

ANNUAL REPORT 2014

IRISH RESEARCH COUNCIL





Irish Research Council Annual Event 2014, Ms Madi Sharma, Plenary Speaker, Mr. Damien English, T.D. Prof. Orla Feely, Prof. Miguel Seabra, Chair, Science Europe, Royal Hospital Kilmainham, November 2014

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Note: The Accounts for the Irish Research Council will be published as part of the HEA C&AG audited Accounts 2014 in Q3 2015

IRELAND'S RESEARCH PERFORMANCE 2014

Essential Science Indicator

Where Irish HEIs in top 1% of world higher education institutions	World research impact ranking (citations)
Immunology	1
Nanoscience/Nanotechnology	2
Computer Science	4
Materials Science	7
Neuroscience & Behaviour	7
Pharmacy & Toxicology	9
Biology & Biochemistry	11
Molecular Biology & Genetics	11
Chemistry	11
Psychiatry/Psychology	15
Physics	19
Agricultural Science	
Clinical Medicine	
Economics & Business	
Engineering	
Environment/Ecology	
Geosciences	
Microbiology	
Plant & Animal Science	
Social Sciences General	

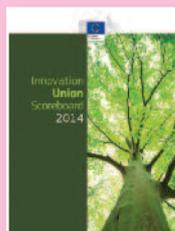
Source : Thomson Reuters InCites2, 2003-2013

Arts and Humanities are not included in the Essential Science Indicators. The QS World University Rankings 2013/14 and other ranking processes show strong evidence that these areas contribute significantly and positively to Irish higher education institution rankings.

Ireland is:



Ranked 18th in terms of Human Capital and Research (Global Innovation Index 2014)



Ranked 3rd in EU member states performance in Human Resources (IU Scoreboard 2014)

FOREWORD



One of the Irish Research Council's principal mandates is to fund excellent research across all disciplines and, in doing so, to enhance Ireland's international reputation as a centre for research and learning. In fulfilling this aim, 2014 has been a very successful year: a total of 1,146 Postgraduate Scholars and 272 Postdoctoral Fellows were funded. The prestige of this funding is significant as the Irish Research Council schemes are highly competitive. More detailed information about these and other awards made in 2014 are being presented within this Annual Report.

An additional aim of the Council is to enrich the available pool of knowledge and expertise in order to address Ireland's current and future challenges, particularly through collaboration and knowledge exchange. To this end, a variety of partnerships have been formed by the Council with government departments and agencies, enterprise and civic society. Specifically, in relation to enterprise, it is noteworthy that 25% of all Postgraduate Scholar awards made in 2014 were co-funded by an Enterprise or Employment Partner. To date, approximately 300 private-sector and other employers have partnered with the Irish Research Council. Of these, taking the Employment Based Postgraduate Programme as an example, SMEs account for more than 70% of Employment Partners. In building these funding programmes, the Irish Research Council offers a range of opportunities and supports diverse career paths for researchers.

In seeking to address ongoing challenges faced by Ireland, the Irish Research Council has funded a number of large research projects that have a societal focus. Several of these projects are interdisciplinary and will form the building blocks of future Horizon 2020 proposals from Ireland.

Finally, solid foundations were laid in 2014 for future achievements: preparation of *Creating Ireland*, a new publication on the public value of funding research in the humanities and social sciences; the formation of new civic-society collaboration with The Wheel; and the development of a new Research for Policy and Society funding scheme. I congratulate the Irish Research Council on its achievements in 2014 and look forward to reading more about these and other milestones in this and future Council reports.

Mr. Damien English, T.D.

Minister of State for Skills, Research and Innovation



The mission of the Irish Research Council is to support excellent research and recognise creative individuals with innovative ideas, thus enabling a vibrant research community which enriches Irish research, the economy and society

The **mandate** of the Council, as set out in 2012, is aligned with delivering on this mission:

- To fund excellent research within, and between, all disciplines, and in doing so to enhance Ireland's international reputation as a centre for research and learning.
- To support the education and skills development of excellent individual early-stage researchers and cultivate independent researchers and thinkers, whilst offering a range of opportunities which support diverse career paths.
- To enrich the pool of knowledge and expertise available for addressing Ireland's current and future challenges, whether societal, cultural or economic, through collaboration and knowledge exchange with government departments and agencies, enterprise and civic society.
- To provide policy advice on postgraduate education and on more general research matters to the HEA and other national and international bodies.





INTRODUCTION

2014 marked the second full year of operation for the Irish Research Council. We have continued to build on the work and success of the former Councils, IRCSET and IRCHSS, whilst also consolidating and developing our mission.

In the course of 2014, the Council set out its vision for a healthy research ecosystem in Ireland, one which provides a diversity of supports and opportunities and which enables the country to reap the full value and benefits of research. This balanced ecosystem would address the breadth of economic and societal needs and develop the knowledge, understanding and insights required by citizens, employers and government.

The Council, in line with its mandate, plays a distinctive role in the research ecosystem. We support the best talent and provide opportunities for excellent researchers with original ideas, regardless of the discipline or research topic. Through our approach, we cultivate individual thinkers to question, to discover and to contribute to the development of the skills, competencies and expertise required for the future. We empower creative and innovative people who can translate new ideas and knowledge into benefits for the economy and for society, both in Ireland and globally. We enable researchers to connect with employers and we have a strong ethos of partnering with other government entities and with civic society to deliver benefits from research to all. And to enable this, in addition to our core funding from the government, we are continuing to leverage funding from non-Exchequer sources nationally and at EU level.

Significant progress was made in 2014, progress which will form the bedrock for the work programme in 2015. This progress is summarised in the following pages and we would like to thank you for taking the time to peruse this report. If you require any more information, please do not hesitate to contact us or visit our website at www.research.ie.

Professor Orla Feely (Chair) and Dr. Eucharia Meehan (Director)



9 INDIVIDUALS, 4 OF OUR IRISH RESEARCH COUNCIL ALUMNI AND 5 OF OUR GOVERNMENT OF IRELAND ACADEMIC SUPERVISORS SECURED PRESTIGIOUS EUROPEAN RESEARCH COUNCIL AWARDS IN 2014.

28

SUCCESSFUL PARTICIPANTS, FROM AHSS & STEM, SUPPORTED BY THE IUA AND IRISH RESEARCH COUNCIL JOINTLY OPERATED MARIE SKŁODOWSKA-CURIE OFFICE = €14M FUNDING SECURED

1418 FUNDED RESEARCHERS

1146



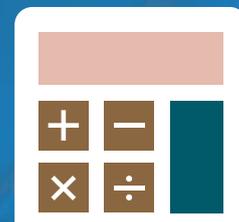
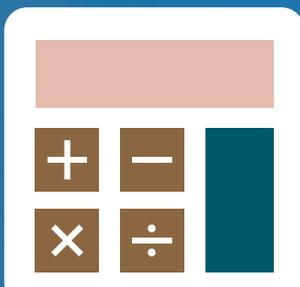
30 PRINCIPAL INVESTIGATOR-LED PROJECTS

IRISH RESEARCH COU

€31.4m + €3.3m

EXCHEQUER BUDGET

LEVERAGED FUNDING FROM OTHER SOURCES





EU COMMISSION REPORTED THE IRISH RESEARCH COUNCIL IN THE TOP 5 MOST SUCCESSFUL CO-FUND PARTICIPATING ORGANISATIONS IN FP7.

POSTGRADUATE RESEARCH STUDENTS

272 POSTDOCTORAL FELLOWS



45

IRISH RESEARCH COUNCIL/ MSC CO-FUND PROJECTS

IRISH RESEARCH COUNCIL OVERVIEW 2014

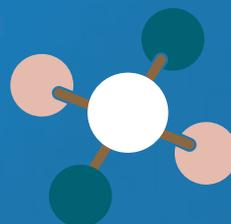
300

PRIVATE-SECTOR & OTHER EMPLOYERS HAVE PARTNERED WITH & CO-FUNDED WITH THE IRISH RESEARCH COUNCIL

PARTNERING WITH

13

GOVERNMENT DEPARTMENTS/AGENCIES



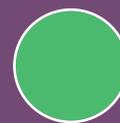
NEW AWARDS 2014

218

GOVERNMENT OF IRELAND SCHOLAR AWARDS

€16.8M

VALUE OF AWARDS



MALE
116



FEMALE
102

69

GOVERNMENT OF IRELAND
POSTDOCTORAL FELLOW AWARDS

€5.5M

VALUE OF AWARDS



MALE
37



FEMALE
32

48

EMPLOYMENT BASED POSTGRADUATE SCHEME

€4.5M

VALUE OF AWARDS



MALE
26



EU
43



STEM
35



FEMALE
22



NON-EU
5



AHSS
13

54

ENTERPRISE PARTNERSHIP POSTGRADUATE & POSTDOCTORAL AWARDS

€5.7M

VALUE OF AWARDS



MALE
41



EU
46



STEM
49



FEMALE
13



NON-EU
8



AHSS
5

30

ELEVATE IRISH RESEARCH COUNCIL/MSC CO-FUND AWARDS

€8M

VALUE OF AWARDS



MALE
18



FEMALE
12



EU
25

11

RESEARCH PROJECT AWARDS

€1.2M

VALUE OF AWARDS



MALE
4



FEMALE
7



AHSS
11





EU
196



NON-EU
22



STEM
112



106
AHSS



EU
59



NON-EU
10



STEM
36



33
AHSS

46 EMPLOYMENT PARTNERS

33
SMEs

7
MNCs

6
OTHER

46 ENTERPRISE PARTNERS

22
SMEs

15
MNCs

9
OTHER

NON-EU
5

STEM
16

AHSS
14

40% OF STEM SCHOLAR AWARDS CO-FUNDED WITH ENTERPRISE/EMPLOYER PARTNER

25% OF ALL SCHOLAR AWARDS CO-FUNDED WITH EMPLOYER PARTNER



A YEAR IN THE LIFE OF THE IRISH RESEARCH COUNCIL

JANUARY

Sponsored by the Irish Research Council, 'New Horizons in the Humanities' was jointly hosted by the Irish Humanities Alliance and Royal Irish Academy.

BT Young Scientist – the Irish Research Council sponsors the inaugural award for an interdisciplinary research project. Daragh Exton and Matt Lucey from Gaelcholaiste Luimnigh amazed with their project "The Vibe of the Hive" combining biology and ecology.

FEBRUARY

The Irish Research Council organized a Horizon 2020 interdisciplinary workshop, 'Creative Connections' on the societal challenges of Health & Wellbeing, Food (including Marine Research/Blue Growth) and Secure Societies on the 11th February 2014. (Photo of Minister Sherlock and plenary contributors below). The HRB, Department of Agriculture, Food & Marine, and Enterprise Ireland partnered in the event. Held in Croke Park, there were 180 delegates and 12 guest speakers.

MARCH

Research Data Alliance Third Plenary Meeting: The Data Sharing Community: Playing your Part. This event was sponsored by the Irish Research Council.

The Irish Research Council, as member of GENDER-NET, attended the second Consortium meeting in Brussels, a third meeting was held in October.

Irish Research Council were delighted with the success of 7 talented young researchers who were chosen in a competitive process to attend the 64th Lindau Nobel Laureate Meeting. The meeting this year was dedicated to physiology, medicine and economics.



JULY

Mr. Abhishek Sharma, Founder & CEO of Beyond Evolution Tech Solutions in Gurgaon, India, and the FP7 BIC International Advisory Group member, carried out a guest lecture at Waterford IT. The lecture was funded by the Irish Research Council.

New Foundations scheme and was co-organized by Waterford Institute of Technology Telecommunications Software and System Group (TSSG) and Trinity College Dublin.

AUGUST

EU funders Humanities in the European Research Area (HERA) 'of which the Irish Research Council is a member' successfully applied to the EU Commission' for a third funding call 'Uses of the Past'. Funding of €21m was awarded.

Irish Research Council academic supervisors have been listed among the top 1% of researchers worldwide, as revealed by a 2014 Irish Times article. The piece refers to work carried out by Thompson Reuters, used in citations. The eleven Irish researchers achieved a position in the coveted first percentile, placing them within the top 3,000 scientists actively publishing their findings.

SEPTEMBER

The Schools of Law and Applied Social Studies, University College Cork, co-hosted an international conference on adoption 'Redefining Adoption in a New Era: Opportunities and Challenges for Law and Social Work Practice'. This event was funded by a Irish Research Council New Foundations Award 2013.

The Irish Research Council featured prominently in this year's Career Zoo, with hundreds of early-stage researchers, including Masters, PhD and postdoctoral candidates, in attendance. Career Zoo is Ireland's premier career event for researchers, graduates and professionals seeking exciting career opportunities.

