

# Annual Report & Accounts 2022





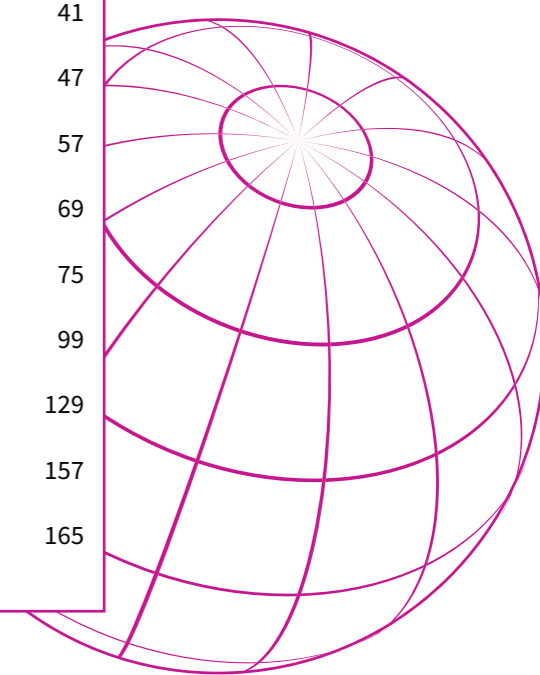
**Cover Image Title:** A spring garden of griseoflowers.

**SFI Research Image of the Year Winner 2022:** Mariana Oliveira Diniz, PhD student, SSPC SFI Research Centre for Pharmaceuticals, University of Limerick.

**Image Description:** Griseofulvin is a drug in which there is wide interest in the pharmaceutical field, as it is used as an antifungal antibiotic to treat skin infections. Griseofulvin was first isolated from penicillium griseofulvum in 1939 and became the first clinical oral antifungal approved to be used in 1950. Griseofulvin is included on the World Health Organization (WHO) List of Essential Medicines. This PhD research investigates the nucleation kinetics of griseofulvin in different solvents and different scales. These crystals were formed when a solution of griseofulvin in acetonitrile was left to evaporate at room temperature on a fume hood for three days. This image was captured on a mobile phone without any further treatment.

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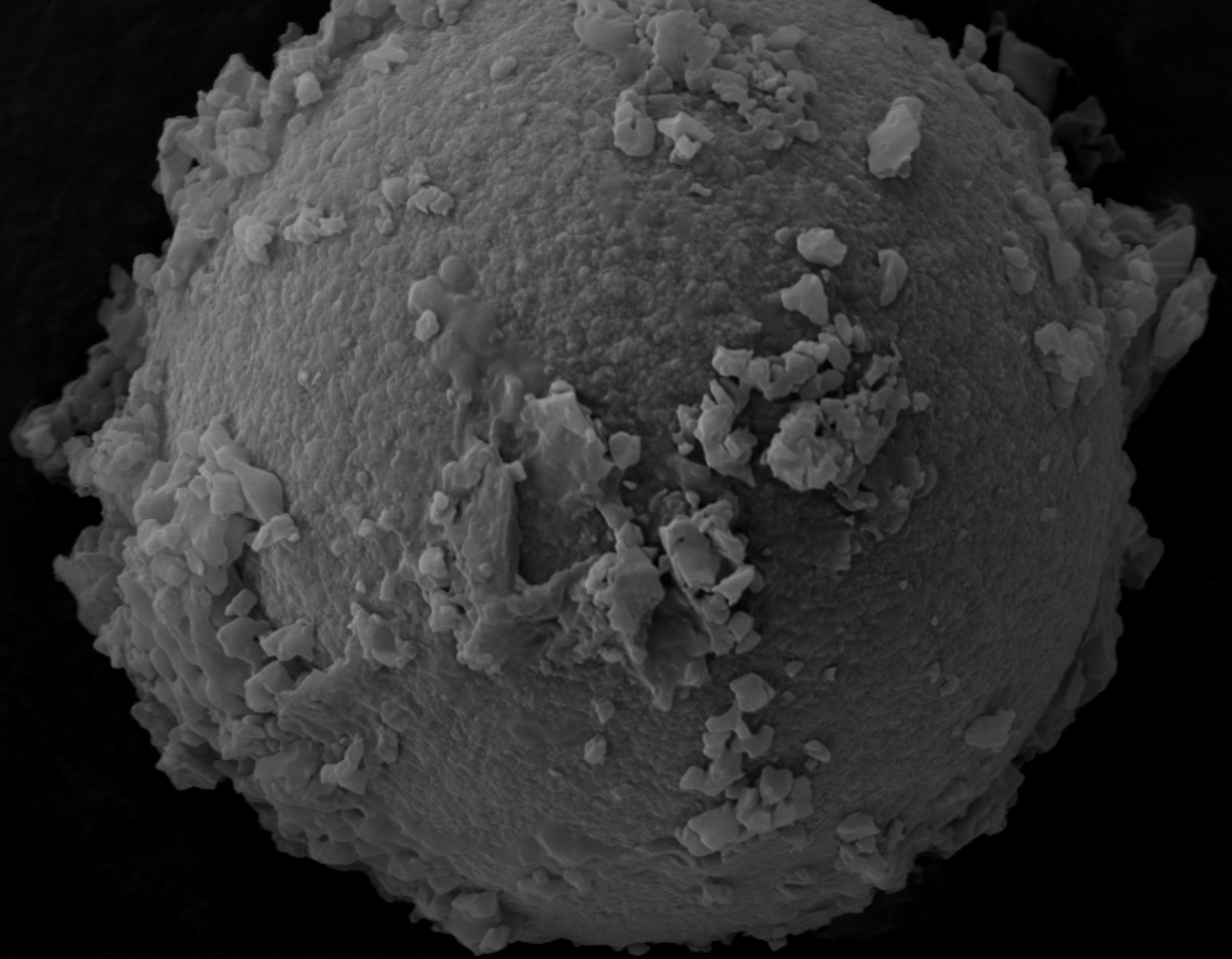
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**About Science Foundation Ireland**  
 Science Foundation Ireland is the national foundation for investment in research in the areas of science, technology, engineering, and mathematics (STEM), which assists in the development and competitiveness 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](http://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 @scienceirel](https://twitter.com/ShapingOurFuture)

# 01



## Key Statistics 2022

Image by Marta Bergillos Ruiz  
*Bernal Institute*  
Title: Planet silica with  
inhabitants

# Key Statistics 2022

## Excellent Research

Ireland is<sup>1</sup>...

**15<sup>th</sup>** in global scientific ranking



Ireland ranks <sup>1</sup> ...	
<b>2<sup>nd</sup></b> Agricultural Sciences	<b>4<sup>th</sup></b> Neuroscience and Behaviour
<b>4<sup>th</sup></b> Immunology	<b>6<sup>th</sup></b> Microbiology

Ireland is<sup>2</sup>...

**1<sup>st</sup>**  
in the world for knowledge diffusion

**6<sup>th</sup>**  
in the world for university-industry R&D collaboration

**27**

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

**5,248** publications reported

SFI-funded publications are 2.4 times more likely to be star publications than the global average<sup>3</sup>

## Talent and Skills

**43,193**  
Jobs supported, directly and indirectly in Ireland

**2,301**  
Postgraduate students supported

**5,986**  
People working on SFI-supported projects

## Empowering Economic Benefit

**€61m**  
Funding from industry

**171**  
Invention disclosures

**12**  
Spin-out companies

**3,084**  
Industry engagements

**64**  
Patents filed

**48**  
Patents awarded

## Regional Development

**1,516**

Regional industry engagements

**734**

Engagements with Multinationals (MNCs)

**782**

Engagements with Small and Medium-sized Enterprises (SMEs)

Northern Ireland  
17 with MNCs / 24 SMEs

Northern and Western Region  
92 with MNCs / 128 SMEs

Eastern and Midlands Region  
377 with MNCs / 422 SMEs

Southern  
248 with MNCs / 208 SMEs



## Value for Money

From €213m, SFI investments leverage:	
<b>€267m</b> Total external funding	WHICH INCLUDES
<b>€163m</b> Total non-exchequer funding	WHICH INCLUDES
<b>€85m</b> won from the EU	
<b>€61m</b> from private enterprise	<b>20</b> ERC awards

## Global Footprint



<sup>1</sup> InCites by Clarivate Analytics | <sup>2</sup> Global Innovation Index 2022 | <sup>3</sup> Star publications are publications in the top 1% of most cited publications, globally.

# Summary 2022

## Supporting Frontiers Research

Strengthening investment in frontiers research that enables Ireland to have the capacity to deal with anticipated and unanticipated social challenges is a key objective of Shaping Our Future. SFI's **Frontiers for the Future Programme** provides opportunities for independent investigators to conduct highly innovative and collaborative research, as well as opportunities for high-risk, high-reward research projects. €61 million was invested through the programme in 2022, supporting 79 grants across ten Higher Education Institutions (HEIs), with a number co-funded by Geological Survey Ireland, the Sustainable Energy Authority of Ireland (SEAI) and Children's Health Foundation. Research topics include future coastal sea levels, next generation batteries, childhood ADHD, and antiviral drugs to treat Covid-19 infections.

This includes 15 grants made through the **SFI Frontiers for Partnership Awards Programme** to increase research capacity within the Technological Universities (TUs) and Institutes of Technology (IoTs) across the country. The awards will support 15 collaborative projects in areas such as green hydrogen, sheep breeding, cancer therapy, and energy use in artificial intelligence (AI) technology.

## Collaboration

Aligned to the Programme for Government, a new ambitious **Co-Centre Programme** was launched in 2022 to establish collaborative research centres across Ireland, Great Britain and Northern Ireland. Fostering new research collaborations, they will help address the climate crisis, and build sustainable and resilient food systems. This programme will see a major investment of €74 million over the coming years to bring scale and cohesion to the research and innovation ecosystem. It is co-funded through the Government's Shared Island initiative, Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA) and UK Research and Innovation (UKRI).

The **SFI-IRC Pathway Programme** supports talented postdoctoral researchers from all research disciplines to develop their track record and transition to being independent research leaders. Building a more cohesive research ecosystem, this collaborative research initiative between SFI and the Irish Research Council (IRC), saw €7.5 million invested in 14 awards across the arts, humanities, social sciences and STEM in 2022.



## Fostering New Research Talent

SFI is responding to the increased demand and a rapidly evolving need for a highly-skilled, adaptable workforce through our cohort based training of postgraduate students. The six **SFI Centres for Research Training** bring together the higher education sector and industry to develop and deliver innovative programmes of research and training for postgraduate students in Ireland, to develop critical capacity in data and ICT skills for the future. In 2022, 149 PhD students were recruited to the six Centres, of which 46% were women. The programme brings together 11 HEIs and 90 industry partners, with an investment of €104 million.

Additionally, in 2022, 115 PhD students were supported through the **EPSRC-SFI Centres for Doctoral Training (CDT)** partnership, bringing together diverse areas of expertise and training, and equipping engineers and scientists with the skills and knowledge to address challenges in data and ICT.

## Anticipating What's Next

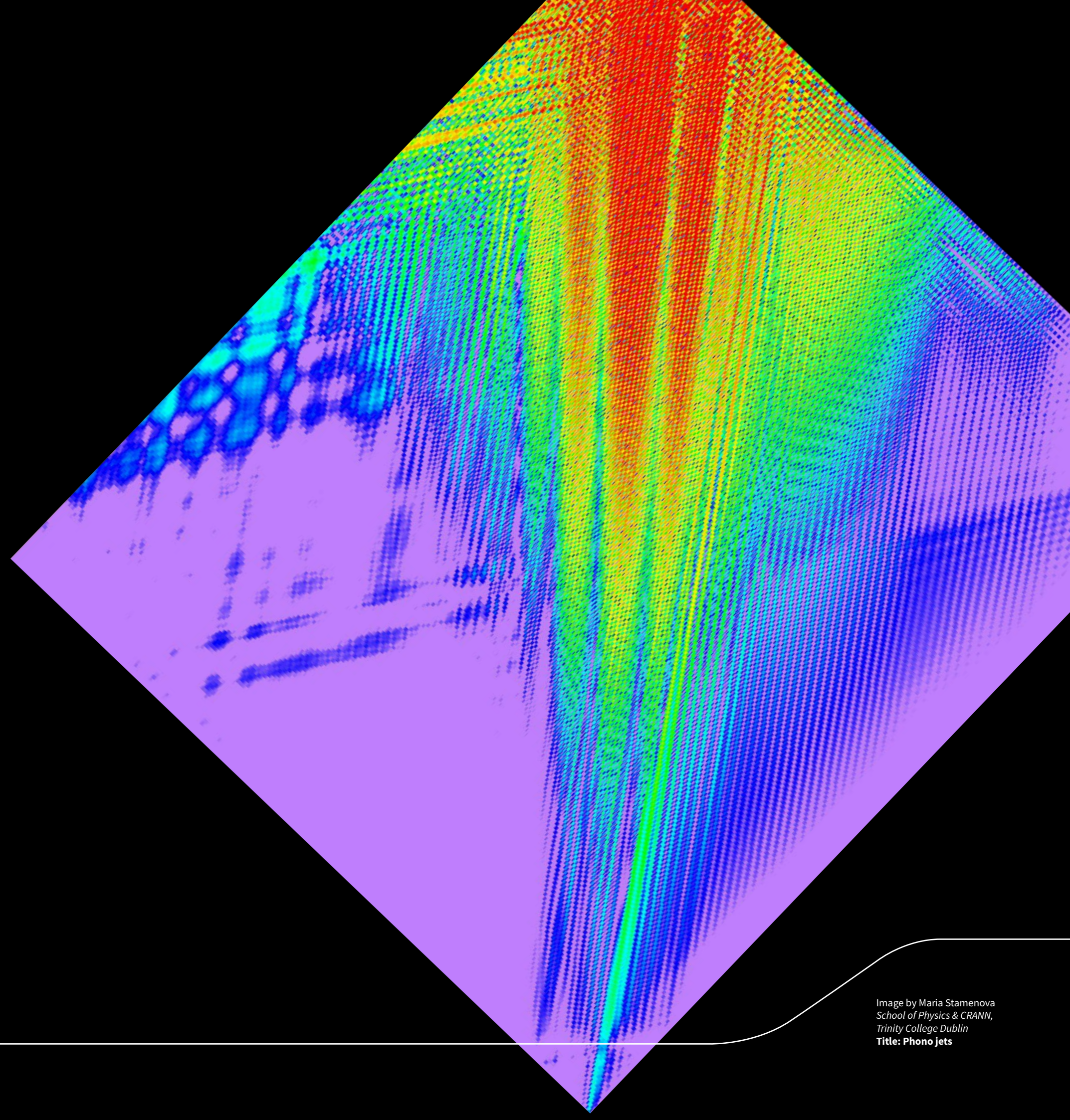
A key objective of Shaping Our Future was to establish a national programme of challenge funding. **The National Challenge Fund** was launched to address our biggest societal challenges, by advancing solutions-based research in areas of the green transition and digital transformation. Funded under the EU's National Recovery and Resilience Plan, the first two of its eight funding calls were opened in 2022.

The **SFI-Defence Organisation Challenge**, which runs in partnership with the Research Technology and Innovation Unit at the Department of Defence, saw ten teams further develop their projects. Seven teams, under the SFI-Irish Aid Sustainable Development Goals (SDG) Challenge, began projects related to SDG 3, to ensure healthy lives and promote well-being for all.

Under the **SFI Future Innovator** Plastics Challenge, the Grain-4-Lab project at Dublin City University (DCU) won the €2 million prize award for using waste products from brewing to create replacement products for laboratory plastics. The Food Challenge was won by the Leaf No Waste team from Technological University (TU) Dublin and Teagasc, for combining sustainable packaging and plant fortification to increase the shelf life of fresh foods.



# 02



## Chairman and Director General's Statements

Image by Maria Stamenova  
School of Physics & CRANN,  
Trinity College Dublin  
Title: Phono jets

# Chairman's Statement

Professor J. Peter Clinch  
Chairman of the Board,  
Science Foundation Ireland



Our annual report provides an opportunity to review the actions, activities, and outputs undertaken by Science Foundation Ireland (SFI) to support talented people carrying out excellent research with tangible benefits for our society and economy.

Ireland's societal and economic wellbeing requires a foundation of excellent research and innovation to allow Irish companies to compete in global markets, and to allow us to attract and retain global talent and inward investment.

## High-efficiency Impact

In 2022, from an initial base investment of €213 million, SFI delivered significant value for money, leveraging €267 million in external funding, an increase of 14% on the previous year, and €163 million in non-exchequer funding. It was a good year for SFI-funded researchers in Europe, where €85 million was won, contributing significantly to our national ambition to be successful in competitions for funding from Horizon Europe.

SFI is making a substantial regional economic impact with €61 million secured from private enterprise and over €26 million from Enterprise Ireland. Out of 1,516 regional industry engagements, 734 were with multinational companies and 782 were with small and medium-sized enterprises. These engagements were spread across the country, including Northern Ireland.

Moreover, investment in research helps us to build a sustainable and inclusive society to make our contribution to addressing some of the world's greatest challenges.

In 2022, SFI has worked hard to bring Ireland closer to the innovation frontier by continuing to fund existing research programmes, while creating and financing innovative new ones.

Over 43,000 direct and indirect jobs were supported in 2022, while 5,986 people worked on SFI-supported projects.

Ireland ranked 6th in the world for university-industry R&D collaboration in 2022, and SFI further enhanced our national reputation in RD&I by developing talent, supporting 2,301 postgraduate research students. In 2022, 32% of PhD and Postdoctoral students departing SFI teams went to industry as a first destination.

These achievements are remarkable if one considers the relatively low level of public funding for research.

## Supporting Impact 2030

The Board and I welcome the publication of the Government's national strategy, Impact 2030, which positions research and innovation at the heart of addressing Ireland's societal, economic and environmental challenges.

In 2023, SFI will continue to implement our current strategy, Shaping our Future, launching new programmes to facilitate Ireland becoming a green, sustainable, deep-tech, innovation leader, and expanding collaborations with Northern Ireland to support an all-island research ecosystem.

A key objective of Shaping Our Future was to establish a national programme of challenge funding. In 2022, the National Challenge Fund was launched, supported with funding under the EU's National Recovery and Resilience Plan. This €65 million programme will

support 90 teams, through eight new challenges, to generate solutions-based research in the areas of green transition and digital transformation.

In an important development for Ireland, funding was secured from the European Regional Development Fund to establish a new programme, ARC: Accelerating Research to Commercialisation. With a focus on strategic growth areas and smart specialisation, it will drive regional development through a network of three hubs. I thank the two regional authorities involved for their support and collaboration.

Along with supporting Investigator-led programmes, scale and growth for the SFI Research Centres Programme, and continued industry engagement, SFI is building resilience for Ireland's research and innovation ecosystem.

## Working in Partnership

In 2022 we were able to celebrate a return to in-person activity and were delighted to engage once more, in person, with our colleagues across the research community, higher education sector, and with key stakeholders in policy and enterprise. The Board and I thank them for their ongoing partnership. We look forward to continuing to collaborate with all our stakeholders during 2023.

Prof Liam Madden attended his last Board meeting in 2022 and I would like to thank him for his exceptional contribution to the Board and the Agency. We have recently welcomed two new Board members, Prof Eileen Harkin-Jones, Emeritus Professor of Polymer Engineering at Ulster University, and Dr Diarmuid O'Brien, Chief Executive of Cambridge Enterprise. The Board and I look forward to working with them in 2023.

In 2022, Philip Nolan completed his first year as Director General and has brought new expertise, insights, and enthusiasm to the role. The Board and I were particularly delighted that in 2022, once again, SFI was recognised as a Great Place to Work. I would like to congratulate all the staff of the Agency on this fine achievement, and I thank the Board for continuing to place a strong emphasis on the welfare of our people at SFI. The Board and I are deeply proud of their dedication, expertise, and passion. I thank the senior management team and all the staff of the Agency for their hard work throughout 2022.

Professor J. Peter Clinch  
Chairman of the Board, SFI

# Director General's Statement

Professor Philip Nolan  
Director General,  
Science Foundation Ireland



Reflecting on my first year as Director General of SFI, I am struck by the significant opportunity that the knowledge and research in our higher education sector can provide for our society.

Throughout 2022 I engaged with colleagues across the higher education institutions and research community, as well as with key partners in government departments and agencies, with the Minister and our own

Department of Further and Higher Education, Research, Innovation and Science and other Government Ministers. I thank them for generously sharing their insights, which will help us shape the future of research and innovation funding in Ireland and meet the needs of the full diversity of our collective community.

The 2022 SFI annual report highlights some of our key achievements and contributions made through the transformative research we fund.

## Fostering Talent and Excellence

Investing in new knowledge is at the core of our research and innovation system. SFI supported 79 independent investigators to conduct highly innovative research with over €61 million via the SFI Frontiers for the Future Programme. We are delighted to welcome the Children's Health Foundation, who join Geological Survey Ireland (GSI) and the Sustainable Energy Authority of Ireland (SEAI) as partners in this important programme.

Regional research capacity in the Technology Universities and Institutes of Technology was boosted with €16.2 million through the SFI Frontiers for Partnerships Programme. SFI's collaboration with the Irish Research Council (IRC), saw €7.5 million invested through the SFI IRC Pathway Programme to support early career researchers in becoming independent research leaders.

SFI's international partnerships were further strengthened with extensive engagement with co-funding research partners in the National Science

Foundation (NSF) and National Institutes of Health (NIH) in the USA, and with partners such as UK Research and Innovation (UKRI) and the Royal Society in the UK. An historic opportunity for researchers to build strategic collaborative partnerships across Ireland, Great Britain and Northern Ireland was launched through the new Co-Centre Programme which will focus on high-quality research and innovation within the areas of climate, and sustainable and resilient food systems. I'd like to thank our partners in Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA) and UKRI for joining us in this new initiative, and for the financial support from the Department of the Taoiseach, through the Shared Island Fund.

Responding to the war in Ukraine, SFI launched a new supplemental grant scheme to encourage and enable holders of existing SFI grants to provide opportunities for displaced researchers from Ukraine to join and collaborate on existing SFI-funded grants, enabling them to maintain continuity in their research career.

## Enhancing Partnerships

SFI continued building strategic partnerships with industry to perform cutting-edge, industry-informed research and innovation, through its Strategic Partnership Programme, with an investment of €2 million to support immersive low-code/no-code software engineering in the University of Limerick's R@ISE Project. SFI also launched its Industry RD&I Fellowship to support the temporary placement of six academic researchers in industry.

In 2022, the SFI Future Innovator Prize progressed with Challenge prize winners developing innovative and tangible solutions to reducing plastic usage in Irish

research laboratories, and addressing food waste. We also launched an exciting new partnership with the Defence Organisation and continued our partnership with Irish Aid.

SFI reviewed how we could best support research in a sustainable way, establishing internal and external green teams to map and deliver on our commitments relating to Environmental, Social, and Governance (ESG) to meet Government 2030 targets and reduce energy usage and carbon emissions. I look forward to working with all of our colleagues in the RD&I community to make this a reality.

## Improving Inclusivity and Diversity

We are committed to building a more inclusive and engaged research and innovation system that celebrates and benefits from the significant diversity of our research talent. In 2022, 46% of PhD students recruited to the six Centres for Research Training were women.

SFI supported the talent pipeline with the relaunched Curious Minds Programme for primary school students and teachers, and invested €6.4 million in 43 projects through the annual SFI Discover Programme to improve public understanding of science, technology, engineering and maths (STEM).

## New Horizons

With the Government's decision to create a new, competitive research and innovation funding agency through the amalgamation of SFI and the IRC, I welcome the opportunities that this new agency will offer. The amalgamation will bring a diversity of talent and partners together and enable us to invest in excellent research across multiple disciplines, integrating different perspectives that will ensure we are more than the sum of our parts. I look forward to working with our colleagues in the IRC, our Department, and the wider higher education and research sector to realise this ambitious goal.

continued support of SFI, as well as our stakeholders and partners, both national and international, across academia and industry.

Finally, I thank the Chair of the Board, Professor Peter Clinch, along with the members of the Board of SFI, and all of our staff, for their commitment, support, professionalism and hard work; their valuable contributions ensure that we can deliver the work that we do, with integrity and pride.

Professor Philip Nolan  
Director General, SFI

I thank the Government, Taoiseach Leo Varadkar TD and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris TD, for their



# 03

## A Year in Review

# 2022 – A Year in Review

## JANUARY

- ▶ Eight Ireland-based researchers were announced as recipients of **European Research Council (ERC) awards**.
- ▶ Researchers from the RCSI University of Medicine and Health Sciences and the AMBER SFI Research Centre for Advanced Materials and BioEngineering announced a **breakthrough for nerve repair therapies**.

Prof Subrata Ghosh will investigate precision medicine in relation to gut inflammation and the microbiome at University College Cork (UCC).



- ▶ **Prof Subrata Ghosh** joined the APC Microbiome Ireland SFI Research Centre at UCC with a prestigious SFI Research Professorship award.

## FEBRUARY

- ▶ Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris TD, and Minister for Foreign Affairs, Simon Coveney TD, **announced €2.4 million in funding** to develop disruptive solutions to challenges facing the Irish Defence Forces.



Pictured at the launch of the SFI-Defence Organisation Challenge (l-r): Prof Philip Nolan, Director General of SFI, Prof J. Peter Clinch, Chairman of the SFI Board, Jacqui McCrum, Secretary General at the Department of Defence, Minister Simon Harris TD, Minister Simon Coveney TD, and Lieutenant General Seán Clancy, Chief of Staff of the Irish Defence Forces.

## MARCH

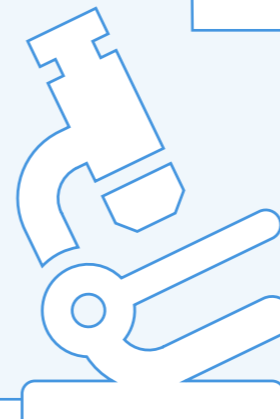
- ▶ Junior Achievement Ireland launched a new programme - Our World - to give thousands of 5th class students in Ireland **the chance to explore STEM subjects and careers**.
- ▶ Research by the VistaMilk SFI Research Centre at Teagasc, co-funded by the Department of Agriculture, Food and the Marine, found that having clover planted in fields where cows graze can **reduce the need to use fertiliser nitrogen** by up to 40%.
- ▶ SFI joined the Irish Research Council (IRC) and the Health Research Board (HRB) in support of the European Higher Education Area (EHEA) **Statement on Ukraine**.
- ▶ A joint investment of €9 million was announced through the **US-Ireland tripartite research and development programme** supporting seven awards across 16 research institutions.



Junior Achievement Ireland's 'Our World' project launched at Brierhill National School. Image: Andrew Downes.

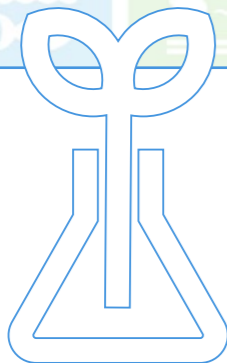


Pictured (l-r): Former Taoiseach Micheál Martin TD in Washington D.C. at the presentation of the **SFI St. Patrick's Day Science Medal** to Glaxo-Wellcome Professor of Molecular Cancer Biology at Duke University, Prof Donald McDonnell, and to Stripe founders, John and Patrick Collison, with SFI Director General, Prof Philip Nolan.



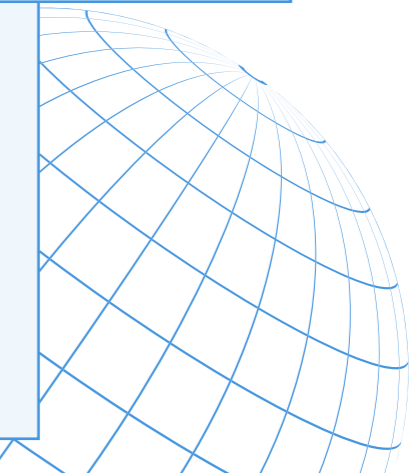
## APRIL

- ▶ Minister Simon Harris TD and Minister for Overseas Aid and Diaspora, Colm Brophy TD, announced €2.47 million in funding for seven research teams competing in the **SFI Sustainable Development Goals (SDG) Challenge**.
- ▶ A new investment was announced to support academic and industry co-funded research collaborations **through the SFI Industry RD&I Fellowship Programme**.



## MAY

- ▶ 79 **SFI Frontiers** awards were made to support independent researchers conducting highly innovative research. A number are co-funded by Geological Survey Ireland (GSI), Sustainable Energy Authority of Ireland (SEAI) and Children's Health Foundation.
- ▶ Minister Simon Harris TD published the Government's new National Research and Innovation Strategy, **Impact 2030**.



## JUNE

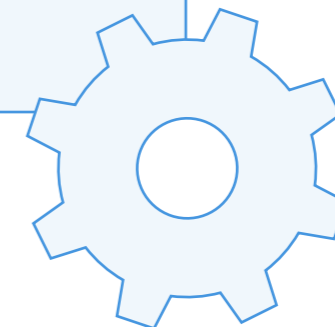
- ▶ Minister Simon Harris TD, and Minister for Education, Norma Foley TD, announced an investment in 47 projects to **support public engagement with STEM**.
- ▶ The **Curious Minds Programme Awards** (formerly Discover Primary Science and Maths) were announced for 374 primary schools, recognising their achievements in STEM.
- ▶ The two-day **Cork Carnival of Science**, supported by SFI, Cork City Council and the Lifetime Lab, brought the joy of STEM to life.
- ▶ An SFI-sponsored book, *The Queer Variable*, **shared insights** from people in the LGBTQ+ community who are working and studying in STEM.



*Pictured (l-r): Ministers Norma Foley TD, and Simon Harris TD, launching the SFI Discover Awards with Beatrix, Isaac and Ayla Freeman-Kishida. Image: Justin MacInnes.*

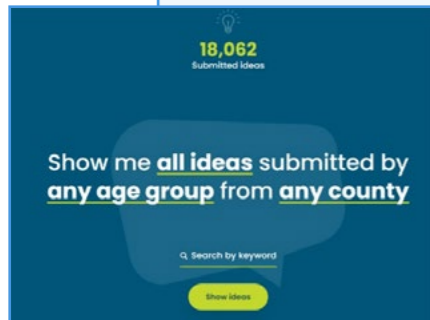


*A student interacts with hands-on demonstrations of STEM at the Cork Carnival of Science. Image: Claire Keogh.*

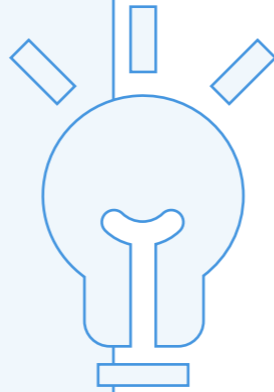


## JULY

- ▶ The Science on Screen documentary **'The People There to Catch Us'** showcased research by Precision Oncology Ireland, in **collaboration with cancer patients** and survivors.



- ▶ The analysis of the **18,000 ideas** submitted by the public to the Creating Our Future national brainstorm was published.
- ▶ The SFI-supported Dublin Maker Festival returned to **celebrate ten years of hacking, making and DIY.**



Revellers enjoying the Dublin Maker Fair in Merrion Square.

▶ WATCH VIDEO

## SEPTEMBER

- ▶ Research led by SFI Research Professor Séamus Davis, at UCC, revealed the atomic mechanism behind high-temperature superconductors that could help **enable super-efficient electrical power.**
- ▶ The iCIRAG SFI Research Centre for Applied Geosciences, hosted at University College Dublin (UCD) had its short film 'Inception Horizon' **selected as a finalist** in the Earth Futures Film Festival.

▶ WATCH VIDEO



The Mellow Tonic visited the Županova jama cave in Slovenia to perform Inception Horizon. Image: Jaka Ivancic.

- ▶ The Leaf No Waste team (TU Dublin) was announced as **winner of the €2 million Food Challenge** in the SFI Future Innovator Prize programme.

▶ WATCH VIDEO

- ▶ Researchers at the APC Microbiome Ireland SFI Research Centre, hosted at UCC, **discovered a new therapy** to enhance resilience to stress.

## AUGUST

- ▶ A **€65 million fund** was launched to drive solutions to support the green transition and digital transformation through the National Challenge Fund, under the EU's National Recovery and Resilience Plan.
- ▶ The AMBER SFI Research Centre for Advanced Materials and BioEngineering, hosted at TCD, launched a **new STEM education programme**, designed and delivered by teachers for teachers, to inspire the next generation of scientists.
- ▶ An investment of €7.5 million to support Ireland's emerging research talent through the SFI-IRC Pathway Programme was announced, across 14 research projects.



## OCTOBER

- ▶ The annual Space Week festival, run by Munster Technological University (MTU) Blackrock Castle Observatory in partnership with SFI and ESERO Ireland, **celebrated the wonders of space** and science.
- ▶ A new joint Co-Centre Programme was announced with an investment of **€74 million to create new collaborative research centres** across Ireland, Great Britain and Northern Ireland.
- ▶ Maths Week, the **all-island festival of maths** and numeracy, was co-ordinated by Calmast and the South East Technological University's STEM Engagement centre.



