

# Annual Report and Accounts 2019



**Cover Image title:** Synthesised Nanoflowers

**SFI Research Image of the Year Winner 2019:** Dr Han Shao, Postdoctoral Researcher, Tyndall National Institute

This nickel foam supported cobalt phosphate nanoflake structure was synthesised via a simple hydrothermal method. The EDX image (without further doctoring) shows the distribution of different elements (red-Ni, purple-Co, blue-O, green-P) of cobalt phosphate microstructure. The nanoflake grew outward in different directions, forming a flower-like microstructure, which helps to enhance energy storage performance. With superior storage capacity and long life, the cobalt phosphate-based device can be employed in next-generation artificial cardiac pacemakers as a rechargeable energy source that will last for more than 15 years.



## Contents

|   |     |
|---|-----|
| Key Statistics 2019   | 2   |
| Chairperson's Statement                                       | 5   |
| Director General's Statement                                  | 7   |
| Year in Review  | 10  |
| Excellent Science   | 16  |
| Talent and Skills   | 19  |
| Global Footprint  | 26  |
| Driving Competitiveness                                       | 31  |
| Governance, Organisational Structure<br>and Statutory Notices | 42  |
| Annual Financial Statements                                   | 60  |
| Award Portfolio and New Awards                                | 86  |
| Grant Commitments and Payment Analysis                        | 88  |
| SFI Peer Review Panels  | 110 |

We believe that scientific knowledge and understanding benefit the whole of society and the economy – join the conversation online at

**#BelieveInScience**  
**@scienceirel**

### 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.

# Key Statistics 2019

## Excellent Science

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

**12<sup>th</sup>**

in global  
scientific  
ranking

**27**

of the most highly  
cited researchers  
in the world have  
been funded by  
SFI

Ireland ranks <sup>1</sup>...

**1<sup>st</sup>**

Immunology

**2<sup>nd</sup>**

Agricultural  
Sciences

**5<sup>th</sup>**

Neuroscience

**5<sup>th</sup>**

Material  
Sciences

**9<sup>th</sup>**

Molecular Biology  
and Genetics

**9<sup>th</sup>**

Microbiology

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

**1<sup>st</sup>**

In the world for  
knowledge diffusion

**3<sup>rd</sup>**

For knowledge  
impact

**5<sup>th</sup>**

For knowledge  
absorption

**12<sup>th</sup>**

Most innovative  
country



**4,936** publications  
reported

SFI-funded publications are **2.69** times more likely  
to be star publications than the global average<sup>3</sup>

## Talent & Skills

**39,840**

Jobs supported,  
directly and indirectly,  
in Ireland

**5,272**

People working  
on SFI-supported  
projects

**26%**

Increase in education  
and public engagement  
activities

**1,834**

Postgraduate  
students  
supported

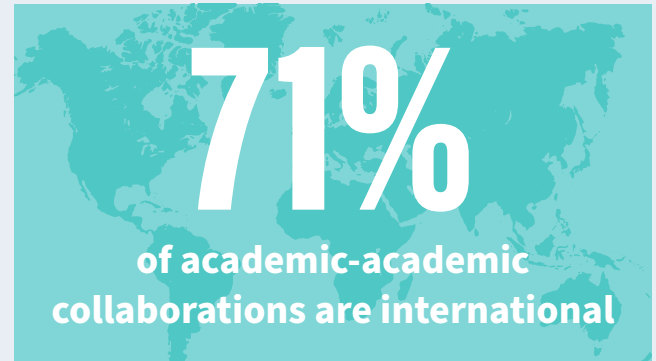
<sup>1</sup> InCites by Clarivate Analytics

<sup>2</sup> Global Innovation Index 2019

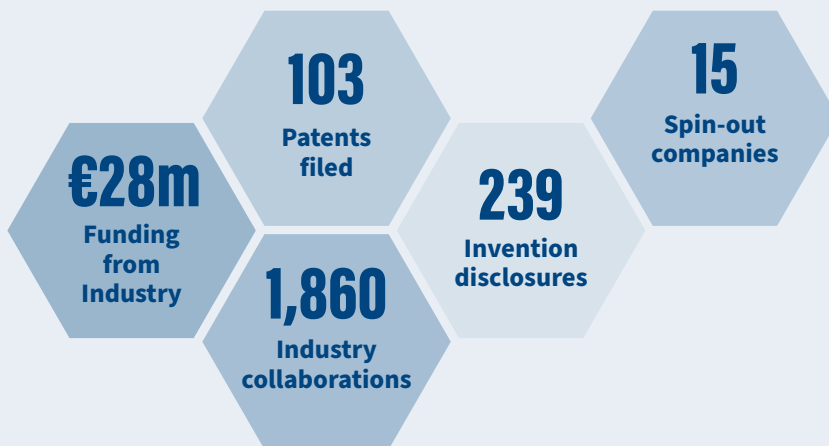
<sup>3</sup> Star publications are publications in the top 1% of most cited publications, globally

## Global Footprint

2,894 international collaborations in 75 countries



## Driving Competitiveness



## Value for money

From **€188 million**, SFI investments leverage:

**€223m** Total external funding

**€148m** Total non-exchequer funding

**€98m** won from the EU

**15** ERC awards won by SFI researchers

## Regional Development

**976**

Regional industry collaborations in Ireland

**539**

Collaborations with Multinationals (MNC)

**437**

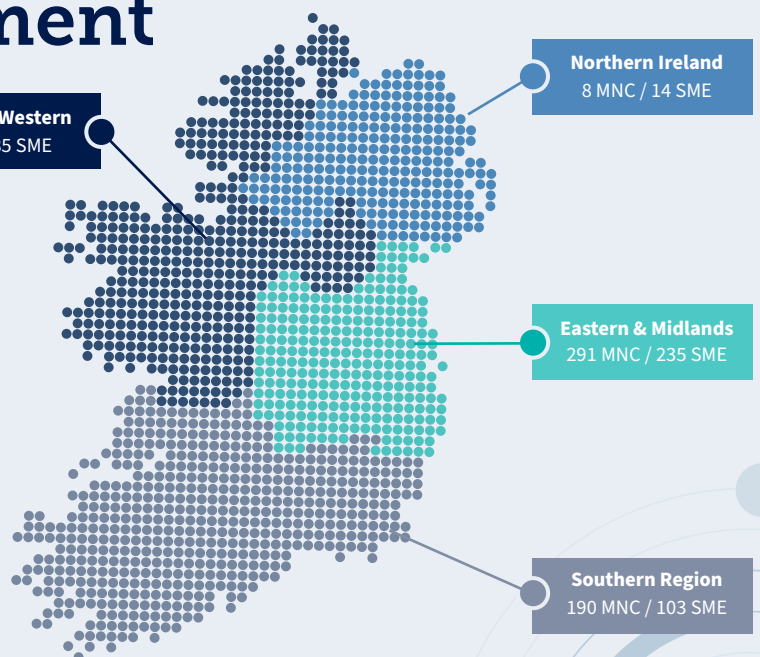
Collaborations with Small to Medium Enterprises (SME)

**Northern & Western**  
50 MNC / 85 SME

**Northern Ireland**  
8 MNC / 14 SME

**Eastern & Midlands**  
291 MNC / 235 SME

**Southern Region**  
190 MNC / 103 SME





## Driving Competitiveness

### SFI Research Centres

Six SFI Research Centres progressed to a second six-year research programme, following a rigorous international peer review process. As part of the commitments in Project Ireland 2040, this investment of **€230 million** will directly benefit approximately **850** researchers employed by the Centres, while also supporting the Government's Future Jobs Ireland initiative. The investment is also buoyed by industry support, with **170** industry partners committing to investing over **€230 million** in cash and in-kind contributions to support collaborative research with the Centres.



## Future Talent

### SFI Centres for Research Training

Six new SFI Centres for Research Training were established to provide for our future skills requirements by training **700** PhD students in digital, data and ICT skills. Collaborations involve **11** Higher Education Institutions and **90** industry partners coming together to develop innovation training programmes in the important fields of data analytics and its application to business, health, agriculture and many other sectors.



## Disruptive Innovation

### New Challenge-based Funding

The first SFI challenge-based funding programme was launched in 2019, with the establishment of the SFI Future Innovator Prize. Twelve multidisciplinary teams competed for a €1 million prize in a challenge to develop disruptive solutions to societal issues. Dr Alison Liddy and her project team at NUI Galway were awarded the prize for their Hydrobloc project, a novel and transformative treatment for people suffering from chronic pain.



## Excellent Science

### SFI Frontiers for the Future

In 2019, the SFI Frontiers for the Future programme was launched to provide opportunities for independent investigators to conduct highly innovative, collaborative research with the potential to deliver impact, whilst also providing opportunities for high-risk, high-reward research projects. The programme was significantly over subscribed with exceptional high-quality applications. It is being delivered in partnership with Geological Survey of Ireland (GSI) and the Environmental Protection Agency (EPA). Through the programme, SFI is committed to increasing the number of grants held by female researchers.



**Professor Peter Clinch,**  
Chair, Science Foundation Ireland

## Chairperson's Statement

Having taken up the role of Chairperson of the Board last August, I am pleased to write my first foreword to an annual report of the Agency. SFI's success, to date, is built on strong partnerships with researchers, higher-education institutions (HEIs), industry, and government. Most importantly, it relies on the generosity of the Irish people whose taxes are entrusted to SFI to support high-quality research, which underpins the medium-term productive capacity of the economy, and contributes solutions to many of the world's great challenges.

I am very heartened to see the exceptional achievements of the Irish research system over the last year. From an SFI investment of €188 million, researchers leveraged total external funding of €223 million. This supports activities across Ireland through 976 regional industry collaborations. The SFI Research Centre network continues to deliver excellent science in collaboration with its industry partners. Following a rigorous international review process, six SFI Research Centres progressed to a second six-year research programme, delivering on Government priorities outlined in Project Ireland 2040. The first SFI Challenge Fund was launched with the establishment of the SFI Future Innovator Prize. In this programme, twelve multidisciplinary teams competed throughout the year for the €1 million prize, in a challenge to develop disruptive solutions to societal issues.

A key priority for SFI is to support excellent talent in STEM to ensure a pipeline of individuals who will go on to build successful careers in academia or industry, and contribute to the growth and development of Ireland's economy and society. The launch of the SFI Frontiers for the Future programme saw strong interest, with exceptionally high-quality applications. The programme provides opportunities for independent investigators to conduct highly innovative, collaborative research, while also providing opportunities for high-risk, high-reward research projects. In addition, in response to Ireland's future skills requirements, and to target areas of growing opportunity, six new SFI Centres for Research Training were established to support 700 PhD students in key areas of data analytics and ICT.

Covid-19 has presented many challenges for Ireland and has also been challenging for SFI as an organisation. However, the crisis has provided the clearest example yet of why capacity building in research is essential. Our research community is at the forefront of the management of the crisis and SFI has brought together IDA Ireland and Enterprise Ireland and worked hand in glove with the Health Research Board (HRB) and Irish Research Council (IRC) in the Covid-19 Rapid Response Call. It is impressive to see the strong reputation of Irish research teams as they collaborate with the best global consortia.

Ireland's research capacity has been driven by increased investment by the State in Research and Development (R&D). However, this investment is below the European Union (EU) average and the commitment in Innovation 2020 to increase combined public and private R&D investment to 2.5% of GNP by 2020 has not been realised. This has resulted in there being more excellent research proposals than SFI, and our partner agencies, can fund. The challenge for SFI in the coming years is to work with government, our partner agencies, the HEIs, industry, and all of the research community, to ensure an appropriate level of investment in R&D so that the research community can deliver on addressing Ireland's economic and social challenges.

Finally, I would like to thank the research community, the HEIs, industry partners, my fellow Board members, and the exceptionally dedicated SFI staff for their hard work over the last 12 months. On behalf of the Board, thank you, in particular, to the staff of SFI for your flexibility, and adaptability, in responding to the Covid-19 crisis. Your work is helping us build a stronger Ireland.



**Prof Peter Clinch**

Chairperson, Science Foundation Ireland





**Professor Mark Ferguson,**  
Director General, Science Foundation Ireland  
(SFI)

## Director General's Statement

As detailed in this report, and summarised by the Chairperson, 2019 was another good year for science in Ireland. We delivered significant achievements, including the refunding of six SFI Research Centres following rigorous international peer review, and the establishment of the SFI Centres for Research Training. These will deliver over 700 new PhD graduates skilled in key areas like data analytics and artificial intelligence, which are in high demand by many employers. Both programmes involve collaboration and participation from leading researchers across all of Ireland's Higher Education Institutes and Industry, maximising efficiency and providing the best training and research experience. They also both involve significant co-funding from Industry and the EU, and international collaboration with global research leaders.

In 2019, we also saw the successful roll out of Challenge funding through the SFI Future Innovator Prize. Challenge funding is an important new instrument and the programme will be expanded in the future, with SFI as the lead national agency. The SFI Frontiers for the Future Programme provided a boost for individual-led research. It was designed to encourage more successful applications from female researchers and emerging investigators applying to SFI for the first time, as well as from established investigators.

### Agenda 2020

2019 was also the last year of SFI's strategy, Agenda 2020. Throughout the year we consulted widely and drafted our new strategy which will be launched in 2020. Here I summarise in table form some of the many achievements of Agenda 2020, by way of a comparison between the start (2012) and closing (2019) years.

|   | 2012 | 2019      |
|---|------|-----------|
| <b>Excellent Research</b>   |      |           |
| Global ranking  | 20   | 12        |
| Number of most highly cited researchers in the world                        | 5    | 27        |
| Star research professors and future research leaders recruited              | 41   | 73        |
| <b>Industry Competitiveness</b>   |      |           |
| SFI Research Centres  | 0    | 16        |
| Industry co-funding partnerships  | 0    | 21 (€32m) |
| Cumulative Industry collaborating companies cash co-funding public research | €8m  | €102.5m   |
| Industry collaborators  | 702  | 1,170     |
| Total Industry Fellowships  | 0    | 202       |

|  | 2012                  | 2019                  |
|--|-----------------------|-----------------------|
| <b>Talent and Skills</b>   |                       |                       |
| SFI-supported researchers  | 2,815                 | 5,272                 |
| Post graduate students supported   | 1,231                 | 1,834                 |
| Royal Society URF's (SFI funded)   | 0                     | 20                    |
| Total SFI St Patricks Day Science Medal Awardees                             | 0                     | 10                    |
| Female award holders   | 19%                   | 28%                   |
| <b>Global Footprint</b>  |                       |                       |
| International collaborations   | 1,821 in 60 countries | 2,894 in 75 countries |
| Cumulative joint funding with international agencies                         | €5.8m                 | €106.6m               |
| <b>Value for Money</b>   |                       |                       |
| Amount of funding in Euros leveraged   | €171m                 | €223m                 |
| Economic return to the economy for every €1 invested in SFI Research Centres | n/a                   | 5x                    |
| <b>Education and Public Engagement</b>                                       |                       |                       |
| Schools with SFI Discover Primary Science and Maths Awards                   | 421                   | 620                   |
| Viewers of SFI funded RTÉ programmes, e.g. Big Week on the Farm              | n/a                   | 1,967,000             |

Whilst we are proud of our achievements, both challenges and opportunities lie ahead.

## Challenges

Ireland's national strategy is to become an innovation leader, creating the best for our future by providing first rate education, growing indigenous companies, attracting inward investment and addressing societal challenges, such as climate change. All of this against a backdrop of intensifying global competition and unpredictable natural or political events. As has been clearly evident in managing both COVID-19 and Brexit, research and innovation are key - providing the ability to respond quickly and effectively, followed by pivoting to new opportunities.

Such resilience will be even more important in the future. The competitive advantage of investing in research and innovation has resulted in many countries significantly increasing their national research and innovation funding budgets. Ireland has focused on maximising efficiency - which has been successful - as evidenced by the Agenda 2020 table shown, and by Eurostat ranking Ireland as the most research and innovation efficient country in Europe.

We must build on our significant achievements and now help Ireland to prepare for its future. This can only be done through renewed investment. SFI looks forward to working with the incoming Government on an ambitious programme of investment in research and innovation. SFI's new strategy takes account of the broad range of economic and societal challenges where scientific research has a critical role to play. We look forward to working with all our partners to deliver on this strategy. It is clear that developing, attracting, growing and retaining talent is key for future prosperity.

At an agency level, SFI must maintain its current high international standards, whilst being agile, responsive, and innovative. Our COVID Rapid Response Call exemplified that, and the high level of inter-agency collaboration and efficiency must be mainstreamed in the future.

## Opportunities

The rapid pace of scientific discovery will create enormous opportunities for breakthrough innovations that will create new markets, grow economies and address future societal challenges, including managing and mitigating climate change. Ireland wants to be a leader in this new, better future. By continuing to grow our investment in research and innovation we will develop, attract, grow and retain the talent we need to become an even more competitive and attractive country in which companies will invest and grow, and people will want to live. The transformational technologies of digitalisation, automation, artificial intelligence, biotechnology and green technologies, can be embraced in responsible ways to create major new opportunities. Emerging technologies such as quantum, can be fostered so that Ireland can be an innovation leader and generate first mover advantage. Ireland can further develop its leadership and success in major European and international programmes. Whilst closer to home, major opportunities exist to expand collaborations with Northern Ireland to create an all island research ecosystem.

The achievements highlighted in this annual report illustrate both the great things that are happening now, and the potential for even greater results in the future. I remain hugely optimistic.

## Acknowledgments

The successes of 2019 are due in no small part to SFI's broad range of stakeholders: academia, industry and government. I would like to thank former Taoiseach Leo Varadkar TD, former Minister for Business, Enterprise and Innovation, Heather Humphreys TD, and former Minister of State for Training, Skills, Innovation, Research and Development, John Halligan TD, and the many elected representatives for their continued support throughout the year. I thank the Department of Business, Enterprise and Innovation, the many other government departments, state agencies and the Higher Education Institutes with whom we collaborate.

I thank our international and industry partners for their engagement and support in joint funding partnership programmes and awards. I thank our research community for their continued partnership, creativity and innovation. Finally, I thank and recognise all SFI employees and the SFI Board for their commitment and dedication to delivering SFI's goals and vision.



