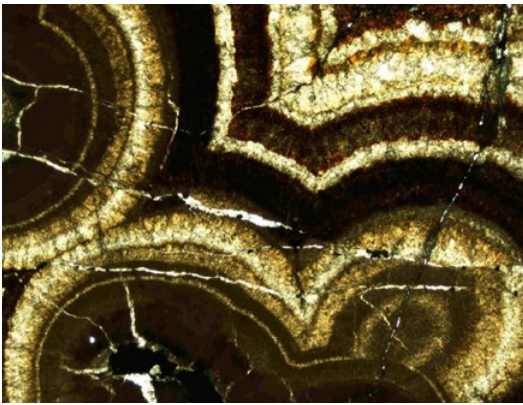




Annual Report and Accounts 2021





Cover Image Title: Colloform Sphalerite

SFI Research Image of the Year Winner 2021: Aileen Doran, Postdoctoral Researcher, iCRAG SFI Research Centre for Applied Geosciences, University College Dublin (UCD).

Image Description: This is an example of colloform sphalerite from the Lisheen deposit, southern Ireland. Lisheen mine, which closed in 2015, was Ireland's second-largest known base metal deposit, and it was mined for zinc and lead. Sphalerite is a common ore mineral for zinc, which is a valuable metal required for many green technologies (e.g., wind turbines, solar panels). Ireland is currently one of Europe's top suppliers of zinc. Often, sphalerite can display textures such as these (colloform growth), with variations in colour generally linked to trace element variations. The image was taken using a transmitted light microscope at the UCD School of Earth Sciences. This sample shows an example of well-developed black dolomite crystals, with some additional calcite. Areas of black matrix breccia (BMB) are closely associated with Irish Zn-Pb mineralisation, typically forming a halo around mineralisation, and it can host clasts of other carbonates from the Irish orefield (e.g., regional dolostone). By using Cathodoluminescence (CL) imaging, we can study the luminescence characteristics of these crystals to help understand their formation.

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About Science Foundation Ireland

Science Foundation Ireland is the national foundation for investment in research in the areas of science, technology, engineering, and mathematics (STEM), which assists in the development and competitiveness of industry, enterprise and employment in Ireland. It also promotes and supports STEM education and engagement to improve awareness and understanding of the value of STEM to society and to support the STEM careers pipeline. See www.sfi.ie for more information.

We fund research that makes a real difference to our society and economy, now and into the future – join the conversation online at **#ShapingOurFuture** at **@Scienceirel**

Key Statistics 2021


Excellent Research

Ireland is¹... **14th** in global scientific ranking

Ireland ranks¹...

2nd Immunology 

3rd Agricultural Sciences 

3rd Neuroscience and Behaviour 

6th Material Sciences 

Ireland is²...

1st In the world for knowledge diffusion

5th For knowledge absorption

10th For knowledge impact

24 of the most highly-cited researchers in the world are funded by SFI

5,384 publications reported

SFI-funded publications are 2.5 times more likely to be star publications than the global average³

Talent & Skills

40,595

Jobs supported, directly and indirectly in Ireland

2,111

Postgraduate students supported

6,201

People working on SFI-supported projects

4,389

EPE activities completed by SFI-funded researchers



¹ InCites by Clarivate Analytics

² Global Innovation Index 2021

³ Star publications are publications in the top 1% of most cited publications, globally

Driving Competitiveness


€64m
Funding from Industry


204
Invention disclosures


13
Spin-out companies


3,092
Industry engagements


68
Patents filed

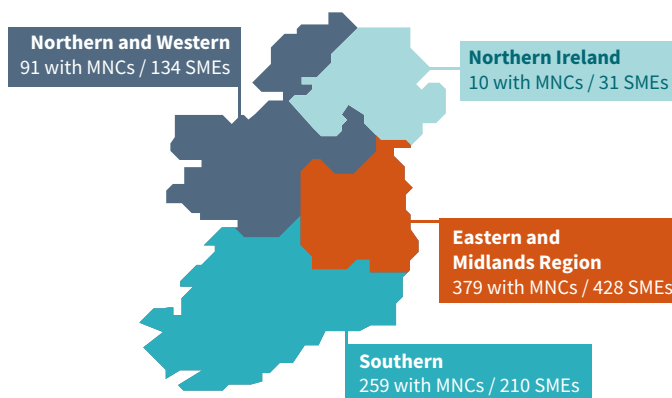

47
Patents awarded

Regional Development

1,542 Regional Industry engagements

739 Engagements with Multinationals (MNCs)

803 Engagements with Small to Medium Enterprises (SMEs)



Value for money

From **€222m**, SFI investments leverage:

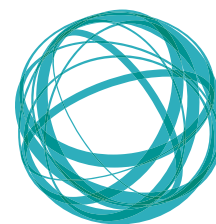
€234m Total external funding
which includes

€164.5m Total non-exchequer funding
which includes

€82m won from the EU

5 ERC awards

Global Footprint



5,708 international academic collaborations in **84** countries

71% of academic-academic collaborations are international

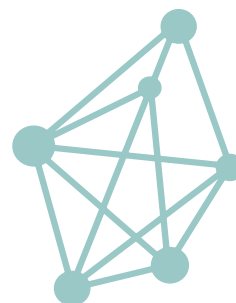
COHESIVE ECOSYSTEM

TANGIBLE BENEFITS

ANTICIPATING WHAT'S NEXT

Jointly funded SFI-IRC Pathway Programme

A €23 million joint investment to support post-doctoral researchers to become research leaders was announced, co-funded by SFI and the Irish Research Council (IRC). The SFI-IRC Pathway Programme will see 40 early career researchers across all disciplines, developing cutting-edge projects over a four-year period and will ensure greater cohesion across Ireland's research performing institutions.



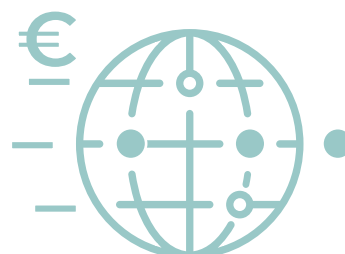
Creating our Future

Working in partnership with over 80 Government Departments, public bodies and societal representative organisations, SFI led a national conversation on research. The people of Ireland were encouraged to share their ideas on what they think researchers should explore to create a better future. Over 18,000 submissions were received between July and November 2021. Ideas were generated through conversations on the role of research at over 1,500 online and in-person brainstorms and events, including roadshows that visited every county in Ireland.



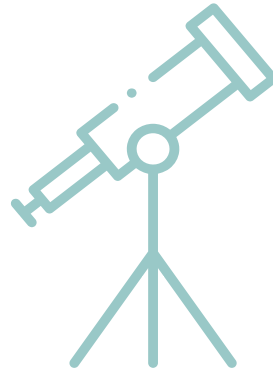
Challenge-based Funding

The TAPAS project at National University Ireland Galway (NUIG) won €1 million in the SFI Future Innovator Prize Challenge AI for Societal Good, while the Farm Zero C project at University College Dublin (UCD) won €2 million under the Zero Emissions Challenge. A new €2.47 million challenge was launched in partnership with Irish Aid, to develop solutions that contribute to the UN Sustainable Development Goals. A new challenge in collaboration with the Defence Organisation was also launched. Eight teams progressed under challenges in the areas of food waste and plastics. In 2021, SFI was appointed to design and deliver national-scale challenge-based funding under the National Recovery and Resilience Plan, for launch in 2022.



SFI Frontiers for the Future

The SFI Frontiers for the Future programme saw €47 million invested across 70 grants to support excellent independent researchers. This will provide opportunities for early career researchers through to well established leaders to conduct high-risk, high-reward research projects. It is run in collaboration with the Geological Survey Ireland (GSI) and the Sustainable Energy Authority of Ireland (SEAI), across nine Higher Education Institutions. 46% of the research grants supported will be led by women researchers and 33% by emerging investigators.



First woman appointed as SFI Research Professor

Prof Dimitra Psychogiou was awarded a prestigious SFI Research Professorship to spearhead a pioneering research programme at Tyndall National Institute (TNI) and University College Cork (UCC). She is a world-leading expert in radio frequency and wireless communication, and her research will help lead to lower-cost broadband wireless infrastructure, making digital and internet services more accessible to the general public.



New SFI Industry RD&I Fellowship Launched

The SFI Industry RD&I Fellowship was launched in 2021, to support research, development and innovation (RD&I) in industry. Companies across the world will host a PhD qualified research expert to facilitate cutting-edge, industry-informed research and the sharing of knowledge. Twenty seven awards were made in 2021, co-funded with industry, across a variety of research areas including microbiology, virtual reality (VR), biotechnology, coastal erosion, breast cancer, photodynamic therapy and more.

EXCELLENT RESEARCH

TOP TALENT

Chairman's Statement

Professor J. Peter Clinch

Chairman of the Board, Science Foundation Ireland



Twenty twenty-one was a significant year for SFI as we celebrated the launch of our strategy to 2025, *Shaping Our Future*. At the launch, I was honoured to introduce An Taoiseach, Micheál Martin, TD, and to welcome the Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD. The SFI Strategy sets out an ambitious plan to make our contribution to the prosperity of Ireland and its people. We will do this by supporting excellent research, promoting innovation-intensity in the enterprise base, and aiding researchers to address major societal challenges. The twin aspects of the Strategy, *Delivering Today* and *Preparing for Tomorrow*, ensure the research capacity we have built delivers now for the Irish people while, at the same time, we plant the seeds to seize future opportunities and position Ireland as a global innovation leader.

I continue to be inspired by our domestic and international research community which, in responding to COVID-19, has worked tirelessly to meet the greatest immediate challenge of our time. They did so in a manner that elevated the importance of science in the public consciousness. Their efforts exemplified the need for a well-resourced research ecosystem. We must learn the lessons from the pandemic response, and the need for a strong research base, as we inevitably face further complex challenges, including digital transformation and the green transition.

The Board and I would like to compliment, and thank, all of those across the higher education and research sector for their commitment throughout the year and for our ongoing partnerships with them. We look forward to continuing to collaborate with all our stakeholders during 2022 as we implement our new strategy.

In 2021, SFI leveraged €234 million in external funding and €164.5 million in non-exchequer funding, from an initial base investment of €222 million. SFI-funded researchers secured over €80 million from the EU, more than €63 million from private enterprise, and over €30 million from Enterprise Ireland.

The impact that Irish research has had on our society and economy can be seen across Ireland. Out of 1,542 regional industry engagements, 739 were with multinational companies and 803 were with small and medium enterprises. These engagements were spread across the country, including Northern Ireland. Over 40,000 direct and indirect jobs were supported in 2021. 5,647 people worked on SFI-supported projects and 2,111 postgraduate research students were supported by SFI.

The Board and I are incredibly proud of this contribution to the Irish economy and to society. We are also proud of the Agency and its staff. Despite highly-challenging conditions, we launched an ambitious new strategy, worked in partnership with government departments and agencies, both nationally and internationally, increased our public engagement with the *Creating Our Future* campaign, and launched new programmes to build excellent research capacity across our research ecosystem.

I would like to pay tribute to the wonderful staff of SFI, and its senior management team, who were led for ten years by Professor Mark Ferguson whose office as Director General ended in 2021. Mark played a central, and transformational, role in the development and success of SFI over the past decade and the Board is grateful for his dedication to Irish science.

Twenty twenty-one was also the year when we formally joined the new Department of Further and Higher Education, Research, Innovation and Science. I would also like to thank Minister Harris and his officials for their steadfast support of SFI, and for their wise counsel in 2021. That year was also when we launched a global search for a new leader of SFI. I am delighted that, in 2022, we welcome Professor Philip Nolan as the new Director General of the Agency. The Board and I look forward to seeing SFI continue to prosper, and reach new heights, under Philip's able stewardship.

Professor J. Peter Clinch

*Chairman of the Board
Science Foundation Ireland*

Director General's Statement

Professor Philip Nolan

Director General, Science Foundation Ireland



We have witnessed over the last several years, not least in our response to the COVID-19 pandemic, the enormous contribution science, research and innovation can have on our everyday lives. It is a pleasure, in this context, to document in our Annual Report the achievements and impact of the researchers and projects funded by Science Foundation Ireland (SFI), and the contribution and achievements of the agency itself. We can see in this Report precisely how research and innovation transforms and improves lives across the world.

It is a privilege to have been appointed Director General of SFI and I would like to pay tribute to Professor Mark Ferguson for his stewardship of SFI over the past ten years. SFI has led the transformation of Ireland's research landscape, sponsoring outstanding research with vital ecological, societal and economic benefits.

SFI's primary purpose is to fund excellent and impactful research and talent which will shape our future, deliver on citizens' priorities, and support our societal, economic and ecological wellbeing. This Annual Report captures the full richness and diversity of our research talent, and the quality, importance, value and impact of their research.

Collaboration with other agencies and stakeholders is at the heart of our organisation and our success. We continued to work with the Irish Research Council (IRC), including to support talented postdoctoral researchers to become independent research leaders through the newly established SFI-IRC Pathway Programme. We also partnered with Geological Survey Ireland (GSI) and the Sustainable Energy Authority of Ireland (SEAI) in the SFI Frontiers for the Future Programme and announced a new partnership with Children's Health Ireland. 2021 saw the launch of new challenge funding programmes in partnership with the Defence Organisation and Irish Aid.

Internationally, we continued to work with partners such as the National Science Foundation (NSF), UK Research and Innovation (UKRI), the Royal Society, and National Institutes of Health (NIH).

Following publication of our new strategy *Shaping Our Future*, we have made excellent progress on many of the actions it contains. This included the delivery, on behalf of the Government, of the first phase of *Creating Our Future*, which stimulated national conversation on research in Ireland, and harvested ideas, across 18,000 submissions, or what is important to people and communities. These ideas will inspire future research, and we will continue to engage with the public in this way.

In September 2021, the Government announced its EU-approved National Recovery and Resilience Plan. The plan included €70 million in challenge funding to be administered by SFI. Through the National Challenge Fund, we will work in partnership with Government and its agencies, to fund and accelerate research to address key national challenges in the areas of Green Transition and Digital Transformation

Enormous opportunities lie ahead, fuelled by the ever-increasing pace of discovery and innovation. The insights of research, and the energy of innovation, can help us shape a future that is healthier, more equal and inclusive, and sustainable. Focusing on excellence in research and its translation into tangible benefits for our economy and society, we aim to secure our position as a global innovation leader in science and engineering, and to ensure Ireland plays its part in addressing the complex challenges that face our society. I look forward to working with the SFI Board, colleagues in SFI and other research and innovation agencies, as well as with our research, higher education, public sector and civil society partners towards this ambitious goal.

I have seen first-hand the dedication and enthusiasm of our research community to deliver excellence and to make a difference in the most creative and innovative ways. I would like to acknowledge the extraordinary talent of our research community and their deep commitment to research, engagement and collaboration.

I would like to thank our stakeholders, both national and international, and all our partners across academia, industry and government for their continued support and collaboration.

I would like to acknowledge the Government's continued support to SFI through An Taoiseach Michael Martin, TD and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD.

Finally, I thank the Chair of the Board, Professor Peter Clinch, the members of the Board of SFI, and our staff for their commitment, professionalism and hard work.

Professor Philip Nolan

Director General of Science Foundation Ireland

2021

A Year in Review

January

- ▶ iCRAG, the SFI Research Centre for Applied Geosciences, in collaboration with the International Union of Geological Sciences, [launched the online UNESCO Lecture Series on Earth Materials](#) for a Sustainable and Thriving Society.



Crushed aluminium cans as building blocks, and the future of metal supply, was discussed during the UNESCO lecture series. Image: Gary Kavanagh, iStock.



Prof Abhay Pandit, Director of the CÚRAM SFI Research Centre for Medical Devices at NUI Galway, is the injectable hydrogel project lead.

February

- ▶ The GAA, Dublin City University's (DCU) School of Health and Human Performance, and the Insight SFI Research Centre for Data Analytics, launched the '[Moving Well – Being Well](#)' series of evidence-based resources to enhance children's fundamental movement skills.

- ▶ Researchers at CÚRAM, the SFI Research Centre for Medical Devices based at NUI Galway, and BIOFORGE Lab, at the University of Valladolid in Spain, [developed an injectable hydrogel](#) that could help repair and prevent further damage to the heart muscle after a heart attack.

- ▶ STEPS Engineers Week, funded by the SFI Discover Programme, [took place from 27 February – 5 March](#), celebrating the creative and limitless world of engineering.



Ali Knight and Mark Langtry pictured at Explorium, Dublin, during Engineers Ireland's STEPS Engineers Week 2021.

2021 | A Year in Review

March

- ▶ Taoiseach Micheál Martin, TD, and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, [launched SFI's new strategy to 2025](#), Shaping Our Future.



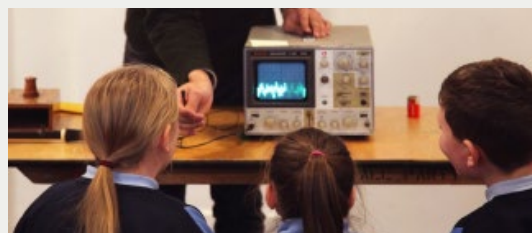
Taoiseach Micheál Martin, TD, launching the SFI Strategy during a virtual event.

- ▶ Taoiseach Micheál Martin, TD, [presented the prestigious SFI St Patrick's Day Science Medal](#) to Prof William C Campbell, a recipient of the 2015 Nobel Prize in Physiology or Medicine, and to Mr Vincent T Roche, President and Chief Executive Officer of Analog Devices, Inc.

Watch video: [Taoiseach Honours Irish Diaspora Leaders](#)

- ▶ A joint investment of €13.5 million was announced through [the US-Ireland tripartite research and development programme](#) supporting seven awards and 60 research positions, across 14 research institutions.
- ▶ The SFI Science in Ireland Barometer [was published](#), revealing that 94% of the Irish population consider science to be important.

- ▶ Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, announced a €5.2 million investment in 49 SFI Discover public engagement and education initiatives to improve public understanding of science, technology, engineering, and maths (STEM).



The Quavers to Quadratics programme led by the National Concert Hall, UCD and TCD was funded under the SFI Discover call, helping children explore science, maths and music.

April

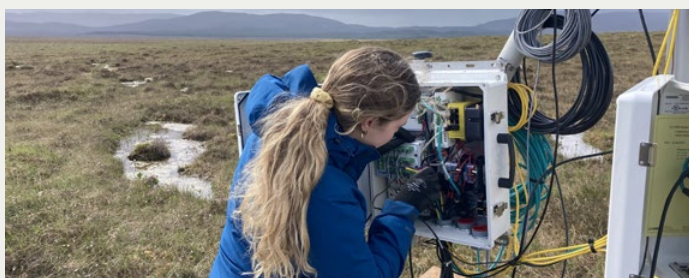
- ▶ Confirm, the SFI Research Centre for Smart Manufacturing hosted at the University of Limerick (UL) [launched a Smart Manufacturing Future Wireless Innovation Test-Bed](#) to explore ideas and technologies for improving manufacturing environments.



Digital manufacturing at the Confirm SFI Research Centre for Smart Manufacturing at UL. Image: Keith Wiseman.

- ▶ VistaMilk SFI Research Centre, jointly funded by the Department of Agriculture, Food and the Marine (DAFM) and hosted by Teagasc, launched a new [€1.4 million carbon sequestration research project](#) in collaboration with Dairy Research Ireland.

Watch video: [Carbon Sequestration Launch Video - YouTube](#)

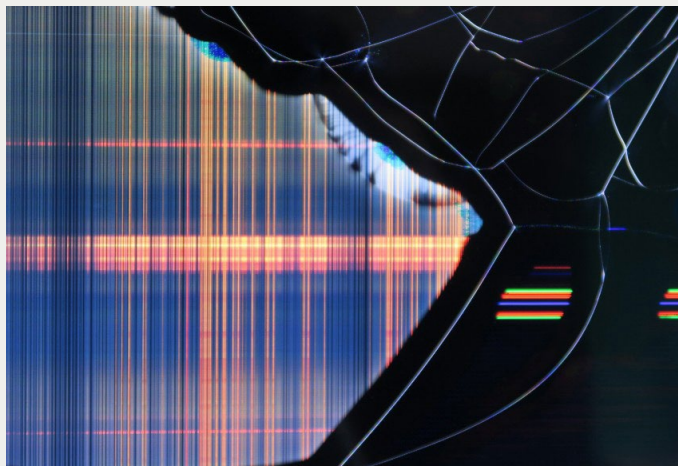


Research assistant with the VistaMilk SFI Research Centre, Aoife Jones, sets up an eddy covariance tower in a bog in Sligo.

2021 | A Year in Review

May

- ▶ Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, [announced €23 million in funding](#) for the SFI-IRC Pathway Programme to support post-doctoral researchers becoming research leaders.
- ▶ SFI launched the virtual exhibition opening of the [SFI STEAM Art Collaboration](#) to inspire and engage people with research through five commissioned artworks, uniting the disciplines of art and science using STEAM (Science, Technology, Engineering, Art and Maths).



Shifting Patterns of Light by artist David Beattie, in collaboration with the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases at the RCSI University of Medicine and Health Sciences.

Watch video: [Shifting Patterns of Light in Conversation with FutureNeuro & David Beattie - YouTube](#)

June

- ▶ Prof Kevin O'Connor and his Farm Zero C team at UCD were announced as [winners of the €2 million SFI Future Innovator Prize](#) to help the dairy sector achieve net-zero emissions by 2027. Watch video: [Farm Zero C - YouTube](#)
- ▶ CÚRAM, the SFI Research Centre for Medical Devices at NUI Galway, and the Galway Film Centre announced [a new Science on Screen documentary](#) about the Irish MedTech community's response to COVID-19.



Prof Martin O'Halloran, Investigator at the CÚRAM SFI Research Centre and Kevin O'Connell, Clinical Project Manager and Senior Physiotherapist, University Hospital Galway, in the Science on Screen documentary.

2021 | A Year in Review

July

- ▶ Taoiseach Micheál Martin, TD and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, [launched the Creating our Future campaign](#), to gather ideas from the public on what researchers should explore.

Watch video [here](#).



Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, is pictured with Julie Byrne, Global Head of Nokia Bell Labs External Collaboration Programs and Chair of the Creating our Future Advisory Forum, and Taoiseach Micheál Martin, TD.



Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris TD, officially opening The Festival of Curiosity 2021.

- ▶ The SFI Discover-supported [Festival of Curiosity took place online](#), for people of all ages to discover science, arts, design and technology in curious new ways.

- ▶ New challenge-based funding programmes were launched in partnership with the Defence Organisation and Irish Aid, with academic researchers competing to develop disruptive solutions to specific problems.

- ▶ The TAPAS project, co-funded with Irish Aid under SFI's partnership with the Department of Foreign Affairs, [was announced as the winner of the SFI Future Innovator Prize AI for Societal Good Challenge](#).

August

- ▶ Three Royal Society-SFI University Research Fellows were announced, [supporting high calibre early career scientists throughout the UK and Ireland](#) to pursue novel and ground-breaking research.



Dr Christiana Pantelidou, UCD, was awarded a Royal Society-SFI University Research Fellowship.

2021 | A Year in Review

September

- ▶ NUI Galway [launched the ReelLIFE SCIENCE](#) cross-border science video competition for young people, supported by SFI Discover.
- ▶ The Creating Our Future roadshow campaign kicked-off, visiting every county in Ireland to encourage members of the public to talk with researchers and submit research ideas they would like explored.

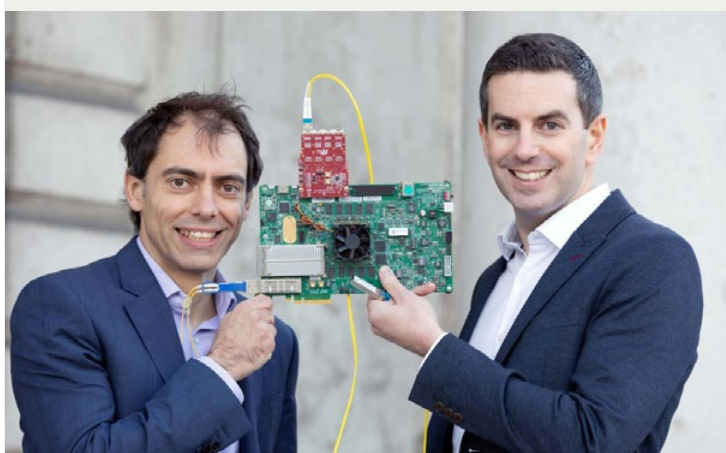


The Creating Our Future roadshow coffee van.



Pictured l-r: Mayor of Galway City, Colette Connolly, Dr Noírin Burke of Galway Atlantaquaria, filmmaker Ken O'Sullivan and Prof Abhay Pandit, Director of CÚRAM, NUI Galway. Image: Aengus McMahon.

- ▶ The CÚRAM SFI Research Centre for Medical Devices, based at NUI Galway, launched a public exhibition at Galway Atlantaquaria to [showcase how marine resources can aid medical device research](#).



Prof Marco Ruffini (left), SFI Research Centre CONNECT at TCD, and Dr Robin Giller, Intel. Image: Paul Sharp/Sharpix.

October

- ▶ Maths Week Ireland, funded by the SFI Discover Programme, took place from 16 - 24 October, exploring the beauty and power of maths.
- ▶ Intel Ireland [signed a two-year research agreement](#) focused on 5G optical networks, with the CONNECT SFI Research Centre for future networks and communications at Trinity College Dublin (TCD).

2021 | A Year in Review

November

- ▶ Science Week [celebrated its 26th year with the theme 'Creating Our Future.'](#) Science festivals and hundreds of virtual events took place nationwide with strong support from RTÉ. Watch video [here](#).
- ▶ The [Empower SFI Spoke research programme was launched](#), supporting research that will help to futureproof EU data flows and drive innovations in data protection.
- ▶ Research from iCrag, the SFI Research Centre for Applied Geosciences; I-Form, the SFI Research Centre for Advanced Manufacturing and Lero, the SFI Research Centre for Software was featured in a global [online BBC series, 'Unlocking Science'.](#)



Minister Simon Harris, TD, is pictured with school students at the launch of Science Week 2021.



Ella Kennedy and Aimee Popescu from St Leo's College Carlow at the ISS in-flight call event. Image: Mary Browne.

- ▶ One hundred Carlow-based students enjoyed a live [video call with a European Space Agency \(ESA\) astronaut](#) on board the International Space Station (ISS). The event was co-organised by the ESERO Ireland Programme at SFI.
- ▶ Brian Corbett, a Principal Investigator at the IPIC SFI Research Centre for Photonics, at Tyndall National Institute, UCC, was awarded the 2021 Institute of Physics Katharine Burr Blodgett Medal and Prize, for his contribution to the application of physics in an industrial and commercial context.

December

- ▶ Ireland's Health Service Executive (HSE) and the ADAPT SFI Research Centre for AI-driven Digital Content Technology at TCD [announced a new research agreement](#) to accelerate the pace of healthcare innovation through digital technologies.
- ▶ Minister Simon Harris, TD, launched a [new collaborative paediatric research funding partnership](#) between Children's Health Foundation and SFI, as part of its Frontiers for the Future Programme.



Pictured l-r: Prof Vinny Wade, Director of the ADAPT SFI Research Centre, Trevor O'Callaghan, CEO of the Dublin Midlands Hospital Group, Prof Martin Curley, HSE Director of Digital Transformation and Information, and Provost of TCD, Dr Linda Doyle.

Excellent Research

Working in partnership with the Higher Education Institutes, SFI supports and drives Ireland's contribution to the latest scientific breakthroughs which lead to innovation for academia, enterprise, the public sector, government, society and beyond.

SFI-funded researchers, from individual investigators through to large-scale SFI Research Centres, are at the forefront of solving some of Ireland and the world's greatest challenges. SFI-backed researchers are catalysing new discoveries and knowledge, producing tangible benefits that have a positive impact on our society and economy, and ensuring all of Ireland's people benefit from public investment.

Publications and Citations

In 2021, SFI-funded Researchers continued to publish world-leading scientific research, with 5,384 publications reported.

SFI-funded publications are 2.5 times more likely to be star publications than the global average (based on publications in the top 1% of most cited publications, globally). The Irish national average is 1.9 times.



5,384

publications reported in 2021

Country	Funder	Documents in Web of Science	Documents in the top 1%
Ireland	All	256,359	1.88
Ireland	Science Foundation Ireland	28,524	2.48
USA	All	12,701,098	1.89
USA	NSF	838,497	2.92
USA	NIH	1,937,483	2.95
Switzerland	All	766,278	2.74
Denmark	All	434,276	2.53
Singapore	All	324,653	2.55
United Kingdom	All	3,676,204	2.03
Finland	All	331,633	1.93
New Zealand	All	255,160	1.91
Israel	All	383,182	1.81
China mainland	All	6,060,763	1.24
EU-28	All	15,356,848	1.34
EU	European Research Council	142,443	4.20
Global Baseline		48,569,581	1.13

Field Specific Rankings 2021 by Publication Quality

Ireland ranks:*

Field	Rank
Immunology	2nd
Agricultural Sciences	3rd
Neuroscience and Behaviour	3rd
Pharmacology and Toxicology	6th
Materials Sciences	6th
Microbiology	7th
Molecular Biology and Genetics	7th

* SFI's ranking statistics are gathered via InCites by Clarivate Analytics

Source: InCites by Clarivate Analytics



SFI Researcher of the Year, Prof William Gallagher, UCD.

SFI Researcher of the Year 2021

William Gallagher, Professor of Cancer Biology at UCD, was recognised as the 2021 SFI Researcher of the Year. His highly esteemed, international reputation in oncology research and innovation, is particularly in the area of molecular diagnostics.