Pictured (l-r): Donna and Danielle from the Space Week Ireland Team.



Maisie Hogan (10) is pictured at the launch of Maths Week Ireland 2022. Image: Mark Stedman.

## NOVEMBER

- ▶ Lero, the SFI Research Centre for Software hosted at University of Limerick (UL), launched an **Open Science Charter** which promotes making research openly available to all.
- ▶ SFI published an **updated Gender Dashboard** to share data on application submission and success rates by gender across SFI's portfolio of grants.
- ▶ Science Week 2022 called on the public to **explore the infinite possibilities of science** with hundreds of events taking place nationwide.
- ▶ A €16.2 million investment was made to **increase research capacity** within the Technological Universities (TUs) and Institutes of Technology (IoTs).



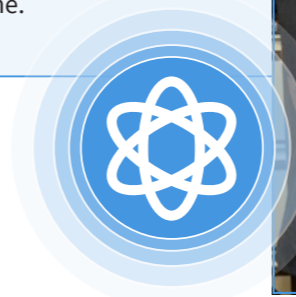
Pictured at the launch of the Lero Open Science Charter were Mariana Clohessy, Lero, Dr Daniel Bangert, Digital Repository of Ireland, Prof Brian Fitzgerald, Lero Director, and Patrick Healy, UL. Image: Brian Arthur Photo.



Prof Philp Nolan, Director General of SFI, with Evelyn Cusack, Head of Forecasting at Met Éireann and Minister Simon Harris TD at the launch of Science Week. Image: Julien Behal.

## DECEMBER

- ▶ A major **investment was announced** to fund research infrastructure projects to advance high-impact research activities.
- ▶ Irish quantum technology experts began a €10 million collaboration across six universities to **future proof EU communications infrastructure**, as part of the EU-wide Quantum Communications Infrastructure programme.



Prof Dan Kilper, Director of the CONNECT SFI Research Centre for Future Networks and Communications, pictured with Minister of State at the Department of the Environment, Climate and Communications, Ossian Smyth TD, and Dr Deirdre Kilbane, Director of Research at the Walton Institute in the South East Technological University (SETU), launching the IrelandQCI project.

# 04



## Excellent Research

Image by Muhammad Muddasar  
University of Limerick  
Title: Tornado of lignin

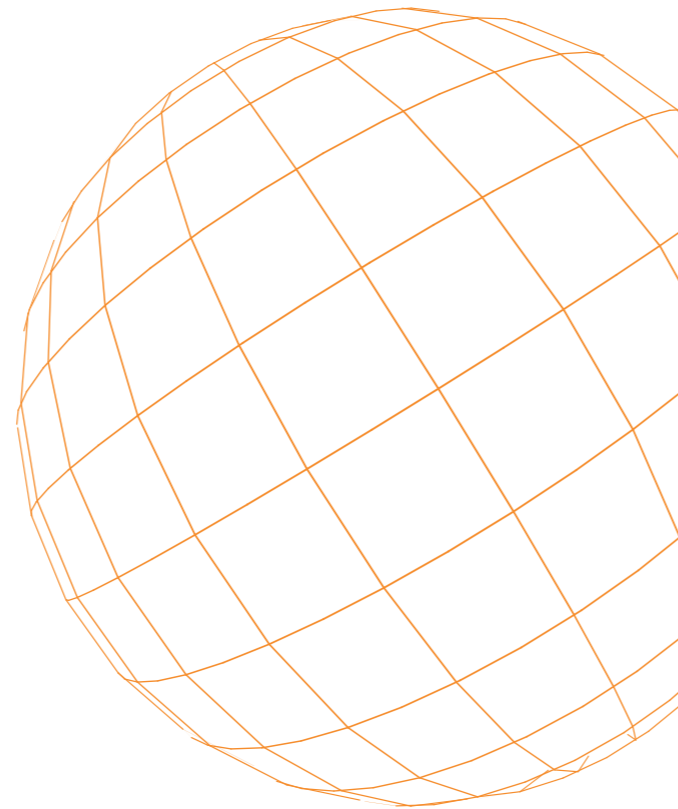
# Excellent Research

SFI-funded researchers continued to undertake excellent research throughout 2022. From individual investigators to large-scale SFI Research Centres, our world-leading researchers are engaging in highly collaborative research with the potential to help us build a better future through discovery and innovation. This work is helping to address the grand challenges of our time, informing evidence-based policy and creating new knowledge for the benefit of all our citizens.

SFI has forged important collaborations across the higher education institutions, enterprise, and state agencies and government departments that underpin this excellent research, to support an interdisciplinary, engaged and inclusive research base.

## Publications and Citations

SFI-funded researchers continued to publish world-leading research in 2022 with **5,248 publications** reported. SFI-funded publications are **2.4 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.



Pictured (l-r) at the SFI Annual Summit: Chairman of the SFI Board, Prof J. Peter Clinch, SFI Researcher of the Year and Head of the Academic Unit of Neurology (TCD), Prof Orla Hardiman, Professor of Inorganic and Materials Chemistry (TCD), Wolfgang Schmitt, and Director General of SFI, Prof Philip Nolan.

### Field Specific Rankings 2022 by Publication Quality

Ireland ranks\*:

Rank	Field
2nd	Agricultural Science
2nd	Space Science
4th	Immunology
4th	Neuroscience and Behaviour
6th	Microbiology
7th	Materials Science
7th	Pharmacology and Toxicology

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

Country	Funder	Web of Science Documents	% of Documents in Top 1%
Ireland	All	280,697	1.91
Ireland	Science Foundation Ireland	31,376	2.41
USA	All	13,564,641	1.91
USA	NSF	948,093	3.01
USA	NIH	1,839,253	2.80
Switzerland	All	831,240	2.71
Denmark	All	473,164	2.51
Singapore	All	354,162	2.60
United Kingdom	All	3,951,541	2.04
Finland	All	358,959	1.95
New Zealand	All	275,721	1.93
Israel	All	413,174	1.85
China mainland	All	6,956,756	1.32
EU-28	All	16,531,458	1.35
EU	European Research Council	163,846	4.06
<b>Global Baseline</b>		<b>52,609,741</b>	<b>1.15</b>

Source: InCites by Clarivate Analytics

## SFI Researcher of the Year 2022

Professor of Neurology and Head of the Academic Unit of Neurology at TCD, Orla Hardiman, was recognised as the 2022 SFI Researcher of the Year. A world-leading researcher in Motor Neuron Disease (MND), particularly Amyotrophic Lateral Sclerosis (ALS), her work has improved how clinicians diagnose and treat this disease.

Prof Hardiman is also lead investigator for a €10 million 'precision medicine' collaborative research programme called **Precision ALS**. This programme combines applied clinical research with cutting-edge data science, to realise the power of artificial intelligence (AI) towards new drug development in Motor Neuron Disease.

A Principal Investigator at the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases and the ADAPT SFI Research Centre for AI-driven Digital Content Technology, Prof Hardiman is the founder and director of the National ALS/MND Clinical and Research Programme, and the HSE National Clinical Lead for Neurology. Her research group has made several ground-breaking discoveries, such as identifying important ALS genes, and demonstrating that mixing genetic material changes disease risk. Her research has also shown that ALS and schizophrenia are biologically connected.

## Research Snapshots



Prof John D. Kelleher from the ADAPT SFI Research Centre for AI-Driven Digital Content Technology at Maynooth University.

### New Research for Stroke Prediction in Younger People

Ischemic stroke occurs when a blood clot blocks the blood flow in an artery in the brain. It is one of the leading causes of mortality worldwide. **New research** by Dr Elizabeth Hunter and Prof John D. Kelleher from the ADAPT SFI Research Centre for AI-Driven Digital Content Technology at Maynooth University has led to novel prediction models that are more accurate at identifying people under 60 with a high risk of stroke.

The research forms part of the Horizon 2020 research project, Precise4Q which as a novel platform, has the potential to impact millions of people at high-risk of ischemic stroke and will pave the way for the prediction and treatment of ischemic stroke in unprecedented ways for younger populations.

### Scaling Up Production Methods for Graphene

Working with international collaborators, researchers at AMBER, the SFI Research Centre for Advanced Materials and Bioengineering Research hosted at TCD, have developed a cheap, scalable production method for graphene that could reduce its production costs to £20 per litre, with the potential to increase production to multi-tonne quantities.

High quality graphene is necessary for applications that require high conductivity, such as the electronics or energy storage industry. It can be used as a barrier material for anti-corrosion, an additive for mechanical reinforcement in polymers, or as a conductive material in sensors, and is expected to find major commercial applications in the coming years.

### Taking the Lead on Responsive Crystals

Dr Sarah Guerin sees the world through a crystal lens. As a computational biophysicist, she has a deep understanding of molecular structures, and with the support of SFI and ERC funding, she is discovering new and responsive crystalline biomolecules that can replace lead in existing technologies and open up new applications for organic sensors.

At the core of her work are piezoelectric crystals, tiny structures that generate electricity under physical pressure. Such crystals currently lie inside many everyday and medical technologies, from barbecue lighters and musical birthday cards, to cardiac pacemakers and nebulisers that deliver aerosolised medicines - but they contain lead zirconium titanate (PZT), which poses health and environmental issues.

“These piezoelectric crystals are one of the last remaining sources of lead in mainstream technologies today,” says Dr Guerin, a lecturer in Sustainable Energy Harvesting at the Department of Physics in UL. “We are developing organic piezoelectric crystals as replacements, which are biocompatible and so can be used more safely with less environmental impact.” The foundation for the research came from Dr Guerin’s PhD at UL, which looked at the piezoelectric properties of amino acids, the building blocks of proteins.

Using computer modelling techniques, she was able to focus in on crystalline structures with particularly high piezoelectric responses, and she has continued to build on those findings in her work in the CÚRAM SFI Research Centre for Medical Devices, followed by



Dr Sarah Guerin is a Funded Investigator in the SSPC SFI Research Centre for Pharmaceuticals hosted by UL.

SSPC, the SFI Research Centre for Pharmaceuticals. In 2021, Dr Guerin showed that the responsive amino acid crystals could be used to detect tiny leaks in pipes, validating the technology with UCD collaborator, Prof Vikram Pakrashi.

During the Covid-19 lockdown, Dr Guerin developed the proposal that secured her a prestigious €1.5 million ERC Starting Grant to develop the organic piezoelectric approach further, with potential applications in medical devices, pharmaceutical drugs and automotive technology and electronics. Dr Guerin was also awarded an SFI-IRC Pathway Programme grant to develop a greener approach to sensors. “The SFI-IRC and ERC grants have enabled me to set up the Actuate Lab at the Bernal Institute in Limerick,” she says. “And today we are using our modelling techniques to guide the development of these biomolecular crystals as reliable, solid-state sensors that don’t cost the earth.”

### Collaborating to Turn Waste into Energy

Head of the Nanotechnology and Bio-Engineering Research Group at Atlantic Technological University (ATU), Dr Suresh Pillai, is working in collaboration with Prof Paula Colavita at TCD’s School of Chemistry, to develop a hybrid electrocatalysis method to convert waste materials like biomass for renewable applications and hydrogen fuel production. The Nano2H2 project is funded by the SFI Frontiers for the Future Programme, and will help to promote a circular economy, where waste by-product can be harnessed as a resource to manufacture new materials and products.



Dr Suresh Pillai at Atlantic Technological University. Image: James Connolly.



## Spotlight on Excellence



*Pictured: Prof Jane Farrar's research group at the School of Genetics and Microbiology, TCD. Image: Dara Mac Dónaill.*

## Developing Life-changing Therapies for Genetic Blindness

Researchers from the School of Genetics and Microbiology, Trinity College Dublin (TCD), in collaboration with the School of Biochemistry and Immunology, are examining how genetics play a role in vision impairment and blindness. Working to develop life-changing therapies, the group is led by Prof Jane Farrar and is supported by SFI, the Irish Research Council (IRC), the Health Research Board of Ireland, and Fighting Blindness Ireland.

In 2022, the group published research on how activating a specific enzyme causes the degeneration of nerve cells or neurons, including those in the eye's retina – a precursor to blindness and several other neurodegenerative diseases.

By removing the gene responsible for this enzyme in mice, the researchers observed a significant improvement in the survival of the optic nerves in the retina – especially those responsible for transmitting visual stimuli to the brain. This process also helped preserve the nerves, which helped the mice retain their vision.

Besides protecting vision, removing the gene also improved the neuron's mitochondrial health – a critical step in treating neurodegenerative diseases and blindness. The group showed that the vision in mice was still preserved even four months after the experiment, indicating the possibility of long-term benefits.

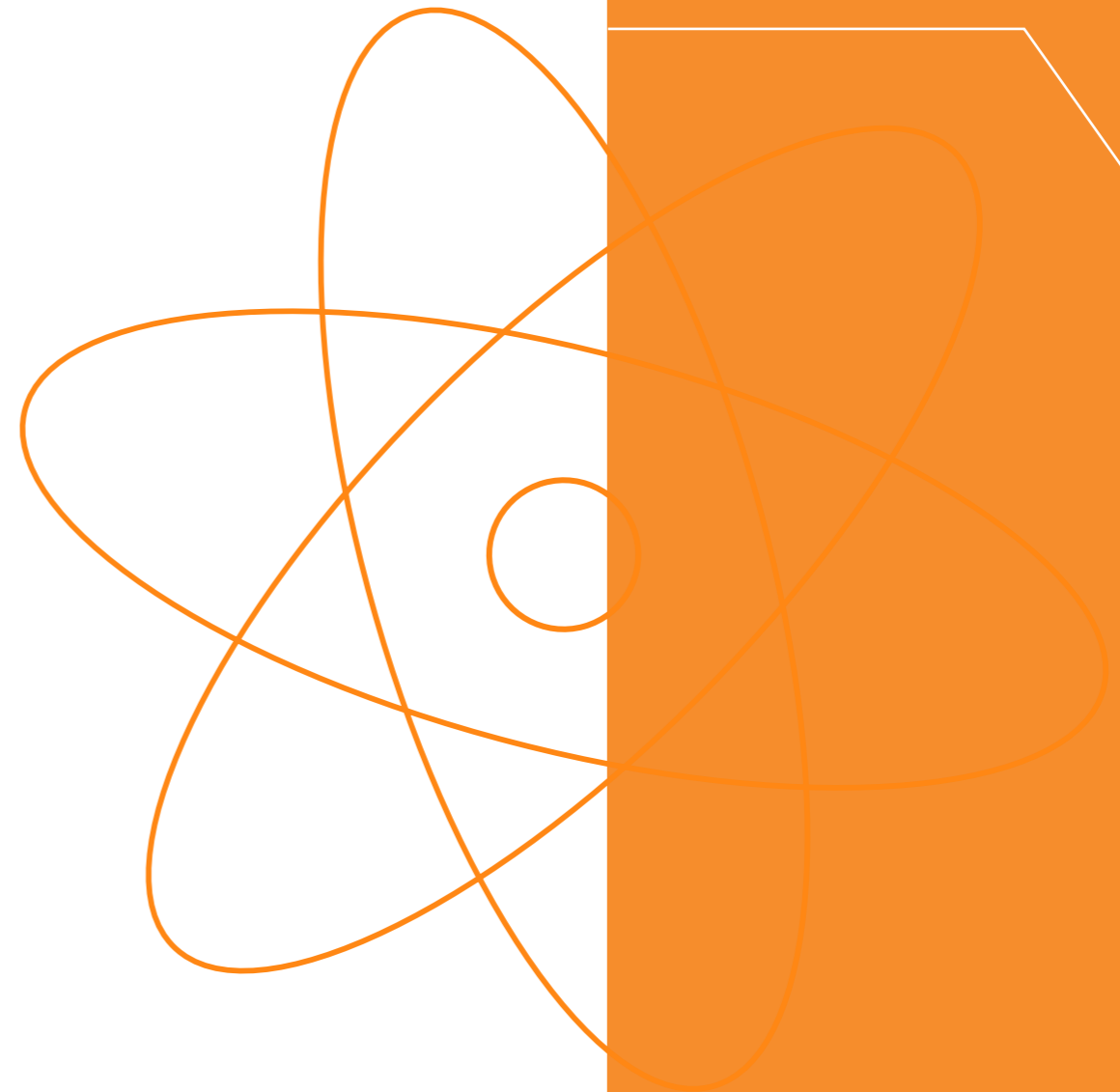
Such therapies targeting suppression or removal of these genes may hold the key to effective new options for treating several diseases, many of which have no treatment options available.

[▶ WATCH THE VIDEO](#)

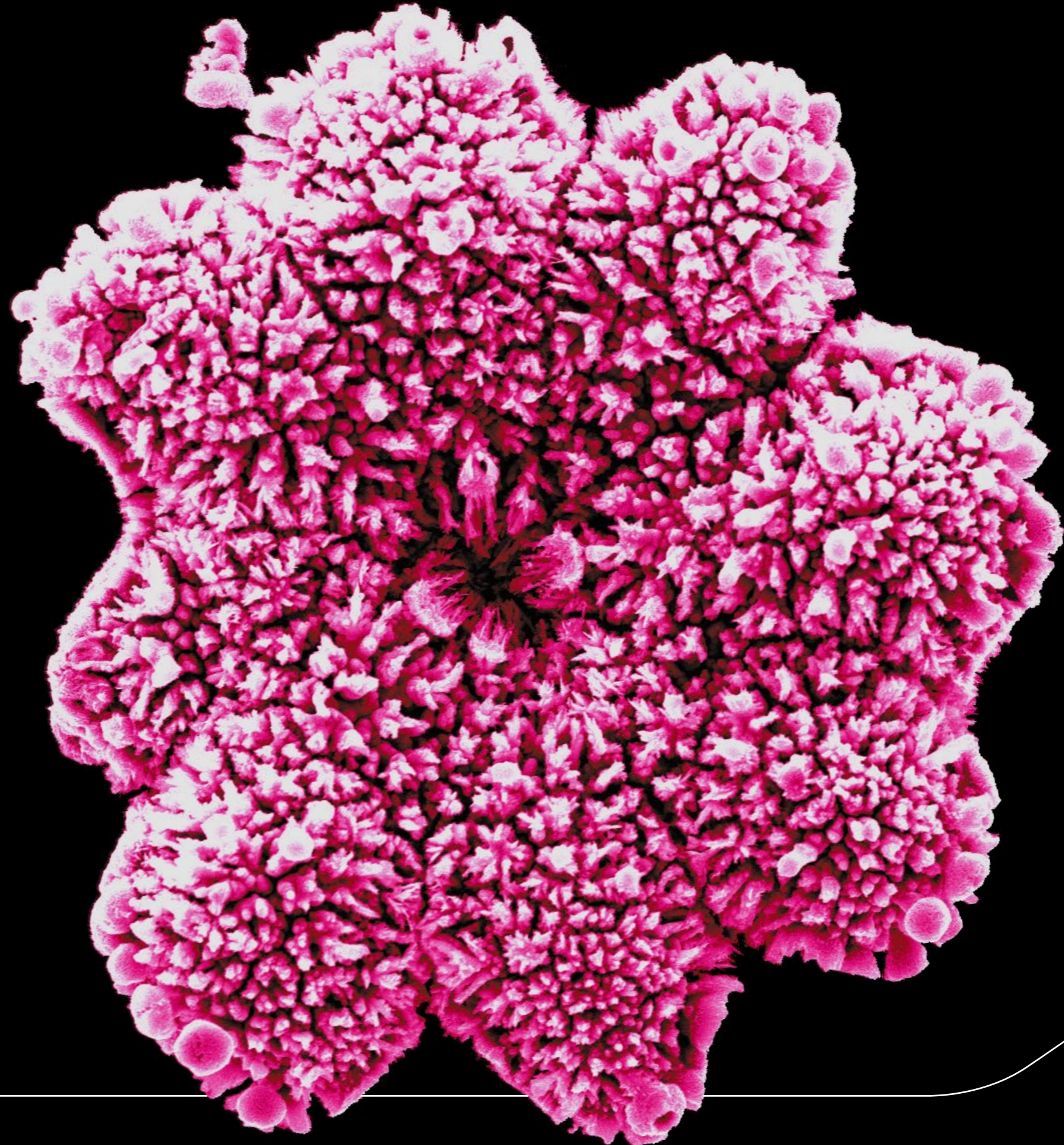
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*“This work represents a significant step on the pathway forward and offers hope that a range of diseases involving the optic nerve will one day be treatable.”*

**Prof Jane Farrar, School of Genetics and Microbiology, TCD.**



# 05



## Talent and Skills

Image by Ehren Dixon  
Tyndall National Institute  
Title: Platinum bloom

# Talent and Skills

SFI funds excellent and impactful research and talent that is fostering a highly skilled, dynamic research and development ecosystem in Ireland. Working in partnership with the higher education institutes, government and industry, we support a diversity of collaborating researchers across a broad range of disciplines, to further the impact of the research we fund.

From training highly sought after PhD students to supporting early career frontiers researchers and senior research leaders, our work encompasses a breadth of voices on the research journey. This enables us to maximise our potential to address Ireland's societal, economic and environmental challenges, delivering on citizens' priorities and shaping a better future for all.

**5,986**

People working on SFI-supported projects

**573**

SFI award holders

**868\***

Funded Investigators and Co-Principal Investigators

**2,301**

Postgraduate (PhD and Masters) students supported by SFI

**149**

PhD students recruited across six SFI Centres for Research Training, bringing the total number of students supported to 639 (46% of which were women)

**115**

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

**32%**

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

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

# Spotlight on Future Skills Needs

As the world and the workplace becomes increasingly digitalised, the need for highly skilled researchers specialising in data, with the cutting-edge ICT skills needed for the future, is rapidly increasing. While technology will play a huge role in our future, we need more than just highly skilled data scientists, we need researchers with highly transferable skills that can work with stakeholders and are confident in combining their technical ability with industry knowledge, working together in an interdisciplinary manner.

SFI's Centres for Research Training Programme (CRTs) supports six Centres that bring together 11 higher education institutes and 90 industry partners with a €104 million investment. The CRTs train postgraduate students in Ireland in areas such as machine learning, digitally enhanced reality, data science, genomics, artificial intelligence, and advanced networks for sustainable societies.

Working in a cohort-based learning model, PhD candidates work together, improving valuable communications skills and undertaking internships. In 2022, 149 PhD students were recruited to the Centres, of which 46% were women. This brings the total number of PhD students supported to-date by the programme to 625.

SFI also fosters the development of PhD training collaborations between researchers in the UK and the SFI Research Centres. Through the Centres for Doctoral Training (CDTs), they train and equip engineers and scientists with the skills and knowledge to address challenges in data and ICT. There are seven SFI CDTs with collaboration between 75 HEIs across the UK and seven across Ireland, with a €39 million investment from SFI and £442 million from the UK EPSRC.

## Exploring the Human Side of Artificial Intelligence (AI)

How can we ensure that AI both gives and gets the best from humans? For Prof Brian Mac Namee, keeping humans in the loop is a central component of his research into AI and machine learning, and Science Foundation Ireland has been at the core of that work.

Prof Mac Namee's interest in computers was sparked early in life, when his parents invested in an Atari 800 computer and his mother helped young Brian and his brothers to type in lines of code. Then an open day at TCD clinched the deal when the Leaving Cert students, including teenage Brian, were shown robots moving through a maze. "I knew then that computer science was something I wanted to study more," he recalls.

After he finished his PhD in AI at TCD and spent a year in industry, Prof Mac Namee joined forces with Dr Sarah Jane Delaney at Dublin Institute of Technology (now TU Dublin).

A few years later, Prof Mac Namee moved to UCD, where he is an Associate Professor in the School of



Brian Mac Namee, Associate Professor, School of Computer Science, UCD.

Computer Science, and his SFI-funded research is deepening our understanding of how AI can help humans while keeping humans (and cows) in the loop. An SFI Career Development Award (CDA) kickstarted this work and helped establish Prof Mac Namee's research group at UCD.

At the Insight SFI Research Centre for Data Analytics, Prof Mac Namee's work has explored how human experts can help to teach machine learning algorithms to spot useful and clinically relevant anomalies in medical images and scans. At the

VistaMilk SFI Research Centre, he is working with colleagues to develop machine learning algorithms to help farmers quickly and objectively assess clover content of grass - an important indicator of grass quality - and detect signs of mastitis in milk from cows.

Also as Centre Director of the SFI Centre for Research Training in Machine Learning, Prof Mac Namee is helping a new generation of PhD researchers at UCD, TU Dublin and DCU to train in machine learning and benefit from industry placements as they learn.

“Already we have had just shy of 100 early-stage researchers working across a broad swathe in machine learning. Everything from developing and applying new algorithms and techniques to the legal and societal impacts, asking how do we live in this world,” says Prof Mac Namee. “The impact of this and all the research we do in this area is that we want to keep humans in the loop, smartly training and improving the machine learning algorithms so that the AI does the heavy lifting and then human expertise can finesse and control the outcomes.”



*Pictured (l-r): Prof Helen Roche presents John O'Grady with the 2022 UCD Conway Festival Gold Medal.*

**Gold Medal for Genetic Research**

In 2022, PhD candidate John O'Grady at the SFI Centre for Research Training in Genomics Data Science, won the Conway Festival Gold Medal for his work on genetic research on tuberculosis (TB) in cattle. His group, supervised by Professors David MacHugh, Claire Gormley, and Stephen Gordon at UCD School of Agriculture and Food Science, is trying to identify potential biomarkers for M. bovis infection. The study aims to develop new diagnostic tests for M. bovis infection and help breed livestock with enhanced bovine TB resistance. The research could also contribute to understanding immunological responses during human TB. John's PhD focuses on determining commonalities in gene expression across breed groups and holds a potential impact component for the agricultural industry worldwide.

**Developing Future Leaders in Medical Device Research**

In 2022, CÚRAM, the SFI Research Centre for Medical Devices at University of Galway was awarded almost €14 million to create 50 postdoctoral fellowship opportunities to develop future leaders in medical device research. The co-funding programme involves €7.1 million from the European Union and €6.8 million from CÚRAM to launch MedTrain+, an enhanced, innovative Marie Skłodowska-Curie Action training programme. Its research outputs will benefit outcomes for chronic illnesses such as diabetes, cardiovascular, neurodegenerative, and musculoskeletal diseases, and support partnerships with SME and multinational companies in MedTech, pharmaceuticals and biotechnology.



*Prof Abhay Pandit, Director of the SFI Research Centre, CÚRAM, at University of Galway, was awarded the prestigious **George Winter Award 2022** from the European Society for Biomaterials (ESB) for outstanding research contributions to the field of biomaterials.*



*Prof Edward Gregg, SFI Research Professor at RCSI University of Medicine and Health Sciences.*

**Tackling Chronic Diseases**

World-leading population health scientist, Prof Edward Gregg, Head of the School of Population Health, at RCSI University of Medicine and Health Sciences, was awarded €4.3 million in funding through the prestigious SFI Research Professorship Programme, as a joint appointment with Imperial College London. His award will support a further 13 research positions.

One-tenth of the world's adults have diabetes, while in Ireland the number of people living with type 2 diabetes has almost doubled in the past 15 years. Prof Gregg's group will investigate how population-level data and research platforms are deployed in Ireland to make key decisions for the prevention and reduction of the burden of chronic diseases, specifically targeting diseases such as diabetes and obesity. This work will pave the way for innovative population registries for chronic diseases, with the potential to improve health outcomes for patients and better inform policy.

**Improving the Technology of Tomorrow's World**

In 2022, Prof Robert Bogdan Staszewski was awarded a new SFI Research Professorship award, continuing his work on mixed-signal integrated circuits electronics for emerging applications, in UCD's School of Electrical and Electronic Engineering.

Prof Staszewski's bleeding-edge research into a new set of exciting application areas such as quantum computing, hybrid neural networking, cryogenic electronics, and 5G/6G wireless and radar, will have real-world impacts on a global scale, improving how data is generated and analysed.

# 06

## Education and Public Engagement

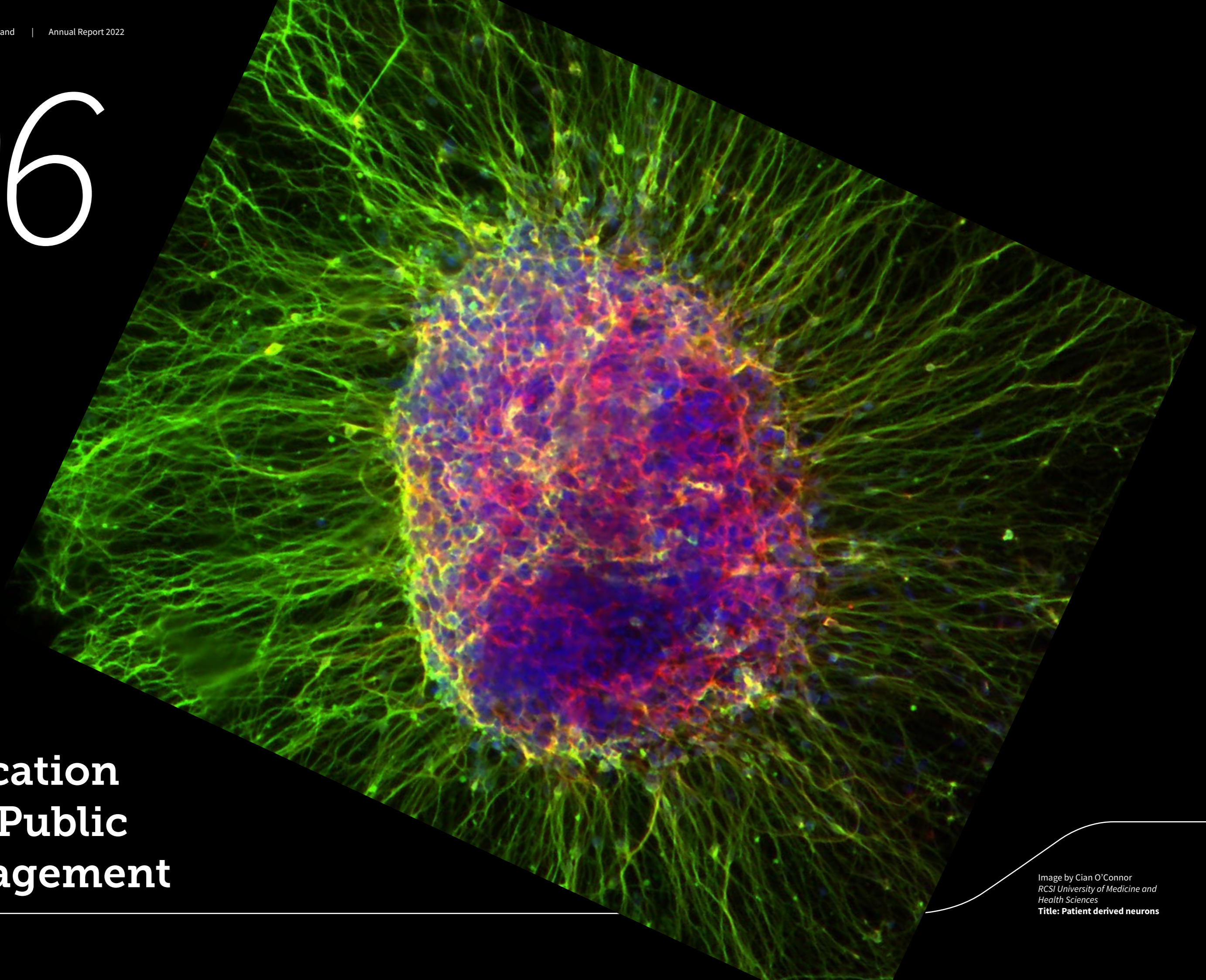


Image by Cian O'Connor  
RCSI University of Medicine and  
Health Sciences  
Title: Patient derived neurons

# Education and Public Engagement

SFI supports and delivers public engagement activities across Ireland, bringing science to life through everyday activities and providing access to science for all our citizens. We champion best practice in STEM education, promoting curiosity across all age groups and education levels to begin a talent pipeline for the future.

During 2022, SFI's support of both in-person and digital activities reached new audiences and created opportunities for innovative collaboration. SFI supports programmes that engage adults of all ages and socioeconomic backgrounds, who may not previously have had opportunities to engage with science, ensuring that we foster a fully inclusive STEM workforce, and increase scientific literacy for all.

**€6.4 million**

invested in 43 projects through the annual SFI Discover Programme Call

**1,018**

Science Week events across the country

**374**

primary schools received awards via the Curious Minds Programme (formerly DPSM)

**228**

second level teachers attended ESERO space-themed continuous professional development

**675**

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

**1,775**

senior cycle students attended ESERO Space Career Roadshows

**2,097**

students met scientists and engineers through the ESERO Space Goes to School programme



## Creating our Future at the National Ploughing Championships

Minister Simon Harris TD is pictured with the Creating Our Future team in the Government of Ireland village at the National Ploughing Championships 2022. Findings of the campaign were available for all to browse. Explore some of the 18K+ ideas submitted to the [database](#).