Irish Research Council announces 30 Elevate International Career Development Fellowships co-funded by Marie Curie Actions. The Fellowships represent an investment of €8m over 3 years.

APRIL

Dr. Charlotte Blease, Irish Research Council Government of Ireland Postdoctoral Fellow ("Hypocritical Oaths – Medicine's dirty secrets") & Dr. Catarina Marvao, ELEVATE Postdoctoral Fellow: ("Dancing as a source of success and happiness") participated in TEDxFullbrightDublin. Visionary, dynamic, and succinct talks were delivered by rising members, established alumni and friends of the Fullbright community based on the TED conference structure. Dr. Charlotte Blease was selected as TEDx Editor's Pick!

MAY

To commemorate the 150th anniversary of the naming of Homo neanderthalensis, NUI Galway gathered some of the most important figures in neanderthal research for an interdisciplinary symposium. This conference was supported by the Irish Research Council under its New Foundations programme. For details of the symposium, see www.neanderthal150.org/

JUNE

At the official opening of the €5m CREATE building at Cork Institute of Technology on 6th June, Minister Sean Sherlock announced the discovery of a new bacterial species. *Campylobacter corcagiensis* - the Corkonian in honour of its hometown - was isolated from lion-tailed macaques (a rare breed of monkeys) by CREATE researchers. The discovery was part of an Irish Research Council project carried out by CIT PhD student Monika Koziel under the supervision of Dr. Roy Sleator and Dr. Brigid Lucey.

The Minister for Research and Innovation Seán Sherlock T.D. announced €5.7 million to support 50 new enterprise-academia research partnerships through the Irish Research Council's (IRC) Enterprise Partnership Scheme – Silver Healthcare was named 250th enterprise partner.



OCTOBER

Minister for Research, Innovation and Skills, Damien English, T.D. announced the award of over €5.5 million in funding to support postdoctoral researchers under the Irish Research Council's 2014 Government of Ireland Postdoctoral Fellowship Scheme.

The Irish Research Council announces Postgraduate Scholarship Awards valued at €16.8 million over four years.

Ghosts, ghouls and other supernatural creatures all make their presence felt at Halloween, both on-screen and off-screen, but for four Irish Research Council-funded researchers, the dark and supernatural are a year-round fascination. Go to www.research.ie for more info.

NOVEMBER

The Irish Research Council held its 2014 Annual Event on the 19th November at the Royal Hospital Kilmainham, Dublin. The overarching theme was 'Connecting Communities - Future Opportunities'. The event focused on cultivating connections across disciplines and across academia, industry and civic society.

Maritime History Conference – 'A Safe Place for Ships': Cork, Ireland, Europe and the Sea. Funded by the Irish Research Council's New Foundations Scheme with help from the Port of Cork, this conference explored Ireland's sea-going past and culture, along with that of its European neighbours.

DECEMBER

The Irish Research Council announced €4.5 million in funding to enable some of Ireland's top postgraduate researchers to work in leading companies around the country. The funding, under the Employment-Based Postgraduate Programme, was awarded to 48 researchers at a ceremony, which took place on board the MV Cill Airne, a former passenger liner docked on North Wall Quay in Dublin.

Minister for Skills, Research and Innovation, Damien English T.D. welcomed the announcement of awards to eight Irish researchers worth approximately €11 million through European Research Council Starting Grants. The Council is an ERC National Contact Point.

The Irish Research Council sponsored the Science of Christmas supplement in the Irish Independent featuring several Irish Research Council awardees.

**A SELECTION OF
2014
PUBLICATIONS
BY CURRENT
AND PREVIOUS
AWARD
HOLDERS**

Do you have a publication in 2015?

Please let us know by emailing communications@research.ie



Irish Officers in the British Forces, 1922 – 45 by Stephen O'Connor

Steven O'Connor currently holds a Government of Ireland, Irish Research Council Postdoctoral Fellowship. He previously held a Government of Ireland, Irish Research Council Postgraduate Scholarship.

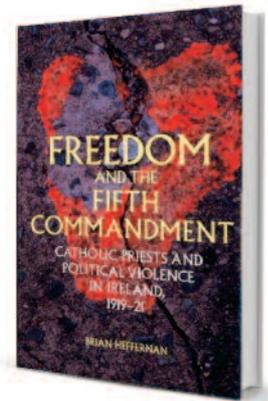
March 2014



Genetic Discrimination: Transatlantic Perspectives on the Case for a European Level Legal Response (edited by Gerard Quinn, Aisling de Paor, Peter Blanck)

Aisling de Paor was awarded a Government of Ireland, Irish Research Council Postgraduate Scholarship & a 'New Ideas Scheme' Award.

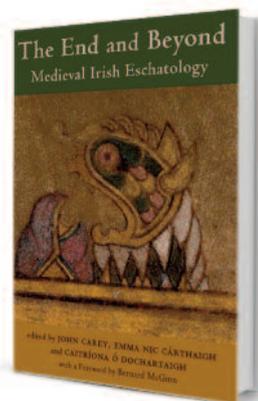
November 2014



Freedom and the Fifth Commandment: Catholic Priests and Political Violence in Ireland, 1919-21 by Brian Heffernan

Brian Heffernan was awarded a Government of Ireland, Irish Research Council Postgraduate Scholarship.

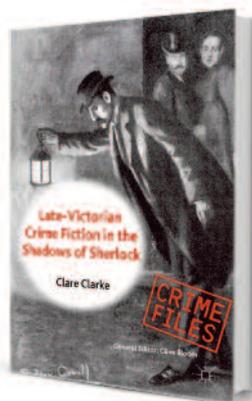
March 2014



The End and Beyond: Medieval Irish Eschatology (edited by John Carey, Emma Nic Cárthaigh and Caitríona Ó Dochartaigh)

John Carey was awarded a Government of Ireland, Irish Research Council Project Grant.

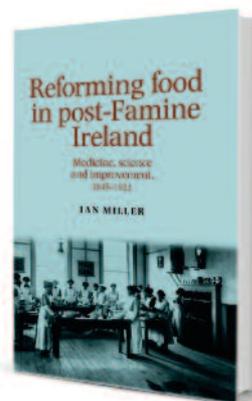
December 2014



Late-Victorian Crime Fiction in the Shadows of Sherlock by Clare Clarke

Clare Clarke was awarded a Government of Ireland, Irish Research Council Postdoctoral Fellowship.

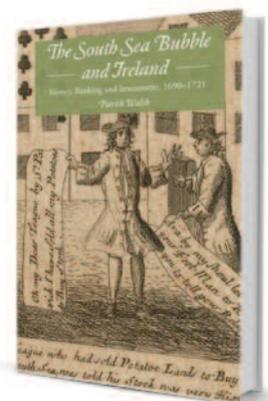
September 2014



Reforming Food in Post-Famine Ireland: Medicine, Science and Improvement, 1845-1922 by Ian Miller

Ian Miller was awarded a Government of Ireland, Irish Research Council Postdoctoral Fellowship.

July 2014

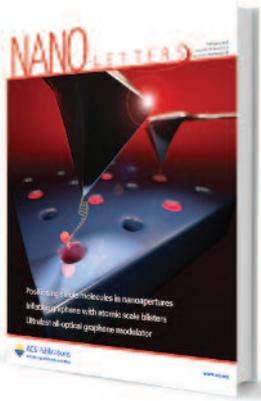


The South Sea Bubble and Ireland: Money, Banking and Investment, 1690 – 1721 by Patrick Walsh

Patrick Walsh currently holds an Irish Research Council CARA Postdoctoral Fellowship.

July 2014

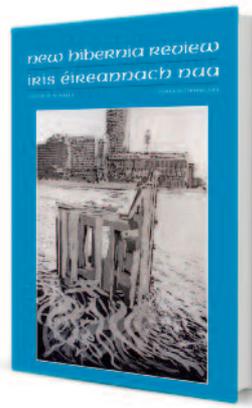




High-Performance Germanium Nanowire-Based Lithium-Ion Battery Anodes Extending Over 1000 Cycles Through in Situ Formation of a Continuous Porous Network, NANO Letters, Volume 14, Issue 2, 2014

Tadhg Kennedy, Emma Mullane, Hugh Geaney, Michal Osiak, Colm O'Dwyer, and Kevin M. Ryan

Tadhg Kennedy was an Irish Research Council/Intel Enterprise Partnership Scheme awardee



Bernard Shaw, Henry Higgins, and the Irish Diaspora, New Hibernia Review, Volume 18, Issue 1, 2014

David Clare has been employed on two different IRC-funded projects: Prof. Patrick Lonergan's "Performance, Nation, and Globalization" and his own "The Hibernicising of the 'Anglo-Irish' Playwright".



Population Genomics Reveal Recent Speciation and Rapid Evolutionary Adaptation in Polar Bears, Cell, Volume 157, Issue 4, 2014

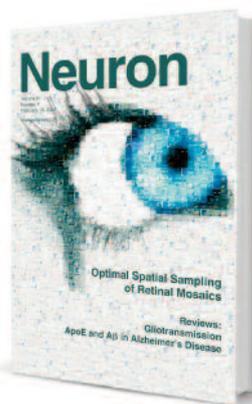
Shiping Liu, Eline D. Lorenzen, Matteo Fumagalli, Bo Li, Kelley Harris, Zijun Xiong, Long Zhou, Thorfinn Sand Korneliussen, Mehmet Somel, Courtney Babbitt, Greg Wray, Jianwen Li, Weiming He, Zhuo Wang, Wenjing Fu, Xueyan Xiang, Claire C. Morgan, Aoife Doherty, Mary J. O'Connell, James O. McInerney, Erik W. Born, Love Dalén, Rune Dietz, Ludovic Orlando, Christian Sonne, Guojie Zhang, Rasmus Nielsen, Eske Willerslev, Jun Wang

Claire C. Morgan and Mary J. O'Connell were funded by the Irish Research Council for Government of Ireland Postgraduate Scholarships.



'Masks of Refinement: Pseudonym, Paratext, and Authorship in the Early Poetry of Thomas Moore', European Romantic Review, Volume 25, Issue 5, 2014.

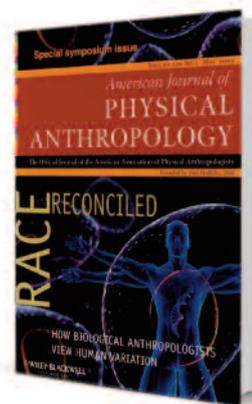
Justin Tonra was awarded an Irish Research Council CARA Postdoctoral Fellowship.



A Transcription Factor Network Coordinates Attraction, Repulsion, and Adhesion Combinatorially to Control Motor Axon Pathway Selection, Neuron 81 (6), 2014.

Aref Arzan Zarin, Jamshid Asadzadeh, Karsten Hokamp, Daniel McCartney, Long Yang, Greg J. Bashaw, and Juan-Pablo Labrador

Aref Arzan Zarin was funded by an Government of Ireland, Irish Research Council Postgraduate Scholarship



Skeletal Manifestations of Stress in Child Victims of the Great Irish Famine (1845-1852): Prevalence of Enamel Hypoplasia, Harris Lines, and Growth Retardation, American Journal of Physical Anthropology, Volume 155, Issue 1, 2014.

Jonny Gerber currently holds a Government of Ireland, Irish Research Council Postdoctoral Fellowship.

SOME OTHER INTERESTING NEWS

RESEARCHERS WIN THE ‘SOLAR SCIENCE LOTTERY’

DR. PAUL A. HIGGINS, (VISITING LMSAL, PALO ALTO, CA, USA) IRISH RESEARCH COUNCIL ENTERPRISE PARTNERSHIP SCHEME RESEARCH FELLOW, ASTROPHYSICS RESEARCH GROUP, TRINITY COLLEGE DUBLIN.

From time to time, the Sun bombards the Earth with enormous blobs of solar plasma that are hurled toward us at speeds upward of 1000 kilometres per second. Upon impacting the Earth, the effects may include the polar aurorae, satellite malfunctions, rerouting of air traffic, and blackouts of radio, GPS, and power grids. These solar storms can be observed as solar flares and coronal mass ejections. The most extreme type of solar flare, or the X-class flare, is the most energetic and the rarest. An X-class flare resulted in a geomagnetic storm that caused the Quebec blackout in 1989.

No one really knows what triggers these large flares to occur, partially because very few have been studied in detail. X-class flares occur less than once per month on average, and a year or more can pass without any occurring at all. Also, since the core of the flare is limited to a ‘tiny’ area on the Sun (a few times the size of the Earth) and the field-of-view of many telescopes is equally small, it is incredibly difficult to catch one of these events in action.

On 29 March 2014, an international team of scientists, including **Dr. Paul Higgins (an Irish Research Council Research Enterprise Partnership Scheme Postdoctoral Fellow in the Trinity College Dublin Astrophysics Research Group)**, obtained the most detailed observations to date of an X-class solar flare.