Amongst his key achievements is the identification and validation of multiple biomarkers for predicting outcomes in patients with breast and other cancers, as well as conceiving and accelerating the development of several novel anti-cancer agents. Critically, his discoveries have transitioned into clinical use, demonstrating the impact of this new scientific knowledge on our society in both healthcare and economic terms.

Prof Gallagher has published 236 peer-reviewed manuscripts with 19,613 citations and was the co-founder and CSO of OncoMark Ltd., an oncology-focused spin-out. He is lead investigator on an SFI-funded Investigator Programme (IvP) project, OPTi-PREDICT, focused on developing novel clinical decision support systems in breast and prostate cancer. In addition, he is Deputy Director of Precision Oncology Ireland, a nationwide SFI Strategic Research Partnership focused on developing better treatment strategies and diagnostics for cancer patients.

Critically, his discoveries have transitioned into clinical use, demonstrating the impact of this new scientific knowledge on our society in both healthcare and economic terms.

Tangible Benefits:



Microplastics Group led by Dr Jing Jing Wang and Prof John Boland at the AMBER SFI Research Centre for Advanced Materials and Bioengineering Research and CRANN, with internal collaboration from TrinityHaus and TCD's School of Engineering and School of Chemistry. Pictured l-r: Prof John Boland, Dr Jing Jing Wang, Prof Liwen Xiao, Dr Dunzhu Li, Dr Yunhong Shi, and Dr Luming Yang. Image: Rachael Kavanagh.

Research finds tap water can shield against microplastics

A study published in *Chemical Engineering Journal* revealed that tap water contains trace elements and minerals which prevent plastics from degrading in the water and releasing microplastics. Co-led by Prof John Boland and Dr Jing Jing Wang from the AMBER SFI Centre for Advanced Materials and Bioengineering Research at TCD and UCD, the study found that many items such as plastic kettles, which are repeatedly used with tap water, can develop a protective skin over time, which can prevent the release of microplastics entirely. Microplastics can carry a range of contaminants such as trace metals and some potentially harmful organic chemicals.

Previous research into the release of microplastics used pure water synthesised in laboratories, which does not account for ions and impurities found in tap water. Tap water containing such trace elements and minerals, is not 100 per cent pure H₂O. Including these elements in the investigation found that the minerals coat the plastic and prevent degradation, so the product becomes microplastic-free.

A dark brown colour in a kettle indicates copper oxide, which forms from copper minerals in tap water due to the copper pipes in a house – all combining to give protection to the kettle. Such protective skins can be manufactured in the laboratory and directly applied to the plastic without having to wait for it to build up naturally. The research team is now competing in the SFI Plastics Challenge to develop such strategies to mitigate against microplastic generation that will allow the safe use and re-purposing of plastic products.

The research team was supported by SFI, Enterprise Ireland, TCD's School of Engineering Scholarship, the China Scholarship Council and the Irish Research Council (IRC).

Microbe research finds potential to reverse aging in the brain

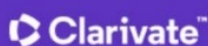


Pictured l-r: Dr Thomaz Bastiaanssen, Prof John Cryan, Dr Marcus Boehme and Katherine Guzzetta from the APC Microbiome Ireland SFI Research Centre at UCC. Image: Clare Keogh.

Research from APC Microbiome Ireland SFI Research Centre at UCC, has introduced a novel approach to reversing aspects of age-related deterioration in the brain via microorganisms, known as microbes, in the gut.

Published in the leading international scientific journal *Nature Aging*, the study was carried out by researchers in the Brain-Gut-Microbiota lab, led by Principal Investigator and Vice President for Research and Innovation at UCC, Prof John F. Cryan.

Home to
**Highly Cited
Researchers**
2021



In 2021, 24 researchers who have been supported by SFI were included on the Clarivate Analytics most highly-cited list. Researchers are selected for their exceptional research performance, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field. Thirteen researchers from the APC Microbiome Ireland SFI Research Centre, based in UCC and Teagasc, were included in the list.

New molecule discovery inspired by the brain

A new molecule which could further increase ultra-fast decision making in computers has been discovered. Inspired by the brain's computing architecture, the findings were published in the world-leading journal *Nature* by an international research team led by Prof Damien Thompson, Principal Investigator at the SSPC SFI Research Centre for Pharmaceuticals, at the Bernal Institute, University of Limerick.

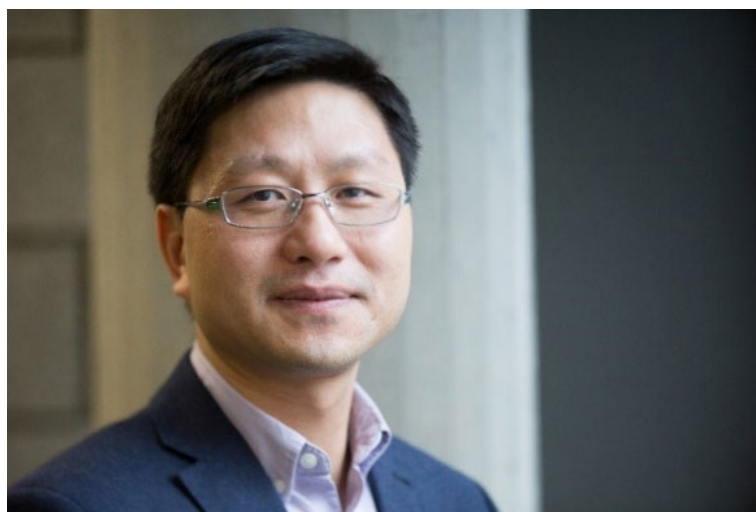
Created by optimising the electrical properties of soft crystals grown from the molecules, this computing architecture provides a new fundamental electronic circuit element in which complex logic is encoded in nanoscale material properties.

It uses natural asymmetry in its metal-organic bonds to cleanly switch between different states, allowing it to perform ultra-fast decision-making. The discovery was made using the Irish Centre for High-End Computing (ICHEC)'s supercomputer and could have major implications in areas spanning financial decision-making to bioinformatics.



Professor in Physics at UL, Damien Thompson leads the predictive materials modelling group at the Bernal Institute.

UCD Professor Anding Zhu elevated to IEEE Fellow



Prof Anding Zhu, Principal Investigator at the CONNECT SFI Research Centre for Future Networks and Communications, UCD.

Professor Anding Zhu

was made a Fellow of the world's largest professional organisation for electronic and electrical engineering, the Institute of Electrical and Electronics Engineers (IEEE). A Principal Investigator in the CONNECT SFI Research Centre for Future Networks and Communications at UCD, his research is focused on future wireless communications.

€9 million EU research project examines impact of undersea noise



The Celtic Voyager vessel – image credit: BBC Storyworks

Dr Gerald Sutton from MaREI, the SFI Research Centre for Energy, Climate and Marine at UCC, is the lead researcher on a €9 million EU project focused on analysing and reducing undersea noise from shipping. Dr Sutton and his team are investigating assessment of damage to marine life as part of the ‘Saturn’ project, following a recent world review in *Science* that found a massive decline in the abundance of sound-producing animals.

Studies of mass strandings of beaked whales on Irish and Scottish coasts, show that they are believed to have occurred following military exercises at sea, using anti-submarine sonar. This is linked to stressed animals altering their diving patterns, triggering physiological changes that lead to stranding. Shocks come from oil/gas exploration, and along with noise from ship propellers, pile driving for offshore wind turbines also causes issues, as monitored by the Marine Institute’s research vessel, Celtic Voyager. The study is providing vital information as offshore windfarm policy is developed into the future.

Excellent Talent and Skills

By funding consistently excellent and impactful research, SFI has played a key role in building Ireland's research and innovation capabilities. From training highly sought-after PhD students to supporting early career frontiers researchers and senior research leaders, SFI is working to attract and retain the best talent. This is delivering tangible benefits to Ireland today and into the future.

Collaborating with the higher education institutes, government and industry, SFI supports the development of a wide range of inclusive STEM career pathways, creating a diverse scientific, research and innovation workforce which is welcoming to all. SFI aims to shape a cohesive and vibrant research ecosystem with a common purpose and vision.

5,647

People working on SFI-supported projects

2,111

Postgraduate (PhD and Masters) students supported by SFI

35%

of PhD and Masters students departing SFI teams went to industry as their first destination



163

PhD students were recruited across six SFI Centres for Research Training, bringing the total number of students supported to 476. 42% of these are female.

554

SFI award holders

777*

Funded Investigators and Co-Principal Investigators

86

PhD students were supported across seven EPSRC-SFI Centres for Doctoral Training

**excludes Co-PIs and FIs who are award holders*



SFI Research Professor, Prof Dimitra Psychogiou, at Tyndall National Institute, UCC.

World-leading expert in radio frequency and wireless communication joins UCC

In 2021, Prof Dimitra Psychogiou was awarded a prestigious SFI Research Professorship to spearhead a pioneering research programme at Tyndall National Institute and UCC.

A world-leading expert in radio frequency and wireless communication, Prof Psychogiou is the first woman to be appointed Professor of Engineering at UCC and the first woman SFI Research Professor.

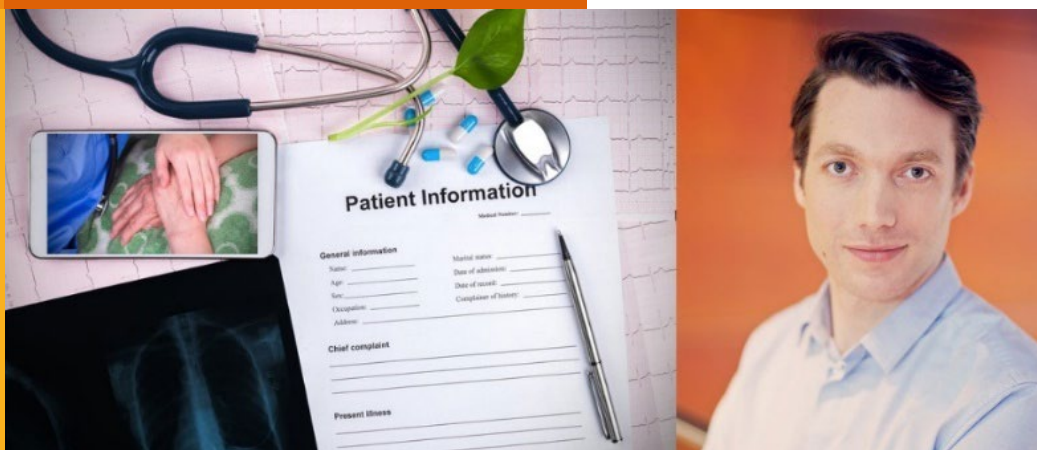
Prof Psychogiou and her research team will work to solve the challenge of spectrum scarcity while enabling wireless connectivity to more devices and applications. Her research will help lead to lower-cost broadband wireless infrastructure, which will make digital and internet services more accessible to the general public and support broadband access for underserved rural areas.

SFI Frontiers for the Future Programme improving gender balance in research

In 2021, 70 research grants valued at €46 million were made through the SFI Frontiers for the Future Programme. This will support individual-led research in areas such as childhood ADHD, future coastal sea levels, next generation batteries, future proofing crops, and the link between obesity and cancer. 46% of the grants will be led by women researchers and 33% by emerging investigators early in their research careers.

The programme will support 188 people in varying research positions across nine Higher Education Institutions, including RCSI University of Medicine and Health Sciences, UCD, Maynooth University (MU), TCD, UL, NUI Galway, UCC, Technological University Dublin (TUD), and DCU. The programme is led by SFI and run in collaboration with Geological Survey Ireland (GSI) and the Sustainable Energy Authority of Ireland (SEAI) who are co-funding a number of the grants, and has 38 industrial collaborators.

Tangible Benefits:



Dr Tim Jacquemard was a Postdoctoral researcher working with the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases, seconded under the SFI Public Service Fellowship in 2021.

Researchers collaborating to inform public policy

The SFI Public Service Fellowship programme offers academic researchers a unique opportunity to be seconded to government departments, agencies and the Library and Research Service of the Oireachtas, to work on specific collaborative research projects. The aim is to foster innovation within the public sector by supporting the development and implementation of data-driven and evidence-based approaches.

In 2021, a number of reports were produced by the seconded researchers in residence.

Dr Boris Galkin, a research fellow at the Connect SFI Research Centre for Future Networks and Communications, authored a report on the economic, social and ethical implications of unmanned aerial vehicles, commonly known as drones.

Examining the emerging technology of drones and their rapid proliferation into the consumer and commercial sectors, he explored examples of the real-world impact of drone use and the evolving legislation governing drones in Ireland. The report outlined the benefits of this technology such as their use in emergency or rescue scenarios. It also examined negative impacts and the need for regulation. Read the report [here](#).

NUI Galway law lecturer, Dr Rónán Kennedy, studied the economic, social and ethical implications of rapidly developed software for legal services, known as 'lawtech' in the Irish legal services market. Examining the development of lawtech software, which could reduce legal costs and improve access to justice, he found it could also worsen the digital divide and solidify existing biases in the legal system. His research highlighted possible areas for legislative intervention. Read the report [here](#).

Dr Tim Jacquemard, a Postdoctoral researcher working with the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases, investigated the social and ethical implications of the use of eHealth (electronic or digitised health technologies) in Ireland. His report set out a framework for understanding the social and ethical implications of these new technologies, to help avoid undesirable outcomes, such as a privacy breaches and wasted resources. Read the report [here](#).

Pathways to building a cohesive research ecosystem



A €23 million investment to [support post-doctoral researchers to become research leaders](#) was announced in 2021. This collaborative programme is co-funded by SFI and the Irish Research Council (IRC), and will see 40 early career researchers across all disciplines, developing cutting-edge projects over a four-year period.

The new joint programme, which is led by SFI, will ensure greater cohesion across Ireland's research performing institutions. It is focused on promoting women researchers in academia, supporting equality, diversity and inclusion across the higher education sector.

Collaborative Fellowship Programme brings data solutions to neuroscience

The [NeuroInsight Fellowship programme](#) was established by FutureNeuro, the SFI Research Centre for Chronic and Rare Neurological Disease hosted by RCSI University of Medicine and Health Sciences, in partnership with the Insight SFI Research Centre for Data Analytics. The transdisciplinary collaboration will deliver an integrated and applied training programme for research fellows, building upon respective health and data analytics expertise. Collectively, the Centres already support over 500 researchers who are working on a new generation of neuroscience and data analytics technologies. The Fellowship will offer 24-month placements to 33 experienced researchers from around the world.

Education and Public Engagement

SFI believes that science, technology, engineering and maths (STEM) is for everyone. This includes creating a diverse scientific, research and innovation workforce, as well as bringing science to life for all. SFI supports and delivers STEM engagement activities across Ireland, championing best practice in STEM education, and promoting curiosity across all age groups and education levels.

By inviting the public to join a conversation about research through campaigns such as Creating our Future, and supporting researchers in engaging with the public, SFI aims to increase the accessibility to publicly-funded scientific content and encourage open dialogue with citizens. Working with a broad range of stakeholders and communities during 2021, SFI supported both in-person and virtual activities, creating opportunities for innovative collaboration and reaching new audiences.

€3.7

million invested in 47 STEM projects through the annual SFI Discover Programme Call.

4,389

education and public engagement activities delivered by SFI-funded researchers.

2,109

Science Week events took place across the country.

335

primary schools received an SFI Discover Primary Science and Maths (DPSM) award.

881

primary school teachers received continuous professional development (CPD) training through the SFI-supported DPSM/European Space Education Resource Office (ESERO) programme.

237

second level teachers attended ESERO space-themed continuous professional development.

2,385+

senior cycle students attended ESERO Space Career Roadshows

STEM Passport for Inclusion

Young women from socially or economically disadvantaged backgrounds do not traditionally access STEM careers, often due to a lack of role models and limited availability of STEM subjects in their educational settings. The STEM Passport for Inclusion project supports young women through a multi-strand approach. Supported by the SFI Discover Programme Call, it is led by Maynooth University with partners Munster Technological University (MTU), the RDI Hub, Accenture, Microsoft and TeenTurn. Almost 500 girls participated in 2021 and the programme aims to reach 15,000 young women from disadvantaged backgrounds over a three-year period. It is also part of the Microsoft Ireland-Maynooth University Digital Wealth school's outreach programme.



6th year students, Beauty Ihekwereme, Sinead Keane, Roisin Keane, and Kelechi Unaegbu, from Firhouse Community College, participated in the STEM Passport for Inclusion Programme. Image: Naoise Culhane Photography.

STEAM Art Collaboration

The Discover Primary Science and Maths programme and SFI's Research Centres created a [new initiative at the interface of STEM and the Arts \(STEAM\)](#). Five artists each paired up with an SFI Research Centre to create a work to interpret aspects of the Centre's research. This inspired audiences to delve into science and art, and the possibilities these collaborations present for the future of our world. Each of the artists took part in an online ['In conversation with' video series](#).



'The Invisible made Visible' is a lino-printing artwork that explains the scientific process of COVID-19 testing. It was created by Shevaun Doherty, a botanical and natural history artist who worked in collaboration with APC Microbiome Ireland.

Tangible Benefits:



Pictured l-r at the launch of Creating our Future: Director of Science for Society at SFI, Dr Ruth Freeman; Director General of the Irish Universities Association, Jim Miley; Taoiseach Micheál Martin, TD; Deputy Director General of SFI, Dr Ciarán Seoighe; Director of the Irish Research Council, Peter Brown; Chair of the Creating Our Future Advisory Forum, Julie Byrne; and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD.

A public conversation about future research



As we set out on an ambitious and transformative path to build capacity and capability across the entire research and innovation system in the coming years, it is vital that everyone has an opportunity to contribute.”

Taoiseach Micheál Martin, TD

Creating Our Future was a first-of-its-kind initiative in Ireland brought forward in 2021 by Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD. As an ‘all of Government’ endeavour, the aim was to create an opportunity for the people of Ireland to contribute to the future direction of Irish research and innovation. People and communities across the country were invited to submit ideas through a dedicated online portal, facilitating a national brainstorm about what researchers can do to help create a better future.

SFI acted as operational lead for the campaign, engaging a diverse network of stakeholders. This included the formation of a Steering Committee led by the Department of Further and Higher Education, Research, Innovation and Science, an Advisory Forum comprised of representatives from just under 80 organisations, and an Expert Committee comprised of individuals with a diverse range of expertise and interests.

The Creating Our Future Roadshow visited every county in Ireland and over 1,500 online and in-person brainstorms and events were held to gather ideas. An aspirational target of 10,000 submissions was set based on the experiences of similar exercises in other countries.

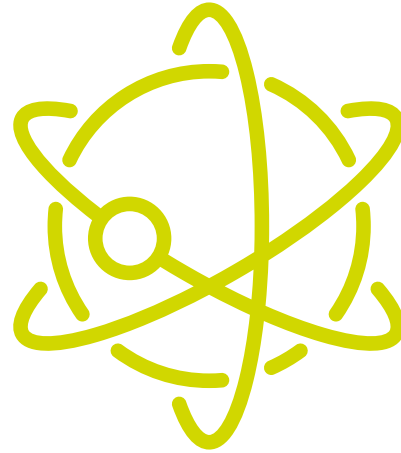
The public responded with great enthusiasm and over 18,000 submissions were received. A committee of experts examined each idea, working to ensure no bias would be introduced. The analysis of submissions that followed will inform future research and policy areas. It has provided a deeper understanding of the public’s feelings about the opportunities that science and technology present, as well as the anxiety felt about the uncertainty of our challenging future. A strong belief that research has a key role to play in creating a better, inclusive and more sustainable future was evident. The campaign has connected stakeholders together in a nationwide collaboration, consulting the public and helping to build a more cohesive and informed research ecosystem.

Global Footprint

In 2021, SFI continued to build strategic international collaborative research partnerships across the globe. By expanding the international footprint of Irish research, SFI is attracting top global research talent, building researchers' networks and increasing access to international funding opportunities.

While adapting to the implications of Brexit and global challenges such as climate change and the post-COVID-19 economic recovery, SFI's international partnerships are delivering positive economic and societal impacts. Showcasing Ireland's excellent research capabilities, this includes supporting the Government's Programme for a Shared Island research corridor.

SFI's international collaborations have extensive global reach: Europe (68.34%); North America (18.19%); Asia (8.32%); Australia and Oceania (2.96%); South America (1.42%); Middle East, North Africa, and Greater Arabia (0.14%); Central America and the Caribbean 0.19%; and Sub-Saharan Africa 0.44%.



8,005

academic-academic collaborations reported by SFI researchers. 71% of these with international partners.

50%

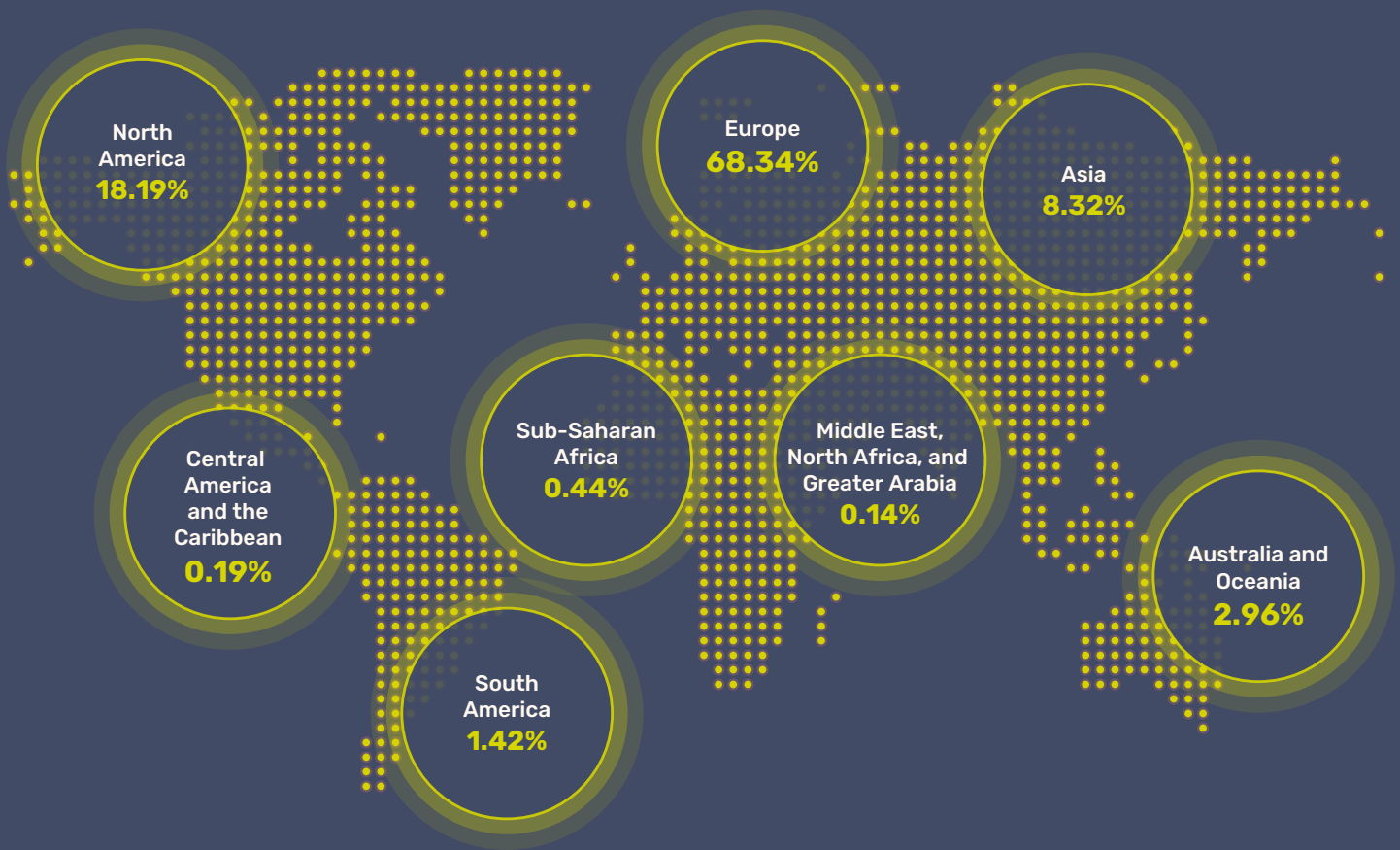
of non-academic engagements were with partners outside of Ireland.

11% with the US, 10% with the UK and 29% with other countries.

503

SFI-funded researchers were involved in or organised 828 workshops and conferences (62% were virtual).

2021 International Academic Collaborations



Top 20 International Academic Collaborations by Country 2021

United Kingdom (excluding Northern Ireland)	1,054
United States of America	908
Germany	522
France	354
Spain	318
Italy	297
Northern Ireland	234
Netherlands	213
China	147
Sweden	143
Australia	134
Canada	130

Switzerland	118
Denmark	115
Belgium	108
Portugal	76
Austria	67
India	56
Poland	54
Brazil	52

SFI US-Ireland Programme

In 2021, seven awards were made with a joint investment of €13.5 million through a tripartite research and development partnership between the United States of America (USA), Republic of Ireland (RoI) and Northern Ireland (NI), which will support more than 60 research positions across 14 research institutions, for three to five years. The programme focuses on prioritised thematic areas, including sensors, nanoscale science and engineering, telecommunications, cybersecurity, energy and sustainability, and health.

The US-Ireland Research and Development Partnership, launched in July 2006, is a unique initiative that aims to increase the level of collaborative R&D amongst researchers and industry professionals across the three jurisdictions. The partner agencies for the 2021 awards were SFI and the Health Research Board (HRB) in the Republic of Ireland; the National Science Foundation (NSF) and National Institutes of Health (NIH) in the USA, and the Health & Social Care R&D Division (HSC R&D) and the Department for the Economy (DfE) in Northern Ireland.

SFI St. Patrick's Day Science Medal

Taoiseach Micheál Martin, TD presented the prestigious SFI St. Patrick's Day Science Medal to Prof William C Campbell, a recipient of the 2015 Nobel Prize in Physiology or Medicine, and to Mr Vincent T Roche, President and Chief Executive Officer of Analog Devices, Inc. The Medal recognises distinguished Irish scientists, engineers or technology leaders living and working in the USA, for their significant scientific contributions to academia and industry.



William C Campbell (Image: Shelly Kusnetz) and Mr Vincent T Roche, Analog Devices Inc. winners of the SFI St Patrick's Day Science Medal 2021.

UK-Ireland Partnerships

Throughout 2021, SFI continued to work in partnership with UK research bodies, supporting research beyond borders and strengthening bilateral research collaborations. SFI continues to support cross-Government activities to support the research community and provide opportunities for joint research partnerships, to benefit all communities.

Five awards were made under the **Engineering and Physical Sciences Research Council (EPSRC) - SFI Joint Funding Research Programme** with an investment of €2.29 million for researchers based in UCD, UL, TCD and the National Institute of Bioprocessing Research and Training (NIBRT). This will support research in the areas of marine science, materials science for personalised medicine, gene control in synthetic DNA circuits, intelligent robotics for ground investigation, and efficient biopharmaceuticals production.

Two new awards were made through the prestigious **Royal Society-SFI University Research Fellowship Programme**, with €1.157 million invested.

The scheme was established to identify outstanding early career scientists who have the potential to become leaders in their fields and provide them with the opportunity to build an independent research career. Research fellows will conduct research projects spanning the physical, mathematical and chemical sciences. **Dr Christiana Pantelidou (UCD)**, will investigate the key concepts and quantities involved in gravitational turbulence and model their consequences on black hole collisions in the universe; and **Dr Michael Gibbons (TCD)**, will harness data centre waste heat to produce usable energy that will reduce data centre energy requirements and carbon emissions. Two further University Research Fellowship renewals were made. These were to Dr Morgan Fraser (UCD) and Dr Richard Hobbs (TCD) with €.79 million invested in the areas of astronomy and plasmonic nanoantennas for ultrafast electronics, respectively.

Tangible Benefits:



OpenIreland-COSMOS transatlantic partnership to improve internet networks

A spectrum analyser used to perform experiments in real-world outdoor scenarios as part of the OpenIreland testbed.

“

“This is the first time that two advanced networking testbeds, based on open technology, are connected in this way for use by academics and industry partners anywhere in the world. These testbeds are powerful as they allow us to move from simulated experiments to real life, city-wide environments and carry out experiments on OpenRAN 5G networks, both outdoor and indoor, using actual 5G licensed spectrum, in addition to optical networking, transmission networks, and edge cloud computing. One of the key aspects of our testbeds is that they enable experimentation across wireless, optical and computing domains, providing a realistic end-to-end scenario, which is ideal also for carrying out advanced proof of concepts.”

Prof Marco Ruffini, Principal Investigator, TCD

A new transatlantic partnership commenced in 2021 will see the SFI-funded OpenIreland telecoms testbed at the CONNECT SFI Research Centre for Future Networks and Communications at TCD connect physically with the National Science Foundation-funded COSMOS testbed in New York City. Researchers will use data from the two testbeds to develop machine learning algorithms capable of predicting physical layer network behaviour. These algorithms have the potential to provide more reliable and sustainable internet networks, using technology for the public good.

Investigators at CONNECT, led by Profs Marco Ruffini and Dan Kilper, have partnered with Prof Gil Zussman at Columbia University and Ivan Seskar at Rutgers University to interconnect the two smart city testbeds, creating a cross-Atlantic, international research environment. The partnership is funded by NGI Atlantic, which supports EU-based researchers working with US research teams in carrying out Next Generation Internet experiments. NGI Atlantic is coordinated by South East Technological University Waterford and supported by the EU's Horizon 2020 NGI initiative. The two testbeds are physically connected through the HEAnet national research network in Ireland, FABRIC in the USA, and the pan-European GÉANT network.