## Curious Minds

During 2022, SFI's Discover Primary Science and Maths Programme (DPSM) was rebranded as **Curious Minds**. The programme supports schools to develop the innate curiosity of children through a hands-on, inquiry-based approach to STEM learning. SFI helps teachers build confidence through free, continuous professional development and hundreds of classroom resources, while the Curious Minds Awards help promote a culture of STEM across the school.

[▶ WATCH THE VIDEO](#)



Minister Simon Harris TD visits Lacken National School to present the school with an award recognising their achievements in STEM.



Pictured (l-r) at BODY @ Science Week in Merrion Square: Director General of SFI, Prof Philip Nolan and Chairman of the SFI Board, Prof J. Peter Clinch.

## Science Week 2022

For the first time in three years, in-person events were possible for Science Week. These were embraced by audiences around the country, with 19 regional festivals and 13 events funded by the Science Week Call.

SFI ran the week's headline event, BODY @ Science Week, an immersive outdoor installation created by Walk the Plank, with input from biological scientists. The event saw visitors flocking to Merrion Square to take a journey through the human body via special effects, light, sound and fire.

[▶ WATCH THE VIDEO](#)

### Sparking Conversations Through Art

‘STEP Through the Looking Glass: Stories Told of Experimental Processes’ is a multimedia exhibition funded through the SFI Discover Programme and the UCD Wellcome Institutional Strategic Support Fund, that uses selected personal and scientific objects as unique and curious ways **to spark conversation and tell a science story.**

Launched in 2022 as part of the Kilkenny Arts Festival, it is a collaboration between award-winning artist and tapestry weaver, Lorna Donlon, scientists at UCD, and the patient advocates who work with them.

[▶ WATCH THE VIDEO](#)



Jason Moriarty, STInt alum is pictured with Minister Simon Harris TD, fellow STInt alum Lucy Greene, and Prof Dáire Keogh, President of DCU. Image: DCU.

### Stem Internships for Teachers

The SFI-supported STEM Teacher Internship Programme (STInt) helps to inform teaching and learning practice, and to provide role models to inspire future generations of students (particularly girls) to enhance their knowledge of STEM careers. The programme, which is coordinated by DCU, facilitates STEM internships for preservice and in-service teachers of STEM subjects, both at primary and second level across Ireland and fosters sustainable school-industry collaborations.

## Spotlight on Debunking the Myths



Dr Zara Molphy, co-lead of the Debunking the Myths Programme and research programme manager in RCSI University of Medicine and Health Sciences, is pictured with Dr Ronan Daly, Registrar in Obstetrics and Gynaecology, and programme expert.

## The Science Behind Our Sexual Health

In today’s climate of ‘fake news’ it can be difficult for teenagers to find reliable sources of information about sexual and reproductive health. Many teenagers are learning about their bodies at a time when health issues are often depicted on film, television and social media, using standardised images that can perpetuate myths and unrealistic body standards.

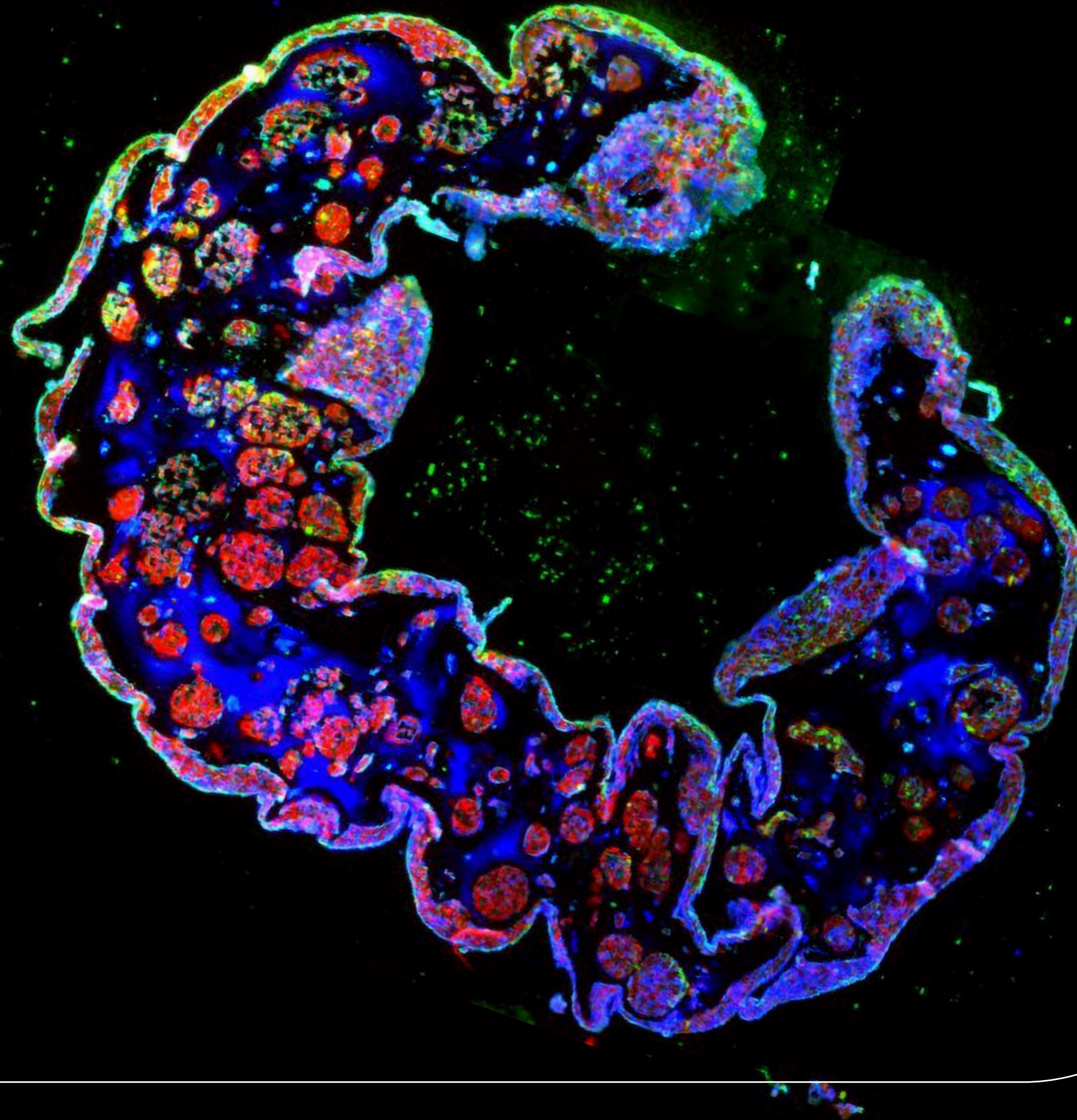
A new series of interactive workshops and online engagement tools called **‘Debunking the Myths: The Science Behind Our Sexual Health’** was launched in 2022, **with support from SFI**, to discuss sexual health with teenagers and debunk myths using evidence-based, scientific information. It is run in partnership with RCSI Obstetrics and Gynaecology Department, the Rotunda Foundation and the Rotunda Hospital.

Topics included anatomy, menstruation, contraception, sexually transmitted infections, the HPV vaccine, consent, sexual assault and information on support services for teens nationwide was provided.

The programme, which was developed to complement the RSE curriculum, was delivered and approved by experts such as research scientists and medics, providing clear, accurate information in relation to sexual health.

There was huge demand for the workshops, with 5,692 students directly engaged. Further workshops are planned, taking on board feedback from students and youth organisations like BelongTo and SpunOut.

# 07



## Global Footprint

Image by Aoise O'Neill  
University of Galway  
Title: Sugar coated fibronasts  
in 3d CRC



# Global Footprint

Throughout 2022, SFI deepened our reach through our international collaborative research partnerships across the globe. By cultivating stronger ties with world-leading universities and research institutions, SFI supported researchers are enhancing Ireland’s research capabilities and developing cutting-edge solutions to some of our most pressing challenges.

In building strategic international partnerships to drive economic and societal impact, SFI is attracting top global research talent, building researcher networks

and expanding the international footprint of Irish research, as well as supporting the Government’s Programme for a Shared Island research corridor.

SFI’s international collaborations have extensive global reach: Europe (67.93%); North America (18.19%); Asia (8.58%); Australia and Oceania (2.89%); South America (1.45%); Sub-Saharan Africa (0.58%); Central America and the Caribbean (0.24%) and Middle East, North Africa, and Greater Arabia (0.14%).

**8,212**

academic collaborations reported by SFI researchers

**71%**

of these with international partners

**52%**

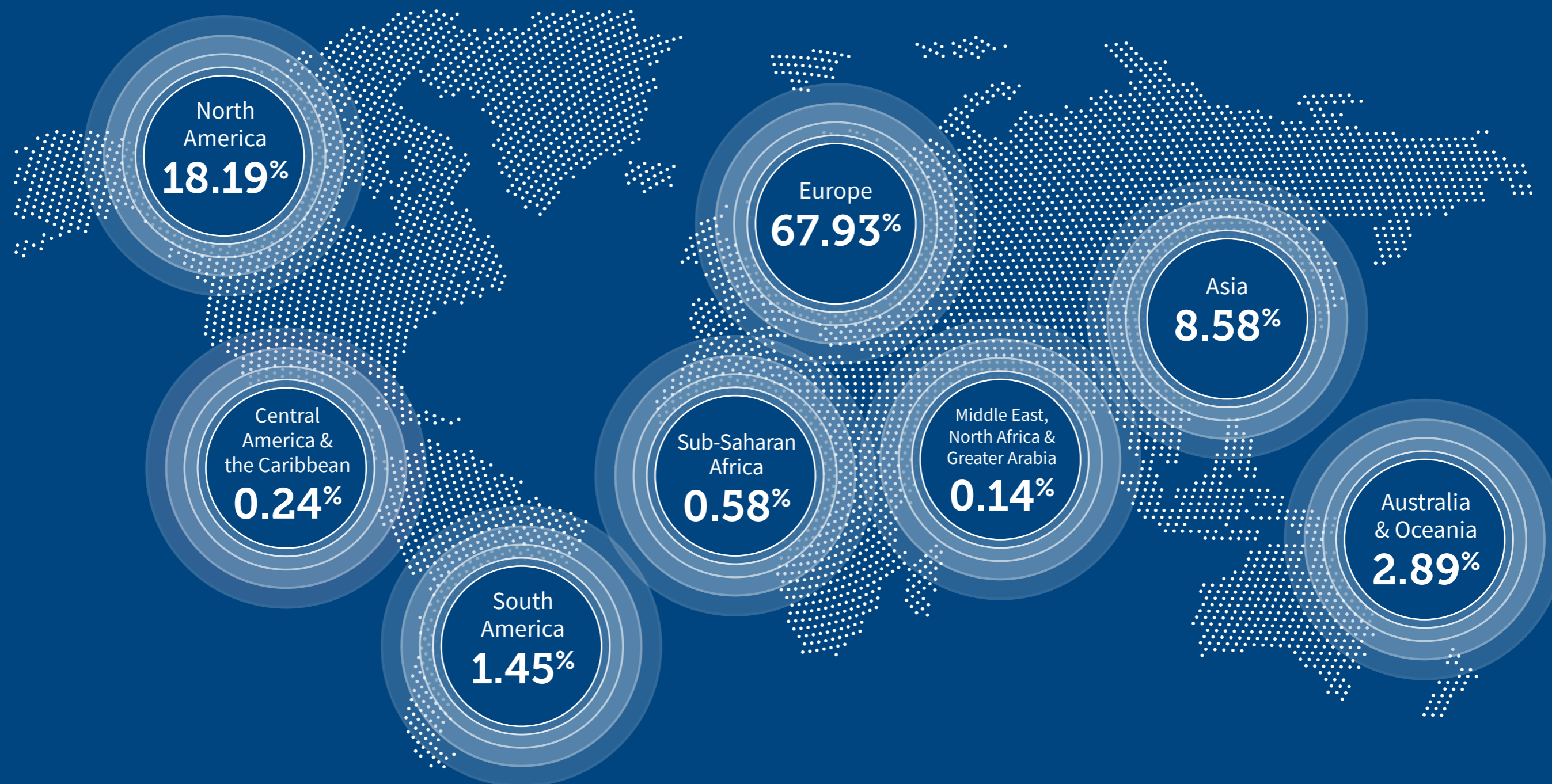
of non-academic engagements were with partners outside of Ireland

**11%**

with the US, 10% with the UK and 31% with other countries



# 2022 International Academic Collaborations



## Top 20 International Academic Collaborations by Country 2022

United Kingdom (excl Northern Ireland)	1,134	Spain	295	Canada	132	India	66
United States of America	925	Northern Ireland	242	Denmark	114	Brazil	60
Germany	534	Netherlands	206	Switzerland	106	Poland	59
France	353	China	137	Belgium	101	Norway	50
Italy	296	Sweden	135	Portugal	72	Finland	50
		Australia	134	Austria	71	Greece	40
						Japan	40



*Pictured (l-r): US-Ireland awardees Dr Rebecca Rolfe, Prof Paula Murphy and Natalie Jablonski (TCD) are researching tissue engineering for tendon reconstruction.*

### SFI US-Ireland Programme

Twelve awards were made in 2022 through a tripartite research and development partnership between the United States of America (USA), Republic of Ireland (RoI) and Northern Ireland (NI). The joint investment of €21 million, of which SFI is contributing €6.1 million, is supporting more than 35 research positions in the Republic of Ireland and 25 research positions in Northern Ireland, across 27 research institutions.

The research projects funded are in the areas of energy and sustainability, quantum networks and telecommunications, nanomaterials, optics and photonics; tissue engineering for tendon reconstruction; and sensor monitoring for water quality and peatlands.

The partner agencies for the 2022 awards were SFI and the Health Research Board (HRB) in the Republic of Ireland; the National Science Foundation (NSF) and the National Institutes of Health (NIH) in the USA, and the Department for the Economy (DfE) in Northern Ireland.

One of the awards, the **CoQREATE Centre-to-Centre** US-Ireland R&D Partnership, represents a combined investment of €3 million. It will explore the foundations of quantum Internet technologies, span four research centres and support at least ten research positions.



*Pictured (l-r): Recipient of the SFI St. Patrick's Day Science Medal for Industry, and President of Stripe, John Collison, with President of the University of Limerick, Prof Kerstin Mey and recipient of the SFI St. Patrick's Day Science Medal for Academia, Prof Donald McDonnell, who is the Associate Director for Translational Research for the Duke Cancer Institute, North Carolina.*

### SFI St. Patrick's Day Science Medal

The **prestigious SFI St. Patrick's Day Science Medal** recognises distinguished Irish scientists, engineers or technology leaders living and working in the USA, for their significant scientific contributions to academia and industry. In 2022, Taoiseach Micheál Martin TD presented medals to Prof Donald McDonnell, Associate Director for Translational Research for the Duke Cancer Institute and Glaxo-Wellcome Professor of Molecular Cancer Biology at Duke University, North Carolina, and to John and Patrick Collison, founders of the finance software company, Stripe.



*The 2022 Royal Society-SFI University Research Fellows are pictured (l-r): Dr Alma Siggins (University of Galway), Dr Rebecca Henry (UCC), Dr Matthew Walters (TCD), Dr Johanna Vos (DIAS), Dr Mark Mitchison (TCD) and Dr Lara McManus (TCD).*

### UK-Ireland Partnerships

SFI worked in partnership with UK research bodies throughout 2022, to provide opportunities for joint research partnerships that mutually benefit all communities. Two awards were made under the **Engineering and Physical Sciences Research Council (EPSRC)-SFI Joint Funding Research Programme** with a co-investment of €2 million for researchers based in TCD and University of Galway who are working to reduce greenhouse gas emissions, and to understand more about black holes.

In the most successful year yet, six new awards were made through the prestigious **Royal Society-SFI University Research Fellowship Programme**, with €3.5 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.

They will carry out work in the areas of carbon sequestration, exoplanetary meteorology, medical engineering and electrophysiology, quantum thermodynamics, strongly coupled quantum field theory, and neuroinflammation.

Three further **University Research Fellowship** renewals were made. These were to Dr John Goold (TCD), Dr Marius de Leeuw (TCD) and Dr Niels Warburton (UCD) with €1.1 million invested in the areas of theoretical and quantum physics, mathematics and astrophysics, respectively.

Additionally, 13 **Enhancement Awards** totalling €2.4 million were made to current University Research Fellows and Renewals to further support and enhance their research activities for the next two years.

### New Initiatives

A new **programme** to foster collaborations of scale between the researchers in Ireland, Great Britain and Northern Ireland was launched in 2022, with a focus on research in the thematic areas of climate, and sustainable and resilient food systems.

The ambitious **Co-Centre Programme** will establish virtual Centres of distributed excellence linking researchers across academia and industry to perform cutting-edge research in areas of mutual economic, societal, health and environmental importance.



Representing an **investment of €74 million**, the programme is managed by SFI and co-funded through the Government's Shared Island initiative, Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA) and UK Research and Innovation (UKRI), to help to bring scale and cohesion to the research and innovation ecosystem.

### Displaced Researchers Programme

In 2022, SFI launched a new supplemental grant scheme to encourage and enable holders of existing SFI grants to provide opportunities for displaced researchers from Ukraine to join and collaborate on existing SFI-funded grants, to enable them to maintain continuity in their research career.

Eight awards were made under the SFI Rapid Response Supplemental Grant for Displaced Researchers Programme, with an investment of €305k, supporting the swift integration of Ukrainian researchers into the Irish research system.

### Futureproofing the Network Security of Tomorrow

Madhusanka Liyanage is an Assistant Professor/Ad Astra Fellow and Director of Graduate Research at UCD's School of Computer Science. A funded investigator at the SFI Connect Research Centre for Future Networks and Communications, he is an expert consultant at the EU Agency for Cybersecurity (Enisa), specialising in enhancing security and privacy in future mobile networks.

A Principal Investigator for two large EU H2020/Horizon Europe projects, Prof Liyanage is building a pathway toward a trustworthy European cybersecurity sector, while his Netslab research group at UCD is focused on security and privacy of Beyond 5G and 6G networks.

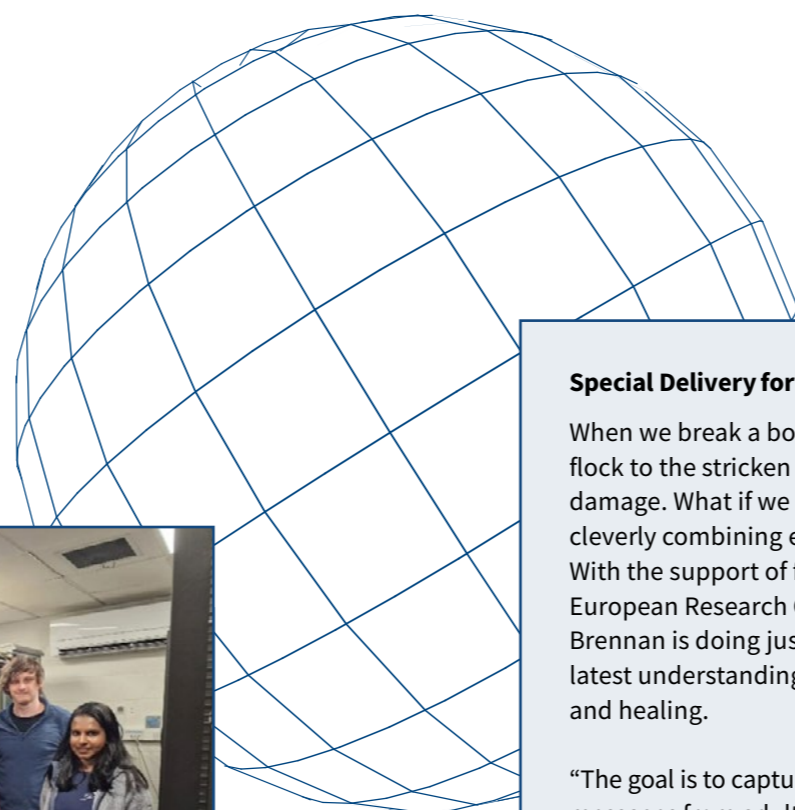
A Docent/Adjunct Professor at the Center for Wireless Communications, University of Oulu, Finland, and Honorary Adjunct Professor of Network Security, at University of Ruhuna, Sri Lanka and University of Sri Jarawardhenepura, Sri Lanka, he has been ranked among the world's Top 2% Scientists in the list prepared by Elsevier BV, Stanford University, USA.



Madhusanka Liyanage (left) pictured with his PhD students and postdocs in his laboratory in the School of Computer Science, UCD. Image: Ranul Tanthilage.

A supervisor of doctoral students at the SFI Centre for Research Training in Machine Learning, Madhusanka is training a new generation of innovators and providing them with the expertise needed to develop novel security and privacy solutions for the connected societies of the future.

He has held a prestigious Marie Skłodowska-Curie Actions Individual Fellowship and received several awards, including the IEEE ComSoc Outstanding Young Researcher award by IEEE ComSoc EMEA, and an Irish Research Council (IRC) Research Ally Prize. In 2022, he received a Special Commendation for IRC Early Career Researcher.



### Special Delivery for Healing Bones

When we break a bone, stem cells in our body flock to the stricken site and help to heal the damage. What if we could boost that process by cleverly combining engineering and biology? With the support of funding from SFI and the European Research Council (ERC), Dr Meadhbh Brennan is doing just that, by combining our latest understanding of stem cells, biomaterials and healing.

"The goal is to capture all-important biochemical messages from adult stem cells in the lab, then encase those messages in a supportive biomaterial and deliver them to ailing bones," explains Dr Brennan, who is a Galway University Foundation Associate Professor in Biomedical Engineering and Regenerative Medicine.

Her approach centres on tiny bundles of biochemical messages called extracellular vesicles or EVs. Cells in our body naturally release these small, cargo-filled bubbles, that then travel and get taken up by receiving cells. "I want to look at the therapeutic value of EVs for healing bone," she says.

At the University of Galway, where Dr Brennan has a co-appointment between the School of Medicine and the School of Engineering, she has a prestigious ERC grant to grow adult stem cells derived from bone marrow in the lab in ways that encourage them to produce EVs that promote healing. "We are modulating the physical and chemical environments of the cells as they grow," she explains. "This lets us mimic the cues they would have in the body and thereby encourage them to release more potent EVs."

With SFI SIRG funding, her lab is also creating scaffolds of biomaterials to encase these powerful EVs, so they can be delivered into sites of injury.



Dr Meadhbh Brennan, University of Galway.

"We know that scaffolds are an effective way to deliver stem cells, so we want to use scaffolds to deliver these EVs to the site," says Dr Brennan. "We are using 3D printing to develop these scaffolds, and because they are delivering EVs rather than live stem cells, we think it will be a more cost-effective process."

Her love of engineering and biology started with a degree in engineering at the University of Galway, then a PhD in biomedical engineering at Southampton University. A move to France saw her develop expertise in stem cells, then she worked at Harvard University with pioneers of EVs and biomaterials. Now she is combining both EVs and scaffolds in the University of Galway.

"I had applied for the SFI funding when I was in the US, and that funding was the impetus to return to Ireland and set up my ERC project here," she says. "And at Galway I get to work in an environment that supports multi-disciplinary research, and where we have excellent cell manufacturing facilities. Because of all these things, I can really see the research in the lab being translated into benefit for patients in the future."

08

# Empowering Societal and Economic Benefits

# Empowering Societal and Economic Benefits

SFI invests in excellent ideas and impactful research to help us successfully address the global, societal and economic challenges we face. This supports collaboration between academia, government and industry across the island of Ireland and internationally. This investment benefits the whole country by driving job creation, establishing new academic-industry

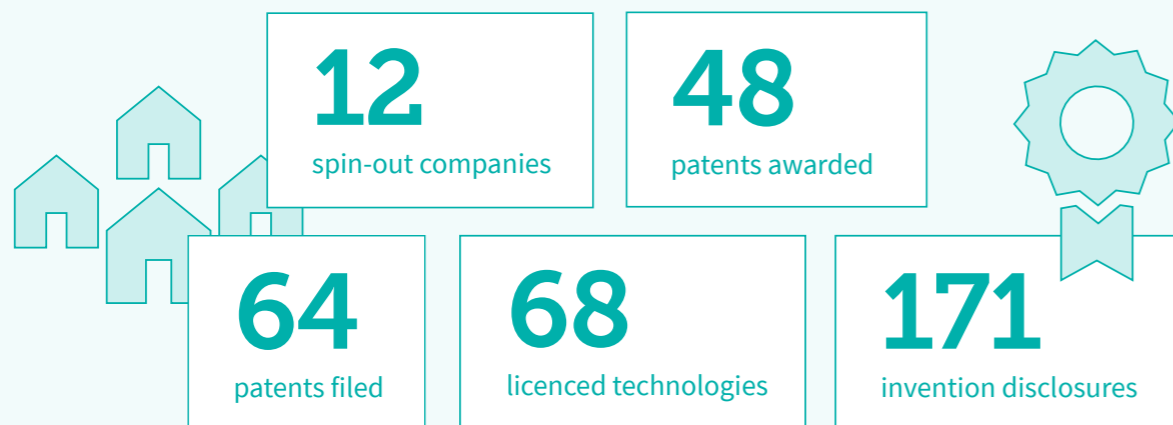
research partnerships, attracting multinational companies, and supporting the growth of small and medium-sized enterprises. It also supports an inclusive, engaged research and innovation system that is integral to addressing major societal issues, ranging from climate change to health and well-being, and to deliver solutions for the good of future generations.

## Non-academic Engagements



## Innovation and Commercialisation

SFI-funded researchers have delivered:



# Building Strategic Partnerships

In 2022, a €5.87 million research partnership was supported through the SFI Strategic Partnership Programme to produce an advanced software development and integration platform, in collaboration with industry and international partners.

R@ISE (Research at Immersive Software Engineering) is a University of Limerick-led research project investigating low-code/no-code approaches in software engineering, where developers as well as

non-developers are equipped with the tools to design, develop, verify and deploy applications quickly, with minimum to no prior knowledge of coding, for solutions in data management, privacy and security.

Supported with matched funding by partners such as Analog Devices, Stripe, Tines, Johnson & Johnson, and Limerick City and County Council, the project will support 22 PhD students and four Postdoctoral Fellows.



Prof James O'Donnell, RCSI College of Medicine and Health Sciences.

### Research is the Life Blood for Coagulation Discoveries

If our blood doesn't clot properly, we soon know about it, from debilitating bleeds to potentially fatal organ damage, heart attacks and strokes. That's why our bodies typically keep coagulation under tight control. And by focusing on an often overlooked protein in this process, consultant haematologist Prof James O'Donnell has made major discoveries about its role in acute and chronic suffering.

Following his medical degree in TCD, Prof O'Donnell trained in Australia and London and saw physician scientists at work. This inspired him to want to combine coagulation research with his own clinical practice. Within six months of taking up a clinical post at St James's Hospital in Dublin, he was awarded an SFI President of Ireland Young Researcher Award, which allowed him to start his biochemistry lab.

"That SFI award was really the cornerstone of all my research," says Prof O'Donnell, who is today Professor of Vascular Biology at RCSI College of Medicine and Health Sciences. "From that I was able to win awards from other agencies, including the Health Research Board, the Irish Heart Foundation and the US National Institutes of Health. I have also been continuously supported by SFI funding ever since."

Much of that research focuses on a protein called von Willebrand Factor or VWF, which acts as a kind of glue to help clots to form. Too little of it can lead to uncontrolled bleeding, and too much can result in problematic clots. "Von Willebrand Factor disease, where you have too little of the protein,

is the most common inherited bleeding disorder, it affects around one in 1,000 people in Ireland,” explains Prof O’Donnell. “Yet there has been relatively little research done on this protein, it is the poor relation of the coagulation factors.”

Prof O’Donnell recently led the Low Von Willebrand in Ireland Cohort (LOVIC) study, which found that women with even a small deficiency in VWF suffered extremely heavy bleeding during periods, were more likely to bleed after giving birth and around 10% had their wombs removed.

“Our LOVIC study has now been replicated in Boston with similar findings, and it has had huge attention globally,” says Prof O’Donnell, who is Director of the Irish Centre for Vascular Biology. “Our study has contributed to the world guidelines for the diagnosis and treatment of VWF disease.”

In 2020, Prof O’Donnell and colleagues were among the first to carry out research on why patients with severe Covid-19 often had many micro-clots in their lungs, and they are continuing to examine the role of coagulation in Long Covid. The RCSI team also recently identified a new role for VWF beyond clot glue. They found it triggers inflammation in the body too, making it a potentially important agent in a wide range of chronic diseases. “Our research is showing the central roles that VWF has in health and disease,” says Prof O’Donnell. “And that means we can look for better ways to identify and treat patients who need help.”

Prof O’Donnell also leads the €4 million ‘iPath’ study, developing the personalised treatment of haemophilia. Supported by an SFI Strategic Partnership, it sees researchers in RCSI University of Medicine and Health Sciences and TCD collaborating with world class clinical and scientific investigators from Shire.

## Promoting Knowledge Sharing

The SFI Industry RD&I Fellowship supports research, development and innovation (RD&I) in industry by providing the opportunity for companies across the world to host an academic expert at various stages of their career who have attained a PhD.

In 2022, six grants were made to support the temporary placement of academic researchers in companies

to undertake research projects in areas such as microbiology, virtual reality, biotechnology, coastal erosion, and breast cancer. The industry partners on these awards will provide co-funding, while Fellowship placements of up to one year full-time, or 24 months part-time, will facilitate cutting-edge, industry-informed research and the sharing of knowledge and expertise.

## Advancing High-quality and High-impact Research

An investment of €18 million in 13 research infrastructure projects across 10 HEIs was made in 2022, to advance high-quality and high-impact research activities in Ireland.

The SFI Research Infrastructure Programme supports the research community in building and sustaining the required infrastructural capacity to enhance and support discovery and innovation, as well as enterprise competitiveness and societal development across the regions.

The projects funded include a terahertz (THz) transmission and characterisation facility at DCU, that will extend the existing capabilities of the university sector in Ireland, enabling further interdisciplinary research and growing Ireland’s expertise in areas where THz is a key enabling technology.

## Empowering Sustainable Solutions Through Challenge-based Funding



The Grain-4-Lab team at DCU.

Challenge-based funding works to address our biggest societal challenges by focusing on proposed solutions developed over tight timelines. Two prize awards of €2 million were awarded in 2022, investing in further research for sustainable solutions to everyday problems. The Grain-4-Lab team from DCU received €2 million in funding in the Plastics Challenge to continue developing its solution to make sustainable laboratory consumables using waste produced from the brewing and distilling industry. A runner-up prize of €250,000 was awarded to the Microplastics-free Plastics team from TCD.

The Food Challenge was won by researchers from TU Dublin and Teagasc in the Leaf No Waste team, who are working on extending the shelf life of fresh produce through a combination of fortified plants and new compostable packaging.

Ten teams competed in the SFI-Defence Organisation Innovation Challenge in 2022, tasked with coming up with solutions for challenges faced by the Irish Defence Forces. Ideas included a portable device that detects biological agents, AI technology to assist the Irish Air Corps to fight wildfires, new techniques for improving radio communications and a co-operative system for humans and robots to work together to manoeuvre aircraft. Seven research teams were also active in the Sustainable Development Goals Challenge in partnership with Irish Aid, working on ways to improve health and well-being across different age groups in partner countries.

 WATCH THE VIDEO



The European Commission Recovery and Resilience Taskforce visited SFI in 2022. Pictured (l-r): Isabel Grilo, Director, Directorate-General for Economic and Financial Affairs; Maria Teresa Fabregas Fernandez, Director, Secretariat-General of Recovery and Resilience Task Force; Declan Costello, Deputy Director-General of the Directorate-General for Economic and Financial Affairs, along with Dr Ciarán Seoighe, Deputy Director General at SFI and Dr Ruth Freeman, Director of Science for Society, SFI.

Building on experience from the Future Innovator prizes, SFI introduced the **National Challenge Fund**, a €65 million programme under the National Recovery and Resilience Plan and funded by the EU's Recovery and Resilience facility. Eight challenges have been set across the twin themes of green transition and digital transformation. The National Challenge Fund invites transdisciplinary teams to conduct engaged research to solve a particular problem they have identified. Teams must include a Societal Impact Champion to represent the potential stakeholders and beneficiaries of the solution.

By December, the 26 teams taking part in the first two challenges were selected. The teams receive training and guidance, including in-person workshops on theory of change, design thinking and evidence-based entrepreneurship. This prepares them to focus on the stakeholders and potential beneficiaries, in addition to the technical elements of the Challenge. An estimated total of 90 teams will participate in the National Challenge Fund.

SFI introduced intending applicants to members of Government departments to identify relevant topics matching their strategic goals. SFI also hosted a visit from members of the European Commission Recovery and Resilience Taskforce (RECOVER) to explain the objectives and schedule of the Challenges.

