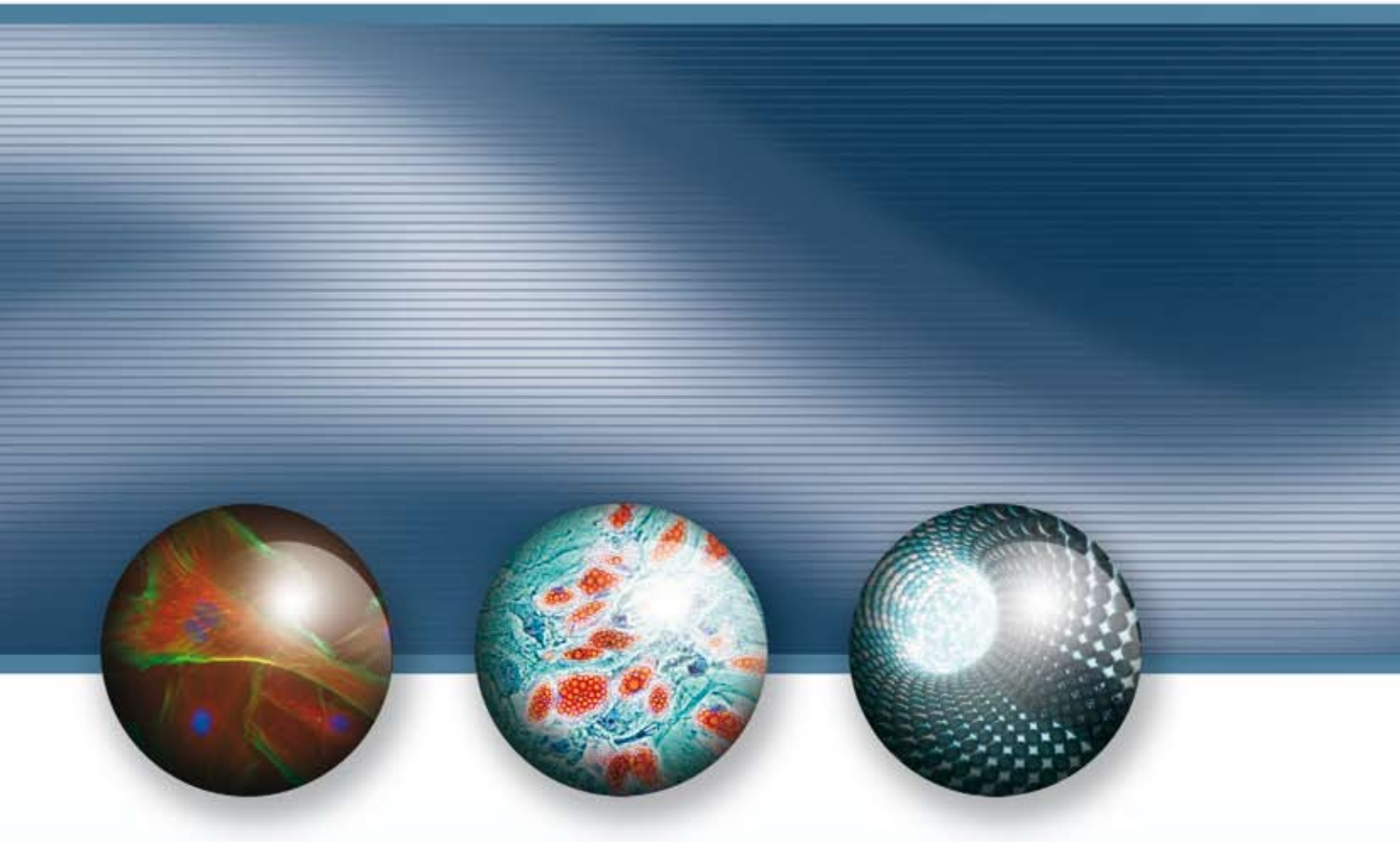
Science Foundation Ireland (SFI)

science foundation ireland
fondúireacht eolaíochta éireann

Investing in Information and Communications Technology (ICT)



Research for Ireland's Future

NDP
National Development Plan 2007 - 2013

www.sfi.ie

Investing in Information and Communications Technology (ICT)

Science Foundation Ireland (SFI) invests in academic research and research teams that generate new knowledge, leading-edge technologies and competitive enterprises in the fields of science and engineering underpinning Biotechnology, Information & Communications Technology, and Sustainable Energy & Energy-Efficient Technologies.