Driving Competitiveness in Research

Ireland's societal and economic wellbeing requires excellent research and innovation to help us compete for the best global talent, international funding and foreign direct investment. SFI is fostering a cohesive research and innovation ecosystem that supports Ireland's competitiveness. This drives job creation, the growth of small and medium enterprises and academic-industry research partnerships, to achieve our national goal to be an Innovation leader. The research SFI supports leads to better technologies, new products, new processes and improved services, which in turn advances Ireland's knowledge economy and builds resilience for the future.

Non-academic engagements



3,092
industry
engagements
(national and
international)

2,522
distinct
organisations

1,588
with
multinational
companies

1,504
with
small-medium
enterprises

Innovation and Commercialisation



SFI-funded researchers have delivered:

13
spin-out
companies

68
patents filed

90
licenced
technologies

204
invention
disclosures

€35 million investment for research infrastructure

Transformative research, which will have both a national and international impact, is being supported through a €35 million investment in 20 research infrastructure projects. Funded by the [SFI Research Infrastructure Programme](#), the awards will support the research community in Ireland by providing sustained access to cutting-edge infrastructure and equipment that will enhance high-quality research activities and innovation in areas of strategic importance.

Among the projects funded is a national rechargeable battery fabrication and test facility at UL, co-funded by SEAL; a Teagasc national soil greenhouse gas test platform to examine the efficacy of a range of novel fertiliser, bioactives, bio-stimulants, manure and digestate additives; and a Centre of Excellence in multimodal microscopy at NUI Galway. The programme facilitates partnerships and collaboration across Ireland between different cohorts of researchers, such as between universities, technological universities, Institutes of Technology, other eligible research bodies, and researchers in the Republic of Ireland and Northern Ireland.

SFI Strategic Partnership Programme

In 2021, two awards were made under the SFI Strategic Partnership Programme with a value of €18.4 million direct costs, with 50% funding from SFI and 50% from co-funding partners. The programme aims to support large-scale research initiatives with strong potential for delivering economic and societal impact to Ireland, in partnership with key stakeholders, such as industry, charities, philanthropic organisations, and higher education institutes.



Prof Sarah Doyle, Associate Professor in Immunology at TCIN, is a co-lead applicant on the EYE-D SFI Strategic Partnership.

The **EYE-D SFI Strategic Partnership** award, valued at €2.4 million direct costs with co-funding from industry and charity partners, focuses on the study of retinal disease. It is led by Prof Matthew Campbell, from the Smurfit Institute of Genetics at TCD, and Associate Prof in Immunology, Sarah Doyle, from the Trinity College Institute of Neuroscience (TCIN). Prof Doyle is also a previous SFI Technology and Innovation Development Award (TIDA) holder.

The project aims to uncover new insights into degenerative retinal diseases and identify new therapeutic treatments and drug delivery methods for Age Related Macular Degeneration (AMD), glaucoma, and retinal degenerations more broadly. It aims to expedite the clinical deployment of therapeutics, bringing together three multinational companies, a private clinic and a charity, as well as supporting nine research positions over a four year period.



Pictured l-r: Prof Andrew Keane, Director of NexSys and UCD Energy Institute, and Prof Aoife Ahern, UCD College Principal of Engineering and Architecture and senior researcher on NexSys.

The **Next Generation Energy Systems (NexSys) SFI Strategic Partnership**, valued at €16 million, is led by Prof Andrew Keane, at the School of Electrical and Electronic Engineering, UCD Energy Institute. The partnership aims to guide the energy sector's transition towards net zero carbon by 2050 in Ireland. It is the first ever second-term award to be funded under this programme, building on the foundations developed by a previous Strategic Partnership award, ESIPP.

Co-funded by nine industry partners, and a philanthropic partner, there are also 40 non-funding collaborators involved in the project. It will support 107 research positions over five years and includes academic collaborators from 15 international institutions. Its higher education institution partners in Ireland are DCU, the Economic and Social Research Institute (ESRI), MU, NUIG, TCD, UCC and UCD. The co-funding secured by NexSys represents the single largest philanthropic donation to an SFI Programme to date (€5 million).



Ireland's first manufacturing-focused Future Wireless Innovation Test-Bed

The Confirm SFI Research Centre for Smart Manufacturing hosted by UL, in collaboration with Netmore, launched a Future Wireless Innovation Test-Bed, located within the UL Digital District. The Test-Bed will be used to explore technologies with the potential to improve manufacturing environments. It will support the creation of smarter factories by utilising the latest wireless technologies such as 5G, 6G and Wifi6. Early tests included an Autonomous Intelligent Vehicle (AIV) controlled on a 5G network at the Confirm SFI Research Centre, demonstrating the viability of integrating 5G as a wireless signalling system within a manufacturing environment.

Tangible Benefits:



Empower SFI Spoke promoting data governance leadership

Empower, a new €10 million academic-industry SFI Spoke research programme, was launched by Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, to futureproof EU data flows and drive innovations in data protection internationally. Focusing on data platforms, data governance and ecosystems, it involves researchers from four SFI Research Centres: Insight, the SFI Research Centre for Data Analytics; the ADAPT SFI Research Centre for AI-Driven Digital Content Technology at TCD; FutureNeuro, the SFI Research Centre for Chronic and Rare Neurological Diseases at RCSI University of Medicine and Health Sciences; and Lero, the SFI Research Centre for Software at UL, which will lead the programme.

Empower will explore how intelligent systems that use shared data within data ecosystems are designed and implemented. It brings together multidisciplinary research in data governance from across the participating SFI Research Centres, in areas such as software development, health, biotech, fintech, medtech, agritech, smart city tech, mobility, media and publishing, sports performance, automotive, and construction.

Speaking of the programme, Empower Director, Prof Markus Helfert based in Maynooth University, said:

“Data ecosystems, such as smart cities or connected health networks, present new challenges that require a fundamental reconsideration of how we manage and use data. While an effective data ecosystem can empower the exchange of knowledge from organisations and individuals, data movement can also give rise to risks that need to be managed from a socio-ethical perspective.”

The amount of data in the world continues to grow, presenting ongoing challenges for citizens, governments and industry, who seek access to the highest quality data available to inform decision making.

Empower is an important national initiative that aims to ensure that Irish research leaders in data governance are at the forefront of addressing these challenges. The programme will facilitate collaborative, transparent and citizen-centric opportunities for the benefit of society.

Partners collaborate to monitor air quality

The Insight SFI Research Centre for Data Analytics at DCU announced a collaboration with DPD Ireland to provide real-time data analysis of air pollution in Dublin. The data is captured by air monitoring sensors installed on buildings and delivery vans across Dublin City, in partnership with universities, Dublin City Council and the Environmental Protection Agency.

The sensors capture particulate matter levels in real time and transmit the data to a database that produces air quality maps. Hotspots, or areas of high pollution, are also produced which may be useful for people with respiratory health issues. Dr Aoife Morrin, Associate Professor at the School of Chemical Sciences at DCU, and Director of the National Centre for Sensor Research (NCSR) is an SFI-funded Investigator with the Insight SFI Research Centre and leads the air quality project.



Dr Aoife Morrin, Associate Professor at the School of Chemical Sciences at DCU.

SFI Industry RD&I Fellowship Programme

Following on from the successful SFI Industry Fellowship programme, a new funding programme was launched in 2021, to support research, development and innovation (RDI) in industry.

The SFI Industry RD&I Fellowship provides the opportunity for companies across the world to host an academic expert at various stages of their career who have attained a PhD. It provides for Fellowship placements of up to one year full-time, or 24 months part-time, facilitating cutting-edge, industry-informed research and the sharing of knowledge and expertise.

The 2021 call funded 27 awards with an investment of €2.1 million for research in projects across a variety of areas including microbiology, virtual reality (VR), biotechnology, coastal erosion, breast cancer, photodynamic therapy and more. The programme which is supported by IDA Ireland will enable the temporary placement of academic researchers in 19 industry partner companies, which include Analog Devices, Huawei, Boston Scientific and a number of Irish SMEs, providing co-funding with a combined value of €1.9 million.

SFI generating value for money

SFI-funded researchers continued to demonstrate scientific excellence, research relevance, return on investment and value for money in 2021.

- ▶ SFI-funded researchers won €234 million from diverse sources.
- ▶ SFI-funded researchers secured €82.3 million in funding from EU sources.
- ▶ Funding from private enterprise was €63.6 million.
- ▶ The ratio of funding from Non-Irish-Exchequer to Irish Exchequer is (2.4:1).
- ▶ The ratio of national funding to International funding is (1:1.26).
- ▶ In 2021, SFI Research Centres signed 116 collaborative research agreements (CRAs), of which 69 were with international companies and had an industry commitment of €32.9 million.

**SFI-funded researchers won
€234 million
from diverse sources**

External Funding Secured by SFI-Funded Researchers 2021

Source	Funding secured
European Union	€82,280,205
Private Enterprise	€63,655,189
Enterprise Ireland – Commercialisation and Non-Commercialisation Awards	€30,509,052
Other Irish Government Source	€10,174,759
Irish Research Council	€7,607,222
Higher Education Authority Ireland	€7,264,904
Charity/Non-Profit Organisation (Irish)	€6,047,615
Marine Institute	€5,648,193
Charity/Non-Profit Organisation (International)	€3,646,924
Health Research Board	€3,232,105
Department of Agriculture, Food and the Marine	€2,980,536
Other International Interest Organisation	€2,911,247
Other International Government Source	€2,910,983
Wellcome Trust	€2,245,690
Environmental Protection Agency	€1,377,134
National Science Foundation US (NSF)	€831,135
Teagasc	€379,551
Department of Communications, Energy and Natural Resources (DCENR)	€325,000
National Institute of Health USA	€22,000
Grand Total	€234,049,444

- ▶ The BiOrbic Bioeconomy SFI Research Centre launched the €2.3 million Talent4BBI Marie Curie PhD COFUND programme. This industry-led PhD/MSCA programme offers a unique opportunity for graduates to thrive in both industrial and academic research settings.
- ▶ €4.4 million was competitively won by the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases at RCSI University of Medicine and Health Sciences under the EU Future and Emerging Technologies (FET) programme. The PRIME (Personalised Living Cell Synthetic Computing Circuit for Sensing and Treating Neurodegenerative Disorders) project led by the Walton Institute at the South East Technological University Waterford, will develop an implant to predict chronic and recurring seizures in epilepsy.
- ▶ In 2021, the European Strategy Forum on Research Infrastructures (ESFRI) approved the recommendation to include 11 new projects onto the ESFRI Roadmap, two of which will, for the first time, be coordinated through Ireland. The Mariner-i project will be led out of Cork through MaREI, the SFI Research Centre for Energy, Climate and Marine hosted by UCC. It will develop a plan for an integrated European Research Infrastructure designed to facilitate the future growth and development of the offshore renewable energy sector.
- ▶ The Growing Up in Europe (GUIDE) project is the first European-wide longitudinal study of children, which will include an investigation into the effects of Long Covid. Ireland will lead on this project through UCD, along with national support provided through the Department of Children, Equality, Disability, Integration and Youth. Both projects will receive significant levels of European and national funding over the next decade.

Tangible Benefits:



Prof Jennifer McElwain, a Principal Investigator with the iCRAG SFI Research Centre for applied Geosciences at TCD, won a highly prestigious European Research Council (ERC) Advanced Grant. Her TERRAFORM project will help measure land plants' impact on the carbon, nutrient and hydrological circles in deep time.

European Research Council (ERC) success

During 2021, five Ireland-based researchers were awarded ERC grants totalling €10.2 million, with four of the five won by SFI-funded researchers. The final ERC results from the Horizon 2020 (H2020) work programme were announced in 2021, with a final national tally of over €173.5 million at H2020 close, well beyond the indicative targets. Through H2020, which ran from 2014 to 2020, 100 ERC projects were funded for Ireland-based researchers, 65 of which were awarded to SFI-funded researchers. The new Horizon Europe framework programme will run from 2021 to 2027.

Four Ireland-based researchers were successful in being awarded over €10 million through ERC Advanced grants, the final major ERC call of the H2020 Programme and the only major call results announced in 2021. Three of the Advanced Grant awardees are SFI and STEM associated researchers based in TCD.

They are Prof Daniel Kelly, an Investigator in the AMBER SFI Research Centre for Advanced Materials and BioEngineering Research, who was also a previous recipient of SFI's President of Ireland Young Researcher Award, along with Prof Jennifer McElwain, an Investigator in the iCRAG SFI Research Centre for Applied Geosciences at TCD and Prof Seamus Martin, Smurfit Chair of Medical Genetics, who has also been successful in several SFI calls. Prof Kelly has previously won ERC Starter, Consolidator and Proof of Concept awards, while Prof McElwain has previously won ERC Starter and Proof of Concept awards. A fourth Advanced Grant was won in 2021, in the Social Science and Humanities domain through UCD.

Prof Jonathan Coleman, lead PI at AMBER, the SFI Research Centre for Advanced Materials and BioEngineering Research, and the School of Physics at Trinity, secured an ERC Proof of Concept grant announced in early 2021, following on from his Advanced award in 2015.

SFI holds the National Delegate role for ERC and is the National Contact Point for both the Life Sciences and the Physical Sciences.

Tangible Benefits:



A challenge-funding model for a sustainable future

The development of challenge-based research funding is an ambitious initiative that seeks to support Ireland's best and brightest researchers in developing novel solutions to significant societal challenges.

In 2021, SFI launched challenge-based funding calls to address major societal challenges in the areas of climate change, sustainability, and the responsible use of data and AI.

The new SFI €2.47 million Sustainable Developments Goals Challenge, launched in partnership with Irish Aid, supports academic researchers to develop solutions that contribute to the UN Sustainable Development Goals. Seven research teams are developing innovative solutions to health and well-being issues, including infectious diseases, mental health, and in related areas such as malnutrition and water sanitation. They represent international collaborations between research institutes in Ireland and those in Irish Aid partner countries: Malawi, Uganda, South Africa, and Vietnam.

The ground-breaking €2.4 million SFI-Defence Organisation Innovation Challenge was also launched in partnership with the Department of Defence and the Irish Defence Forces.

In the first phase, ten successful research teams from around Ireland were connected with members of the Defence Forces to develop solutions to identified challenges, such as the Recovery of Rigid Hull Inflatable Boats (RHIBs) at sea and the reduction of the environmental impact of Defence Forces aircraft, land vehicles and marine vessels.

In the area of climate change and sustainability, Prof Kevin O'Connor and his team at UCD were awarded €2 million under the SFI Future Innovator Prize. Their Farm Zero C project is helping a dairy farm achieve net-zero emissions by 2027. Partnering with Carbery Group, they studied how planting different types of grasses and hedgerows can boost biodiversity and soil health, as well as how livestock feed can affect methane gas production. The project aims to work with a further 5,000 farms within five years.

A ground-breaking AI-based satellite imagery analysis tool (TAPAS) that measures climate change adaptation in agriculture was named winner of the SFI Future Innovator Artificial Intelligence (AI) for Societal Good Challenge. Dr Aaron Golden and Prof Charlie Spillane at NUI Galway were awarded €1 million for their interdisciplinary project, which is co-funded with Irish Aid under SFI's partnership with the Department of Foreign Affairs.

SFI Research Centres

The network of 16 world-leading SFI Research Centres is making important scientific advances, enhancing enterprise, and training students with critical, in-demand skills. It support regional development, and enhance Ireland's international reputation.

The SFI Research Centres link scientists and engineers in partnerships with 1,023 research bodies across the globe. This includes 12 universities, two Higher Education Institutes, one Institute of Technology and seven other research bodies in Ireland.

This represents a cumulative SFI investment of €684 million and an industry commitment of €638 million, since 2013. The Centres have to-date signed 1,218 collaborative research agreements (CRAs) with 683 companies around the world, 355 of which are in Ireland.



Combined cumulative outputs for SFI Research Centres to end of 2021

Key Outputs	Cumulative to 2021
Journal Publications	12,741
Conference Publication	6,331
MSc/MEng Graduates	222
PhD Graduates	1,631
% Trainee Departures to Industry	34.1%
EU Participation	585
EU Coordination	143
ERC Awards	53
EI Commercialisation Awards	469
License Agreements	322
Spin Outs Incorporated	50

Cost-Share and Leveraging	Result	Target	Success
Total Industry Funding in Cash Received	€122.5 million	€87.7 million	140%
Total Industry Funding Received	€287.5 million	€225 million	128%
Non Exchequer-Non Commercial Funding	€378.0 million	€380.8 million	99%

SFI Research Centres have to-date secured:

€378 million in non-exchequer, non-commercial funding

€287.5 million from Industry

469 EI Commercialisation Awards

322 Licence agreements

50 Spin outs

22 SFI Spoke Awards

To date, SFI Research Centres have:

participated in **728** major EU-funded initiatives and cumulatively won **53** prestigious European Research Council (ERC) awards.

drawn down approximately **€278 million** in cumulative Horizon 2020 funding and have an industry commitment of **€638 million**.

SFI Policy Updates

Improving gender equality, diversity and inclusion in SFI



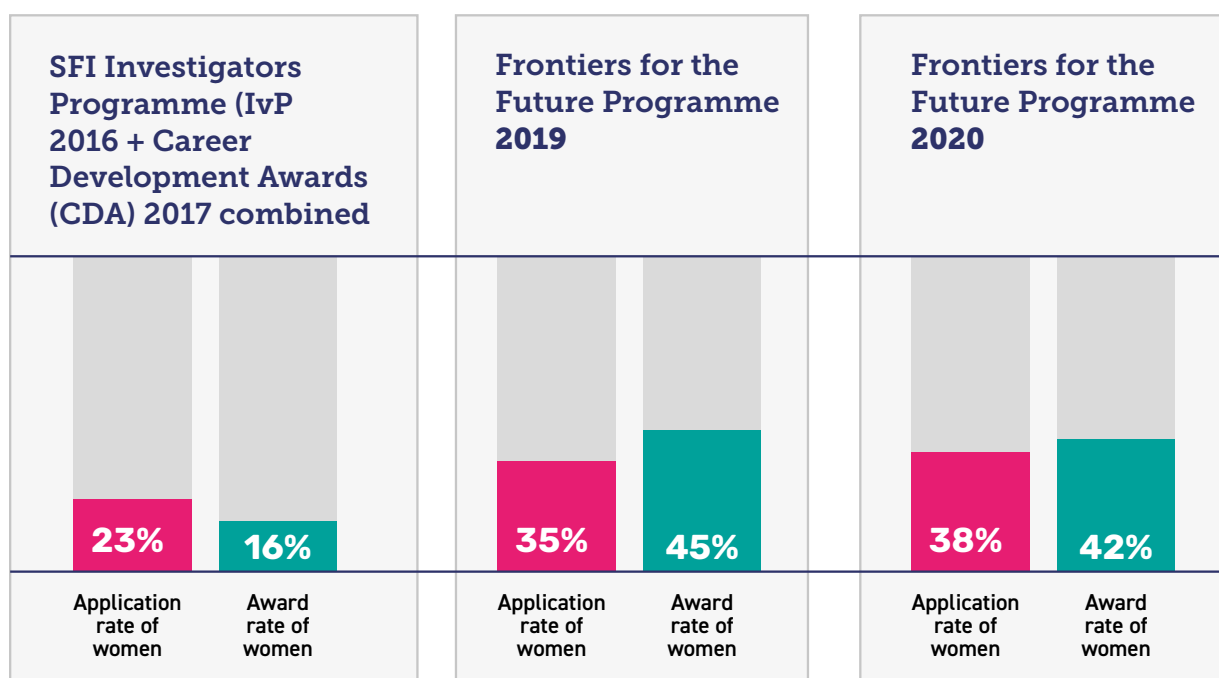
SFI's Strategy 'Shaping Our Future 2025' has set an ambitious target of attaining at least 35% women by 2025 as research leaders to ensure a more equal, diverse and inclusive research ecosystem, and to reflect the diversity of Ireland's Higher Education Institutions.

In 2021, 28% of SFI award holders, reflecting both Principal and co-Principal Investigators, were women, while 40% of SFI award team members were women.

SFI has initiated an external expert review of the SFI Gender Strategy 2016-2020 and is working on the development of a comprehensive Equality, Diversity and Inclusion Strategy as its successor. This new strategy will outline specific actions and targets for equality, diversity and inclusion for the Foundation and will be developed in consultation with a broad range of stakeholders.

Gender initiatives undertaken in the SFI Frontiers for the Future Programme continued to support gender balance in mid to late career stage STEM researchers. In line with SFI's Gender targets, the SFI Frontiers for the Future Programme seeks to support investigators returning to research after a period of leave, through the Emerging Investigator initiative. In 2021, 46% of the research grants supported will be led by women researchers and 33% by emerging investigators.

The gender initiatives undertaken in the Frontiers for the Future Programme have contributed to a significant increase in both the number of applications from women and grants awarded to women, compared with those numbers corresponding to previous programmes for similar career stages.



Research Integrity and Research Governance

During 2021, SFI continued to work with its external advisor to review its policies and processes that support the integrity of its research investment and related outputs, including those pertaining to Data Management Plans (DMPs). A data management plan is a living document that details the procedures for careful handling of data and other research outputs and is a key element in ensuring research quality and reliability. In support of the objectives outlined in SFI's Strategy 2025, SFI developed data management plan guidance for applicants and reviewers during 2021.

Requirements for these plans at the application submission stage will be implemented during 2022 across many of SFI's Programme Calls.

SFI's Data Provenance Review is one of a number of assurance processes which support its commitment to ensuring that funded research is conducted to the highest standards of integrity and rigour. It continues to be a central component of SFI's programme progress site reviews of individual-led awards. This involves an external subject-matter expert panel studying the provenance of a dataset and engaging with the principal investigator and research team on matters concerning good research practice, training and mentoring. A review of this process was undertaken in 2021, to ensure the continued reliability and reproducibility of SFI-supported research, contributing to Ireland's reputation as a leader in research excellence. SFI also continues to review institutional policies and procedures regarding Research Integrity, training and the handling of allegations of scientific misconduct, the results of which are being shared with relevant stakeholders.

Open Science

SFI's Open Access Policy became fully aligned with the principles of Plan S, the initiative for open-access science publishing, from 1 January 2021. This meant that all SFI-funded scholarly papers submitted for publication from this date were required to be openly available immediately (without embargo) upon publication. Authors were also required to apply a Creative Commons or CC-BY copyright licence, thus ensuring the reuse and distribution of their work. In collaboration with colleagues in cOAlition S, SFI led in the development of a survey to monitor the impacts of Plan S and continues to gather data through this portal to help improve user experience.

During 2021, 75% of refereed original and review articles were openly available, as determined by Unpaywall analysis. This reflects a 15%-point increase on data arising from the same analysis undertaken in 2020 and reflects the 'open' status of publications at a point in time. As such, the term "openly available" does not necessarily translate into full alignment with SFI's Open Access Policy, which requires that publications be immediately available (no embargo) from the date of publication (gold/diamond/green) and under a CC-BY licence. SFI will continue to work with its research community to ensure that a) SFI monies do not support publications in hybrid journals which are not covered by transformative agreements, and b) a CC-BY licence is applied to all publications attributed to SFI monies, ensuring the reuse and distribution of SFI attributed research outputs.

From January 2021, SFI incorporated the Rights Retention Strategy wording into all relevant legislative and policy documents. This means that when an applicant accepts an award from SFI, they will be agreeing to SFI's Grant Terms and Conditions which take precedence over any subsequent contract such as that from a publisher. This will ensure that each and every researcher can retain the rights to their work.

SFI continues to work closely with [IReL](#), a nationally funded e-resource licensing consortium providing access to online resources to participating Irish higher education institutions. SFI has helped IReL to secure additional funding for transformative agreements where, by the close of 2021, over twenty transformative agreements had been negotiated, many with large publishing houses. Transformative Agreements are part of a suite of measures which support each and every Ireland-based researcher in maximising the exposure and impact of all Irish (publicly) funded research. Collectively these measures will support a transition to 100% Open Access as reflected in the National Open Research Forum's (NORF) actions towards attaining an open research environment. Moreover, they align with UNESCO's policy of universal access to information, thus contributing to a reduction in the gap between industrialised countries and those in emerging economies.

Governance Statement and Board Members' Report, Organisational Structure and Statutory Notices

Science Foundation Ireland Board Members

SFI Board members as of 30th April 2022



Prof J. Peter Clinch

Chairman of the Board of Science Foundation Ireland (SFI)

Prof J. Peter Clinch was appointed Chairperson of the Board of SFI in August 2019. He was previously Chairperson of the National Competitiveness Council where he served as a senior independent adviser to Government on competitiveness, trade and economic policy. Peter is a former Vice President of UCD where he holds the Jean Monnet Chair of Public Policy and he is an Affiliate Faculty member of the competitiveness programme at the Institute for Strategy, Harvard Business School. He has held visiting positions, or has been an invited speaker at, amongst others, the University of California, Berkeley and San Diego, Oxford University, Cambridge University, the University of Southern California, and the John F. Kennedy School of Government at Harvard University. Peter has advised, amongst others, the World Bank, OECD, and several national governments and agencies. He is regularly consulted on strategy by leading national and international organisations and has made significant contributions to a broad range of policy domains at national and European level. He holds first-class BA and MA degrees in economics, a PhD, a Diploma in Environmental Impact Assessment, and is a graduate of the Advanced Management Programme at Harvard Business School and the International Directors' Program at Insead. He has authored over 200 publications and papers on various aspects of sustainable economic development. In 2017, Peter was conferred with a Fellowship of the Academy of Social Sciences for distinguished research and contributions to policy.



Aidan W. Donnelly

Director of Ion Renewables Ltd.

Aidan Donnelly is a founder Director of Ion Renewables Ltd an Energy Storage company. He also has interests in a number of property and environmental start-up companies. In addition, he was Chairperson of NORA, the Irish Government agency responsible for Ireland's National Oil Reserves. Aidan has extensive experience in the development and management of technology-oriented multinationals in Ireland such as Xerox (Europe) Ltd., Quantum Peripheral Products Ltd., Puritan Bennett, Cabletron Systems, Betdaq (Global Betting Exchange Ltd.) and, most recently, ServeCentric Ltd. For over 12 years, Aidan also served in the Irish army, holding the rank of Captain in the Army Ordnance Corp. He earned an MBA (UCG), MIE (UCD) and a BSc (UCG) and is a Chartered Director (C.Dir.) with the Institute of Directors in Ireland.



Máire Geoghegan-Quinn

Former EU Commissioner for Research, Innovation and Science

Máire Geoghegan-Quinn served as the European Commissioner for Research, Innovation and Science from 2010-2014. As Commissioner, she established the 'Innovation Union' initiative; progressed the European Research Area; and delivered the largest ever research framework programme, Horizon 2020, with a 30% budget increase (€80 billion in total for research and innovation). She had political responsibility for two directorates general – the Directorate General for Research and Innovation and the Joint Research Centre. In March 2021, Máire was appointed chairperson of the governing authority of NUIG, Údarás na hOllscoile. Máire previously served as a Fianna Fáil TD for the Galway West constituency (1975–1997); and held several ministerial positions including: Minister for the Gaeltacht (1979–1981), becoming the first woman Cabinet Minister since the foundation of the Irish State; Minister for European Affairs (1987–1991); and Minister for Justice (1993–1994). She holds a Degree of Doctor of Laws from NUI Galway, a degree of Doctor of Science from UCD (both honoris causa); and the Légion d'honneur among other awards. She is a member of the European Joint Research Centre (JRC) Alumni Network and an Honorary Fellow of the Royal College of Physicians of Ireland.



Brendan Harte

Senior Vice President of Finance, ICON plc

Brendan Harte, FCA is a Senior Vice President of Finance in ICON Plc, an Irish founded global clinical research organisation with approximately 40,000 employees. He joined ICON in 2008 and has served in several global roles on the senior management team, with a focus on leading change initiatives, strategic restructuring of the business model and supporting the drive for growth and increased shareholder value. In his current role, he works on the team charged with the successful on-boarding and global integration of new business lines acquired by ICON. In previous roles, he developed and led large, multidisciplinary teams responsible for areas such as Financial Reporting, Corporate Accounting, Taxation, Statutory Compliance, and Investigator Payments. Prior to joining ICON, he worked in leadership roles with Hewlett Packard Financial Services, Accenture, and Meridian Vat Reclaim. Mr Harte is a Fellow of Chartered Accountants Ireland.



Declan Hughes

Assistant Secretary General, Department of Enterprise, Trade and Employment

Declan Hughes is a member of the Management Board of the Department of Enterprise, Trade and Employment with responsibility for promoting business innovation, disruptive technologies, research spinouts, IP and standards, inward investment and future manufacturing. He has over twenty years' experience in developing and advising on enterprise and innovation policies, including Building Ireland's Knowledge Economy, the Action Plan for Jobs and Covid business supports. He was previously head of the Indigenous Enterprise, SMEs and Entrepreneurship Division and Strategic Policy and Finance Division. He is a Board member of IDA Ireland, chair of the DTIF Advisory Committee and the Space Enterprise Coordination Committee. He has served on EU RDI committees and is a member of the OECD Committees on Industry & Innovation and Investment. Declan served on the Board of Enterprise Ireland, National Competitiveness Council, Interim Public Procurement Reform Board and Food Wise Implementation Committee and is a member of the IOD. He was formerly on the Executive Committee of the enterprise and STI agency, Forfás and head of secretariat of ICSTI. He is a first-class Masters graduate of Smurfit School of Business, UCD and of executive programmes at Wharton School of Business, Roffey Park Institute and Singapore Civil Service College. Declan was appointed to the Board on 5th April 2022.