### External Funding Secured by SFI-Funded Researchers 2022

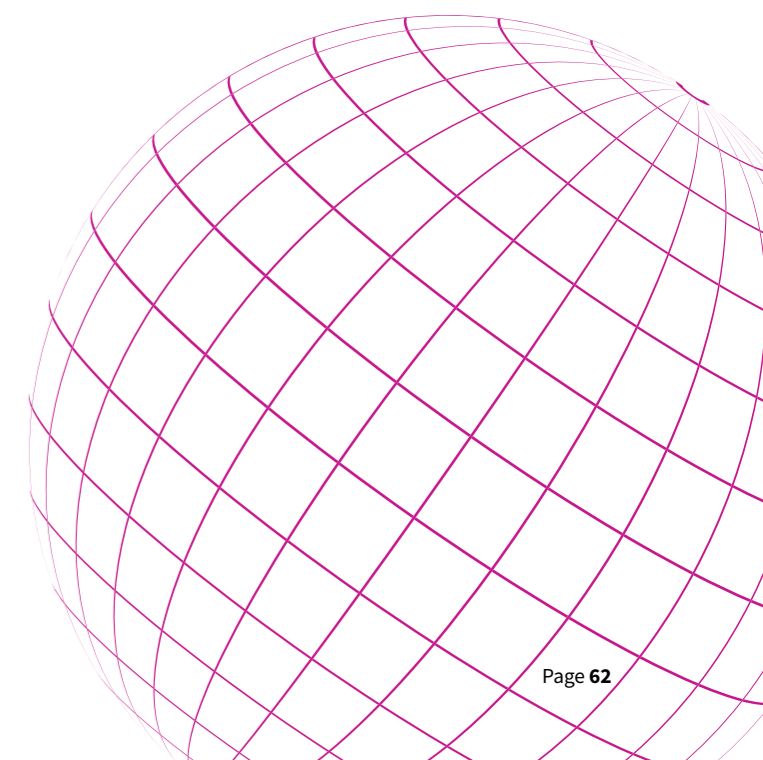
Source	Funding secured
European Union	€85,151,019.00
Private Enterprise	€61,253,430.67
Enterprise Ireland – Commercialisation and Non-Commercialisation Awards	€26,315,544.00
Other Irish Government Source	€25,780,233.33
Health Research Board	€18,785,576.05
Irish Research Council	€12,928,043.20
Higher Education Authority Ireland	€8,671,448.17
Charity/Non-Profit Organisation (Irish)	€5,370,209.14
Department of Agriculture, Food and the Marine	€4,360,955.49
Other International Interest Organisation	€4,025,671.75
Marine Institute	€3,705,172.00
Other International Government Source	€3,490,362.52
Environmental Protection Agency	€2,277,064.00
Charity/Non-Profit Organisation (International)	€1,315,507.99
National Institute of Health USA	€1,154,041.00
Teagasc	€876,000.00
Wellcome Trust	€839,236.00
National Science Foundation US (NSF)	€496,999.00
Department of Communications, Energy and Natural Resources (DCENR)	€352,750.00
<b>Grand Total</b>	<b>€267,149,263</b>

## SFI Generating Value For Money

SFI-funded researchers continued to demonstrate scientific excellence, research relevance, return on investment and value for money in 2022.

- ▶ SFI-funded researchers won €267 million from diverse sources.
- ▶ SFI-funded researchers secured €85 million in funding from EU sources.
- ▶ Funding from private enterprise was €61.2 million.
- ▶ The ratio of funding from Non-Irish-Exchequer to Irish Exchequer is 1:1.6.

- ▶ The ratio of national funding to international funding is 1:0.88.
- ▶ In 2022, SFI Research Centres signed 136 collaborative research agreements (CRAs), of which 73 were with international companies and had an industry commitment of €32.2 million.





## SFI Research Centres

The network of 16 world-leading SFI Research Centres is supporting the delivery of transformative research, discovery and innovation, as well as training students with critical, in-demand skills, enhancing enterprise and industry, supporting regional development, and enhancing Ireland's international reputation.

They link scientists and engineers in partnerships across 1,101 research bodies across the globe and have signed 1,426 collaborative research agreements with 688 companies – 366 of which are in Ireland. Of these 688 companies, 317 are multinationals, while 340 are small and medium-sized enterprises, with the remainder being a mix of startups and 'other' company categories.



Industry Commitment

**€638 million**

**€684 million from SFI**

## Boosting Industry Investment

A University of Limerick study published in 2022 in the journal *Research Policy*, led by Prof Helena Lenihan, analysed the value of the publicly-funded SFI Research Centres Programme. It found that companies that collaborate with the Centres tend to increase their investment in research and development (R&D), redirecting their R&D spending towards more scientific types of research. The study found that the SFI Research Centres Programme has led to greater potential for breakthrough ideas and disruptive innovations, boosting the Irish economy, making it both more competitive and resilient. It also found that firms that collaborated with SFI Research Centres experienced an increase in their in-house R&D intensity in the 1–2 year period after the collaboration begins, and that this increases over time. In addition, collaborating with publicly-funded research centres can stimulate

the research component of firms' in-house R&D, but it takes time for this impact to materialise. Also, while the impact of collaboration on firms' overall in-house R&D is greater for large firms, SMEs experience a greater increase in applied research orientation.



*“Companies that collaborate with SFI Research Centres tend to increase their investment in R&D.”*

## Combined Cumulative Outputs for SFI Research Centres to End of 2022

Key Outputs	Cumulative to 2022
Journal Publications	14,727
Conference Publications	6,980
MSc/MEng Graduates	228
PhD Graduates	1,850
% Trainee Departures to Industry	35%
EU Participation	717
EU Coordination	159
ERC Awards	65
EI Commercialisation Awards	508
License Agreements	349
Spin-outs Incorporated	59

### SFI Research Centres have to-date secured:

**€417.3** million in non-exchequer, non-commercial funding

**€354.9** million from industry

**508** EI Commercialisation Awards

**349** Licence agreements

**59** Spin-outs

**22** SFI Spoke Awards

### To date, SFI Research Centres have:

Participated in **876** major EU-funded initiatives and cumulatively won 65 prestigious European Research Council (ERC) awards.

Drawn down approximately **€352 million** in cumulative Horizon 2020 and Horizon Europe funding and have an industry commitment of €638 million.

Collaborated with **1,101** research bodies worldwide.

## SFI Research Centres Benefit Industry RD&I

In 2022, the Insight SFI Research Centre for Data Analytics extended their research partnership with global financial services company, Fidelity Investments. As organisations turn more and more to automatic or semi-automatic customer service management using digital conversational agents, known as chatbots, businesses need to be able to audit the knowledge

being used by chatbots to minimise the error in the retrieval of information. Insight’s ongoing work with Fidelity has generated a US patent (Mohanty et al, 2022) relating to enterprise knowledge graph extraction that will improve such customer facing recommender systems, demonstrating the value SFI Research Centres can bring to industry research and development.

## Spotlight on Ireland’s Success in Horizon Europe

The Horizon Europe programme entered its second year in 2022, with results coming through from both the 2021 and 2022 work programmes. The first half of the year saw successful national results through the three main calls from the 2021 work programme, and some great results through the Proof-of-Concept 2022 call. Meanwhile, the end of the year saw the announcement of Ireland’s first national success in an ERC Synergy call in STEM, as well as success through the 2022 Starting Grant call. By the end of 2022, these combined results brought our national tally of ERC awards to almost €49 million across all domains. SFI holds the National Delegate role for ERC and is the National Contact Point for both the Life Sciences and the Physical Sciences.

Prof Pádraig Dunne at UCD’s School of Physics is an SFI Principal Investigator and Frontiers for the Future awardee. In 2022 he became the first STEM researcher in Ireland to partner on an ERC Synergy Grant. Prof Dunne is partnering with researchers from the University of Copenhagen (Denmark), GSI Helmholtz Centre for Heavy Ion Research (Germany), and Queen’s University Belfast (UK) on an astrophysics project, examining how neutron star mergers make heavy elements.

“

*Our team will use our experience with laser produced plasmas, combined with new and recently developed spectroscopy techniques, to provide fundamental*

*atomic data. The data will make a key contribution to our understanding of Kilonovae and the physics of the formation of the heavy elements.”*

**Prof Pádraig Dunne, UCD.**

The European Research Council Executive Agency (ERCEA), visited Ireland in October 2022 for an informative event with Prof Nektarios Tavernarakis, Vice-President of the ERC Scientific Council, at which members of the ERCEA shared advice on a variety of grant management topics. Prof Maria Leptin, President of the ERC Scientific Council also visited Ireland in 2022, delivering a keynote on the impact of reforming research assessment at a conference on the future of higher education on the island of Ireland. Prof Luke O’Neill (TCD) was appointed by the European Commission as one of five new members of the governing body of the ERC, the Scientific Council.

In 2022, SFI launched the ERC Support Programme to promote Irish institutions to recruit ERC-funded researchers from outside of Ireland to help recruited ERC awardees by providing excellent facilities and infrastructure.

## Technology Empowering Citizens and the Irish Language

The ‘Smart Dún Laoghaire’ collaborative research programme was launched to deliver innovative research and technology projects to promote adaptation and mitigation for climate change in Dublin. It is co-funded by the SFI Enable Research Programme through the CONNECT SFI Research Centre and Dún Laoghaire–Rathdown County Council.

The ADAPT SFI Research Centre for AI-driven Digital Content Technology, hosted by TCD, collaborated with Dublin City Council in 2022 on the **Smart Dublin initiative**, exploring innovative health and well-being solutions for local communities. Under the initiative, two projects, the Digital Twin project and the Smart D8 project, are bringing technology providers, academia, local organisations and citizens together to explore the use of data to improve quality of life and address challenges facing local communities in the area. It will include the monitoring of air quality, analysing traffic flow and improved understanding of energy use and flooding.

In 2022, the Irish Language Technology (ILT) research team at the ADAPT SFI Research Centre at DCU worked with Rannóg an Aistriúcháin, the Translation Section for the Houses of the Oireachtas, to provide Translation Memory files of primary legislation (Acts) legacy data, spanning the period 1960-2018. These resources are **extremely beneficial to Irish translators** as it will allow them to reuse previously translated material using state-of-the-art translation software.



## A Little Light Listening

The IPIC SFI Research Centre for Photonics’ podcast series, A Little Light Listening, went from strength to strength in 2022. Listen to how they are developing

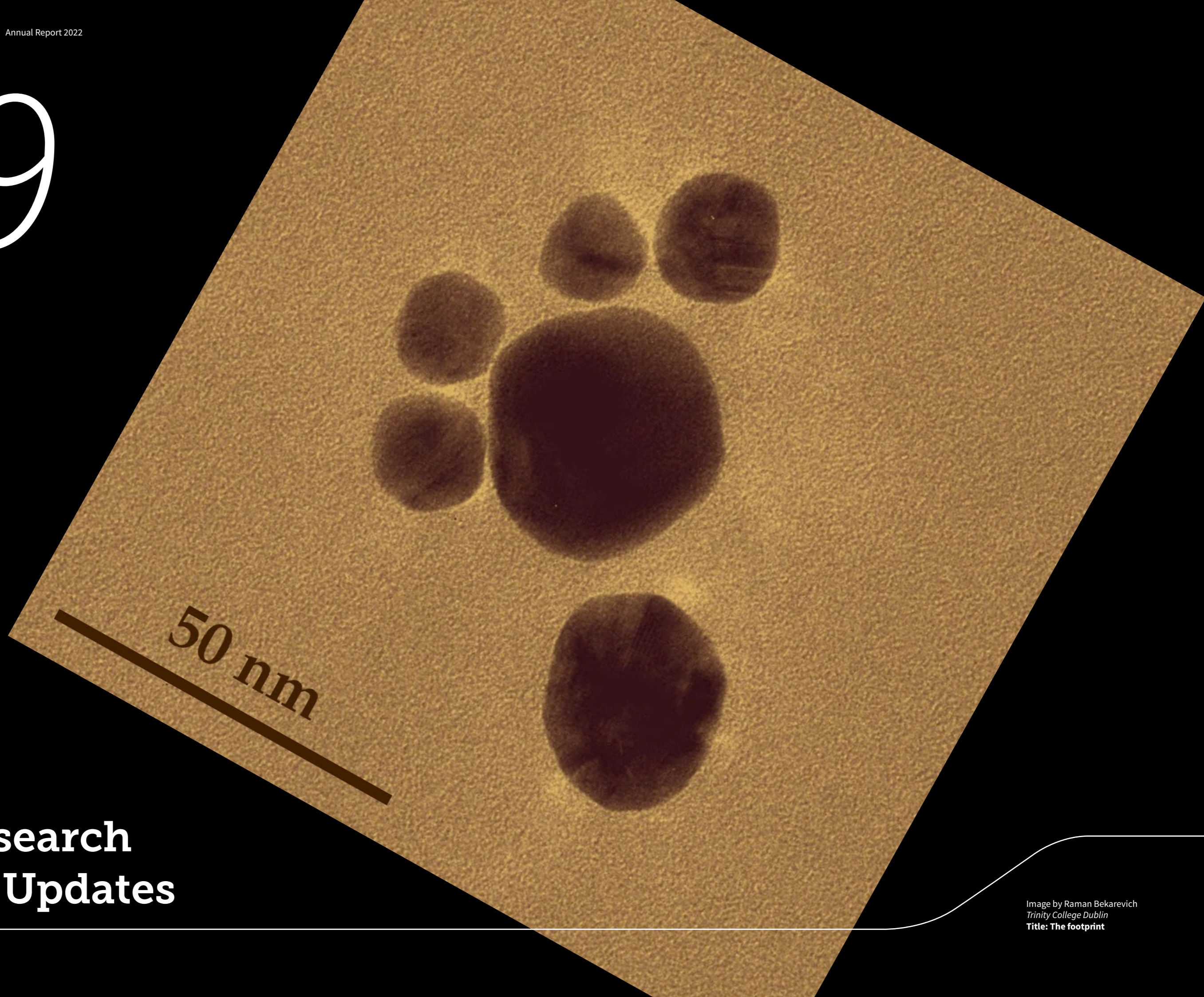
photonics-based techniques to monitor lung functionality in premature babies [here](#).

## Regional Development

The Insight SFI Research Centre for Data Analytics **announced an investment** of €350k in new collaborations with the Institutes of Technology and the new Technological Universities. The seven new projects, which will support 20 new research positions, are with TU Dublin, Munster Technological University (MTU), Atlantic Technological University (ATU) and Dundalk Institute of Technology.

The gender profile of the new research cohort is 50:50 male/female, and the research areas include energy efficient scheduling for industry, lifestyle predictors for dementia and safe artificial intelligence (AI) for medical devices. These new research synergies across the regions aim to transform society, health, technology and industry for the better.

09



# SFI Research Policy Updates

Image by Raman Bekarevich  
Trinity College Dublin  
Title: The footprint

# SFI Research Policy Updates

## Improving Gender Equality, Diversity and Inclusion

As the coordinating partner of the Funding Organisations for Gender Equality (FORGEN) Community of Practice<sup>1</sup> (CoP), SFI contributed to the publication of two landmark reports in 2022. The first summarised the outputs from a FORGEN CoP workshop with Prof Londa Schiebinger of Stanford University, on the sex and gender dimension in the research and innovation funding process<sup>2</sup>.

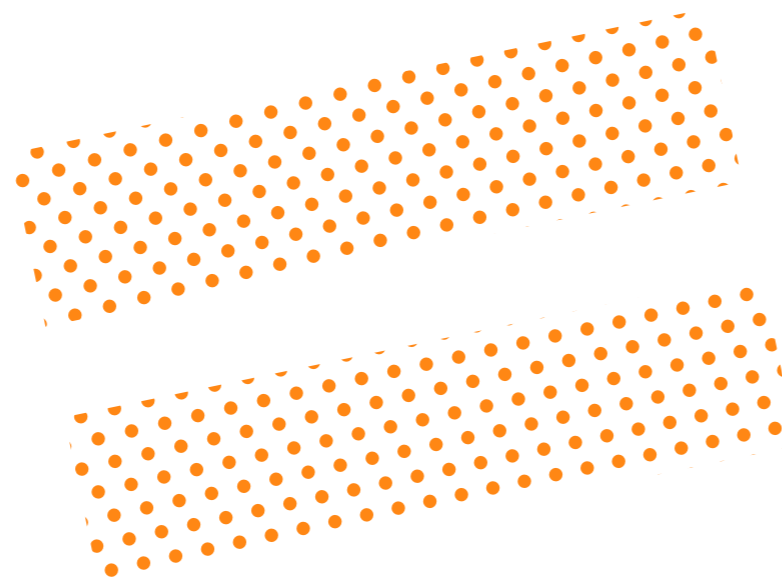
The second resulted from a workshop organised by the San Francisco Declaration on Research Assessment (DORA) funders group and the FORGEN CoP on optimising the use of narrative CVs and mitigating bias in their assessment<sup>3</sup>. The workshop, facilitated by Dr Claartje Vinkenburgh, had over 120 participants from over 40 funding organisations, across 22 countries. The project was supported by the Horizon 2020 funded ACT project<sup>4</sup>.

## SFI Gender Dashboards

As part of SFI's commitment to provide transparency in its review processes, SFI published two interactive dashboards<sup>5</sup> in 2022, providing analysis of gender disaggregated success rates and funding amounts across SFI's portfolio of grants from 2012 to 2021.

The data, which is available to use free of charge and licensed under a Creative Commons Attribution (CCBY) licence, continues to support that success rates for men and women applicants are comparable, and that applications made by, and grants awarded to women, continue to rise.

The SFI Gender Dashboard includes the number of applications and grants awarded, success rates and average grant size awarded by gender (binary), while the Funding Analysis Dashboard shows the average grant size requested by applicants and the average grant size awarded, by gender (binary).



1 <https://forgen.act-on-gender.eu/>  
 2 <https://zenodo.org/record/7388875#.ZC5z2nbMJJaY>  
 3 <https://zenodo.org/record/5799414#.ZC5003bMJab>  
 4 <https://act-on-gender.eu/>  
 5 <https://www.sfi.ie/funding/sfi-policies-and-guidance/gender/dashboard/>

## SFI's Gender Strategy

A review of SFI's Gender Strategy (2016-2020) and the foundational work to support the development of SFI's (external) Equality, Diversity and Inclusion (EDI) strategy were completed in 2022 by the University of Catalunya. An oversight committee reviewed and provided feedback on all documentation. The review highlighted that SFI had performed well against its Gender Strategy 2016-2020, particularly in respect of gender balance in SFI's portfolio of grants, whilst also identifying areas for improvements through the development of a broader EDI strategy, which is currently underway.

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 2022, 29% of SFI grant holders, reflecting both Principal and co-Principal Investigators, were women, while 42% of SFI grant team members were women.

An external EDI expert was commissioned to engage in an extensive consultation process. Using a participatory, inclusive approach, a broad range of stakeholders, including those from organisations who represent underrepresented groups within higher education were consulted. This approach ensured that the voices of people directly affected by SFI's policies and strategic focus were amplified, and our understanding of EDI-related challenges and obstacles along the STEM education lifecycle improved.

## Supporting Best Practice in Research

During 2022, SFI continued to work with its external advisor to review 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. The requirement to submit DMPs at application stage was rolled out across many SFI Programme Calls during 2022. Further guidance on the Data Provenance Review process was developed during 2022 and is currently being implemented in the programme progress review process.

SFI became a member of the Coalition for Advancing Research Assessment (CoARA), having signed up to the Agreement on Reforming Research Assessment during December 2022. This membership commits SFI to a shared direction for changes in assessment practices for research, researchers and research performing organisations, with the overarching goal to maximise the quality and impact of research.

SFI participated in the National Research Integrity Forum's (NRIF) Community of Practice to share SFI's learnings with the wider community. SFI Director General, Prof Philip Nolan, is a member of the NRIF's Steering Group, where strategic issues related to Conduct of Research and Research Integrity are discussed among key senior stakeholders.

SFI will participate as a member of CoARA over the coming years. To complement these actions, SFI will continue to participate in stakeholder workshops to address key actions of the **European Research Area (ERA) Policy Agenda**. Key action #3 on the reform of the research assessment system relates to the work of CoARA and the implementation of the agreement on Reforming Research Assessment. The fundamental premise of CoARA reflects many of the initiatives espoused by SFI's work on the Narrative CV and the **Declaration on Research Assessment (DORA)**.

In 2022, SFI developed a **self-assessment tool** to support research performing organisations in developing and assessing the strength of their policies and procedures.

## Accessible Research Outputs Open to All

During 2022, 79% of refereed original and review articles were openly available, as determined by Unpaywall analysis. This reflects a 5 percentage point increase on data arising from the same analysis undertaken in 2010 and reflects the ‘open’ status of publications at a point in time.

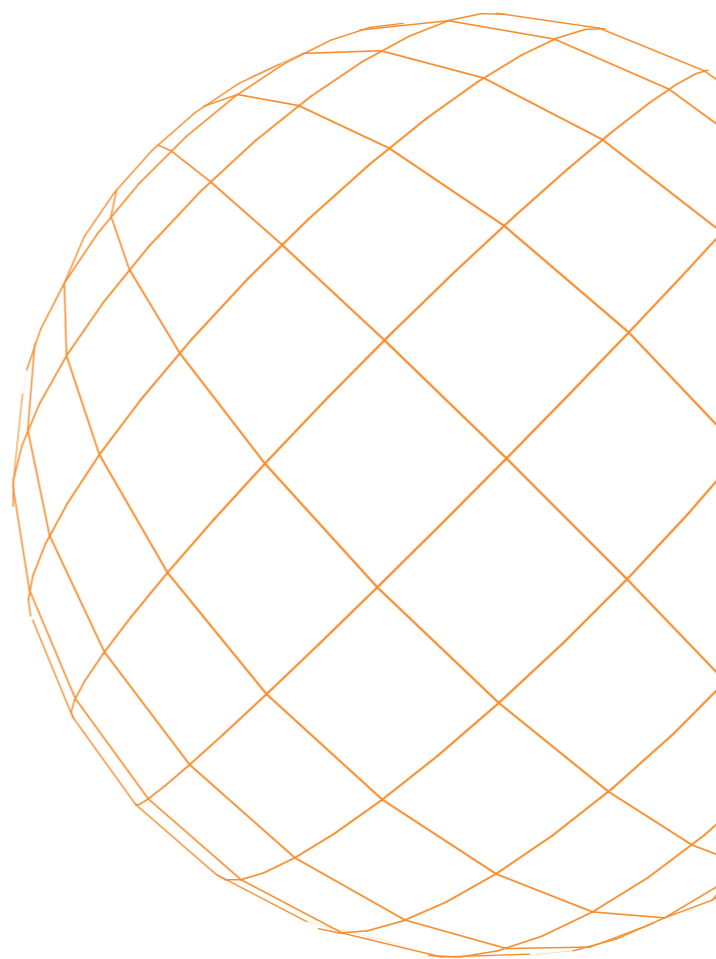
As such, the term “openly available” does not necessarily translate into full alignment with SFI’s Open Access Policy, which requires that publications be immediately available (no embargo) from the date of publication (gold/diamond/green) and under a CCBY licence.

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, and leaders in the National Open Research Forum (NORF)<sup>6</sup>, towards implementing measures to support a transition to 100% Open Access. In collaboration with colleagues from cOAlition S<sup>7</sup>, SFI led on the development of a survey to monitor the impacts of Plan S<sup>8</sup> and continues to gather data through this portal to help researchers publish their work in accordance with Plan S principles.

Due to broad changes in the Open Access landscape internationally, SFI updated their Open Access Policy<sup>9</sup> in 2022. The update included simplification of the layout and language used to ensure Open Access compliance requirements are clearer and more concise, whilst providing clarification to frequently misunderstood points around the payment of Article Processing Charges (APCs), Rights Retention wording, and compliant Open Access publication routes. The Open Access FAQs<sup>10</sup> have been updated and improved, with Rights Retention Strategy<sup>11</sup> data added.

SFI developed an Open Access Publishing Guide<sup>12</sup> to provide researchers with a step-by-step guide on how to publish Open Access in compliance with SFI’s Open Access Policy. The guide distils important points from the Open Access Policy, as well as international best practice, providing a simplified roadmap for publishing Open Access when in receipt of SFI funding.

Two additional questions were included in the Research Profile to help gather more accurate data and spread awareness about SFI Open Access Policy requirements. During Research Outputs, SFI grant holders are required to answer one question concerning the Open Access status of each publication. Two additional questions concerning the inclusion of Rights Retention wording and the application of a Creative Commons Attribution Licence (CC-BY) were added as part of the 2022 Research Outputs. The intention here was to increase awareness and prompt further understanding to be sought by the SFI Research Community as to the benefits of Open Access and routes to compliance.



<sup>6</sup> <https://norf.ie>

<sup>7</sup> <https://www.coalition-s.org>

<sup>8</sup> SFI-funded scholarly papers submitted for publication are required to be openly available immediately (without embargo) upon publication. Authors are also required to apply a Creative commons or CC-BY copyright licence, thus ensuring the reuse and distribution of their work. Use of the Rights Retention Wording is also mandated, where required.

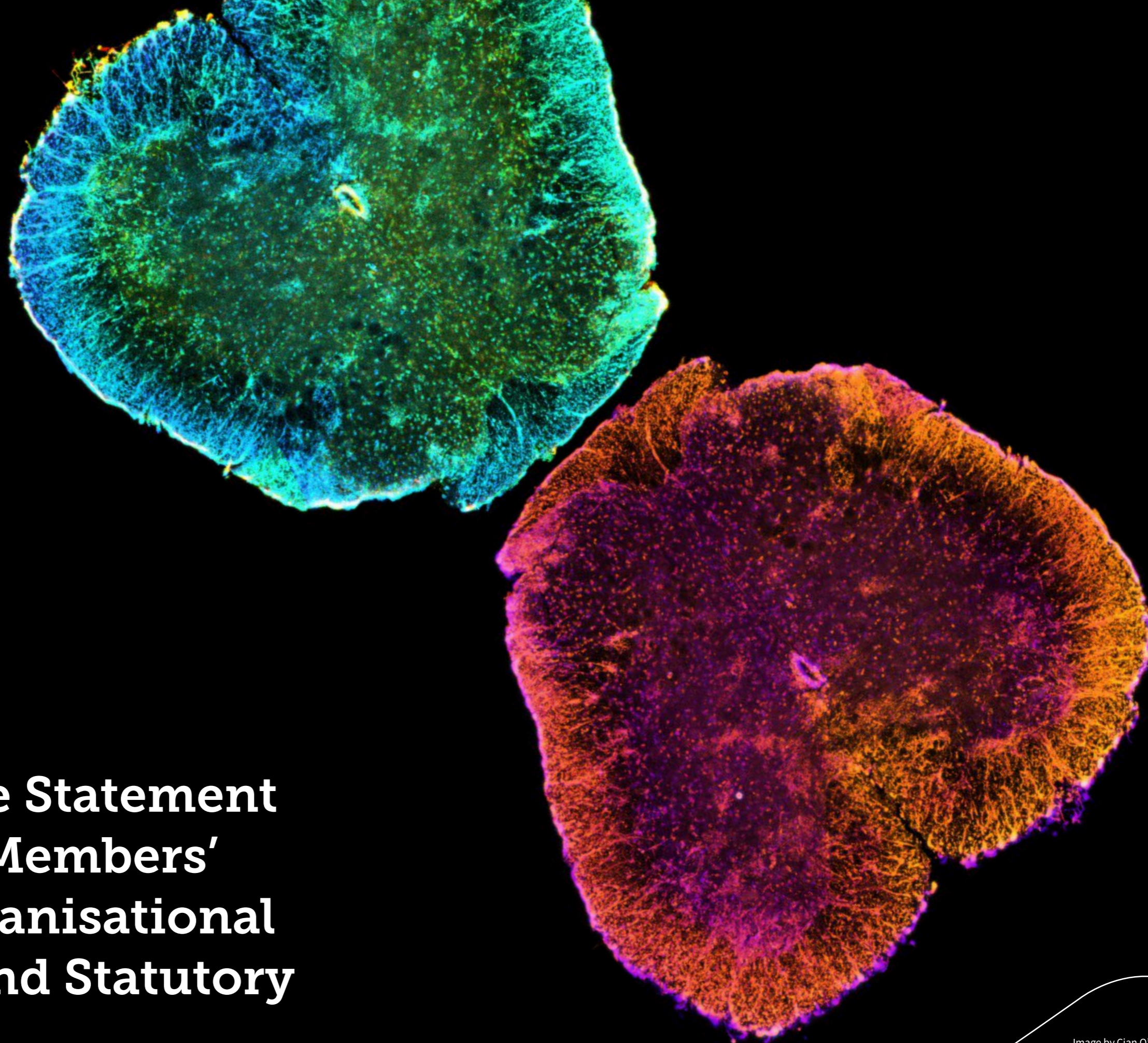
<sup>9</sup> <https://www.sfi.ie/funding/sfi-policies-and-guidance/open-research/SFI-Open-Access-Policy.V.4-2022.pdf>

<sup>10</sup> <https://www.sfi.ie/funding/sfi-policies-and-guidance/open-research/SFI-Open-Access-FAQs.pdf>

<sup>11</sup> <https://www.coalition-s.org/resources/rights-retention-strategy/>

<sup>12</sup> <https://www.sfi.ie/funding/sfi-policies-and-guidance/open-research/SFI-Open-Access-Publishing-Guide.pdf>

# 10



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

Image by Cian O'Connor  
RCSI University of Medicine  
and Health Sciences  
Title: Spinal cord butterfly

# Science Foundation Ireland Board Members

SFI Board Members as of 30th April 2023



## Prof J. Peter Clinch

**Chairman of the Board, Science Foundation Ireland (SFI)**

Prof J. Peter Clinch was appointed Chairman 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 program 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/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. 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, Ion Renewables Ltd.**

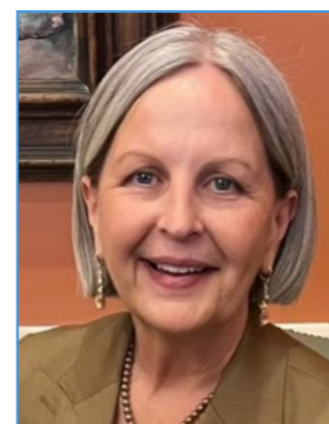
Aidan Donnelly is a founder Director of Ion Renewables Ltd., an energy storage company. He also has interests in a number of property and environmental start-up companies. In addition, he was Chairperson of NORA, the Irish Government agency responsible for Ireland's National Oil Reserves. Aidan has extensive 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 IOD.



## 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 as Chairperson of the governing authority of University of Galway, 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 female 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 University of 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.



## Prof Eileen Harkin-Jones

**Emeritus Professor of Polymer Engineering, School of Engineering, Ulster University**

Prof Eileen Harkin-Jones was appointed to the SFI Board on 6th April 2023 and is Emeritus Professor of Polymer Engineering at Ulster University, where she held the Spirit-Aerospace/Royal Academy of Engineering Chair in Composites Engineering from 2014-2021. Prior to that she held the Boxmore Chair in Polymer Engineering at Queen's University Belfast (1993-2014). She has over 30 years of experience in polymer science and engineering research, as well as significant industrial experience in the polymer sector.

Eileen's research is in the development and processing of advanced thermoplastic polymers and composites with applications in areas from aerospace to medical devices and with a focus on sustainability. She has published over 200 papers, won research funding in excess of £16 million as principal investigator and has supervised over 40 PhD students to completion. She has also been awarded two National UK prizes for excellence in technology transfer.

Eileen holds a first-class BEng from UCD and a PhD from Queen's University Belfast. She is an elected Fellow of two national academies: The Royal Academy of Engineering (UK) and the Irish Academy of Engineering. In 2013, she was awarded an OBE for Services to Higher Education.



### 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 15,000 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 heads 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 (DETE)

Declan Hughes was appointed to the Board on 5th April 2022 and is a member of the Management Board of DETE with responsibility for promoting business innovation, disruptive technologies and research Spin-outs, IP and standards, inward investment and future manufacturing. He has over 20 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 RD&I committees and is a member of the OECD Committees on Industry and 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.



### Prof Ann Leen

#### Professor of Paediatrics in the Centre for Cell and Gene Therapy, Baylor College of Medicine

Ann Leen is a Professor of Paediatrics in the Centre 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, leukaemia, pancreatic cancer and Covid-19. She is currently the principal investigator on five investigator-initiated Investigational New Drug (IND) studies and over the past 10 years has served as PI on over 10 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.