The huge solar eruption was recorded simultaneously from multiple telescopes on the ground and in space. The event is one of the best observed flares using modern instrumentation. The team’s success was helped by Dr. Higgins, a flare prediction expert, who assisted the team in New Mexico by making an accurate forecast of the event and initiating a ‘Major Flare Watch’ hours beforehand, putting observatories around the world on high-alert.

Lead by Dr. Lucia Kleint (Bay Area Environmental Research Institute), the fortunate team was observing the Sun at the National Solar Observatory (NSO) in New Mexico and managed to record the rare event with multiple instruments at the ground-based Dunn Solar Telescope. The team was able to measure the magnetic fields within the erupting structure, which is a critical part of the flare process. Co-Investigator Dr. Alberto Sainz Dalda (Stanford University) and the team agree that the data are better than they ever hoped for, “We were very lucky to catch such a rare event and that the flare occurred during ideal observing conditions.

The magnification of our images is so large, that the cameras can only record 0.1% of the solar disk. We can resolve details in the flare with sizes of less than 200 kilometers in a region three times larger than the Earth.”

Astronomer and co-observer Dr. Kevin Reardon (National Solar Observatory) adds, ‘This observation is very unique - so rarely do all the conditions come together. Studying these data should give us a glimpse of what to expect when we try to capture these flares with much better spatial resolution using the twenty-five-times bigger Daniel K. Inouye Solar Telescope (DKIST) currently being built on Maui, Hawaii.’

Dr. Higgins concludes, ‘This dataset provides unprecedented detail of the solar flare’s evolution, from its onset in a region of just a few thousand kilometres, and through its expansion into interplanetary space. By studying such large and rare events in detail, scientists hope to learn how to better predict future flare occurrences and protect our infrastructure and the lives of our pilots and astronauts.’

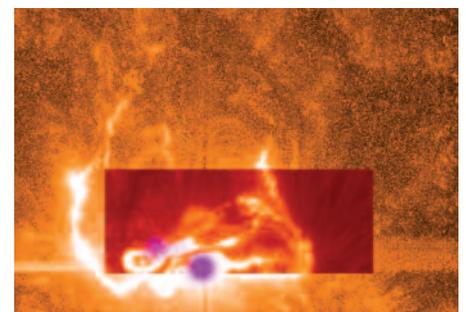


Image: The 29 March 2014 X-class flare captured by the team in various wavelengths of light. Credit: Dr. Lucia Kleint (BAER Institute), Dr. Alberto Sainz-Dalda (Stanford University) & Dr. Kevin Reardon (National Solar Observatory).





FROM NATIONAL TO EUROPEAN SUCCESS

MARIE SKŁODOWSKA-CURIE RESEARCH FELLOW, UCD, SCHOOL OF PHILOSOPHY & UNIVERSITY OF MEMPHIS, DEPARTMENT OF PHILOSOPHY (2014 – 2017).

Dr. Dylan Trigg, Irish Research Council Postdoctoral Research Fellow at UCD, School of Philosophy, has been awarded a highly prestigious Marie Curie FP7 International Outgoing Fellowship beginning in October 2014. Notably, Trigg achieved a score of 99.1% for the grant. His proposal received the highest score of all social sciences and humanities proposals from Ireland competing in the 2013 International Outgoing Fellowships Call, ranking second in all Europe from over 250 applications submitted in response to the Call.

Trigg will spend two years at the University of Memphis working with Professor Shaun Gallagher, the leading specialist in the field of embodied cognition. In the third year, he will return to UCD to work alongside his current Irish Research Council mentor, Professor Dermot Moran.

Trigg's project, "Toward a Phenomenology of the Anxious Body" (TPAB), is a study of anxiety, which employs an interdisciplinary methodology involving philosophy, cognitive science, and psychoanalysis. This project builds on his current Irish Research Council research at UCD, "Merleau-Ponty and the Prehistory of the Subject." Interdisciplinary in focus, Trigg's Irish Research Council research involved not only a critical analysis of Merleau-

Ponty's philosophy, but also a consideration of how a philosophical study of the body might impact psychoanalysis and related disciplines. In his Marie Curie Fellowship, Trigg will develop these themes through studying anxiety.

The issue of anxiety is a central problem in today's society. Anxiety is the most common form of mental illness in the US and UK, affecting 18% of the population in the US and 13% in the UK. Despite this, a rigorous analysis of anxiety at both an experiential and conceptual level remains overlooked.

Trigg's research will attend to this oversight through combining first-person phenomenology with technical skills acquired in embodied cognition. In the final year of his research, Trigg will collaborate with medical practitioners in order to implement the research at policy level. Alongside publishing in leading journals, several workshops and conferences are planned throughout the duration of the research. The impact of the TPAB project will be to position the issue of anxiety on the research horizon and to make an enduring contribution to the EU strategy for the future of mental health by tackling societal challenges such as stigma and exclusion.





IRISH RESEARCH TEAM, INCLUDING IRISH RESEARCH COUNCIL SCHOLAR, DISCOVERS “OFF SWITCH” FOR LIFE- THREATENING TOXIN



Researchers at Maynooth University have found the “off” switch for a powerful toxin produced by a fungus that is a life threatener for cancer and organ transplant patients. The discovery could lead to new treatments for these patients but might also point the way towards switching off other common fungal infections.

Details of the work have just been published in the Cell Press journal *Chemistry & Biology*, and funding for the work comes from the Irish Research Council and Science Foundation Ireland. The team includes Prof. Sean Doyle with Drs Gary Jones, David Fitzpatrick, Rebecca Owens and Gráinne O’Keeffe and PhD student Stephen Dolan. Mr. Stephen Dolan BSc, the lead author on the paper, is an Irish Research Council Postgraduate Scholar (2012-2015) under Professor Doyle’s supervision.

The dangerous *Aspergillus fumigatus* is one of the most common disease-causing agents affecting immunocompromised patients but is also a problem in food safety. It poses a significant risk in leukaemia, organ transplants and HIV patients and aspergillosis infections kill an estimated 600,000 people a year worldwide.

Prof. Doyle in Maynooth’s Department of Biology has led a team for years studying the fungus and the harmful substance it produces, gliotoxin. The team’s latest discovery tops all others however: a molecule called GtmA that shuts down the production of gliotoxin.

Prof. Doyle described it as a “breakthrough” because learning how the toxin is switched off in one fungal species “will provide insights into how to do this with other human, animal and plant-disease causing fungi”.

He believes it may lead to pharmaceuticals and food additives that can diminish the production of this “extremely damaging toxin”.

Mr. Dolan, the Irish Research Council-funded PhD student in this team, has received further recognition of his significant academic achievements. He was awarded the best poster prize at the International Asperfest Meeting which was held in Seville, Spain on 21–22 March 2014. This meeting was attended by over 200 fungal genetics researchers from throughout Europe, North America and beyond, and the winning poster addressed the topic “Exploring the Enzymatic Mechanism and Biological Function of Gliotoxin S-methylation in *Aspergillus fumigatus*”. The prize, a monetary award, was won in the face of top-class competition from over 100 PhD students from around the world.

In June 2014, Mr. Dolan was awarded a prize for Best Presentation at the Irish Fungal Society Meeting held at NUI Galway.

Dolan, S.K., Owens, R.A., O’Keeffe, G., Hammel, S., Fitzpatrick, D.A., Jones G.W. and Doyle, S. (2014) Regulation of Non-ribosomal Peptide Synthesis: Bis-thiomethylation Attenuates Gliotoxin Biosynthesis in *Aspergillus fumigatus*, *Chemistry & Biology*. 21(8), 999–1012.



Image: the pygmy shrew has called Ireland its home for thousands of years, but has recently come under attack. Its greater white-toothed shrew rival is more than twice its size. Photo Credit: Ruth Carden



IRISH RESEARCH COUNCIL FELLOW FIGHTS TO PROTECT PYGMY SHREW FROM INVADING RIVAL

Indirect competition between a native species and an invading rival has a way of delaying researchers in understanding the relationship between the two, which in turn hinders acquisition of endangered and protected status for the species under attack. Without understanding the relationships between animals in a given ecological niche, we can't possibly fight to preserve a given species, let alone an entire ecosystem. Such rivalries will no doubt lead to one extinction after another lest biologists around the country practise constant vigilance. One such scientist, always alert and willingly watchful, is Irish Research Council funded post-doctoral fellow Dr. Allan McDevitt, of UCD's School of Biology and Environmental Science.

Dr. McDevitt, who maintains a primary interest in cataloguing the spatial and temporal movements of species using modern molecular techniques, first became interested in shrew research upon the completion of his undergraduate zoology degree, which he nurtured with the undertaking of a doctorate immediately thereafter, both of which were pursued in UCD. Dr. McDevitt's latest, Irish Research Council funded project, 'Modelling the Evolutionary Consequences of a Recent Invader in Ireland,' harkens back to those carefree postgraduate days, specifically his unwavering interest in the welfare of Ireland's pygmy shrews *Sorex minutus*.

Among the smallest mammals in the world, the pygmy shrew's thousands of years of comfort in Ireland face imminent threat at the hands of the greater white-toothed shrew, *Crocidura russula*, which Dr. McDevitt and his team fear could overtake the island by the year 2050.

"The invading population of the greater white-toothed shrew currently covers an area of 7,600 km² and is found in counties Tipperary, Limerick, Cork, Waterford, Kilkenny,

Offaly and Laois," says Dr. McDevitt. This is almost ten percent of the total area of the country, a frighteningly fast feat for a species first identified here as recently as 2007. "According to our data they have not yet crossed the Shannon," he observes, adding that Ireland lacks the landscape complexity to facilitate indefinite niche partitioning.

"The displacement of the pygmy shrew will continue in Ireland as the greater white-toothed shrew carries on spreading rapidly, with the invader only being temporarily hindered by rivers and other barriers," agrees colleague Dr. Jon Yearsley.

The team hope to use their findings in their application to have the greater white-toothed shrew recognised as an invasive species, so that local authorities may take appropriate action to ensure the protection of the pygmy shrew, including the provision of bigger hedgerows and more deciduous woodlands, as suggested by Professor Ian Montgomery of Queen's University Belfast, who also contributed to the research. "The ecological impact of these alien species is likely to be far greater than, for example, the grey squirrel," he warns.

Dr. McDevitt's findings have been published in open access journal *PLOS ONE*. The Irish Research Council has also provided funding to John Lusby, a contributing researcher on the project, via an EMBARK Scholarship.

McDevitt AD, Montgomery WI, Tosh DG, Lusby J, Reid N, et al. (2014) 'Invading and Expanding: Range Dynamics and Ecological Consequences of the Greater White-Toothed Shrew (*Crocidura russula*) Invasion in Ireland', *PLoS ONE* 9(6)

(2B)OR!(2B)?

CREATING AN ENERGY-NEUTRAL SMART BEEHIVE: UCC STUDENTS, LED BY IRISH RESEARCH COUNCIL SCHOLAR, WIN IEEE/IBM SMARTER PLANET CHALLENGE 2014!

A project using smart technology to help the plight of the humble honey bee has won a global competition for UCC students against challengers from MIT/Boston University (2nd) and TU Delft (3rd).

The UCC students created an energy-neutral smart beehive for the IEEE/IBM Smarter Planet Challenge 2014. The competition organisers asked students worldwide to come up with an innovative solution to a grand challenge facing their community.

The UCC pilot project uses big data, mobile technology, wireless sensor networks and cloud computing to look at the impact of carbon dioxide, oxygen, temperature, humidity, chemical pollutants and airborne dust levels on the honey bees, using solar panels for an energy-neutral operation.

The energy-neutral smart beehive, currently in its first pilot phase, can autonomously monitor the activity of the bee colony and conditions within the beehive. The data which are stored in an active beehive are protected through traditional methods including cryptography, but the bees also protect it. As team leader Fiona Edwards Murphy says, "honey bees are vicious when protecting their hive, including our data!"

The students' research will also allow bee keepers to monitor their hives at times that were previously difficult or impossible such as during the night, heavy rain or in the depths of winter.

In the competition, the student projects had to fit into one or more key areas, including: big data/analytics, cloud computing, cyber security or mobile technologies. The IEEE/IBM Smarter Planet Challenge competition is run by the largest

engineering organisation in the field, the Institute of Electrical and Electronic Engineering, and the prize of €5,000 was sponsored by IBM. The five prizewinning UCC students came from Electrical and Electronic Engineering (Fiona Edwards Murphy, Liam O'Leary and Killian Troy), the School of Food and Nutritional Sciences (Lily Pinson) and the School of Biological, Environmental and Earth Sciences (Katie Hetherington).