Prof Ann Leen

Professor of Pediatrics in the Center for Cell and Gene Therapy at Baylor College of Medicine

Ann Leen is a Professor of Pediatrics in the Center for Cell and Gene Therapy at Baylor College of Medicine and an immunologist with more than 20 years of experience in developing and testing novel T-cell therapies for the treatment of viral infections and cancer. She has developed and clinically implemented immunotherapeutic strategies to treat a spectrum of diseases including myeloma, lymphoma, leukemia, pancreatic cancer and COVID-19. She is currently the principal investigator on five investigator-initiated Investigational New Drug (IND) studies and over the past ten years has served as PI on over ten clinical trials using “first in human” cell therapies for patients. She has co-founded two companies – Marker Therapeutics and AlloVir – and serves as AlloVir’s Chief Scientific Officer. Prof Leen is a senior or co-author on more than 100 peer-reviewed publications and a named inventor on 14 issued patents. She has also reviewed manuscripts for various journals and served as a grant peer reviewer for both national and international funding agencies. Prof Leen holds a PhD in Immunology from the CRC Institute for Cancer Studies in Birmingham, UK, and a BSc in Biochemistry from UCC.



Gráinne McAleese

Deputy Group CFO of UDG Healthcare plc

Gráinne McAleese is a senior business leader with experience working internationally at executive committee level in financial and leadership roles, primarily in the pharmaceutical and biotech industry. Ms McAleese is currently Deputy Group CFO of UDG Healthcare plc, a global Irish-headquartered company providing innovative outsourced services to healthcare companies. Prior to UDG Healthcare, she worked as General Manager for Ireland and Vice President of Finance with Alexion Pharmaceuticals, a rare disease US biotech company. Ms McAleese previously spent ten years working with Elan Corporation plc in the United States and Ireland in various corporate, strategic and group finance roles, and most recently as Corporate Controller and Chief Accounting Officer. Ms McAleese is a Fellow of Chartered Accountants Ireland, a Certified Public Accountant in the United States, and holds Bachelor’s and Master’s degrees from DCU.



Clíona Murphy

Vice-President R&D, Global Quality Assurance, PepsiCo

Clíona Murphy is Vice-President R&D, Global Quality Assurance, PepsiCo. In this role she is responsible for the quality policies and standards developed and deployed across the entire PepsiCo portfolio and for verifying and assuring compliance against them. She also leads PepsiCo’s Million Women Mentor programme across the world. Clíona joined PepsiCo in 1997 and has worked in a variety of R&D and Supply Chain leadership roles across the PepsiCo system in Europe, UK, China, Asia and Ireland. She is a Chartered Engineer with a Degree in Engineering from TCD, and an MSc in Food, Nutrition & Health from UCD. Clíona previously served as a member of the Teagasc Authority. Clíona is a Board Member of STEM SouthWest, a member of the Steering Committee of the Global Food Safety Initiative and a member of TCD’s Provost’s Council.



Prof Philip Nolan

Director General of SFI

Prof Philip Nolan was appointed Director General of SFI, the primary national funder of basic and applied research in the areas of science, technology, engineering and mathematics, with effect from 17 January 2022.

Previously President of Maynooth University, from 2011-2021, he established a new strategy for the University in its research, teaching and engagement activities, which saw unprecedented growth and diversification of teaching and research, and a doubling of the research capacity of the University. He has contributed to important developments in higher education in Ireland, specifically in reforming the transition from second to third level, in widening participation in higher education, and in promoting equality and diversity.

Prof Philip Nolan earned his degrees in Physiology (1988) and Medicine (1991) at UCD and was subsequently awarded a PhD in Physiology for his research on the control of breathing and the cardiovascular system during sleep. He is an accomplished researcher, with interests in physiological signal processing and control systems, and publications in the leading journals in the field. He joined the academic staff of the Department of Human Anatomy and Physiology at UCD in 1996, winning President's Awards for both Research and Teaching. He was appointed Director of the UCD Conway Institute for Biomolecular and Biomedical Research in 2003, before becoming Registrar and Deputy President at UCD in 2004, where he led an institution-wide reform of the undergraduate curriculum, the UCD Horizons programme, and was responsible for access and widening participation, postgraduate studies, international partnerships, and library and information technology services.

During 2020 and 2021, Professor Nolan was centrally involved in the management of the COVID-19 pandemic, as a member of the National Public Health Emergency Team, chairing its disease modelling subgroup. He is a member of the Royal Irish Academy, and an Honorary Fellow of the Faculty of Public Health Medicine of the Royal College of Physicians of Ireland.

Governance Statement and Board Members' Report

The Board of Science Foundation Ireland (SFI) was established under the Industrial Development (Science Foundation Ireland) Act 2003 ("the Act"). The functions of the Board are set out in section 7 of the Act, as amended. The Board is accountable to the Minister for Further and Higher Education, Research, Innovation and Science ("the Minister") and is responsible for ensuring good governance and performs this task by setting strategic objectives and targets and taking strategic decisions on all key business issues. Section 7(4) of the Act requires the Board to comply with such general directives relating to policy in the exercise of its functions as may be given by the Minister. The regular day-to-day management, control and direction of SFI are the responsibility of the Director General, the Executive Committee and the senior management team. The Board also sets the ethical tone of the Foundation by ensuring that SFI's values, good standards of governance and ethical behaviours permeate throughout the Foundation.

The Director General and the senior management team follow the broad strategic direction set by the Board and must ensure that all Board members have a clear understanding of the key activities and decisions related to the entity, and of any significant risks likely to arise. The Director General acts as a direct liaison between the Board and senior management of SFI.

Board Responsibilities

The work and responsibilities of the Board are set out in the Board Manual, which also contains the matters specifically reserved for Board decision. Standing items considered by the Board include:

- ▶ Approval of the Strategic Plan
- ▶ Oversight of operations and review of performance of the Foundation
- ▶ Approval of the Foundation's annual financial statements
- ▶ Appointing the Director General
- ▶ Declaration of interests by Members
- ▶ Receive reports from Board sub-committees
- ▶ Overseeing compliance by the Foundation with all applicable laws and Codes of Practice
- ▶ Approval of the Risk Management Policy

Section 24 of the Act requires the Board to keep, in such form as may be approved by the Minister with consent of the Minister for Public Expenditure and Reform, all proper and usual accounts of money received and expended by it. In preparing these financial statements, the Board of the Foundation is required to:

- ▶ select suitable accounting policies and apply them consistently;
- ▶ make judgements and estimates that are reasonable and prudent; and
- ▶ prepare the financial statements on a going concern basis unless it is inappropriate to presume that it will continue in operation, and state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements.

The Director General and senior management of the Foundation are responsible for keeping adequate accounting records which disclose, with reasonable accuracy at any time, its financial position and enable it to ensure that the financial statements comply with section 24 of the Act.

These accounts are approved by the Board and submitted to the Comptroller and Auditor General for audit as soon as possible after the year-end. The maintenance and integrity of the corporate and financial information on the Foundation's website is the responsibility of the Director General and senior management. The Board is responsible for approving the annual plan and budget.

An evaluation of the performance of the Foundation by reference to the annual plan and budget was carried out on 13th December, 2021. The Board, principally through the Audit and Risk Committee, has assessed the State body's principal risks including a description of these risks where appropriate and associated mitigation measures or strategies. The Foundation is adhering to the relevant aspects of the Public Spending Code. The Board, through the Director General and senior management, is also responsible for safeguarding its assets and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities. The Board considers that the financial statements of SFI give a true and fair view of the financial performance and the financial position of the Foundation as at 31st December 2021.

Board Structure and Committees

The SFI Board normally consists of a Chairperson, Deputy Chairperson and ten ordinary members appointed by the Minister, following consultation with the Minister for Enterprise, Trade and Employment, as set out in Section 8 of the Act. The independent non-executive Board Members, have the necessary and complementary skills and expertise to set the strategy and broad policies for the Foundation and oversee its operation. The SFI Board met seven times during 2021. The table below details the appointment period for members during 2021:

Board Member	Role	Date appointed
Prof J. Peter Clinch	Chairperson	01/08/2019
Prof Mark Ferguson	Director General	16/01/12 (resigned 16/01/22)
Prof Sir Tom Blundell	Board Member	19/11/14 (resigned 30/04/2022)
Mr Aidan Donnelly	Board Member	05/12/13 (reappointed 17/06/21)
Ms Máire Geoghegan-Quinn	Board Member	11/04/18
Mr Brendan Harte	Board Member	17/12/19
Prof Ann Leen	Board Member	10/09/20
Prof Liam Madden	Board Member	01/02/13 (reappointed 17/06/21)
Ms Gráinne McAleese	Board Member	25/10/18
Ms Clíona Murphy	Board Member	10/09/20

Gender Balance in the Board membership

As at 31st December 2021, the Board had four (40%) women and six (60%) male members, with two positions vacant. One of these positions was filled on the 5th April 2022 by a nominee of the Department of Enterprise, Trade and Employment. The Board therefore meets the Government target of a minimum of 40% representation of each gender in the membership of State Boards. The Gender Balance requirement will be considered and noted when filling the abovementioned vacant posts through the Public Appointments Service.

Audit and Risk Committee

The Audit and Risk Committee (ARC), which comprises five members, supports the Board in its responsibilities for risk, control, governance and associated assurance. The ARC is independent from the financial management of the organisation and monitors the system of internal controls and financial safeguards, oversees the internal audit function and conducts audits of SFI grants made to external institutions. The committee ensures that a system to monitor risk and provide mitigating actions is in place and kept up to date. The committee also monitors and reviews SFI financial reports on a regular basis including the Annual Financial Statements. The committee is also responsible for overseeing compliance with corporate governance requirements, including with the Code of Practice for the Governance of State Bodies, as updated in September 2016.

The ARC reports to the Board after each meeting, and formally in writing annually. The Committee normally has five members including at least one external member. The current members of the Committee are Brendan Harte (Chairperson), Aidan Donnelly, Gráinne McAleese, Stephen O'Connor (who joined the committee on 30th March 2020) and Clóna Murphy (who joined the Committee on 8th December 2020). Stephen O'Connor is an external committee member and the Director General attends all meetings. There were seven meetings of the ARC in 2021.

Board Nominations Advisory Committee

The Board Nominations Advisory Committee (NAC) comprises three members and considers the skillsets required on the Board, as well as relevant areas of expertise and advises the Public Appointments Service accordingly when Board vacancies arise. The Committee reports to the Board after each meeting. The current members of the Committee are Prof J. Peter Clinch (Chairperson), Prof Philip Nolan and Prof Ann Leen. There were no meetings of the Committee in 2021.

Management Development and Remuneration Committee

The Management Development and Remuneration Committee (MDRC) comprises four members and was established to review the Chairperson's appraisal of the Director General's performance against agreed personal objectives; review performance of senior management; oversee interim succession planning for the Director General and senior management subject always to adherence to competitive recruitment process requirements; oversee staff appraisal process; and review remuneration of senior management in the context of Government policy and guidelines and oversee implementation of remuneration policy. The Committee reports to the Board after each meeting. The current members of the Committee are Prof J. Peter Clinch (Chairperson), Mr Aidan Donnelly, Ms Gráinne McAleese and Ms Clóna Murphy (appointed on 8th February 2021). There was one meeting of the Committee in 2021.

Grant Approval Committee

The SFI Grant Approval Committee (GAC), which comprises five members, is delegated the power to approve research grant proposals in line with the delegated authority levels approved by the Board. The Committee reports to the Board after each meeting. The members of the Committee are: Prof Liam Madden (Chairperson), Prof Sir Tom Blundell, Ciaran Conlon, Prof Ann Leen and Prof Philip Nolan. Ciaran Conlon joined the Committee as an external member on 30th March 2020. Prof Ann Leen joined the Committee on 7th December 2020. There were six meetings of the Committee in 2021.

Recruitment Committee

The SFI Recruitment Committee was established on 8 June 2020 to oversee and manage, on behalf of the Board, key elements of the process for the appointment of a new Director General in January 2022. The Committee comprised three members, Prof J. Peter Clinch (Chairperson), Gráinne McAleese and Aidan Donnelly. The Committee held four meetings in 2021 and Prof Philip Nolan was subsequently appointed Director General of SFI on 17 January 2022.

Schedule of Attendance, Fees and Expenses

A schedule of attendance at the Board and Committee meetings for 2021 is set out below, including the fees and expenses received by each member:

	Board	Audit and Risk Committee	Grant Approval Committee	Board Nominations Advisory Committee	Management Development and Remuneration Committee	Recruitment Committee	Fees 2021 €	Expenses 2021 €
No of meetings	7	7	6	0	1	4		
Prof J. Peter Clinch	7				1	4	0	0
Prof Mark Ferguson	7		6				0	0
Prof Sir Tom Blundell	6		3				€11,970	0
Mr Aidan Donnelly	7	7			1	4	€11,970	0
Ms Máire Geoghegan-Quinn	7						€11,970	0
Mr Brendan Harte	7	7			1		€11,970	0
Prof Ann Leen	7		5				0	€443
Prof Liam Madden	7		5				0	0
Ms Gráinne McAleese	7	7				4	€11,970	0
Ms Clíona Murphy	6	7					0	0
Board fees paid to UCD*							€20,520	0
Total							€80,370	€443

Board members are paid fees as determined by the Minister with the consent of the Minister for Public Expenditure and Reform. Certain Board members are excluded from receiving fees from SFI under the “One Person One Salary” remuneration arrangements, whereby public servants cannot receive Board fees in addition to a salary. These are Prof J. Peter Clinch and Prof Mark Ferguson.

**In relation to Prof J. Peter Clinch, through DBEI, the Department of Public Expenditure and Reform sanctioned Science Foundation Ireland to offset UCD’s costs (as employer) in releasing Prof J. Peter Clinch to serve on the Board of SFI up to the relevant fee for the position of Chair.*

In addition, three Board members, Prof Liam Madden, Prof Ann Leen and Ms Clíona Murphy, have waived their Board fees.

Key Personnel Changes

There were no new appointments to the Board during 2021 and Prof Liam Madden and Aidan Donnelly resigned and were reappointed to the Board by the Minister on 17 June 2021, in terms of Section 9 (3) of the Act. Prof Mark Ferguson resigned from the Board on 16 January 2022 and Prof Philip Nolan was appointed to the Board on 17 January 2022. Prof Sir Tom Blundell resigned as a Member of the Board on 30 April 2022. Mr Declan Hughes was appointed to the Board on 5 April 2022.

Disclosures Required by the Code of Practice for the Governance of State Bodies (2016)

The Board is responsible for ensuring that SFI has complied with the requirements of the Code of Practice for the Governance of State Bodies (2016), as published by the Department of Public Expenditure and Reform in August 2016. The following disclosures are required by the Code:

Employee Short-Term Benefits Breakdown

Employees' short-term benefits in excess of €60,000 are categorised into the following bands:

Range			No of Employees
From	To	2021	2020
€60,000	€69,999	11	12
€70,000	€79,999	16	9
€80,000	€89,999	7	1
€90,000	€99,999	0	3
€100,000	€109,999	6	9
€110,000	€119,999	6	1
€120,000	€129,999	-	1
€130,000	€139,999	-	-
€140,000	€149,999	2	1
€150,000	€159,999	-	-
€160,000	€169,999	2	2
€170,000	€179,999	-	-
€180,000	€189,999	-	-
€190,000	€199,999	-	1
€200,000	€209,999	1	-

Note: For the purposes of this disclosure, short term employee benefits in relation to services rendered during the reporting period include salary, overtime allowances and other payments made on behalf of the employee but exclude employer's PRSI.

Consultancy Costs

Consultancy costs include the cost of external advice to management and exclude outsourced 'business-as-usual' functions.

	2021	2020
Legal advice	€248,089	€283,364
Public relations advice	€126,938	€126,234
Research integrity advice	€85,359	€37,112
Research Infrastructure Programme review	€47,478	-
HR and pensions advice	€34,377	€81,480
Procurement advice	€26,752	€19,099
Covid 19 national survey	€24,388	-
Tax and financial advice	€5,124	€60,270
Other	€42,000	€59,839
State aid compliance advice	-	€100,620
Consultancy fees for move to new premises	-	€47,064
Total	€640,505	€815,082
Consultancy costs capitalised	-	€47,064
Consultancy costs charged to the income and expenditure and retained reserves	€640,505	€768,018
Total	€640,505	€815,082

Legal Costs and Settlements

Expenditure incurred in relation to general legal advice received by SFI is disclosed in Consultancy Costs above. No legal costs, settlements or conciliation and arbitration costs were incurred in the year relating to contracts with third parties.

Travel and Subsistence Expenditure

Travel and subsistence expenditure is categorised as follows:

	2021	2020
Domestic		
- Board*	€443	€1,942
- Employees	€14,110	€11,839
International		
- Board*	-	(€3,483)
- Employees	€2,151	€73,554
Total	€16,704	€83,852

* There were no travel and subsistence costs paid directly to Board members in 2021. The cost of €443 relates to accommodation costs paid directly by SFI.

Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure:

	2021	2020
Staff hospitality	€2,222	€3,788
Client hospitality	-	-
Total	€2,222	€3,788

Statement of Compliance

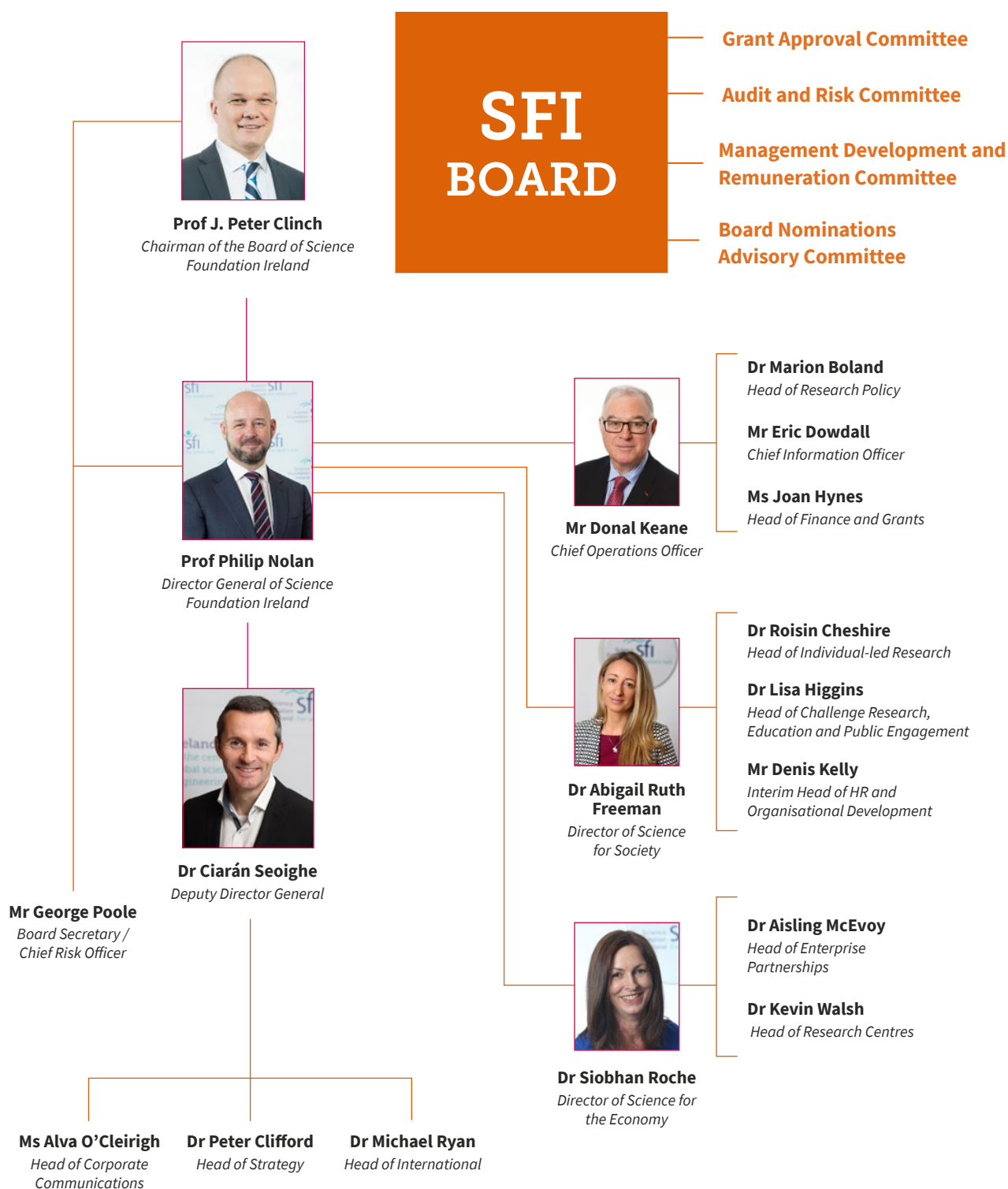
The Board has adopted the Code of Practice for the Governance of State Bodies (2016) and has put procedures in place to ensure compliance with the Code. SFI had complied with the Code of Practice for the Governance of State Bodies in 2021.

Risk Management

The SFI Board has adopted the SFI Risk Policy and Strategy, which outlines the risk management system in place and sets out the roles and responsibilities of the various stakeholders involved with the management of risk. This was updated in 2020. It is the policy of the Foundation to adhere to risk management best practice. The Policy and Strategy sets out the process by which the Foundation identifies and addresses the key risks attached to its activities. These risks are compiled by the Management Risk Committee with the input and support of the Executive Committee and reported on at regular intervals to the SFI Audit and Risk Committee and to the Board, including associated mitigation measures, controls and updates. The Board has conducted an assessment of SFI's principal risks, including a description of these risks where appropriate and associated measures or strategies.

Organisational Structure

As of end of April 2022



Science Foundation Ireland Executive Team



Prof Philip Nolan,

Director General of Science Foundation Ireland

See full profile on page 46.



Dr Ciarán Seoighe

Deputy Director General

Dr Ciarán Seoighe joined SFI as Deputy Director General in January 2018. In his role, Ciarán is responsible for Organisational Strategy, Corporate Communications and SFI's International team. In addition, he deputises for the Director General, as required. Ciarán joined SFI after nearly two decades in management consulting with Accenture. In his time with Accenture, in both Ireland and South Africa, Ciarán has worked with some of the world's largest and most successful organisations. He holds a BA (Mod) in Natural Science and PhD in Quantum Physics from TCD. Since joining SFI, Ciarán has led the development of SFI's new strategy and been a regular contributor to national strategies and initiatives including the Disruptive Technologies Innovation Fund Advisory Board, the Public Service Innovation Advisory Board and the Creating Our Future public consultation initiative. He brings a wealth of experience across a variety of sectors executing large-scale transformation, innovation, strategic and change initiatives.



Mr Donal Keane

Chief Operations Officer

Mr Donal Keane was appointed as Chief Operations Officer at SFI on 1 November 2005. He has responsibility for Financial Control, Financial Management of Grants, Information Systems, IT Networks, Data Protection/GDPR, Research Policy and liaison with the Internal Audit Coordinator with respect to internal audits and external grant audits. Donal joined SFI from IADT Dun Laoghaire, where he held the position of Secretary and Financial Controller from 1997 to 2005. Prior to that, Donal held senior management positions at Our Lady of Lourdes Hospital Drogheda, GE Capital and Wang Finance in both Dublin and Toronto, Canada. Donal has also been a member of the European Science Foundation (Strasbourg) and BBSRC (now part of UKRI) Audit Committees in recent years. Donal holds a Bachelor of Commerce degree from UCD and is a Fellow of the Institute of Chartered Accountants in Ireland.



Dr Abigail Ruth Freeman

Director of Science for Society

Dr Abigail Ruth Freeman is the Director of Science for Society at SFI. She oversees Individual-led Research Programmes and Centres for Research Training, Challenge-based Research Programmes and the Education and Public Engagement brief at the Foundation. Ruth is a frequent voice on media and is currently a weekly contributor to The Pat Kenny Show on Newstalk radio. Prior to her current appointment Ruth has held a series of positions at SFI. She was appointed Director of Strategy and Communications in 2013, after previous roles as Director of Innovation, Communications and Education, and Director of Programmes, Enterprise and International Affairs. Ruth joined SFI as a Scientific Programme Manager in November 2006. Prior to joining the Foundation, she worked as a researcher at Trinity College Dublin. Ruth holds a BA (Mod) and PhD in Genetics and a post-graduate diploma in Statistics from Trinity College Dublin, where she was awarded a Trinity scholarship, the Eli Lilly Chemistry Prize and the Roberts prize for Biology.



Dr Siobhan Roche

Director of Science for the Economy

Dr Siobhan Roche was appointed SFI Director of Science for the Economy in 2018. She has responsibility for SFI strategy relating to competitive funding programmes that stimulate the development of innovative research collaborations involving companies, both large and small, multinational and indigenous companies, academic researchers and other external stakeholders. Siobhan has worked within SFI for several years, most recently as Head of Post Award and SFI Research Centres, following her role as Head of Partnerships and Scientific Programme Manager. Siobhan brings experience as a research scientist from both the private sector, where she worked with US-based Exelixis Inc. and a former Irish human genome start-up company, HiberGen Inc., and academia where she was a Group Leader at TCD and St Patrick's Hospital. Siobhan has authored publications in leading, peer reviewed journals, secured national and international competitive research funding and holds several international patents. She holds a B.A. Mod in Genetics from TCD and a PhD in Molecular and Cell Biology from the University of California at Berkeley (USA).

Statutory and Other Notices

1. Board Members – Register of Interests

The Board operates to the best practice corporate governance principles, and in accordance with the guidelines set out in the Code of Practice for the Governance of State Bodies 2016 issued by the Department of Public Expenditure and Reform, both in its activities and in its use of Committees. SFI Board members register their interests in other undertakings with the Secretary, in accordance with these guidelines.

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

SFI is subject to the Ethics in Public Office Acts 1995 and 2001 and continues to comply with the provisions of the Act.

3. Freedom of Information Act 1997, Freedom of Information (Amendment) Act 2003 and Freedom of Information Act 2014

SFI became a prescribed body under the Freedom of Information Act 1997 from 31 May 2006. SFI complies fully with the Act. Requests for information under this Act should be addressed to the FOI Officer, Science Foundation Ireland, Three Park Place, Hatch Street Upper, Dublin 2. In 2021, SFI received five FOI requests.

Prompt Payment of Accounts Act 1997

4. (i) Prompt Payment of Accounts Act 1997

SFI comes under the remit of the Prompt Payment of Accounts Act 1997, and the European Communities (Late Payment in Commercial Transactions) Regulations 2002. It is the policy of SFI to ensure that all invoices are paid promptly. Specific procedures are in place that enable SFI to track all invoices and ensure that payments are made before the due date. Invoices are registered daily, and electronic payments are issued as required to ensure timely payments. Management is satisfied that SFI complied with the provisions of the Act in all material respects.

4. (ii) Prompt payment to suppliers

SFI is committed to meeting its obligations under the 15-day Prompt Payment Rule, which came into effect on 1 July 2011. This provision ensures that payments to suppliers in respect of all valid invoices received will be made within 15 calendar days. SFI reports quarterly in the 'About Us – Governance - Customer Service' section of the website on the implementation of the 15-day Prompt Payments Rule. <http://www.sfi.ie/about-us/governance/customer-service/>

1. Employment Equality Acts 1998-2015

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

2. Protected Disclosures Act 2014

There were no protected disclosures made to SFI in 2021.

3. Safety, Health and Welfare at Work Act 2005 and 2010

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

4. Clients' Charter

SFI has published a Clients' Charter setting out its commitment to a high quality of service. This charter includes a procedure for dealing with complaints. In 2021, no complaints were received under the charter.

5. Reporting by Public Sector Bodies

Under Statutory Instrument (SI) 542/2009 - European Communities (Energy End-use Efficiency and Energy Services) Regulations 2009, the Public Sector has specific energy reporting obligations. SFI's offices are located at Three Park Place, Hatch Street Upper, Dublin 2. In each area relevant to energy usage and services to the building, SFI endeavours to employ the most energy efficient and environmentally friendly means available.

Annual Financial Statements Year Ended 31 December 2021

Report of Comptroller & Auditor General



Ard Reachtaire Cuntas agus Ciste Comptroller and Auditor General

Report for presentation to the Houses of the Oireachtas

Science Foundation Ireland

Opinion on the financial statements

I have audited the financial statements of Science Foundation Ireland for the year ended 31 December 2021 as required under the provisions of section 24 of the Industrial Development (Science Foundation Ireland) Act 2003. The financial statements comprise

- the statement of income and expenditure and retained revenue reserves
- the statement of comprehensive income
- the statement of financial position
- the statement of cash flows, and
- the related notes, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the assets, liabilities and financial position of Science Foundation Ireland at 31 December 2021 and of its income and expenditure for 2021 in accordance with Financial Reporting Standard (FRS) 102 — *The Financial Reporting Standard applicable in the UK and the Republic of Ireland*.

Basis of opinion

I conducted my audit of the financial statements in accordance with the International Standards on Auditing (ISAs) as promulgated by the International Organisation of Supreme Audit Institutions. My responsibilities under those standards are described in the appendix to this report. I am independent of Science Foundation Ireland and have fulfilled my other ethical responsibilities in accordance with the standards.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Report on information other than the financial statements, and on other matters

Science Foundation Ireland has presented certain other information together with the financial statements. This comprises the annual report including the governance statement and Board members' report, and the statement on internal control. My responsibilities to report in relation to such information, and on certain other matters upon which I report by exception, are described in the appendix to this report.

I have nothing to report in that regard.