### **Prof Mark Ferguson**

Director General of Science Foundation Ireland and  
Chief Scientific Adviser to the Government of Ireland



2019

# A Year in Review



SFI SIRG awardees: Dr Cristina Trujillo (TCD), Dr Amanda Sosa-Avendano (UCD), Dr Fiona McDonald (UCC), Dr Sinead McParland (Teagasc), Dr Maria Prencipe (UCD), Dr Rebeca Garcia Lopez (DIAS).



Prof Peter Gallagher and Áine Flood from TCD at the launch of the SFI Discover Awards, representing the Astronomical Midlands: Engaging Rural Communities with the I-LOFAR project.

## January

- » [SFI invested in early-career research talent](#) with 20 awards in the areas of health, energy, environment, materials and technology under the SFI Starting Investigator Research Grant (SIRG) Programme.

## February

- » [A €39 million UK-Ireland](#) joint investment linking world-leading SFI Research Centres and UK Higher Education Institutions in seven new joint Centres for Doctoral Training was announced, to equip the next generation of doctoral level researchers across engineering and physical sciences.
- » [Researchers from AMBER](#), the SFI Research Centre for Advanced Materials and BioEngineering hosted at Trinity College Dublin (TCD), announced the development of a new material to improve the lifetime of batteries.
- » [SFI Research Professor](#), Prof Wenxin Wang, and his team at University College Dublin (UCD) published a breakthrough in the search for a cure for epidermolysis bullosa (EB), via the Branca Bunús spin out company.
- » [STEM education](#) and public engagement projects, including initiatives for under-represented groups, received funding through the SFI Discover Programme.



- » **SFI's first challenge-based funding programme** was announced with 12 multidisciplinary teams competing for the €1 million SFI Future Innovator Prize, to develop disruptive solutions to societal issues.
- » **The SFI-supported Low Frequency Array (LOFAR)** telescope, and UCD researchers, were part of a team that uncovered hundreds of thousands of previously unseen galaxies.



SFI Future Innovator Prize teams

## March

- » **The SFI St. Patrick's Day Science Medal** was awarded to leading gastroenterologist, Prof Eamonn Quigley, and Boston Scientific Chief Executive Officer, Mr Michael Mahoney.
- » **€100 million was invested** in six new SFI Centres for Research Training to train 700 students in areas of nationally and internationally identified future skills needs of digital, data and ICT.
- » **Cancer researchers at UCD** have led the development of a new epiCaPture test to detect prostate cancer.
- » **The CÚRAM SFI Research Centre for Medical Devices** hosted at National University of Ireland Galway (NUI Galway), announced participation in a €15 million European Union (EU) project to address chronic lower back pain.
- » **Engineers Week**, supported by the SFI Discover Programme, took place from the 2nd to 8th March across Ireland, to celebrate the world of engineering.
- » **A cross collaboration led by the MaREI SFI Research Centre for Energy, Climate and Marine**, hosted by University College Cork (UCC), saw the launch of Cork's first carbon neutral bus, delivering renewable fuel solutions for Irish transport.



Carbon neutral bus research collaboration in Cork.



The SFI Centre for Research Training in Advanced Networks for Sustainable Societies team is pictured with SFI Director and Chief Scientific Adviser to the Government of Ireland, Prof Mark Ferguson.





Dr Sarah Hayes, Education, Training and Public Engagement Manager with SSPC, the SFI Research Centre for Pharmaceuticals, is pictured at the announcement of an investment of €230 million in six SFI Research Centres.



Director General of SFI and Chief Scientific Adviser to the Government of Ireland, Prof Mark Ferguson, is pictured with the then European Commissioner for Research, Science and Innovation, Carlos Moedas.

## April

- » [Tech Week](#), supported by the SFI Discover Programme, took place across the country to spark an interest in technology and STEM careers.
- » [The AMBER SFI Research Centre](#) in collaboration with I-Form, the SFI Research Centre for Advanced Manufacturing, hosted at UCD, announced a breakthrough new material to address energy supply issues for the smart wearable market.

## May

- » [€230 million was invested](#) in six SFI Research Centres, supporting 850 researchers in the areas of photonics, marine renewable energy, gut health, data analytics, advanced pharmaceutical manufacturing and advanced materials. You can watch the video [here](#).

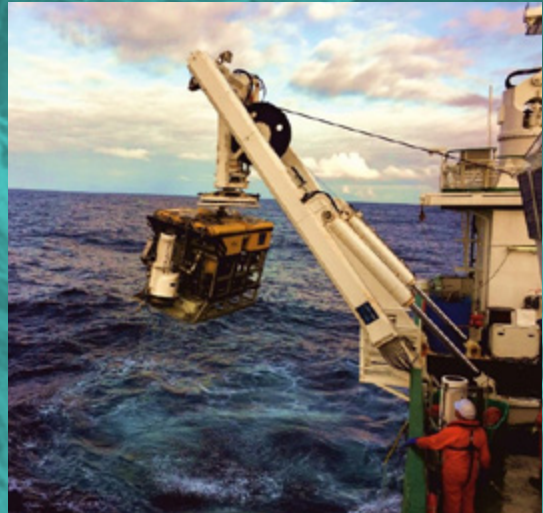
## June

- » SFI hosted the European Science Advisors Forum (ESAF) in TCD, to discuss the links between science, policy, society and politics. Key topics included big data, trustworthiness in communication and artificial intelligence (AI).
- » [An SFI-supported research collaboration](#) led to a Blood Cancer Network Ireland clinical trial and novel treatment for patients with Multiple Myeloma.
- » [Prof Mark Ferguson, Director General of Science Foundation Ireland](#) and Chief Scientific Adviser to the Government of Ireland, was appointed Chair of the new European Innovation Council (EIC) Advisory Board.



## July

- » [Four prestigious Royal Society-SFI University Research Fellowships](#) were announced in the areas of robotics, data storage, space science and next-generation microscopy.
- » SFI celebrated diversity and equality in STEM with an in-house event for #LGBTSTEMDay
- » [A University College Cork \(UCC\)](#) study supported by SFI, the Geological Survey Ireland (GSI) and the Marine Institute, discovered plastic at the bottom of a deep submarine canyon, following an expedition by the Marine Institute's RV Celtic Explorer.



The Marine Institute's Remotely Operated Vehicle (ROV) Holland 1 recovering a monitoring station. Photo courtesy of Zoe O'Hanlon and UCC

## August

- » [Prof Kevin O'Connor](#), Director of the BiOrbic Bioeconomy SFI Research Centre hosted at UCD, was named to the EU Horizon Europe Mission Board for Societal Transformation in Adaptation to Climate Change.
- » The MaREI SFI Research Centre for Energy, Climate and Marine, hosted at UCC, secured €1.6 million in EU funding for a climate change collaboration between Wales and Ireland, through a CCAT (Coastal Communities Adapting Together) project.



SFI staff celebrated diversity in STEM with a talk from Dr Shaun O'Boyle, Founder of House of STEM, and an organiser of #LGBTSTEMday.

## September

- » [An economic report from the ADAPT SFI Research Centre for Digital Media Technology](#), hosted by TCD, found artificial intelligence (AI) research has generated €300 million for the Irish economy.
- » [Researchers from the Insight SFI Research Centre for Data Analytics](#), based at Dublin City University (DCU), produced a prototype wristband to detect Irish Sign Language (ISL) and translate it into text and voice in real time.





Maths Week took place across the country from 12th – 20th October aiming to reach over 400,000 people.



Dr Siobhan Roche, SFI Director of Science for the Economy, and Prof Brian Fitzgerald, Director of the Lero SFI Research Centre hosted by UL, explore driverless car technology at UL. Image by Sean Curtin, True Media.

## October

- » [The SSPC SFI Research Centre for Pharmaceuticals](#), hosted by University Limerick (UL), announced research to investigate the creation of water from air.
- » [Maths Week Ireland](#), supported by the SFI Discover Programme, took place to improve appreciation of maths among the public.
- » [SFI announced a €4.2 million](#) SFI Spoke research collaboration between the Lero, Insight and CONNECT SFI Research Centres on driverless vehicles, partnering with 11 companies from the automotive, industrial and agricultural sectors.
- » [€25 million was invested in six projects](#) through the SFI Research Infrastructure Programme, as part of Future Jobs Ireland, to support research infrastructure across autonomous technologies, flow cytometry and gene analysis, medical imaging; cleanroom processing and metrology, ocean observing, and molecular analysis.



Dr Timothy McCarthy (Maynooth University) pictured with Minister Humphreys and SFI Deputy Director General, Dr Ciarán Seoighe. Prof McCarthy's National Autonomous Technologies Data Platform (NATDaP) will provide valuable open autonomous technology data via an SFI Infrastructure award.



## November

- » [The 2019 SFI Science Awards](#) were announced, recognising key leaders in the Irish research community.
- » [The SFI-commissioned](#) ‘Everything’ poem by Irish poet Stephen James Smith reflected on science and climate action for Science Week 2019.
- » [Science Week](#) took place from 10th to 17th November with a focus on climate action. A partnership with Coillte saw 30,000 trees planted nationwide.
- » Taoiseach Leo Varadkar TD, in collaboration with SFI, hosted a Science Week roundtable of scientists and experts researching areas impacted by climate change-related challenges, to explore new ways of reducing emissions and adapting to our changing climate.



Poet Stephen James Smith pictured at the 2019 SFI Science Summit.



Minister for Communications, Climate Action and the Environment, Richard Bruton TD, is pictured with Dr Ruth Freeman, Director of Science for Society, SFI and students from St. Laurence NS, Baldoye, photographed in Baldoye Community Gardens.

## December

- » [DCU, together with Met Éireann](#), launched an Irish Sign Language Environmental and Geography Glossary – a project funded under the SFI Discover Programme Call.
- » A new government-supported [SFI Smart Futures](#) campaign was launched nationwide to demonstrate the diversity of STEM careers to students in Ireland. You can watch the video [here](#).



# Excellent Science

Over the past number of years, SFI has transformed the funding of scientific research on a competitive basis in Ireland. SFI funds excellent research and innovation, developing research capacity and talent, supporting both national and international collaboration. Through the research we fund, we are working to positively impact society and the economy, and to address global challenges.

## 2019 Top 15 Country Rankings by Publication Quality (InCites Essential Science Indicators)

| Country-Territory | Rank |
|-------------------|------|
| ICELAND           | 1    |
| SWITZERLAND       | 2    |
| SCOTLAND          | 3    |
| NETHERLANDS       | 4    |
| SINGAPORE         | 5    |
| DENMARK           | 6    |
| WALES             | 7    |
| ESTONIA           | 8    |
| BELGIUM           | 9    |
| ENGLAND           | 10   |
| SWEDEN            | 11   |
| IRELAND           | 12   |
| USA               | 13   |
| NORTHERN IRELAND  | 14   |
| AUSTRIA           | 15   |

## Field Specific Rankings by Publication Quality

Ireland ranks<sup>4</sup>:

**1st** Immunology

**2nd** Agricultural Sciences

**5th** Materials Sciences

**5th** Neuroscience & Behaviour

**9th** Molecular Biology & Genetics

**9th** Microbiology

**14th** Biology and Biochemistry

**17th** Chemistry

**24th** Physics

**28th** Computer Science

<sup>4</sup> SFI's ranking statistics are gathered via InCites by Clarivate Analytics

## Publications and Citations

SFI's funded researchers continue to demonstrate the excellent science they are delivering with impact, with significant numbers of scientific publications and citations.



**4,936** publications were reported by SFI researchers in 2019

SFI-funded publications are 2.69 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 1.72.

| Country        | Funder                        | # Documents in Web of Science | Documents in the Top 1% |
|----------------|-------------------------------|-------------------------------|-------------------------|
| <b>Ireland</b> | <b>All</b>                    | <b>199,485</b>                | <b>1.72</b>             |
| Ireland        | Science Foundation Ireland    | 19,965                        | 2.69                    |
| USA            | All                           | 10,447,502                    | 1.79                    |
| USA            | National Science Foundation   | 621,562                       | 2.89                    |
| USA            | National Institutes of Health | 928,094                       | 2.84                    |
| Switzerland    | All                           | 622,371                       | 2.62                    |
| Denmark        | All                           | 347,909                       | 2.44                    |
| Singapore      | All                           | 259,256                       | 2.28                    |
| United Kingdom | All                           | 2,923,058                     | 1.85                    |
| Finland        | All                           | 267,927                       | 1.79                    |
| New Zealand    | All                           | 193,064                       | 1.82                    |
| Israel         | All                           | 313,277                       | 1.66                    |
| China          | All                           | 4,587,043                     | 1.13                    |
| EU             | All                           | 12,220,233                    | 1.25                    |
| EU             | European Research Council     | 85,960                        | 4.57                    |

Source: InCites by Clarivate Analytics





SFI Researcher of the Year and Director of the BiOrbic Bioeconomy SFI Research Centre at UCD, Prof Kevin O'Connor, pictured with SFI Director General and Chief Scientific Adviser to the Government of Ireland, Prof Mark Ferguson.

## SFI Researcher of the Year 2019

Prof Kevin O'Connor, Director of the BiOrbic Bioeconomy SFI Research Centre, hosted by UCD, was named 2019 SFI Researcher of the Year. This prestigious award recognises the accomplishments of an SFI funded researcher who has contributed significantly to the Irish research community and achieved exceptional scientific and engineering research outputs. Prof O'Connor's research is focused on growing and developing Ireland's [circular bioeconomy](#). He is shaping the European Bioeconomy Strategy through his chairing of the Scientific Committee for the Bio-based Industries Joint Undertaking (BBIJU), a €3.7 billion Public-Private Partnership.



#HighlyCited2019

## Web of Science: 2019 most highly cited

[A total of 29 researchers based in Ireland](#) have featured in the 2019 Highly Cited Researchers global list published by Clarivate Analytics, which recognises world-class researchers for their exceptional research performance, demonstrated by the production of multiple highly cited papers. **27 of these are researchers that are, or have been, funded by SFI.** Nine of which are from APC Microbiome Ireland SFI Research Centre. This list positions these researchers at the very highest levels of research influence and impact and includes 23 Nobel laureates.





Prof Valeria Nicolosi, Principal Investigator at AMBER, the SFI Research Centre for Advanced Materials and BioEngineering, TCD.

## Spotlight on Excellence

In 2019, Professor of Nanomaterials and Advanced Microscopy at TCD's School of Chemistry, Valeria Nicolosi, became Ireland's only six-time **European Research Council grant awardee**. Prof Nicolosi is also Principal Investigator at AMBER, the SFI Research Centre for Advanced Materials and BioEngineering, and at the I-Form Advanced Manufacturing SFI Research Centre.

Recently awarded her fourth European Research Council's (ERC) Proof of Concept grant, this tops up her ERC Consolidator grant from 2016, and ERC Starting grant in 2011, to bring her total research funding awarded in the last 10 years to over €20 million. Prof Nicolosi is exploring the commercial applications of her research into the manufacturing of inexpensive 3D printed, nanotechnology enabled, high-performance energy storage devices for the wearable technology sector.

Throughout 2019, Prof Nicolosi and her team had multiple discoveries on battery materials, published in Nature Communications, including a breakthrough in ultra-thin nanomaterials that can triple storage capacity. Prof Nicolosi's work has facilitated research collaborations with I-Form, the SFI Research Centre for Advanced Manufacturing, at UCD, and organisations such as Nokia Bell Labs, and is set to address the issue of energy supply for the next generation of smart wearable devices, also known as e-wearables and e-textiles.





# Talent and Skills

SFI is creating and advancing knowledge in Ireland by investing in world-class talent, helping Ireland to be an innovation leader, more resilient to future economic and societal disruptions, and providing societal benefits for all.

Through our career-funding programmes, SFI ensures that excellent early-career researchers are supported as they move through the research system, creating a diverse and inclusive environment for talent to thrive and futureproofing Ireland's STEM careers pipeline and knowledge economy.



**5,272**

people working on SFI supported projects



**1,834**

Postgraduate (PhD and Masters) students supported by SFI



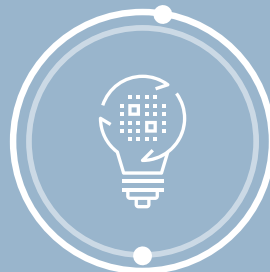
**28%**

28% of PhDs & Masters who departed from SFI teams went to industry as their first destination



**514**

SFI Award Holders



**341**

Funded Investigators



**130**

Co-Principal Investigators

# Spotlight on SFI Centres for Research Training Programme



Directors of the SFI Centre for Research Training in Machine Learning are pictured with Prof Mark Ferguson, Director General of SFI, Minister for Business, Enterprise, and Innovation Heather Humphreys TD, and Minister for Training, Skills, Innovation, Research and Development, John Halligan TD.

## 127

students began their  
PhDs in 2019

## 46%

of these students were female

## 40

collaborations established  
in 2019

## 31

of these were non-academic

SFI launched the SFI Centres for Research Training programme to bring together the higher education sector and industry to develop and deliver innovative programmes of research and training for postgraduate students in Ireland, under the theme of 'Data and ICT Skills for the Future'. The programme aims to increase the number of PhDs meeting the data skills needs of industry and to support and nurture early-career research talent.

The six SFI Centres for Research Training, representing an investment of €104 million, will provide training for over 700 postgraduate students in the complementary areas of Machine Learning, Digitally Enhanced Reality, Foundations of Data Science, Genomics Data Science, Artificial Intelligence and Advanced Networks for Sustainable Societies.