The Irish Research Council funds the PhD of the team leader Fiona Edwards Murphy, who is designing a smart beehive.

The students were mentored by Dr. Emanuel Popovici, Electrical and Electronic Engineering, Dr. Pádraig Whelan, School of Biological, Environmental and Earth Sciences and Dr. Edward Lahiff, Food and Nutritional Sciences. Dr. Popovici and Dr. Whelan also co-supervise Ms Edwards-Murphy's PhD research.

The team involved in the project: L-R Lily Pinson, Fiona Murphy Edwards (Team leader & Irish Research Council Scholar), Katie Hetherington, Dr Pádraig Whelan, Dr Emanuel Popovici, Mick O'Shea, Liam O'Leary, Professor John O'Halloran and Killian Troy Image: Provision.



UCC has a great track record in this competition, winning it in 2011 and coming second in 2013.

For the competition, the students used a Boolean themed project which was also inspired by Shakespeare, entitled: (2B) OR!(2B): From the beehive to the cloud and back

In their creative video entry that won them the competition (<https://www.youtube.com/watch?v=b0YBn1mEMJM>), the students highlighted that the EU, UN and other bodies have predicted growing constraints on global food supplies and prices, as honey bee colonies, identified as the most important pollinator insect for food production, suffer a dramatic decline.

To describe the problem logically, the students presented the problem as a Boolean equation that also paid homage to Shakespeare's timeless contemplation on life (To be, or not to be...?)

"Population Increase" OR "Climate Change" = "Less Food"

"Less Food" AND "Fewer Bees" = (2B)OR!(2B)?

The enterprising UCC students have proven that question to be always 'True' according to the theory of George Boole – and outlined a potential solution to saving the honey bee, so vital to human, animal and plant life, and a key species in many ecological systems. The students have designed a path to a potential solution that will use bee data on a unique scale and in an unobtrusive manner using mobile and cloud technology to monitor the honey bees.

Dr. Michael Murphy, President of UCC said: "At UCC we are hugely proud of our first Professor of Mathematics, George Boole, whose bicentenary we are celebrating this year. Boole's theories of logic and probabilities are as powerful today as they were back in the 1800s. I am delighted that his work has inspired

our current students to create novel solutions to an urgent global problem and helped them win an international competition in the process."

Data from initial observations were captured in two scientific papers and three invention disclosures with smarter hive features and experiments being carried out at the UCC Embedded Systems Laboratory.

Dr. Emanuel Popovici, the Director of Embedded Systems Group at UCC comments:

"(2B) or !(2B) is an exceptional interdisciplinary project where long established technologies and beekeeping practices meet the latest advances in electronic technology. It is a project where Boole proves that Shakespeare's famous existential question is always true. It is a project where five very bright and enthusiastic students from three disciplines interact and exchange some brilliant ideas to help humanity".



Dr. David Prendergast, (Intel) Prof. Catherine Lyall (University of Edinburgh), Prof. Miguel Seabra (Chair of Science Europe, FCT Portugal), Ms Madi Sharma (Social Entrepreneur), Prof. John Brewer (QUB)



Dr. Eucharia Meehan, Ms Ann O'Dea (Silicon Republic), Prof. Orla Feely, Ms Colleen Dube (Fulbright Commission), Ms Catriona Ward, (Enterprise Ireland)

IRISH RESEARCH COUNCIL ANNUAL EVENT

In November 2014, the Irish Research Council held its Annual Event at the Royal Hospital Kilmainham, Dublin. This was our biggest research event of the year and the overarching theme was 'Connecting Communities–Future Opportunities'.

The event focused on cultivating connections across disciplines and across academia, industry and civic society.

The event was opened by the Minister for Skills, Research and Innovation. Speaking at the conference Minister English said:

"Irish researchers and the higher education institutions continue to push the boundaries in European and world research. This event is an opportunity for the research community to examine what the next opportunities are and to plan and set out how we will continue to punch above our weight amongst the international research community."

A range of expert speakers, drawn from academia, enterprise, government and civic society, addressed over 200 delegates.

Speaking before the conference, Professor Orla Feely, Chair of the Irish Research Council, said: ***"Interdisciplinary research is about drawing on different skill-sets and areas of expertise when dealing with multi-faceted problems and issues so as to ensure the best possible research outcomes."***

Professor Feely continued: ***"Since its establishment in 2012, in addition to supporting excellent research in all disciplines, the Irish Research Council has placed an emphasis on supporting interdisciplinary research, and***

we firmly believe that exciting developments will occur in Ireland as a result. With teams of highly-skilled researchers working together, we can develop innovative solutions to major global challenges."

A couple of examples of interdisciplinary research currently being undertaken in Ireland are: 'The Programmable City' in Maynooth University, which is looking at how information on citizens and places is captured and processed as data, how software is used to govern and manage cities, and how our everyday behaviour within a city is influenced by software – from traffic management systems, to restaurant review apps on our smartphones.

'Project Life Course', currently taking place in NUI Galway, will produce research on policy reform to enable citizens to achieve their potential and to live fulfilling and productive lives, including health and well-being and civic engagement.

Internationally acclaimed public speaker and entrepreneur Madi Sharma, who runs the Madi Group of companies, focused on combining innovation and local action to address major global challenges.

Commenting at the conference, Ms. Sharma, said: ***"In addition to encouraging different research disciplines to work together, we must also encourage other sectors to interact proactively with the research community. Business, government and civil society can all benefit through research-focused collaborations. By encouraging such cross-sectoral partnerships, we can develop better public policies and better services for all citizens."***



Connecting Communities-Future Opportunities



Dr. Elizabeth M. Daly (IBM), Prof. Pol Holm (TCD),
Dr. Henk A.J. Mulder (University of Groningen)



Orla Feely



Damien English T.D.



Miguel Seabra



Catherine Lyall



Colleen Dube



Elizabeth M. Daly



Poul Holm



Henk A. J. Mulder



Pdraig Murphy



Martin Drury



Madi Sharma



Ann O'Dea



John Brewer



Deirdre Garvey



William Hynes



Eoin Kilfeather



David Prendergast



Paul Kilkenny



Catriona Ward



Alice Dijkstra

The conference included overview of the opportunities presented by Horizon 2020, the biggest EU research and innovation programme to date, with a budget of nearly €80 billion over seven years.



Dr. Seán McElwaine (bouzouki) Mr. Donal McCague (fiddle)
Dr. Seán McElwaine was supported by the Monaghan County Council Heritage Office and the Arts Council.

2. RESEARCHER CAREER PROGRESSION AWARDS-OPPORTUNITIES AND NEW INITIATIVES



IRISH RESEARCH COUNCIL ANNOUNCED GOVERNMENT OF IRELAND POSTGRADUATE SCHOLARSHIP AWARDS VALUED AT **€16.8** MILLION OVER FOUR YEARS

GOVERNMENT OF IRELAND POSTGRADUATE SCHOLARSHIP SCHEME 2014

Under this scheme, 1051 eligible applications were assessed. 218 scholars awards were made with a total value of €16.8m. There were separate funding streams for Arts, Humanities & Social Sciences and for Science, Technology, Engineering & Mathematics and applications were assessed independently by peer reviewers.

'The sheer breadth of diversity in subject areas in the Postgraduate Scholarship Scheme awards announced today demonstrates the role of the Irish Research Council in addressing the broad skills and research needs within society, and enabling a vibrant research community in Ireland.'

The successful students in the 2014 Postgraduate Scholarship Scheme are studying towards the award of a Master's by research or a doctoral degree (PhD), and are drawn from seventeen different higher education institutions.

Dr. Eucharía Meehan, Director of the Irish Research Council, said when announcing the results that ***"The Irish Research Council is a crucial port of call for students seeking funding. The main aim of our funding programme is to provide opportunities for researchers, particularly those at an early stage of their career, in order to encourage them to become independent researchers and have a range of career opportunities open to them."***

Concussion in Rugby, household energy demand, the impact of obesity on motor development, the construction of Irish identity and potential therapies for autoimmune disease are just some of the research topics that received funding under the latest round of awards.



GOVERNMENT OF IRELAND POSTDOCTORAL FELLOWSHIP SCHEME 2014

The Irish Research Council Government of Ireland Postdoctoral Fellowship Scheme is designed to support researchers at an early stage of their research careers, enabling them to associate with internationally recognised research teams. The Council strongly believes in the importance of encouraging individuals to become rigorous independent researchers. This postdoctoral programme is designed to facilitate researchers' crucial first steps on their career paths while at the same time enabling valuable novel research.

When launching the scheme Minister English said: *"These highly competitive awards emphasise the development of the skills of the individual researcher, cultivating creative and innovative people who can transmit new ideas and knowledge and who will become key members of our research community."*

Under this scheme, 398 eligible applications were assessed. 69 Fellow awards were made with a total value of €5.5m. There were separate funding streams for Arts, Humanities & Social Sciences and for Science, Technology, Engineering & Mathematics and these were assessed independently by peer reviewers.

Mortgage stress and the property crash, benefits of exercise in the treatment of Alzheimer's, climate change, true crime murder literature and the development of a biochip for the rapid and ultrasensitive detection of bacteria associated with bacterial meningitis are just some of the research topics that received funding under the latest round of grants.

For a list of Fellows and Projects visit www.research.ie

IRISH
RESEARCH
COUNCIL
ANNOUNCED
GOVERNMENT
OF IRELAND
POSTDOCTORAL
FELLOWSHIP
AWARDS
VALUED AT
€5.5
MILLION OVER
TWO YEARS





ELEVATE 2014

THE IRISH RESEARCH COUNCIL HAS AWARDED 30 POSTDOCTORAL FELLOWSHIPS UNDER ELEVATE, AN INTERNATIONAL CAREER DEVELOPMENT PROGRAMME COFUNDED BY MARIE CURIE ACTIONS. AWARDS ARE VALUED AT €8M OVER THREE YEARS

ELEVATE is an International Career Development Fellowship which is financially supported by the Irish Research Council & Marie-Curie Actions. The aim of this initiative is to allow Irish-based experienced researchers to benefit from research mobility. Researchers have the opportunity to spend two years of their Fellowship at an International Host Organisation in any country outside of Ireland (outgoing phase) followed by a one year return phase at a host HEI of their choice in Ireland. Utilising newly acquired knowledge and expertise, this Fellowship allows experienced researchers to establish new, and strengthen existing research networks, and to work with leading experts in their respective fields. In 2014 the Council made 30 Awards to excellent Fellows across all academic disciplines: 17 Awards were STEM (Science, Technology, Engineering and Mathematics) based, and 13 Awards were based on projects spanning Arts, Humanities and Social Sciences (AHSS).

Dr. Janet Metcalfe, Chair and Head of Vitae, and a member of the Marie Skłodowska-Curie Actions Advisory Group and the European Commission's Steering Group for Human Resources and Mobility, delivered a workshop on Careers for Researchers. The purpose of this workshop was to prepare the Fellows for their mobility phase, and to provide a roadmap for career progression with a view to establishing these Researchers as world leaders in their field on their return to Ireland.

Barbara Moynihan, from 'On Your Feet', also delivered an interactive workshop entitled 'Present with Power', where ELEVATE Fellows learned key presentation skills and strategies that will enable them to demonstrate the societal impacts of their research to the general public, and will help in the dissemination of their findings to key networks and stakeholder groups.



HOME & INTERNATIONAL HOST ORGANISATIONS



RWTH Aachen
University, Germany



University of York,
England



UNIVERSITY of LIMERICK
Ollscoil Luimnigh

University of British
Columbia, Canada



Waterford Institute of Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LAIRGE

University of Aberdeen,
Scotland

University of Guelph,
Canada

KTH Royal Institute of
Tech, Sweden



NUI MAYNOOTH
Ollscoil na hÉireann Má Nuad

Universidad de Almería,
Spain

Queen's University
Belfast, Northern Ireland

Harvard University,
Boston, USA



NUI Galway
OÉ Gaillimh

The University of Bergen,
Norway

University of California,
Berkeley, USA



University of
Birmingham, England

Aberystwyth University,
Wales

Queen Mary University
of London, England

H. Lee Moffitt Cancer
Center and Research
Institute, Florida, USA



University College
London, England

Utrecht University, The
Netherlands

Freie Universität Berlin,
Germany

University of California,
Santa Barbara, USA

Massachusetts Institute
of Technology, USA

Stanford University
School of Medicine, USA



INRIA, France

Paris Observatory, France

The University of Oxford,
England

Georgia Institute of
Technology & Emory
University School of
Medicine

Durham University,
England



UCC

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

University of Denver,
USA

Smithsonian
Environmental Research
Center, Maryland, USA

University of Tokyo
Center for Philosoph,
Japan

University of Oxford,
England



ULTRAFAST MAGNETIC NANOSCOPY' – ELEVATE CASE STUDY

Fellow Name: Deirdre Kilbane

Higher Education Institute in Ireland: University College Dublin

International Higher Education Institute: University of Kaiserslautern, Germany

Project Abstract: Magnetization dynamics, how magnetic materials change in space and time, is a topic of constant interest and research both fundamentally and technologically. This research covers state-of-the-art applications with its prime example of giant-magneto-resistance devices to read data in hard disks, and also extends into multidisciplinary scientific research fields, for instance using single molecular magnets (SMM) in future multimedia devices. Potential applications of SMMs include quantum computing, high-density information storage and magnetic refrigeration as a less expensive alternative to superconductive cooling. It is known that fundamental processes and interactions that determine magnetic dynamics in complex materials occur on timescales of attoseconds-to-femtoseconds and on lengthscales of micrometers-to-nanometers. However, an experimental capability that covers the necessary properties of element-specific magnetic sensitivity combined with ultra-high time and space-resolution currently does not exist.