Seamus McCarthy
Comptroller and Auditor General

21 June 2022

Appendix to the report

Responsibilities of Board members

As detailed in the governance statement and Board members' report, the Board members are responsible for

- the preparation of annual financial statements in the form prescribed under section 24 of the Industrial Development (Science Foundation Ireland) Act 2003
- ensuring that the financial statements give a true and fair view in accordance with FRS 102
- ensuring the regularity of transactions
- assessing whether the use of the going concern basis of accounting is appropriate, and
- such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Responsibilities of the Comptroller and Auditor General

I am required under section 24 of the Industrial Development (Science Foundation Ireland) Act 2003 to audit the financial statements of Science Foundation Ireland and to report thereon to the Houses of the Oireachtas.

My objective in carrying out the audit is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement due to fraud or error. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the ISAs, I exercise professional judgment and maintain professional scepticism throughout the audit. In doing so,

- I identify and assess the risks of material misstatement of the financial statements whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- I obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal controls.
- I evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures.

- I conclude on the appropriateness of the use of the going concern basis of accounting and, based on the audit evidence obtained, on whether a material uncertainty exists related to events or conditions that may cast significant doubt on Science Foundation Ireland's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my report. However, future events or conditions may cause the Science Foundation Ireland to cease to continue as a going concern.
- I evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I report by exception if, in my opinion,

- I have not received all the information and explanations I required for my audit, or
- the accounting records were not sufficient to permit the financial statements to be readily and properly audited, or
- the financial statements are not in agreement with the accounting records.

Information other than the financial statements

My opinion on the financial statements does not cover the other information presented with those statements, and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, I am required under the ISAs to read the other information presented and, in doing so, consider whether the other information is materially inconsistent with the financial statements or with knowledge obtained during the audit, or if it otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact.

Reporting on other matters

My audit is conducted by reference to the special considerations which attach to State bodies in relation to their management and operation. I report if I identify material matters relating to the manner in which public business has been conducted.

I seek to obtain evidence about the regularity of financial transactions in the course of audit. I report if I identify any material instance where public money has not been applied for the purposes intended or where transactions did not conform to the authorities governing them.

Statement on Internal Control

Scope of Responsibility

On behalf of the Board of Science Foundation Ireland I acknowledge our responsibility for ensuring that an effective system of internal control is maintained and operated. This responsibility takes account of the requirements of the Code of Practice for the Governance of State Bodies (2016).

Purpose of the System of Internal Control

The system of internal control is designed to manage risk to a tolerable level rather than to eliminate it. The system can therefore provide only reasonable and not absolute assurance that assets are safeguarded, transactions authorised and properly recorded and that material errors or irregularities are either prevented or detected in a timely way.

The system of internal control, which accords with guidance issued by the Department of Public Expenditure and Reform has been in place in Science Foundation Ireland for the year ended 31 December 2021 and up to the date of approval of the financial statements.

Science Foundation Ireland has operated in a remote environment since March 2020 due to the impact of Covid 19. This has not had any major impact on the working and control environment as major financial processes are automated and the appropriate IT infrastructure was put in place to allow staff to work remotely.

Capacity to Handle Risk

Science Foundation Ireland has an Audit and Risk Committee (ARC) comprising of five members, of whom during 2021 four were Board members (and three of these are qualified accountants). The ARC met 7 times in 2021.

Science Foundation Ireland has also established an internal audit function which is adequately resourced and conducts a programme of work agreed with the ARC. The internal audit function and the role of Internal Audit Coordinator are both outsourced to professional services firms.

The Board has developed a risk management policy which sets out its risk appetite, the risk management processes in place and details the roles and responsibilities of staff in relation to risk. The policy has been made available to all staff who are expected to work within Science Foundation Ireland's risk management policies, to alert management on emerging risks and control weaknesses and assume responsibility for risks and controls within their own area of work.

Risk and Control Framework

Science Foundation Ireland has implemented a risk management system which identifies and reports key risks and the management actions being taken to address and, to the extent possible, to mitigate those risks.

A risk register is in place which identifies the key risks facing Science Foundation Ireland and these have been identified, evaluated and graded according to their significance. The register is reviewed by the ARC and the Board on a bi-monthly basis. The outcome of these assessments is used to plan and allocate resources to ensure risks are managed to an acceptable level.

The risk register details the controls and actions needed to mitigate risks, and responsibility for the operation of controls assigned to specific staff. I confirm that a control environment containing the following elements is in place:

- ▶ procedures for all key business processes have been documented;
- ▶ financial responsibilities have been assigned at management level with corresponding accountability;
- ▶ an appropriate budgeting system with an annual budget which is kept under review by senior management;
- ▶ Controls which are aimed at ensuring the security of the information and communication technology systems;
- ▶ procedures in place to safeguard the assets; and
- ▶ control procedures over grant funding to research bodies to ensure that there are adequate controls over approval of grants and to ensure that grant funding has been applied for the purpose intended.

Ongoing Monitoring and Review

Formal procedures have been established for monitoring control processes and control deficiencies are communicated to those responsible for taking corrective action and to management and the Board, where relevant, in a timely way. I confirm that the following ongoing monitoring processes are in place:

- ▶ key risks and related controls have been identified and processes have been put in place to monitor the operation of those key controls and report any identified deficiencies;
- ▶ reporting arrangements have been established at all levels, including delegated responsibility for financial management;
- ▶ there are regular reviews by senior management of periodic and annual performance and financial reports which indicate performance against budgets/forecasts;
- ▶ External Peer review of all Research proposals by scientific experts to adjudicate whether the proposal is worthwhile from an educational and scientific research viewpoint and that it meets the criteria for funding;
- ▶ Monitoring and control of all Research Grants awarded, with annual grant payments based on budget projections provided for each award with an option to defer grant payments if expenditure is below budget;
- ▶ Monitoring of Industry Cost Share targets at Research Centres with proactive management where targets are not being achieved.
- ▶ A programme of systems-based audits at the Eligible Research Bodies are undertaken on an annual basis, covering on average four different Research Bodies each year;
- ▶ Following an EU Thematic audit on the ERDF fund 2014-2020 a new State Aid Verifications Checklist has been created and is undergoing testing on a pilot basis, following which it will be formally rolled out across the sector in Q4 2022, to enable SFI to check compliance by the Research Bodies with State Aid rules.
- ▶ Setting targets to measure financial and other performance;
- ▶ Formal project management disciplines.

Procurement

I confirm that Science Foundation Ireland has procedures in place to ensure compliance with current procurement rules and guidelines and that during 2021 Science Foundation Ireland complied with those procedures.

Review of Effectiveness

I confirm that Science Foundation Ireland has procedures to monitor the effectiveness of its risk management and control procedures. Science Foundation Ireland's monitoring and review of the effectiveness of the system of internal control is informed by the work of the internal and external auditors, the Audit and Risk Committee which oversees their work, and the senior management within Science Foundation Ireland responsible for the development and maintenance of the internal control framework.

I confirm that the Board conducted an annual review of the effectiveness of the internal controls for 2021 on 29th March 2022.

Internal Control Issues

No weaknesses in internal control were identified in relation to 2021 that require disclosure in the financial statements.

On behalf of the Board of Science Foundation Ireland:



Professor Peter Clinch
Chairman

Date: June 16th, 2022

Statement of Income and Expenditure and Retained Revenue Reserves

For the year ended 31 December 2021

	Notes	2021 €'000	2020 €'000
Income			
Oireachtas Grant	2	237,429	211,295
Other Income	3	5,488	3,408
Net Deferred Retirement Benefit Funding	5 (c)	2,076	1,649
		244,993	216,352
Expenditure			
Administration, Operations & Promotion Expenses	4	14,887	12,312
Depreciation	6	769	724
Retirement Benefit Costs	5(a)	1,803	1,402
Grants Paid	9(a)	227,535	202,072
		244,994	216,510
(Deficit) for the year before appropriations		(1)	(158)
Transfer from the Capital Account	7	450	676
Surplus for the Year after appropriations		449	518
Balance brought forward at 1 January		1,607	1,089
Balance carried forward at 31 December		2,056	1,607


The Statement of Cash Flows and Notes 1 to 17 form part of these Financial Statements.

On behalf of the Board of Science Foundation Ireland:



Professor Peter Clinch
Chairman

Date: June 16th, 2022



Professor Philip Nolan
Director General

Date: June 16th, 2022

Statement of Comprehensive Income

For the year ended 31 December 2021

	Notes	2021 €'000	2020 €'000
Surplus after Appropriations		449	518
Experience losses on retirement benefit obligations		(333)	(388)
Change in assumptions underlying the present value of retirement benefit obligations		(301)	(3,125)
Total Actuarial Loss in the period	5(d)	(634)	(3,513)
Adjustment to Deferred Retirement benefits funding		634	3,513
Total Comprehensive Income for the year		449	518

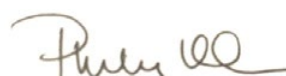
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On behalf of the Board of Science Foundation Ireland:



Professor Peter Clinch
Chairman

Date: June 16th, 2022



Professor Philip Nolan
Director General

Date: June 16th, 2022

Statement of Financial Position

As at 31st December 2021

	Notes	2021 €'000	2020 €'000
Fixed Assets			
Property, Plant & Equipment	8	5,288	5,738
Current Assets			
Receivables	10	587	395
Cash and Cash Equivalents		2,313	2,392
		2,900	2,787
Current Liabilities (Amounts falling due within one year)			
Payables	11	(844)	(1,180)
Net Current Assets		2,056	1,607
Retirement benefits			
Retirement Benefit Liability	5(b)	(31,665)	(28,955)
Deferred Retirement Benefit Funding Asset	5 (b)	31,665	28,955
		-	-
Total Net Assets		7,344	7,345
Representing:			
Capital Account	7	5,288	5,738
Accumulated Surplus at end of Year		2,056	1,607
		7,344	7,345

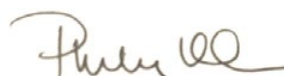
The Statement of Cash Flows and Notes 1 to 17 form part of these Financial Statements.

On behalf of the Board of Science Foundation Ireland:



Professor Peter Clinch
Chairman

Date: June 16th, 2022



Professor Philip Nolan
Director General

Date: June 16th, 2022

Statement of Cash Flows

For the year ended 31 December 2021

	Notes	2021 €'000	2020 €'000
Net Cash Flows from Operating Activities			
Surplus/(Deficit) for the year before appropriations		(1)	(158)
Depreciation of property, plant & equipment	6	769	724
(Increase)/ Decrease in Receivables	10	(192)	54
(Decrease) in Payables	11	(336)	(887)
Net Cash Flow from Operating Activities		240	(267)
Cash Flows from Investing Activities			
Payments to acquire property, plant & equipment	8	(319)	(48)
Net Cash Flows from Investing Activities		(319)	(48)
Cash Flows from Financing Activities			
		-	-
(Decrease) /Increase in Cash and Cash Equivalents		(79)	315
Cash and Cash Equivalents at 1 January		2,392	2,707
Cash and Cash Equivalents at 31 December		2,313	2,392

The Statement of Cash Flows and Notes 1 to 17 form part of these Financial Statements.

Notes to the Financial Statements

For the year ended 31 December 2021

1 Accounting Policies

The basis of accounting and significant accounting policies adopted by Science Foundation Ireland are set out below. They have been applied consistently throughout the year and for the preceding year.

(a) General Information

Science Foundation Ireland was set up under the Industrial Development (Science Foundation Ireland) Act 2003, and by the Industrial Development (Science Foundation Ireland) (Amendment) Act, 2013, with its Head Office at Three Park Place, Upper Hatch Street, Dublin 2.

Science Foundation Ireland's primary objectives as set out under section 7 of the Industrial Development (Science Foundation Ireland) Act 2003, as amended by the Industrial Development (Science Foundation Ireland) (Amendment) Act, 2013, are as follows:

Science Foundation Ireland funds oriented basic and applied research in the areas of science, technology, engineering, and mathematics (STEM) which promotes and assists the development and competitiveness of industry, enterprise and employment in Ireland. The Foundation also promotes and supports the study of, education in and engagement with, STEM and promotes an awareness and understanding of the value of STEM to society and in particular to the growth of the economy.

Science Foundation Ireland is a Public Benefit Entity (PBE).

(b) Statement of Compliance

The financial statements of Science Foundation Ireland for the year ended 31 December 2021 have been prepared in accordance with FRS 102, the financial reporting standard applicable in the UK and Ireland issued by the Financial Reporting Council (FRC), as promulgated by Chartered Accountants Ireland.

(c) Basis of Preparation

The financial statements have been prepared under the historical cost convention, except for certain assets and liabilities that are measured at fair values as explained in the accounting policies below. The financial statements are in the form approved by the Minister for Further and Higher Education, Research, Innovation and Science with the consent of the Minister for Public Expenditure and Reform under the Industrial Development (Science Foundation Ireland) Act 2003, and by the Industrial Development (Science Foundation Ireland) (Amendment) Act, 2013. The financial statements reflect the requirements of the Code of Practice for the Governance of State Bodies 2016, which came into effect for accounting periods commencing on or after the 1st September, 2016. The following accounting policies have been applied consistently in dealing with items which are considered material in relation to Science Foundation Ireland's Financial Statements.

(d) Revenue

Revenue is recognised on an accruals basis except in the case of Oireachtas Grants which are recognised on a cash receipts basis.

(e) Property, plant & equipment

Property, plant & equipment are stated at cost less Accumulated Depreciation, adjusted for any provision for impairment. Depreciation is provided on all property, plant & equipment, at rates estimated to write off the cost less the estimated residual value of each asset on a straight-line basis over their estimated useful lives, as follows:

(i) Leasehold Improvements	over the remaining life of the lease
(ii) Computer Equipment & Computer Software	3 years
(iii) Fixtures & Fittings	5 years

Assets are depreciated in the year of acquisition unless they have not been commissioned / brought into use at the year end.

Residual value represents the estimated amount which would currently be obtained from disposal of an asset, after deducting estimated costs of disposal, if the asset was already of an age and in the condition expected at the end of its useful life.

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

1. Accounting Policies (cont'd)

(f) Capital Account

The Capital Account represents the unamortised funds utilised for the acquisition of property, plant & equipment and is written down in line with the depreciation policy for these assets.

(g) Foreign Currency

Monetary assets and liabilities denominated in foreign currencies are translated at the exchange rates ruling at the end of the Financial Year. Revenues and costs are translated at the exchange rates ruling at the dates of the underlying transactions. The resultant surpluses or deficits are dealt with in the Statement of Income and Expenditure and Retained Revenue Reserves.

(h) Employee Benefits

Short term benefits

Short term benefits such as holiday pay are recognised as an expense in the year, and benefits that are accrued at year-end are included in the Payables figure in the Statement of Financial Position.

Retirement Benefits

SFI operates the Science Foundation Ireland Superannuation Scheme 2016, which is a defined Benefit scheme, for all staff who joined the organisation before 2013. SFI also operates the Single Public Services Pension Scheme ("Single Scheme"), which is a defined benefit scheme for pensionable public servants appointed on or after 1 January 2013.

Pension costs reflect pension benefits earned by employees in the period and are shown net of staff pension contributions which are remitted to the Department of Further and Higher Education, Research, Innovation and Science in respect of Science Foundation Ireland's retirement benefit scheme and to DPER in respect of the Single Scheme. An amount corresponding to the pension charge is recognised as income to the extent that it is recoverable.

Actuarial gains or losses arising on scheme liabilities are reflected in the Statement of Comprehensive Income, and a corresponding adjustment is recognised in the amount recoverable from the Department of Further and Higher Education, Research, Innovation and Science.

The Financial Statements reflect, at fair value, the assets and liabilities arising from Science Foundation Ireland's pension obligations and any related funding, and recognise the costs of providing pension benefits in the accounting periods in which they are earned by employees.

Retirement benefit scheme liabilities are measured on an actuarial basis using the Projected Unit Credit method. Deferred pension funding represents the corresponding asset to be recovered in future periods from the Department of Further and Higher Education, Research, Innovation and Science.

(i) Operating Leases

Rental expenditure under operating leases is recognised in the Statement of Income and Expenditure and Retained Revenue Reserves as they fall due. It is recognised as an expense over the period that SFI obtains benefit from the use of the leased buildings.

(j) Research Grant Payments

Amounts paid to Research Bodies on foot of research grants awarded are charged to the Statement of Income and Expenditure and Retained Revenue Reserves in the year of payment.

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

1. Accounting Policies (cont'd)

(k) Critical Accounting Judgements and Estimates

The preparation of the Financial Statements requires management to make judgements, estimates and assumptions that affect the amounts reported for assets and liabilities as at the reporting date and the amounts reported for income and expenditure during the year. However, the nature of estimation means that actual outcomes could differ from those estimates. The following judgements have had the most significant effect on amounts recognised in the financial statements.

Depreciation and Residual Values

The Directors have reviewed the asset lives and associated residual values of all fixed asset classes, and in particular, the useful economic life and residual values of fixtures and fittings, and have concluded that asset lives and residual values are appropriate.

Retirement Benefit Obligation

The assumptions underlying the actuarial valuations for which the amounts recognised in the Financial Statements are determined (including discount rates, rates of increase in future compensation levels, mortality rates and healthcare cost trend rates) are updated annually based on current economic conditions, and for any relevant changes to the terms and conditions of the pension and post-retirement plans.

The assumptions can be affected by:

- (i) The discount rate, changes in the rate of return on high-quality corporate bonds
- (ii) Future compensation levels, future labour market conditions
- (iii) Changes in demographics

2. Oireachtas Grants

The Oireachtas Grants paid to Science Foundation Ireland from the Department of Further and Higher Education, Research, Innovation and Science, as shown in the Financial Statements consist of:

	D/FHERIS	2021 €'000	2020 €'000
Grants for Current Expenditure	Vote 45		
Pay and Pensions *	Subhead C3.1	6,135	5,084
Administration Expenses	Subhead C3.1	8,936	7,300
Grants for Capital Expenditure			
Research Grants	Subhead C3.1	206,858	183,411
Research Grants – Centres for Research Training	Subhead C4.2	15,500	15,500
		237,429	211,295

*The grant for pay expenditure is stated net of employee pension contributions of €289k (2020: €261k) remitted to the Exchequer. These include deductions of €125k in 2021 (2020: €110k) in respect of members of The Single Pension Scheme which were remitted to the Department of Public Expenditure and Reform.

Departmental administration and Ministerial functions relating to research policy and programmes transferred from the Department of Enterprise, Trade and Employment to the Department of Further and Higher Education, Research, Innovation and Science (SI 586 of 2020), with effect from 1 January 2021.

Under Section 11 of the Industrial Development Act, 1993, as amended by Section 2 of the Industrial Development Act, 2019, the aggregate amount of grants to Enterprise Ireland, IDA and Science Foundation Ireland to enable them to discharge their Capital obligations and liabilities shall not exceed €14 billion. At 31 December 2021 the aggregate amount made available to the three Agencies was €11 billion (2020: €10.2 billion).

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

3. Other Income

Research Grant Funding:	Notes	2021 €'000	2020 €'000
Contributions from other funding agencies to Awards made by SFI			
Teagasc	3(a)	74	226
Marine Institute	3(b)	313	431
Environmental Protection Agency	3(c)	360	402
Geological Society of Ireland	3(d)	316	311
Irish Cancer Society	3(e)	98	163
Department of Agriculture, Food and the Marine	3(f)	1,090	1,073
Department of Foreign Affairs	3(g)	900	555
Health Research Board	3(h)	514	-
Sustainable Energy Authority of Ireland	3(i)	661	-
Department of Education	3(j)	401	-
Department of Defence	3(k)	250	-
Sub-Total		4,977	3,161
Contribution towards EU ERA NET funding calls	3(l)		
• ERA-HDHL		21	36
• ERA CosysMed		36	-
• EU NanoMed III		67	76
• BlueBio		30	-
• M.ERAnet.2		80	-
Income from EU in respect of SFI's participation in Horizon 2020 award			
ACT	3(m)	142	-
European Space Agency	3(n)	135	135
Total		5,488	3,408

- (a) Contribution from Teagasc for co-funding of multi-annual awards made by SFI in 2017.
- (b) Contributions from the Marine Institute for co-funding of multi-annual awards made by SFI in 2016, 2017 and 2018.
- (c) Contributions from the Environmental Protection Agency for co-funding of multi-annual awards made by SFI in 2016, 2017 and 2020.
- (d) Contributions from the Geological Society of Ireland for Co-Funding of multi-annual awards made in 2016, 2017, 2018 and 2020.
- (e) Contribution from the Irish Cancer Society towards the ICS-SFI Collaborative Cancer Research Centre (CCRC) Programme awarded 2015.
- (f) Contribution from the Department of Agriculture, Food and the Marine for SFI Research Centre awarded in 2018.
- (g) Contribution from the Department of Foreign Affairs for SFI Future Innovator Prize awards in 2020 and 2021.
- (h) Contribution from the Health Research Board towards US-Ireland awards made in 2020 and 2021.
- (i) Contribution from the Sustainable Energy Authority of Ireland (SEAI) towards three Frontiers for the Future awards and one one Research Infrastructure award made in 2021.

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

3. Other Income (cont'd)

- (j) Contribution from the Department of Education towards SFI Discover awards made in 2021.
- (k) Contribution from the Department of Defence for SFI Future Innovator Prize awards made in 2021.
- (l) SFI participates in a number of different ERA Net funding calls in conjunction with other European funding agencies and the EU. As part of its participation in these activities, SFI receives funding towards both the capital cost of awards made and towards the programme management costs of running these activities.
- (m) SFI is a partner in an EU research awards made under the European Union's Horizon 2020 research and innovation programme; ACT (Communities of PrACTice for Accelerating Gender Equality and Institutional Change in Research and Innovation across Europe)
- (n) Funding arising from an annual contract between SFI and the European Space Agency (ESA) for the implementation of a European Space Education Resource Office (ESERO) in Ireland.

4. Administration, Operations & Promotion Expenses

	Notes	2021 €'000	2020 €'000
Remuneration and Other Pay Costs	4(a)	6,557	5,556
Accommodation		2,433	2,337
Programme Management		757	631
Marketing & Supports	4(b)	2,465	1,368
IT Support & Infrastructure		856	690
Administration Expenses	4(c)	409	389
Accounting & Internal Audit Services		269	224
Professional & Support Services	4(d)	802	818
Specialist & Education Services		171	206
HR Management		136	61
Statutory Audit Fee		32	32
Total		14,887	12,312

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

4(a) Remuneration and other pay costs

	Notes	2021 €'000	2020 €'000
Staff Salaries		5,138	4,680
Agency Staff		756	76
Employers' contribution to Social Welfare		529	484
(Decrease)/Increase in holiday pay accrual		(45)	65
Staff Training and Development		81	80
Staff travel and subsistence costs	4(e)	17	85
Board Members' Fees and Expenses	4(f)	81	86
Total		6,557	5,556
Actual employed as at year end		67	64

Included in The total Key Management personnel compensation for 2021 was €874k (2020: €846k). This includes the compensation for the Board members, the Director General and four Senior Executives who reported to him. Science Foundation Ireland deducted pension levies from staff of €205k (2020: €188k) which were paid over to the Department of Further and Higher Education, Research, Innovation and Science. There were no overtime payments, other allowances or termination payments made in either year.

4(b) Included in Marketing & Supports is public engagement consultant fees of €126k (2020: €126k).

4(c) Included in the Administration Expenses is hospitality expenditure:

	2021 €'000	2020 €'000
Staff hospitality	2	4
Client hospitality	-	-
Total	2	4

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

4(d) Professional & Support Services

	2021 €'000	2020 €'000
Administrative services	287	176
Legal advice	248	283
Research Integrity advice	85	37
Research Infrastructure programme review	47	-
HR and Pensions advice	35	82
Procurement advice	27	19
Covid 19 National Survey	24	-
Research Analyst Horizon 2020 funding	20	-
Tax and Financial advice	5	60
Other Professional fees	24	60
State Aid Compliance Advice	-	101
Total	802	818

There were no legal cases or settlements made in 2021. SFI defines consultancy fees as specific finite tasks involving expert skills or capabilities that would not normally reside within SFI.

4(e) Travel and Subsistence Expenditure

Staff Travel and subsistence expenditure is categorised as follows:

	2021 €'000	2020 €'000
Domestic Travel & Subsistence	15	12
International Travel & Subsistence	2	73
Total	17	85

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

4 (e) Travel and Subsistence Expenditure (cont'd)

Employee benefits breakdown

Range of Key Management Personnel Remuneration

From	To	Number of Employees	
		2021	2020
€60,000 - €69,999		11	12
€70,000 - €79,999		16	9
€80,000 - €89,999		7	1
€90,000 - €99,999		0	3
€100,000 - €109,999		6	9
€110,000 - €119,999		6	1
€120,000 - €129,999		-	1
€130,000 - €139,999		-	-
€140,000 - €149,999		2	1
€150,000 - €159,999		-	-
€160,000 - €169,999		2	2
€170,000 - €179,999		-	-
€180,000 - €189,999		-	-
€190,000 - €199,999		-	1
€200,000 - €209,999		1	-

Note: For the purposes of this disclosure, short-term employee benefits in relation to services rendered during the reporting period include salary, overtime allowances and other payments made on behalf of the employee, but exclude employer's PRSI.

4(f) Board Members' Remuneration and Expenses

Board Member	Board Fees 2021	Vouched Expenses 2021	Meetings attended 2021	Board Fees 2020	Vouched Expenses 2020	Meetings attended 2020
	€	€	Number	€	€	Number
Prof Peter Clinch	-	-	7 out of 7	-	-	7 out of 7
Prof Mark Ferguson	-	-	7 out of 7	-	-	7 out of 7
Prof Sir Tom Blundell	11,970	-	6 out of 7	11,970	-	7 out of 7
Aidan Donnelly	11,970	-	7 out of 7	11,970	-	7 out of 7
Mary Doyle	-	-	n/a	6,982	-	4 out of 4
Maire Geoghegan Quinn	11,970	-	7 out of 7	11,970	-	5 out of 7
Brendan Harte	11,970	-	7 out of 7	12,453	-	7 out of 7
Prof. Ann Leen	-	443	7 out of 7	-	-	2 out of 2
Mr. Liam Madden	-	-	7 out of 7	-	(3,483)	7 out of 7
Grainne McAleese	11,970	-	7 out of 7	11,970	-	7 out of 7
Cliona Murphy	-	-	6 out of 7	-	-	2 out of 2
Board fees paid to UCD*	20,520	-	n/a	20,520	-	n/a
General Board expenses	-	-	n/a	-	1,942	n/a
Total	80,370	443		87,835	(1,541)	

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

4(f) Board Members' Remuneration and Expenses (cont'd)

Board members are paid fees as determined by the Minister of Further and Higher Education, Research, Innovation and Science, with the consent of the Minister for Public Expenditure and Reform. Certain Board members are excluded from receiving fees from SFI under the "One Person One Salary" remuneration arrangements whereby public servants cannot receive Board fees in addition to a salary. These are Prof Peter Clinch and Prof Mark Ferguson.

*Board fees paid to UCD are in relation to Professor Clinch. Through the Department of Further and Higher Education, Research, Innovation and Science, the Department of Public Expenditure and Reform sanctioned Science Foundation Ireland to offset UCD's costs (as employer) in releasing Professor Clinch to serve on the Board of SFI up to the relevant fee for the position of Chair. In addition, three Board members, Prof. Liam Madden, Prof. Ann Leen and Cliona Murphy have waived their Board fees.

The following Board members are based overseas: Prof. Sir Tom Blundell is UK based while Mr. Liam Madden and Prof. Ann Leen are US based.

The Director General's remuneration package for 2021 was as follows: annual basic salary €201k (2020: €197k) and standard public sector pension arrangements apply. No performance related bonus was applicable. Prof. Ferguson is also Chief Scientific Advisor (CSA) to the Government. There is no remuneration for this role and all administration costs for the office are absorbed by SFI. Total expenses for the year incurred by the Director General in the discharge of both roles amounted to €3k (2020: €9k) of which €nil (2020: €nil) related to CSA activities.

Board members vouched expenses are set out as follows:

	2021 €'000	2020 €'000
Domestic Travel & Subsistence	0.4	2
International Travel & Subsistence	-	(3)
Total	0.4	(1)

Board members expenses of €0.4k in 2021 (2020: (-€1k) relates to expenditure paid by Science Foundation Ireland on behalf of the Board members. No expenses were paid directly to Board members in 2021 or 2020.

The following appointments to the Board took place in 2021:

- Professor Liam Madden was reappointed as a member on 17th June 2021
- Aidan Donnelly was reappointed as a member on 17th June 2021

5. Retirement Benefit Costs

A. Analysis of total retirement benefit costs charged to the Statement of Income and Expenditure and Retained Revenue Reserves

	2021 €'000	2020 €'000
Current Service Cost	1,846	1,367
Interest on Retirement Benefit Scheme Liabilities	246	296
Employee Contributions	(289)	(261)
	1,803	1,402

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

5. Retirement Benefit Costs (cont'd)

B. Movement in net Retirement benefit obligation during the financial year

	2021 €'000	2020 €'000
Net retirement benefit obligation at 1 January	28,955	23,793
Current Service Cost	1,846	1,367
Interest Costs	246	296
Payments to Pensioners	(16)	(14)
Actuarial Loss	634	3,513
Net retirement benefit obligation at 31 December	31,665	28,955

The Board recognises these amounts as an asset corresponding to the unfunded deferred liability for retirement benefits on the basis of the set of assumptions described in the Accounting Policies above and a number of past events. These events include the statutory basis for the establishment of the retirement benefit schemes, and the policy and practice currently in place in relation to funding public service pensions including contributions by employees and the annual estimates process. The Board has no evidence that this funding policy will not continue to meet such sums in accordance with current practice.