The six SFI Centres for Research Training are:

- » **SFI Centre for Research Training in Machine Learning**  
Dr Brian McNamee (UCD), Dr Georgiana Ifrim (UCD), Prof Sarah Jane Delany (TU Dublin), Prof Noel O'Connor (DCU).
- » **SFI Centre for Research Training in Digitally Enhanced Reality**  
Prof Carol O'Sullivan (TCD), Prof Vincent Wade (TCD), Prof John Kelleher (TU Dublin), Prof Alan Smeaton (DCU), Prof Peter Corcoran (NUI Galway), Prof Julie Berndsen (UCD).
- » **SFI Centre for Research Training in Advanced Networks for Sustainable Societies**  
Prof Dirk Pesch (UCC), Prof John Barrett (CIT), Dr Deirdre Desmond (MU) Prof Siobhán Clarke (TCD), Prof Max Ammann (TU Dublin), Prof Cormac Sreenan (UCC).
- » **SFI Centre for Research Training in Foundations of Data Science**  
Prof James Gleeson (UL), Dr Claire Gormley (UCD), Prof Ken Duffy (MU).
- » **SFI Centre for Research Training in Artificial Intelligence**  
Prof Barry O'Sullivan (UCC), Prof Tiziana Margaria (UL), Dr Ivana Dusparic (TCD), Dr Derek Bridge (UCC), Dr Suzanne Little (DCU), Dr Paul Buitelaar (NUI Galway).
- » **SFI Centre for Research Training in Genomics Data Science**  
Prof Cathal Seoighe (NUI Galway), Dr Eva Szegezdi (NUI Galway), Prof Denis Shields (UCD), Prof Gianpiero Cavalleri (RCSI), Prof Pavel Baranov (UCC), Prof Aoife McLysaght (TCD).

## SFI Research Professorship Programme

Since its launch, the SFI Research Professorship Programme has sought to recruit world-leading scientists and engineers to build the national research base and enhance Ireland's reputation as a location to carry out high-impact, high-quality research.

In 2019, Prof Ortwin Hess was recruited from Imperial College London to Ireland, as Chair Professor of Quantum Nanophotonics at TCD's School of Physics. Under the SFI Research Professorship Programme, his work in the area of metamaterials and quantum photonics

aims to help advance quantum simulation, quantum communications, quantum metrology and quantum sensing which may lead to more secure communications, massive computing power, ultra-sensitive immunoassay sensing and the possibility to discover new properties of bio-molecules and novel materials. This €3.85 million grant will support thirteen research positions over five years. Prof Hess received the Royal Society's Rumford Medal in 2016, joining previous prestigious winners of the award such as Faraday, Maxwell, Kirchhoff and Rayleigh.



SFI Research Professor Ortwin Hess, Trinity College Dublin.

## SFI Supporting Emerging Research Leaders



The SFI President of Ireland Future Research Leaders awardees 2018-2019, are pictured at Áras an Uachtaráin (l-r): Dr Sónia Negrão (UCD), Dr Roman Romero-Ortuno (TCD), Dr Nessa O'Connor (TCD), Dr David Loane (TCD), Dr Rory Johnson (UCD), Dr Ruth Freeman, SFI Director of Science for Society, President of Ireland Michael D. Higgins, Dr Caitriona Jackman (DIAS), Dr Stephen Redmond (UCD), Dr Suzanne Cloonan (TCD), Dr Eóin McNamee (MU), and Dr Joanne Masterson (MU).

**Six awards** were made through the SFI President of Ireland Future Research Leaders Programme in 2019, representing an investment of €3.2 million.

The Programme recruits outstanding and emerging early-career research leaders with exceptional accomplishments in scientific and engineering back to Ireland.

These awards will support health research in the areas of inflammatory bowel diseases, lung cancer and applying big data to help diagnose frailty to assist our ageing population. Other areas supported include protecting the future of barley production, aquaculture uses of seaweed for clean energy biofuels and potential health treatments for osteoarthritis, and data analytics and machine learning in Space Science.

## SFI Supporting Postdoctoral Researchers

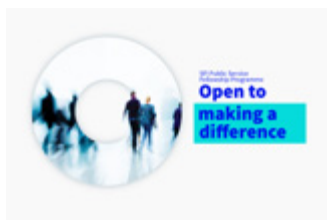
The SFI Starting Investigator Research Grant (SIRG) supports the development of postdoctoral researchers, and others who have yet to hold an independent research post, in taking the initial steps towards a fully independent research career.

Researchers are provided with experience towards a full-time academic position for four years, including the supervision of a postgraduate student funded through the award.

10 awards supported  
with an investment of

**€5.16  
million**





Watch video [here](#).

## SFI Public Service Fellowship

SFI believes that STEM can play a significant role in helping the Government address significant national and global challenges, and to maximise how research improves the lives of people in Ireland. As part of the Government's action to promote a culture of evidence-based policy making and innovation in the public sector, SFI launched a pilot programme in 2019 to place researchers in government departments, agencies, and local authorities.

The SFI Public Service Fellowship offers researchers a unique opportunity to be temporarily seconded as 'SFI Researcher in Residence' to Government Departments, Agencies and the Library and Research Service of the Oireachtas, to work on specific projects where they can translate their expertise into making a real difference for society and the economy.



## SFI Supporting High-risk, High-reward Research

In 2019, SFI launched a new and dynamic funding programme entitled 'SFI Frontiers for the Future' to support independent investigators conducting highly innovative, collaborative research, with the potential to deliver impact. This programme provides opportunities for high-risk, high-reward research and is run in collaboration with other state agencies including the Geological Survey of Ireland (GSI) and the Environmental Protection Agency (EPA).

The Programme supports different research career stages and has experienced very high demand since its launch, with over 500 applications received, 25% of these being from new entrants.

## Addressing Diversity and Gender Imbalance in STEM

SFI continues to build upon its significant work to improve gender balance, equality, diversity and inclusion across the research teams it supports. SFI supports the Athena SWAN initiative, endorsed by Irish Research Bodies. Subject matter experts participating in either remote or panel reviews for SFI, are briefed on unconscious bias.

- » In 2019, 28% of SFI award holders were female (up 2 percentage points on 2018). SFI's target is 30%.
- » 38% of team members were female, a 1 percentage point increase on 2018.
- » The SFI Frontiers for the Future Programme includes a range of gender initiatives to increase the number of women applying for and being awarded funding. 15% more female researchers applied, compared to previous similar programmes.
- » SFI is committed to supporting women at all stages of their research careers, including the early-career stage. In 2019, paid maternity and adoptive leave for postgraduate students funded on SFI awards was launched. See more [here](#).

**€5 million**

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

**620**

primary schools received an SFI Discover Primary Science and Maths (DPSM) Award in 2019

**3,492**

teachers from 299 primary schools received continuous professional development (CPD) training through the SFI-supported DPSM/ European Space Education Resource Office (ESERO) programme

## Education and Public Engagement

SFI showcases the best in Irish science, so that its value to the economy and society is realised. We aim to build scientific literacy and confidence among the Irish public, so they can be informed, reflect and input into the societal challenges we face together. We fund excellent education and public engagement projects that contribute to the betterment of society and contribute to a diverse STEM talent pipeline.

**SFI-funded researchers' education and public engagement increased 26% with 2,299 activities reported in 2019**

### Science Week and Climate Action

The theme for Science Week 2019 was Climate Action, seeking to help people understand the science and to build solutions for a positive climate future.

- » **13** SFI funded regional festivals.
- » **555,000+** people reached through 1,400 events nationwide.
- » **213** roadshows and workshops directly funded by SFI.

### Tree Planting Initiative

SFI partnered with Coillte to plant **30,000 trees** nationwide.

**65** organisations, schools and community groups planted trees across **22** counties.



(L-r) Rosemary Collier, Director of National Historic Properties, Office of Public Works; Cormac Downey, Arboricultural Officer, Office of Public Works; Deborah Meghen Director of Stewardship Coillte; Helen McEntee, TD, Minister for European Affairs, and Dr Ciarán Seoighe, Deputy Director General, SFI, in Oldbridge.



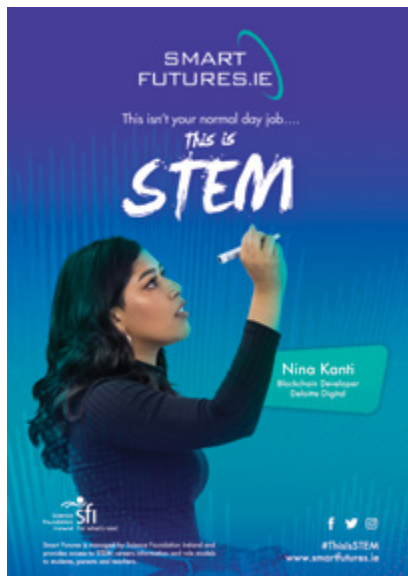
## 1.9 million

viewers reached by the SFI - RTÉ Joint Initiative produced TV content such as Big Week on the Farm and What Planet Are You On?

## What Planet Are You On?

The Science Foundation Ireland - RTÉ Joint Initiative produced, What Planet Are You On?, which aired during Science Week.

74% of Irish adults reported<sup>5</sup> an improved level of knowledge about Climate Action, following SFI-RTÉ's Science Week TV programming.



Nina Kanti, Blockchain Developer with Deloitte Digital.

## This Is STEM

The SFI Smart Futures STEM careers awareness programme launched the #ThisIsSTEM campaign nationwide, in collaboration with the Department of Education and Skills, to promote a wide range of role models and career paths in STEM.

A nationwide cinema advert has aired to 907,000 people. A social media campaign reached an average of 783,893 people in Ireland monthly.

<sup>5</sup> SFI Science Week and Climate Action Engagement Study, Dec 2019, via iReach Insights Ltd.



Partner representatives at the 'Dingle Peninsula 2030 launch event, with MaREI, Dingle Creativity and Innovation Hub, ESB Networks and North, East and West Kerry Development.

# Spotlight on Dingle Peninsula 2030

MaREI, the SFI Research Centre for Energy, Climate and Marine hosted by UCC, in collaboration with ESB Networks (ESBN) and local partners on the Dingle Peninsula 2030 project, are working with the community to move towards to a low-carbon society and create a more environmentally and economically sustainable future on the Dingle Peninsula.

Dingle, Co. Kerry was identified by ESNB in 2018 as a demonstration town, to test how the smart electricity network of the future will operate. Several homes have been fitted with solar panels, electric vehicle charging points, battery storage and other technologies and the residents have become ambassadors within their communities.

Throughout 2019, many engagement activities such as interviews with ambassadors, workshops, LED bulb swaps and outreach events took place. Community workshops gathered local opinions on the social, economic and environmental challenges facing them. Census data on the social and economic indicators of community vibrancy were presented, along with data on the energy consumption of households and an introduction to climate adaptation and mitigation. MaREI also developed an energy master plan for the community.

The project is building capacity within the community and amongst stakeholders, leading to better understanding of community engagement methods and their effectiveness. These learnings and outcomes are influencing the direction of the project, feeding into both the MaREI research programme and education and public engagement programme.





# Global Footprint

## International Collaborations

SFI has several lead agency agreements with other international funding agencies, which aim to support, grow and strengthen research collaborations between researchers based in Ireland and international researchers.

- » SFI's international collaborations have extensive global reach: Europe (65%), North America (19%), Asia (10%), Australia and Oceania (3%), South America (2%) and Middle East, North Africa, and Greater Arabia (1%).
- » 4,079 (up from 3,797) academic-academic collaborations reported by SFI researchers, with over 2,894 (71%) of these with international partners.
- » 47% of non-academic collaborations were with partners outside of Ireland – 14% with United States, 9% with UK and 24% with other countries.
- » SFI award holders were involved in the organisation of 607 national and 285 international conferences, workshops and seminars in 2019. The SFI Conferences and Workshops Programme **has contributed €11.3 million** to the Irish economy.

### 71%



of academic collaborations were with international partners

### €11.3 million



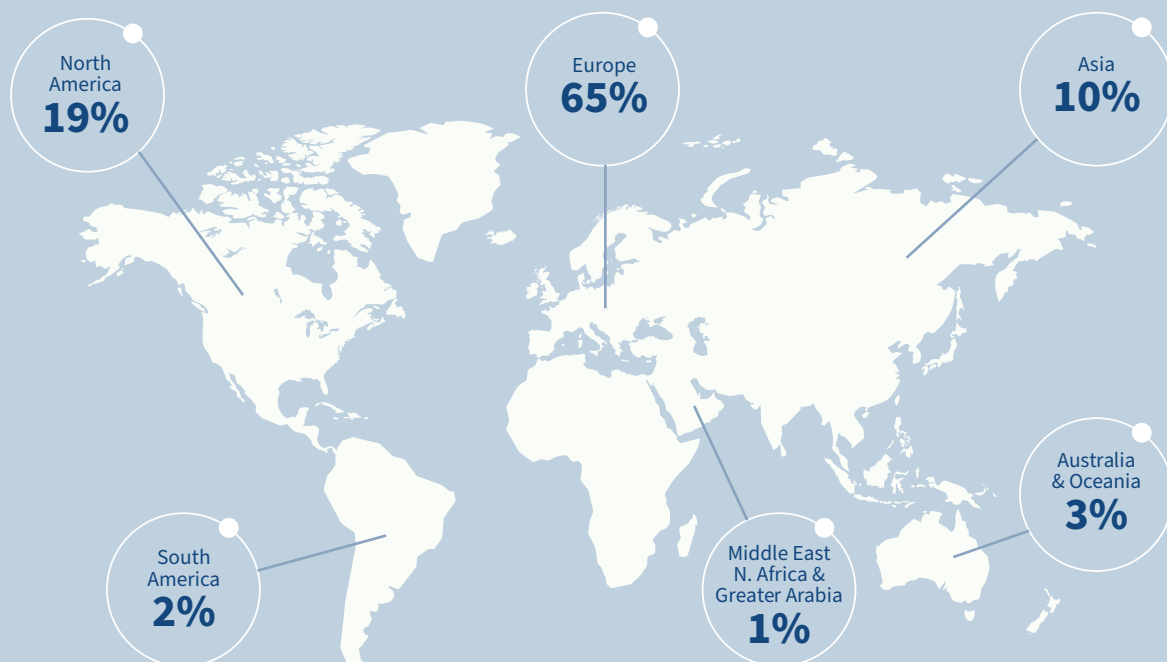
contributed to the Irish economy by the SFI Conferences and Workshops Programme

### 47%



of non-academic collaborations were international

## 2019 International Academic Collaborations



## Number of 2019 International Academic Collaborations by Country

|  |     |                                     |    |                        |              |
|--|-----|-------------------------------------|----|------------------------|--------------|
| United Kingdom<br>(excluding Northern Ireland) | 530 | Hungary                             | 15 | Algeria                | 2            |
| United States of America                       | 468 | Russian Federation                  | 15 | Colombia               | 2            |
| Germany  | 246 | Turkey                              | 12 | Malta                  | 2            |
| France   | 167 | Israel                              | 11 | Pakistan               | 2            |
| Italy  | 156 | Czech Republic                      | 10 | Sri Lanka              | 2            |
| Spain  | 150 | South Africa                        | 9  | Thailand               | 2            |
| Northern Ireland                               | 116 | Argentina                           | 8  | Armenia                | 1            |
| China  | 112 | Chile                               | 8  | Bangladesh             | 1            |
| Netherlands                                    | 111 | Luxembourg                          | 8  | Bosnia and Herzegovina | 1            |
| Canada   | 76  | Slovakia                            | 8  | Bulgaria               | 1            |
| Sweden   | 67  | Romania                             | 7  | Burkina Faso           | 1            |
| Australia                                      | 66  | Korea, South<br>(Republic of Korea) | 6  | Croatia                | 1            |
| Denmark  | 60  | Qatar                               | 6  | Egypt                  | 1            |
| Belgium  | 52  | Iran (Islamic Republic of)          | 5  | Iceland                | 1            |
| Switzerland                                    | 52  | Kazakhstan                          | 5  | Kuwait                 | 1            |
| Brazil   | 36  | Lebanon                             | 5  | Mauritius              | 1            |
| Austria  | 29  | Estonia                             | 4  | Mongolia               | 1            |
| Finland  | 29  | Macao                               | 4  | Morocco                | 1            |
| Poland   | 28  | Slovenia                            | 4  | Oman                   | 1            |
| India  | 26  | Taiwan, Province of China           | 4  | Tunisia                | 1            |
| Portugal                                       | 23  | Cyprus                              | 3  | Ukraine                | 1            |
| Japan  | 22  | Hong Kong                           | 3  | United Arab Emirates   | 1            |
| New Zealand                                    | 20  | Latvia                              | 3  | Vietnam                | 1            |
| Norway   | 18  | Mexico                              | 3  | <b>Grand Total</b>     | <b>2,894</b> |
| Greece   | 17  | Saudi Arabia                        | 3  |                        |              |
| Singapore                                      | 16  | Serbia                              | 3  |                        |              |



Prof Mark Ferguson, Director General of Science Foundation Ireland and Chief Scientific Adviser to the Government of Ireland is pictured with Prof Eamonn Quigley, Chief of Gastroenterology and Hepatology, at Houston Methodist Hospital and Weill Cornell Medical College, and Mr Michael Mahoney, CEO of Boston Scientific.

## SFI US-Ireland Programme

The US-Ireland Research and Development Partnership is a unique initiative involving funding agencies across three jurisdictions: United States of America, Republic of Ireland and Northern Ireland. In 2019, five awards were made with an investment of €2.6 million. In 2019, the partner agencies agreed to expand the thematic areas of the partnership to include Cybersecurity.

The partner agencies in the Republic of Ireland are SFI, the Health Research Board and the Department of Agriculture, Food and the Marine. It is facilitated by the National Science Foundation, US National Institutes of Health and the National Institute of Food and Agriculture, within the US Department of Agriculture in the USA. In Northern Ireland, the Health & Social Care R&D Division, the Department for the Economy, and the Department of Agriculture, Environment and Rural Affairs are partners.

## SFI St. Patrick's Day Science Medal

In 2019, Minister for Communications, Climate Action and Environment, Richard Bruton TD, presented the prestigious St. Patrick's Day Science Medal to Prof Eamonn Quigley, Chief of Gastroenterology and Hepatology, at Houston Methodist Hospital and Weill Cornell Medical College; and Mr Michael Mahoney, CEO and Chairperson of the Board of Directors of Boston Scientific, for their significant contributions to academia, research and industry. The Medal recognises distinguished Irish scientists, engineers or technology leaders living and working in the USA.

## UK Partnerships and BREXIT

In 2019, SFI continued to strengthen bilateral research collaborations with the United Kingdom, demonstrating the shared intent between research bodies in both countries to collectively innovate, grow and maintain research mobility.