The goal of the proposed project is to overcome these limitations simultaneously and to develop the first "complete" tool for the study of magnetization dynamics in complex magnetic materials. Pilot experiments that demonstrate the scientific potential and impact of this complete imaging system across the scientific disciplines will be performed.

The development of such an experimental tool requires the unique combination of cutting-edge experts in x-ray laser science, magnetic dynamics, and mathematical physics. The Fellow is an expert mathematical, computational and experimental physicist, who is currently developing x-ray light sources for lithography and biological imaging. She will extend her skills in modern pulsed x-ray laser sources and ultrafast magnetization dynamics with the Aeschlimann Group at the University of Kaiserslautern (Ger), who are leading scientists in these fields. The proposed project is at the cutting edge of ultrafast science and will promote EU research in this field during the return phase with Prof.

O'Sullivan (Ire) at University College Dublin, a key opinion-leader for EUV/x-ray sources, who will mentor Dr. Kilbane in establishing this field in UCD. The proposed project will help the fellow researcher gain professional maturity and to actively participate in shaping the next generation of ultrafast research with pulsed x-rays, an area that is rapidly expanding with increasing worldwide availability of high-harmonic and free-electron laser light sources.

Prof. Martin Aeschlimann, University of Kaiserslautern:

As an ELEVATE fellow Deirdre is raising the profile of the Aeschlimann Group. In addition to her research skills she is acquiring several transferable skills and demonstrating to junior members a holistic approach to early-stage career development. She is on her way to becoming a highly qualified academic and skilled scientific researcher, contributing to the next generation of ultrafast science research.

Dr Deirdre Kilbane: *I view the fellowship as an integral step towards achieving my long-term aim, an academic position at a university or research institute in Europe, where I can lead an ultrafast science research team as a highly skilled scientific researcher. As a member of the Aeschlimann Group I am able to accomplish my immediate goal, to demonstrate ultrafast magnetic nanoscopy and in doing so acquire and use basic transferable skills such as project management, leadership and communication. I will gain experience in developing project ideas and successfully apply for funding, establish collaborations, manage projects and organize meetings. Understanding spin-dynamics in complex systems on its fundamental time- and length- scales is the driving force behind ultrafast magnetization dynamics. The training I receive in the Aeschlimann Group in ultrafast x-ray laser science and magnetization dynamics will provide me with the expertise to run and develop new x-ray HHG tabletop experiments, skills that are transferable to large-scale x-ray facilities and EU funded research such as the x-ray free-electron laser (FEL) (cf. EuroFEL in FP7 and LURE, FAIR-LSF, XRAY FEL PUMP-PROBE, FLASH and EUFELE in FP5). At the end of the project, the combined scientific research and complementary skills will enable me to pursue a number of channels: junior professorship/lecturer, leader of a junior research group – all leading to a position in cutting-edge research in Europe.*

RESEARCH PROJECT GRANTS 2014

The Research Project Grants (RPG) Scheme is designed with the objective of facilitating researchers and research teams to build capacity in their research area by way of stimulus project grants and knowledge transfer initiatives. The rationale for this scheme is to provide funding for researchers to enable them to expand their research activities and become competitive for international funding opportunities. This is being facilitated through:

- Small-medium sized projects such as exploratory investigations which may lead to larger and more sustainable research projects and programmes;
- Research staff;
- Knowledge transfer initiatives; and
- Networking and collaboration on national or international levels.

These projects investigate a diverse range of research questions within the arts, humanities and social sciences, as listed below.

€1.2M

THE IRISH RESEARCH COUNCIL AWARDED FUNDING FOR ELEVEN STARTER RESEARCH PROJECT GRANTS

A case-study approach of a WSA approach to guidance counselling provision in the Irish post-primary sector

Attention bias modification training for socially anxious adolescents: a randomized control trial

Biobehavioural correlates of unemployment

POLSENT: Policy, sentiment, and financial markets

Optimisation of strategic noise mapping and population exposure estimation for meeting the requirements of the European Noise Directive (OASIS)

Territorial Rights and Rivers: a philosophical exploration of territorial rights over rivers

Objective measurements of listening to, attending to and imagining music

Bright side of work project

The role of the European Commission in multi-level financial management in the European Union: a step closer to governmentalizing and further integration?

Interculturalism, migration and performance in contemporary Ireland

The cultural transmission of motherhood in Europe: a case study



IRISH RESEARCH COUNCIL STARTER RESEARCH PROJECT GRANT- CASE STUDY

Project Title: The role of the European Commission in multi-level financial management in the European Union: a step closer to governmentalizing and further integration?

Awardee: Dr. Emmanuelle Schön Quinlivan

Higher Education Institute: University College Cork

Building in a novel way on the existing literature on the European Union as a dual executive, Dr. Schön-Quinlivan's research argues that the Commission has governmentalized through its increased power in the area of finance. It assesses the ways in which institutional governmentalizing has happened with respect to structures, processes and procedures but also culture and norms. Finally, in a context of changing economic multi-level governance which gives the institution opportunities for strengthening its executive position, this project examines whether the Commission has become a leading core executive at the heart of new networks allowing it to revive a soft approach to deeper European integration through budgetary and fiscal policies.



IRISH RESEARCH COUNCIL ADVANCED RESEARCH PROJECT GRANT – CASE STUDY

Project Title: Monastic Ireland: landscape and settlement

Awardee: Dr. Rachel Moss

Higher Education Institute: University College Cork

Visitors travelling through the Irish landscape often come upon the country's uniquely rich medieval monastic remains. This is part of a shared European history as these houses were founded by international orders – Augustinians, Benedictines, Carmelites, Cistercians, Dominicans, Franciscans and other orders. Monasteries and friaries are in many Irish towns often standing on the site of a medieval gateway or close to a river, medieval route way or castle. Magnificent buildings dominate rural landscapes, some deliberately located in isolated places, others marking the location of medieval settlements that did not flourish. The artistic and architectural skills of master craftsmen and masons can be seen in fine stonework, in exceptional carvings and in the remnants of wall paintings. Tombs depicting knights and noble ladies remind us of the patrons who endowed these houses, the great Irish and Anglo-Norman families (Barrys, Fitzgeralds, O'Donnells, O'Conors and many more). These places provide a tangible link to noble ancestors and craftsmen and the communities of friars and monks who not only prayed, but also played a

pivotal role in the economic, political and social life of their environs. Their stories and those of their foundations are a gateway both to the history of medieval Ireland and the European networks that it fostered.

This project on Monastic Ireland involves a partnership between Dr. Rachel Moss, the Department of History of Art and Architecture, Trinity College Dublin (Principal Investigator), Dr. Edel Bhreathnach, the Discovery Programme and Dr. Malgorzata Krasnodebska-D'Aughton, the School of History, University College Cork. Funders for the outreach aspect of the project launched include the Department of Arts, Heritage and the Gaeltacht and Fáilte Ireland together with the Irish Research Council.

In December, Heather Humphreys T.D., Minister for Arts, Heritage and the Gaeltacht, launched two new websites www.monastic.ie and www.schools.monastic.ie which are exciting resources for visitors to some of Ireland's most important medieval monasteries and friaries and for teachers and students to connect them with their local heritage.

The aim of the tourist website, coordinated by Dr. Keith Smith, is to provide visitors with access to educational, practical and entertaining information based on high quality historical and archaeological information.

This information is accompanied by a tour of each site. This is a responsive website that can be accessed without charge on laptops, mobile phones and tablets.

The educational resource, a collaboration between Dr. Keith Smith and Irish Research Council Enterprise Partnership Postdoctoral Fellow, Dr. Danielle O'Donovan, is for teachers and students wishing to develop local history and archaeological projects. This website revolves around the existence of monastic and church sites in every locality in Ireland and how these buildings and landscapes can be used to connect young people with their historic and archaeological environs and make them the custodians of their own heritage.

Both websites will continue to be built upon as the project progresses.



Dr. Eucharía Meehan, Dr. Rachel Moss, Dr. Edel Bhreathnach, Dr. Malgorzata Krasnodebska - D'Aughton, Ms Heather Humphreys T.D., Minister for Arts, Heritage and the Gaeltacht.

For a list of Fellows and projects visit www.research.ie

NEW FOUNDATIONS

The Irish Research Council 'New Foundations' scheme supports eligible researchers who intend to pursue research, networking and/or dissemination activities within and across the diversity of disciplines. This scheme provides support for research actions, the development of networks, conference development, conference participation or attendance, workshops and/or more general dissemination activities designed to better communicate the outcomes and values of academic research in Ireland and beyond.

**155
AWARDS
VALUED AT
€837K**

Project Title: "Damaged goods? Recording and representing use-patterns of Bronze Age metalwork"

Awardee: Prof. Aidan O'Sullivan

Higher Education Institute: University College Dublin



3D polymer prints of ancient bronze artefacts scanned at the National Museum of Ireland, laser scanning of the anvil from the Bishopsland Hoard, and a 3D digital model of a Bronze Age palstave axe.

The Irish Research Council New Foundations-funded project "Damaged goods? recording and representing use-patterns of Bronze Age metalwork" enabled Professor Aidan O'Sullivan to collaborate with Dr. Barry Molloy in fine tuning his ideas during the preparation of a successful application for a Marie Skłodowska-Curie International Fellowship for 2015-2017, with an award amounting to almost €190,000 to be based at UCD School of Archaeology.

"We expect that this Irish Research Council New Foundations project will be foundational for the next, exciting stage of Dr. Molloy's research career!" Prof. Aidan O'Sullivan, Project Principal Investigator.

"A New Foundations grant enabled us to tailor 3D image capture and processing methods to archaeological metal artefacts, and to create an initial digital archive

and physical reference collection using 3D printing. Establishing the practical methods and demonstrating the potential for archaeological research through the work of the grant was crucial for developing a successful Marie Skłodowska Curie application". Dr. Barry Molloy

Conference Title: Redefining Adoption in a New Era: Opportunities and Challenges for Law and Social Work Practice

Awardee: Dr Aisling Parkes

Higher Education Institute: University College Cork

The Schools of Law and Applied Social Studies, University College Cork, co-hosted an international conference on adoption 'Redefining Adoption in a New Era: Opportunities and Challenges for Law and Social Work Practice'. This event was funded by the Irish Research Council New Foundations Award 2013. It was the first interdisciplinary conference of its kind in Ireland where the convenors, Dr. Aisling Parkes and Dr. Simone McCaughren, brought together not only leading scholars and professionals in the area of adoption, but also those people with direct experiences of adoption.

Community groups such as Adoption Rights Alliance, Adoption Loss Natural Parents' Network of Ireland, and Families through Adoption, all of which had a representative from their group speak at the conference. There were also many attendees from community organisations such as Brú Columbanus and Know my Own.

Deputy Anne Ferris, Labour T.D., gave a powerful opening address, where she explained how her own personal experiences, both as an adopted person and as a natural mother, informed her decision to introduce the Open Adoption Bill 2014 for consideration in the Dáil this year. Furthermore, Deputy Ferris highlighted the fact that Philomena Lee's story has opened the eyes and minds of the people of Ireland to the scandalous reality of adoption practice in the past. She further added that the 'State owes [her] an apology and a thank you' and that her 'brave decision to speak out has empowered other natural mothers – and many more adopted children – to speak out too'.

Philomena Lee delivered a very moving and eloquent account of the long and painful search she and her daughter, Jane, undertook to find her son, Anthony, who was placed for adoption in the early 1950s.

She spoke with dignity and heartfelt emotion about not only having been locked away from society due to the perceived shame of becoming pregnant outside of marriage, but also about having to be parted from her two-and-a-half year-old son without forewarning or consent.