### Prof Liam Madden (Retired on 30th January 2023)

#### Executive Vice President and General Manager of the Wired and Wireless Group, Xilinx

Prof Liam Madden leads a worldwide organisation of R&D professionals, including teams in Dublin and Cork, and as GM is also responsible for the Wired and Wireless infrastructure business. Prof Madden has spent more than 30 years in the US semiconductor industry, where he has contributed to a range of industry leading products and technologies. Based in Silicon Valley, he has worked with established companies and start-ups, including a leadership role in a successful IPO. Prof Madden is a regular speaker at university and industry events worldwide. He holds five patents in semiconductor technology. He is a Fellow of Engineers Ireland and is an Adjunct Professor of Electrical, Electronic and Communication Engineering at UCD.



### Gráinne McAleese

#### Deputy Group CFO, Inizio

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 Inizio, a global Irish-headquartered company providing innovative outsourced services to healthcare companies. Prior to Inizio, 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 10 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 a Bachelor's and a Master's degree from DCU.





## Cliona Murphy

### Senior Business Leader and Board Director

Cliona Murphy is a senior business leader and board director with experience working internationally at executive level in research and development and supply chain leadership roles, primarily in the food and beverage sector. In her most recent executive role Cliona was Vice-President, Global Quality Assurance at PepsiCo, with responsibility for quality policies and standards across the entire PepsiCo portfolio. Cliona's 26 year career at PepsiCo includes several senior R&DI and supply chain leadership roles in Europe, UK, China, Asia and Ireland. Prior to PepsiCo, she worked for several years for Imperial Chemical Industries in both R&D and Engineering.

Cliona is a member of TCD's Provost's Council. She is a former member of the Teagasc Authority and the Steering Committee for the Global Food Safety Initiative, and a former Director of Cork Chamber of Commerce. She is passionate about education access for all and Women in STEM, leading PepsiCo's Million Women Mentors Programme and supporting activities such as iWish and STEM SouthWest, and sponsoring students via the Trinity Access Programme and Trinity Centre for Asian Studies. She is a chartered engineer with a degree in Engineering from TCD, and an MSc in Food, Nutrition and Health from UCD.

## Prof Philip Nolan

### Director General, SFI

Prof Philip Nolan took up the role of Director General of SFI on 17th 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.



## Dr Diarmuid O'Brien

### Chief Executive, Cambridge Enterprise

Dr Diarmuid O'Brien was appointed to the SFI Board on 6th April 2023 and is the Chief Executive of Cambridge Enterprise; the organisation responsible for commercialising research from the University of Cambridge. Cambridge Enterprise is responsible for patenting the ground-breaking research from the University of Cambridge, licensing innovative technology to global businesses, connecting its exceptional faculty with the challenges of international business through consultancy and cultivating the formation of the next disruptive technology businesses through its seed fund.

Diarmuid has 20 years' experience connecting academic-based research with the enterprise community. Previously he was the Chief Innovation and Enterprise Officer at TCD, where he had overall responsibility for the development and enhancement of the college's innovation and enterprise strategy.

Prior to this, Diarmuid was Director of Trinity Research and Innovation with responsibility for both the Research Development Office and the Office of Corporate Partnership and Knowledge Exchange. In that role he led the establishment of the University Bridge venture fund, which is ranked in the world's top five collaborative university funds, according to Global University Venturing.

Diarmuid was also the Executive Director of CRANN, an internationally recognised centre of excellence for nanotechnology and materials science research. He has held senior management roles in several university-founded start-up companies, including Ntera, Xoliox, and Deerac Fluidics. Diarmuid was a Research Fellow at Princeton University. He has a PhD in Physics from the University of Sheffield and a degree in Materials Science from TCD.

# 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 funds 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.
- ▶ 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 financial 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 2022. 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 2022.

## 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 2022. The table below details the appointment period for members during 2022:

Board Member	Role	Date appointed
Prof J. Peter Clinch	Chairman	01/08/19
Prof Philip Nolan	Director General	17/01/22
Prof Mark Ferguson	Director General	Resigned 16/01/22
Prof Sir Tom Blundell	Board Member	Resigned 30/04/22
Mr Aidan Donnelly	Board Member	17/06/21
Ms Máire Geoghegan-Quinn	Board Member	11/04/18
Mr Brendan Harte	Board Member	17/12/19
Mr Declan Hughes	Board Member	05/04/22
Prof Ann Leen	Board Member	10/09/20
Prof Liam Madden	Board Member	Retired 30/01/23
Ms Gráinne McAleese	Board Member	25/10/18
Ms Cliona Murphy	Board Member	10/09/20

## Gender Balance in the Board Membership

As at 31st December 2022, the Board had four (40%) women and six (60%) male members, with two positions vacant. One of the Board 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 above mentioned vacant posts through the Public Appointments Service.

## Audit and Risk Committee

The role of the Audit and Risk Committee (ARC), which comprises five members, supports the Board in its responsibilities for risk, control and 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, Cliona Murphy and Stephen O'Connor (external member). The Director General attends all ARC meetings. There were seven meetings of the ARC in 2022.

## 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 (Chairman), Prof Philip Nolan and Prof Ann Leen. There was one meeting of the Committee in 2022.

## Management Development and Remuneration Committee

The Management Development and Remuneration Committee (MDRC) comprises five 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; 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 (Chairman), Mr Aidan Donnelly, Ms Gráinne McAleese, Ms Cliona Murphy and Ms Máire Geoghegan-Quinn, who was appointed on 29th March 2022. There were two meetings of the Committee in 2022.

## 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 Ann Leen, Ciaran Conlon (external member), Declan Hughes and Prof Philip Nolan. Prof Nolan joined the Committee on 17th January 2022 and Mr Declan Hughes joined the Committee on 19th October 2022. There were three meetings of the Committee in 2022.

## Recruitment Committee

The SFI Recruitment Committee was established on 8th 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 (Chairman), Ms Gráinne McAleese and Mr Aidan Donnelly. There were no meetings of the Committee during 2022 and Prof Philip Nolan was appointed Director General of SFI on 17th January 2022.

## Schedule of Attendance, Fees and Expenses

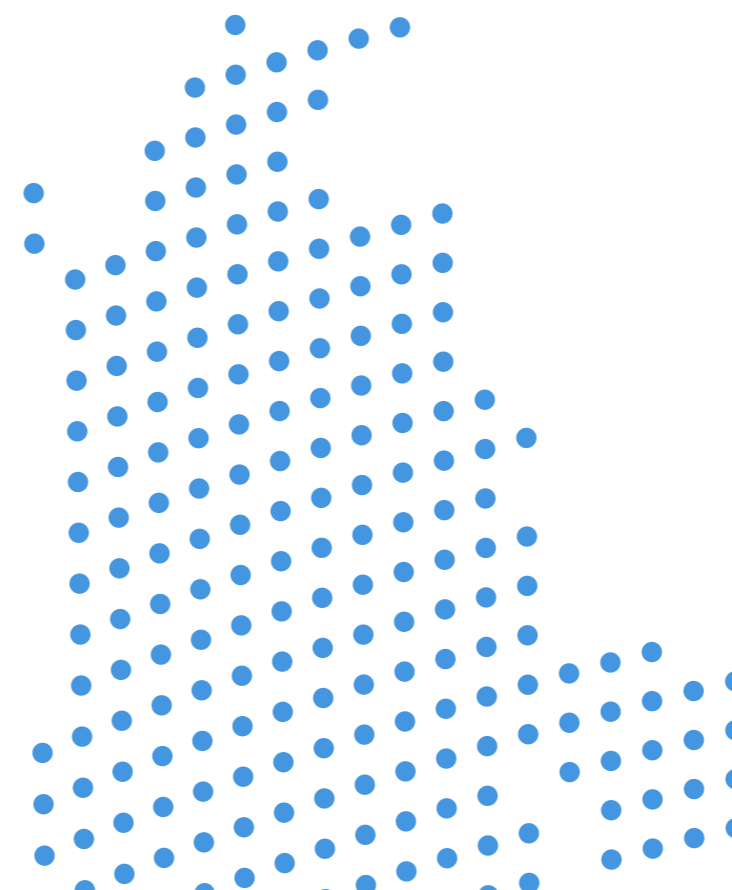
A schedule of attendance at the Board and Committee meetings for 2022 is set out below, including the fees and expenses received by each member:

	Board	Audit and Risk Committee	Grant Approval Committee	Board Nominations Advisory Committee	Management Development and Remuneration Committee	Recruitment Committee	Fees 2022 €	Expenses 2022 €
<b>No of Meetings</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>		
Prof J. Peter Clinch	7			1	2	0	0*	212
Prof Philip Nolan	6	6	3	1			0	0
Prof Sir Tom Blundell	0		0				4,169	0
Mr Aidan Donnelly	7	7			2	0	11,970	0
Ms Máire Geoghegan-Quinn	7				2		11,970	0
Mr Brendan Harte	7	7					11,970	0
Mr Declan Hughes	5		3				0	0
Prof Ann Leen	6		2	1			0	0
Prof Liam Madden	6		1				0	0
Ms Gráinne McAleese	6	5				0	11,970	0
Ms Clíona Murphy	5	6			2		0	227
*Board fees paid to UCD							20,520	0
General Board expenses							0	6,854
<b>Total</b>							<b>72,569</b>	<b>7,293</b>

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 were Prof J. Peter Clinch, Prof Philip Nolan and Mr Declan Hughes.

*\*In relation to Prof J. Peter Clinch, through DBEI (now DETE), 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 two new appointments to the Board during 2022 with the appointment of Prof Philip Nolan as Director General and as an ex officio Member on 17th January 2022 and Mr Declan Hughes appointed as a member on 5th April

2022. Prof Sir Tom Blundell resigned, Prof Liam Madden retired and Prof Mark Ferguson retired as Director General during 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		
			2022	2021
€60,000		€69,999	6	11
€70,000		€79,999	13	16
€80,000		€89,999	17	7
€90,000		€99,999	3	-
€100,000		€109,999	-	6
€110,000		€119,999	11	6
€120,000		€129,999	-	-
€130,000		€139,999	-	-
€140,000		€149,999	-	2
€150,000		€159,999	2	-
€160,000		€169,999	-	2
€170,000		€179,999	2	-
€180,000		€189,999	-	-
€190,000		€199,999	-	-
€200,000		€209,999	1	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 employers' PRSI.

## Consultancy Costs

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

	2022 €	2021 €
Legal advice	153,867	248,089
Public Relations advice	124,061	126,938
Equality Diversity and Inclusion (EDI) consultancy	71,717	-
Research Infrastructure Programme review	71,217	47,478
Research Integrity advice	52,507	85,359
Advice to prepare for SFI/IRC amalgamation	41,574	-
Procurement advice	40,203	26,752
HR and Pensions advice	31,242	34,377
Smart Futures consultancy	28,948	-
Covid 19 National Survey	-	24,388
Tax and Financial advice	2,096	5,124
Other	-	42,000
<b>Total</b>	<b>617,432</b>	<b>640,505</b>
Consultancy costs capitalised	-	-
Consultancy costs charged to the Income and Expenditure and Retained Reserves	617,432	640,505
<b>Total</b>	<b>617,432</b>	<b>640,505</b>

## 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:

	2022 €	2021 €
<b>Domestic</b>		
Board	439	443
Employees	51,397	14,110
<b>International</b>		
Board	-	-
Employees	39,924	2,151
<b>Total</b>	<b>91,760</b>	<b>16,704</b>

## Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure:

	2022 €	2021 €
Staff hospitality	11,181	2,222
Client hospitality	1,683	-
<b>Total</b>	<b>12,864</b>	<b>2,222</b>

## 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 2022.

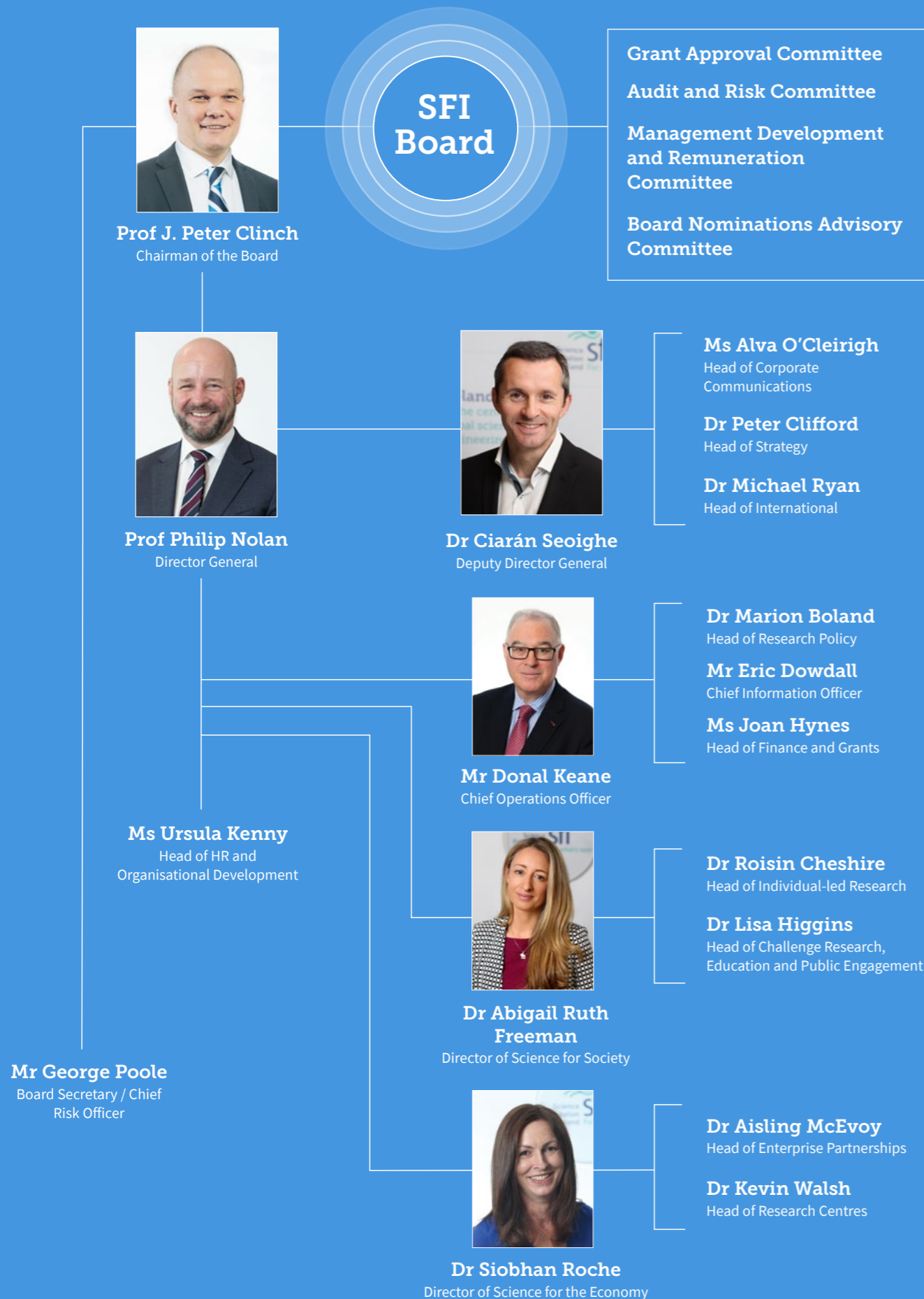
## Performance Review

Monitoring of effective corporate governance by the Board includes continuous review of the internal structure of the State body to ensure that there are clear lines of accountability for management throughout the organisation. In addition to requiring the monitoring and disclosure of corporate governance practices on a regular basis, the Board undertakes an annual self-assessment evaluation of its own performance and that of its committees. This self-assessment evaluation was undertaken by the SFI Board in November 2022.

## 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 and will be updated again in 2023. The SFI Risk Register was also updated in 2022 in order to make it easier to read and more user-friendly. The updated Risk Register was approved by the SFI Audit and Risk Committee in February 2023. 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 Risk Management 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 30th April, 2023.



# Science Foundation Ireland Executive Team

As of 30th April, 2023.



## Prof Philip Nolan

**Director General**

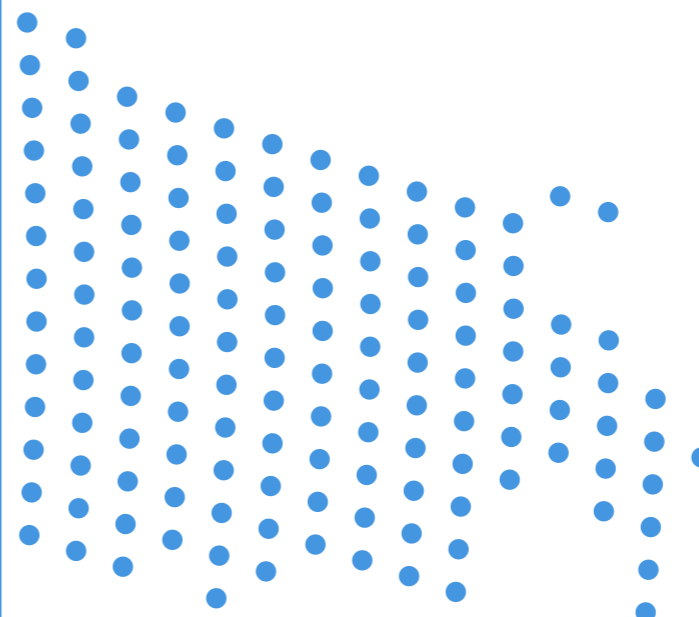
See full profile on page 79.



## 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 1st 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 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 in both the private sector and in third level research, focussing on the application of genetics and genomics technology to deciphering the biological causes of illnesses such as cancer, cardiovascular disease and mental health disorders. Siobhan has authored publications in leading, peer reviewed journals, secured national and international competitive research funding and holds several international patents. She holds a BA (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

## 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.

### 1. 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.

### 2. 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 31st 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. SFI received five FOI requests in 2022, and all of these requests were granted.

## Prompt Payment of Accounts Act 1997

### 3. (i) Prompt Payment of Accounts Act 1997

SFI comes under the remit of the Prompt Payment of Accounts Act 1997 which came into effect on 2nd January 1998, and the European Communities (Late Payment in Commercial Transactions) Regulations 2002, which came into effect on the 7th August 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.

### (ii) Prompt payment to suppliers

SFI is committed to meeting its obligations under the 15-day Prompt Payment Rule, which came into effect on 1st 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.

### 4. Employment Equality Acts 1998-2015

SFI wholeheartedly supports the principle of equal opportunities in employment. It opposes all forms of discrimination on the grounds of colour, race, nationality, sexual orientation, ethnic or national origin (and/or area of origin), religion, gender, marital status, age or disability. SFI's commitment to implementing equal opportunities is reflected in its policies, practices and procedures, 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.

### 5. Protected Disclosures Act 2014

There were no protected disclosures made to SFI in 2022.

### 6. 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.

### 7. 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 2022, no complaints were received under the charter.



**8. Reporting by Public Sector Bodies**

Under Statutory Instrument (SI) 542, 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.

**9. Environmental, Social and Governance (ESG)**

SFI has committed to taking an ambitious approach to ESG, transforming SFI itself, driving significant change in the national research system, and leading by example across the public service. During 2021, a new ESG framework was agreed by the SFI Board. In line with Government requirements, SFI nominated a Champion to lead this work, which was taken up by SFI's Deputy Director General, Dr Ciarán Seoighe. Two new Green Teams were established. The Internal Green Team will focus on reducing SFI's environmental impact, developing a roadmap with the aim of becoming a leading public sector body from an operational perspective. The External Green Team will focus on shaping and influencing the grants we fund and the external RD&I community to enable Ireland to become an internationally recognised sustainable funder of research. Actions plans and roadmaps will be established for both areas during 2023.

**Vision: SFI will take a leadership role in ESG to protect our planet, our people, and our prosperity**

	Internal	External
Environmental	Reducing the environmental impact of SFI's internal operations	SFI funded research performed sustainably Funding environmental research
Social	Corporate Social Responsibility SFI culture Equality, Diversity & Inclusion in SFI	Education & Public Engagement Equality, Diversity & Inclusion in SFI awards
Governance	Leadership, management and oversight Targeted internal controls	Targeted oversight and control of awards

# 11

## Annual Financial Statements

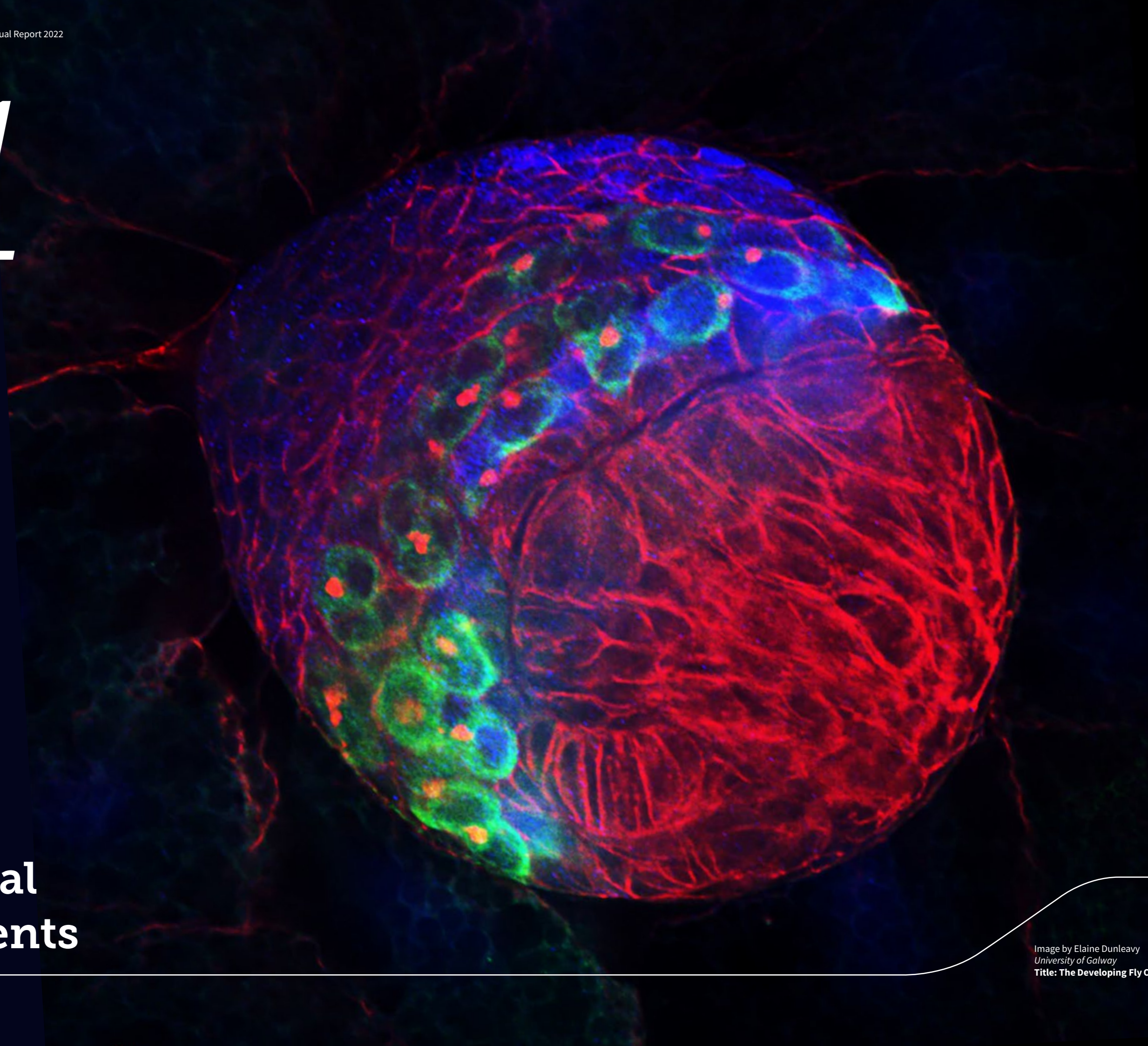


Image by Elaine Dunleavy  
University of Galway  
Title: The Developing Fly Ovary

# Report of Comptroller and 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 2022 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 2022 and of its income and expenditure for 2022 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

16 June 2023

### 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 (SFI) 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 31st December 2022 and up to the date of approval of the financial statements.

## Capacity to Handle Risk

Science Foundation Ireland has an Audit and Risk Committee (ARC) comprising of five members, of whom during 2022 four were Board members (and three of these are qualified accountants). The ARC met seven times in 2022.

SFI 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 a range of KPIs, including industry cost share targets, at SFI 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 2014-2021 a new State aid Verifications Checklist has been created and has undergone testing on a pilot basis at a number of Research Bodies in 2022. There is a follow up meeting with representatives from the IUA and THEA taking place in June 2023 to review their proposals with respect to the formal rollout of the State aid Verifications Checklist 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 2022 SFI 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 2022 on 17th April, 2023.

## Internal Control Issues

No weaknesses in internal control were identified in relation to 2022 that require disclosure in the financial statements.

On behalf of the Board of Science Foundation Ireland:



**Professor J. Peter Clinch**  
Chairman of the Board

Date: 15th June, 2023

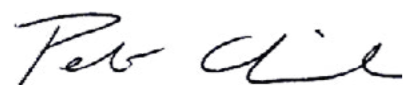
# Statement of Income and Expenditure and Retained Revenue Reserves

For the year ended 31st December, 2022

	Notes	2022 €'000	2021 €'000
<b>Income</b>			
Oireachtas Grant	2	229,802	237,429
Other Income	3	4,439	5,488
Net Deferred Retirement Benefit Funding	5 (c)	2,239	2,076
		<b>236,480</b>	244,993
<b>Expenditure</b>			
Administration, Operations & Promotion Expenses	4	16,758	14,887
Depreciation	6	480	769
Retirement Benefit Costs	5(a)	2,019	1,803
Grants Paid	9(a)	217,611	227,535
		<b>236,868</b>	244,994
Deficit for the Year Before Appropriations		(388)	(1)
Transfer from the Capital Account	7	422	450
Surplus for the Year after Appropriations		<b>34</b>	449
Balance brought forward at 1st January		2,056	1,607
Balance carried forward at 31st December		<b>2,089</b>	2,056

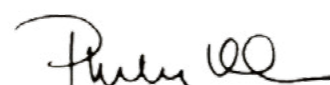
The Statement of Cash Flows and Notes 1 to 17 form part of these Financial Statements.

On behalf of the Board of Science Foundation Ireland:



**Professor J. Peter Clinch**  
Chairman of the Board

Date: 15th June, 2023



**Professor Philip Nolan**  
Director General

Date: 15th June, 2023

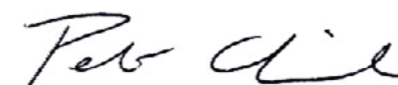
# Statement of Comprehensive Income

For the year ended 31st December, 2022

	Notes	2022 €'000	2021 €'000
Surplus after Appropriations		34	449
Experience losses on retirement benefit obligations		(2,454)	(333)
Change in assumptions underlying the present value of retirement benefit obligations		12,939	(301)
Total Actuarial Gain/(Loss) in the period	5(d)	10,485	(634)
Adjustment to Deferred Retirement benefits funding		(10,485)	634
<b>Total Comprehensive Income for the year</b>		<b>34</b>	449

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 J. Peter Clinch**  
Chairman of the Board

Date: 15th June, 2023



**Professor Philip Nolan**  
Director General

Date: 15th June, 2023

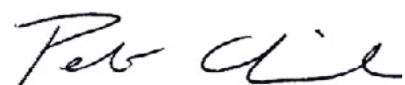
## Statement of Financial Position

As at 31st December, 2022

	Notes	2022 €'000	2021 €'000
<b>Fixed Assets</b>			
Property, Plant & Equipment	8	4,866	5,288
<b>Current Assets</b>			
Receivables	10	598	587
Cash and Cash Equivalents		2,258	2,313
		<b>2,856</b>	2,900
<b>Current Liabilities (Amounts falling due within one year)</b>			
Payables	11	(766)	(844)
<b>Net Current Assets</b>			
		<b>2,090</b>	2,056
<b>Retirement Benefits</b>			
Retirement Benefit Liability	5(b)	(23,419)	(31,665)
Deferred Retirement Benefit Funding Asset	5(b)	23,419	31,665
		-	-
<b>Total Net Assets</b>			
		<b>6,956</b>	7,344
<b>Representing:</b>			
Capital Account	7	4,866	5,288
Accumulated Surplus at End of Year		2,089	2,056
		<b>6,956</b>	7,344

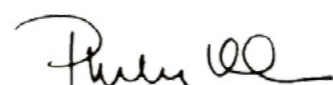
The Statement of Cash Flows and Notes 1 to 17 form part of these Financial Statements.

On behalf of the Board of Science Foundation Ireland:



**Professor J. Peter Clinch**  
Chairman of the Board

Date: 15th June, 2023



**Professor Philip Nolan**  
Director General

Date: 15th June, 2023

## Statement of Cash Flows

For the year ended 31st December, 2022

	Notes	2022 €'000	2021 €'000
<b>Net Cash Flows from Operating Activities</b>			
Deficit for the year before appropriations		(388)	(1)
Depreciation of property, plant & equipment	6	480	769
Increase in Receivables	10	(11)	(192)
Decrease in Payables	11	(78)	(336)
<b>Net Cash Flow from Operating Activities</b>			
		<b>3</b>	240
<b>Cash Flows from Investing Activities</b>			
Payments to acquire property, plant & equipment	8	(58)	(319)
<b>Net Cash Flows from Investing Activities</b>			
		<b>(58)</b>	(319)
<b>Cash Flows from Financing Activities</b>			
		-	-
<b>Decrease in Cash and Cash Equivalents</b>			
		<b>(55)</b>	(79)
Cash and Cash Equivalents at 1st January		2,313	2,393
<b>Cash and Cash Equivalents at 31st December</b>			
		<b>2,258</b>	2,313

# Notes to the Financial Statements

For the year ended 31st December, 2022

## 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, Hatch Street Upper, 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 31st December, 2022 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	<i>over the remaining life of the lease</i>
ii.	Computer Equipment & Computer Software	<i>3 years</i>
iii.	Fixtures & Fittings	<i>5 years</i>

# Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

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.

### (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 1st 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 SFI's retirement benefit scheme and to the Department of Public Expenditure and Reform 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 SFI'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.

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### (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.

### (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:

- The discount rate, changes in the rate of return on high-quality corporate bonds
- Future compensation levels, future labour market conditions
- 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 Vote 45	2022 €'000	2021 €'000
<b>Grants for Current Expenditure</b>			
Pay and Pensions*	Subhead C3.1	7,454	6,135
Administration Expenses	Subhead C3.1	8,962	8,936
<b>Grants for Capital Expenditure</b>			
Research Grants	Subhead C3.1	197,886	206,858
Research Grants – Centres for Research Training	Subhead C4.2	15,500	15,500
		<b>229,802</b>	237,429

\*The grant for pay expenditure is stated net of employee pension contributions of €332k (2021: €289k) remitted to the Exchequer. These include deductions of €160k in 2022 (2021: €125k) in respect of members of The Single Pension Scheme which were remitted to the Department of Public Expenditure and Reform.

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

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 2021), with effect from 1st 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 2022 the aggregate amount made available to the three agencies was €11.7 billion (2021: €11 billion).

## 3. Other Income

	Notes	2022 €'000	2021 €'000
<b>Research Grant Funding:</b>			
<b>Contributions from other funding agencies to Awards made by SFI</b>			
Teagasc	3(a)	-	74
Marine Institute	3(b)	-	313
Environmental Protection Agency	3(c)	318	360
Geological Society of Ireland	3(d)	585	316
Irish Cancer Society	3(e)	-	98
Department of Agriculture, Food and the Marine	3(f)	981	1,090
Department of Foreign Affairs and Trade	3(g)	900	900
Health Research Board	3(h)	466	514
Sustainable Energy Authority of Ireland	3(i)	75	661
Department of Education	3(j)	870	401
Department of Defence	3(k)	-	250
<b>Sub-Total</b>		<b>4,195</b>	4,977
<b>Contribution towards EU ERA NET funding calls</b>	3(l)		
• ERA-HDHL		14	21
• ERA CosysMed		11	36
• Euro NanoMed III		17	67
• BlueBio		30	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)	136	135
Department of Foreign Affairs & Trade	3(o)	36	-
<b>Total</b>		<b>4,439</b>	5,488



## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

- a. Contribution from Teagasc in 2021 for co-funding of multi-annual awards made by SFI in 2017.
- b. Contributions from the Marine Institute in 2021 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 2021.
- d. Contributions from the Geological Society of Ireland for co-funding of multi-annual awards made in 2016, 2017, 2018 and 2021.
- e. Contribution from the Irish Cancer Society in 2021 towards the ICS-SFI Collaborative Cancer Research Centre (CCRC) Programme awarded in 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 and Trade for SFI Future Innovator Prize awards in 2021 and 2022.
- h. Contribution from the Health Research Board towards US-Ireland awards made in 2021 and 2022.
- i. Contribution from the Sustainable Energy Authority of Ireland (SEAI) towards a Frontiers for the Future award made in 2022.
- j. Contribution from the Department of Education towards SFI Discover awards made in 2022.
- 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 award made under the European Union's Horizon 2021 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.
- o. Contribution from Department of Foreign Affairs & Trade towards the programme management costs of running the SFI Future Innovator Prize programme.