The net deferred funding for retirement benefits recognised in the Statement of Income and Expenditure and Retained Revenue Reserves is as follows:

C. Net Deferred Retirement Benefit Funding

	2021 €'000	2020 €'000
Funding recoverable in respect of Current Year retirement benefit costs	2,092	1,663
Less State Grant applied to pay retirement benefits	(16)	(14)
	2,076	1,649

D. General Description of the scheme

Science Foundation Ireland has responsibility for the pension costs of:

1. staff with effect from 16th July 2014, under the Industrial Development (Forfás Dissolution) Act 2014, who were members of the Forfás Pension Scheme joined the new Science Foundation Ireland pension scheme on superannuation terms no less favourable than those they enjoyed under the Forfás scheme immediately before the date of transfer from Forfás to SFI.
2. staff who are members of the Single Public Service pension scheme.

Both schemes are defined benefit pension schemes and are fully funded annually on a pay as you go basis from monies provided by the Department of Further and Higher Education, Research, Innovation and Science.

The Science Foundation Ireland pension scheme is a defined benefit final salary scheme with retirement benefits linked to final salary and length of service. The Single Public Service pension scheme is also a defined benefit scheme with retirement benefits linked to career average revalued earnings and length of service. The valuation used for FRS 102 disclosures is based on an actuarial review of the schemes for the financial year ended 31 December 2021 carried out by a qualified independent actuary, taking account of the requirements of the FRS in order to assess the schemes liabilities at 31 December 2021.

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

5. Retirement Benefit Costs (cont'd)

D. General Description of the scheme (cont'd)

The principal actuarial assumptions were as follows:

Liabilities shown in the Financial Accounts are computed using the Projected Unit Credit method.

	2021	2020
Financial Assumptions		
Discount Rate*	1.3% p.a	0.85% p.a
Future Salary Increases	3.5% p.a	3% p.a
Future State Pension increases	3.5% p.a	3% p.a
Future Pension Increases	3% p.a	2.5% p.a
Future price inflation	2% p.a	1.5% p.a
Revaluation in deferment	3% p.a	2.5% p.a

* discount rate reflects a duration of liabilities of approximately 31 years in 2021 (31 years in 2020)

	2021	2020
Retirement age		
New entrants	Age 65	Age 65
Other members	Age 62	Age 62

The Mortality basis explicitly allows for Improvements in life expectancy over time, so that life expectancy at retirement will depend on the year in which a member attains retirement age (age 65). The table below shows the life expectancy for members attaining age 65 in 2021 and 2041.

Year of attaining age 65	2021	2041
Life expectancy - Male	21.8	24.1
Life expectancy - Female	24.2	26.2

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

5. Retirement Benefit Costs (cont'd)

D. General Description of the scheme (cont'd)

Prior Year Comparatives

Year ending December 31st	2021 €'000	2020 €'000	2019 €'000	2018 €'000	2017 €'000
Closing pension liability	31,665	28,955	23,793	18,789	17,518
Experience (loss) / gain arising on the plan Liabilities	(333)	(388)	(325)	(415)	(828)
% Liabilities	-1.1%	-1.3%	-1.3%	-2.2%	-4.7%
Total (Loss) / Gain recognised in Statement of Comprehensive Income	(634)	(3,513)	(3,226)	395	(824)
% Liabilities	-2%	-12.1%	-13.5%	2.1%	-4.7%

6. Depreciation

	Notes	2021 €'000	2020 €'000
Depreciation charge for the year	8	769	724
Total		769	724

7. Capital Account

		2021 €'000	2020 €'000
Opening Balance as at 1 January		5,738	6,414
Transfer from Statement of Income & Expenditure and Retained Revenue Reserves			
- To fund Fixed Asset acquisitions	8	319	48
- Amortised in line with asset depreciation	8	(769)	(724)
		(450)	(676)
Closing balance as at 31 December		5,288	5,738

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

8. Property, plant & equipment

	Leasehold Improvements €'000	Computer Equipment €'000	Computer Software €'000	Fixtures & Fittings €'000	Total €'000
Cost					
At 1 January 2021	5,464	1,230	131	684	7,509
Additions	-	319	-	-	319
Disposals/Write-downs	-	(80)	-	-	(80)
At 31 December 2021	5,464	1,469	131	684	7,748
Depreciation					
At 1 January 2021	444	922	131	274	1,771
Charge for Year	218	414	-	137	769
Disposals/Write-downs	-	(80)	-	-	(80)
At 31 December 2021	662	1,256	131	411	2,460
Net Book Amount					
At 1 January 2021	5,020	308	-	410	5,738
Net Movement for Year	(218)	(95)	-	(137)	(450)
At 31 December 2021	4,802	213	-	273	5,288

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

9. Grants

(a) Analysis of Grants Paid

	2021 €'000	2020 €'000
ICT		
Future Networks, Communications and Internet of Things	16,621	15,599
Data Analytics, Management, Security, Privacy, Robotics and Artificial Intelligence (including Machine Learning)	31,009	24,382
Digital Platforms, Content and Applications, and Augmented Reality and Virtual Reality	8,530	6,930
Health & Wellbeing		
Connected Health and Independent Living	3,075	2,524
Medical Devices	16,082	10,672
Diagnostics	15,867	9,451
Therapeutics	30,327	19,925
Food		
Food for Health	9,748	9,549
Smart and Sustainable Food Production and Processing	14,308	13,994
Energy, Climate Action and Sustainability		
Decarbonising the Energy System	11,358	3,463
Sustainable Living	8,247	6,709
Manufacturing and Materials		
Advanced and Smart Manufacturing	16,910	13,108
Manufacturing and Novel Materials	24,568	29,342
Services and Business Processes		
Innovation in Services and Business Processes	655	1,320
Basic Biomedical Science (BBS)	1,786	3,200
Covid Rapid Response Call	1,095	16,097
Other	17,349	15,807
Total	227,535	202,072

The analysis of grants paid reflects the Research Priority Areas 2018 to 2023 which revised the original 14 Research priority areas to ensure that Ireland optimises the opportunities arising from new science and technology developments and disruptions.

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

9(b) Grant Commitments

	Notes	2021 €'000	2020 €'000
Outstanding Grant Commitments as at 1 January		756,401	655,567
Grants approved during the year		147,974	312,291
De-commitments during the year		(26,224)	(12,546)
Grant payments made in the year – Gross	9(a)	(227,535)	(202,072)
<i>Amounts received from other funding agencies for Co-Funding of SFI awards</i>	3		
Teagasc		74	226
Marine Institute		313	431
Environmental Protection Agency		360	402
Geological Society of Ireland		316	311
Irish Cancer Society		98	163
Department of Agriculture, Food & the Marine		1,090	1,073
Department of Foreign Affairs		900	555
Health Research Board		514	-
Sustainable Energy Authority of Ireland		661	-
Department of Education		401	-
Department of Defence		250	-
Outstanding Commitments as at 31 December		655,593	756,401
Outstanding Commitments excluding Co-funded commitments		661,612	762,266

10. Receivables

	2021 €'000	2020 €'000
Debtors	39	4
Prepayments & Accrued income	548	391
Total	587	395

Notes to the Financial Statements (cont'd)

For the year ended 31 December 2021

11. Payables

	2021 €'000	2020 €'000
General Creditors	267	(1)
Deferred Income*	306	546
Accruals	188	572
Interagency Balance - IDA**	83	63
Total	844	1,180

*Deferred income represents the grants and programme management monies received from the EU and other funding agencies but not expended by the year end. The EU deferred income is in respect of SFI's participation in ERAnet Co-funded calls (made in conjunction with other EU funding agencies and the EU). These amounts are credited to Other Income over the period to which the related expenditure is incurred.

**Interagency Balance relates to the balance owed by SFI to IDA at 31 December 2021 for accommodation costs paid on behalf of SFI.

12. Commitments under Operating Leases

SFI signed an "Agreement for Lease" with the IDA in May 2018 for Three Park Place. The lease is for 25 years (subject to a break clause after 10 years) with annual rent payments of €1,668,628 which commenced in May 2019, following a one-year rent free period.

The following are future minimum lease payments over the period of the lease.

	2021 €'000	2020 €'000
Within 1 year	1,668	1,671
During 2-5 years	6,672	6,675
Over 5 years	27,324	28,992

13. Taxation

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

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

14. Events after the reporting date

Professor Mark Ferguson retired as Director General of Science Foundation Ireland on 14th January 2022. Professor Philip Nolan was appointed Director General with effect from 17th January 2022. There are no other events between the reporting date and the date of approval of these financial statements for issue that require adjustment to the financial statements.

Notes to the Financial Statements (*cont'd*)

For the year ended 31 December 2021

15. Related Party Disclosures

Science Foundation Ireland adopts procedures in accordance with the guidelines issued by the Department of Public Expenditure and Reform covering the personal interests of Board members and staff. In the normal course of business, Science Foundation Ireland may approve grants or enter into other contractual arrangements with entities in which Science Foundation Ireland Board members and staff are employed or are otherwise interested.

In cases of potential conflict of interest, Board members and staff do not receive Board documentation or otherwise participate in or attend discussions regarding these transactions. A register is maintained and available on request of all such instances.

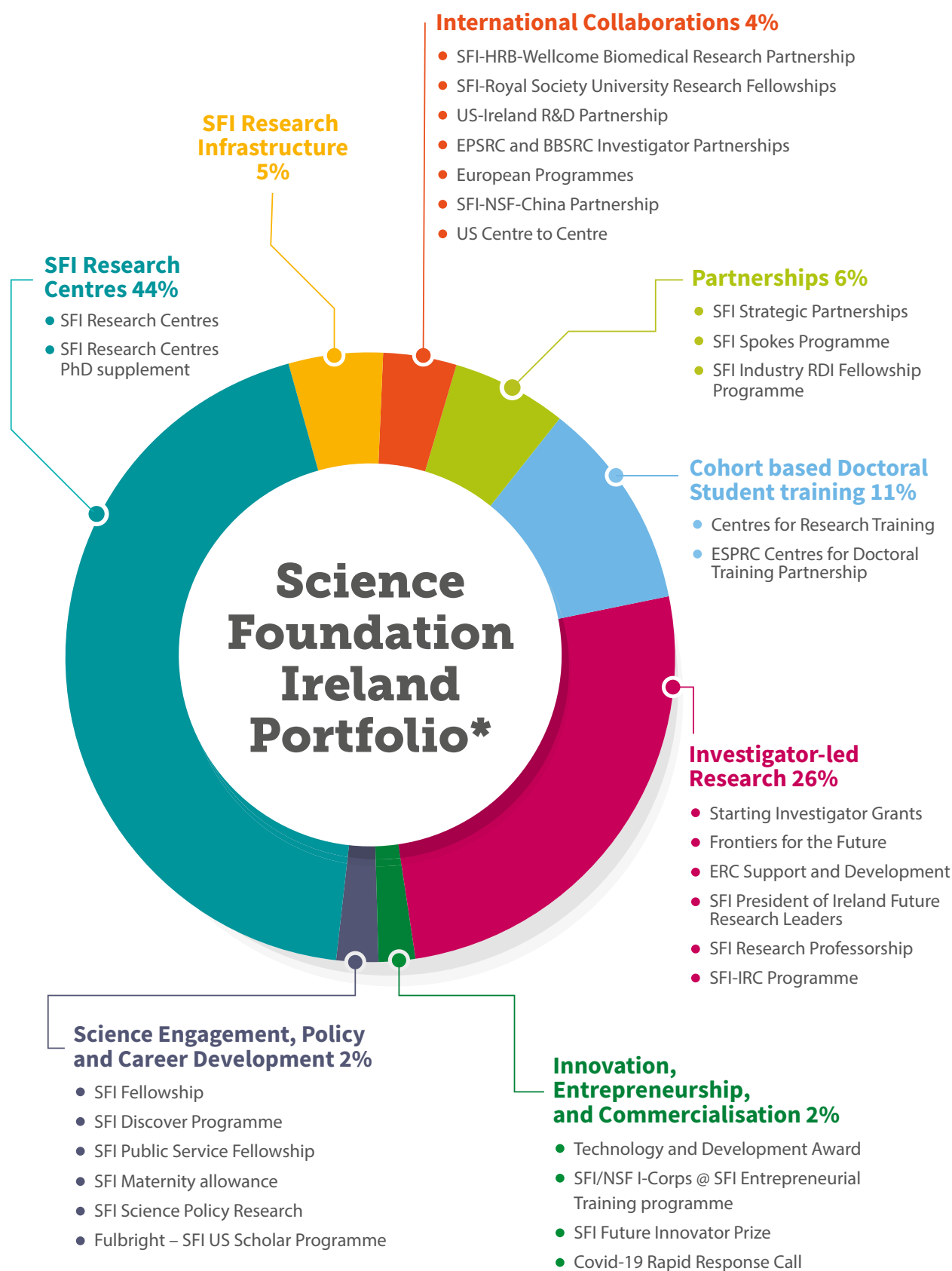
16. Contingencies and Legal Actions

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

17. Approval of Financial Statements

The Financial Statements were approved by the Board of Science Foundation Ireland on June 16th, 2022.

Science Foundation Ireland Portfolio*



* Based on payments issued and scheduled from 1/1/2021 to 31/12/2024 as at 31/12/2021.

Award Portfolio and New Awards Approved

In 2021, 301 awards were approved across 20 SFI programmes, with a value of €148 million, to fund a diverse and balanced portfolio of early to mid-career researchers through to world-leading research professors. Total payments to research bodies and institutions were €222.5 million.

Summary of key award programme decisions in 2021:

- 70 awards were made under the SFI Frontiers for the Future programme with **€46 million** invested to support excellent independent researchers.
- **€11.9 million** was invested in two awards under the SFI Strategic Partnership Programme to foster and develop co-funded partnerships of scale delivering economic and societal impact to Ireland.
- **23 awards** were made under the SFI Future Innovator Prize Call 2021, with an investment of €9.9 million to support challenge-based funding.
- The SFI Research Infrastructure Programme funded 20 research equipment and facilities awards valued at **€34.8 million** to support key research infrastructure projects.
- SFI invested **€13 million** in the jointly funded SFI-IRC Pathway Programme with 24 awards made to support post-doctoral researchers to become research leaders across all disciplines.
- 27 awards were funded by the SFI Industry RD&I Fellowship programme with an investment of **€2.1 million** to support research Fellowship placements in industry.
- 79 awards were made through the SFI Discover Programme totalling **€4.9 million** to support STEM education and engagement.
- Seven awards were made under the SFI US-Ireland R&D Partnership Programme to with an SFI investment of **€2.5 million**, supporting over 60 research positions across 14 research institutions in areas such as telecommunications, energy and health.

New awards made in 2021

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Breda Smyth	COVID-RRC	Multi-site study to develop a SARS-CoV-2 infection surveillance system for third-level students and staff in Republic of Ireland (UniCoV)	National University of Ireland, Galway	1,161,647.00
Malika Bendeache	SFI Discover	AI in My Life: extending Transition Year deliberative workshops nationally	Dublin City University	49,955.00
Nicola Broderick	SFI Discover	Guardians of the Future: developing parents' climate science literacy	Dublin City University	49,994.00
Emma Clarke	SFI Discover	Citizens' Think-Ins: a multi-stakeholder approach to community engagement with STEM	Dublin City University	49,681.00
Liz Coleman	SFI Discover	Samhail	National University of Ireland, Galway	50,000.00
Ann-Marie Creaven	SFI Discover	The Science of Us	University of Limerick	49,821.00
Anna Davies	SFI Discover	iAdapt: Expanding engagement with adaptation planning through Climate Smart	Trinity College Dublin	46,207.00
Joanne Dolan	SFI Discover	Teen-Turn	Teen-Turn	50,000.00
Pierpaolo Dondio	SFI Discover	Happy Maths: fighting maths anxiety with game-based learning	Technological University Dublin	52,059.00
Thomas Doyle	SFI Discover	Jellyfish Fantastic: increasing ocean literacy through creative design and participation	University College Cork	49,340.00
Daniel Ferrick	SFI Discover	Visioneers: smart cities education programme	Trinity College Dublin	37,860.00
Riona Fitzgerald	SFI Discover	TRY FIVE: Biology, Engineering, Chemistry, Electronics and Microscopy	Technological University Dublin	49,230.00
Lizbeth Goodman	SFI Discover	Muinin Catalyst: sustainable STEAM future-ready teaching and learning for resilience	University College Dublin	299,851.00
Amy Harrington	SFI Discover	Gaelscoileanna STEM programme	Royal Dublin Society	269,359.00
Maria Kelly	SFI Discover	Junior Researcher Programme	RCSI University of Medicine and Health Sciences	24,733.00
Louise Lawlor	SFI Discover	Inspiring children in STEM for the future	Kildare County Council	4,000.00
Sylvia Leatham	SFI Discover	Manufacturing in the classroom: sustainability and the circular economy	University College Dublin	25,100.00
Eoin Lettice	SFI Discover	Tree Explorers 2	University College Cork	49,258.00
Aoife Long	SFI Discover	Cyber Skills Careers	Munster Technological University	291,811.00
Patricia Maguire	SFI Discover	Little Big Questions	University College Dublin	53,399.00
Fergal Malone	SFI Discover	Debunking the myths: The science behind our sexual health	RCSI University of Medicine and Health Sciences	274,348.00
Frances McCarthy	SFI Discover	Sustainable Space	Cosmos Education T/A Blackrock Castle Observatory	236,390.00

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Shane McCracken	SFI Discover	I'm a STEM engagement event - Ireland	Gallomanor Communications Ltd.	36,750.00
Jonathan McCrea	SFI Discover	SCI:COM	Whipsmart Media Ltd.	64,000.00
David McKeown	SFI Discover	Dublin Maker - 10th Anniversary	University College Dublin	50,000.00
Jennifer McMahon	SFI Discover	MY-Sci: Mental health promotion in youth through science	University of Limerick	47,337.00
Maria Isabel Meza Silva	SFI Discover	Unboxing Manufacturing: STEM for all at Our Lady's Hospital School	Irish Manufacturing Research	46,276.00
Bush Moukarzel	SFI Discover	To Be a Machine (Version 2.0)	Dead Centre Theatre	49,200.00
Siún Nic Mhuirí	SFI Discover	Maths4All Professional Learning Communities	Dublin City University	160,000.00
Cliona O'Carroll	SFI Discover	Catching Stories: testimony of infectious disease in Ireland	University College Cork	48,488.00
Enda O'Connell	SFI Discover	ReelLIFE SCIENCE video competition	National University of Ireland, Galway	30,894.00
John O'Donoghue	SFI Discover	Current Chemistry Investigators (CCI)	Trinity College Dublin	235,696.00
Grainne O'Malley	SFI Discover	Wild Connections: the flora and fauna of Ireland	The Birr Scientific and Heritage Foundation	74,000.00
Alan O'Riordan	SFI Discover	Uiscope 2022: device-enabled citizen science project on water quality	Tyndall National Institute	50,000.00
Abhay Pandit	SFI Discover	Undergraduate Research Opportunity Programme (UROP)	National University of Ireland, Galway	50,000.00
Una Parsons	SFI Discover	Engineering NorthWest	Atlantic Technological University Sligo	50,000.00
Keith Quille	SFI Discover	CS LINC - Bridging the gap to formal computer science education	Technological University Dublin	265,853.00
Helen Roche	SFI Discover	STEP Through the Looking Glass: stories told of experimental processes	University College Dublin	49,999.00
Bridgette Rowland	SFI Discover	Engaging Families in STEM Programme	Kildare County Council	9,000.00
Gerard Ryder	SFI Discover	Fiosracht in the Classroom: The STEMPATHY journey	Technological University Dublin	47,028.00
Roseanna Shanahan	SFI Discover	Science hub at Learning Hub Limerick	Learning Hub Limerick Ltd.	50,000.00
Sharon Shannon	SFI Discover	Spaces In-Between	University College Dublin	49,957.00
Niamh Shaw	SFI Discover	Sssh! @ The Library (STEM, STEAM and Space Hub Project)	Niamh Shaw Ltd.	38,228.00
Frances Sheridan	SFI Discover	Data Bytes: A data science programme and showcase for TY students	National College of Ireland	35,690.00
Glenn Strong	SFI Discover	Pytch: A bridge from block to text programming	Trinity College Dublin	49,730.00
PJ Wall	SFI Discover	Technology in my Life	Trinity College Dublin	49,306.00
Mairead Whelan	SFI Discover	Big Life Fix Series 2	Kite Entertainment	300,000.00
John White	SFI Discover	Science in Action for Infant Learning (SAIL)	Dublin City University	47,188.00
Jerry Bird	SFI Discover Science Week	Sligo Science Festival	Atlantic Technological University Sligo	30,000.00

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Dea Birkett	SFI Discover Science Week	Nature's Secret Circus: exploring Achill's geology through circus	Circus250 CIC	6,428.00
Caitriona Boyle	SFI Discover Science Week	Festival of Farming and Food - SFI Science Week at Teagasc	Teagasc	26,770.00
Amanda Branigan	SFI Discover Science Week	Louth Science Festival 2021	Louth County Council	8,000.00
Alice D'Arcy	SFI Discover Science Week	STEAM Silver Science: Brainy-atrics never too old to learn	STEAM Education Ltd.	8,000.00
Sheila Donegan	SFI Discover Science Week	South East Science Festival	South East Technological University Waterford	30,000.00
Sheila Donegan	SFI Discover Science Week	Kilkenny Science Festival	South East Technological University Waterford	33,600.00
Rachel Farrell	SFI Discover Science Week	Girls in STEM: changing mindsets and impacting futures	University College Dublin	8,000.00
Eoin Gill	SFI Discover Science Week	WexSci 2021	South East Technological University Waterford	30,000.00
Jackie Gorman	SFI Discover Science Week	Midlands Science Festival	Atlantic Corridor	30,000.00
Mervyn Horgan	SFI Discover Science Week	Cork Science Festival	Glenosheen Ltd.	30,000.00
Anna Kadzik-Bartoszewska	SFI Discover Science Week	The Improv Lab	Gaiety School of Acting	8,000.00
Taran Kelly	SFI Discover Science Week	Ballyhoura Science Week 2021	Ballyhoura Development Ltd.	8,000.00
Maeve Liston	SFI Discover Science Week	Tipperary Festival of Science	Mary Immaculate College	30,000.00
Donal Lyne	SFI Discover Science Week	Designer Minds: online STEAM workshops for primary girls	Designer Minds Educational Services Ltd.	8,000.00
Fergal Malone	SFI Discover Science Week	BIAS: inequality in women's health and research	RCSI University of Medicine and Health Sciences	31,300.00
Amanda Mathieson	SFI Discover Science Week	Back for the Future on Tour	University College Dublin	4,442.50
Liz McBain	SFI Discover Science Week	Building Spaces of Possibility	British Council Ireland	8,000.00
Daniel Vincent McCarthy	SFI Discover Science Week	Curiosity Accelerator @ Science Week 2021: catalysing conversation	The Festival of Curiosity Ltd.	8,000.00
Pat McHale	SFI Discover Science Week	Mayo Science and Technology Festival 2021	Mayo County Council T/A Mayo Science and Technology Festival	26,500.00
Deirdriu McQuaid	SFI Discover Science Week	Cavan Monaghan Science Festival	Monaghan County Council	30,000.00
Paul Mee	SFI Discover Science Week	Galway Science and Technology Festival	Galway Science and Technology Forum	20,000.00
N/A	SFI Discover Science Week	Award declined	Trinity College Dublin	8,000.00
Sean O'Brien	SFI Discover Science Week	ED-SMART: encouraging dialogue around smart-manufacturing through artistic representations of technology	University of Limerick	8,000.00

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John O'Donoghue	SFI Discover Science Week	Power Our Future	Trinity College Dublin	8,000.00
Geraldine O'Meara	SFI Discover Science Week	South Dublin Libraries Season of Science	South Dublin County Council	8,000.00
Bernie Quilligan	SFI Discover Science Week	Limerick Festival of Science	University of Limerick	30,000.00
Bridgette Rowland	SFI Discover Science Week	Bridging the Gap: Kildare Libraries Science Week 2021 public events	Kildare County Council	8,000.00
Al Russell	SFI Discover Science Week	Science Week 2021 at The Ark	The Children's Cultural Centre Ltd. T/A The Ark	8,000.00
Niamh Shaw	SFI Discover Science Week	Science Week Live! A live-streamed daily news show	Niamh Shaw Ltd.	5,800.00
Joseph Walsh	SFI Discover Science Week	Kerry Science Festival – Beyond 2021	Munster Technological University	28,000.00
Jonathan Bones	EPSRC-SFI Joint Funding of Research	Cutting-edge analytical solutions for smart, integrated, efficient biopharmaceutical production	The National Institute for Bioprocessing Research and Training	637,271.70
Frederic Dias	EPSRC-SFI Joint Funding of Research	Wave breaking in crossing seas	University College Dublin	148,114.00
David Igoe	EPSRC-SFI Joint Funding of Research	ROBOCONE: intelligent robotics for next generation ground investigation and design	Trinity College Dublin	590,055.00
Carsten Kroeger	EPSRC-SFI Joint Funding of Research	Supercoiling-driven gene control in synthetic DNA circuits	Trinity College Dublin	437,194.10
Vivek Ranade	EPSRC-SFI Joint Funding of Research	Table top manufacturing of tailored silica for personalised medicine [SiPM]	University of Limerick	478,695.50
John Evans	EU Co-Funding Initiatives	BlueBioeconomy	Marine Institute	495,952.00
Orla Feely	SFI Fellowship	SFI Fellowship	University College Dublin	144,342.19
Orla Feely	SFI Fellowship	SFI Fellowship	University College Dublin	165,919.65
Wolfgang Schmitt	SFI Fellowship	SFI Fellowship	Trinity College Dublin	173,031.82
Ursel Bangert	Frontiers for the Future	Pushing the frontiers of next generation nanoelectronics and energy storage by establishing, tailoring and exploiting the functionalities of novel materials: 2-D ferroelectrics and their domains and dynamic 1-D domain walls	University of Limerick	452,220.00
George Barreto	Frontiers for the Future	Coupling neurosciences and artificial intelligence to potentiate pharmacological actions of tibolone over neuroglobin signalling in traumatic brain injury	University of Limerick	603,227.00
Marcus Baumann	Frontiers for the Future	Continuous flow biocatalysis for high value products exploiting enzyme cascade processes	University College Dublin	534,061.00
Jonathan Bond	Frontiers for the Future	Unravelling epigenetic systems disruption in cancer	University College Dublin	623,080.00

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Carmel Breslin	Frontiers for the Future	The fabrication of conducting 2D layered graphene-like materials and their applications as environmental sensors and as electro-catalysts for electro-Fenton: improved sensing and removal of emerging pollutants from water	Maynooth University	616,915.00
Hugh J. Byrne	Frontiers for the Future	Shedding light on cellular function: combining kinetic, mechanistic modelling approaches with label free microspectroscopic imaging (CYTOMECHSPEC)	Technological University Dublin	621,373.00
Peter Byrne	Frontiers for the Future	Catalytic Wittig CO ₂ utilisation methodology for sustainable production of carboxylic acids derivatives	University College Cork	596,824.00
Annette Byrne	Frontiers for the Future	Leveraging chromosomal instability for improved diagnosis and treatment in bevacizumab resistant metastatic colorectal cancer	RCSI University of Medicine and Health Sciences	614,247.79
Niamh Cahill	Frontiers for the Future	Predicting sea levels and sea-level extremes for Ireland	Maynooth University	258,529.00
Maeve Caldwell	Frontiers for the Future	Apolipoprotein-E genotype influences inflammation in Alzheimer's Disease	Trinity College Dublin	623,994.00
Tancredi Caruso	Frontiers for the Future	Delivering food security from grasslands by understanding the link between root microbial networks and resilient agriculture	University College Dublin	501,649.00
Mert Celikin	Frontiers for the Future	Additive manufacturing of bioresorbable magnesium implants	University College Dublin	501,198.00
Claire Conway	Frontiers for the Future	Digital models for next generation mitral prostheses	RCSI University of Medicine and Health Sciences	610,852.00
Mark Cunningham	Frontiers for the Future	Gene therapy approaches for brain tumour related epilepsy	Trinity College Dublin	556,218.00
Annie Curtis	Frontiers for the Future	Chrono-Vac: harnessing the chronobiology of skin dendritic cells to boost vaccine efficacy	RCSI University of Medicine and Health Sciences	616,273.00
John Dooley	Frontiers for the Future	ORCHESTRA 6G: orchestrating arrays for 6G	Maynooth University	417,572.00
Elaine Dunleavy	Frontiers for the Future	Mechanisms of centromere assembly and maintenance in germ cells and impacts on cell fate, fertility and early development	National University of Ireland, Galway	1,188,230.00
Karen English	Frontiers for the Future	Removing the brake; role of PPAR on mesenchymal stromal cell therapeutic efficacy in ARDS	Maynooth University	1,297,245.00
Elisa Fadda	Frontiers for the Future	GlycoShape: A database/toolbox for structural glycomics and glycoanalytics	Maynooth University	565,940.00
Sara Farrona	Frontiers for the Future	Inter-PWOs: investigation of how chromatin-associated PWOs and their interacting molecules regulate plant development	National University of Ireland, Galway	603,187.76