A number of SFI programmes facilitate UK partnerships, such as the joint UK-Ireland investment with the Engineering and Physical Sciences Research Council (EPSRC), under the Centres for Doctoral Training Programme, as well as the SFI Research Centres and SFI Spokes Awards, the SFI Centres for Research Training, the SFI Strategic Partnership Awards and the SFI Industry Fellowship Awards. Others, such as the SFI Research Professorship Programme, also support joint appointments.

Four awards made through the prestigious Royal Society -SFI University Research Fellowship. **€2.8 million invested**, eight research positions supported.

**€39  
million**

invested in seven new  
joint Centres for Doctoral  
Training, between  
Ireland and the UK

**€2.8  
million**

Investment made by  
the Royal Society -SFI  
University Research  
Fellowship

## EPSRC-SFI Joint Funding Research Programme

In 2019, the first four awards in the areas of telecommunications, mathematics, diagnostics and magnetism were made under the new EPSRC-SFI Joint Funding of Research partnership programme, with an investment of €1.7 million.

**€39 million** was invested to support the involvement of SFI Research Centres in seven new joint **Centres for Doctoral Training (CDT)**, between Ireland and the UK to enable doctoral students based in Irish institutions to benefit from training opportunities and collaboration with Higher Education Institutions in the UK. These awards provide outstanding early-career researchers with an opportunity to build independent research careers.

- » **IPIC, the SFI Research Centre for Photonics** with Queens University Belfast and University of Glasgow: EPSRC CDT in Photonic Integration and Advanced Data Storage (€6.2 million).
- » **I-Form, the SFI Research Centre for Advanced Manufacturing** with University of Sheffield and University of Manchester: EPSRC CDT in Advanced Metallic Systems: Metallurgical Challenges for the Digital Manufacturing Environment (€5.3 million).
- » **CÚRAM, the SFI Research Centre for Medical Devices** with University of Glasgow, Aston University and University of Birmingham: EPSRC CDT in Engineered Tissues for Discovery, Industry and Medicine (€6.3 million).
- » **SSPC, the SFI Research Centre for Pharmaceuticals** with University of Nottingham and University College London: EPSRC CDT in Transformative Pharmaceutical Technologies (€3.9 million).
- » **MaREI, the SFI Research Centre for Energy, Climate and Marine** with University College London and Loughborough University: EPSRC CDT in Energy Resilience and the Built Environment (€4.9 million).
- » **AMBER, the SFI Research Centre for Advanced Materials and BioEngineering Research** with Imperial College London and University College London: EPSRC CDT in Advanced Characterisation of Materials (€6.2 million).
- » **BiOrbic, the SFI Research Centre for the Bioeconomy** with University of Nottingham: EPSRC CDT: Atoms-to-Products an Integrated Approach to Sustainable Chemistry (€5.8 million).



# Spotlight on SFI US Research Trade Mission



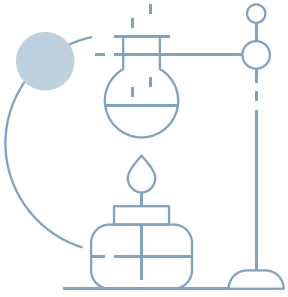
Secretary General of the Department of Business, Enterprise and Innovation in Ireland, Dr Orlaigh Quinn, is pictured with Jacinta Tobin, Chief Growth Officer at Arceo, Prof Vincent Wade, Director of the ADAPT SFI Research Centre, Prof Brian Fitzgerald, Director of the LERO SFI Research Centre, and Lofred Madzou, AI Project Lead at World Economic Forum.

SFI coordinated Ireland's first international research mission to the United States, in December 2019. The mission, led by the Department of Business, Enterprise and Innovation and Secretary General Dr Orlaigh Quinn, involved six SFI Research Centres (ADAPT, Insight, Lero, Confirm, CONNECT and VistaMilk) and aimed to strengthen and advance scientific cooperation between Ireland and the San Francisco Bay Area.

SFI Research Centres showcased Ireland's research strengths, testbed capabilities and talent pipeline to top technology companies and institutes, in areas such as AI, machine learning, cloud computing, data governance, industrial IoT and data science.

Salesforce, Cisco, LinkedIn, Facebook, Autodesk, Accenture and VMware were visited with discussions taking place around industry-academic research collaboration. Partnering with global venture capital firm, SOSV, an event involving an expert panel discussion was held on "AI as an Enabler of Breakthrough Technologies", with US and Irish perspectives shared on ethical AI and trustworthy AI, data governance and best practices for the development of AI strategies.

US and Ireland insights on agricultural technology/agrifood research and future trends were presented during a workshop with SVG Ventures and Santa Clara University. Topics focused on autonomous systems, precision agriculture, IoT, sensor technology and the bioeconomy. A visit was also made to Stanford University institutes specialising in design thinking, data science, artificial intelligence and cybersecurity, during which potential strategic collaborations and opportunities for student and researcher exchange were discussed.



# SFI Driving Competitiveness

SFI is the Irish Government's largest competitive funder of scientific research in Ireland. We support outstanding research that underpins economic development and assists international and indigenous industry to grow and flourish in Ireland.

Within the context of rapid and substantial economic, social, and political change, international competitiveness and uncertainty, SFI programmes are a key element of the drive to boost Ireland's international competitiveness and attract foreign direct investment (FDI) across the Irish regions, and in supporting high-growth indigenous SMEs.

## Non-academic collaborations



## Innovation and Commercialisation

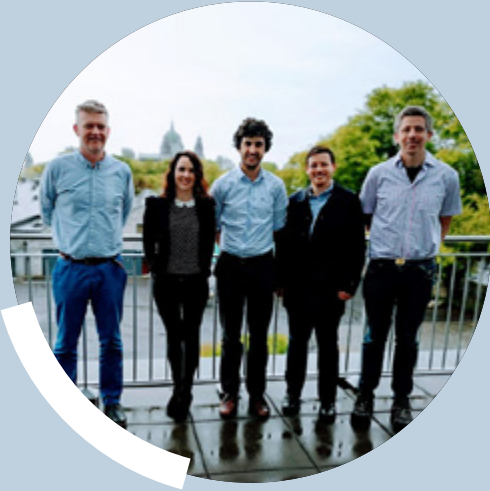
SFI-funded researchers have delivered:

- » **15** spin-out companies
- » **103** patents filed
- » **84** licenced technologies
- » **239** invention disclosures





# Spotlight on Challenge Funding



The Hydrobloc team at NUI Galway. (L-r) Dr Leo Quinlan, Dr Alison Liddy, Dr Conor Judge, Dr Martin O'Halloran and Dr Barry McDermott.

The SFI Future Innovator Prize is part of an overall government plan to cultivate challenge-based funding in Ireland. Challenge-based funding is a solution focused approach to funding research that uses prizes and other incentives to direct innovation activities at specific problems. The programme is designed to facilitate the invention of disruptive solutions to address critical societal challenges over a 12-month period, during which multidisciplinary teams compete for the final prize.

The first winner of the SFI Future Innovator Prize is Hydrobloc, led by Dr Alison Liddy and the multidisciplinary team at NUI Galway. They have been awarded €1 million to address the challenge of chronic neuropathic pain, which has significant societal impact with 300,000 cases in Ireland alone, due to diseases such as multiple sclerosis, cancer and arthritis.

Watch the video [here](#).

Hydrobloc is a novel nanogel solution for chronic neuropathic pain, which provides long term pain relief, is drug free and comes without the severe side effects of prescription medications. In keeping with the societal impact philosophy of the Programme, the patient voice was central throughout the development of this project.

Alongside the announcement of the main Prize winner, a special prize of €500,000 was also awarded to Prof Dominic Zerulla and his team at PEARlabs, UCD, in recognition of the potential impact of their project to develop a novel, nanoscale biological imaging technology.

Watch the video [here](#).

A further two SFI Future Innovator prize competitions ran in 2019, the 'Artificial Intelligence for Societal Good Challenge' and 'Zero-Emissions Challenge'. Four of these projects are being co-funded by the Department of Foreign Affairs and Trade.



Prof Cecily Kelleher, College Principal, College Of Health and Agricultural Sciences, Prof Walter Kolch, Director of Precision Oncology Ireland, Minister for Business, Enterprise and Innovation, Heather Humphreys TD, Prof Mark Ferguson, Director General SFI and Chief Scientific Adviser to the Government of Ireland, and Prof Orla Feely, Vice President for Research, Innovation and Impact, UCD.

## SFI Leveraging Research Collaboration

In Ireland, more than 40,000 people are diagnosed with cancer each year. In 2019, the Government invested €5 million through the **SFI Strategic Partnership Programme**, matched by a €6.9 million investment from the charity and industry partners, to establish the Precision Oncology Ireland Consortium, led by researchers in UCD. It involves five Irish universities, six Irish cancer research charities and 10 companies, all collaborating to take on the challenge of tailoring cancer treatments to individual patients based on their unique cancer.

The programme will also provide key infrastructural supports to researchers, co-ordinating access to tumour biobanks, and allowing access to state-of-the-art technologies.



Pictured (l to r): Prof Paul Ross, Director of APC Microbiome SFI Research Centre, Dr Lori Lathrop Stern, Science Liaison at DuPont Nutrition & Biosciences; Dr Martin Kullen, Global Research & Development Lead at DuPont Nutrition & Biosciences, and Prof Catherine Stanton, Principal Investigator at APC Microbiome SFI Research Centre.

## SFI Spokes Programme

Two awards were made in 2019 under the SFI Spokes Programme totalling €3.7 million. These were in the areas of Blended Autonomy Vehicles (LERO), and infant health (APC-DuPont).

## SFI Industry Fellowship

The SFI Industry Fellowship Programme provides industry partners with access to innovative researchers and cutting-edge technology through collaborative research with Irish academic institutions, stimulating excellence through knowledge exchange and the training of engineers and scientists.

In 2019, 71 awards were made, with €4.9 million invested across 15 institutions. Of these, eleven are based in the UK, with five placed in Northern Ireland. Over 154 industry partnerships have been forged to-date, in areas such as renewable energy, smart manufacturing, rehabilitation robotics, next generation medical devices.

A recent SFI survey gathered feedback from Industry Fellowship awardees, industry partners and research offices. It found that 42% of industry partners wished to strengthen existing collaborations with an academic partner.



Pictured (l-r) Dr Jennie Rothwell, Research Funding Manager, BiOrbic; Professor Kevin O'Connor, Director of BiOrbic and Dr Jennifer Brennan, Director of Research Development & Innovation, THEA.

## SFI Supporting Rural and Regional Development

Working to unlock the commercial potential of the country's bioeconomy and proactively tackle climate change, BiOrbic Bioeconomy SFI Research Centre signed a memorandum of understanding (MOU) agreement with the Technological Higher Education Association (THEA), as part of Bioeconomy Ireland Week 2019.

This is the first time that THEA has signed an MOU with an SFI Research Centre. It creates opportunities for BiOrbic to collaborate with all of THEA's higher education institutions across Ireland. It also creates collaborative mechanisms to further develop Ireland's bioeconomy through partnerships in research, development, innovation, education and training opportunities, with a particular focus on regional development and increases access to European funding.

## SFI Supporting Small Island Communities

MaREI, the SFI Research Centre for Energy, Climate and Marine hosted by UCC has been awarded €9 million for the H2020 project MUSICA to build a pilot multi-use platform which will be a decarbonising one-stop-shop for small islands, including their marine initiatives (Blue Growth) and ecosystems.

MUSICA, which stands for Multiple Use of Space for Island Clean Autonomy, will pilot a floating offshore platform which will provide 70% of the electricity and 100% of freshwater for a small island with up to 2,000 inhabitants. The energy will be supplied via renewable energy and will be a combination of wind, PV and wave energy and the desalinated water will be powered by green renewable electricity.

## SFI Generating Value for Money

SFI-funded researchers continued to demonstrate scientific excellence, research relevance, return on investment and value for money in 2019:

- » SFI-funded researchers won €223 million from diverse sources
- » SFI-funded researchers secured €98 million in funding from EU sources
- » Funding from private enterprise was €28 million
- » The ratio of funding from Irish Exchequer to Non-Irish-Exchequer is 1:2.0
- » The ratio of national funding to International funding is 1:1.4

SFI Research Centres have drawn down approximately **€172.6 million** in cumulative Horizon 2020 funding and have an industry commitment of **€466 million**.

**€98  
million**

Funding secured by SFI-  
funded researchers from  
EU sources



## External Funding Secured by SFI-Funded Researchers in 2019

|   | Total Funding Secured by PI (€) |
|---|---------------------------------|
| European Union  | 97,727,624                      |
| Private Enterprise  | 27,662,119                      |
| Enterprise Ireland – Commercialisation and Non-Commercialisation Awards | 26,553,451                      |
| Other Irish Government Source   | 19,099,800                      |
| Irish Research Council (IRC)  | 16,591,666                      |
| Charity/Non-Profit Organisation (Irish)                                 | 6,261,446                       |
| National Institute of Health USA  | 4,886,661                       |
| Health Research Board   | 4,317,769                       |
| Other International Government Source                                   | 3,636,236                       |
| Charity/Non-Profit Organisation (International)                         | 3,160,722                       |
| Environmental Protection Agency   | 3,103,322                       |
| Other International Interest Organisation                               | 2,164,055                       |
| Department of Communications, Climate Action and Environment            | 2,023,253                       |
| Wellcome Trust  | 1,773,866                       |
| Other Source  | 1,006,174                       |
| Department of Agriculture, Food and the Marine                          | 858,087                         |
| Marine Institute  | 470,808                         |
| Higher Education Authority Ireland                                      | 411,423                         |
| National Science Foundation USA   | 353,485                         |
| Teagasc   | 328,000                         |
| IDA Ireland   | 200,000                         |
| <b>Grand Total</b>  | <b>222,589,967</b>              |



---

## European Research Council Awards

---

In 2019, 15 European Research Council (ERC) awards were won by Irish researchers across Ireland in all domains, with a total drawdown of €19.5 million. Of these, 12 were awarded to SFI funded researchers, six of which were major ERC Consolidator Grant awards, representing funding in excess of €12 million.

Four of the six awards were made in the STEM sector, across the Life Sciences, and Physical Sciences and Engineering domains, and all four recipients are investigators in SFI Research Centres.

By the end of 2019, Irish based researchers had won over €123 million in funding in ERC grants, surpassing the Government's target for Ireland under Horizon 2020, of €100 million (2014-2020).

---

## EU Co-funded Initiatives

---

SFI invested in nine EU co-funded initiatives during 2019. Of these, five were ERA-nets, three Joint Programmatic Initiatives (JPIs) and one Joint Technology Initiative (JTI), through which 31 SFI researchers are partners, in 26 transnational projects.

---

## Leveraging Philanthropic Funding

---

[CURÁM SFI Research Centre for Medical Devices](#) hosted at NUI Galway has been awarded funding of US\$300,000 from The Michael J Fox Foundation for Parkinson's research to develop a novel approach to brain repair for Parkinson's disease.



# SFI Research Centres

The network of 16 SFI Research Centres represent a cumulative SFI investment of **€684 million** and an industry commitment of **€466 million**.

The SFI Research Centres link scientists and engineers in partnerships across **812 research bodies** across the globe, including nine Irish universities and seven Institutes of Technology.

The Centres have signed **900** collaborative research agreements with **470** companies around the world (230 in Ireland) and attract industry which make important contributions to Ireland's economy, and expand STEM educational and career opportunities.

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

**€257 million**

in non-exchequer, non-commercial funding

**€193 million**

from Industry

**405**

Enterprise Ireland commercialisation awards

**222**

licensing agreements

**36**

Spin outs

**20**

Spoke Awards





## Combined cumulative key performance indicator results for SFI Research Centres to end of 2019:

| Key Performance Indicator   | Cumulative-to-2019 |
|-----------------------------|--------------------|
| Journal Publications        | 8,303              |
| Conference Publications     | 4,982              |
| MSc/MEng Graduates          | 134                |
| PhD Graduates               | 1,040              |
| % Trainee Departs 1st Ind   | 37%                |
| EU Participations           | 429                |
| EU Coordination             | 105                |
| ERC Awards                  | 37                 |
| EI Commercialization Awards | 405                |
| License Agreements          | 222                |
| Spin Outs Incorporated      | 36                 |

| Cost-Share and Leveraging            | Result         | Target         | Success |
|--------------------------------------|----------------|----------------|---------|
| Cash-in-Bank                         | €76.1 million  | €52.2 million  | 146%    |
| Total Industry funding received      | €193.5 million | €149.8 million | 129%    |
| Non Exchequer-Non Commercial Funding | €257.1 million | €276.5 million | 93%     |

- » **International reach:** 120 Contract Research Agreements (CRAs) signed in 2019, representing €22 million of which 71 were with international organisations.
- » **Leveraging Investment:** [For every €1 invested by the State](#), the ADAPT SFI Research Centre for Digital Media Technology generated €5.30 for the Irish economy, equating to €300+ million over three years.
- » **Excellent Science:** Insight researchers have generated 2,000+ publications, 72 licence agreements and participated in 86 EU projects.
- » **Talent:** [The SSPC SFI Research Centre for Pharmaceuticals'](#) structured PhD and Industry placement programmes has created a strong talent pipeline, with 70% of its researchers transitioning to industry.
- » **Climate action:** The Irish Government published the ambitious Climate Action Plan, which specifies how Ireland can meet its mandatory EU 2030 emissions reductions targets. It explicitly cites research and guidance from the MaREI SFI Research Centre for Energy, Climate and Marine, on climate adaptation and the web-based Climate Ireland platform.

# Spotlight on Societal Impact



Pictured (l-r): Barry Skillington, CFO and Co-Founder, Atlantia Clinical Food Trials, Prof Mark Ferguson, Director General of Science Foundation Ireland and Chief Scientific Adviser to the Government of Ireland, An Taoiseach, Leo Varadkar T.D., Andrea Doolan, CEO of Atlantia Clinical Food Trials and Julie Sinnamon, CEO, Enterprise Ireland.

## SFI Research Centre spin out helps elevate functional foods

**Atlantia Food Clinical Trials**, a spin out of the APC Microbiome SFI Research Centre hosted at UCC, designs and delivers clinical studies in food ingredients, supplements and live bio-therapeutics, which are gut bacteria isolated from healthy humans, and exert a therapeutic effect towards combating a disease.