### 4. Administration, Operations and Promotion Expenses

	Notes	2022 €'000	2021 €'000
Remuneration and Other Pay Costs	4(a)	7,846	6,557
Accommodation		2,415	2,433
Programme Management		734	757
Marketing and Supports	4(b)	1,832	2,465
IT Support and Infrastructure		815	856
Administration Expenses	4(c)	602	409
Accounting and Internal Audit Services		201	269
Professional and Support Services	4(d)	958	802
Specialist and Education Services		245	171
HR Management		130	136
Statutory Audit Fee		32	32
PhD Stipend Fee Paid to Students		948	-
<b>Total</b>		<b>16,758</b>	<b>14,887</b>

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 4(a) Remuneration and Other Pay Costs

	Notes	2022 €'000	2021 €'000
Staff Salaries		6,207	5,138
Agency Staff		711	756
Employers' Contribution to Social Welfare		619	529
Decrease in Holiday Pay Accrual		(15)	(45)
Staff Training and Development		153	81
Staff Travel and Subsistence Costs	4(e)	91	17
Board Members' Fees and Expenses	4(f)	80	81
<b>Total</b>		<b>7,846</b>	<b>6,557</b>
Actual Employed as at Year End		93	67

Included in Remuneration and Other Pay Costs is total Key Management personnel compensation for 2022 which came to €916k (2021: €874k). This includes the compensation for the Board members, the Director General and four Senior Executives who reported to him. SFI deducted pension levies from staff of €212k (2021: €205k) 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 €124k (2021: €127k).

### 4(c) Included in the administration expenses is hospitality expenditure:

	Notes	2022 €'000	2021 €'000
Staff Hospitality		11	2
Client Hospitality		2	-
<b>Total</b>		<b>13</b>	<b>2</b>

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 4(d) Professional and Support Services

	2022 €'000	2021 €'000
Administrative services	465	287
Legal Advice	154	248
Research Integrity Advice	52	85
Research Infrastructure Programme Review	71	47
Equality Diversity and Inclusion (EDI) Consultancy	72	-
Advice to Prepare for SFI/IRC Amalgamation	42	-
HR and Pensions Advice	31	35
Procurement Advice	40	27
Smart Futures Consultancy	29	-
Covid 19 National Survey	-	24
Research Analyst Horizon 2020 Funding	-	20
Tax and Financial Advice	2	5
Other Professional Fees	-	24
<b>Total</b>	<b>958</b>	<b>802</b>

There were no legal cases or settlements made in 2022. 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:

	2022 €'000	2021 €'000
Domestic Travel and Subsistence	51	15
International Travel and Subsistence	40	2
<b>Total</b>	<b>91</b>	<b>17</b>

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### Employee Benefits Breakdown

Range of Key Management Personnel Remuneration		Number of Employees	
From	To	2022	2021
€60,000	- €69,999	6	11
€70,000	- €79,999	13	16
€80,000	- €89,999	17	7
€90,000	- €99,999	3	-
€100,000	- €109,999	-	6
€110,000	- €119,999	11	6
€140,000	- €149,999	-	2
€150,000	- €159,999	2	-
€160,000	- €169,999	-	2
€170,000	- €179,999	2	-
€200,000	- €209,999	1	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	Vouched Expenses	Meetings Attended	Board Fees	Vouched Expenses	Meetings Attended
	2022 €	2022 €	2022 number	2021 €	2021 €	2021 number
Prof J. Peter Clinch	-	212	7 out of 7	-	-	7 out of 7
Prof Philip Nolan	-	-	6 out of 7	-	-	n/a
Prof Sir Tom Blundell	4,169	-	0 out of 2	11,970	-	6 out of 7
Mr Aidan Donnelly	11,970	-	7 out of 7	11,970	-	7 out of 7
Ms Máire Geoghegan Quinn	11,970	-	7 out of 7	11,970	-	7 out of 7
Mr Brendan Harte	11,970	-	7 out of 7	11,970	-	7 out of 7
Prof Ann Leen	-	-	6 out of 7	-	443	7 out of 7
Mr Declan Hughes	-	-	5 out of 5	-	-	n/a
Prof Liam Madden	-	-	6 out of 7	-	-	7 out of 7
Ms Gráinne McAleese	11,970	-	6 out of 7	11,970	-	7 out of 7
Ms Cliona Murphy	-	227	5 out of 7	-	-	6 out of 7
Prof Mark Ferguson	-	-	n/a	-	-	7 out of 7
Board fees paid to UCD*	20,520	-	n/a	20,520	-	n/a
General Board expenses	-	6,854	n/a	-	-	n/a
<b>Total</b>	<b>72,569</b>	<b>7,293</b>		<b>80,370</b>	<b>443</b>	

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

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 J. Peter Clinch, Prof Philip Nolan and Mr. Declan Hughes.

\*Board fees paid to UCD are in relation to Prof J. Peter Clinch. Through the Department of Business, Enterprise and Innovation, 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. Cliona Murphy have waived their Board fees.

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

Prof Mark Ferguson retired as Director General on 16th January 2022. Prof Philip Nolan joined as Director General on 17th January 2022. Prof Philip Nolan is on secondment from Maynooth University. SFI is cross charged by Maynooth University for Prof Philip Nolan’s basic salary, employer’s PRSI and pension contributions.

The Director General’s remuneration package as at 31st December 2022 is as follows: annual basic salary €222k (2021: €201k). The agreed pension contribution between SFI and Maynooth University is 25%, which is aligned with a Department of Finance letter issued to Personnel Officers dated 20th September 2005 in relation to the contribution to be paid between public bodies where the secondee remains a member of his existing pension scheme. The Director General is a member of the Maynooth University ‘Model Pension Scheme’ and his entitlements in that regard do not extend beyond the terms of that scheme. No performance related bonus was applicable. Total expenses for the year incurred by the Director General amounted to €21k (2021: €3k).

Board members vouched expenses are set out as follows:

	2022	2021
	€'000	€'000
Domestic Travel and Subsistence	0.4	0.4
International Travel and Subsistence	-	-
<b>Total</b>	<b>0.4</b>	<b>0.4</b>

Board members’ expenses of €439 in 2022 (2021: €443) relate to vouched expenditure paid by Science Foundation Ireland to SFI Board members. The balance of €6,854 (2021: €0k) relates to expenditure paid by Science Foundation Ireland on behalf of the Board members. General Board expenses for 2022 include accommodation and meal costs for Board meetings held during the year.

The following resignations and appointments to the Board took place in 2022:

- ▶ Prof Mark Ferguson resigned as Director General and ex officio member of the Board on 16th January, 2022.
- ▶ Prof Philip Nolan was appointed Director General and ex officio member of the Board on 17th January, 2022.
- ▶ Mr. Declan Hughes was appointed as a member on 5th April, 2022.
- ▶ Prof Sir Tom Blundell resigned on 30th April, 2022.

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 5. Retirement Benefit Costs

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

	2022	2021
	€'000	€'000
Current Service Cost	1,940	1,846
Interest on Retirement Benefit Scheme Liabilities	411	246
Employee Contributions	(332)	(289)
	<b>2,019</b>	<b>1,803</b>

#### B. Movement in net retirement benefit obligation during the financial year

	2022	2021
	€'000	€'000
Net retirement benefit obligation at 1st January	31,665	28,955
Current Service Cost	1,940	1,846
Interest Costs	411	246
Payments to Pensioners	(112)	(16)
Actuarial (Gain)/Loss	(10,485)	634
<b>Net retirement benefit obligation at 31st December</b>	<b>23,419</b>	<b>31,665</b>

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

	2022	2021
	€'000	€'000
Funding recoverable in respect of Current Year retirement benefit costs	2,351	2,092
Less State Grant applied to pay retirement benefits	(112)	(16)
	<b>2,239</b>	<b>2,076</b>

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### D. General Description of the Scheme

Science Foundation Ireland has responsibility for the pension costs of:

- Staff with effect from 16th July 2014, under the Industrial Development (Forfás Dissolution) Act 2014, who were members of the Forfás Pension Scheme who 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.
- 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 31st December, 2022 carried out by a qualified independent actuary, taking account of the requirements of the FRS in order to assess the schemes liabilities at 31st December, 2022.

The principal actuarial assumptions were as follows:

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

	2022	2021
<b>Financial Assumptions</b>		
Discount Rate*	3.60% p.a	1.3% p.a
Future Salary Increases	4.10% p.a	3.5% p.a
Future State Pension increases	4.10% p.a	3.5% p.a
Future Pension Increases	3.60% p.a	3% p.a
Future Price Inflation	2.60% p.a	2% p.a
Revaluation in Deferment	3.60% p.a	3% p.a

\* discount rate reflects a duration of liabilities of approximately 31 years in 2022 (31 years in 2021)

The assumed retirement ages of members of the pension scheme are as follows:

- Active employees of the Closed (pre 2004) scheme have an assumed retirement age of 62 years;
- Active employees of the Model (post 2004) scheme have a retirement age of 65;
- Active Single Scheme members are assumed to retire at age 66.

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 2022 and 2042.

Year of Attaining Age 65	2022	2042
Life expectancy - Male	21.9	24.1
Life expectancy - Female	24.3	26.2

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### Prior Year Comparatives

	2022	2021	2020	2019	2018
Year ending 31st December	€'000	€'000	€'000	€'000	€'000
<b>Closing pension liability</b>	<b>23,419</b>	31,665	28,955	23,793	18,789
Experience (loss)/gain arising on the plan Liabilities	(2,454)	(333)	(388)	(325)	(415)
% Liabilities	-10.5%	-1.1%	-1.3%	-1.3%	-2.2%
Total (loss)/gain recognised in Statement of Comprehensive Income	10,485	(634)	(3,513)	(3,226)	395
% Liabilities	44.8%	-2%	-12.1%	-13.5%	2.1%

### 6. Depreciation

	Note	2022	2021
		€'000	€'000
Depreciation charge for the year	8	480	769
<b>Total</b>		<b>480</b>	769

### 7. Capital Account

	Note	2022	2021
		€'000	€'000
<b>Opening Balance as at 1st January</b>		<b>5,288</b>	5,738
Transfer from Statement of Income and Expenditure and Retained Revenue Reserves			
• To fund Fixed Asset acquisitions	8	58	319
• Amortised in line with asset depreciation	8	(480)	(769)
		(422)	(450)
<b>Closing balance as at 31st December</b>		<b>4,866</b>	5,288

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 8. Property, Plant & Equipment

	Leasehold Improvements	Computer Equipment	Computer Software	Fixtures & Fittings	Total
	€'000	€'000	€'000	€'000	€'000
<b>Cost</b>					
At 1st January, 2022	5,464	1,469	131	684	<b>7,748</b>
Additions	-	49	-	9	<b>58</b>
Disposals/Write-downs	-	(78)	-	(1)	<b>(79)</b>
<b>At 31st December, 2022</b>	<b>5,464</b>	<b>1,440</b>	<b>131</b>	<b>692</b>	<b>7,727</b>
<b>Depreciation</b>					
At 1st January, 2022	662	1,256	131	411	<b>2,460</b>
Charge for Year	218	124	-	138	<b>480</b>
Disposals/Write-downs	-	(78)	-	(1)	<b>(79)</b>
<b>At 31st December, 2022</b>	<b>880</b>	<b>1,302</b>	<b>131</b>	<b>548</b>	<b>2,861</b>
<b>Net Book Amount</b>					
At 1st January, 2022	4,802	213	-	273	<b>5,288</b>
Net Movement for Year	(218)	(75)	-	(129)	<b>(422)</b>
<b>At 31st December, 2022</b>	<b>4,584</b>	<b>138</b>	<b>-</b>	<b>144</b>	<b>4,866</b>

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 9. Grants

#### A. Analysis of Grants Paid

	2022	2021
	€'000	€'000
<b>ICT</b>		
Future Networks, Communications and Internet of Things	<b>18,757</b>	16,621
Data Analytics, Management, Security, Privacy, Robotics and Artificial Intelligence (including Machine Learning)	<b>36,534</b>	31,009
Digital Platforms, Content and Applications, and Augmented Reality and Virtual Reality	<b>9,455</b>	8,530
<b>Health and Well-being</b>		
Connected Health and Independent Living	<b>1,234</b>	3,075
Medical Devices	<b>12,810</b>	16,082
Diagnostics	<b>10,882</b>	15,867
Therapeutics	<b>23,477</b>	30,327
<b>Food</b>		
Food for Health	<b>9,639</b>	9,748
Smart and Sustainable Food Production and Processing	<b>13,847</b>	14,308
<b>Energy, Climate Action and Sustainability</b>		
Decarbonising the Energy System	<b>16,902</b>	11,385
Sustainable Living	<b>3,176</b>	8,247
<b>Manufacturing and Materials</b>		
Advanced and Smart Manufacturing	<b>14,387</b>	16,910
Manufacturing and Novel Materials	<b>26,319</b>	24,568
<b>Services and Business Processes</b>		
Innovation in Services and Business Processes	<b>636</b>	655
Basic Biomedical Science (BBS)	<b>1,119</b>	1,786
Covid Rapid Response Call	<b>110</b>	1,095
Other	<b>18,327</b>	17,349
<b>Total</b>	<b>217,611</b>	227,535

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 (continued)

For the year ended 31st December, 2022

### 9(b) Grant Commitments

	Notes	2022 €'000	2021 €'000
Outstanding Grant Commitments as at 1st January		655,593	756,401
Grants approved during the year		140,909	147,974
De-commitments during the year		(11,903)	(26,224)
Grant payments made in the year – Gross	9(a)	(217,611)	(227,535)
<i>Amounts received from other funding agencies for Co-funding of SFI awards</i>	3		
Teagasc		-	74
Marine Institute		-	313
Environmental Protection Agency		318	360
Geological Society of Ireland		585	316
Irish Cancer Society		-	98
Department of Agriculture, Food and the Marine		981	1,090
Department of Foreign Affairs and Trade		900	900
Health Research Board		466	514
Sustainable Energy Authority of Ireland		75	661
Department of Education		870	401
Department of Defence		-	250
<b>Outstanding Commitments as at 31st December</b>		<b>571,183</b>	655,593
<b>Outstanding Commitments excluding co-funded commitments</b>		<b>574,982</b>	661,612

### 10. Receivables

	2022 €'000	2021 €'000
Debtors	77	39
Prepayments and Accrued Income	521	548
<b>Total</b>	<b>598</b>	587

## Notes to the Financial Statements (continued)

For the year ended 31st December, 2022

### 11. Payables

	2022 €'000	2021 €'000
General Creditors	61	267
Deferred Income*	322	306
Accruals	323	188
Interagency Balance - IDA**	60	83
<b>Total</b>	<b>766</b>	844

\*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 31st December 2022 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.

	2022 €'000	2021 €'000
Within 1 year	1,668	1,668
During 2-5 years	6,672	6,672
Over 5 years	25,656	27,324

### 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.

## Notes to the Financial Statements *(continued)*

For the year ended 31st December, 2022

### 14. 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.

### 15. Contingencies and Legal Actions

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

### 16. Non-adjusting Events after the Reporting Period

Government, on 5th April 2023, confirmed its decision, and agreed the General Scheme of legislation, to establish a new research funding agency through the amalgamation of Science Foundation Ireland (SFI) and the Irish Research Council (IRC). The IRC is a division within the Higher Education Authority (HEA). A High Level Group has been established by the Department to advise the Department on this process, and both SFI and HEA-IRC are represented on this group. The Minister appointed Professor Philip Nolan as CEO Designate to this new agency in June 2023. Operational planning for the amalgamation, which has already commenced, will accelerate following this appointment. The target date for the formal establishment of the new agency is 1st January, 2024.

### 17. Approval of Financial Statements

The Financial Statements were approved by the Board of Science Foundation Ireland on 15th June, 2023.

# Science Foundation Ireland Portfolio\*

**26%**

## Investigator-led Research

- ▶ Starting Investigator Grants
- ▶ Frontiers for the Future
- ▶ ERC Support
- ▶ SFI President of Ireland Future Research Leaders
- ▶ SFI Research Professorship
- ▶ SFI-IRC Pathway Programme

**11%**

## Cohort-based Doctoral Student Training

- ▶ Centres for Research Training
- ▶ ESPRC Centres for Doctoral Training Partnership

**2%**

## Science Engagement, Policy and Career Development

- ▶ SFI Discover Programme
- ▶ SFI Fellowship
- ▶ SFI Maternity Allowance
- ▶ SFI Public Service Fellowship
- ▶ SFI Science Policy Research
- ▶ Fulbright – SFI US Scholar Programme

**6%**

## Partnerships

- ▶ SFI Strategic Partnerships
- ▶ SFI Spokes Programme
- ▶ SFI Industry RDI Fellowship Programme



**2%**

## Innovation, Entrepreneurship and Commercialisation

- ▶ Technology, Innovation and Development Award
- ▶ SFI/NSF I-Corps @SFI Entrepreneurial Training Programme
- ▶ SFI Future Innovator Prize
- ▶ Covid-19 Rapid Response Call

**4%**

## International Collaborations

- ▶ SFI-HRB-Wellcome Biomedical Research Partnership
- ▶ SFI-Royal Society University Research Fellowships
- ▶ EPSRC and BBSRC Investigator Partnerships
- ▶ European Programmes
- ▶ US-Ireland R&D Partnership
- ▶ US Centre to Centre
- ▶ SFI-NSF-China Partnership

**44%**

## SFI Research Centres

- ▶ SFI Research Centres
- ▶ SFI Research Centres PhD Supplement

**5%**

## SFI Research Infrastructure

\*Based on payments issued and scheduled from 1/1/2022 to 31/12/2025 as at 31/12/2022.



# 12

## Award Portfolio and New Awards



# Award Portfolio and New Awards Approved

In 2022, 305 awards were approved across 19 programmes, with a net investment of €140.9 million, to fund world-leading research carried out by Irish-based researchers.

Total payments to research bodies and institutions were €213.4 million, supporting the full range of diversity in research talent, and programmes that promote education and engagement in STEM. This includes cohort-based PhD programmes and early career researchers, through to leading researcher professors and large scale centres.

## Summary of Key Award Programme Decisions in 2022:

- ▶ 79 awards were made under the **SFI Frontiers for the Future Programme**, with a net €61 million invested to support excellent independent researchers. This includes 15 awards under the **Frontiers for Partnership Programme** supporting collaborative projects across the Technological Universities (TUs) and Institutes of Technology (IoTs).
- ▶ SFI invested €7.5 million in the jointly funded **SFI-IRC Pathway Programme** with 14 awards made to support post-doctoral researchers in becoming research leaders across all disciplines.
- ▶ Under the **Royal Society-SFI University Research Fellowship Programme**, 22 awards were made with an investment of €7 million to further support early career researchers in building independent research careers.
- ▶ The **SFI Research Infrastructure Programme** funded 13 awards valued at €18 million to support building research capacity with key equipment and facilities.
- ▶ Challenge-based funding saw €8.8 million invested in 12 **SFI Future Innovator** awards, and €7 million invested in 26 awards through the **National Challenge Fund**.
- ▶ €2.3 million was awarded through the **SFI Strategic Partnership Programme** to develop a co-funded regional partnership delivering economic and societal impact to Ireland.
- ▶ STEM education and engagement was supported with an investment of €6.4 million for 43 awards, funded by the **SFI Discover Programme**. A further 31 awards were made under the Science Week Programme, with €637k invested.
- ▶ An investment of €6.1 million was made with 12 awards funded under the **SFI US-Ireland R&D Partnership Programme**.
- ▶ Six awards were made under the **SFI Industry Fellowship Programme**, with an investment of €0.5 million, to immerse researchers into industry and gain relevant business knowledge and experience, and to give industry partners the opportunity to develop cutting-edge innovations.
- ▶ Eight awards were made under the SFI Rapid Response Supplemental Grant for **Displaced Researchers Programme**, to support researchers coming from the Ukraine with an investment of €305k.

# New Awards Made in 2022

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Breda Smyth</b>	COVID-19 Rapid Response Funding Programme	Multi-site study to develop a SARS-CoV-2 infection surveillance system for third level students and staff in Republic of Ireland (UniCoV)	University of Galway	380,864
<b>Dea Birkett</b>	SFI Discover	StrongWomen Science: Donegal Rural and Island Tour	Circus250 CIC	19,810
<b>Nina Bresnihan</b>	SFI Discover	OurKidsCode: Establishing and sustaining family creative coding clubs across Ireland	Trinity College Dublin	299,137
<b>Ann Butler</b>	SFI Discover	It's Our Planet	Junior Achievement Ireland	158,530
<b>Conor Cahalane</b>	SFI Discover	5*S: Space, Surveyors and Students - Phase 2	Maynooth University	251,743
<b>Kevin Casey</b>	SFI Discover	CoCoA23: Co-create collaborate activate - advancing computational thinking education	Maynooth University	299,976
<b>Marianne Checkley</b>	SFI Discover	Green STEAMTech	Kinia	265,000
<b>Mary Cunningham</b>	SFI Discover	Full STEAM Ahead! A partnership approach to STEAM in youthreach	National Youth Council of Ireland	299,725
<b>Mary Cunningham</b>	SFI Discover	STEAM in Youth Work 2023 - 2024	National Youth Council of Ireland	299,731
<b>Anna Davies</b>	SFI Discover	We-Adapt: Expanding adaptation engagement with the climate smart platform	Trinity College Dublin	274,088
<b>Aoife Deane</b>	SFI Discover	Teaching Resources for Youth-informed Biodiversity Education (TRYBE)	University College Cork	49,956
<b>Joanne Dolan</b>	SFI Discover	Teen-Turn	Teen-Turn	50,000
<b>Pierpaolo Dondio</b>	SFI Discover	Happy Maths: Reducing maths anxiety with game-based learning	Technological University Dublin	209,138
<b>Aileen Drohan</b>	SFI Discover	Yarning Connections	South East Technological University	49,642
<b>Jennifer Edmond</b>	SFI Discover	Who Wants to Write an Email: Arts, AI and self-expression	Trinity College Dublin	45,802
<b>Nigel Flegg</b>	SFI Discover	Quavers to Quadratics: Music and Science	The National Concert Hall	38,900
<b>Eoin Gill</b>	SFI Discover	Maths Week Ireland	South East Technological University	299,812

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Conn Holohan</b>	SFI Discover	Immersive Empathy: Using immersive technologies to narrate community challenges	University of Galway	49,195
<b>Mervyn Horgan</b>	SFI Discover	Cork Carnival of Science	Cork City Council t/a Lifetime Lab	300,000
<b>Walter Kolch</b>	SFI Discover	CuriosiTY: Broadening participation in a Transition Year STEM placement programme	University College Dublin	166,376
<b>Emma Leahy</b>	SFI Discover	Fernhill Park and Gardens Augmented Reality Project	Dún Laoghaire Institute of Art, Design & Technology	52,349
<b>Eoin Lettice</b>	SFI Discover	Irish Tree Explorers Network	University College Cork	299,766
<b>David Lewis</b>	SFI Discover	Technology in my Life II (TimL II)	Trinity College Dublin	49,833
<b>Iain MacDonald</b>	SFI Discover	HPV education powered by STEAM: Exploring peer-to-peer creative critical engagements	Maynooth University	48,411
<b>Patricia Maguire</b>	SFI Discover	Little Big Questions	University College Dublin	50,508
<b>Elizabeth Mathews</b>	SFI Discover	Irish Sign Language STEM Glossary Project: Signs in context	Dublin City University	233,570
<b>Amanda Mathieson</b>	SFI Discover	Generation Glas: A network of young sustainable champions	University College Dublin	258,080
<b>Chris Mays</b>	SFI Discover	Fossils for our Future: Ireland's palaeontology participation programme	University College Cork	49,956
<b>Lauren McDermott-Smith</b>	SFI Discover	Inspiring the Future Ireland	SDC South Dublin County Partnership	50,000
<b>David McKeown</b>	SFI Discover	Dublin Maker Festival	University College Dublin	50,000
<b>Eilish McLoughlin</b>	SFI Discover	STEM Teacher Internship (STInt) Programme	Dublin City University	299,991
<b>Maria Isabel Meza Silva</b>	SFI Discover	Taiscéalaí: 3D printing education for primary schools	Irish Manufacturing Research	49,992
<b>Mary Murphy</b>	SFI Discover	Let's Find Out: Audio visual STEM content for children	Stop.watch Television Ltd.	271,158
<b>Aisling Murray</b>	SFI Discover	BETA: A festival of critical inquiry in art and technology	The Digital Hub	48,064
<b>Pamela O'Brien</b>	SFI Discover	Exploring the Sustainable Development Goals through coding	Technological University of the Shannon	49,940

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Cliona O'Carroll</b>	SFI Discover	Circular Tales: Engaging with the past to inspire the future	University College Cork	51,997
<b>Enda O'Connell</b>	SFI Discover	ReelLIFE SCIENCE Video Competition	University of Galway	35,000
<b>Helen Osment</b>	SFI Discover	Igniting Curiosity in STEM: FIRST LEGO League	The Institution of Engineering and Technology	293,090
<b>Katriona O'Sullivan</b>	SFI Discover	All-Ireland STEM Passport for Inclusion	Maynooth University	599,777
<b>Glenn Strong</b>	SFI Discover	Pytch Phase 2: Bridging blocks to text in the curriculum	Trinity College Dublin	299,423
<b>Paul Stynes</b>	SFI Discover	STEM Family Learning Programmes	National College of Ireland	50,000
<b>Genevieve Whitfield</b>	SFI Discover	Foodscape: Soil Society - Activity Zone	Airfield Estate	49,930
<b>David Williams</b>	SFI Discover	LightUp Your World Workshop Series	Munster Technological University	37,050
<b>Andrei Parnachev</b>	EPSRC-SFI Joint Funding of Research	CFT and Gravity: Heavy states and black holes	Trinity College Dublin	566,265
<b>Xinmin Zhan</b>	EPSRC-SFI Joint Funding of Research	Reducing greenhouse gas emissions and engaging antibacterial resistance in anaerobic treated effluents (REGENERATE)	University of Galway	429,817
<b>Carol Aherne</b>	Frontiers for the Future	Targeting mucin-mediated mechanisms to protect the intestinal barrier	University College Dublin	621,615
<b>Pavel Baranov</b>	Frontiers for the Future	Characterisation of human mRNA decoding diversity	University College Cork	1,271,296
<b>Ozgun Bayram</b>	Frontiers for the Future	Molecular analysis of chromatin-regulated gene expression in mycotoxigenic fungi for improved agricultural outputs and food security	Maynooth University	615,266
<b>Antonio Benedetto</b>	Frontiers for the Future	BIONIC: Tuning the properties of model and real biomembranes by organic electrolytes. An experimental comprehensive study of elasticity, mechano-elasticity and transport through active and passive channels	University College Dublin	577,138
<b>Tommy Boland</b>	Frontiers for the Future	Neonatal dietary interventions to reduce enteric methane emissions (NeoDREMES)	University College Dublin	571,783

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Colm Bracken</b>	Frontiers for the Future	Development of cryogenic microwave kinetic inductance detectors toward next-generation science instruments for astronomy and beyond	Maynooth University	613,466
<b>Louise Bradley</b>	Frontiers for the Future	Emission control with dielectric metasurfaces	Trinity College Dublin	605,313
<b>Gordon Bromley</b>	Frontiers for the Future	Geologic Perspectives on Abrupt Climate Change (GeoPAC2): Strengthening Ireland's capacity for projecting future change	University of Galway	583,739
<b>Marion Butler</b>	Frontiers for the Future	Investigating sex differences in innate immune signalling pathways of relevance to Covid-19 and SLE	Maynooth University	618,875
<b>Hugh J. Byrne</b>	Frontiers for the Future	Developing label free spectroscopic techniques for virology: A novel analytical approach through multidisciplinary partnership (ViroSPEC)	Technological University Dublin	1,289,380
<b>Vinny Cahill</b>	Frontiers for the Future	ClearWay: Advancing deep reinforcement learning and swarm intelligence to optimize travel-time reliability in mixed traffic	Trinity College Dublin	1,290,122
<b>Marcus Claesson</b>	Frontiers for the Future	Determining the biotherapeutic potential of missing Lachnospiraceae in inflammatory bowel diseases	University College Cork	622,919
<b>Michael Coey</b>	Frontiers for the Future	Ferrimagnetic switching with topological manganese perovskites (FISTMAP)	Trinity College Dublin	329,734
<b>Jakki Cooney</b>	Frontiers for the Future	Dynamic communication networks controlling immunomodulatory enzyme specificity and activity (DyNetIME)	University of Limerick	623,085
<b>Desmond Cox</b>	Frontiers for the Future	The impact of E-cigarettes on childhood health outcomes (ECHO) study	University College Dublin	616,449
<b>James Curtin</b>	Frontiers for the Future	Plasma PLUS: Discovery of plasma assisted therapies for cancer	Technological University Dublin	1,272,129
<b>Steven Davy</b>	Frontiers for the Future	Sustain: Sustainable, green and energy efficient artificial intelligence for autonomous systems	Technological University Dublin	1,295,799
<b>John Devaney</b>	Frontiers for the Future	Future Forests: Understanding the effect of tree diversity in planted forests under a rapidly changing climate	Maynooth University	516,192

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Ray Duffy</b>	Frontiers for the Future	Pulsed laser annealing of low temperature 2D semiconductors for large area applications in electronics using flexible substrates	Tyndall National Institute	1,274,748
<b>Paul Eastham</b>	Frontiers for the Future	Heat transfer and dissipation in quantum devices: Exploiting strong-coupling to structured baths for enhanced performance	Trinity College Dublin	416,745
<b>Mikel Egana</b>	Frontiers for the Future	Cerebrovascular dynamic responses subsequent to high-intensity interval vs moderate-intensity continuous training in men and women with type 2 diabetes	Trinity College Dublin	552,960
<b>Andrea Erxleben</b>	Frontiers for the Future	Novel platinum-based mitocans for the treatment of resistant cancers: Synthesis, targeted delivery and biological studies	University of Galway	489,684
<b>Mikhail Filatov</b>	Frontiers for the Future	Dyes with switchable intersystem crossing for photonics	Technological University Dublin	859,539
<b>Robert Forster</b>	Frontiers for the Future	Wire Free Electroceuticals: 3D electrical and electrochemical stimulation of cells	Dublin City University	604,718
<b>Simon Furney</b>	Frontiers for the Future	NoCoSMiCC: Non-coding somatic mutations in colorectal cancer	Royal College of Surgeons in Ireland	302,246
<b>Declan Gilheany</b>	Frontiers for the Future	Small Nitrogen Bicycles: Constrained molecular geometry for aza bioisosteres, encouraged Lewis pairs and pentavalent, pentaco-ordinate nitrogen	University College Dublin	481,245
<b>Conor Graham</b>	Frontiers for the Future	Development and application of traceability tools for Irish shellfish and fish of economic and conservation concern (TRACE-FISH)	Atlantic Technological University	892,630
<b>Darren Griffith</b>	Frontiers for the Future	Development of Pt-based proteolysis targeting chimeras (Pt-PROTACs) as molecular probes for Pt-binding proteins and next generation anticancer agents	Royal College of Surgeons in Ireland	535,065
<b>Yurii Gun'ko</b>	Frontiers for the Future	Chiral 2D nanostructures	Trinity College Dublin	976,209
<b>Gary Henehan</b>	Frontiers for the Future	Green chemistry biocatalysis (Genesis)	Technological University Dublin	1,039,309
<b>Mark Hollywood</b>	Frontiers for the Future	Role of LINGO1 and BK channels in tremor	Dundalk Institute of Technology	1,285,577

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Darrin Hulsey</b>	Frontiers for the Future	VitaDevo: Angling for a new model of osteoimmunology-environmental developmental genetics of vitamin D in Atlantic salmon	University College Dublin	576,617
<b>Rossen Ivanov</b>	Frontiers for the Future	Ocean flow induced by internal wave-current interactions (IWCI): From linear to nonlinear, incorporating rotational effects	Technological University Dublin	915,790
<b>Oran Kennedy</b>	Frontiers for the Future	OsteoLeukins: Osteocytes as an important source of interleukins in skeletal injury and disease	Royal College of Surgeons in Ireland	616,775
<b>Zili Li</b>	Frontiers for the Future	Geotechnical big data monitoring and assessment tools for evaluating whole-life performance of underground infrastructure	University College Cork	593,104
<b>Mingming Liu</b>	Frontiers for the Future	Electric shared-mobility services to empower next-generation transportation for Ireland's ambition to reach a low-carbon future (ESSENTIAL)	Dublin City University	335,529
<b>Fiona Lyng</b>	Frontiers for the Future	Raman spectroscopy for monitoring of oral pre-malignant lesions for improved prognosis and management	Technological University Dublin	542,860
<b>Dermot Lynott</b>	Frontiers for the Future	Modelling implicit bias: Linking language, the media and biased attitudes	Maynooth University	503,328
<b>Karl Mason</b>	Frontiers for the Future	Effective integration of renewable energy within the agriculture sector in Ireland using artificial intelligence	University of Galway	965,030
<b>Ruth Massey</b>	Frontiers for the Future	Attack and defence: Defining key bacterial pathogenic strategies to identify targets for therapeutic intervention	University College Cork	1,274,005
<b>Marion McAfee</b>	Frontiers for the Future	Process control for extrusion-based 3D-printing of personalised medicine (PROCEED 3D)	Atlantic Technological University	1,133,164
<b>Michael McAuliffe</b>	Frontiers for the Future	MIRSIM: Microplastic infrared structured illumination microscope	Munster Technological University	595,396
<b>Sheila McBreen</b>	Frontiers for the Future	Gamma-ray investigation of the full transient sky: A 6U CubeSat for the localisation of gamma-ray bursts in the multi-messenger era	University College Dublin	1,198,739
<b>Fergal McCaffery</b>	Frontiers for the Future	Regulatory compliance framework for trustworthy AI medical device software (Reg-Fr-AIMS)	Dundalk Institute of Technology	1,292,570