Since its establishment, SFI has contributed to the development and growth of a critical mass of individual investigators and research groups in these broad areas.

Today, SFI funds over 300 Principal Investigators across multiple diverse disciplines and continues to encourage growth in these numbers to deliver the targets set out in the Irish Government's Strategy for Science, Technology & Innovation 2006-2013. Through these investments, Ireland's research landscape has become diverse, yet highly interconnected.

SFI Centres for Science, Engineering & Technology (CSETs) and Strategic Research Clusters (SRCs) bring together researchers in diverse disciplines such as physics, chemistry, engineering, material science, and biochemistry, and serve as examples of the opportunities for interdisciplinary work and cross-fertilisation of ideas that are presented across the sectors supported by SFI.

The addition of new researchers, the growth of collaborative activity and the development of convergence will continue to ensure that new research opportunities are captured effectively to bring economic and social benefits to Ireland.

Information processes underlie almost all aspects of our society and of our personal lives. SFI investment is concerned with leading research embracing all aspects of these processes – from data to information, information to knowledge, and onward to deployment for the citizen and exploitation by enterprise.

Research support by SFI in the area of Information & Communications Technology includes software (ranging widely over computational thinking and value-chain engineering), hardware (including materials science, opto- and other electronics); and the combination of software and hardware in grids, sensor and other networks. As a result, there is now considerable strength in sizable research teams in the areas of: nanotechnology (including nano-biotechnology), advanced manufacturing, photonics, telecoms, finance (in particular mathematical and algorithmic finance, and information security), sensor networks, and e-Society.

SFI Centres for Science, Engineering and Technology (CSETs)

The SFI Centres for Science, Engineering & Technology (CSETs) help link scientists and engineers in partnerships across academia and industry to address crucial research questions, foster the development of new and existing Irish-based technology companies, attract industry that could make an important contribution to Ireland and its economy, and expand educational and career opportunities in Ireland in science and engineering. CSETs must exhibit outstanding research quality, intellectual breadth, active collaboration, flexibility in responding to new research opportunities, and integration of research and education in the fields that SFI supports.

SFI currently funds nine CSETs, three under the SFI Biotechnology remit and six under Information and Communications Technology.

Information and Communications Technology CSETs

Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity College Dublin

www.crann.tcd.ie

CRANN is Ireland's first purpose-built research institute with a mission to advance the frontiers of nanoscience, where the disciplines of physics, chemistry and biology converge.

CRANN's scientific programme focuses on advancing three of the key areas related to visualising and manipulating: magnetic structures and devices, bottom-up fabrication and testing of nanoscale integrated devices and nano-biology of cell-surface interactions. By developing tools and techniques that allow atom-by-atom assembly of structures and devices, CRANN will develop technologies that impact the next generation microelectronics, new drug delivery systems and other discoveries that will change our lives in the coming decades.

Centre Director: Prof. John Boland

Industry Partners: Hewlett-Packard, Intel

Centre for Telecommunications Value-Chain Research (CTVR)

Trinity College Dublin

www.ctvr.ie

The Centre for Telecommunications Value-Chain Research (CTVR) was established in July 2004. It is a multi-institution and multi-disciplinary research centre headquartered at Trinity College Dublin. With over 66 full time researchers and 36 academic staff involved, the centre engages in industry-guided research that redefines key elements of telecommunications systems, architectures and networks.

Centre Director: Prof. Donal O'Mahony

Industry Partners: Bell Labs Ireland/Alcatel Lucent

Digital Enterprise Research Institute (DERI)

National University of Ireland, Galway

www.deri.ie

The Digital Enterprise Research Institute (DERI) is based at NUI Galway and is dedicated to researching the technologies that will underpin the next generation of the World Wide Web – the Semantic Web. The institute, which SFI has supported since 2003, aims to develop the software that allows the Internet to become a platform where organisations and individuals communicate much more easily with each other to carry out commercial activities and provide value-added services.

Centre Director: Prof. Stefan Decker

Industry Partners: Storm, Nortel, Cisco, Ericsson, Fidelity, Celtrak, Cyntelix, OpenLink

Lero – The Irish Software Engineering Research Centre
University of Limerick

www.lero.ie

Lero focuses on specific domains, especially those where reliability is crucial, including automotive, medical devices, telecommunications and financial services. The Centre develops models, methods and tools that make it cheaper, faster or easier to produce this crucial software.