The conference provided a platform and initiated debate on some of the more controversial aspects of adoption. Internationally renowned keynote speakers included Nigel Cantwell, independent child rights consultant; Dr. Pien Bos from University of Humanistic Studies; Dr. Peter Selman, University of Newcastle; and Dr. Fergus Ryan, Lecturer in Law from NUI Maynooth. Dr. Geoffrey Shannon, Chair of the Adoption Authority of Ireland, opened the second day of the conference and chaired some of the sessions on the day



Image: (from left to right) Dr. Aisling Parkes, Jane Libberton (Philomena's daughter), Philomena Lee, and Dr. Simone McCaughren



ULYSSES RESEARCH PROGRAMME

The joint Irish Research Council and French Embassy/Campus France Ulysses research funding call was launched in June. The programme is named Ulysses after James Joyce's famous novel to celebrate the Joycean links between Ireland and France. This programme is designed to support new research collaborations between Irish and French researchers.

In its seventeenth year, the Ulysses programme continues to support Irish and French researchers across a range of mutually important areas. Collaborations have often continued long after the Ulysses award has finished, and in many cases lead to further research funding. Successful researchers each receive up to €2,500 to spend a short period in the other country to carry out their research.

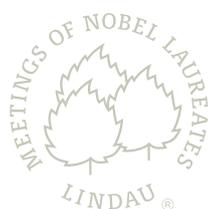
To mark the launch in 2014 the French ambassador, Jean-Pierre Thébault, was presented with a book on James Joyce co-edited by Dr. Katherine O'Callaghan, an Irish Research Council Fellow based at the School of English in Trinity College Dublin, and by Dr. Oona Frawley.

France will be a key partner-country for Ireland in applications for funding under the European Union's €7bn Horizon 2020 Framework Programme as Irish researchers are developing joint projects with their counterparts in France on a greater scale than ever before.

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PROJECTS HAVE BEEN FUNDED TO DATE UNDER THE ULYSSES PROGRAMME
19 AWARDS WERE MADE IN 2014



Prof. Orla Feely, Dr. Katherine O'Callaghan, French ambassador, Jean-Pierre Thébault



LINDAU FELLOW AWARDS

Since 1951, the Lindau Nobel Laureate Meetings have been bringing together the most esteemed scientists of their times with outstanding young scientists from all over the world annually. The Meetings focus alternately on medicine and physiology, physics, chemistry, and economic sciences. These annual Lindau Nobel Laureate Meetings provide a globally recognised forum for the transfer of knowledge between generations of scientists. The Lindau Nobel Laureate Meetings Award offers the unique opportunity for up to 600 aspiring young scientists from all around the globe to meet the luminaries of science, the Nobel Laureates, for an intense exchange of knowledge, ideas and experiences. An international competition selects participants. In May 2013, the organisers of the Lindau Meetings and Council signed a memorandum of understanding establishing for the first time the opportunity for the participation of young Irish scientists. The President of Ireland is the patron of the Fellow award given to those researchers nominated by the Irish Research Council who succeed in selection through the international competition.

The Irish Research Council were delighted with the success of 7 talented young researchers who were chosen in a competitive process to attend the 64th Lindau Nobel Laureate meetings in June & August 2014. The meetings were dedicated to physiology/medicine and economics. The Irish researchers in physiology and medicine were Fergus McCarthy from UCC, a specialist in maternal & foetal medicine, Sean Saunders from TCD, a specialist in immunology, Aideen Ryan from NUIG, also a specialist in immunology and Fionn O'Brien from UCC, and a specialist in Pharmacology. The researchers in Economics were Michael Curren and Sarah Mitchell from TCD and Patrick O'Sullivan from UCD.



Patron of the Fellow award, the President of Ireland, Michael D Higgins

In recognition of their success the Minister for Skills, Research and Innovation, Mr. Damien English, T.D., and Professor Orla Feely, Chairperson of the Irish Research Council, presented the researchers with their specially designed awards at a ceremony that took place in Meath on 15th September.





3. PARTNERING ON RESEARCH WITH ENTERPRISE, GOVERNMENT AND CIVIC SOCIETY

The Irish Research Council uses two funding mechanisms to support enterprise engagement with research and researchers in Irish universities and institutes of technology:

- Employment Based Postgraduate Programme
- Enterprise Partnership Scheme

The key focus of these schemes is to provide early-stage career researchers, namely postgraduate students and postdoctoral researchers, with diverse career opportunities while developing their skills with relevant industry/societal companies and organisations. Facilitating the involvement of enterprise and employment partners with the education and training of graduates from Irish higher education institutions contributes to the Council's commitment to enabling research with both a knowledge and societal focus. Through these funding schemes the Council has developed working relationships with hundreds of enterprise and employment partners as well as strategic partnerships across government and civic society.

It provides industry with flexible and easy access to an exceptional pool of competitively selected, high-calibre researchers and the opportunity to build links with relevant academic research groups.

THE IRISH RESEARCH COUNCIL IS PROUD TO HAVE PARTNERED WITH



FOR A LIST OF OUR 2014 AWARD WINNERS PLEASE VISIT OUR WEBSITE www.research.ie

MINISTER ENGLISH
ANNOUNCED

€4.5M

IN FUNDING TO
RESEARCHERS FOR
EMPLOYMENT-BASED
RESEARCH

Mr. Damien English T.D.
Professor Orla Feely &
Dr. Eoin Syron (Oxymem)
winner of *The Irish Times*
Intertrade Ireland Innovator
of the Year 2014

ACTION
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EMPLOYMENT-BASED POSTGRADUATE PROGRAMME AWARDS 2014

The funding was awarded to 48 researchers at a ceremony which took place on board the MV Cill Airne. The €4.5 million was allocated under the Irish Research Council's Employment-Based Postgraduate Programme, which enables postgraduate researchers across all academic disciplines to work and undertake research in a business, not-for-profit, NGO or public sector organisation. Employers participating in the programme include IBM, enBIO, Oxymem, Galvanic, Future Analytics, Merchants Quay Ireland, Tusla - The Child and Family Agency.

The research projects that received funding cover topics such as: optimising innovative, energy-efficient wastewater treatment facilities, developments in surface treatment for the European Space Agency, undertaking risk assessment for urban development and planning and enhancing stress reduction through gaming.

Professor Orla Feely, Chair of the Irish Research Council, said: *"This programme continues to deliver on the Action Plan for Jobs through the creation of research-based employment opportunities and increased participation of indigenous SMEs. By embracing research and using researchers' expertise to enhance their offerings, Irish companies gain a true competitive edge."*

EMPLOYMENT-BASED POSTGRADUATE CASE STUDIES



Scholar Name: Ms Aoife Doyle

Project Title: Towards an integrated approach to urban resilience enhancement

Employment Partner: Future Analytics Consulting Ltd. (FAC)

Higher Education Institute: Dublin Institute of Technology (DIT)



FutureAnalytics

Planning + Research + Economics

EMPLOYMENT PARTNER PROFILE

Future Analytics Consulting (FAC) is a dynamic SME consultancy specialising in spatial planning (national, regional and local level - urban and rural planning), development and economic research. Based at 23 Fitzwilliam Square, Dublin 2, the consultancy specialises in applying evidence-led analysis to all its projects, and successfully combines professional knowledge and experience with that of active spatial planning practitioners. The company currently works on a range of European research projects aimed at improving the security and resilience of urban areas, in particular within the European Commission's Seventh Framework Programme (EU FP7) for Research and Development (R&D) activities.

“ EMPLOYMENT MENTOR

*Future Analytics Consulting Ltd are delighted to partner with Dublin Institute of Technology as part of the Irish Research Council Employment-Based Postgraduate Programme. FAC has become a national leader in applied research development and project management, and the programme has enabled us to further our own research objectives and accelerate innovation processes. The Programme is of significant importance in supporting innovation and advancing the research agenda in Ireland. **Dr. William Hynes, Future Analytics Ltd.*** ”

“ SCHOLAR

*The Irish Research Council Employment-Based Postgraduate Programme has provided me with the opportunity to conduct PhD research while employed by Future Analytics Consulting (FAC). As an employee, my active engagement within a number of EU research projects in the field of urban resilience has exposed me to the vast knowledge base and differing perspectives of several multi-disciplinary consortia. Within traditional PhD programmes, this type of access to multi-disciplinary research activity is often not supported by faculty-based university organisational structures. The Irish Research Council Programme has been invaluable in this respect. **Ms. Aoife Doyle*** ”

“ ACADEMIC SUPERVISOR

*The Dublin Institute of Technology (DIT) is thrilled to partner with Future Analytics Consulting Ltd (FAC) as part of the Irish Research Council's Employment-Based Postgraduate Programme. DIT has a long established record of industry associations and applied research and this postgraduate programme complements both of these strategic objectives. This programme is vital to enhance research capability within Irish companies and in cementing strong industry bonds with the academic sector in Ireland. **Dr. Paddy Prendergast, Dublin Institute of Technology*** ”



Research Project

Modern cities have evolved as epicentres for a variety of conflicts, tensions and vulnerabilities, with urban insecurity emerging as one of the most enduring challenges facing urban growth. A growing number of cities across Europe are experiencing or are increasingly susceptible to intense inter-communal conflict and violence reflecting ethnic, nationalist or economic urban fractures. Indeed a number of recent outbreaks of violence in traditionally 'stable' European cities highlight the fragility of inter-group relations in an increasingly urbanised world. This research aims to examine the role of urban planning and management in enhancing the security and resilience of cities. It is guided by four broad objectives as follows:

Explore how incidents of inter-group conflict can influence processes of urban development.

Investigate how urban policy has been shaped by incidents of neighbourhood insecurity in a number of selected case study areas.

Examine how such conflict has in turn been shaped by urban policy (exploring the role of urban planning and management in enhancing the security of these neighbourhoods and the city as a whole).

Investigate how a more holistic, integrated and citizen centred approach to urban (security) resilience can be achieved within urban planning and management.

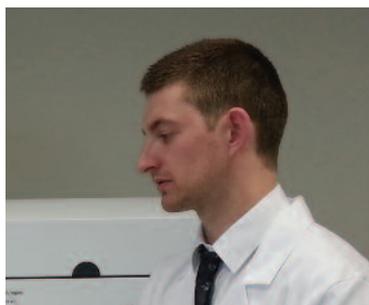
Research Collaboration

FAC and DIT have a long established collaborative relationship, with FAC actively seeking to pursue a 'triple helix' model (university-industry-government relationships) in the advancement of research activities. FAC is actively engaged in a number

of EU FP7 research projects in the field of urban security, safety and resilience. The PhD research project is informed by these studies, drawing from research gaps and building on ongoing innovation in the field. It is envisaged that the PhD study, developed under the guidance of DIT (Dr. Patrick Prendergast) will aid the continued development of current and proposed EU research activity within FAC.

Research Impact

The PhD research topic has been informed by these overarching research themes and aims to contribute to ongoing knowledge production in these areas. It is envisaged that the research conducted as part of this study will aid and contribute to further advancement of current EU projects and the development of new agendas within FAC research.



Scholar Name: Mr. Patrick Ward

Project Title: Speciation analysis of trace elements in supplements

Employment Partner: Alltech Biotechnology

Higher Education Institute: Dublin City University



EMPLOYMENT PARTNER PROFILE

At Alltech, our mission is to improve the health and performance of people, animals and plants through natural nutrition and scientific innovation. Alltech improves health and performance by adding nutritional value to food and feed through its innovative use of yeast fermentation, enzyme technology, algae and nutrigenomics. The company's pursuit of this mission is guided by its founding ACE principle, our promise that in doing business we have a positive impact on the Animal, the Consumer, and the Environment.

“ EMPLOYMENT MENTOR

The IRC Employment-Based Programme assists our research efforts by facilitating interaction between our company and the academic institution. This overlap benefits us as an industrial partner and also the student who has opportunities that may be unavailable to researchers in either setting. We have developed a strong relationship with Patrick's academic supervisor and her research group at DCU. Some advantages from the EBP programme include access to instrumentation and expertise as well as continued professional development by attending training courses. All parties experience positive outcomes from this arrangement and we continue to work on improving communication and interaction. **Dr. Cathal Connolly, Alltech** ”

“ SCHOLAR

The Employment-Based Programme has opened an academic support network to me. I would not be able to avail of this academic support in industry alone. The analytical instrumentation which is accessible to me presents more research options and therefore increases the potential for my goals. Advice is always on hand from both my employment mentor and my academic supervisor. This collaboration allows for a more balanced outlook on research capabilities combining the best of both worlds, where efficiency meets novelty. ”
Mr. Patrick Ward

Research Project

The objective of this study is to increase sample through-put for selenomethionine analysis and to reduce the extraction time of selenoamino acids from selenized yeast, from the current three days to at most one day. This reduction will be investigated using microwave assisted enzymatic and/or chemical extractions. Development and optimisation of these methods would follow on to validation of both the microwave assisted enzymatic extraction and the chemical hydrolysis extraction. Once both methods are sufficient for routine analysis and increase sample through put, both assays will be used to further investigate the other selenocompounds, not only in our products, but in commercially available selenium-enriched yeasts too. This research allows Alltech to efficiently monitor its products by speeding up the analysis of batch to batch yeasts while also checking product reproducibility.