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Ursula Fearon	Frontiers for the Future	Molecular signatures that distinguish RA and PsA pathotypes - impact for disease progression and response	Trinity College Dublin	616,592.00
Angela Feechan	Frontiers for the Future	RECEPTAR PATH: removing susceptibility RECEPTors in wheat and barley TARGETed by fungal leaf blight PATHogens	University College Dublin	623,197.00
Breiffni Fitzgerald	Frontiers for the Future	Machine learning for wind farm aerodynamics and control (MeLodiC)	Trinity College Dublin	520,632.00
Nicola Fletcher	Frontiers for the Future	A 'One Health' approach to investigate hepatitis E virus in humans, animals and the environment	University College Dublin	588,572.00
Max Garcia-Melchor	Frontiers for the Future	Accelerated rational design of cost-effective hybrid materials for water splitting using machine learning	Trinity College Dublin	605,085.00
Emmanuelle Graciet	Frontiers for the Future	Future-proofing our crops by increasing their resilience to flooding (hypoxia) and pathogens	Maynooth University	617,895.00
Patrick Harrison	Frontiers for the Future	CRISPR Prime-XL and HDR-XL to repair cystic fibrosis mutations across an entire exon using a single guide RNA; an essential step towards clinical translation	University College Cork	431,763.00
Ioscani Jimenez del Val	Frontiers for the Future	Dial-A-Sugar: model-predictive control of biopharmaceutical glycosylation	University College Dublin	612,202.00
Robert Johnson	Frontiers for the Future	DNA amplification and detection within a confined nanospace	University College Dublin	591,092.00
Adam Kane	Frontiers for the Future	Noisy Neighbours: The movement ecology of urban gulls	University College Dublin	343,964.00
Susan Kelleher	Frontiers for the Future	EMMA: electrospun membranes with micro and nanoscale surface patterns for anti(bio)fouling and antibacterial applications	Dublin City University	596,128.00
Clare Kelly	Frontiers for the Future	Sex matters: identifying the neurodevelopmental origins of sex differences in depression	Trinity College Dublin	623,974.00
Brendan Kennedy	Frontiers for the Future	Investigating fundamental biological processes underpinning vision, to understand disease and develop therapeutic interventions for blindness	University College Dublin	431,009.00
Michael Peter Kennedy	Frontiers for the Future	No spurs after nonlinear distortion (NoSAND)	University College Dublin	1,160,974.00
Amir Khan	Frontiers for the Future	LRRK2 control of membrane trafficking in health and disease	Trinity College Dublin	1,277,045.00
Alexey Lastovetsky	Frontiers for the Future	Models, algorithms and software for energy-efficient parallel computing in heterogeneous hybrid multicore era	University College Dublin	616,148.00
Joanne Lysaght	Frontiers for the Future	Identifying novel aspects of immune checkpoint pathways to improve response rates in upper gastrointestinal cancer	Trinity College Dublin	387,198.00

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John Mackrill	Frontiers for the Future	Inositol trisphosphate signalling in potato blight: a pathway to the elimination of a plant destroyer?	University College Cork	367,848.00
Jennifer Mahony	Frontiers for the Future	The sweet tooth of a bacterial virus: unravelling phage-host attachment and recognition modalities (PHARM) in the dairy bacterium <i>Streptococcus thermophilus</i>	University College Cork	618,010.00
Abdollah Malekjafarian	Frontiers for the Future	Automated and rapid fault diagnosis of railway tracks using in-service train measurements	University College Dublin	486,807.00
Suzanne Martin	Frontiers for the Future	Low-cost, integrated holographic technology for specialized, highly adapted, photopolymer beam shaping elements (LIGHTSHAPE)	Technological University Dublin	519,036.00
Siobhan McClean	Frontiers for the Future	AdaptaLox: adaptation of bacteria to the low oxygen environment in chronic lung diseases - a target for a single treatment modality	University College Dublin	612,232.00
Grace McCormack	Frontiers for the Future	Investigating diversity and adaptation in wild honey bees in Ireland	National University of Ireland, Galway	614,999.00
Maria McNamara	Frontiers for the Future	The evolution of melanin in vertebrates: using taphonomy to decode the history of metal-melanin interactions and melanin function through deep time	University College Cork	614,083.00
Rosemary Monahan	Frontiers for the Future	MAIVV: modular AI verification and visualisation	Maynooth University	620,828.00
Anne Moore	Frontiers for the Future	Induction of broad systemic and mucosal immune responses by non-injected stable vaccines	University College Cork	1,151,621.00
Brona Murphy	Frontiers for the Future	GLIOTREAT: novel treatments for Glioblastoma patients	RCSI University of Medicine and Health Sciences	556,161.00
Eddie Myers	Frontiers for the Future	Photoinitiated transformations of peptides and protein for biopharmaceutical and biomaterial application	National University of Ireland, Galway	596,879.00
Valeria Nicolosi	Frontiers for the Future	Engineering of hierarchical porous structures based on novel 2D nanomaterials: towards the new generation of battery devices beyond Lithium	Trinity College Dublin	1,221,918.00
James O'Donnell	Frontiers for the Future	Defining the mechanisms through which enhanced clearance contributes to the pathogenesis of the common inherited bleeding disorder Von Willebrand disease	RCSI University of Medicine and Health Sciences	1,257,285.00
Olivia O'Leary	Frontiers for the Future	Unlocking the mechanisms underlying gut microbial regulation of adult hippocampal neurogenesis: implications for cognitive and stress-related brain disorders	University College Cork	623,636.40
Stefan Oscarson	Frontiers for the Future	Towards novel therapies; development of a glycoconjugate fungal vaccine targeting <i>Cryptococcus neoformans</i> infections	University College Dublin	409,718.00

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Vivek Ranade	Frontiers for the Future	'Factory in a Box' for personalised products based on emulsions [FabPRO]	Trinity College Dublin	1,242,967.00
Tracy Robson	Frontiers for the Future	Breaking the Obesity-Cancer link; a theranostic role for FKBPL in modulating immunometabolism across disease progression in oesophageal adenocarcinoma	RCSI University of Medicine and Health Sciences	1,182,252.00
Isabel Rozas	Frontiers for the Future	Towards an antiviral drug to treat COVID-19 infections	Trinity College Dublin	590,223.00
Albert A Ruth	Frontiers for the Future	Ultra-sensitive cavity-enhanced trace gas detection for new atmospheric science and socio-economic impacts	University College Cork	1,286,273.00
Colm Ryan	Frontiers for the Future	Understanding and predicting context-specific synthetic lethality in cancer	University College Dublin	545,044.34
Patricia Scully	Frontiers for the Future	Laser functionalisation of flexible polymer-carbon composites for medical sensing	National University of Ireland, Galway	575,088.00
Christophe Silien	Frontiers for the Future	Illumination diversity for label-free super-resolution biological multimodal far-field microscopy	University of Limerick	560,725.00
Teerachot Siriburanon	Frontiers for the Future	Massive array of mm-wave transmitters with digital pencil beam steering for 5G communications and radars	University College Dublin	602,326.00
Michael Stock	Frontiers for the Future	Developing a process-based understanding of platinum group element mineralisation: a natural laboratory in Ireland (Critical-Ireland)	Trinity College Dublin	621,302.00
Damir Vareslija	Frontiers for the Future	Epigenetic and microenvironmental regulation of brain metastases	RCSI University of Medicine and Health Sciences	487,500.00
Anthony Ventresque	Frontiers for the Future	RobuSTests: robust software tests	University College Dublin	622,116.00
Fiona Walsh	Frontiers for the Future	Targeting antimicrobial resistance plasmids to resurrect antimicrobial therapies	Maynooth University	1,195,040.00
Robert Whelan	Frontiers for the Future	Predicting who will respond to stimulant medication in ADHD: A precision medicine approach using neurally informed computational models	Trinity College Dublin	587,499.00
Kenneth Wolfe	Frontiers for the Future	Molecular arms race between a yeast homing genetic element and its genomic target	University College Dublin	1,279,805.34
Damien Woods	Frontiers for the Future	Active DNA tiles for programmable nucleation of robust DNA nanostructures	Maynooth University	604,266.00
Shuo Yin	Frontiers for the Future	Novel digital holographic and modelling technologies for unlocking the metal-ceramic co-deposition mechanism during supersonic cold spray	Trinity College Dublin	575,661.00
Paul Young	Frontiers for the Future	Investigation of LNX proteins as novel regulators of synaptic function and potential drug targets in neurological disorders	University College Cork	529,430.00

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Hongzhou Zhang	Frontiers for the Future	Controllable resistive switching in two-dimensional molybdenum disulphide via site-specific Helium ion irradiation	Trinity College Dublin	622,579.00
Dara Fitzgerald	Fulbright-SFI US Scholar Programme	SFI US Scholar	The Fulbright Commission	31,500.00
Demetra Achilleos	SFI Future Innovator Prize	Good health and well-being for all via a solar-driven, sustainable, water treatment technology	University College Dublin	369,608.00
Holger Claussen	SFI Future Innovator Prize	MISTRAL: automated persistent aerial communication system	Tyndall National Institute	282,969.00
David Culliton	SFI Future Innovator Prize	Disruptive sensor-informed control measures to prevent water ingress on P50 and P60 naval offshore patrol vessels	South East Technological University Carlow	280,150.00
Rozenn Dahyot	SFI Future Innovator Prize	Smart Hangar	Maynooth University	247,331.00
Denis Dowling	SFI Future Innovator Prize	Light-weight, high efficiency, electric propulsion solution for enabling zero emissions marine transport	University College Dublin	266,034.00
Sean Doyle	SFI Future Innovator Prize	Reducing neonatal and maternal mortality by rapid detection of sepsis in resource-limited environments	Maynooth University	390,000.00
Cormac Flynn	SFI Future Innovator Prize	SightSave, an unconventional and disruptive treatment option for preventing vision loss in low and middle income countries	National University of Ireland, Galway	384,900.00
Joseph Gallagher	SFI Future Innovator Prize	BIOTOPE 2 (biomarkers to predict Pneumonia 2)	University College Dublin	388,739.00
Aaron Golden	SFI Future Innovator Prize - Winner	Tracking adaptation progress in agriculture and food security using an AI-powered satellite remote sensing platform - TAPAS	National University of Ireland, Galway	1,357,440.50
Robert Johnson	SFI Future Innovator Prize	Robust and reusable electrochemical DNA biosensors for point of need deployment	University College Dublin	269,424.00
Lokesh Joshi	SFI Future Innovator Prize	"BIO-SENSE", rapid in-situ detection of multiple biological agents in parallel, for active threats, continuous surveillance and public health monitoring programmes	National University of Ireland, Galway	216,995.00
Tony Keene	SFI Future Innovator Prize - Runner-up	LiCoRICE: closing the circuit - bringing lithium cobalt batteries into the circular economy	University College Dublin	578,240.70
Piet Lens	SFI Future Innovator Prize	Clean-up of diffuse chemical and microbiological pollution by floating wetlands	National University of Ireland, Galway	379,650.00
Brian Mac Namee	SFI Future Innovator Prize	Machine learning and virtual reality for sustainable and effective pilot training	University College Dublin	276,850.00
Patricia Maguire	SFI Future Innovator Prize - Runner-up	Development of an AI-powered risk stratification platform for preeclampsia	University College Dublin	709,646.50
Gavin McArdle	SFI Future Innovator Prize	Decision support systems for aerial fire-fighting	University College Dublin	263,463.00

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Tim McCarthy	SFI Future Innovator Prize	COPilot AI (common operational picture and AI) for managing wildfires	Maynooth University	277,147.00
David McCloskey	SFI Future Innovator Prize - Runner-up	SolarCool: improving solar PV through thermal management	Trinity College Dublin	626,933.20
Kevin O'Connor	SFI Future Innovator Prize - Winner	Farm Zero C: creating a carbon neutral resilient dairy farm	University College Dublin	2,519,544.90
Kevin O'Connor	SFI Future Innovator Prize - Winner	Farm Zero C: creating a carbon neutral resilient dairy farm supplement	University College Dublin	173,425.20
Cliona O'Sullivan	SFI Future Innovator Prize	BACKTRACK: A technology enabled care pathway delivered by community health workers to manage low back pain in Uganda	University College Dublin	242,261.00
Mark Shrimme	SFI Future Innovator Prize	Using data science to achieve scale and quality in surgical training in East and Southern Africa	RCSI University of Medicine and Health Sciences	310,689.00
Ashish Vashishtha	SFI Future Innovator Prize	AltFuel4DF: portable and scalable waste to synthetic biofuel technology demonstrator to decarbonise defence force transport	South East Technological University Carlow	263,301.00
Pavel Baranov	SFI-HRB-Wellcome Research Career Development Fellowship Supplement	General Supplement	Health Research Board	532.50
Pavel Baranov	SFI-HRB-Wellcome Research Career Development Fellowship Supplement	General Supplement	Health Research Board	549.00
Pavel Baranov	SFI-HRB-Wellcome Research Career Development Fellowship Supplement	General Supplement	Health Research Board	508.75
William Gallagher	SFI-HRB-Wellcome Trust Biomedical Research Partnership	Institutional Strategic Support Fund	Health Research Board	55,000.00
Brian McStay	SFI-HRB-Wellcome Research Career Development Fellowship Supplement	General Supplement	Health Research Board	502.25
Niamh O'Sullivan	SFI-HRB-Wellcome Research Career Development Fellowship Supplement	General Supplement	Health Research Board	1,159.00

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Mani Ramaswami	SFI-HRB-Wellcome Trust Biomedical Research Partnership	Institutional Strategic Support Fund	Health Research Board	55,000.00
Andrey Shkporov	SFI-HRB-Wellcome Research Career Development Fellowship	crAssphages – the most abundant viruses in human gut	Health Research Board	227,589.50
Mohammad Ali Ekhtiari	SFI Industry RD&I Fellowship Programme	End-user considerations in the transition to a green gas network	University College Dublin	73,083.40
Xiulong Bao	SFI Industry RD&I Fellowship Programme	Investigation of high gain circularly polarized antenna with wide beamwidth for low power wide area network	University College Dublin	78,382.00
Majid Bhinder	SFI Industry RD&I Fellowship Programme	Adaptation of wave structure interaction modelling to characterise the performance of a novel mooring optimisation device for floating offshore wind	University College Cork	100,249.16
James Duffy	SFI Industry RD&I Fellowship Programme	Development of novel analysis technology for rapid detection of infectious particles	Trinity College Dublin	88,394.52
Karen Fox	SFI Industry RD&I Fellowship Programme	Preparation of 18F or 19F labelled RNAs via 4'-F and 2'-F-deoxyribose nucleotides and their precursors	RCSI University of Medicine and Health Sciences	68,830.50
Jorge Garcia	SFI Industry RD&I Fellowship Programme	Reflective spectroscopy probe	Trinity College Dublin	66,879.38
Nima E. Gorji	SFI Industry RD&I Fellowship Programme	Recyclability of metallic Titanium powders for 3D printing of biomedical products	South East Technological University, Waterford	85,486.76
Petra Jagust	SFI Industry RD&I Fellowship Programme	Breast cancer immune ecosystem-derived T Cell therapy (SENSE)	RCSI University of Medicine and Health Sciences	72,583.89
Marie Le Berre	SFI Industry RD&I Fellowship Programme	Putting the bio in biosensing: bioassay development for a silicon-based electrical transduction platform	National University of Ireland, Galway	98,464.04
Balasubramaniam M	SFI Industry RD&I Fellowship Programme	Fabrication and characterisation of silicon-based biointerfaces for biosensor application	University of Limerick	68,899.98
Sojan Mathew	SFI Industry RD&I Fellowship Programme	Assessment of coastal evolution and vulnerability along County Wicklow using geospatial techniques	Trinity College Dublin	102,371.71
Walter Messina	SFI Industry RD&I Fellowship Programme	Design and fabrication of a novel highly localised drug delivery device for photodynamic therapy	Tyndall National Institute	82,541.46
Lilian MottiAder	SFI Industry RD&I Fellowship Programme	Can the evolution of depth cameras enable holographic interaction?	University of Limerick	52,328.96

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
James Murray	SFI Industry RD&I Fellowship Programme	Recovery of PEEK recycle for use in orthopaedics	Technological University of the Shannon, Athlone	74417.4
Sudhakara Naidu Neppalli	SFI Industry RD&I Fellowship Programme	Anti-corrosion Sol-Gel based coatings for 3D printed ceramic and metal substrates	Trinity College Dublin	91,865.88
Jamal Nasir	SFI Industry RD&I Fellowship Programme	Goal-oriented chatbots optimisation with reinforcement learning	National University of Ireland, Galway	6,305.00
Eimear O'Hara	SFI Industry RD&I Fellowship Programme	Sustainable additive manufacturing of orthopaedic implants	National University of Ireland, Galway	96,433.48
Akash Pisharody	SFI Industry RD&I Fellowship Programme	Mechanical behavior of recycled carbon fiber composites subject to hygrothermal exposure	National University of Ireland, Galway	69,846.00
Lukasz Porwol	SFI Industry RD&I Fellowship Programme	The next generation VR-driven serious communication and collaboration hybrid infrastructures for business	National University of Ireland, Galway	113,037.45
Srikumar Roy	SFI Industry RD&I Fellowship Programme	Floating offshore wind: site characterisation framework (FLOWSiChF)	University College Dublin	91,677.43
Ibrahim Saana Amiin	SFI Industry RD&I Fellowship Programme	Selective delayering of low-geometry materials by plasma FIB Dx chemistry for the failure analysis of magnetic sensors	University of Limerick	98,464.04
Emad Tandis	SFI Industry RD&I Fellowship Programme	Toward an eco-friendly heat treatment process for steel wire	University College Dublin	68,179.42
Daire Tyndall	SFI Industry RD&I Fellowship Programme	Surface finishing of 3D printed implant devices and instruments	Trinity College Dublin	79,633.00
Shen Wang	SFI Industry RD&I Fellowship Programme	xSymGen: A symptom generation framework for SAIN using xAI	University College Dublin	32,516.00
Sahan Wasala	SFI Industry RD&I Fellowship Programme	Aeroacoustics noise modelling, measurement and prediction to standardise HDD-Chassis interactions used in large-scale data centres	Trinity College Dublin	94,940.78
Ming Zhao	SFI Industry RD&I Fellowship Programme	Development and application of process analytical technology (PAT) tools for in-line monitoring of milk powder reconstitution processes	University College Dublin	82,725.62
Ahmad Ziaee	SFI Industry RD&I Fellowship Programme	Development of advanced coating and masking technologies for bioactive 3D-printed implants (MaskBio)	University of Limerick	68,179.42
Mario Cabrero Manresa	SFI-IRC Pathway Programme	Investigating the mediators and mechanisms that govern inflammatory responses on fibroblasts and the impact of fibroblast-macrophage interactions in inflammatory bowel disease	University College Dublin	552,500.00
Alison Connolly	SFI-IRC Pathway Programme	EIRE - nEonicotinoid Insecticide exposuREs: an environmental and occupational exposure study of neonicotinoid insecticides	National University of Ireland, Galway	551,301.00

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Eric Conway	SFI-IRC Pathway Programme	Developing precision medicine strategies to target ASXL1 gain-of-function mutant acute myeloid leukemias	Trinity College Dublin	551,300.00
Jennifer Cookman	SFI-IRC Pathway Programme	In situ crystallisation and electron crystallography of pharmaceutical crystals using liquid phase electron microscopy	University of Limerick	551,528.00
Kevin Daly	SFI-IRC Pathway Programme	Herd Health: The pathogen and health consequences of small ruminant domestication and zoonosis	Trinity College Dublin	552,006.00
Monica de Gaetano	SFI-IRC Pathway Programme	Synthetic Lipoxin-A4 mimetics: novel therapeutic approaches to target residual inflammatory risk in atherosclerosis-associated Diabetes complications	University College Dublin	552,201.00
Tarini Ghosh	SFI-IRC Pathway Programme	Understanding microbiome assembly, resilience transmission to enable rational design of therapeutic microbial consortia	University College Cork	546,992.00
Sarah Guerin	SFI-IRC Pathway Programme	Crystal Clear: standardisation of eco-friendly amino acid piezoelectrics	University of Limerick	548,301.00
Damien Haberlin	SFI-IRC Pathway Programme	Using biotelemetry to understand the interactions of elasmobranchs (sharks, skates, and rays) with offshore renewable energy devices	University College Cork	544,099.00
Chris Kavanagh	SFI-IRC Pathway Programme	Perturbative analysis of the two body problem in general relativity in the small mass-ratio limit	University College Dublin	519,548.00
Venus Keus	SFI-IRC Pathway Programme	MOREHIGGS: measuring observables to refine extensions of the HIGGS sector	Dublin Institute for Advanced Studies	520,392.50
Maria Kotlyar	SFI-IRC Pathway Programme	A novel integrated photo-thermal spectroscopic method for monitoring bacterial growth and assessing antimicrobial effects	Munster Technological University	548,960.00
Florian Le Pape	SFI-IRC Pathway Programme	Seismo-acoustic sensing of the changing North Atlantic Ocean and climate	Dublin Institute for Advanced Studies	542,436.00
Viviana Marzaioli	SFI-IRC Pathway Programme	Decoding the impact of joint micro-environment on monocyte molecular signatures and function: impact for prediction of disease pathotype and disease outcome	Trinity College Dublin	552,199.00
Soumya Mukherjee	SFI-IRC Pathway Programme	Ionic ultramicroporous polymer adsorbents for energy-efficient purification of commodity chemicals	University of Limerick	550,850.00
Silvia Nagy	SFI-IRC Pathway Programme	A complete double copy dictionary and its applications	Dublin Institute for Advanced Studies	507,095.00
Valeria Nico	SFI-IRC Pathway Programme	Hybrid multi-axial nonlinear vibrational energy harvesting	University of Limerick	551,121.00
Donna Rodgers-Lee	SFI-IRC Pathway Programme	Energetic particles: from embedded to exposed exoplanets	Dublin Institute for Advanced Studies	516,582.92

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Maria Rodriguez Aburto	SFI-IRC Pathway Programme	Deciphering the role of early life microbiota in neuro-glia-vascular development and contributions to neurodevelopmental disorders	University College Cork	551,602.00
Trent Rogers	SFI-IRC Pathway Programme	Arbitrary nanoscale shapes self-assembled from a fixed monomer set	Maynooth University	551,000.00
Özlem Sarikaya Bayram	SFI-IRC Pathway Programme	Dissection of the epigenetically controlled gene network in aflatoxigenic fungi to improve agricultural productivity and food safety	Maynooth University	551,600.00
Nanasaheb Thorat	SFI-IRC Pathway Programme	Plasmonic nanomedicine coupled biomolecular fingerprinting of brain cancer	University of Limerick	551,901.00
Junli Xu	SFI-IRC Pathway Programme	Understanding the impacts of micro (nano) plastics released from plastic products using spectral imaging	University College Dublin	550,682.00
Lingli Zhou	SFI-IRC Pathway Programme	Controls on high-grade stratiform Co mineralisation in the Central African Copperbelt (CRITICAL)	University College Dublin	551,900.00
Daniela Boehm	SFI Maternity Allowance	Harnessing the potential of plasma activated liquids for bio-medical applications	Technological University Dublin	25,903.94
Nollaig Bourke	SFI Maternity Allowance	VIRCOA-TILDA: viral and immune risk factors for COVID-19 in older adults in the TILDA study	Trinity College Dublin	40,197.63
Elaine Dunleavy	SFI Maternity Allowance	Epigenetic mechanisms of stem cell maintenance	National University of Ireland, Galway	37,517.78
Stephen Fahy	SFI Maternity Allowance	Thermoelectric efficiency of IV-VI and V2-VI3 materials driven near phase transitions	Tyndall National Institute	43,213.92
Morgan Fraser	SFI Maternity Allowance	The fate of the most massive stars	The Royal Society	2,758.80
Aoife Gowen	SFI Maternity Allowance	Multi-scale hyperspectral imaging for enhanced understanding and control of food microbiology (HyperMicroMacro)	University College Dublin	28,282.29
David Henshall	SFI Maternity Allowance	FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases	RCSI University of Medicine and Health Sciences	19,149.30
Brian MacNamee	SFI Maternity Allowance	SFI Centre for Research Training in Machine Learning	University College Dublin	12,025.03
Conor McCarthy	SFI Maternity Allowance	Confirm SFI Research Centre for Smart Manufacturing	University of Limerick	51,060.06
Fiona McGillicuddy	SFI Maternity Allowance	Functional consequences of obesity-induced adipose tissue inflammation on HDL acceptor capacity and reverse cholesterol transpoty (RCT)	Health Research Board	12,459.50
Rachel McLoughlin	SFI Maternity Allowance	Staphylococcus aureus induced immunosuppressive memory: consequences for bug and for host	Health Research Board	27,929.00
Michael Morris	SFI Maternity Allowance	Delivering innovative materials for medical devices	Trinity College Dublin	11,979.06

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Michael Morris	SFI Maternity Allowance	AMBER SFI Centre for Advanced Materials and Bioengineering Research	Trinity College Dublin	70,831.64
Ciaran Morrison	SFI Maternity Allowance	Primary cilia and cellular senescence	Health Research Board	3,695.00
Noel O'Connor	SFI Maternity Allowance	Insight SFI Research Centre for Data Analytics	National University of Ireland, Galway	26,126.46
Noel O'Connor	SFI Maternity Allowance	Insight SFI Research Centre for Data Analytics	National University of Ireland, Galway	14,185.44
Noel O'Connor	SFI Maternity Allowance	Insight SFI Research Centre for Data Analytics	National University of Ireland, Galway	25,095.72
Abhay Pandit	SFI Maternity Allowance	CÚRAM SFI Research Centre for Medical Devices	National University of Ireland, Galway	40,795.60
Paul Ross	SFI Maternity Allowance	Gut Inflammation: discovery and therapeutic targeting of the secretome-receptome inflammatory network in inflammatory bowel disease	University College Cork	26,125.58
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	27,479.67
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	23,276.96
Jonathan Bones	Research Infrastructure	CONCEPT: A national synthetic biology and cell line development facility	The National Institute for Bioprocessing Research and Training	4,254,187.75
Maurice Collins	Research Infrastructure	Sustainable composites processing and characterisation Suite (SCoPe)	University of Limerick	1,602,269.00
Paul Cotter	Research Infrastructure	FutureSeq: future-proofing the Irish DNA sequencing centre at Teagasc	Teagasc	1,603,305.17
Stephen Dooley	Research Infrastructure	An end-to-end test-bed for power-to-X processes: carbon dioxide to aviation fuels	Trinity College Dublin	2,156,094.66
William Gallagher	Research Infrastructure	National spatial tissue profiling (NaSPro) platform for precision medicine: integration of chemical, brightfield and fluorescence imaging of tissues combined with single cell molecular profiling	University College Dublin	2,256,619.00
Virginie Gautier	Research Infrastructure	UCD enhanced containment level 3 (CL3) laboratory suite for human and animal risk group 3 biological agents: a national resource for translational research and infectious diseases preparedness	University College Dublin	1,570,522.00
Andrew Kellett	Research Infrastructure	AUTOPILOT: automated high-throughput analysis of cellular phenotyping	Dublin City University	2,410,470.67
Duygu Kiyan	Research Infrastructure	MASTER: magnetotelluric acquisition systems for terrestrial Earth research	Dublin Institute for Advanced Studies	772,475.00
Sean Leen	Research Infrastructure	High-performance materials thermal-mechanical physical simulation system for process-structure-property-performance characterisation in advanced manufacturing (IMPPACT)	National University of Ireland, Galway	831,888.00

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Graeme Maxwell	Research Infrastructure	Lab-to-Fab integration from novel materials to devices using Atomic Layer Processing (Atomic Layer Deposition and Etch) encompassing: modelling; proof of concept model validation; material development and characterisation; wafer-scale device fabrication	Tyndall National Institute	2,971,897.00
Frank McDermott	Research Infrastructure	Multi-collector inductively coupled plasma mass-spectrometer (HR-MC-ICP-MS) with reaction-gas enabled platform	University College Dublin	831,791.00
Margaret McGee	Research Infrastructure	UCD Conway-CEPHR advanced cytometry unit	University College Dublin	914,288.37
Peter McLoughlin	Research Infrastructure	Nanoscale chemical imaging system	South East Technological University Waterford	907,527.00
John Morrissey	Research Infrastructure	MICROFERM: microbial fermentation facility for scale-up of sustainable food and industrial fermentations with real-time process monitoring	University College Cork	1,610,659.00
Luis Padrela	Research Infrastructure	Next generation nanopharma process development platform (NaPRO)	University of Limerick	808,354.00
Karl Richards	Research Infrastructure	National soil greenhouse gas test platform to examine the efficacy of a range of novel fertiliser, bioactives, bio-stimulants, manure, digestate additives	Teagasc	571,238.01
Kevin M Ryan	Research Infrastructure	The national rechargeable battery fabrication and test facility (NRBFT)	University of Limerick	619,577.00
Kerry Thompson	Research Infrastructure	The development of a centre of excellence in multimodal microscopy in NUI Galway	National University of Ireland, Galway	3,300,279.00
Paul Townsend	Research Infrastructure	Tera lab for 6G wireless-photonic networking	Tyndall National Institute	2,850,330.00
Ted Vaughan	Research Infrastructure	Dual-magnification 3D X-ray tomography imaging system	National University of Ireland, Galway	2,317,395.00
Subrata Ghosh	Research Professorship Programme	Analytic understanding of gut microenvironment to enhance new treatments (AUGMENT) rational integration of precision nutrition, microbiome and immune response to optimise immunotherapy in IBD and other inflammatory diseases	University College Cork	5,636,138.00
Dimitra Psychogiou	Research Professorship Programme	Highly-versatile RF front-end antenna interfaces for next generation communications	Tyndall National Institute	4,245,143.00
Michelle Browne*	RS-SFI University Research Fellowship	New catalysts for the oxygen evolution reaction	The Royal Society	593,721.10