Functional foods such as those tested by Atlantia, serve to prevent and delay the onset of disease. Atlantia CEO, Andrea Doolan, participated in a roundtable discussion with Taoiseach Leo Varadkar TD, during St Patrick's Day celebrations in March 2019.

A first-of-its-kind study published in the prestigious journal, *Gastroenterology*, revealed how bacteria can be used to heal aspirin-induced ulcers. The study is an excellent example of research cross collaboration, between APC Microbiome, Atlantia Food Clinical Trials, multinational biosciences company, Chr. Hansen, and the Mercy University Hospital, Cork.



Prof David Henshall, Director of the FutureNeuro SFI Research Centre with patient advocate, Collette Delahunt.

## Improving lives of epilepsy patients

It is estimated that more than 50 million people worldwide have epilepsy. Research led by FutureNeuro the SFI Research Centre for Chronic and Rare Neurological Diseases, hosted at RCSI, has found a pattern of molecules that appear in the blood before a seizure happens.

The discovery may lead to the development of an early warning system, which would enable people with epilepsy to know when they are at risk of having a seizure.



## SFI Policy Updates

### Research Integrity

Following a successful pilot, a data provenance step has been included in all mid-term progress reviews of SFI Investigator-led awards. This step allows an external subject-matter expert panel to study the provenance of a dataset and engage with the research team on matters concerning training, mentoring and supervision along with procedures used for data capture, analysis, storage and curation. SFI's Agreed Upon Procedure (AUP) is a top-down initiative that looks at the policies and procedures in support of Research Integrity and their reach, within a research organisation. The AUP pilot was finalised during 2019 and is now being implemented along with SFI's Annual Programme of audits.

SFI continues to support the national Research Integrity training programme, which has been accessed by over 8,000 researchers. This programme is now in its final year.

### Open Science

SFI recognises that the societal and economic benefit of research is maximised when research outputs can be accessed by everyone. In 2019, 50% of SFI-funded original and review articles published were openly available, which represents a 5 percentage point improvement on the previous year. Other initiatives to support open science include:

- » SFI has been a partner of cOAlition S since 2018 and supports the Plan S<sup>6</sup> call for full and immediate open access to scholarly publications.
- » SFI's Open Access Policy, published in December 2019<sup>7</sup>, stipulates that all publications arising from SFI funded research must be openly available from the 1st of January 2021.
- » SFI supports negotiations of transformative agreements<sup>8</sup> between The Irish Research eLibrary (IReL) and international publishers, such as the recently secured agreement with Elsevier<sup>9</sup>.
- » SFI is a signatory to the San Francisco Declaration of Research Assessment (DORA<sup>10</sup>), and remains committed to considering the content, availability and impact of publications, rather than the journal or publisher when evaluating research outputs.
- » In line with the open access policy, SFI stipulates that research data should be Findable, Accessible, Interoperable and Reusable (FAIR<sup>11</sup>). All new funding calls require applicants to submit their Data Management Plans, describing the procedures for data collection, storage, sharing and preservation.

<sup>6</sup> [Plan S](#)

<sup>7</sup> [SFI Open Access Policy](#)

<sup>8</sup> [Transformative Agreements](#)

<sup>9</sup> [Elsevier Deal](#)

<sup>10</sup> [DORA](#)

<sup>11</sup> [FAIR European Commission \(2018\) Turning FAIR into Reality Final Report and Action Plan from the European Commission Expert Group on FAIR Data. Luxembourg: Publications Office of the European Union.](#)



## Sustainable Laboratory Practices

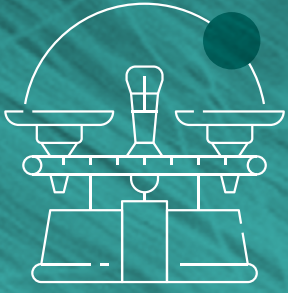
CURÁM, the SFI Research Centre for Medical Devices hosted by NUI Galway, became the first lab in Europe to be Green Lab certified by My Green Lab, a non-profit organisation that aims to fundamentally and permanently improve the sustainability of scientific research.

With research laboratories estimated to discard more than 5.5 million metric tonnes of plastic each year globally, Dr Una Fitzgerald, a CÚRAM funded Investigator and Director of the Galway Neuroscience Centre at NUI Galway, established the Galway Green Labs initiative to transform practice across campus and address issues such as plastic waste, energy reduction, recycling, and water usage. CURÁM launched a short video documentary, 'The time to green our labs is now' to promote awareness of their work and to encourage others to re-examine their lab practices.

Watch the video [here](#).



Dr Una Fitzgerald at the 2019 SFI Science Summit.



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



# Science Foundation Ireland Board Members\*



## Prof Peter Clinch

### Chairperson of the Board of Science Foundation Ireland (SFI)

Prof Peter Clinch was appointed Chairperson of the Board of SFI in August 2019. He was previously Chairperson of the National Competitiveness Council where he served as a senior independent adviser to Government on competitiveness, trade and economic policy. Peter has been appointed to positions of responsibility by four governments, including holding the position of chief policy adviser to the Taoiseach. He 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. He has authored over 200 publications and papers on various aspects of sustainable economic development. In 2017, Peter was conferred with a Fellowship of the Academy of Social Sciences for distinguished research and contributions to policy.



## Prof Mark W.J. Ferguson

### Director General of SFI and Chief Scientific Adviser to the Government of Ireland

Prof Mark W.J. Ferguson commenced as Director General of SFI in January 2012 and as Chief Scientific Adviser to the Government of Ireland in October 2012. Prof Ferguson is Chair of the European Commission Pilot Advisory Board for the European Innovation Council and is a founding member of the Small Advanced Economies Initiative. Recently, he served on the EU High Level Group on the impact of H2020 and chaired international committees reviewing the Research and Innovation systems of Denmark, Hungary and Canada. Previously, a Professor and Dean of Biological Sciences at The University of Manchester, he was co-founder and CEO of Renovo Group Plc. Prof Ferguson is the recipient of numerous international research prizes and awards, including the 2002 European Science Prize (jointly), author of 329 papers and book chapters, 61 patent families, author/editor of eight books, supervised 77 PhD students and has been awarded over £70 million in competitive research grants and approximately £100 million in start-up company equity funding. Prof Ferguson graduated from Queens University of Belfast with degrees in Dentistry (BDS 1st class honours), Anatomy and Embryology (BSc 1st class honours, PhD) and Medical Sciences (DMedSc), and holds Fellowships from the Royal Colleges of Surgeons in Ireland (FFD), and Edinburgh (FDS) and is a Founding Fellow of the UK Academy of Medical Sciences (FMedSci). He is a member or Fellow of a number of learned Societies and was made a “Commander of the British Empire” (CBE) by the Queen in 1999 for services to Health and Life Sciences.

\* As of 30th April 2020





### Mr Aidan W. Donnelly

#### Managing Director of Advest Management Ltd.

Aidan Donnelly is the Managing Director of Advest Management Ltd., a private equity fund management company. In addition, he was Chairperson of NORA, the Irish Government agency responsible for Ireland's National Oil Reserves and has interests in renewable and environmental start-up companies. 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 M.B.A. (UCG), M.I.E. (UCD) and a B.Sc. (UCG) and is a Chartered Director (C.Dir.) with the IOD.



### Ms Máire Geoghegan-Quinn

#### Former EU Commissioner for Research, Innovation and Science

Appointed SFI Board member in April 2018, 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. 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 NUI Galway, a degree of Doctor of Science from UCD (both honoris causa); and the Légion d'honneur among other awards. She is a member of the European Joint Research Centre (JRC) Alumni Network and an Honorary Fellow of the Royal College of Physicians of Ireland.



### Mr Dermot Mulligan

#### Assistant Secretary General, Dept. of Business, Enterprise and Innovation

Dermot Mulligan is Head of the Innovation and Investment Division of the Department of Business, Enterprise and Innovation. He reports to the Secretary General of the Department and the Minister. His areas of responsibility include formulation and implementation of Government policy on Innovation (including Science, Technology, Research and Development), Foreign Direct Investment and North/South Trade. He has previously worked in a range of Government Departments, including the Departments of Health, Finance and Education and Skills. He holds a first degree in Law and an M.Sc. (Economics) in Policy Studies from TCD and an MBA from the University of Warwick.



## Prof Sir Tom Blundell

**Director of Research and Professor Emeritus in Biochemistry, University of Cambridge**

Prof Sir Tom Blundell has previously held teaching and research positions in the Universities of London, Sussex and Oxford and leads an active research team in structural and computational biology in the Department of Biochemistry, Cambridge University. He was co-founder of Astex Therapeutics in 1999, which sold for \$886 million to Otsuka. Tom remains on the Board and has a breast cancer drug on the market world-wide and eight in clinical trials. He has also been a member of several Boards and Scientific Advisory Boards of both pharma and biotech companies, including SKB, Celltech and UCB. Tom has held several prestigious roles in public bodies, including Chair of Royal Commission on Environmental Pollution and Charities, and a member of the advisory group to the Prime Minister. He was founding CEO and Chair of the UK Biotechnology and Biological Sciences Research Council. Tom Blundell was knighted in 1997 and is a member of several academies. He has received numerous international awards, prizes, medals and honours for his research work and holds Honorary Doctorates from 16 universities. Recent awards include the Ewald Prize.



## Mr Liam Madden

**Executive Vice President and General Manager of the Wired and Wireless Group at Xilinx**

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. Mr 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. Mr 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 from February 2013 to February 2018 was an Adjunct Professor of Electrical, Electronic and Communication Engineering at UCD.



## Ms Mary Doyle

### Former Deputy Secretary General, Dept. of Education and Skills

Ms Mary Doyle sits on the SFI Board as the appointee of the Minister for Education and Skills. Mary took up her role in the Department of Education and Skills in June 2012 where she led the Higher Education and Further Education Divisions in the Department. She has worked in the Departments of the Taoiseach, Health, and was Director General in the Office/ Department of the Minister for Children and Youth Affairs. She has been a member of the National Economic and Social Council and the National Statistics Board and a Forum Member of the Economic and Social Research Institute. She is currently a member of the Board of The Wheel. She holds a degree in European Studies from UL and a Master's in Public Service Management from TCD/Irish Management Institute.



## Ms Grainne McAleese

### Head of Finance for UDG Healthcare plc

Grainne 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 Head of Finance for UDG Healthcare plc, a global Irish-headquartered company providing innovative outsourced services to healthcare companies. Prior to UDG Healthcare, she worked as General Manager for Ireland and Vice President of Finance with Alexion Pharmaceuticals, a rare disease US biotech company. Ms McAleese previously spent 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.



## Mr 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. Brendan was appointed to the SFI Board on 17 December 2019.



# Governance Statement and Board Members' Report

## Governance

The Board of Science Foundation Ireland (SFI) was established under the Industrial Development (Science Foundation Ireland) Act 2003. The functions of the Board are set out in section 7 of this Act, as amended. The Board is accountable to the Minister for Business, Enterprise and Innovation (“the Minister”) and is responsible for ensuring good governance and it 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 and the senior management team. The Board also sets the ethical tone of the Foundation by its own actions, but also in overseeing senior management and staff to ensure that SFI’s values, good standards of governance and ethical behaviours permeate all levels of 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 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:

- » Declaration of interests.
- » Reports from Board committees, including circulation of minutes.
- » Financial reports/management accounts.
- » Performance reports.
- » Risk register.
- » Matters reserved for the Board.

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

- » Select suitable accounting policies and apply them consistently.
- » Make judgements and estimates that are reasonable and prudent.
- » Prepare the financial statements on the 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 Board is 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. The maintenance and integrity of the corporate and financial information on the Foundation's website is the responsibility of the Board. 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 December 6, 2019. 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 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 at 31 December 2019.

## Board Structure and Committees

The SFI Board normally consists of a Chairperson, Deputy Chairperson and ten ordinary members appointed by the Minister for Business, Enterprise and Innovation, following consultation with the Minister for Education and Skills, as set out in Section 8 of the Industrial Development (Science Foundation Ireland) Act 2003. The independent non-executive Board Members, national and international, have the necessary and complementary skills and expertise to set the strategy and broad policies for the Foundation and oversee its operation. The table below details the appointment period for current members:

| Board Member             | Role             | Date Appointed                    |
|--------------------------|------------------|-----------------------------------|
| Prof Peter Clinch        | Chairperson      | 01/08/2019                        |
| Prof Mark Ferguson       | Director General | 16/01/12 (reappointed 16/01/17)   |
| Prof Sir Tom Blundell    | Board Member     | 19/11/14 (reappointed 25/07/2019) |
| Mr Aidan Donnelly        | Board Member     | 05/12/13 (reappointed 08/06/17)   |
| Ms Mary Doyle            | Board Member     | 05/12/2012 (reappointed 23/08/16) |
| Ms Máire Geoghegan-Quinn | Board Member     | 11/04/18                          |
| Mr Brendan Harte         | Board Member     | 17/12/19                          |
| Mr Liam Madden           | Board Member     | 01/02/13 (reappointed 08/06/17)   |
| Ms Grainne McAleese      | Board Member     | 25/10/18                          |
| Mr Dermot Mulligan       | Board Member     | 02/09/15                          |

The Board reviewed its performance in February 2020 with the submission of a report on 2019 activities, which included a review of the Board Committees and the Board members also completed a Board evaluation questionnaire. The Board has established four committees as follows:

## Audit and Risk Committee

The role of the Audit and Risk Committee (ARC), which comprises five members, is to support the Board in relation to its responsibilities for issues of 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 the conduct of audits of SFI grants made to external institutions. The committee ensures a system to monitor risk and provide for 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 Audit and Risk Committee normally has five members including at least one external member. The current members of the Audit and Risk Committee are Brendan Harte (Chairperson), Aidan Donnelly, Grainne McAleese, Marcus Breathnach and Stephen O'Connor (who joined the committee on 30 March 2020). Mr Breathnach is not a Board member and is a representative of the Department. Mr O'Connor is also an external committee member. Ms Bernie Cullinan retired as a member of the Audit and Risk Committee in December 2019 having completed a 10- year term as a Board member and as Chair of the Audit and Risk Committee. Mr Harte, having previously been an external member of the Committee, was appointed to the Board on 17 December 2019 and was appointed by the Board as Chairperson of the Committee on that date. There were nine meetings of the ARC in 2019.

## 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 Peter Clinch (Chairperson), Prof Mark Ferguson and Mr Dermot Mulligan. Ms Cullinan, whilst acting as Chairperson of SFI, was also a member of this Committee. There were two meetings of the Committee in 2019.



## Management Development and Remuneration Committee

The Management Development and Remuneration Committee (MDRC) comprises two members and reviews the performance of the senior management team and oversees planning for management, development and succession. The Committee reports to the Board after each meeting. The current members of the Committee are Prof Peter Clinch (Chairperson) and Mr Aidan Donnelly. Ms Cullinan, whilst acting as Chairperson of SFI, was also a member of this Committee. There was one meeting of the Committee in 2019.

## Grant Approval Committee

The SFI Grant Approval Committee (GAC), which comprises three 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: Mr Liam Madden (Chairperson), Prof Tom Blundell and Prof Mark Ferguson. Ciaran Conlon joined the Committee as an external member on 30 March 2020. Dr Pat Duane retired as a member of this Committee in July 2019 and Mr Barry O'Sullivan also retired from this Committee in December 2019. There were three meetings of the Committee in 2019 (and on two occasions Committee members approved grants by email). The Committee completed a review of its effectiveness in March 2020 following completion of a self-assessment questionnaire.

## Schedule of Attendance, Fees and Expenses

A schedule of attendance at the Board and Committee meetings for 2019 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 | Fees 2019<br>€ | Expenses 2019<br>€ |
|--|-------|--------------------------|--------------------------|--------------------------------------|---|----------------|--------------------|
| <b>No of Meetings</b>                  | 9     | 9                        | 3                        | 2                                    | 1   |                |                    |
| Prof Peter Clinch (appointed 01/08/19) | 3     |                          |                          | 1                                    |   | -              | €247               |
| Prof Mark Ferguson                     | 9     |                          | 3                        | 2                                    |   | -              | -                  |
| Prof Sir Tom Blundell                  | 7     |                          | 3                        |                                      |   | €11,970        | €1,874             |
| Ms Bernie Cullinan                     | 9     | 9                        |                          | 2                                    | 1   | €11,165        | €292               |
| Mr Aidan Donnelly                      | 9     | 8                        |                          | -                                    | 1   | €11,970        | -                  |
| Ms Mary Doyle                          | 7     |                          |                          |                                      |   | -              | €278               |
| Dr Pat Duane                           | 3     |                          | 1                        |                                      |   | €6,789         | -                  |
| Ms Máire Geoghegan-Quinn               | 6     |                          |                          |                                      |   | €11,970        | €340               |
| Mr Brendan Harte (appointed 17/12/19)  | 1     | 9                        |                          |                                      |   |                |                    |
| Mr Liam Madden                         | 6     |                          | 3                        |                                      |   | -              | €27,477            |
| Ms Grainne McAleese                    | 6     | 8                        |                          |                                      |   | €11,970        | -                  |
| Mr Dermot Mulligan                     | 8     |                          |                          | 2                                    |   | -              | -                  |
| Mr Barry O'Sullivan                    | 3     |                          | 0                        | 1                                    |   | -              | -                  |
| Board fees paid to UCD*                |       |                          |                          |                                      |   | €8,550         | -                  |
| <b>Total</b>                           |       |                          |                          |                                      |   | <b>€74,384</b> | <b>€30,508</b>     |

Board members are paid fees as determined by the Minister for Business, Enterprise and Innovation with the consent of the Minister for Public Expenditure and Reform. Certain Board members are excluded from receiving fees from SFI under the "One Person One Salary" remuneration arrangements, whereby public servants cannot receive Board fees in addition to a salary. These are Prof Peter Clinch, Prof Mark Ferguson, Ms Mary Doyle, and Mr Dermot Mulligan.

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

In addition, two Board members, Mr Liam Madden and Mr Barry O'Sullivan, have waived their Board fees.