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Aidan McDonald</b>	Frontiers for the Future	High-valent metal-halide complexes for strong C-H bond activation and halogenation	Trinity College Dublin	624,001
<b>Gerard McGlacken</b>	Frontiers for the Future	SOSEarth: Sustainable organic synthesis using Earth abundant metals for critical pharmaceutical transformations	University College Cork	1,214,112
<b>Jan Miletin</b>	Frontiers for the Future	Individualised mask for infants requiring nasal continuous positive airway pressure – tailored Mask (tMASK) feasibility study	University College Dublin	478,294
<b>Audrey Morley</b>	Frontiers for the Future	Signal tracking to unveil Arctic climate variability	University of Galway	616,296
<b>Derek Morris</b>	Frontiers for the Future	Predicting cognitive dysfunction and psychosocial disability in schizophrenia using genetic, neuroimaging and environmental data	University of Galway	619,636
<b>Gabriel-Miro Muntean</b>	Frontiers for the Future	Framework for performance-aware differentiated innovative services in 5G and beyond networks (FRADIS)	Dublin City University	611,481
<b>Kevin Murphy</b>	Frontiers for the Future	Space based applications using photosensitive recording materials	Technological University Dublin	677,875
<b>Erivelton Nepomuceno</b>	Frontiers for the Future	Simultaneous stabilisation and wave energy harvesting for a floating offshore wind/wave platform	Maynooth University	587,975
<b>Niamh Nowlan</b>	Frontiers for the Future	Developmentally inspired approaches to cartilage defect healing	University College Dublin	1,250,854
<b>Marguerite Nyhan</b>	Frontiers for the Future	Environmental Intelligence - Modelling complex human-environment interactions for maximising environmental health and equity in urban areas	University College Cork	587,385
<b>Timothy O'Brien</b>	Frontiers for the Future	Hybrid advanced therapy medicinal products as next generation tissue engineered therapies for limb salvage in critical limb ischaemia	University of Galway	1,220,095
<b>Conor O'Byrne</b>	Frontiers for the Future	Characterisation of the function and regulation of GadR, a novel transcriptional regulator of acid resistance in <i>Listeria monocytogenes</i>	University of Galway	510,378
<b>Katie O'Dwyer</b>	Frontiers for the Future	GIDAS - GILL disease in Atlantic salmon	Atlantic Technological University	1,246,339
<b>Doireann O'Kiely</b>	Frontiers for the Future	Mathematical models for wrinkle technology (WrinkleTech)	University of Limerick	466,109

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Shane O'Reilly</b>	Frontiers for the Future	Bioprospecting of novel marine terpenoids with broad commercial applications	Atlantic Technological University	689,313
<b>Lisa Orme</b>	Frontiers for the Future	Investigating the past climate influence on the carbon accumulation rates of Irish blanket bogs (PCARB)	Maynooth University	570,570
<b>Jamie O'Sullivan</b>	Frontiers for the Future	Examining the role of von Willebrand Factor as a potential therapeutic target in triple negative breast cancer	Royal College of Surgeons in Ireland	614,342
<b>Peter Parbrook</b>	Frontiers for the Future	Boron Containing III-N alloys for next generation visible and UV light emitting devices	Tyndall National Institute	1,288,943
<b>Nikolay Petkov</b>	Frontiers for the Future	Nanofabrication and advanced characterisations for GeSn quantum devices	Munster Technological University	1,298,800
<b>Suresh Pillai</b>	Frontiers for the Future	Nano2H2: Nano-electrocatalysts for sustainable hydrogen production from bio-resources	Atlantic Technological University	1,281,101
<b>Roger Preston</b>	Frontiers for the Future	New approaches to exploit coagulation protease-receptor signalling for therapeutic benefit	Royal College of Surgeons in Ireland	950,091
<b>Deirdre Purfield</b>	Frontiers for the Future	OviSeq: From genome to phenome, advancing genetic gain in sheep through genomics	Munster Technological University	803,258
<b>Susan Quinn</b>	Frontiers for the Future	PhotoGene: Photoactive nucleic acid probes towards new diagnostics and therapeutics	University College Dublin	602,648
<b>James Rice</b>	Frontiers for the Future	Responsive plasmonics using biomaterials	University College Dublin	618,910
<b>John Ringwood</b>	Frontiers for the Future	Economic wave energy through technical innovation (SeaChange)	Maynooth University	1,074,213
<b>Sinead Ryan</b>	Frontiers for the Future	The computing frontier for quantum field theories	Trinity College Dublin	620,422
<b>Mathias Senge</b>	Frontiers for the Future	Re-engineering Porphyrins: From Shape to Function (PORPHYSHAPE)	Trinity College Dublin	1,228,898
<b>Giacomo Severini</b>	Frontiers for the Future	ReHapt: Predictive modelling-based haptic cycling rehabilitation of stroke survivors	University College Dublin	619,139
<b>James Sweeney</b>	Frontiers for the Future	3E-X: Emerging, enriching and educating to prepare for the next disease X	University of Limerick	323,912
<b>Elizabeth Topp</b>	Frontiers for the Future	Stable chemically modified mRNA vaccines	The National Institute for Bioprocessing Research and Training	1,247,356

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Dean Venables</b>	Frontiers for the Future	Low cost monitoring using spectroscopy for high quality information on urban nitrogen dioxide (LOCOMOSHUN)	University College Cork	542,614
<b>Patrick Walsh</b>	Frontiers for the Future	Identifying the mechanism of action of a novel therapeutic target during the earliest phases of IBD onset in childhood	Trinity College Dublin	556,328
<b>Frank Wellmer</b>	Frontiers for the Future	The formation of flowers – what determines the specificities of the floral homeotic transcription factors?	Trinity College Dublin	617,802
<b>William Whelan-Curtin</b>	Frontiers for the Future	MetaSPECS - Metasurfaces and photonic integrated circuits for enhanced photothermal SPECTroScopy	Munster Technological University	1,276,342
<b>Astrid Wingler</b>	Frontiers for the Future	Functional traits of grass weeds: Investigating the processes that determine weediness	University College Cork	555,875
<b>John Boland</b>	SFI Future Innovator Prize	Microplastics Free Plastics: Eliminating microplastic generation at source	Trinity College Dublin	320,784
<b>Holger Claussen</b>	SFI Future Innovator Prize	MISTRAL: Automated persistent aerial communication system	Tyndall National Institute	630,722
<b>Tobi Eniolu Morakinyo</b>	SFI Future Innovator Prize	HEAT-ADAPT: Enhancing heat adaptive capacity in Africa's informal settlements with nature-based solutions	University College Dublin	229,422
<b>Lorraine Foley</b>	SFI Future Innovator Prize	Evaluating quality and shelf life of silicon enriched fresh salad leaves using alternative plastic packaging solutions	Technological University Dublin	2,373,759
<b>Jennifer Gaughran</b>	SFI Future Innovator Prize	Grain-4-Lab: Laboratory-grade bioplastics production from native renewable waste streams: promoting a circular Irish bioeconomy	Dublin City University	2,408,312
<b>Quan Le</b>	SFI Future Innovator Prize	AI solutions for mangrove blue carbon in Vietnam	University College Dublin	387,211
<b>Patricia Maguire</b>	SFI Future Innovator Prize	Development of an AI-powered risk stratification platform for preeclampsia	University College Dublin	649,850
<b>Tim McCarthy</b>	SFI Future Innovator Prize	COPilot AI (Common Operational Picture and AI): For managing wildfires	Maynooth University	1,276,059
<b>Kevin McGuigan</b>	SFI Future Innovator Prize	Supporting climate-resilient health facilities in Malawi through sustainable access to water using solar disinfection of harvested rainwater: The SURGeWater Project	Royal College of Surgeons in Ireland	284,958

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Aonghus McNabola</b>	SFI Future Innovator Prize	REcycling wastewater Heat in mEAT production/preparation in Zambia: Technology and process development, and societal impacts (REHEATZ)	Trinity College Dublin	409,352
<b>Liana Ricci</b>	SFI Future Innovator Prize	Water management through Ecohydrology for climate change adaptation in Dar-es-Salaam, Tanzania (WECOAdapt)	University College Dublin	382,578
<b>Annmarie Ryan</b>	SFI Future Innovator Prize	The future of data driven agriculture in Uganda: A design-led approach to building climate resilient futures with marginalised smallholder farmers	University of Limerick	387,089
<b>Muhammad Ali</b>	National Challenge Fund	Efficient and effective biofiltration of methane generated from on-site wastewater treatment system	Trinity College Dublin	311,087
<b>Alessio Benavoli</b>	National Challenge Fund	HLOOP: Humans-in-the-Loop towards a more effective AI in manufacturing	Trinity College Dublin	243,952
<b>Bharat Bhushan Tripathi</b>	National Challenge Fund	Machine learning for predicting brain deformation in concussions using head motion	University of Galway	244,417
<b>Oisin Boydell</b>	National Challenge Fund	All-Ireland, AI-enhanced peatland monitoring platform (AI2Peat): Combining artificial and human intelligence to combat climate change at national scale	University College Dublin	259,400
<b>Subhash Chandra</b>	National Challenge Fund	Luminescent solar photobioreactor for carbon capture to bioenergy (Lumiscarb)	Trinity College Dublin	315,908
<b>Julie Clarke</b>	National Challenge Fund	A national climate risk index for the built environment	Trinity College Dublin	322,481
<b>Patrick Collins</b>	National Challenge Fund	Platform Urbanism: A new tool for placemaking	University of Galway	258,207
<b>Andrew Daly</b>	National Challenge Fund	Artificial intelligence-powered 3D printing: aiPRINT	University of Galway	252,095
<b>Cailbhe Doherty</b>	National Challenge Fund	CERBERUS: Certainty of evidence reports for the biometric data captured by wearable devices that are user-focused and succinct	University College Dublin	247,743
<b>Ray Griffin</b>	National Challenge Fund	PEStech: Making the labour market visible	South East Technological University	226,600
<b>Thomas Hooper</b>	National Challenge Fund	FluoroCapture: Upgrading of high GWP waste fluorinated gases	University College Dublin	306,635

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Ibrahim Khalil</b>	National Challenge Fund	Towards a systems-based digital platform for agricultural land use planning, management decision and inventory reporting (HOLOS-IE)	University College Dublin	258,830
<b>Zili Li</b>	National Challenge Fund	'Road Phone': Road pavement condition monitoring using smartphone sensing at the community level	University College Cork	239,768
<b>Philip Long</b>	National Challenge Fund	Accessible, easily deployable collaborative robotic system for manufacturing tasks: Robomate	Atlantic Technological University	252,674
<b>Eleni Mangina</b>	National Challenge Fund	Stroke tele-rehabilitation platform using extended reality (XR)	University College Dublin	258,047
<b>Aonghus McNabola</b>	National Challenge Fund	Submersible screw pump as turbines: A low-cost fish friendly solution for micro hydropower pumped energy storage including sea-water (SubScrewHydro)	Trinity College Dublin	314,778
<b>Di Nguyen</b>	National Challenge Fund	Planning for disruptions: Improving reliability and resource allocation in public transport	University College Dublin	258,576
<b>Séamus O'Shaughnessy</b>	National Challenge Fund	DRIVE: Direct contact immersion cooling of electric vehicle batteries - a novel approach for improved thermal management and performance	Trinity College Dublin	308,234
<b>Vikram Pakrashi</b>	National Challenge Fund	Train as a sensor for railway infrastructure (TRain)	University College Dublin	251,840
<b>Andrew Phillips</b>	National Challenge Fund	Renewable energy storage reactor for mobile applications - RESR	University College Dublin	288,332
<b>Anup Poudel</b>	National Challenge Fund	The development of a smart radiofrequency renal denervation system for cardiovascular disease	University of Galway	256,703
<b>Mary Pryce</b>	National Challenge Fund	Using untapped wind energy to produce green hydrogen using a simpler and sustainable electrolyser design	Dublin City University	313,441
<b>Stephen Redmond</b>	National Challenge Fund	Smart robotic gripping for manufacturing, supply chain, and logistics	University College Dublin	257,841
<b>Charles Stuart</b>	National Challenge Fund	Critical steps to decarbonising aviation for Ireland	Trinity College Dublin	321,424
<b>Qian Xiao</b>	National Challenge Fund	Exploring realistic pathways to the decarbonisation of buildings in the urban context: A case study of Dublin City	Trinity College Dublin	254,949

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Nan Zhang</b>	National Challenge Fund	An AI-driven automated high-throughput microfluidic-based flow synthesis platform for acceleration of nanomedicine development	University College Dublin	241,641
<b>Ortwin Hess</b>	QuantERA ERA-NET II Co-fund Programme	Dicke-enhanced single-emitter strong coupling at ambient conditions as a quantum resource (DISCO)	Trinity College Dublin	299,963
<b>Ursel Bangert</b>	Research Infrastructure	Observing materials' structure and dynamics at the nm-scale in environmental conditions and under external stimuli by in-situ transmission electron microscopy (ObSTEM)	University of Limerick	1,263,414
<b>Liam Barry</b>	Research Infrastructure	Terahertz Transmission and Characterisation Facility	Dublin City University	952,175
<b>Hugh J. Byrne</b>	Research Infrastructure	Leica multimodal imaging platform	Technological University Dublin	1,245,392
<b>Mark Fenelon</b>	Research Infrastructure	High resolution and multiscale 3D X-ray microscopy system for advanced computed microtomography of foods with sub-micrometric resolution	Teagasc	794,879
<b>Jesus Maria Frias Celayeta</b>	Research Infrastructure	Mobile Air Research Laboratory	Technological University Dublin	1,013,161
<b>Peter Gallagher</b>	Research Infrastructure	Upgrading the Irish Low Frequency Array (I-LOFAR) and founding the LOFAR European Research Infrastructure Consortium (ERIC)	Dublin Institute for Advanced Studies	534,757
<b>David Henshall</b>	Research Infrastructure	A core medium throughput facility with multi-parametric readouts for the assessment of functional alterations in single cells and brain networks in health and disease states	Royal College of Surgeons in Ireland	1,558,000
<b>Anita Maguire</b>	Research Infrastructure	Fast reaction kinetics in NMR Spectroscopy: FaNS	University College Cork	908,579
<b>James Meaney</b>	Research Infrastructure	Replacement of 3T MRI scanner and ancillary equipment	Trinity College Dublin	2,019,331
<b>Redmond O'Connell</b>	Research Infrastructure	Placing Ireland at the centre of a brain imaging revolution with OPM-MEG	Trinity College Dublin	1,552,510
<b>Cian O'Mathuna</b>	Research Infrastructure	JOULIET: Energy for the Internet of everything	Tyndall National Institute	1,475,698
<b>Dimitra Psychogiou</b>	Research Infrastructure	Flexi-RF: Dynamic RF test and characterisation suite for high performance, highly-flexible RF and microwave front-ends and antennas	Tyndall National Institute	2,706,004

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Ramesh Raghavendra</b>	Research Infrastructure	High energy, high resolution dual beam x-ray micro-computed tomography for advanced manufacturing research	South East Technological University	2,027,718
<b>Robert Bogdan Staszewski</b>	Research Professorship	Mixed-signal integrated circuits electronics for emerging applications	University College Dublin	7,100,020
<b>Edward W. Gregg</b>	Research Professorship	Changing the direction of diabetes with integrated, population-level, data-driven decision-making	Royal College of Surgeons in Ireland	4,259,520
<b>Marius de Leeuw</b>	Royal Society University Research Fellowship	Finding integrable models	The Royal Society	380,966
<b>Marius de Leeuw</b>	Royal Society University Research Fellowship	Symmetries in solvable models	The Royal Society	182,893
<b>Eimear Dolan</b>	Royal Society University Research Fellowship	A soft robotics approach to reduce the foreign body response to medical implants	The Royal Society	203,829
<b>Andrea Droghetti</b>	Royal Society University Research Fellowship	Exploring out-of-equilibrium effects and functionalities at hybrid interfaces	The Royal Society	154,444
<b>Michael Gibbons</b>	Royal Society University Research Fellowship	Loop heat pipe for waste heat recovery in data centres	The Royal Society	195,100
<b>John Goold</b>	Royal Society University Research Fellowship	Probing non equilibrium thermodynamics and dynamics of quantum many-body quantum systems using spectral methods	The Royal Society	407,309
<b>Rebecca Henry</b>	Royal Society University Research Fellowship	Preclinical investigation of immunometabolic mechanisms in a model of traumatic brain injury with pre-existing obesity	The Royal Society	594,395
<b>Richard Hobbs</b>	Royal Society University Research Fellowship	Engineering plasmonic nanoantennas for nanochemistry and ultrafast electronics	The Royal Society	204,443
<b>Mark Howard</b>	Royal Society University Research Fellowship	New horizons for fault-tolerant quantum computation	The Royal Society	84,149



SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Lewys Jones</b>	Royal Society University Research Fellowship	Retrofitting small-scale, high-impact, modular innovations for next-generation TEM	The Royal Society	208,082
<b>Lynette Keeney</b>	Royal Society University Research Fellowship	Making Memories: Ultra-thin multiferroics for disruptive data storage technologies	The Royal Society	219,590
<b>Jonathan Mackey</b>	Royal Society University Research Fellowship	Asymmetric nebulae of massive stars	The Royal Society	218,647
<b>Lara McManus</b>	Royal Society University Research Fellowship	Cortical and spinal connectivity of motor units as a novel biomarker for amyotrophic lateral sclerosis	The Royal Society	588,418
<b>Mark Mitchison</b>	Royal Society University Research Fellowship	Thermodynamics of precision in quantum measurement and control	The Royal Society	575,033
<b>Sinead O'Keeffe</b>	Royal Society University Research Fellowship	Advancing photonics for radiotherapy	The Royal Society	196,299
<b>Christiana Pantelidou</b>	Royal Society University Research Fellowship	Gravitational turbulence in the era of gravitational waves	The Royal Society	153,430
<b>John Regan</b>	Royal Society University Research Fellowship	Seed Black Hole formation from environment to accretion	The Royal Society	173,724
<b>Pauline Scanlan</b>	Royal Society University Research Fellowship	Local adaption of bacteria in the human gut	The Royal Society	200,643
<b>Alma Siggins</b>	Royal Society University Research Fellowship	Adsorption based biotechnology to integrate methane emission mitigation and valorisation	The Royal Society	601,411
<b>Johanna Vos</b>	Royal Society University Research Fellowship	Exometeorology: Weather on worlds beyond our own	The Royal Society	571,830
<b>Matthew Walters</b>	Royal Society University Research Fellowship	A conformal framework for strongly-interacting systems	The Royal Society	578,283

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Niels Warburton</b>	Royal Society University Research Fellowship	Gravitational waves from intermediate mass-ratio binaries	The Royal Society	343,308
<b>Jeremy Bird</b>	Science Week	Sligo Science Festival 2022	Atlantic Technological University	30,000
<b>Dea Birkett</b>	Science Week	Science Circus by the Sea: Day-long festival on Achill	Circus250 CIC	15,630
<b>Jessica Bonenfant</b>	Science Week	The Science of Space Festival	Greywood Arts CLG	30,500
<b>Catriona Boyle</b>	Science Week	Festival of Farming and Food	Teagasc	30,000
<b>Amanda Branigan</b>	Science Week	Louth Science Festival 2022	Louth County Council	35,000
<b>Mary Carr</b>	Science Week	STEM at ATU - Donegal	Atlantic Technological University	8,000
<b>Rebecca Dolan</b>	Science Week	Theatre 2.0: Creative Resilience	Gaiety School of Acting	8,000
<b>Sheila Donegan</b>	Science Week	South East Science Festival	South East Technological University	30,000
<b>Sheila Donegan</b>	Science Week	Kilkenny Science Festival	South East Technological University	35,000
<b>Rachel Farrell</b>	Science Week	Full STEAM Ahead: Look See What I Can Be	University College Dublin	8,000
<b>Eoin Gill</b>	Science Week	WexSci - Wexford Science Festival	South East Technological University	29,991
<b>Caroline Gilleran Stephens</b>	Science Week	Water-Shaping our Future	Dundalk Institute of Technology	8,000
<b>Jackie Gorman</b>	Science Week	Midlands Science Festival	Atlantic Corridor	30,000
<b>Isabelle Grosjean</b>	Science Week	Voyage to the heart of the cell 2.0	Institut NeuroMyoGène-Unité de Pysiopathologie et Génétique du Neurone et du Muscle	8,000
<b>Mervyn Horgan</b>	Science Week	Cork Science Festival 2022	Glenosheen Ltd.	30,000
<b>Colin Kelleher</b>	Science Week	A Plant Science Festival in the National Botanic Gardens	National Botanic Gardens of Ireland (OPW)	27,895

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Tanya Kiang</b>	Science Week	Shadow Archives: Scientific cinematography and imagining new futures	Photo Museum Ireland	7,880
<b>Walter Kolch</b>	Science Week	Invisible Spectrum	University College Dublin	7,970
<b>Rhiannon Laubach</b>	Science Week	Ballyhoura Science Week 2022	Ballyhoura Development Ltd.	8,000
<b>Aoife Long</b>	Science Week	Cyber Conversation	Munster Technological University	8,000
<b>Patricia Maguire</b>	Science Week	“C'mere til I tell ya” Dublin Mini Festival	University College Dublin	35,000
<b>Fergal Malone</b>	Science Week	BIAS: Inequality in Women's Health and Research	Royal College of Surgeons in Ireland	35,000
<b>Amanda Mathieson</b>	Science Week	Back for the Future Escape Room: On Tour	University College Dublin	7,990
<b>Pat McHale</b>	Science Week	Mayo Science and Technology Festival 2022	Mayo County Council t/a Mayo Science & Technology Festival	26,500
<b>Deirdriu McQuaid</b>	Science Week	Cavan Monaghan Science Festival 2022	Monaghan County Council	30,000
<b>Paul Mee</b>	Science Week	Galway Science and Technology Festival	Galway Science and Technology Forum	25,000
<b>Shaun O'Boyle</b>	Science Week	Shakespeare in ISL for people and machines	Dublin City University	7,900
<b>Bernie Quilligan</b>	Science Week	Limerick Festival of Science 2022	University of Limerick	30,000
<b>Laurie Ryan</b>	Science Week	Festival of Sport Science 2022: Females in focus	Technological University of the Shannon	8,000
<b>Niamh Shaw</b>	Science Week	Science Week, Live 2022! A TY livestreamed daily news/magazine show	Niamh Shaw Ltd.	8,000
<b>Joseph Walsh</b>	Science Week	Kerry Science Festival 2022	Munster Technological University	28,000
<b>Orla Feely</b>	SFI Fellowship	SFI Fellowship	University College Dublin	154,962
<b>Orla Feely</b>	SFI Fellowship	SFI Fellowship	University College Dublin	168,422
<b>Jim Livesey</b>	SFI Fellowship	SFI Fellowship	University of Galway	168,422

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Wolfgang Schmitt</b>	SFI Fellowship	SFI Fellowship	Trinity College Dublin	168,422
<b>Niall Smith</b>	SFI Fellowship	SFI Fellowship	Munster Technology University	175,597
<b>N/A</b>	SFI Industry RD&I Fellowship Programme	Award declined	Teagasc	62,378
<b>Adriana Ferreira Maluf Braga</b>	SFI Industry RD&I Fellowship Programme	Co-digestion optimisation and biochar utilisation to improve methane content in biogas from food and agro-industrial waste anaerobic digestion	University of Galway	76,201
<b>Ruth Foley</b>	SFI Industry RD&I Fellowship Programme	Development of a CRISPR-based gene therapy product for epidermolysis bullosa, targeting new mutations in the COL7A1 gene	University College Dublin	86,590
<b>Brian Jennings</b>	SFI Industry RD&I Fellowship Programme	Stereoscopic and multi-source illumination methods for 3D imaging of the human face	Trinity College Dublin	81,739
<b>Chinmoy Kundu</b>	SFI Industry RD&I Fellowship Programme	Towards developing autonomous 6G mobile networks using digital twin architecture	University College Dublin	100,805
<b>Brince Paul Kunnel</b>	SFI Industry RD&I Fellowship Programme	Development of advanced in-line blood monitoring sensors and systems for therapeutic applications	Tyndall National Institute	87,983
<b>Donagh Berry</b>	SFI Maternity / Adoptive Allowance	Vistamilk SFI Research Centre	Teagasc	11,700
<b>Donagh Berry</b>	SFI Maternity / Adoptive Allowance	Vistamilk SFI Research Centre	Teagasc	32,753
<b>Donagh Berry</b>	SFI Maternity / Adoptive Allowance	Vistamilk SFI Research Centre	Teagasc	34,769
<b>John Boland</b>	SFI Maternity / Adoptive Allowance	Microplastics Free Plastics: Eliminating microplastic generation at source	Trinity College Dublin	22,702
<b>Grace Cott</b>	SFI Maternity / Adoptive Allowance	Processes and mechanisms controlling carbon sequestration and storage in 'blue carbon habitats'; advancing Ireland's capacity to mitigate and adapt to climate change (BlueCarbon)	University College Dublin	37,529
<b>Brian Fitzgerald</b>	SFI Maternity / Adoptive Allowance	Lero SFI Research Centre	University of Limerick	12,025

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Brian Fitzgerald</b>	SFI Maternity / Adoptive Allowance	Lero SFI Research Centre	University of Limerick	39,920
<b>Brian Kelleher</b>	SFI Maternity / Adoptive Allowance	Integrating multidisciplinary geoscientific data into forecasting models to monitor and predict coastal change: Proof of concept in Dublin Bay	Dublin City University	12,025
<b>Dan Kilper</b>	SFI Maternity / Adoptive Allowance	CONNECT SFI Research Centre	Trinity College Dublin	28,880
<b>Conor McCarthy</b>	SFI Maternity / Adoptive Allowance	Confirm SFI Research Centre	University of Limerick	36,689
<b>Conor McCarthy</b>	SFI Maternity / Adoptive Allowance	Confirm SFI Research Centre	University of Limerick	38,715
<b>Eilish McLoughlin</b>	SFI Maternity / Adoptive Allowance	STEM Teacher Internship (STInt) Programme	Dublin City University	24,772
<b>Michael Morris</b>	SFI Maternity / Adoptive Allowance	AMBER SFI Research Centre	Trinity College Dublin	3,575
<b>Michael Morris</b>	SFI Maternity / Adoptive Allowance	Delivering innovative materials for medical devices	Trinity College Dublin	15,971
<b>Michael Morris</b>	SFI Maternity / Adoptive Allowance	PPSAD: Plasma processes for selective area deposition	Trinity College Dublin	15,971
<b>Abhay Pandit</b>	SFI Maternity / Adoptive Allowance	Dyes with switchable intersystem crossing for photonics	University of Galway	37,423
<b>Paul Ross</b>	SFI Maternity / Adoptive Allowance	MIMIC - Missing microbes in Infants born by C-section	University College Cork	32,287
<b>Paul Ross</b>	SFI Maternity / Adoptive Allowance	APC SFI Research Centre	University College Cork	32,335
<b>Paul Ross</b>	SFI Maternity / Adoptive Allowance	APC SFI Research Centre	University College Cork	32,380
<b>Ingmar Schoen</b>	SFI Maternity / Adoptive Allowance	Mechanobiology of platelet contractility and secretion during thrombosis	Royal College of Surgeons in Ireland	21,777
<b>Cathal Seoighe</b>	SFI Maternity / Adoptive Allowance	SFI Centre for Research Training in Genomics Data Science	University of Galway	15,149

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Kalpana Shankar</b>	SFI Maternity / Adoptive Allowance	A mixed-methods examination of reviewer recruitment, assessment criteria, and workflow in the peer review process	University College Dublin	22,336
<b>Lidia Tajber</b>	SFI Maternity / Adoptive Allowance	Active pharmaceutical ingredients as ionic liquids: Significance of protonics and functional profiling for the design of effective medicines (ActiPIILs)	Trinity College Dublin	12,025
<b>Damien Thompson</b>	SFI Maternity / Adoptive Allowance	SSPC SFI Research Centre	University of Limerick	35,714
<b>Michael Zaworotko</b>	SFI Maternity / Adoptive Allowance	Green Adsorbents for Clean Energy (GrACE)	University of Limerick	36,632
<b>John Dooley</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	Maynooth University	61,746
<b>Tobias Engel</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	Royal College of Surgeons in Ireland	20,268
<b>David Henshall</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	Royal College of Surgeons in Ireland	16,906
<b>Simon Kelly</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	University College Dublin	25,749
<b>John McHale</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	University of Galway	24,751

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Jennifer McMahon</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	University of Limerick	18,918
<b>Paul Ross</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	University College Cork	41,655
<b>Robert Whelan</b>	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	Trinity College Dublin	95,029
<b>Karim Cherkaoui</b>	SFI US-Ireland R&D Partnership Programme	Ga2O3: Understanding growth, interfaces and defects to enable next generation electronics (GUIDE)	Tyndall National Institute	452,508
<b>Niall English</b>	SFI US-Ireland R&D Partnership Programme	Full atomistic understanding of solid-liquid interfaces via an integrated experiment - theory approach	University College Dublin	453,814
<b>Arman Farhang</b>	SFI US-Ireland R&D Partnership Programme	Smart radio environments with reconfigurable intelligent surfaces: Communications through blockage in millimeter-wave systems (REFLECT-MMWAVE)	Trinity College Dublin	484,179
<b>Robert Forster</b>	SFI US-Ireland R&D Partnership Programme	AI-EPOCMON: AI-enabled point-of-care monitoring	Dublin City University	892,352
<b>Catherine Godson</b>	SFI US-Ireland R&D Partnership Programme	A functional genomics pipeline for genetic discovery in diabetic kidney disease	University College Dublin	908,860
<b>Lewys Jones</b>	SFI US-Ireland R&D Partnership Programme	Antiferroelectricity, ferrielectricity and ferroelectricity in the archetypal antiferroelectric PbZrO3 at small scale	Trinity College Dublin	453,223
<b>Daniel Kilper</b>	SFI US-Ireland R&D Partnership Programme	Convergent Quantum Research Alliance in Telecommunications (CoQREATE)	Trinity Collge Dublin	918,070
<b>Patrick McGetrick</b>	SFI US-Ireland R&D Partnership Programme	ARISE: Assembly and robotics innovation in steel building erection	University of Galway	449,907

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Aoife Morrin</b>	SFI US-Ireland R&D Partnership Programme	Wearable dynamic microsystem sampler for collecting microbial volatiles (SkinSense)	Dublin City University	282,279
<b>John Ringwood</b>	SFI US-Ireland R&D Partnership Programme	LEAP HI: US-Ireland R&D Partnership - Control co-design for ocean wave energy conversion	Maynooth University	452,251
<b>Brian Rodriguez</b>	SFI US-Ireland R&D Partnership Programme	Processing-driven nucleation mediated control for manufacturing of phase-pure ferroelectric hafnia	University College Dublin	385,548
<b>Jagdish Vij</b>	SFI US-Ireland R&D Partnership Programme	Structure-property relationships of new polar liquid crystalline phases through synthesis and characterisation using a range of analytical techniques	Trinity College Dublin	451,737
<b>Adrian Lynch</b>	SFI/RTÉ Joint Initiative	SFI/RTÉ Grant support Initiative	RTÉ	585,000
<b>Brian McStay</b>	SFI-HRB-Wellcome Trust Biomedical Research Partnership - Investigator Award	Human acrocentric chromosomes, nucleolar formation and rDNA genomic stability	Health Research Board	305,002
<b>Andrey Shkoporov</b>	SFI-HRB-Wellcome Trust Biomedical Research Partnership - Research Career Development Fellowship	crAssphages: The most abundant viruses in human gut	Health Research Board	56,883
<b>Chandra Bellasio</b>	SFI-IRC Pathway Programme	Photosynthetic metabolite exchange (PHOMEX)	University College Dublin	548,900
<b>Elaine Corbett</b>	SFI-IRC Pathway Programme	A new human-computer interface for assessing neuromuscular-cognitive interactions in decision making	University College Dublin	548,186
<b>Loanda Cumba</b>	SFI-IRC Pathway Programme	MultiMAT: Development of functional 3D printable advanced (bio)inks	Dublin City University	547,406
<b>Sigrid Dupan</b>	SFI-IRC Pathway Programme	Sensory feedback for upper limb prosthetics	University College Dublin	543,474
<b>Daniela Freitas</b>	SFI-IRC Pathway Programme	Farm-to-Gut: A game-changer project to identify super Irish oats	Teagasc	552,499
<b>Tom Hodgkinson</b>	SFI-IRC Pathway Programme	Regeneration of articular cartilage through biomaterial-controlled in situ cell reprogramming to recover youthful epigenetic information	Royal College of Surgeons in Ireland	552,140