MINISTER SHERLOCK
ANNOUNCED
€5.7M
TO SUPPORT
ENTERPRISE-ACADEMIA
RESEARCH
PARTNERSHIPS

ENTERPRISE PARTNERSHIP SCHEME AWARDS 2014

The Enterprise Partnership Scheme is an innovative initiative whereby the Irish Research Council, in partnership with private enterprises and public bodies, awards co-funded postgraduate scholarships and postdoctoral fellowships to the most promising researchers in Ireland.

The awards in June marked the 10th year of the Enterprise Partnership Scheme and the engagement of 250 companies. The awards, granted to students and fellows on the basis of excellence, demonstrates how the Scheme engages enterprise, not just in collaborative research activity, but also in the skills development of future higher education graduates.

The Minister said that he was *“pleased that the Scheme has seen a consistent increase in the number of SMEs engaging in collaborative research with academic institutions, and that this year are almost double that of MNCs”*.

Ken Cahill, CEO of SilverCloud Health (the 250th company to engage on this Scheme), an innovative Irish online health & wellness e-therapy platform commented that the Scheme will enable them to *“extend our already established research in online delivered healthcare, build our traction in new international markets, and further position Ireland to be a leading player in the technology and healthcare sector”*.

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POSTGRADUATE
POSTDOCTORAL
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ENTERPRISE PARTNERSHIP SCHEME CASE STUDIES



Scholar: Michelle Kearns

Project Title: Sharing hope: the community impact of pieta house suicide prevention centres

Enterprise Partner and Mentor: Pieta House

Higher Education Institute and Academic

Mentor: University of Limerick



UNIVERSITY of LIMERICK
OILScoil LUIMNIGH



ENTERPRISE PARTNER PROFILE

Pieta House provide free therapeutic support to those who engage in self-harm or have suicidal ideation. Our vision is to provide our support services within 100 kilometres of everyone in Ireland so that we can reduce the number of deaths by suicide, the number of people engaging in self-harm, and to bring about social change. Our therapy model and practice is increasingly evidenced-based. We collaborate with students, academics, researchers, and clinicians across Ireland to design and conduct projects that will improve the quality and efficiency of our service, and the experience of our clients.

“ ENTERPRISE MENTOR

The Enterprise Partnership Scheme enabled us to undertake a project that would otherwise have been unachievable due to staffing and resource levels. Driven by the energy and expertise of UL and the reputation and quality assurance of the IRC, we are now in a position to gather community-level data that will provide invaluable information on the impact of Pieta House on a community before, during, and after the establishment of a new centre. This will afford unprecedented insights into the impact of a suicide intervention service on a local community, and enable us to make informed decisions about future development.

Dr. Paul Surgenor, Pieta House



“ SCHOLAR

Coming from a psychological background where many studies are laboratory-based and theoretical in nature, this current project offers an exciting new challenge by engaging the research skills I have developed to tackle real world issues; an opportunity that could never have been afforded without the resources, support and guidance offered by the Irish Research Council and Pieta House. The knowledge that my work may have practical implications for the prevention of suicide and self-harm in our society is a fantastic incentive, made all the more rewarding by collaborating with an organisation so driven by this cause.

Ms Michelle Kearns



“ ACADEMIC SUPERVISOR

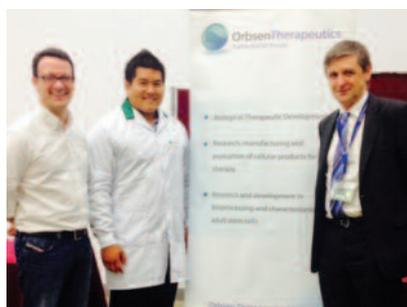
Academics, particularly in the social sciences are often motivated by social justice and go into research in the hope of improving people's lives. Too often the research that is then undertaken is overly academic, with findings that appear to make sense in carefully controlled conditions not quite so robust in real-world settings. The enterprise partnership scheme helps researchers move beyond these carefully controlled settings and test whether our ideas work where there are harsh realities at play. And of course our research efforts are only useful if they work in the real world; if they don't then we cannot effect our aim to improve people's lives.

Prof. Orla Muldoon, Dr. Rachel Msetfi, University of Limerick.



Research Project

Pieta House is a growing non-profit organisation that currently operates nine suicide prevention centres across Ireland, with a further three envisaged to open over the next two years. This project will examine, at a community level, the impact of this service provider opening in a town. Pieta House at its core is a community-led initiative. Towns work together through means of fundraising, community action and visible displays of support to bring Pieta suicide prevention services to their locality. The current project will examine how the shared goal of coming together to provide this vital service impacts on communities in terms of attitudes, awareness and behaviour. In order to achieve this key variables related to suicidality and mental health will be tracked over time. The primary aims of this project are (1) to investigate if coming together to provide suicide prevention services have community consequences that extend beyond the direct benefits of individual counselling, (2) to evaluate if open and visible access to services at a local level can de-stigmatise suicide and mental illness and (3) to assist Pieta House with its future service development by identifying attributes of communities associated with support for and uptake of Pieta services.



Scholar: Joshua Chao

Project Title: Scaffold-mediated stem cell delivery as an effective therapeutic for critical limb ischemia

Enterprise Partner: Orbsen Therapeutics Ltd.

Higher Education Institute: National University of Ireland, Galway.



NUI Galway
OÉ Gaillimh



ENTERPRISE PARTNER PROFILE

Orbsen Therapeutics is developing stromal cell-based therapies based on its proprietary technologies. The core products include the highly purified, immuno-selected CD362/Syndecan-2 positive stromal cells (MSCs) isolated either from human bone marrow (Cyndacel-M™) or from human umbilical cord (Cyndacel-C™). The company is developing a diverse portfolio of clinical-stage products to treat major conditions with unmet medical needs.

“ ENTERPRISE MENTOR

We're delighted to be joined by Mr. Joshua Chao as part of this Enterprise Partnership Scheme to advance our development of the Cyndacel™ therapy for patients with critical limb ischemia (CLI). Prof. Timothy O'Brien at NUI Galway is a genuine thought leader in this arena and we expect this project to yield specific and significant advances to Cyndacel™ delivery for patients with CLI. We expect that this project will generate data that is comprised within a Clinical Trial Application using Cyndacel™ as a treatment for patients with CLI within the next 30 months. This is an exciting and real world development project and we're thrilled that Josh chose Orbsen as part of this scheme. Dr. Stephen Elliman, Orbsen Therapeutics

“ SCHOLAR

This remarkable opportunity for industry - academia partnerships fuels the drive toward producing effective clinical products. We really wanted to take advantage of this collaborative effort, and the experience gained from the synergy and teamwork between Orbsen Therapeutics and REMEDI. The biomedical research field is changing rapidly and we are in an interesting time where we are observing a shift as an increasing number of academic labs are partnering up with industry companies, and we are extremely excited to see where this project takes us over the course of the scholarship.

Mr. Joshua Chao

”

“ ACADEMIC SUPERVISOR

The programme is an excellent opportunity to enhance collaborative interaction between enterprises and the University. The interaction between the University and enterprise partners will facilitate translation of discoveries from university laboratories to commercial products that benefit patients.

Prof. Timothy O'Brien, National University of Ireland, Galway

”

Research Project

The central research question of this project is to assess the therapeutic potential of stem cell delivery in re-vascularizing ischemic tissue in patients who present with critical limb ischemia (CLI). Typically caused by the accumulation of deposits in the arterial wall, peripheral vascular disease (PVD) is the narrowing/obstruction of arteries that carry blood to the arms and legs, brain, and heart. PVD is a growing health problem particularly in Western societies, affecting nearly ten million people in the US, with a prevalence of 12-20% among those ages 65+. PVD presents with varying degrees of severity, ranging from intermittent claudication to critical limb ischemia, a more chronic problem typically involving tissue loss. While the optimal treatment of CLI is to re-vascularize using stents/bypass, 40% of patients are not suitable and the only therapeutic option is

amputation. The development of new therapies for these “no-option” patients is the principal goal of this project.

Research Collaboration

Orbsen Therapeutics Ltd was spun out of the Regenerative Medicine Institute (REMEDI) at NUI Galway to commercialize and translate to the clinic, the novel and defined stromal cell therapy – Cyndacel. Orbsen and NUI Galway have since collaborated in winning 3 distinct EU FP7 project awards, an SFI TIDA, an SFI Industry Fellowship, and this Irish Research Council PhD Studentship. In the last 3 years, Orbsen has grown from 1 employee to 12 full-time scientists. Orbsen is based on campus at NUI Galway and is focused on developing Cyndacel for three EU FP7 funded clinical trials, starting in 2015 with a Phase 1b clinical trial of Cyndacel as a topical treatment for patients with non-healing diabetic wounds.

Orbsen and NUI Galway are also committed to working together to bring the next generation of defined stromal cell therapies through clinical trials in patients suffering with primary sclerosing cholangitis, diabetic nephropathy, and acute respiratory distress syndrome (ARDS).

Research Impact

The Irish Research Council has provided us with the resources to explore promising stem cell and tissue engineering strategies. By combining cells, biomaterials, and microenvironmental factors, we hypothesize this approach will induce differentiation signals, promote tissue repair, and restore functional ability in ischemic tissues. The Enterprise Partnership Scheme has further opened up a wide array of commercial avenues in developing the next generation of stromal cell therapies for clinical use.

WE ARE PROUD TO PARTNER WITH GOVERNMENT DEPARTMENTS & AGENCIES

The Irish Research Council seeks to enrich the pool of knowledge and expertise available and accessible for addressing Ireland's current and future needs, whether societal, cultural or economic, by funding excellent research and researchers. In order to deliver on this mandate, the Council has set out a strategic objective to maximise partnering and collaboration with societal stakeholders, including enterprise, and with a particular focus to be given to government and civic society so as to address their needs.




 An Roinn Coimirce Sóisialaí
 Department of Social Protection
www.welfare.ie

 **IRISH RESEARCH COUNCIL**
 An Chomhairle um Thaighde in Éirinn

CASE STUDY

Funded by the Department of Social Protection, the Social Protection Research Innovation Award (SPRIA) is designed to support research which may inform the

future development of social protection policies in line with the Programme for Government and the Europe 2020 Strategy. The project, using appropriate social

research methods, will capture best practice and innovative approaches to activation for lone parents in an Irish and international context.

AWARDEE 2014:

Dr. Michelle Millar (NUI Galway), An active inclusion approach to lone parents

CIVIC SOCIETY



STRATEGIC PARTNERSHIP BETWEEN THE IRISH RESEARCH COUNCIL AND THE WHEEL



A strategic partnership between The Irish Research Council and The Wheel has been established to provide a structured mechanism to foster and promote effective engagement and transfer of knowledge and understanding between stakeholders in the academic community, the community and voluntary sector and into society in general. Effective engagement between the higher education sector and the community/voluntary sectors is a key objective of the National Strategy for Higher Education.

Specifically this partnership will encourage higher education researchers to disseminate their work and exchange knowledge with colleagues from beyond academia in order to ensure that research is available to inform the community and voluntary sector and to inform policy for civic society. Even more particularly this initiative will encourage the exchange of knowledge so as to develop research questions to better understand and develop our society.

The Irish Research Council and The Wheel will partner to:

- Support the community and voluntary sector and academic researchers develop strong collaborative research networks. Specifically the Irish Research Council will provide funding for higher education researchers to work on projects with non-academic partners in the community and voluntary sectors (Irish Research Council New Foundations – 'Engaging with Civic Society' Strand). The Wheel will support the community and voluntary sector as they engage with this competitive funding initiative.
- Work together to engage with Horizon 2020 and other European research funding mechanisms for the benefit of the research and community/voluntary sectors in Ireland.
- In the medium term, support the community and voluntary sector and academic researcher to develop strong European collaborative research linkages.
- Increase the awareness of the benefit and impact of funded research on the economy and quality of life among participants, policy makers and the general public .
- Lead the way nationally and internationally in developing, and advising on, mechanisms to enhance knowledge exchange and collaborative research between the academic and community/voluntary sectors.

Both parties will furthermore engage with all community/voluntary, public-sector/government and private-sector stakeholders to deliver on the objectives of the partnership.



4. LEADING FOR IRELAND IN EUROPE

The Irish Research Council is committed to facilitating the enhancement of opportunities for Irish researchers within the European Research Area.