Lero's researchers deliver internationally recognised scientific outputs and publish in the leading journals and conferences. As software engineering is, by definition, an applied science, Lero's research agenda is informed by the requirements of its chosen industrial domains. The researchers concentrate on problem areas that have potential real-world application.

Centre Director: Prof. Kevin Ryan

Primary Industry Partners: Robert Bosch, Fidelity Systems, IBM, KMC, Rovsing, Snap-on Diagnostics, Siemens, Citco, BT Ireland, Oracle, Cyclon, Tecnomen, Saab Combitech, Debian

Centre for Next Generation Localisation (CNGL)
Dublin City University

www.cngl.ie

The Centre for Next Generation Localisation (CNGL) was announced as a Science Foundation Ireland (SFI)-funded Centre in December 2007.

Language barriers constitute a formidable obstacle to the free flow of information, products and services in an increasingly globalised economy and information society. "Localisaion" refers to the process of adapting digital content to culture, locale and linguistic environments at high quality and speed. Localisation is a key enabling, value-adding, multiplier component of the global software and content distribution industry. The Centre for Next Generation Localisation (CNGL) is a dynamic Academia-Industry partnership with over 100 researchers developing novel technologies addressing the key localisation challenges. The Centre's objective is to produce substantial advances in the basic and applied research underpinning the design, implementation and evaluation of the blueprints for the Next Generation Localisation Factory.

Centre Director: Prof. Josef Van Genabith

Industry Partners: Microsoft, Dai Nippon Printing (Japan), IBM, Symantec, Idiom Technologies (now part of SDL Enterprises), Alchemy Software Development, VistaTEC, Traslán, SpeechStorm

CLARITY – The Centre for Sensor Web Technologies
University College Dublin

www.clarity-centre.com

In April 2008 CLARITY, a partnership between UCD and DCU and supported by research at the Tyndall National Institute in Cork, was officially established.

CLARITY is a research centre that focuses on the intersection between two important research areas – adaptive sensing and information discovery. Through the development of innovative new technologies, CLARITY aims to contribute to Ireland's future industry base and to contribute to improving the quality of life of people in areas such as personal health, digital media and the management of our environment.

The overall theme of CLARITY's research programme is 'bringing information to life', referring to the harvesting and harnessing of large volumes of sensed information, from both the physical world in which we live and the digital world of modern communications and computing.

Centre Director: Prof. Barry Smyth

Primary Industry Partners: Changing Worlds, Critical Path, Foster Miller, Vodafone, IBM