## Key Personnel Changes

The following appointments to and resignations from the Board took place in 2019:

- » Dr Pat Duane retired on 25th July 2019.
- » Prof Sir Tom Blundell was reappointed as a Board Member on 18th July 2019.
- » Prof Peter Clinch was appointed as Chairperson on 1st August 2019.
- » Ms Bernie Cullinan retired on 7th December 2019. Ms Cullinan was Deputy Chairperson and acted as Chairperson of SFI from December 2018 until 1st August 2019.
- » Mr Brendan Harte was appointed on 17th December 2019.
- » Mr Barry O’Sullivan retired on 31st December 2019.

## 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    |          | Number of Employees |      |
|----------|----------|---------------------|------|
| From     | To       | 2019                | 2018 |
| €60,000  | €69,999  | 14                  | 10   |
| €70,000  | €79,999  | 5                   | 4    |
| €80,000  | €89,999  | 3                   | -    |
| €90,000  | €99,999  | 6                   | 5    |
| €100,000 | €109,999 | 5                   | 6    |
| €110,000 | €119,999 | -                   | 1    |
| €120,000 | €129,999 | 1                   | -    |
| €130,000 | €139,999 | 1                   | -    |
| €140,000 | €149,999 | -                   | 1    |
| €150,000 | €159,999 | 2                   | 1    |
| €160,000 | €169,999 | -                   | -    |
| €170,000 | €179,999 | -                   | -    |
| €180,000 | €189,999 | -                   | 1    |
| €190,000 | €199,999 | 1                   | -    |

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



## Consultancy Costs

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

|   | 2019<br>€      | 2018<br>€<br>Restated |
|---|----------------|-----------------------|
| Consultancy fees for move to new premises                                     | 553,296        | 181,009               |
| Legal advice  | 92,575         | 150,000               |
| Public Relations advice   | 124,353        | 115,000               |
| Research Integrity advice   | 29,227         | 21,902                |
| HR and Pensions advice  | 26,508         | -                     |
| SFI Discover Programme Evaluation review                                      | -              | 36,900                |
| Tax and Financial advice  | -              | 14,000                |
| Other   | 68,421         | 22,198                |
| <b>Total Consultancy</b>  | <b>894,380</b> | <b>541,009</b>        |
| Consultancy costs capitalised   | 553,296        | 181,009               |
| Consultancy costs charged to the Income and Expenditure and Retained Reserves | 341,084        | 360,000               |
| <b>Total</b>  | <b>894,380</b> | <b>541,009</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:

|                      | 2019<br>€      | 2018<br>€      |
|----------------------|----------------|----------------|
| <b>Domestic</b>      |                |                |
| -Board*              | 17,718         | 8,964          |
| -Employees           | 88,531         | 118,964        |
| <b>International</b> |                |                |
| -Board*              | 29,270         | 31,872         |
| -Employees           | 122,443        | 112,143        |
| <b>Total</b>         | <b>257,962</b> | <b>271,943</b> |

\* includes travel and subsistence of €2,690 paid directly to Board members in 2019 (2018: €2,478). The balance of €44,298 (2018: €38,358) relates to expenditure paid by SFI on behalf of the Board members.

## Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure

|                    | 2019<br>€    | 2018<br>€    |
|--------------------|--------------|--------------|
| Staff hospitality  | 4,357        | 1,000        |
| Client hospitality | -            | -            |
| <b>Total</b>       | <b>4,357</b> | <b>1,000</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 was in compliance with the Code of Practice for the Governance of State Bodies for 2019.

## Risk Management

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

# Organisational Structure 2020



## SFI Executive Team

### Prof Mark Ferguson

**Director General of SFI and Chief Scientific Adviser to the Government of Ireland**

See full profile on page 43.



### 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. He holds a BA (Mod) in Natural Science and PhD in Quantum Physics from TCD. 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 has a wealth of experience across a variety of sectors executing large-scale transformation, business re-engineering, strategic and change initiatives.



### Mr Donal Keane

**Chief Operations Officer**

Mr Donal Keane was appointed as Chief Operations Officer at SFI on 1 November 2005. He has responsibility for Financial Control, Financial Management of Grants, Information Systems, IT Networks, Data Protection/GDPR 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/ 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. Prior to this, Ruth has held a series of positions at SFI, including Director of Strategy and Communications, Director of Innovation, Communications and Education, and Director of Programmes, Enterprise and International Affairs. She has had responsibility for overseeing SFI research funding programmes and management of funded awards, as well as the Foundation's activities in conjunction with industry and international partners. Ruth joined SFI as a Scientific Programme Manager in November 2006. Prior to joining the Foundation, Ruth worked as a researcher at TCD. She holds PhD and Bachelor degrees in Genetics from TCD, where she was awarded a Trinity scholarship, the Eli Lilly Chemistry Prize and the Roberts prize for Biology. Ruth's PhD research on population genetics in hybrid zones, was funded by a prestigious studentship from the Wellcome Trust and was carried out at TCD and ILRI, Nairobi.



## Dr Siobhan Roche

### Director of Science for the Economy

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

## Statutory and Other Notices

### 1. Board Members – Register of Interests

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

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

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

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

SFI became a prescribed body under the Freedom of Information Act 1997 from 31 May 2006. SFI complies fully with the Act. Requests for information under this Act should be addressed to the FOI Officer, Science Foundation Ireland, Three Park Place, Hatch Street Upper, Dublin 2. In 2019, SFI received four FOI requests.

## Prompt Payment of Accounts Act 1997

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

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

### 4. (ii) Prompt payment to suppliers

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

<http://www.sfi.ie/about-us/governance/customer-service/>

## 1. 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 only on the basis of their abilities, knowledge and qualifications.

## 2. Protected Disclosures Act 2014

There were no protected disclosures made to SFI in 2019.

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

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

## 4. Clients' Charter

SFI has published a Clients' Charter setting out its commitment to a high quality of service. This charter includes a procedure for dealing with complaints. In 2019, no complaints were received under the charter.

## 5. 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.





# Annual Financial Statements Year Ended 31 December 2019





## **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 2019 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 2019 and of its income and expenditure for 2019 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**

**29 June 2020**

## 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 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.

### 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.

I also 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.

# Statement on Internal Control

## Scope of Responsibility

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

## Purpose of the System of Internal Control

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

The system of internal control, which accords with guidance issued by the Department of Public Expenditure and Reform has been in place in Science Foundation Ireland for the year ended 31 December 2019 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 2019 three were Board members (and two of these are qualified accountants) and two are external appointments (one of whom is a qualified accountant). One of the Board members, who was Chair of the ARC and who was a qualified accountant, retired from the Board and as Chair of the ARC on 6th December 2019, having reached the maximum ten years of service on the Board. One of the external ARC members, who is a qualified accountant, was appointed to the Board on 17th December 2019 and took over as Chair of the ARC from that date. The ARC met nine times in 2019. Science Foundation Ireland has also established an internal audit function which is adequately resourced and conducts a programme of work agreed with the ARC. The internal audit function and the role of Internal Audit Coordinator are both outsourced to professional services firms.

The ARC 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.
- » 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.
- » 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 2019, Science Foundation Ireland complied with those procedures.

## Review of Effectiveness

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

I confirm that the Board conducted an annual review of the effectiveness of the internal controls for 2019 on 30th March 2020.

## Internal Control Issues

No weaknesses in internal control were identified in relation to 2019 that require disclosure in the financial statements.

On behalf of the Board of Science Foundation Ireland:



**Prof Peter Clinch**  
Chairperson

Date: 26th June 2020



# Statement of Income and Expenditure and Retained Revenue Reserves

For the year ended 31 December 2019

|   |       | 2019           | 2018     |
|---|-------|----------------|----------|
|   |       |                | Restated |
|   | Notes | €'000          | €'000    |
| <b>Income</b>                                     |       |                |          |
| Oireachtas Grant                                  | 2     | 207,429        | 191,582  |
| Other Income                                      | 3     | 1,651          | 3,100    |
| Net Deferred Retirement Benefit Funding           | 5 (c) | 1,778          | 1,666    |
|   |       | <b>210,858</b> | 196,348  |
| <b>Expenditure</b>                                |       |                |          |
| Administration, Operations and Promotion Expenses | 4     | 12,471         | 10,776   |
| Depreciation                                      | 6     | 736            | 164      |
| Retirement Benefit Costs                          | 5(a)  | 1,564          | 1,461    |
| Grants Paid                                       | 9(a)  | 189,657        | 183,729  |
|   |       | <b>204,428</b> | 196,130  |
| Surplus for the year before appropriations        |       | <b>6,430</b>   | 218      |
| Transfer to the Capital Account                   | 7     | <b>(6,068)</b> | (84)     |
| Surplus for the Year after appropriations         |       | <b>362</b>     | 134      |
| Balance brought forward at 1 January 2019         |       | <b>727</b>     | 593      |
| Balance carried forward at 31 December 2019       |       | <b>1,089</b>   | 727      |

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



**Prof Peter Clinch**  
Chairperson

Date: 26th June 2020



**Prof Mark Ferguson**  
Director General

Date: 26th June 2020

# Statement of Comprehensive Income

For the year ended 31 December 2019

|  | Note | 2019       | 2018       |
|--|------|------------|------------|
|  |      | €'000      | €'000      |
| Surplus after Appropriations   |      | 362        | 134        |
| Experience losses on retirement benefit obligations                                  |      | (325)      | (415)      |
| Change in assumptions underlying the present value of retirement benefit obligations |      | (2,901)    | 810        |
| Total Actuarial (Loss)/ Gain in the period   | 5(d) | (3,226)    | 395        |
| Adjustment to Deferred Retirement benefits funding                                   |      | 3,226      | (395)      |
| <b>Total Comprehensive Income for the year</b>                                       |      | <b>362</b> | <b>134</b> |

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:



**Prof Peter Clinch**  
Chairperson

Date: 26th June 2020



**Prof Mark Ferguson**  
Director General

Date: 26th June 2020

# Statement of Financial Position

As at 31 December 2019

|  |       | 2019         | 2018         |
|--|-------|--------------|--------------|
|  |       |              | Restated     |
|  | Notes | €'000        | €'000        |
| <b>Fixed Assets</b>  |       |              |              |
| Property, Plant and Equipment                                    | 8     | 6,414        | 346          |
| <b>Current Assets</b>  |       |              |              |
| Receivables  | 10    | 449          | 292          |
| Cash and Cash Equivalents  |       | 2,707        | 1,686        |
|  |       | 3,156        | 1,978        |
| <b>Current Liabilities (Amounts falling due within one year)</b> |       |              |              |
| Payables   | 11    | (2,067)      | (1,251)      |
| Net Current Assets   |       | 1,089        | 727          |
| <b>Retirement benefits</b>                                       |       |              |              |
| Retirement Benefit Liability                                     | 5 (b) | (23,793)     | (18,789)     |
| Deferred Retirement Benefit Funding Asset                        | 5 (b) | 23,793       | 18,789       |
|  |       | -            | -            |
| <b>Total Net Assets</b>  |       | <b>7,503</b> | <b>1,073</b> |
| <b>Representing:</b>   |       |              |              |
| Capital Account  | 7     | 6,414        | 346          |
| Accumulated Surplus at end of Year                               |       | 1,089        | 727          |
|  |       | 7,503        | 1,073        |

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:



**Prof Peter Clinch**  
Chairperson

Date: 26th June 2020



**Prof Mark Ferguson**  
Director General

Date: 26th June 2020

# Statement of Cash Flows

For the year ended 31 December 2019

|  |       | 2019           | 2018         |
|--|-------|----------------|--------------|
|  |       |                | Restated     |
|  | Notes | €'000          | €'000        |
| <b>Net Cash Flows from Operating Activities</b>      |       |                |              |
| Excess Income over Expenditure                       |       | 6,430          | 218          |
| Depreciation of property, plant and equipment        | 6     | 736            | 164          |
| (Increase) / Decrease in Receivables                 | 10    | (157)          | 605          |
| Increase in Payables                                 | 11    | 816            | 545          |
| <b>Net Cash Flow from Operating Activities</b>       |       | <b>7,825</b>   | <b>1,532</b> |
| <b>Cash Flows from Investing Activities</b>          |       |                |              |
| Payments to acquire property, plant and equipment    | 8     | (6,838)        | (248)        |
| Loss on disposal of property, plant and equipment    |       | 34             | -            |
| <b>Net Cash Flows from Investing Activities</b>      |       | <b>(6,804)</b> | <b>(248)</b> |
| <b>Cash Flows from Financing Activities</b>          |       |                |              |
|  |       | -              | -            |
| <b>Increase in Cash and Cash Equivalents</b>         |       | <b>1,021</b>   | <b>1,284</b> |
| Cash and Cash Equivalents at 1 January 2019          |       | 1,686          | 402          |
| <b>Cash and Cash Equivalents at 31 December 2019</b> |       | <b>2,707</b>   | <b>1,686</b> |



# Notes to the Financial Statements

## For the year ended 31 December 2019

### 1. Accounting Policies

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

#### (a) General Information

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

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

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

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

#### (b) Statement of Compliance

The financial statements of Science Foundation Ireland for the year ended 31 December 2019 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 Business, Enterprise and Innovation 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 and Equipment**

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

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

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

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

**(f) Capital Account**

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

**(g) Foreign Currency**

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

**(h) Employee Benefits****Short term benefits**

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

**Retirement Benefits**

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

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

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

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

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

#### **(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 the SFI obtains benefit from the use of the leased buildings.

#### **(j) Research Grant Payments**

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

#### **(k) Critical Accounting Judgements and Estimates**

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

#### **Depreciation and Residual Values**

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

#### **Retirement Benefit Obligation**

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

The assumptions can be affected by:

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

## 2. Oireachtas Grants

The Oireachtas Grants paid to Science Foundation Ireland from Vote 32, Business, Enterprise and Innovation, (under the Science and Technology Development Programme) as shown in the Financial Statements consist of:

|  |             | 2019           | 2018         |
|--|-------------|----------------|--------------|
| <b>Grants for Current Expenditure</b>      |             | <b>€'000</b>   | <b>€'000</b> |
| Pay *                                      | Subhead B.4 | <b>4,992</b>   | 4,612        |
| Administration Expenses                    | Subhead B.4 | <b>7,050</b>   | 5,980        |
| <b>Grants for Capital Expenditure</b>      |             |                |              |
| Research Grants                            | Subhead B.4 | <b>172,750</b> | 175,490      |
| Capital costs for move to Three Park Place | Subhead B.4 | <b>7,137</b>   | -            |
| Research Grants                            | Subhead B.5 | <b>15,500</b>  | 5,500        |
|  |             | <b>207,429</b> | 191,582      |

\*The grant for pay expenditure is stated net of employee pension contributions of €236,000 (2018: €223,000) remitted to the Exchequer. These include deductions of €92,000 in 2019 (2018: €77,000) in respect of members of The Single Pension Scheme which were remitted to the Department of Public Expenditure and Reform.

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 made by the Minister to Enterprise Ireland, IDA and Science Foundation Ireland to enable them to discharge their Capital obligations and liabilities shall not exceed €14 billion. This limit was increased from €7 billion in December 2019. At 31 December, 2019 the aggregate amount made available to the three Agencies was €8.9 billion (2018: €6.5 billion).

## 3. Other Income

|  |       | 2019         | 2018         |
|--|-------|--------------|--------------|
| <b>Research Grant Funding:</b>   | Notes | <b>€'000</b> | <b>€'000</b> |
| <b>Contributions from other funding agencies to Awards made by SFI</b> |       |              |              |
| Teagasc  | 3(a)  | <b>189</b>   | 532          |
| Marine Institute   | 3(b)  | <b>733</b>   | 704          |
| Environmental Protection Agency  | 3(c)  | <b>101</b>   | 117          |
| Geological Society of Ireland  | 3(d)  | <b>297</b>   | 296          |
| Health Research Board  | 3(e)  | -            | 57           |
| Irish Cancer Society   | 3(f)  | <b>52</b>    | 184          |
| Department of Agriculture, Food and the Marine                         | 3(g)  | -            | 820          |
| Sub-Total  |       | <b>1,372</b> | 2,710        |



|  |       | 2019         | 2018         |
|--|-------|--------------|--------------|
|  | Notes | €'000        | €'000        |
| <b>Contribution towards EU ERA NET funding calls</b>   | 3(h)  |              |              |
| » ERA-HDHL   |       | 60           | 129          |
| » M-ERANET2  |       | -            | 6            |
| » EU NanoMed III   |       | 10           | -            |
| » BlueBio  |       | 1            | -            |
| » QuantERA   |       | 3            | 29           |
| <b>Income from EU in respect of SFI's participation in Horizon 2020 awards where SFI is a partner</b>                    | 3(i)  |              |              |
| ACT  |       | 36           | 24           |
| INROAD   |       | 14           | 9            |
| Contribution from Pfizer Corp towards awards made by SFI under the SFI-Pfizer Biotherapeutics Innovation Award Programme |       | 35           | 30           |
| European Space Agency  | 3(j)  | 120          | 163          |
| <b>Total</b>   |       | <b>1,651</b> | <b>3,100</b> |

- (a) Contribution from Teagasc for co-funding of multi-annual awards made by SFI in 2014 and 2017.
- (b) Contributions from the Marine Institute for co-funding of multi-annual awards made by SFI in 2016, 2017 and 2018.
- (c) Contributions from the Environmental Protection Agency for co-funding of multi-annual awards made by SFI in 2016 and 2017.
- (d) Contributions from the Geological Society of Ireland for Co-Funding of multi-annual awards made in 2016, 2017 and 2018.
- (e) Contribution from the Health Research Board in respect of one US/Ireland R&D Partnership award.
- (f) Contribution from the Irish Cancer Society towards the ICS-SFI Collaborative Cancer Research Centre (CCRC) Programme awarded 2015.
- (g) Contribution from the Department of Agriculture, Food and the Marine for SFI Research Centre awarded in 2018.
- (h) SFI participates in a number of different ERA Net funding calls in conjunction with the 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.
- (i) SFI is a partner in two EU research awards made under the European Union's Horizon 2020 research and innovation programme; a) ACT (Communities of PrACTice for Accelerating Gender Equality and Institutional Change in Research and Innovation across Europe) and b) InRoad (towards better synchronisation of priority settings and evaluation mechanisms for research infrastructures beyond national relevance).
- (j) Funding arising from an annual contract between SFI and the European Space Agency (ESA) for the implementation of a European Space Education Resource Office (ESERO) in Ireland.