SFI Awardee	Programmes	Project Title	Research Body	Total Value of Award including Overheads €
<b>Linda Katona</b>	SFI-IRC Pathway Programme	Functional circuit mapping of gut-vagal influence in the brain	University College Cork	543,983
<b>Joshka Kaufmann</b>	SFI-IRC Pathway Programme	Contemporary evolutionary dynamics of Atlantic salmon and their scope for adaptation to multiple anthropogenic stressors including climate change	Marine Institute	551,600
<b>Patrick Kavanagh</b>	SFI-IRC Pathway Programme	Probing the evolution of cosmic dust in the iconic supernova SN1987A and extragalactic young stellar objects with the James Webb Space Telescope	Dublin Institute for Advanced Studies	549,198
<b>David G. Madden</b>	SFI-IRC Pathway Programme	SYNAPTICS: Automated nanoparticle synthesis via process analytical technology driven pathways	University of Limerick	551,300
<b>David McNulty</b>	SFI-IRC Pathway Programme	ALTERNATE: Advanced lithium-sulfur batteries as a beyond lithium-ion energy storage technology	University of Limerick	549,252
<b>Dania Movia</b>	SFI-IRC Pathway Programme	Extracellular vesicles in non-small-cell lung cancer: Finding allies among the enemies	Trinity College Dublin	551,630
<b>Yvonne Ryan</b>	SFI-IRC Pathway Programme	Understanding mercury in Ireland and working towards net zero: Developing a metabolic inventory of mercury added products and mercury containing wastes in the built environment (BE-MAP)	University of Limerick	434,550
<b>Anton Walsh</b>	SFI-IRC Pathway Programme	Infrared laser sensing for Irish agricultural emissions (IRLS-AGRE)	Munster Technological University	542,150
<b>Tiziana Margaria</b>	SFI Strategic Partnership Programme	R@ISE: Research at ISE - Immersive Software Engineering	University of Limerick	2,301,747
<b>Sub-Total</b>				<b>144,233,503</b>

## Co-funded Awards 2022

SFI Awardee	Programmes	Project Title	Co-Funder	Total Value of Co-Fund €
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### Co-funded SFI Discover Awards

<b>Ann Butler</b>	SFI Discover	It's Our Planet	Department of Education	-79,265
<b>Nina Bresnihan</b>	SFI Discover	OurKidsCode: Establishing and sustaining family creative-coding clubs across Ireland	Department of Education	-149,569
<b>Joanne Dolan</b>	SFI Discover	Teen-Turn	Department of Education	-25,000
<b>Walter Kolch</b>	SFI Discover	CuriosiTY: Broadening participation in a Transition Year STEM placement programme	Department of Education	-72,013
<b>Patricia Maguire</b>	SFI Discover	Little Big Questions	Department of Education	-25,254
<b>Maria Isabel Meza Silva</b>	SFI Discover	Taiscéalaí: 3D Printing Education for Primary Schools	Department of Education	-24,996
<b>Eilish McLoughlin</b>	SFI Discover	STEM Teacher Internship (STInt) Programme	Department of Education	-149,995
<b>Pamela O'Brien</b>	SFI Discover	Exploring the Sustainable Development Goals through Coding	Department of Education	-24,970
<b>Katriona O'Sullivan</b>	SFI Discover	All-Ireland STEM Passport for Inclusion	Department of Education	-299,888
<b>David Williams</b>	SFI Discover	LightUp Your World Workshop Series	Department of Education	-18,525

### Co-funded Frontiers for the Future Awards

<b>Koen Verbruggen</b>	Frontiers for the Future	Signal tracking to unveil Arctic climate variability	Geological Survey of Ireland	-308,148
<b>Koen Verbruggen</b>	Frontiers for the Future	Geologic perspectives on abrupt climate change (GeoPAC2): Strengthening Ireland's capacity for projecting future change	Geological Survey of Ireland	-291,869
<b>William Walsh</b>	Frontiers for the Future	Nano2H2: Nano-electrocatalysts for sustainable hydrogen production from bio-resources	Sustainable Energy Authority of Ireland	-500,000

### Co-funded Future Innovator Prize Awards

<b>Tobi Eniolu Morakinyo</b>	Future Innovator Prize	HEAT-ADAPT: Enhancing HEAT ADAPTive capacity in Africa's informal settlements with nature-based solutions	Department of Foreign Affairs and Trade	-86,839
<b>Quan Le</b>	Future Innovator Prize	AI Solutions for Mangrove Blue Carbon in Vietnam	Department of Foreign Affairs and Trade	-168,133

SFI Awardee	Programmes	Project Title	Co-Funder	Total Value of Co-Fund €
<b>Kevin McGuigan</b>	Future Innovator Prize	The SurgeWater Project: Supporting climate-resilient health facilities in Malawi through sustainable access to water using solar disinfection of harvested rainwater	Department of Foreign Affairs and Trade	-141,623
<b>Aonghus McNabola</b>	Future Innovator Prize	Recycling wastewater heat in meat production/preparation in Zambia: Technology and process development, and societal impacts (REHEATZ)	Department of Foreign Affairs and Trade	-151,130
<b>Liana Ricci</b>	Future Innovator Prize	Water management through ecohydrology for climate change adaptation in Dar-es-Salaam, Tanzania (WECOAdapt)	Department of Foreign Affairs and Trade	-178,275
<b>Annmarie Ryan</b>	Future Innovator Prize	The future of data driven agriculture in Uganda: A design-led approach to building climate resilient futures with marginalised smallholder farmers	Department of Foreign Affairs and Trade	-174,000

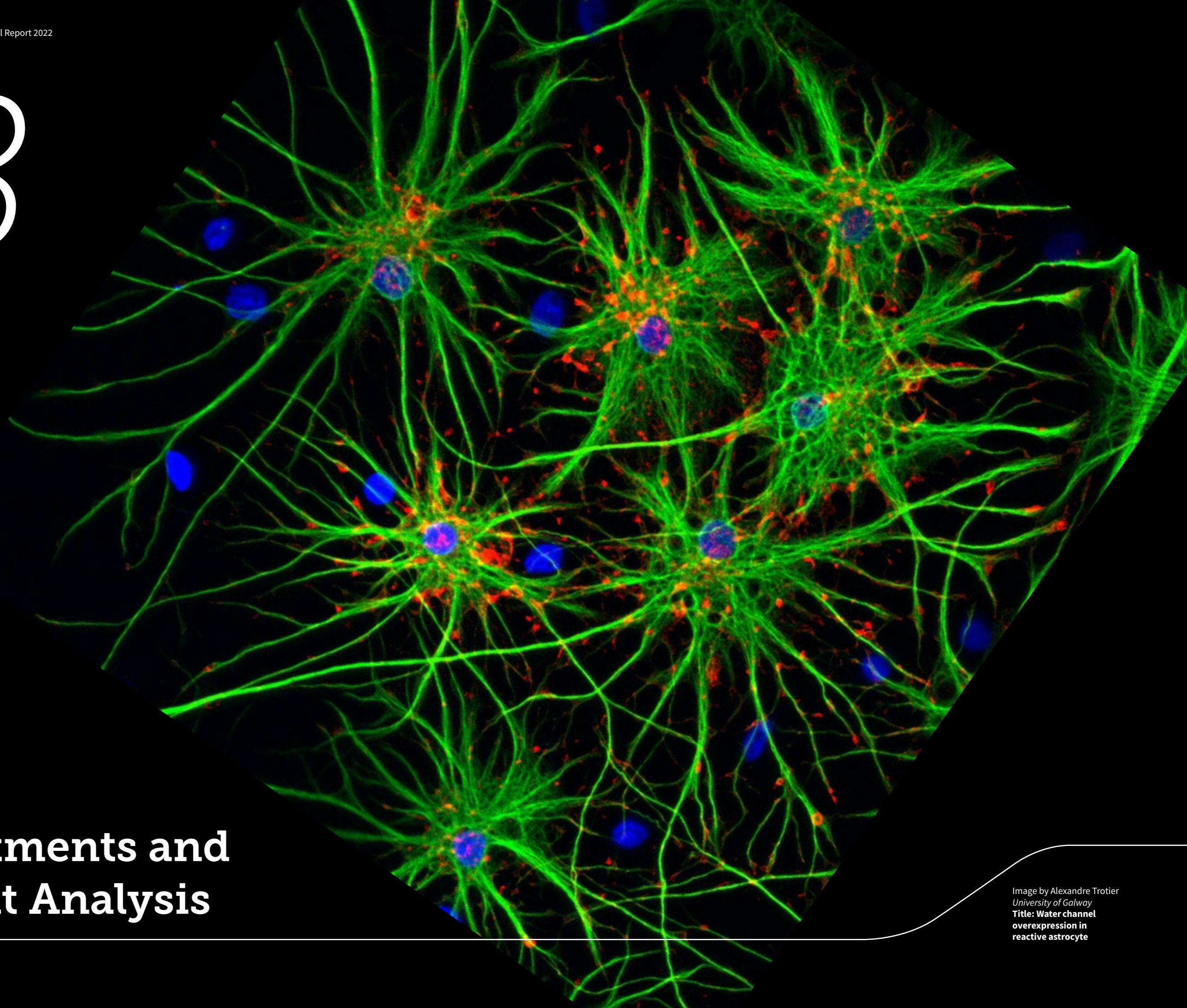
### Co-funded US Ireland R&D Partnership Programme Awards

<b>Catherine Godson</b>	US-Irl R&D Partnership	A functional genomics pipeline for genetic discovery in diabetic kidney disease	Health Research Board	-454,430
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**Total Co-funded** -3,323,921

**Net Total Commitments** 140,909,582

# 13



## Grant Commitments and Payment Analysis

Image by Alexandre Trotier  
University of Galway  
Title: Water channel  
overexpression in  
reactive astrocyte

# Grant Commitments and Payments Analysis 2022

## 2022 Payments by Institution

2022 Payments by Institution	€
Trinity College Dublin	47,969,505
University College Dublin	35,474,705
University of Galway	30,283,587
University College Cork	27,660,267
University of Limerick	21,692,899
Tyndall National Institute	9,975,885
Royal College of Surgeons in Ireland	7,066,202
Teagasc	6,181,380
Maynooth University	6,103,001
Dublin City University	5,714,904
Technological University Dublin	5,091,516
The Royal Society - Grant	3,683,222
South East Technological University	2,123,997
Dublin Institute for Advanced Studies	1,401,209
Munster Technological University	1,245,040
Atlantic Technological University	1,194,503
RTÉ	793,000
Dundalk Institute of Technology	523,179
Marine Institute	367,811
National Youth Council of Ireland	325,618
Health Research Board	295,964
The National Institute for Bioprocessing Research and Training	249,010
Stop.watch Television Ltd.	242,068
Cork City Council t/a Lifetime Lab	152,450
The Institution of Engineering and Technology	147,933
Kinia	131,500
Junior Achievement Ireland Ltd.	83,080
Kite Entertainment	79,400
The Festival of Curiosity Ltd.	60,800
Technological University of the Shannon	50,384
Teen-Turn	50,000
Dun Laoghaire Institute of Art, Design & Technology	47,114
National College of Ireland	45,000
SDC South Dublin County Partnership	45,000
Irish Manufacturing Research	44,993
Airfield Estate	44,937

2022 Payments by Institution	€
The Digital Hub	43,258
The National Concert Hall	35,010
Royal Dublin Society	35,000
Circus250 CIC	32,539
Louth County Council	32,300
Glenosheen Ltd.	30,000
Monaghan County Council	30,000
The Institution of Engineers of Ireland	30,000
Greywood Arts CLG	27,450
Atlantic Corridor	27,250
Mayo County Council t/a Mayo Science & Technology Festival	26,500
Whipsmart Media Ltd.	25,600
National Botanic Gardens of Ireland (OPW)	25,106
The Birr Scientific and Heritage Foundation	25,100
Galway Science & Technology Forum	24,500
Schweppes Curtis Nunn Ltd.	17,500
Gaiety School of Acting	8,000
Niamh Shaw Ltd.	7,780
Ballyhoura Development Ltd.	7,635
Institut NeuroMyoGène-Unité de Pysiopathologie et Génétique du Neurone et du Muscle	7,200
Photo Museum Ireland	7,092
British Council Ireland	5,750
Learning Hub Limerick Ltd.	5,000
Gallomanor Communications Ltd.	3,800
Designer Minds Educational Services Ltd.	800
Kildare County Council	800
STEAM Education Ltd.	800
The Children's Cultural Centre Limited t/a The Ark	800
Mary Immaculate College	784
South Dublin County Council	352
Feilte Dhuibh Linne Teoranta t/a St Patrick's Day Festival	-19,927
Sustainable Energy Authority of Ireland*	-75,000
Environmental Protection Agency*	-318,430
Geological Survey of Ireland*	-584,980
Department of Education*	-869,475
Department of Foreign Affairs and Trade*	-900,000
Department of Agriculture, Food and the Marine*	-980,957
<b>Grand Total</b>	<b>213,416,000</b>

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



# Grant Commitments and Payments Analysis 2022

## 2022 Payments by Programme

2022 Payments by Programme	€
SFI Research Centres	84,829,739
Frontiers for the Future	30,822,705
Research Infrastructure	18,038,434
SFI Centres for Research Training	12,135,924
Research Professorship	9,133,776
EPSRC-SFI Centres for Doctoral Training (CDT) Partnership	6,623,392
SFI Future Innovator Prize	6,382,527
Investigator Programme	5,734,467
National Challenge Fund	5,652,482
SFI Strategic Partnership Programme	4,666,729
SFI Discover	3,873,729
Royal Society-SFI University Research Fellowship	3,683,222
US-Ireland	3,428,141
Starting Investigator Research Grant	3,126,356
President of Ireland Future Research Leaders	3,034,154
SFI-IRC Pathway Programme	2,363,805
SFI Spokes Programme	2,341,740
Joint Programming Initiatives	1,439,072
EPSRC-SFI Joint Funding of Research	1,404,067
Career Development Award	757,184
SFI Maternity/Adoptive Leave Allowance	646,086
Adoptive Leave Allowance: EU Co-Funding Initiatives	646,073
SFI-HRB-Wellcome Trust Biomedical Research Partnership	604,359
Science Week	590,672
SFI Fellowship	417,010
SFI Industry RD&I Fellowship Programme	369,190
SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	305,023
BBSRC-SFI Joint Funding	198,590
ERC Support	172,940
ERC Development	166,909
COVID-RRC	110,485
Public Service Fellowship Programme	91,109
Industry Fellowship	68,374
President of Ireland Young Researcher Award	35,000
TIDA	-26,054
SFI Science Policy Research Programme	-33,814
<b>Total</b>	<b>213,416,000</b>

# Grant Commitments and Payments Analysis 2022

## 2022 Grant Commitments by Programme

Programme	€
Frontiers for the Future	61,179,573
Research Infrastructure	18,051,618
Research Professorship	11,359,540
SFI Future Innovator Prize	8,840,098
SFI-IRC Pathway Programme	7,566,268
National Challenge Fund	7,065,603
Royal Society University Research Fellowship	7,036,225
SFI Discover	6,419,970
SFI US-Ireland R&D Partnership Programme	6,130,297
SFI Strategic Partnership Programme	2,301,747
EPSRC-SFI Joint Funding of Research	996,082
SFI Fellowship	835,825
SFI Maternity / Adoptive Allowance	646,050
Science Week	637,256
SFI Industry RD&I Fellowship Programme	495,698
SFI COVID-19 Rapid Response Funding Programme	380,864
SFI-HRB-Wellcome Trust Biomedical Research Partnership	361,885
SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	305,023
EU Co-funding Initiatives	299,963
<b>Total</b>	<b>140,909,585</b>

# Grant Commitments and Payments Analysis 2022

## 2022 Number of Awards by Programme

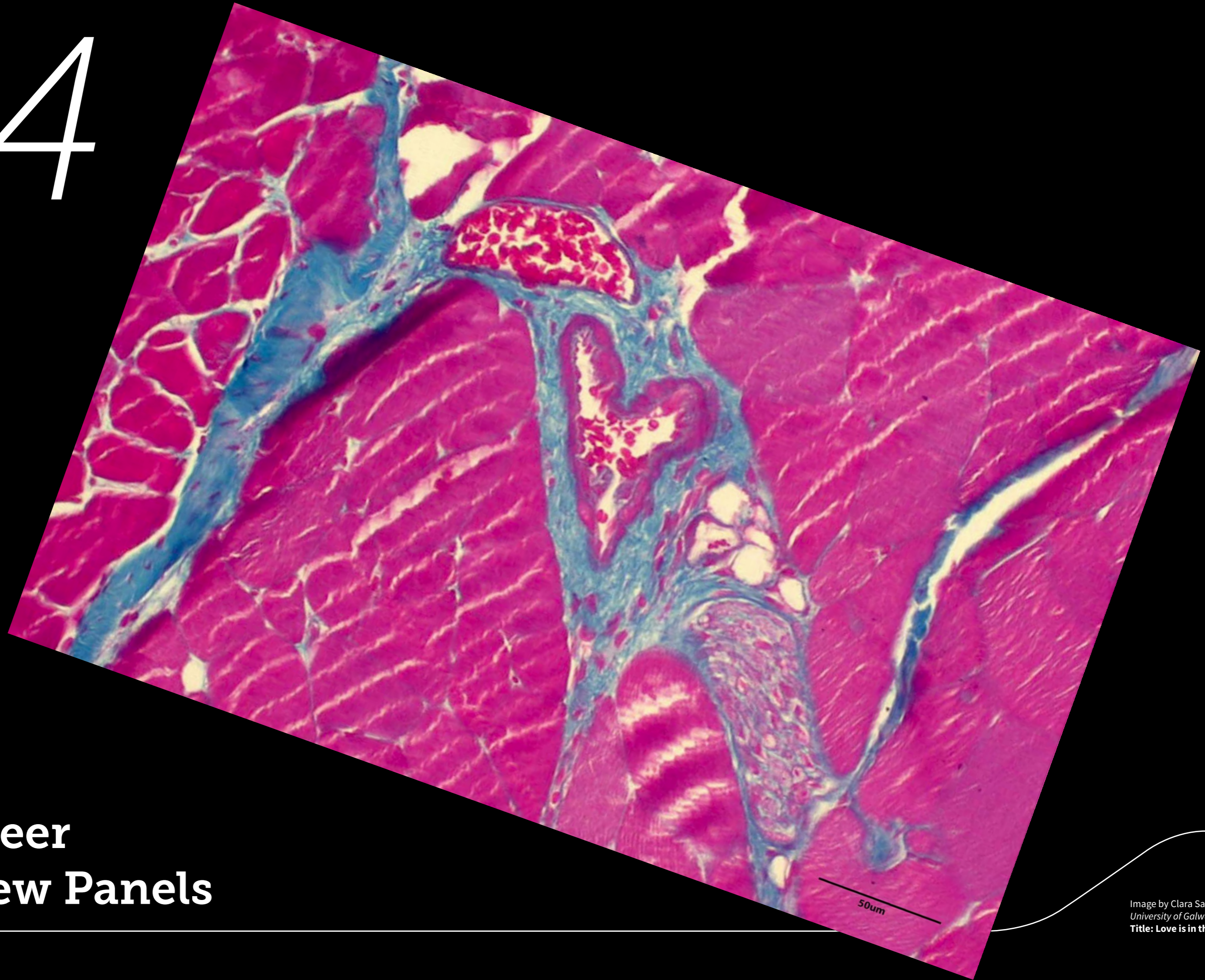
Programme	No. of Awards
Frontiers for the Future	79
SFI Discover	43
Science Week	31
National Challenge Fund	26
SFI Maternity / Adoptive Allowance	25
Royal Society University Research Fellowship	22
SFI-IRC Pathway Programme	14
Research Infrastructure	13
SFI US-Ireland R&D Partnership Programme	12
SFI Future Innovator Prize	12
SFI Rapid Response Supplemental Grant for Displaced Researchers - Ukraine	8
SFI Industry RD&I Fellowship Programme	6
SFI Fellowship	5
EPSRC-SFI Joint Funding of Research	2
Research Professorship	2
SFI-HRB-Wellcome Trust Biomedical Research Partnership	2
EU Co-funding Initiatives	1
SFI COVID-19 Rapid Response Funding Programme	1
SFI Strategic Partnership Programme	1
<b>Total</b>	<b>305</b>

# Grant Commitments and Payments Analysis 2022

## 2022 Number of Awards by Institution

Institution	No. of Awards	Institution	No. of Awards
University College Dublin	48	Galway Science and Technology Forum	1
Trinity College Dublin	44	Glenosheen Ltd.	1
The Royal Society	22	Greywood Arts CLG	1
University of Galway	21	Institut NeuroMyoGène- Unité de Pysiopathologie et Génétique du Neurone et du Muscle	1
University College Cork	19	Irish Manufacturing Research	1
University of Limerick	17	Junior Achievement Ireland Ltd.	1
Maynooth University	15	Kinia	1
Dublin City University	14	Louth County Council	1
Royal College of Surgeons in Ireland	13	Marine Institute	1
Technological University Dublin	12	Mayo County Council t/a Mayo Science and Technology Festival	1
Munster Technological University	9	Monaghan County Council	1
Atlantic Technological University	8	National Botanic Gardens of Ireland	1
South East Technological University	7	National College of Ireland	1
Teagasc	7	Niamh Shaw Ltd.	1
Tyndall National Institute	7	Photo Museum Ireland	1
Dundalk Institute of Technology	3	RTÉ	1
Health Research Board	2	SDC South Dublin County Partnership	1
Circus250 CIC	2	Stop.watch Television Ltd.	1
Dublin Institute for Advanced Studies	2	Teen-Turn	1
National Youth Council of Ireland	2	The Digital Hub	1
Technological University of the Shannon	2	The Institution of Engineering and Technology	1
Airfield Estate	1	The National Concert Hall	1
Atlantic Corridor	1	The National Institute for Bioprocessing Research and Training	1
Ballyhoura Development Ltd.	1		
Cork City Council t/a Lifetime Lab	1	<b>Total</b>	<b>305</b>
Dún Laoghaire Institute of Art, Design and Technology	1		
Gaiety School of Acting	1		

# 14



## SFI Peer Review Panels

Image by Clara Sanz Nogués  
University of Galway  
Title: Love is in the...arteries

## SFI Peer Review Panels

Below is a consolidated alphabetised list of the international reviewers who participated in Review Panels and Sitting Panels in 2022, 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
Aceto, Nicola	ETH Zurich
Adamchuk, Viacheslav	McGill University
Adcock, Thomas	University of Oxford
Agami, Reuven	Netherlands Cancer Institute
Alvarez-Lorenzo, Carmen	Universidade de Santiago de Compostela
Ameneiro, Senén Barro	Universidade de Santiago de Compostela
Angelidaki, Irini	DTU Risø Campus
Atature, Mete	University of Cambridge
Attallah, Moataz	University of Birmingham
Atzori, Luigi	University of Cagliari
Aurbach, Elyse	University of Michigan
Ball, Graham	Nottingham Trent University
Barata, Jose	Universidade de Lisboa
Barber, David	University College London
Bargelloni, Luca	Università di Padova
Bartels, Dorothea	University of Bonn
Baulac, Stéphanie	UPMC Sorbonne Universités
Baumeister, Ralf	University of Freiburg
Becker, Albert	University of Bonn
Beenakker, Carlo	Leiden University
Ben-Menachem, Elinor	University of Gothenberg
Bensch, Wolfgang	University of Kiel
Bentley, Alison	International Maize and Wheat Improvement Center
Bettger, Janet Prvu	Duke University
Bilardo, Caterina Maddalena	Amsterdam University Medical Centres
Binder, Wolfgang	Martin Luther University Halle-Wittenberg
Bitter, Harry	Wageningen University
Bolzonella, David	University of Verona
Boni, Valentina	START Madrid - Center for Cancer Care
Borri, Paola	Cardiff University
Boucaud, Philippe	CRHEA-CNRS
Boudoux, Caroline	Polytechnique Montréal
Boulatov, Roman	University of Liverpool
Boyton, Rosemary Jane	Imperial College London
Breckon, Toby	Durham University

Reviewer Name	Organisation
Brown, Steve	Swansea University
Brummer, Robert	Orebro University
Buee, Luc	INSERM Centre de recherche Jean-Pierre Aubert
Bull, David	University of Bristol
Bungartz, Hans-Joachim	Technical University of Munich
Burdet, Etienne	Imperial College London
Burkard, Guido	Universität Konstanz
Cameron, Duncan	University of Sheffield
Carrozza, Maria Chiara	Sant'Anna School of Advanced Studies
Cerchiello, Paola	University of Pavia
Chambers, Rachel	University College London
Chan, Agnes	Northeastern University
Chhowalla, Manish	University of Cambridge
Christensen, Heidi	University of Sheffield
Christlieb, Martin	University of Oxford
Clifford, Gari	Emory University
Coffey, Tracey	University of Nottingham
Corchado, Juan	Universidad de Salamanca
Corne, David	Heriot-Watt University
Corstanje, Ronald	Cranfield University
Cowburn, Russell	University of Cambridge
da Ascensão Reis, Maria	Universidade Nova de Lisboa
Dasgupta, Shoumita	Boston University
Dean, Lewis	Research Councils UK
Dechant, Georg	Innsbruck Medical University
Diggie, Peter	Lancaster University
Driessen, Arnold	University of Groningen
Esler, Karen	Stellenbosch University
Faaïj, André	TNO
Fatemi, Ali	University of Memphis
Featherstone, Helen	University of Bath
Feng, Liang	University of Pennsylvania
Finkelstein, Noah	University of Colorado Boulder
Frey, Sándor	Konkoly Observatory, Research Centre for Astronomy and Earth Sciences
Gardner, Peter	The University of Manchester
Gilbert, Clare	London School of Hygiene and Tropical Medicine
Gilbert, Nick	The University of Edinburgh
Govindan, Kannan	Universidad de Salamanca
Grammatikos, Sotirios	Norwegian University of Science and Technology
Greensmith, Linda	University College London
Hackenberger, Christian	Humboldt Universität zu Berlin
Harnett, William	University of Strathclyde
Harrison, Sandy P.	University of Reading
Hayward, Vincent	Sorbonne University
Heinzle, Elmar	Universitätskliniken des Saarlandes

Reviewer Name	Organisation
Higgins, Rosemary	Florida Gulf Coast University
Hilbeck, Angelika	ETH Zurich
Hodivala-Dilke, Kairbaan	Queen Mary University of London
Hofman, Jan	University of Bath
Hofmann-Apitius, Martin	Bonn-Aachen International Center for Information Technology
Hussell, Tracy	The University of Manchester
Hussey, Martin	Enterprise Ireland
Ierapetritou, Marianthi	University of Delaware
Illingworth, Sam	Edinburgh Napier University
Irvine, John	University of St Andrews
Jamieson, Lisa	Lisa Jamieson Inc
Jenner, Richard	University College London
Jokerst, Nan Marie	Duke University
Jones, Matt	Swansea University
Jonsson, Ann-Beth	Stockholm University
Joselevich, Ernesto	Weizmann Institute of Science
Joy West, Jennifer	Norwegian University of Life Sciences
Kalergis, Alexis	Pontifical Catholic University of Chile
Kelly, Tom	Enterprise Ireland
Kennedy, Richard B.	Mayo Clinic
Kiernan, Chantelle	IDA Ireland
Klinkert, Annette	city2science GmbH
Koh, Lenny	University of Sheffield
Koistinaho, Jari	University of Helsinki
Kozlova, Olga	University of Strathclyde
Kumara, Soundar	Penn State College
Kyprianou, Andreas	University of Bath
Ladani, Leila	Arizona State University
Lanz, Minna	Tampere University of Technology
Lapenta, Giovanni	Katholieke Universiteit Leuven
Le Vay, Lewis	Bangor University
Leach, Matthew	University of Surrey
Lechuga, Laura M.	Catalan Institute of Nanoscience and Nanotechnology
Li, Jia	The Pennsylvania State University
Li, Xiaohong	University of Exeter
Liang, Han	The University of Texas MD Anderson Cancer Center
Lin, Ming	University of Maryland
Liserre, Marco	University of Kiel
Little, David	University of Stirling
Livingstone-Banks, Michaela	University of Oxford
Lopez Vincete, Patricia	Private Enterprise
Loreau, Michel	Centre National de la Recherche Scientifique
Lucini, Biagio	Swansea University
Luck, Michael	King's College London
Lund, Mogens Sandø	Aarhus University

Reviewer Name	Organisation
MacKay, Robert	Warwick University
Mantovani, Diego	Université Laval
Maroto-Valer, Mercedes	Heriot-Watt University
Mason, Deborah	Cardiff University
Mayas, Rabiah	Museum of Science and Industry
McShane, Eithne	Enterprise Ireland
Meacham, Stephen	National Science Foundation
Menon, Vinod	City College of New York
Meredith, Paul	Swansea University
Millar, Kate	University of Nottingham
Miralles, Daniel Julio	University of Buenos Aires
Mohney, Suzanne	The Pennsylvania State University
Mohrdiek, Stefan	Centre Suisse d'Electronique et de Microtechnique
Mulle, Jennifer G.	Rutgers University - The State University of New Jersey
Ni Cleirigh, Ellen	Enterprise Ireland
Nieminen, Risto	Aalto University
Nikiema, Josiane	Université du Québec à Montréal
Nikolakopoulos, George	Luleå University of Technology
Nind, Melanie	University of Southampton
Olsson, Eva	Chalmers University of Technology
Özel, Tuğrul	Rutgers University - The State University of New Jersey
Peeling, Rosanna	London School of Hygiene and Tropical Medicine
Pérez-Neira, Ana Isabel	UPC Barcelona
Pilu, Maurizio	Digital Catapult Centre
Popovich, Philip G.	Ohio State University
Popovski, Petar	Aalborg University
Quilliam, Richard	University of Stirling
Raja, Anita	City University of New York
Ramirez, Andrea	Delft University of Technology
Ratynskaia, Svetlana	KTH - Royal Institute of Technology
Rinaldi, Rosaria	University of Salento
Roche, Stephan	Catalan Institute of Nanoscience and Nanotechnology
Rosen, David	Georgia Institute of Technology
Ruan, Roger	University of Minnesota
Rumpel, Cornelia	Centre National de la Recherche Scientifique
Russell, Wendy	University of Aberdeen
Sacco, Pasqualina	Fraunhofer Italia
Schneider, Christian	Vesalius Biocapital
Schulze-Osthoff, Klaus	University of Tübingen
Schwarzer, Christoph	Innsbruck Medical University
Sigurdsson, Einar	NYU School of Medicine
Singh, Shiva	University of Western Ontario
Skouby, Knud Erik	Aalborg University
Sobel, Peter	The Optical Society
Soreq, Hermona S.	The Hebrew University of Jerusalem

Reviewer Name	Organisation
Sorrell, Steven	University of Sussex
Sousa, Elvino S.	University of Toronto
Teixeira, José António	Minho University
Temmer, Manuela	University of Graz
Terpenney, Janis	George Mason University
Thalmann, Daniel	École Polytechnique Fédérale de Lausanne
Thrän, Daniela	Helmholtz Centre for Environmental Research
Trancoso, Isabel	Instituto Superior Técnico
Tripp, Ralph	University of Georgia
Trost, Matthias	Newcastle University
Turitsyn, Sergei	Aston University
Turpen, Chandra	University of Maryland
Uhlemann, Elisabeth	Mälardalen University
Vassalos, Dracos	University of Strathclyde
Waddington, Rachel	Cardiff University
Wallace, Robin	The University of Edinburgh
Wang, Lihui	KTH - Royal Institute of Technology
Ward, Oonagh	Health Research Board
Watson, Steve P.	University of Birmingham
Wemaere, Alice	Environmental Protection Agency
Whelan, Mark	Enterprise Ireland
Wicke, Birka	Radboud University Nijmegen Medical Centre
Williams, Sylvain	McGill University
Wilson, Alan	The University of York
Wilson, Mark	University of Leeds
Wilson, Steven	University of Strathclyde
Xu, Heng	American University
Yazdanbakhsh, Maria	Leiden University Medical Center
Yeong, Wai Yee	Nanyang Technological University
Zadpoor, Amir	Delft University of Technology
Zwiggelaar, Reyer	Aberystwyth University



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