SFI ICT Research Scientists

Software

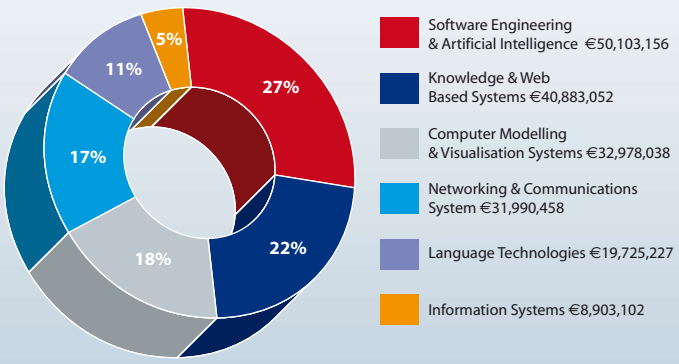
Software Engineering & Artificial Intelligence	
Prof. Padraig Cunningham	University College Dublin
Prof. Eugene Freuder	University College Cork
Dr. William Harrison	Trinity College Dublin
Prof. Matthew Hennessey	Trinity College Dublin
Prof Kevin Ryan, (CSET) Lero - the Irish Software Engineering Research Centre	University of Limerick
Dr. Michael O'Neill	University College Dublin
Dr. Barry O'Sullivan	University College Cork
Dr. Emanuel Popovici	University College Cork
Dr. Conor Ryan	University of Limerick
Prof. Michel Schellekens	University College Cork
Dr. Peter Nicholas Wilson	University College Cork
Networking & Communications Systems	
Dr. Marissa Condon	Dublin City University
Prof. William Donnelly	Waterford IT
Prof. Doug Leith	NUI Maynooth
Dr. Liam Marnane (SRC) Efficient Embedded Digital Signal Processing for Mobile Digital Health (EEDSP)	Dublin City University
Prof. Richard Middleton	NUI Maynooth
Dr. Scott Rickard	University College Dublin
Prof. Robert Shorten	NUI Maynooth
Knowledge & Web Based Systems	
Prof Barry Smyth, (CSET) CLARITY: Bringing Information to Life	University College Dublin
Prof Stefan Decker, (CSET) Digital Enterprise Research Institute (DERI)	NUI Galway
Prof. Karsten Menzel (SRC) Information and Communication Technology for Sustainable and Optimised Building Operation (ITOBO)	University College Cork
Computer Modelling & Visualisation Systems	
Dr. Geraldine Boylan	University College Cork
Dr. Steven Collins	Trinity College Dublin
Prof. James Gleeson	University of Limerick
Dr. Debra Laefer	University College Dublin
Dr. Alexey Lastovetsky	University College Dublin
Dr. Fiona Newell	Trinity College Dublin
Dr.Carol O Sullivan	Trinity College Dublin
Prof Henry Rice	Trinity College Dublin
Prof. A. Stewart Fotheringham (SRC) Advanced Geotechnologies	NUI Maynooth
Dr Graeme Watson	Trinity College Dublin
Prof. Simon Wilson	Trinity College Dublin
Information Systems	
Dr. Jim Duggan	NUI Galway
Prof. Patrick Nixon	University College Dublin
Dr. Johannes Slingerland	NUI Maynooth
Prof. Peter Eric Wellstead	NUI Maynooth
Language Technologies	
Prof Josef Van Genabith, (CSET) Centre for Next Generation Localisation (CNGL)	Dublin City University
Dr. Fred Cummins	University College Dublin
Dr. Andrew Way	Dublin City University

Hardware

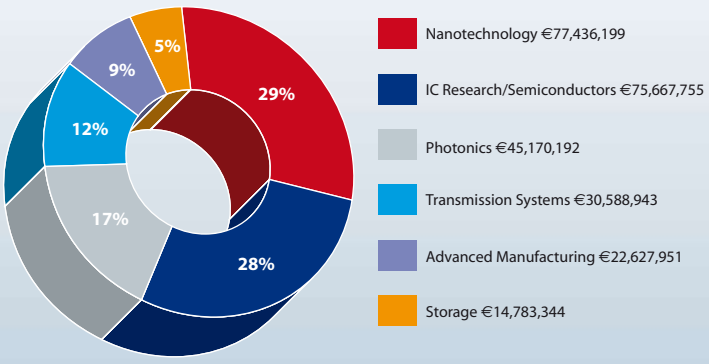
Nanotechnology	
Dr. Louise Bradley	Trinity College Dublin
Dr. Thomas Busch	University College Cork
Dr. Jonathan Coleman	Trinity College Dublin
Prof John Boland (CSET) Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)	Trinity College Dublin
Prof. Sylvia M Draper	Trinity College Dublin
Dr. Claude Ederer	Trinity College Dublin
Dr. Mauro Ferreira	Trinity College Dublin
Dr. Silvia Giordani	Trinity College Dublin
Dr. Justin Holmes	University College Cork
Prof. Michael Morris	University College Cork
Prof. Martyn Pemble	Tyndall National Institute
Dr. Kevin M. Ryan	University of Limerick
Prof. Igor Shvets	Trinity College Dublin
Dr. Jiri Vala	NUI Maynooth
Photonics	
Prof. John Costello	University College Dublin
Prof. J. Christopher Dainty	NUI Galway
Dr. Padraig Dunne	University College Dublin
Dr. Stephen Hegarty	Cork IT
Dr. Guillaume Huyet	Cork IT
Dr. Stephen O'Brien	Tyndall National Institute
Prof. Eoin O'Reilly	Tyndall National Institute
Prof. Gerard O'Sullivan	University College Dublin
Dr. Emanuele Pelucchi	Tyndall National Institute
Dr. Frank Hudson Peters (SRC) Photonics – Integration "From Atoms to Systems" (PiFAS)	Tyndall National Institute
Dr. Emma Sokell	University College Dublin
IC Research/Semiconductors	
Prof. Thomas Brazil	University College Dublin
Prof. Jean-Pierre Colinge	Tyndall National Institute
Prof. Cynthia Colinge	Tyndall National Institute
Dr. Georgios Fagas	Tyndall National Institute
Prof. Stephen Fahy	Tyndall National Institute
Dr. James Greer	Tyndall National Institute
Dr. Paul Hurley	Tyndall National Institute
Prof. Michael Peter Kennedy	Tyndall National Institute
Prof. Patrick McNally	Dublin City University
Prof. Martyn Pemble (SRC) FORME - Functional Oxides and Related Materials for Electronics	Tyndall National Institute
Prof. Miles Turner	Dublin City University
Dr Anding Zhu	University College Dublin
Advanced Manufacturing	
Prof Donal O'Mahony, (CSET) Centre for Telecommunications Value Chain Research (CTVR)	Trinity College Dublin
Transmission Systems	
Dr. Liam Barry	Dublin City University
Prof. David Cotter	Tyndall National Institute
Dr. Andrew Ellis	Tyndall National Institute
Prof. Orla Feely	University College Dublin
Dr. Robert Manning	Tyndall National Institute
Prof. Paul Townsend	Tyndall National Institute
Storage	
Dr. Hans-Benjamin Braun	University College Dublin
Prof. Michael Coey	Trinity College Dublin
Dr. Saibal Roy	Tyndall National Institute
Prof. Stefano Sanvito	Trinity College Dublin