## 4. Administration, Operations and Promotion Expenses

|  | Notes | 2019          | 2018              |
|--|-------|---------------|-------------------|
|  |       | €'000         | Restated<br>€'000 |
| Remuneration and Other Pay Costs       | 4(a)  | 5,409         | 5,166             |
| Accommodation                          |       | 2,240         | 971               |
| Programme Management                   |       | 1,100         | 687               |
| Marketing and Supports                 | 4(b)  | 1,481         | 1,593             |
| IT Support and Infrastructure          |       | 683           | 769               |
| Administration Expenses                | 4(c)  | 605           | 468               |
| Accounting and Internal Audit Services |       | 324           | 337               |
| Professional and Support Services      | 4(d)  | 318           | 355               |
| Specialist and Education Services      |       | 210           | 291               |
| HR Management                          |       | 69            | 108               |
| Statutory Audit Fee                    |       | 32            | 31                |
| <b>Total</b>                           |       | <b>12,471</b> | <b>10,776</b>     |

### 4 (a) Remuneration and other pay costs

|   | Notes | 2019         | 2018         |
|---|-------|--------------|--------------|
|   |       | €'000        | €'000        |
| Staff Salaries                              |       | 4,576        | 4,266        |
| Employers' Contribution to Social Welfare   |       | 457          | 403          |
| (Decrease) /increase in Holiday Pay Accrual |       | (30)         | 43           |
| Staff Training and Development              |       | 74           | 104          |
| Staff Travel and Subsistence Costs          | 4(e)  | 211          | 231          |
| Board Members' Remuneration and Expenses    | 4(f)  | 121          | 119          |
| <b>Total</b>                                |       | <b>5,409</b> | <b>5,166</b> |
| Actual Employed at Year End                 |       | 62           | 59           |

From 1 January 2019 onwards, members of public service defined benefit pension schemes pay an additional superannuation contribution (ASC) arising from the Public Service Stability Agreement (2018-2020) and the Public Service Pay and Pensions Act 2017. ASC has replaced the pension-related deduction (PRD) which ceased at the end of 2018. While PRD was a temporary emergency measure, ASC is a permanent contribution in respect of pensionable remuneration.

The total Key Management personnel compensation for 2019 was €841,000 (2018: €946,000). This includes the compensation for the Board members, the Director General and four Senior Executives who reported to him (including maternity leave cover for one senior executive in 2018). Science Foundation Ireland deducted pension levies from staff of €220,000 (2018: €239,000) which were paid over to the Department for Business, Enterprise and Innovation. There were no overtime payments, other allowances or termination payments made in either year.

**4 (b) Included in Marketing and Supports is public engagement consultant fees of €124,000 (2018: €115,000).**

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

|                    | 2019     | 2018     |
|--------------------|----------|----------|
|                    | €'000    | €'000    |
| Staff Hospitality  | 4        | 1        |
| Client Hospitality | -        | -        |
| <b>Total</b>       | <b>4</b> | <b>1</b> |

**4 (d) Professional and Support Services**

|  | 2019       | 2018              |
|--|------------|-------------------|
|  | €'000      | Restated<br>€'000 |
| Legal Advice                             | 93         | 150               |
| Research Integrity Advice                | 29         | 22                |
| HR and Pensions Advice                   | 27         | -                 |
| Tax and Financial Advice                 | -          | 14                |
| SFI Discover Programme Evaluation Review | -          | 37                |
| Other Professional Fees                  | 68         | 22                |
| Administrative Services                  | 101        | 110               |
| <b>Total</b>                             | <b>318</b> | <b>355</b>        |

The 2018 charge for Professional and Support Services have been reduced by €181,000 to reflect a prior year adjustment to capitalise the design, project management and consultancy fees incurred in 2018 relating to the move to the new premises. See note eight for details of this adjustment.

There were no legal cases or settlements made in 2019. 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**

|                                      | 2019       | 2018       |
|--------------------------------------|------------|------------|
|                                      | €'000      | €'000      |
| Domestic Travel and Subsistence      | 89         | 119        |
| International Travel and Subsistence | 122        | 112        |
| <b>Total</b>                         | <b>211</b> | <b>231</b> |

## Employee Benefits Breakdown

| Range of Key Management Personnel Remuneration |            | Number of Employees |      |
|--|------------|---------------------|------|
| From   | To         | 2019                | 2018 |
| €60,000  | - €69,999  | 14                  | 10   |
| €70,000  | - €79,999  | 5                   | 4    |
| €80,000  | - €89,999  | 3                   | -    |
| €90,000  | - €99,999  | 6                   | 5    |
| €100,000                                       | - €109,999 | 5                   | 6    |
| €110,000                                       | - €119,999 | -                   | 1    |
| €120,000                                       | - €129,999 | 1                   | -    |
| €130,000                                       | - €139,999 | 1                   | -    |
| €140,000                                       | - €149,999 | -                   | 1    |
| €150,000                                       | - €159,999 | 2                   | 1    |
| €160,000                                       | - €169,999 | -                   | -    |
| €170,000                                       | - €179,999 | -                   | -    |
| €180,000                                       | - €189,999 | -                   | 1    |
| €190,000                                       | - €199,999 | 1                   | -    |

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



**4(f) Board Members' Remuneration and Expenses**

| <b>Board Member</b>     | <b>Board Fees<br/>2019<br/>€</b> | <b>Vouched<br/>Expenses<br/>2019<br/>€</b> | <b>Meetings<br/>Attended<br/>2019<br/>Number</b> | <b>Board Fees<br/>2018<br/>€</b> | <b>Vouched<br/>Expenses<br/>2018<br/>€</b> | <b>Meetings<br/>Attended<br/>2018<br/>Number</b> |
|-------------------------|----------------------------------|--|--|----------------------------------|--|--|
| Prof Peter Clinch       | -                                | 247  | 3 out of 3                                       | -                                | -  | n/a  |
| Prof Mark Ferguson      | -                                | -  | 9 out of 9                                       | -                                | -  | 6 out of 6                                       |
| Prof Sir Tom Blundell   | 11,970                           | 1,874                                      | 7 out of 9                                       | 11,970                           | 1,399                                      | 5 out of 6                                       |
| Bernie Cullinan         | 11,165                           | 292  | 9 out of 9                                       | 11,970                           | 215  | 5 out of 6                                       |
| Aidan Donnelly          | 11,970                           | -  | 9 out of 9                                       | 11,970                           | 150  | 6 out of 6                                       |
| Mary Doyle              | -                                | 278  | 7 out of 9                                       | -                                | 114  | 6 out of 6                                       |
| Dr Pat Duane            | 6,789                            | -  | 3 out of 6                                       | 11,970                           | -  | 6 out of 6                                       |
| Maire Geoghegan Quinn   | 11,970                           | 340  | 6 out of 9                                       | 8,645                            | 800  | 4 out of 5                                       |
| Brendan Harte           | -                                | -  | 1 out of 1                                       | -                                | -  | n/a  |
| Mr Liam Madden          | -                                | 27,477                                     | 6 out of 9                                       | -                                | 30,473                                     | 5 out of 6                                       |
| Grainne McAleese        | 11,970                           | -  | 6 out of 9                                       | 2,220                            | -  | 1 out of 1                                       |
| Dermot Mulligan         | -                                | -  | 8 out of 9                                       | -                                | -  | 5 out of 6                                       |
| Barry O'Sullivan        | -                                | -  | 3 out of 9                                       | -                                | 311  | 5 out of 6                                       |
| Ann Riordan             | -                                | -  | n/a  | 19,031                           | 439  | 5 out of 5                                       |
| Board fees paid to UCD* | 8,550                            | -  | n/a  | -                                | -  | n/a  |
| General Board expenses* | -                                | 16,480                                     | n/a  | -                                | 6,935                                      | n/a  |
| <b>Total</b>            | <b>74,384</b>                    | <b>46,988</b>                              |  | <b>77,776</b>                    | <b>40,836</b>                              |  |

Board members are paid fees as determined by the Minister for Business, Enterprise and Innovation with the consent of the Minister for Public Expenditure and Reform. Certain Board members are excluded from receiving fees from SFI under the "One Person One Salary" remuneration arrangements whereby public servants cannot receive Board fees in addition to a salary. These are Prof Peter Clinch, Prof Mark Ferguson, Ms Mary Doyle and Mr Dermot Mulligan.

\*Board fees paid to UCD are in relation to Prof Clinch, through DBEI. The Department of Public Expenditure and Reform sanctioned Science Foundation Ireland to offset UCD's costs (as employer) in releasing Prof Clinch to serve on the Board of SFI up to the relevant fee for the position of Chair. In addition, two Board members, Mr Liam Madden and Mr Barry O'Sullivan, have waived their Board fees.

The following Board members are based overseas: Prof Sir Tom Blundell is UK based while Mr Barry O'Sullivan and Mr Liam Madden are US based.

The Director General's remuneration package for 2019 was as follows: annual basic salary €193,000 (2018: €186,000) and standard public sector pension arrangements apply. No performance related bonus was applicable.

Prof Ferguson is also Chief Scientific Advisor (CSA) to the Government, a role formerly under the administration of Forfás. There is no remuneration for this role and all administration costs for the office are absorbed by SFI. Total expenses for the year incurred by the Director General in the discharge of both roles amounted to €41,000 (2018: €62,000) of which €600 (2018: €4,000) related to CSA activities.

Board members vouched expenses are set out as follows:

|                                      | 2019      | 2018      |
|--------------------------------------|-----------|-----------|
|                                      | €'000     | €'000     |
| Domestic Travel and Subsistence      | 18        | 9         |
| International Travel and Subsistence | 29        | 32        |
| <b>Total</b>                         | <b>47</b> | <b>41</b> |

Board expenses includes travel and subsistence of €3,000 paid directly to Board members in 2019 (2018: €2,000). The balance of €44,000 (2018: €39,000) relates to expenditure paid by Science Foundation Ireland on behalf of the Board members. General Board expenses for 2019 include accommodation and meal costs for two Board meetings held off site.

The following appointments to and resignations from the Board took place in 2019:

1. Dr Pat Duane retired on 25th July 2019.
2. Prof Sir Tom Blundell was reappointed on 25th July 2019.
3. Prof Peter Clinch was appointed as Chairperson on 1st August 2019.
4. Ms Bernie Cullinan retired on 7th December 2019.
5. Mr Brendan Harte was appointed on 17th December 2019.
6. Mr Barry O'Sullivan retired on 31st December 2019.

As confirmed by the Board at its October 2018 meeting, with effect from the retirement of Ms Riordan on 4th December 2018, Ms Bernie Cullinan, Deputy Chairperson of SFI assumed the Chairperson role pending appointment of a new Chairperson on August 1st, 2019 following the PAS process. Mr Aidan Donnelly became Chairperson of the Audit and Risk Committee until August 1st, 2019 on an interim basis.

## 5. Retirement Benefit Costs

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

|   | 2019  | 2018  |
|---|-------|-------|
|   | €'000 | €'000 |
| Current Service Cost                              | 1,424 | 1,325 |
| Interest on Retirement Benefit Scheme Liabilities | 376   | 359   |
| Employee Contributions                            | (236) | (223) |
|   | 1,564 | 1,461 |

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

|   | 2019          | 2018   |
|---|---------------|--------|
|   | €'000         | €'000  |
| Net Retirement Benefit Obligation at 1 January          | 18,789        | 17,518 |
| Current Service Cost                                    | 1,424         | 1,325  |
| Interest Costs  | 376           | 359    |
| Payments to Pensioners                                  | (22)          | (18)   |
| Actuarial Loss / (Gain)                                 | 3,226         | (395)  |
| <b>Net Retirement Benefit Obligation at 31 December</b> | <b>23,793</b> | 18,789 |

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

|   | 2019  | 2018  |
|---|-------|-------|
|   | €'000 | €'000 |
| Funding recoverable in respect of Current Year retirement benefit costs | 1,800 | 1,684 |
| Less State Grant applied to pay retirement benefits                     | (22)  | (18)  |
|   | 1,778 | 1,666 |

**D. General Description of the scheme**

Science Foundation Ireland has responsibility for the pension costs of:

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

2. Staff who are members of the Single Public Service pension scheme.

Both schemes are defined benefit pension schemes and are fully funded annually on a pay as you go basis from monies provided by the Department of Business, Enterprise and Innovation.

The schemes are defined benefit final salary schemes with retirement benefits linked to final salary and length of service. The valuation used for FRS 102 disclosures is based on an actuarial review of the schemes for the financial year ended 31 December 2019 carried out by a qualified independent actuary, taking account of the requirements of the FRS in order to assess the schemes liabilities at 31 December 2019.

The principal actuarial assumptions were as follows:

| Liabilities shown in the Financial Accounts are computed using the Projected Unit Credit method.        | 2019                        | 2018                 |
|---|-----------------------------|----------------------|
| <b>Financial Assumptions</b>  |                             |                      |
| Discount Rate*  | <b>1.25% p.a</b>            | 2.0% p.a             |
| Future Salary increases   | <b>3.0% p.a</b>             | 3.3% p.a             |
| Future State Pension increases  | <b>3.0% p.a</b>             | 3.3% p.a             |
| Future Pension increases  | <b>2.5% p.a</b>             | 2.8% p.a             |
| Future Price inflation  | <b>1.5% p.a</b>             | 1.8% p.a             |
| Revaluation in Deferment  | <b>2.5% p.a</b>             | 2.8% p.a             |
| * discount rate reflects a duration of liabilities of approximately 31 years in 2019 (31 years in 2018) |                             |                      |
| <b>Demographic Assumptions</b>  |                             |                      |
| Mortality Pre-Retirement  | <b>62% PNML00 (Males)</b>   | 62% PNML00 (Males)   |
|   | <b>70% PNFLO0 (Females)</b> | 70% PNFLO0 (Females) |
| Mortality Post-Retirement   | <b>58% ILT15 (Males)</b>    | 58% ILT15 (Males)    |
|   | <b>62% ILT15 (Females)</b>  | 62% ILT15 (Females)  |
| <b>Retirement Age</b>   |                             |                      |
| New Entrants  | <b>Age 65</b>               | Age 65               |
| Other Members   | <b>Age 62</b>               | Age 62               |



The Mortality basis explicitly allows for Improvements in life expectancy over time, so that life expectancy at retirement will depend on the year in which a member attains retirement age (age 65). The table below shows the life expectancy for members attaining age 65 in 2019 and 2039.

| <b>Year of Attaining Age 65</b> | <b>2019</b> | <b>2039</b> |
|---------------------------------|-------------|-------------|
| Life Expectancy - Male          | <b>21.5</b> | <b>23.9</b> |
| Life Expectancy - Female        | <b>24.0</b> | <b>26.0</b> |

| <b>Prior Year Comparatives</b>                                      |                |             |             |             |             |
|---|----------------|-------------|-------------|-------------|-------------|
| Year Ending December 31st   | <b>2019</b>    | <b>2018</b> | <b>2017</b> | <b>2016</b> | <b>2015</b> |
|   | €'000s         | €'000s      | €'000s      | €'000s      | €'000s      |
| <b>Closing pension liability</b>                                    | <b>23,793</b>  | 18,789      | 17,518      | 15,113      | 10,076      |
| Experience (Loss) / Gain Arising on the Plan Liabilities            | <b>(325)</b>   | (415)       | (828)       | 161         | (469)       |
| % Liabilities   | <b>-1.3%</b>   | -2.2%       | -4.7%       | 1.1%        | -4.6%       |
| Total (Loss) / Gain Recognised in Statement of Comprehensive Income | <b>(3,226)</b> | 395         | (824)       | (3,766)     | (1,058)     |
| % Liabilities   | <b>-13.5%</b>  | 2.1%        | -4.7%       | -24.9%      | -10.5%      |

## 6. Depreciation

|                                  | <b>Note</b> | <b>2019</b> | <b>2018</b> |
|----------------------------------|-------------|-------------|-------------|
|                                  |             | €'000       | €'000       |
| Depreciation charge for the year | 8           | <b>736</b>  | 164         |
|                                  |             | <b>736</b>  | 164         |

## 7. Capital Account

|   | <b>2019</b>  | <b>2018</b>       |
|---|--------------|-------------------|
|   | €'000        | Restated<br>€'000 |
| <b>Opening Balance as at 1 January</b>  | <b>346</b>   | 262               |
| Transfer from Statement of Income and Expenditure and Retained Revenue Reserves |              |                   |
| - To fund Fixed Asset acquisitions  | 8            | 248               |
| - Amortised in line with asset depreciation                                     | 8            | (164)             |
| -To reflect loss on disposal of Fixed Assets                                    | <b>(34)</b>  | -                 |
|   | <b>6,068</b> | 84                |
| <b>Closing balance as at 31 December</b>  | <b>6,414</b> | 346               |

## 8. Property, Plant and Equipment

|                            | Leasehold<br>Improvements<br>€'000 | Computer<br>Equipment<br>€'000 | Computer<br>Software<br>€'000 | Fixtures &<br>Fittings<br>€'000 | Total<br>€'000 |
|----------------------------|------------------------------------|--------------------------------|-------------------------------|---------------------------------|----------------|
|                            | Restated                           |                                |                               |                                 | Restated       |
| <b>Cost</b>                |                                    |                                |                               |                                 |                |
| At 1 January 2019          | 181                                | 896                            | 768                           | 166                             | 2,011          |
| Additions                  | 5,236                              | 920                            | -                             | 682                             | 6,838          |
| Disposals/Write downs      | -                                  | (587)                          | (637)                         | (164)                           | (1,388)        |
| <b>At 31 December 2019</b> | <b>5,417</b>                       | <b>1,229</b>                   | <b>131</b>                    | <b>684</b>                      | <b>7,461</b>   |
| <b>Depreciation</b>        |                                    |                                |                               |                                 |                |
| At 1 January 2019          | -                                  | 776                            | 751                           | 138                             | 1,665          |
| Charge for Year            | 226                                | 369                            | 5                             | 136                             | 736            |
| Disposals/Write downs      | -                                  | (584)                          | (633)                         | (137)                           | (1,354)        |
| <b>At 31 December 2019</b> | <b>226</b>                         | <b>561</b>                     | <b>123</b>                    | <b>137</b>                      | <b>1,047</b>   |
| <b>Net Book Amount</b>     |                                    |                                |                               |                                 |                |
| At 1 January 2019          | 181                                | 120                            | 17                            | 28                              | 346            |
| Net Movement for Year      | 5,010                              | 548                            | (9)                           | 519                             | 6,068          |
| <b>At 31 December 2019</b> | <b>5,191</b>                       | <b>668</b>                     | <b>8</b>                      | <b>547</b>                      | <b>6,414</b>   |

### Prior Year Adjustment - Leasehold Improvements

In the 2018 financial statements Design, Project Management and Consultancy fees for the move to new premises totalling €181,000 were charged to Professional and Support services. In 2019 further Design, Project Management and Consultancy fees of €554,000 were incurred and are capitalised under Leasehold Improvements. To ensure consistency of accounting treatment for capitalisation of all consultancy costs, the 2018 comparative figures have been restated to reflect these costs as Leasehold Improvements.

