,090
SRC	29,146
Research Frontiers Programme	11,030
Stokes	8,044
TIDA-HIPA	5,695
Centres	2,508
Walton	2,377
PIYRA	2,107
Maths Initiative	1,990
SIRG	1,784
Short term Travel Fellowships	1,020
US Ireland R&D Partnership	994
Engineering - Professorship and Lectureship Programme	832
Conference & Workshop	507
Translational Research Award	500
Supplements	427
UREKA	424
NanoSci-E+ Transnational Call	329
PICA	139
WISER	84
Joint Programming Initiatives	49
Grand Total	**154,049**

2011 Payments by Institution

	€'000
Trinity College Dublin	32,500
University College Dublin	30,904
National University of Ireland, Galway	20,541
Dublin City University	17,337
University College Cork	15,120
Tyndall National Institute	12,274
University of Limerick	7,698
National University of Ireland, Maynooth	6,732
Royal College of Surgeons in Ireland	3,953
Waterford Institute of Technology	2,174
Dublin Institute of Technology	1,590
Teagasc	735
Health Research Board	550
Cork Institute of Technology	523
Dundalk Institute of Technology	367
Dublin Institute for Advanced Studies	286
Institute of Technology Tallaght	256
Institute of Technology Sligo	168
Tralee Institute of Technology	123
Athlone Institute of Technology	105
Institute of Technology Carlow	110
Georgia Tech Ireland	5
Grand Total	**154,049**

Note: Certain awards made to NUIG are co-funded by the European Regional Development Fund and the National Strategic Reference Framework EU Structure Funds (NSRF).

EUROPEAN REGIONAL DEVELOPMENT FUND

2011 Number of Awards by Institution

	No. of grants
University College Dublin	71
Trinity College Dublin	66
National University of Ireland, Galway	55
Dublin City University	41
University College Cork	36
National University of Ireland, Maynooth	22
University of Limerick	19
Royal College of Surgeons in Ireland	16
Tyndall National Institute	15
Dublin Institute of Technology	9
Waterford Institute of Technology	7
Cork Institute of Technology	5
Health Research Board	5
Teagasc	5
Dublin Institute for Advanced Studies	3
Athlone Institute of Technology	2
Institute of Technology Tallaght	2
Dundalk Institute of Technology	1
Institute of Technology Carlow	1
Tralee Institute of Technology	1
Grand Total	**382**

2011 Number of Awards by Programme

	No. of grants
Short term Travel Fellowships	102
Research Frontiers Programme	79
TIDA-HIPA	71
Conference & Workshop	55
Investigators	31
Walton	21
WISER	10
Translational Research Award	4
CSET /CSET Supplement	3
SRC Supplement	3
Mathematics Initiative Supplement	1
US Ireland R&D Partnership	1
Joint Programming Initiatives	1
Grand Total	**382**

2011 Grant Commitments by Programme

	€'000
Investigators	39,511
CSET	36,014
Research Frontiers Programme	15,073
TIDA	6,530
Walton	2,438
Translational Research Award	1,498
SRC Supplement	1,260
Short term Travel Fellowships	1,143
Conference & Workshop	545
Mathematics Initiative Supplement	416
US Ireland R&D Partnership	207
Joint Programming Initiatives	99
WISER - Summer Placement	53
Grand Total	**104,787**

Research for Ireland's Future

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Science Foundation Ireland

EUROPEAN REGIONAL DEVELOPMENT FUND

NDP National Development Plan
Transforming Ireland