*award retracted

SFI Awardee	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Morgan Fraser	RS-SFI University Research Fellowship Renewal	Exploring the transient luminosity gap	The Royal Society	388,156.00
Michael Gibbons	RS-SFI University Research Fellowship	Loop heat pipe for waste heat recovery in data centres	The Royal Society	593,966.10
Richard Hobbs	RS-SFI University Research Fellowship Renewal	Engineering plasmonic nanoantennas for nanochemistry and ultrafast electronics	The Royal Society	403,035.50
Christiana Pantelidou	RS-SFI University Research Fellowship	Gravitational turbulence in the era of gravitational waves	The Royal Society	563,371.10
Adrian Lynch	SFI/RTÉ Joint Initiative	SFI/RTÉ Grant support Initiative 2021	RTÉ	825,000.00
Brian Fitzgerald	SFI Spokes Programme	Empower: citizens and organisation to control, share and extract value from their data	University of Limerick	1,514,948.00
Vincent Wade	SFI Spokes Programme	Patient data platform enabling a definitive precision medicine approach to new drug development in neurodegeneration (PRECISION ALS)	Trinity College Dublin	3,586,997.20
Matthew Campbell	SFI Strategic Partnership Programme	EYE-D: therapeutic target identification for degenerative retinal disease	Trinity College Dublin	1,605,230.90
Andrew Keane	SFI Strategic Partnership Programme	Next Generation Energy Systems (NexSys)	University College Dublin	10,323,023.00
Graham Cross	SFI US-Ireland R&D Partnership Programme	Mechanics of the formation and function of 2D material pleats	Trinity College Dublin	445,932.80
Tiernan Henry	SFI US-Ireland R&D Partnership Programme	Sensor application to peatland hydrology in remote environments (SAPHIRE)	National University of Ireland, Galway	423,055.00
Paula Murphy	SFI US-Ireland R&D Partnership Programme	Design of genetically engineered tensile load-bearing soft tissues inspired by embryonic tendon development	Trinity College Dublin	452,157.90
Tomasz Ochalski	SFI US-Ireland R&D Partnership Programme	Strained engineered germanium quantum-well laser on GaAs and Si for optical coherence tomography	Munster Technological University	382,567.00
Noel O'Connor	SFI US-Ireland R&D Partnership Programme	Ultrasensitive nitrogen sensor using imprinted polymer assisted bacteria for real-time monitoring of water quality	Dublin City University	374,206.30
James O'Donnell	SFI US-Ireland R&D Partnership Programme	Intelligent data harvesting for multi-scale building stock classification and energy performance prediction	University College Dublin	453,796.10
Marco Ruffini	SFI US-Ireland R&D Partnership Programme	A unified framework for the emulation of classical and quantum networks	Trinity College Dublin	431,357.40
Sub-Total				151,718,494

Co-funded awards 2021

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Co-Fund €
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Co-funded SFI Discover Awards

Lizbeth Goodman	Discover - Co Fund	Muinin catalyst sustainable STEAM future-ready teaching and learning for resilience	Department of Education	-149,925.50
Frances McCarthy	Discover - Co Fund	Sustainable Space	Department of Education	-133,695.00
Keith Quille	Discover - Co Fund	CS LINC: bridging the gap to formal computer science education	Department of Education	-116,876.00
Bridgette Rowland	Discover - Co Fund	Engaging Families in STEM Programme	Department of Education	-4,500.00
Sharon Shannon	Discover - Co Fund	Spaces In-Between	Department of Education	-24,978.50

Co-funded Frontiers for the Future Awards

Breiffni Fitzgerald	Frontiers for the Future Co-Fund	Machine learning for wind farm aerodynamics and control (MeLodiC)	Sustainable Energy Authority of Ireland	-260,316.00
Alexey Lastovetsky	Frontiers for the Future Co-Fund	Models, algorithms and software for energy-efficient parallel computing in heterogeneous hybrid multicore era	Sustainable Energy Authority of Ireland	-308,073.50
Valeria Nicolosi	Frontiers for the Future Co-Fund	Engineering of hierarchical porous structures based on novel 2D nanomaterials: towards the new generation of battery devices beyond Lithium	Sustainable Energy Authority of Ireland	-431,610.00
Koen Verbruggen	Frontiers for the Future Co-Fund	Predicting sea levels and sea-level extremes for Ireland	Geological Survey of Ireland	-129,264.30
Koen Verbruggen	Frontiers for the Future Co-Fund	Developing a process-based understanding of platinum group element mineralisation: a natural laboratory in Ireland (Critical-Ireland)	Geological Survey of Ireland	-310,650.75

Co-funded Research Infrastructure Awards

William Gallagher	Research Infrastructure co-fund	The National Rechargeable Battery Fabrication and Test Facility (NRBFT)	Sustainable Energy Authority of Ireland	-309,788.50
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Co-funded Future Innovator Prize Awards

Demetra Achilleos	SFI Future Innovator Prize - Co-Fund	Good health and well-being for all via a solar-driven, sustainable, water treatment technology	Department of Foreign Affairs and Trade	-126,385.00
Holger Claussen	SFI Future Innovator Prize - Co-Fund	MISTRAL: automated persistent aerial communication system	Department of Defence	-25,000.00
David Culliton	SFI Future Innovator Prize - Co-Fund	Disruptive sensor-informed control measures to prevent water ingress on P50 and P60 naval offshore patrol vessels	Department of Defence	-25,000.00
Rozenn Dahyot	SFI Future Innovator Prize - Co-Fund	Smart Hangar	Department of Defence	-25,000.00

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Co-Fund €
Denis Dowling	SFI Future Innovator Prize - Co-Fund	Light-weight, high efficiency, electric propulsion solution for enabling zero emissions marine transport	Department of Defence	-25,000.00
Sean Doyle	SFI Future Innovator Prize - Co-Fund	Reducing neonatal and maternal mortality by rapid detection of sepsis in resource-limited environments	Department of Foreign Affairs and Trade	-180,000.00
Cormac Flynn	SFI Future Innovator Prize - Co-Fund	SightSave, an unconventional and disruptive treatment option for preventing vision loss in low and middle income countries	Department of Foreign Affairs and Trade	-131,613.00
Joseph Gallagher	SFI Future Innovator Prize - Co-Fund	BIOTOPE 2 (BIOmarkers TO predict PnEumonia 2)	Department of Foreign Affairs and Trade	-132,926.00
Robert Johnson	SFI Future Innovator Prize - Co-Fund	Robust and reusable electrochemical DNA biosensors for point of need deployment	Department of Defence	-25,000.00
Lokesh Joshi	SFI Future Innovator Prize - Co-Fund	"BIO-SENSE", rapid in-situ detection of multiple biological agents in parallel, for active threats, continuous surveillance and public health monitoring programmes	Department of Defence	-25,000.00
Piet Lens	SFI Future Innovator Prize - Co-Fund	Clean-up of diffuse chemical and microbiological pollution by floating wetlands	Department of Foreign Affairs and Trade	-140,000.00
Gavin McArdle	SFI Future Innovator Prize - Co-Fund	Decision support systems for aerial fire-fighting	Department of Defence	-25,000.00
Tim McCarthy	SFI Future Innovator Prize - Co-Fund	COPilot AI (Common Operational Picture and AI) for managing wildfires	Department of Defence	-25,000.00
Brian MacNamee	SFI Future Innovator Prize - Co-Fund	Machine learning and virtual reality for sustainable and effective pilot training	Department of Defence	-25,000.00
Cliona O'Sullivan	SFI Future Innovator Prize - Co-Fund	BACKTRACK: A technology enabled care pathway delivered by community health workers to manage low back pain in Uganda	Department of Foreign Affairs and Trade	-82,839.00
Mark Shrimme	SFI Future Innovator Prize - Co-Fund	Using data science to achieve scale and quality in surgical training in East and Southern Africa	Department of Foreign Affairs and Trade	-106,237.00
Ashish Vashishtha	SFI Future Innovator Prize - Co-Fund	AltFuel4DF: portable and scalable waste to synthetic biofuel technology demonstrator to decarbonise defence force transport	Department of Defence	-25,000.00

Co-funded US Ireland R&D Partnership Programme Awards

Rose Anne Kenny	US Ireland R&D Partnership Programme - Co-Fund	Co-Fund	Health Research Board	-414,516.00
Total co-funded				-3,744,194
Net Total Commitments				€147,974,300

Grant Commitments and Payments Analysis 2021

2021 Payments by Institution

2021 Payments by Institution	€
Trinity College Dublin	€46,270,919
University College Dublin	€41,496,984
National University of Ireland, Galway	€36,081,935
University of Limerick	€26,387,802
University College Cork	€26,312,644
Tyndall National Institute	€11,949,753
Teagasc	€8,193,533
Dublin City University	€6,354,696
Maynooth University	€5,176,686
Royal College of Surgeons in Ireland	€4,699,892
The National Institute for Bioprocessing Research and Training	€4,430,144
The Royal Society	€2,059,698
Dublin Institute for Advanced Studies	€1,797,231
Waterford Institute of Technology	€1,004,493
Technological University Dublin	€750,617
Munster Technological University	€548,149
Institute of Technology, Carlow	€543,451
Health Research Board	€542,305
National Youth Council of Ireland	€281,677
Camara Education	€200,771
Cosmos Education T/A - Blackrock Castle Observatory	€200,585
RTÉ	€198,500
Kite Entertainment	€190,600
Royal Dublin Society RDS	€132,514
The Festival of Curiosity Ltd.	€128,000
Junior Achievement Ireland	€126,397
The Institution of Engineering and Technology	€125,820
Foróige	€80,000
The Rediscovery Centre Ltd.	€77,515
Athlone Institute of Technology	€73,488
Marine Institute	€58,333
Learning Hub Limerick Ltd.	€45,000
Teen-Turn	€45,000
Dead Centre Theatre	€44,280
Irish Manufacturing Research	€42,429
The Birr Scientific and Heritage Foundation	€41,500
Atlantic Corridor	€40,000

Niamh Shaw Ltd.	€39,625
Whipsmart Media Ltd.	€34,400
Gallomanor Communications Ltd.	€32,985
National College of Ireland	€32,121
The Fulbright Commission	€31,500
Glenosheen Limited	€30,000
Monaghan County Council	€30,000
Mary Immaculate College	€28,790
Mayo County Council t/a Mayo Science & Technology Festival	€26,500
Galway Science & Technology Forum	€20,000
Kildare County Council	€18,900
Scifest Ltd.	€15,000
British Council Ireland	€12,995
South Dublin County Council	€9,300
Gaiety School of Acting	€8,000
The Children's Cultural Centre Ltd. T/A The Ark	€8,000
Louth County Council	€7,974
Designer Minds Educational Services Ltd.	€7,200
STEAM Education Ltd.	€7,200
Circus250 CIC	€5,785
ECDL Ireland Ltd T/A ICS Skills	€5,000
Riverbank Arts Centre CLG	€5,000
Mol Teic T/A Dingle Hub / Dingle Creativity and Innovation Hub	€4,992
Ballyhoura Development Ltd.	€4,590
The Cork Electronic Industries Association	€2,924
Wexford County Council	€2,545
Crawford Art Gallery	€1,483
Centre for Climate Change T/A Cool Planet Experience	€800
St Angela's College	€800
Limerick Institute of Technology	-€2,540
Institute of Technology Carlow	-€2,577
Galway-Mayo Institute of Technology	-€6,395
Institute of Technology Tralee	-€16,888
Irish Cancer Society*	-€98,378
Institute of Technology Sligo	-€151,929
Department of Defence*	-€250,000
Geological Survey of Ireland*	-€315,558
Cork Institute of Technology	-€323,536
Environmental Protection Agency*	-€359,615
Department of Education*	-€429,975
Sustainable Energy Authority of Ireland*	-€661,569
Department of Foreign Affairs and Trade*	-€900,000
Department of Agriculture, Food and the Marine*	-€1,090,789
Grand Total	€222,558,000

*Represents the co-funding by these funding agencies of awards made by SFI

Grant Commitments and Payments Analysis 2021

2021 Payments by Programme

2021 Payments by Programme	€
SFI Research Centres	€78,513,257
Research Infrastructure	€34,849,507
Frontiers for the Future	€19,347,607
SFI Centres for Research Training	€15,026,240
Investigator Programme	€10,454,690
Research Professorship Programme	€9,632,668
SFI Strategic Partnership Programme	€7,380,676
SFI Discover	€5,188,436
SFI Spokes Programme	€4,839,899
EPSRC-SFI Centres for Doctoral Training (CDT) Partnership	€4,832,975
Starting Investigator Research Grant	€4,160,953
SFI Future Innovator Prize	€4,131,122
President of Ireland Future Research Leaders	€3,742,278
SFI-IRC Pathway Programme	€3,397,705
SFI US-Ireland R&D Partnership Programme	€2,656,429
Career Development Award	€2,483,838
Royal Society-SFI Research Partnership	€2,056,939
SFI Industry RD&I Fellowship Programme	€1,896,045
SFI-NSFC Partnership	€1,159,205
SFI Fellowship	€1,111,336
COVID-RRC	€1,073,341
SFI Secondment model	€967,782
EPSRC-SFI Joint Funding of Research	€903,090
SFI-HRB-Wellcome Partnership	€872,232
EU Co-Funding Initiatives	€550,890
SFI Maternity Allowance	€493,503
SFI Science Policy Research Programme	€399,435
SFI ERC Support Programme	€226,342
BBSRC-SFI Joint Funding of Research	€208,204
President of Ireland Young Researcher Award	€118,564
Public Service Fellowship Programme	€87,586
TIDA	€75,412
Fulbright – Science Foundation Ireland US Scholar Programme	€31,500
Industry Fellowship	-€311,686
Total	€222,558,000

Grant Commitments and Payments Analysis 2021

2021 Grant Commitments by Programme

Programme	€
Frontiers for the Future	€45,587,549
Research Infrastructure	€34,851,378
SFI-IRC Pathway Programme	€13,068,097
SFI Strategic Partnership Programme	€11,928,254
SFI Future Innovator Prize	€9,924,742
Research Professorship Programme	€9,881,281
SFI Spokes Programme	€5,101,945
SFI Discover	€4,976,882
SFI US-Ireland R&D Partnership Programme	€2,548,557
Royal Society-SFI University Research Fellowship	€2,542,250
EPSRC-SFI Joint Funding of Research	€2,291,330
SFI Industry RD&I Fellowship Programme	€2,106,717
COVID-RRC	€1,243,643
SFI Maternity Allowance	€526,005
EU Co-Funding Initiatives	€495,952
SFI Fellowship	€483,294
SFI-HRB-Wellcome Research Career Development Fellowship	€384,925
Fulbright – Science Foundation Ireland US Scholar Programme	€31,500
Total	€147,974,300

Grant Commitments and Payments Analysis 2021

2021 Number of Awards by Programme

2021 Number of Awards by Programme	No. awards
SFI Discover	79
Frontiers for the Future	70
SFI Industry RD&I Fellowship Programme	27
SFI-IRC Pathway Programme	24
SFI Future Innovator Prize	23
Research Infrastructure	20
SFI Maternity Allowance	21
SFI-HRB-Wellcome Research Career Development Fellowship	8
SFI US-Ireland R&D Partnership Programme	7
Royal Society-SFI University Research Fellowship	5
EPSRC-SFI Joint Funding of Research	5
SFI Fellowship	3
SFI Strategic Partnership Programme	2
Research Professorship Programme	2
SFI Spokes Programme	2
COVID-RRC	1
EU Co-Funding Initiatives	1
Fulbright – Science Foundation Ireland US Scholar Programme	1
Total	301

Grant Commitments and Payments Analysis 2021

2021 Number of Awards by Institution

Institution	No. Awards
University College Dublin	60
Trinity College Dublin	44
National University of Ireland, Galway	28
University of Limerick	22
University College Cork	21
Maynooth University	14
Royal College of Surgeons in Ireland	14
Health Research Board	11
Dublin City University	9
Technological University Dublin	7
Tyndall National Institute	7
The Royal Society	6
Dublin Institute for Advanced Studies	5
Munster Technological University	4
South East Technological University Waterford	4
Kildare County Council	3
Teagasc	3
Institute of Technology Sligo	2
Institute of Technology, Carlow	2
Niamh Shaw Ltd.	2
The National Institute for Bioprocessing Research and Training	2
Athlone Institute of Technology	1
Atlantic Corridor	1
Ballyhoura Development Ltd.	1
British Council Ireland	1
Circus250 CIC	1

Institution	No. Awards
Cosmos Education T/A - Blackrock Castle Observatory	1
Dead Centre Theatre	1
Designer Minds Educational Services Ltd.	1
Gaiety School of Acting	1
Gallomanor Communications Ltd.	1
Galway Science & Technology Forum	1
Glenosheen Ltd.	1
Irish Manufacturing Research	1
Kite Entertainment	1
Learning Hub Limerick Ltd.	1
Louth County Council	1
Marine Institute	1
Mary Immaculate College	1
Mayo County Council T/A Mayo Science & Technology Festival	1
Monaghan County Council	1
National College of Ireland	1
Royal Dublin Society RDS	1
RTÉ	1
South Dublin County Council	1
STEAM Education Ltd.	1
Teen-Turn	1
The Birr Scientific and Heritage Foundation	1
The Children's Cultural Centre Ltd. T/A The Ark	1
The Festival of Curiosity Ltd.	1
The Fulbright Commission	1
Whipsmart Media Ltd.	1
Total	301

SFI Peer Review Panels

Below is a consolidated alphabetised list of the international reviewers who participated in Review Panels and Sitting Panels in 2021, for those programmes where all funding decisions are complete, and applicants have been notified of the outcome.

The identities of international expert technical reviewers, who participated in the postal review of applications to SFI's funding programmes, are not disclosed to ensure that each proposal receives a robust assessment.

Reviewer Name	Organisation
Adali, Tulay	University of Maryland
Adamchuk, Viacheslav	McGill University
Alexe, Marin	University of Warwick
Alocilja, Evangelyn C.	Michigan State University
Alpert, Carol Lynn	Museum of Science
Amor, Sandra	VU University Medical Center Amsterdam
Atature, Mete	University of Cambridge
Aurbach, Elyse	University of Michigan
Bancroft, Ian	University of York
Barrow, Abigail	Private Enterprise
Baudry, Benoit	KTH - Royal Institute of Technology
Baulac, Stéphanie	Université de Sorbonne
Baumeister, Ralf	University of Freiburg
Beach, Mark	University of Bristol
Benfenati, Fabio	Università di Genova
Bensch, Wolfgang	University of Kiel
Berge, David	Universiteit van Amsterdam
Bergström, Christel	Uppsala University
Betke, Margrit	Boston University
Bierkens, Marc	University of Utrecht
Blumberger, Jochen	University College London
Blunn, Gordon	University of Portsmouth
Bode, Ann	University of Minnesota
Bonnema, Guusje	Wageningen University
Borri, Paola	Cardiff University
Boucaud, Philippe	Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications
Boudoux, Caroline	Polytechnique Montréal
Boulatov, Roman	University of Liverpool
Brain, Susan	King's College London
Brandão, Miguel	KTH - Royal Institute of Technology
Brodsky, Emily	University of California Santa Cruz
Brouwer, Kim	University of North Carolina

Reviewer Name	Organisation
Brown, Grant	University of Toronto
Brown, Steve	Swansea University
Buchert, Johanna	Natural Resources Institute Finland
Buratti, Emanuele	International Centre for Genetic Engineering and Biotechnology
Burcelin, Remy	Paul Sabatier University
Burgess, Diane	University of Connecticut
Burrows, Andrew	University of Bath
Burton, Jeremy	Western University
Cardella, Monica	Purdue University
Case, Keith	Loughborough University
Castree, Noel	University of Manchester
Cerchiello, Paola	University of Pavia
Chen, Lydia	Delft University of Technology
Cheung, Peter	Imperial College London
Chiang, Roger	University of Cincinnati
Christlieb, Martin	University of Oxford
Cifuentes, Alejandro	Institute of Food Science Research
Clardy, Jon	Harvard University
Corchado, Juan	Universidad de Salamanca
Coutanceau, Christophe	University of Poitiers
Crick, Tom	Swansea University
Davazoglou, Dimitris	National Center for Scientific Research Demokritos
Davies, Huw	Emory University
Day, Graeme	University of Southampton
De Bruin, Rob	University College London
De Reuse, Hilde	Institut Pasteur
De Vries, Helga E	VU University Medical Center Amsterdam
Delerue, Christophe	Institute for Electronics, Microelectronics and Nanotechnology
DePaolo, Donald	University of California Berkeley
Derby, Brian	The University of Manchester
Doucet, Arnaud	University of Oxford
Dressler, Falko	Universität Paderborn
Driesen, Johan	Katholieke Universiteit Leuven
Driessen, Arnold	University of Groningen
Ebrahimi, Touradj	Ecole Polytechnique Federale de Lausanne
Eckerdal, Anna	Uppsala University
Egger, Anne	Central Washington University
El Haj, Alicia	Birmingham University
Elezzabi, Abdulhakem	University of Alberta
Errachid El Salhi, Abdelhamid	Université de Lyon
Faaij, André	TNO
Fabris, Stefano	Scuola Internazionale Superiore di Studi Avanzati

Reviewer Name	Organisation
Felser, Claudia	Max Planck Institute
Feng, Liang	University of Pennsylvania
Ferhatosmanoglu, Hakan	Warwick University
Fleshner, Monika	University of Colorado Boulder
Forlizzi, Jodi	Carnegie Mellon University
Fraser, Hamish	Ohio University
French, Jacqueline	NYU Langone Medical Centre
Gambardella, Luca Maria	University of Lugano
Gao, Robert	Case Western Reserve University
Giannotti, Fosca	University of Pisa
Girardin, Stephen	University of Toronto
Giudici, Paolo Stefano	University of Pavia
Glowacki, Julianne	Harvard University
Gomes, Ana	Universidade Católica Portuguesa
Gori-Giorgi, Paola	Vrije Universiteit Amsterdam
Green, Rylie	Imperial College London
Greene, Casey	Perelman School of Medicine
Groleau, Denis	University of Sherbrooke
Gruhn, Volker	University of Duisberg-Essen
Gu, Sai	University of Warwick
Guiot, Serge R.	University of Montreal
Gurr, Sarah	University of Exeter
Guy, Owen	Swansea University
Hadad, Christopher	Ohio State University
Hammoudeh, Mohammad	Manchester Metropolitan University
Hardingham, Giles	The University of Edinburgh
Harrison, Sandy	University of Reading
Hashsham, Syed	Michigan State University
Hassanizadeh, Majid	Utrecht University
Hatti-Kaul, Rajni	Lund University
Havinga, Paul	University of Twente
Hecht, Gail	Loyola University Chicago
Hovakimyan, Naira	University of Illinois at Urbana-Champaign
Hunt, John	University of Liverpool
Irvine, John	St Andrews
Jacob, Jamey	Oklahoma State University
Jacobovitz, Gloria	Johns Hopkins University
Jannach, Dietmar	Technical University of Dortmund
Johansson, Asa	Uppsala University
Jokerst, Nan Marie	Duke University
Joselevich, Ernesto	Weizmann Institute of Science
Joyce, Johanna	University of Lausanne

Reviewer Name	Organisation
Jukan, Admela	Technische Universität Braunschweig
Jusiak, Andrew	University of Iowa
Kalogeraki, Vana	Athens University of Economics and Business
Kamath, Chandrika	Lawrence Livermore National Laboratory
Kanyuka, Kostya	Rothamsted Research
Karagiannidis, George	Aristotle University
Kauppinen, Tiina	University of Manitoba
Keener, Paula	Global Ocean Visions
Keep, Richard	University of Michigan
Keller, Andreas	Universität des Saarlandes
Kemp, Christopher	Fred Hutchinson Cancer Research Center
Kington, Angus	Brown University
König, Sven	Institut für Tierzucht und Haustiergenetik
Kurup, Smita	Rothamsted Research
Lanfume, Laurence	INSERM National Institute of Health and Medical Research
Lanz, Minna	Tampere University of Technology
Le Huerou-Luron, Isabelle	National Research Institute for Agriculture, Food and the Environment (INRAE)
Lee, Hoyun	University of Ottawa
Levin, Lorraine	Carnegie Mellon University
Liou, Frank	Missouri University
Lipshitz, Howard	University of Toronto
Liu, Ling	Georgia Institute of Technology
Losada, Inigo	IH Cantabri
Lund, Mogens Sandø	Aarhus University
Lusher, Amy	Norwegian Institute for Water Research
Mallucci, Giovanna	University of Cambridge
Mantovani, Alberto	Humanitas Clinical and Research Center
Mantovani, Diego	Université Laval
Markl, Volker	Technische Universität Berlin
Markose, Sheri	University of Essex
Markus, M. Lynne	Bentley University
Maroto-Valer, Mercedes	Heriot-Watt University
Mascolo, Cecilia	University of Cambridge
Matos, Anibal	University of Porto
McGroarty, Frank	University of Southampton
McNeill, Fiona	The University of Edinburgh
Millar, Kate	University of Nottingham
Moan, Torgeir	Norwegian University of Science and Technology
Moayyedi, Paul	Mc Master University
Moens, Marie Francine	Katholieke Universiteit Leuven (KU Leuven)
Mohney, Suzanne	Pennsylvania State University
Mohrdiek, Stefan	Centre Suisse d'Electronique et de Microtechnique

Reviewer Name	Organisation
Moller, Charles	Aalborg University
Moore, Craig S	Memorial University of Newfoundland
Nallanathan, Arumugam	Queen Mary University of London
Nieminen, Risto	Aalto University
Obermayer, Klaus	Technische Universität Berlin
Olaverri Monreal, Cristina	Johannes Kepler University Linz
Olsson, Eva	Chalmers University
O'Neill, Alex John	University of Leeds
Palmer, Mitchell	United States Department of Agriculture
Palmer, Richard	Swansea University
Palmore, G. Tayhas R.	Brown University
Paolone, Mario	EPFL - Ecole Polytechnique Federale de Lausanne
Parak, Wolfgang	University of Hamburg
Paterlini, Sandra	University of Trento
Patterson, Andrew D.	The Pennsylvania State University
Patterson, Eann	University of Liverpool
Peacock, David	University of Bergen
Pérez-Neira, Ana Isabel	UPC Barcelona
Perucca, Emilio	University of Pavia
Pitas, Ioannis	Aristotle University
Plale, Beth A.	Indiana University
Pollmann, Frank	TU Munich
Porcello, Darrell	University of California at Berkeley (UC Berkeley)
Preneel, Bart	Katholieke Universiteit Leuven (KU Leuven)
Procter, Rob	University of Warwick
Quigley, David	University of Warwick
Ragaert, Kim	Ghent University
Rankin, Shelley C.	University of Pennsylvania
Rathje, Ellen	University of Texas at Austin
Ravel, Jacques	University of Maryland
Reynolds, Chris	University of Reading
Rinaldi, Rosaria	University of Salento
Rogaeva, Ekaterina	University of Toronto
Romero, Ignacio	The Open University
Rorison, Judy	University of Bristol
Ryan, Anthony J	University of Sheffield
Sadanandom, Ari	Durham University
Samuolienė, Giedrė	Lithuanian Research Centre for Agriculture and Forestry
Sarro, Lina	Delft University of Technology
Schulze-Osthoff, Klaus	University of Tübingen
Schuttlefield Christus, Jennifer	University of Wisconsin Oshkosh
Shalaev, Evgenyi	Allergan Inc.

Reviewer Name	Organisation
Sherman, Philip	University of Toronto
Sittig, Dean	University of Texas Health Science Center at Houston
Skeldon, Kenneth	Wellcome Genome Campus
Sobel, Peter	The Optical Society (OSA)
Soreq, Hermona S.	The Hebrew University of Jerusalem
Sozzani, Silvano	University of Brescia
Steed, Jonathan	Durham University
Stein, Andreas	University of Minnesota
Steinkellner, Herta	University of Natural Resources and Applied Life Sciences Vienna
Stevens, Gary	Kinectrics
Strauss, Bradley	University of Toronto
Sun, Jing	University of Michigan
Suryanarayanan, Raj G.	University of Minnesota
Tagmatarchis, Nikos	National Hellenic Research Foundation
Taherzadeh, Mohammad J.	University of Borås
Tasker, Paul	Cardiff University
Teixeira, José António	University of Minho
Thomsen, Marianne	Aarhus University
Thornley, Patricia	Aston University
Tirkkonen, Olav	Aalto University
Toyserkani, Ehsan	University of Waterloo
Tozzini, Valentina	Consiglio Nazionale della Ricerca
Trancik, Jessika	Massachusetts Institute of Technology
Turitsyn, Sergei	Aston University
Turpen, Chandra	University of Maryland
Uchegbu, Ijeoma F.	University College London
Udalova, Irina	University of Oxford
Ulm, Roman	University of Geneva
Ulukus, Sennur	University of Maryland
Uttamchandani, Deepak	University of Strathclyde
Valdes, Ana	University of Nottingham
Vale, Zita	Polytechnic Institute of Porto
Valente, Enza Maria	University of Pavia
Valstar, Michel	The University of Nottingham
van de Weijer, Carlo J.T.	Eindhoven University of Technology
van der Meer, Yvonne	Maastricht University
van Eck, Miranda	Leiden University
van Iersel, Marc W.	University of Georgia
Van Rhijn, Ildiko	Harvard Medical School
van Schaik, Willem	University of Birmingham
van Wijk, Ad	Delft University of Technology
Vancso, Julius	University of Twente

Reviewer Name	Organisation
Vedral, Vlatko	University of Oxford
Walczak, Henning	University College London
Walsh, Patrick	University of Pennsylvania
Walton, Krista	Georgia Tech
Wang, Lihui	KTH Sweden
Watts, Paul	Nelson Mandela Metropolitan University
Williams, Laurie	North Carolina State University
Wolf, Tilman	University of Massachusetts Amherst
Wosinska, Lena	KTH - Royal Institute of Technology
Xu, Heng	American University
Yang, Simon	University of Guelph
Yeatman, Eric	Imperial College London
Zhang, Xiao-Ping	University of Birmingham
Zhuang, Weihua	University of Waterloo
Zincir-Heywood, Nur	Dalhousie University Canada
Zuilhof, Han	Wageningen University

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