- The Council forms part of a network of Research Councils across Europe which allows countries to relate to each other and collaborate on research agendas. The Council has secured an international reputation and an expertise on Europe which is not replicated nationally anywhere else.
- In 2014 an International Advisory Group was set up to assist the Council to establish a clear strategy for its international engagements so as to better assist the research community. At this time with the advent of Horizon 2020 and other development in the Irish and European research landscape, the Council wishes to establish a clear strategy for its international engagements so as to better assist the research community.

Margaret Kelleher	University College Dublin
Rob Kitchin	Maynooth University
Michael Breen	Mary Immaculate College, University of Limerick
Paul Murphy	NUI Galway
Patrick Paul Walsh	University College Dublin
Susan Schreibman	Maynooth University (formerly TCD)
Conor O'Carroll	European Steering Group on Human Resources & Mobility

- The Irish Research Council is a core member of the two established European networks of Humanities and Social Science research councils: NORFACE (New Opportunities for Research Funding Agency Co-operation in Europe) and HERA (the Humanities in the European Research Area).
- The Irish Research Council is presently the lead coordinator for the HERA network. Through network membership the Council facilitates researchers' access to dedicated streams of EU funding which are ring-fenced for these particular networks.

- Ireland is a member of two European Research Infrastructure Consortia-the European Social Survey (ESS) and the Digital Research Infrastructure for the Arts and Humanities (DARIAH). The Irish Research Council now represents Ireland in the two consortia. ESFRI, the European Strategy Forum on Research Infrastructures, produced a roadmap in 2008 which identifies 44 research infrastructures of pan-European interest corresponding to the long-term needs of the European research communities, covering all scientific areas. There are a total of five infrastructures in the roadmap which span the humanities and social sciences area, and these include the ESS and DARIAH initiatives. The Irish Research Council has been involved with both these initiatives, in their pre-European Research Infrastructure Consortia (ERIC) form, for some time, and this has resulted in considerable benefits to the Irish research community.

- The Council is a member of Science Europe, the association of European Research Funding Organisations (RFO) and Research Performing Organisations (RPO). Science Europe promotes the collective interests of the Research Funding and Research Performing Organisations of Europe. It supports its member organisations in their efforts to foster European research. It will strengthen the European Research Area through its direct engagement with key partners. In doing so, it will be informed by direct representation of all scientific communities in its reflections on policies, priorities and strategies.

- NET4SOCIETY is an international network of National Contact Points for Socio-economic Sciences and Humanities (SSH) in FP7. As a learning network through which the IRC Social Science and Humanities National Contact Point gains full and easy access to all the essential tools to enable them to support SSH researchers in the H2020 proposal preparation process.

- Participation in these networks has also been used by the Council to lobby for development and inclusion of research priorities sought by the Irish research community in EU funding calls and the Council has established effective communication structures with Irish researchers to facilitate this.



Dr. Jennifer Brennan and Dr. Suzanne Miller-Delaney, Irish Marie Skłodowska-Curie Office



Horizon 2020, the EU's largest research and innovation programme, has three key pillars: excellent science, industrial leadership and societal challenges. Horizon 2020's societal challenges advocate collaboration between different fields and disciplines, namely,

- Health, demographic change and wellbeing.
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bio-economy.
- Secure, clean and efficient energy.
- Smart, green and integrated transport.
- Climate action, environment, resource efficiency and raw materials.
- Europe in a changing world-inclusive, innovative and reflective societies.
- Secure societies-protecting freedom and security of Europe and its citizens.

Supporting the European Commission's vision of cooperation between various disciplines, the Irish Research Council is encouraging researchers in the Humanities and social sciences to consider the opportunities Horizon 2020 holds beyond 'challenge 6' and find partners and submit proposals for a number of challenges. "New Horizons" project-funding will be made available by the Irish Research Council in 2015 to Irish AHSS researchers to best position themselves for interdisciplinary funding opportunities available from H2020. See www.research.ie for more details.

THE HORIZON 2020 MARIE SKŁODOWSKA-CURIE ACTIONS (MSCA)

support researchers at all stages of their careers, all research disciplines & in all employment sectors. The Actions reinforce cooperation between academia & industry in particular through cross-border & cross-sector mobility of researchers. They focus on excellent & innovative research training, career development & knowledge exchange.

The Irish Marie Skłodowska-Curie Office (IMSCO) is jointly operated by the Irish Universities Association (IUA) and the Irish Research Council (IRC), with support from Science Foundation Ireland (SFI). The office provides advice and support on preparing applications for Marie Skłodowska-Curie funding and the management of MSC awards.

The predecessor Marie Curie Actions under FP7 were a clear success story for Ireland. Of the €620 million won by Irish organisations from FP7, €115 million can be attributed to the Actions. This financed networks for doctoral training, industry-academic partnerships, personal fellowships and co-funded a number of national fellowship programmes, including three operated by the Irish Research Council: INSPIRE, CARA and ELEVATE. In fact, the Council is ranked in the list of top 5 European organisations successful in securing funding from this COFUND programme.

Ireland started strongly in the 2014 Calls for MSCA. To date, around €14 million of funding (1.8% of the available budget) has been won. 2014 highlights have included:



- The TRUSS Innovative Training Network, coordinated by Dr. Arturo Gonzalez from University College Dublin. This project is bringing in over €1 million to three Irish organisations: UCD, Trinity College and Arup Consulting Engineers. <http://trussitn.eu/>

- 24 researchers successfully secured prestigious personal fellowships through the Individual Fellowships Call, which received over 7,000 applications from across the world. Seven of the 24 successful applications were ranked in the top 10 in their research area panel, including the application from Dr. Fiona Smyth from Trinity College, who achieved the top score of 98% in the Social Sciences and Humanities panel. Dr. Smyth will spend two years at Harvard University working on her project in architectural acoustics, and will be funded to return to Trinity College for a year to consolidate her work.

- A number of successful applications with an "All-Island" partnership at the core, including the ENACT project which links Queen's University Belfast with University College Dublin and laboratories in the UK and Argentina, and the SAGE-CARE project between Ulster University, Waterford Institute of Technology and industry and public bodies in Northern Ireland and Croatia. These projects were funded by the RISE Research and Innovation Staff Exchange Scheme and were showcased at the recent "Building Collaborative North South Partnerships in MSCA" hosted by the IMSCO. <http://www.iaa.ie/building-collaborative-north-south-partnerships-in-msca/>

- Through the 2014 COFUND Call, University College Dublin has secured around €900,000 to co-finance a new research fellowships programme in omics driven personalised medicine. The programme will bring ten high-potential researchers to UCD over the next five years. It builds on UCD's previous COFUND success with the UCD Energy-21 programme.

Overall, the IMSCO are delighted with these early successes and are looking forward to building on them in partnership with the Council, other research funders and the Irish research community.

For information on the MSCA and the supports offered by the IMSO, visit www.iaa.ie/mariecurie.



European Research Council
Established by the European Commission

The European Research Council (ERC) is a European funding initiative, set up under the "Ideas" pillar of the EU Framework Programme 7. The ERC's mission is to encourage the highest quality research in Europe through competitive funding and to support investigator-initiated frontier research across all fields of research, on the basis of scientific excellence. The Irish Research Council Strategy for ERC focusses on building up existing research excellence in the humanities and social sciences cultivating quality applications. General supports to applicants is provided in a range of ways, helping to increase the number of successful applications.

- Guidance on proposal preparation and resolution of technical queries in conjunction with the ERCEA.
- Assistance on Enterprise Ireland proposal development support applications and endorsing such applications in conjunction with Enterprise Ireland.
- Mock interviews for Stage 2 Applicants in the Starting and Consolidator grant schemes.



ERC SUCCESS CASE STUDY: DR. EILIONOIR FLYNN: CENTRE FOR DISABILITY LAW AND POLICY

In 2014 the Irish Research Council supported and help develop the successful Starting Grant application for Dr. Eilionoir Flynn to the European Research Council.

The right to make one's own decisions and to have these decisions respected by law is a basic human freedom which most adults take for granted. However, for many people with disabilities (especially people with intellectual, psycho-social and other cognitive disabilities) this fundamental right has been denied – informally, in the private sphere, and formally, in the public sphere through States' laws and policies. The VOICES project will take a radical approach to develop new law reform ideas based on this concept of 'universal legal capacity.' Its primary objective is to develop reform proposals based on the lived experience of disability, and this will be a powerful argument for legal change. Dr. Eilionoir Flynn is a former Irish Research Council GOI Scholar



HERA

Humanities in the European Research Area

HERA – Humanities in the European Research Area - is a partnership between 24 humanities research councils across Europe and the European Commission, with the objective of firmly establishing the humanities in the European Research Area and in the European Commission Framework Programmes. The humanities are crucial to the understanding and conceptualising of fundamental changes in contemporary European society. Linking national programmes and launching joint research programmes dealing with all-encompassing social, cultural, political and ethical developments will generate new knowledge and enable policy-makers, scientists and the general public to interpret the challenges of a changing world. HERA aims to set new and innovative research

IRISH RESEARCH COUNCIL AND HERA

agendas and thus enhance the humanities' contribution to the European Research Area as well as to the ongoing debates on issues of particular relevance to European society.

In 2014 the Network was pleased to announce a new HERA Joint Research Programme (HERA JRP 3) on "Uses of the Past". With up to €21 million available, the research programme will fund new and exciting humanities-centred projects involving researchers from four or more countries. Funding is provided from HERA partners and the European Union is providing top-up funding via a COFUND grant to the HERA JRP UP initiative. These awards will be announced in October 2015.

NORFACE MIGRATION



New Opportunities for Research Funding Agency Cooperation in Europe (NORFACE) is a partnership between fourteen social sciences research councils across Europe which was established in 2004, when the

network successfully bid for an FP6 award to coordinate activities. The twelve partners involved are the research councils for the social sciences from Estonia, Denmark, Finland, Germany, Iceland, Ireland, The Netherlands, Norway, Portugal, Slovenia, Sweden and the United Kingdom, Canada and Austria participate in NORFACE as associate partners. This partnership is built on a history of less formal co-operation

and joint activities between the Nordic and UK research councils. NORFACE formalises this existing working relationship and provides a framework and a vision for a durable multi-national strategic partnership in research funding and practice. It is an ambitious programme of communication, enquiry, sharing of experience and action.



CHIST-ERA stands for European Coordinated Research on Long-term Challenges in Information and Communication Sciences & Technologies ERA-Net. CHIST-ERA is a coordination and co-operation activity of national (and regional) research funding organisations mainly in Europe and is supported by the European Union under the ERA-Net funding scheme of the FP7. The aim is to reinforce the transnational collaboration between the participating states in challenging multidisciplinary research in the area of ICST with the potential to lead to significant breakthroughs. The partner organisations identify emergent scientific fields allowing researchers to engage in high-risk, high-impact projects by launching each year a transnational call for research proposals.



APPENDIX 1

COUNCIL MEMBERS

Professor Orla Feely (Chair), Vice-President for Research, Innovation & Impact. School of Electrical, Electronic and Communications Engineering, University College Dublin

Professor John Brewer, President of the British Sociological Association, Department of Sociology, University of Aberdeen

Professor Thomas M. Cooney, Academic Director of the Institute for Minority Entrepreneurship, Dublin Institute of Technology

Dr. Ivan Coulter, Chief Executive Officer, Sigmoid Pharma Ltd

Professor Caroline Fennell, School of Law, Head of the College of Arts, Celtic Studies & Social Sciences, University College Cork

Professor James P. Gleeson, Department of Mathematics and Statistics, University of Limerick

Professor Sheila Greene, Fellow Emeritus, Professor of Childhood Research and former Director of the Children's Research Centre, Trinity College Dublin

Professor Anita R. Maguire, Department of Chemistry, Vice President for Research & Innovation, University College Cork

Professor Rowena Pecchenino, Dean of the Faculty of Social Sciences, Head of Department of Economics, Finance and Accounting, National University of Ireland, Maynooth

Professor Sean Ryder, Head of the Department of English, Chair HERA Network Board, National University of Ireland, Galway

Professor Alan F. Smeaton, Director, Insight Centre for Data Analytics, Dublin City University

2014 COUNCIL EXECUTIVE

Dr. Eucharía Meehan, Director

Dr. Gemma Irvine, Assistant Director

Dr. Johanna Archbold

Ms Sorcha Carthy

Ms Fiona Davis

Ms Margaret Egan

Ms Angela Ennis

Mr Paul Kilkenny

Ms Leonora Harty

Dr. Ross McKiernan

Dr. Eavan O'Brien

Ms Sharon O'Rourke

Dr. Kate Ryan

Ms Olive Walsh

Postdoctoral Internship holders in 2014:

Dr. Zsuzsanna Zarka





NOTES



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