SFI ICT Investment*

Software



Hardware



* Total amounts for funding as of November 2008 under key award programmes, i.e., CSETs, SRCs, PI, PIYRA and Research Professor.

SFI Awards

SFI has established a flexible grants and awards portfolio for investing in research that occurs within Ireland. SFI chooses recipients through peer/merit review by distinguished scientists. The grants portfolio includes:

SFI Principal Investigator (PI) Programme

Supports those fields of science and engineering that underpin biotechnology, information and communications technology, and sustainable energy and energy-efficient technologies. PI grants may range from €100,000 to €1,000,000 per year and may be three to five years in duration.

SFI Centres for Science, Engineering and Technology (CSET)

Help link scientists and engineers in partnerships across academia and industry to address crucial research questions, foster the development of new and existing Irish-based technology companies, attract industry that could make an important contribution to Ireland and its economy, and expand educational and career opportunities in Ireland in science and engineering. Grants normally range from €1 to €5 million per year for five years.

SFI Strategic Research Clusters (SRCs)

Designed to facilitate the clustering of outstanding researchers to carry out joint research activities in areas of strategic importance to Ireland, while also giving the time and resources to attract and cultivate strong industry partnerships that can inform and enhance their research programmes. Awards are for up to five years duration and up to €1,500,000 per annum.

SFI Research Professor Recruitment Awards

Aim to attract to Ireland outstanding researchers, with particularly distinguished international reputations, awards normally ranging up to €500,000 per annum for up to two years.

SFI President of Ireland Young Researcher Award (PIYRA)

Recognises outstanding engineers and scientists who, early in their careers (no more than five years since PhD), have already demonstrated or shown exceptional potential for leadership at the frontiers of knowledge. Awards are normally up to €1 million over five years.

SFI Starting Investigator Research Grants (SIRG)

Support excellent early-career-stage investigators to carry out independent research in the fields of science and engineering that underpin biotechnology, information and communications technology, and sustainable energy and energy-efficient technologies. SIRG awards are up to €500,000 for a period of four years.

SFI Principal Investigator Career Advancement Award (PICA)

Supports outstanding researchers returning to active research after a prolonged absence. PICA awards may range from €100,000 to €1,000,000 per year for a three to five year period.

SFI Research Frontiers Programme (RFP)

Supports the very best research in a broad range of disciplines in Science, Mathematics and Engineering. Awards may be up to €250,000 and may be up to four years duration.

SFI E.T.S. Walton Visitor Awards

Support leading international scientists who wish to visit Ireland to undertake research for up to 12 months. Awards normally range up to €200,000.

SFI Workshops and Conferences Grants

Support international meetings held in Ireland for intensive inquiry and collaboration on topics of timely scientific importance. Awards range from €500 to €50,000.

For a full list of SFI award programmes and current deadlines see www.sfi.ie

Learn more about SFI and our programmes at www.sfi.ie

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