The impact on the 2018 comparative figures is as follows:

|                                    | Published<br>€'000 | Adjustment<br>€'000 | Restated<br>€'000 |
|------------------------------------|--------------------|---------------------|-------------------|
| Leasehold Improvements             | -                  | 181                 | 181               |
| Professional and Support Services  | 536                | (181)               | 355               |
| Capital Account                    | 165                | 181                 | 346               |
| Accumulated Surplus at End of Year | 727                | -                   | 727               |

## 9. Grants

| 9 (a) Analysis of Grants Paid  | 2019<br>€'000  | 2018<br>€'000  |
|--|----------------|----------------|
| Priority Area A - Future Networks and Communications                                 | 16,995         | 12,279         |
| Priority Area B - Data Analytics, Management, Security and Privacy                   | 23,729         | 10,898         |
| Priority Area C - Digital Platforms, Content and Applications                        | 8,265          | 11,032         |
| Priority Area D - Connected Health and Independent Living                            | 2,570          | 1,643          |
| Priority Area E - Medical Devices  | 10,378         | 11,607         |
| Priority Area F - Diagnostics  | 16,920         | 18,863         |
| Priority Area G - Therapeutics: Synthesis, Formulation, Processing and Drug Delivery | 19,104         | 16,084         |
| Priority Area H - Food for Health  | 9,181          | 6,721          |
| Priority Area I - Sustainable Food Production and Processing                         | 6,283          | 11,877         |
| Priority Area J - Marine Renewable Energy  | 6,066          | 5,128          |
| Priority Area K - Smart Grids and Smart Cities                                       | 6,079          | 5,199          |
| Priority Area L - Manufacturing Competitiveness                                      | 9,989          | 5,386          |
| Priority Area M - Processing Technologies and Novel Materials                        | 23,210         | 37,059         |
| Priority Area N - Innovation in Services and Business Processes                      | 546            | 599            |
| Basic Biomedical Science (BBS)   | 6,898          | 7,139          |
| Other  | 23,444         | 22,215         |
| <b>Total</b>   | <b>189,657</b> | <b>183,729</b> |

The analysis of grants paid reflects the results of the National Research Prioritisation Strategy adopted by government following input from the research community, the enterprise sector and research funding departments and agencies.

| 9 (b) Grant Commitments   | Notes | 2019<br>€'000  | 2018<br>€'000 |
|---|-------|----------------|---------------|
| <b>Outstanding Grant Commitments as at 1 January</b>                      |       | <b>400,897</b> | 458,006       |
| Grants approved during the year   |       | 448,510        | 132,077       |
| De-commitments during the year  |       | (5,555)        | (8,166)       |
| Grant payments made in the year – Gross                                   | 9(a)  | (189,657)      | (183,730)     |
| Amounts received from other funding agencies for Co-Funding of SFI awards | 3     |                |               |
| Teagasc   |       | 189            | 532           |
| Marine Institute  |       | 733            | 704           |
| Environmental Protection Agency   |       | 101            | 117           |
| Geological Society of Ireland   |       | 297            | 296           |
| Health Research Board   |       | -              | 57            |
| Irish Cancer Society  |       | 52             | 184           |
| Department of Agriculture, Food and the Marine                            |       | -              | 820           |
| <b>Outstanding Commitments as at 31 December</b>                          |       | <b>655,567</b> | 400,897       |

## 10. Receivables

|                                | 2019<br>€'000 | 2018<br>€'000 |
|--------------------------------|---------------|---------------|
| Debtors                        | 20            | 13            |
| Prepayments and Accrued income | 429           | 279           |
| <b>Total</b>                   | <b>449</b>    | <b>292</b>    |

## 11. Payables

|                             | 2019<br>€'000 | 2018<br>€'000 |
|-----------------------------|---------------|---------------|
| General Creditors           | 30            | 231           |
| Deferred Income*            | 1,084         | 289           |
| Accruals                    | 813           | 661           |
| Interagency Balance - IDA** | 140           | 70            |
| <b>Total</b>                | <b>2,067</b>  | <b>1,251</b>  |

\*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 ERA-Net Co-funded calls (made in conjunction with other EU funding agencies and the EU). These amounts are credited to Other Income over the period to which the related expenditure is incurred.

\*\*Interagency Balance relates to the balance owed by SFI to IDA at 31 December 2019, being the difference between the amount of money paid to IDA by SFI and the actual money spent by IDA on behalf of SFI.

## 12. Commitments Under Operating Leases

SFI commenced payment of rent for its new premises on 14th May 2019, and moved in on 23rd September 2019. Rent payments on its old premises continued until 31st October 2019. Rent paid on the old premises between May 2019 and October 2019 amounted to €284k and is included in the rent expense disclosed above.

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 commencing in May 2019, following a one year rent free period. The commitments also reflect the lease payments for a coffee machine in 3PP.

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

|                  | 2019<br>€'000 | 2018<br>€'000 |
|------------------|---------------|---------------|
| Within 1 year    | 1,672         | 1,122         |
| During 2-5 years | 6,677         | 6,734         |
| Over 5 years     | 30,661        | 32,551        |

### 13. Taxation

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

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

### 14. Events After the Reporting Date

There are no events between the reporting date and the date of approval of these financial statements for issue that require adjustment to the financial statements.

The Board recognises that the Covid-19 pandemic is a significant event which has occurred since the reporting date. The Board is taking the situation seriously and is monitoring the situation, in conjunction with management, on an ongoing basis. The business continues to operate with measures in place to protect staff through facilitating remote working for all employees. Staff are working remotely and services continue to be provided. To date, the operations and most of the entity's activities are being maintained while adjusting to the different way in which the business is being delivered. A new COVID 19 crisis research "Call", has been launched which is being funded out of our existing Capital allocation. SFI has not incurred any additional Pay costs and any incremental Non-Pay costs incurred are being met from savings associated with lower travel and accommodation costs for external reviewers and SFI staff during the COVID-19 period.

Going concern - The Board considers that, as Science Foundation Ireland provides a public service that is principally funded by moneys provided by the Exchequer, via its parent department, Department of Business, Enterprise and Innovation, it is appropriate to prepare these financial statements on a going concern basis.

### 15. Related Party Disclosures

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

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

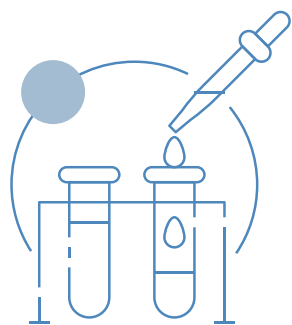
### 16. Contingencies and Legal Actions

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

### 17. Approval of Financial Statements

The Financial Statements were approved by the Board of Science Foundation Ireland on 26th June 2020.





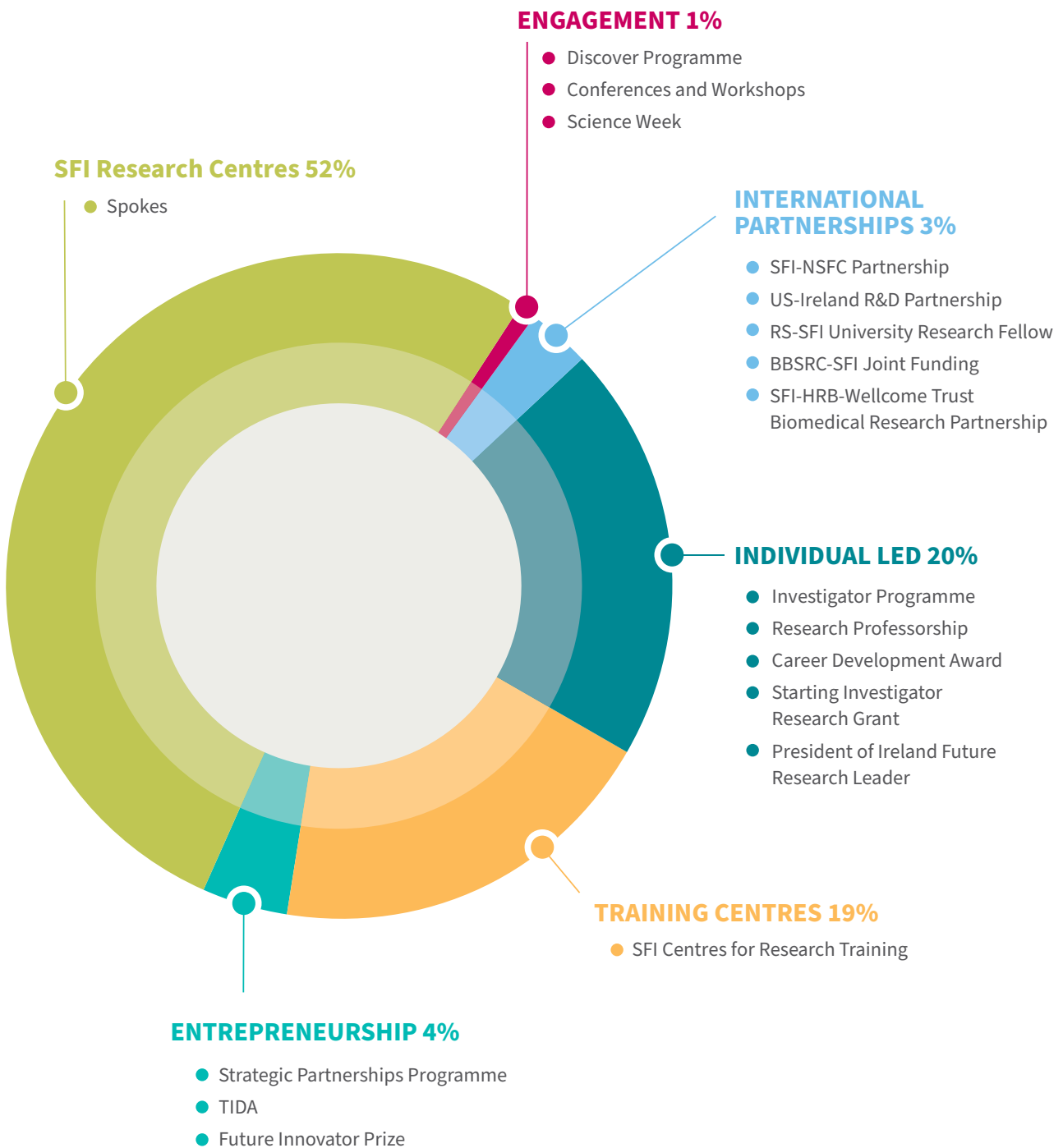
# Award Portfolio and New Awards Approved

Science Foundation Ireland funds early and mid-stage researchers and established highly esteemed research leaders, through individual and collaborative awards, across a diverse and balanced portfolio of programmes. In 2019, **317 awards** were approved across 32 programmes, with a value of **€448.5 million**. Total payments to research bodies/institutions were **€188 million**.

## Summary of award programme decisions in 2019:

- » 20 outstanding researchers were supported with an investment of €10.3 million through the **SFI Starting Investigator** Research Grant (SIRG) Programme.
- » One award was made under the **SFI Research Professor** Programme to attract world-leading researchers to Ireland, with an investment of €8 million.
- » The **SFI Research Infrastructure** Programme funded five research equipment and facilities awards valued at €9.4 million to support key research infrastructure projects.
- » 34 awards were made under the **SFI Future Innovator Prize** Call 2019 with an investment of €7.2 million.
- » 47 awards were made through the **SFI Discover** Annual Programme totalling €5.6 million to support the education and engagement of the public and young people in STEM.
- » 71 awards valued at €4.9 million were approved under the **SFI Industry Fellowship** Programme aimed at providing researchers with experience of working in an industry-research environment.
- » €3 million was invested via six awards under the President of Ireland **SFI Future Research Leaders** Programme.

# Science Foundation Ireland Portfolio 2019



## Grant Commitments and Payments Analysis 2019

| 2019 Payments by Institution                                   | €000s  |
|--|--------|
| Trinity College Dublin   | 40,556 |
| University College Dublin                                      | 34,607 |
| National University of Ireland, Galway                         | 28,812 |
| University College Cork  | 25,167 |
| University of Limerick   | 21,934 |
| Tyndall National Institute                                     | 9,024  |
| Royal College of Surgeons in Ireland                           | 8,575  |
| Dublin City University   | 4,659  |
| National University of Ireland, Maynooth                       | 3,462  |
| The Royal Society  | 2,517  |
| Dublin Institute for Advanced Studies                          | 1,527  |
| Teagasc  | 1,149  |
| Health Research Board  | 1,110  |
| TU Dublin (Dublin Institute of Technology)                     | 1,061  |
| Cork Institute of Technology                                   | 754    |
| RTÉ  | 605    |
| The National Institute for Bioprocessing Research and Training | 490    |
| Athlone Institute of Technology                                | 398    |
| The Festival of Curiosity Ltd.                                 | 282    |
| Camara Education   | 251    |
| Stop.watch Television Ltd.                                     | 239    |
| Waterford Institute of Technology                              | 229    |
| Cosmos Education t/a Blackrock Castle Observatory              | 162    |
| The Institution of Engineers of Ireland                        | 150    |
| National Youth Council of Ireland                              | 147    |
| Scifest Ltd.   | 135    |
| Atlantic Corridor  | 120    |
| Foróige  | 104    |
| Cork City Council t/a Lifetime Lab                             | 102    |
| Galway-Mayo Institute of Technology                            | 93     |
| Royal Dublin Society RDS                                       | 85     |
| Institute of Technology Sligo                                  | 59     |
| British Council Ireland  | 59     |
| National College of Ireland                                    | 46     |
| Feilte Dhuibh Linne Teoranta t/a St Patrick's Day Festival     | 46     |
| Riverbank Arts Centre CLG                                      | 45     |
| Mol Teic t/a Dingle Hub / Dingle Creativity and Innovation Hub | 45     |
| The National Concert Hall                                      | 44     |
| Galway Community Circus  | 40     |

| 2019 Payments by Institution                               | €000s                                     |
|--|---|
| Crawford Art Gallery                                       | 38  |
| Wexford County Council                                     | 35  |
| Gallomanor Communications Ltd.                             | 34  |
| The Cork Electronic Industries Association                 | 31  |
| Whipsmart Media Ltd.                                       | 31  |
| Glenosheen Ltd.  | 30  |
| Limerick Institute of Technology                           | 29  |
| ECDL Ireland Ltd T/A ICS Skills                            | 28  |
| Monaghan County Council                                    | 27  |
| Mayo County Council t/a Mayo Science & Technology Festival | 26  |
| Institute of Technology Tralee                             | 23  |
| Galway Science & Technology Forum                          | 20  |
| South Dublin County Council                                | 19  |
| I Wish STEM Company Ltd.                                   | 16  |
| Pint of Science Ireland                                    | 12  |
| Imaginosity, Dublin Children's Museum                      | 8   |
| Louth County Council                                       | 8   |
| The Children's Cultural Centre Limited t/a The Ark         | 8   |
| The Rediscovery Centre Ltd.                                | 8   |
| Centre for Climate Change t/a Cool Planet Experience       | 8   |
| Fighting Blindness   | 7   |
| Kildare County Council                                     | 7   |
| Dublinia Heritage Centre                                   | 6   |
| Fingal County Council                                      | 5   |
| Ballyhoura Development Ltd.                                | 5   |
| The Cool Planet Experience                                 | 4   |
| Mary Immaculate College                                    | 3   |
| Learning Hub Limerick Ltd.                                 | 3   |
| Lifetime Lab   | 2   |
| DunLaoghaire Rathdown County Council                       | 1   |
| Gaiety School of Acting                                    | 1   |
| Sirius Science Ltd.  | 1   |
| FabLab Foundation Ireland                                  | -7 (reimbursement of funds)               |
| Irish Cancer Society                                       | -53                                       |
| Institute of Technology Carlow                             | -90 (includes reimbursement of FIP Award) |
| Environmental Protection Agency                            | -101                                      |
| Geological Survey of Ireland                               | -297                                      |
| Marine Institute   | -541                                      |
| <b>Total</b>   | <b>188,285</b>                            |

| 2019 Payments by Programme   | €000s           |
|--|-----------------|
| SFI Research Centres   | €64,621         |
| Investigator Programme   | €26,783         |
| SFI Centres for Research Training                                  | €9,844          |
| Research Infrastructure  | €9,459          |
| Research Professorship Programme                                   | €8,134          |
| Career Development Award   | €7,866          |
| SFI Future Innovator Prize   | €7,294          |
| Strategic Partnership Programme                                    | €5,691          |
| SFI Discover Awards  | €5,652          |
| Spokes Fixed Programme   | €5,067          |
| Industry Fellowship  | €4,990          |
| Starting Investigators Research Grant (SIRG)                       | €4,698          |
| Research Centres PhD Scheme  | €3,483          |
| President of Ireland Future Research Leaders (PIYRA)               | €3,159          |
| Spokes Rolling Programme   | €1,945          |
| SFI-NSFC Partnership   | €1,944          |
| Royal Society-SFI University Research Fellowship                   | €1,895          |
| US-Ireland R&D Partnership   | €1,862          |
| BBSRC-SFI Joint Funding of Research                                | €1,765          |
| SFI Fellowship   | €1,499          |
| SFI Maternity Allowance  | €1,489          |
| Investigator Programme - PhD programme                             | €1,417          |
| EU Co-Funding Initiatives  | €1,344          |
| EPSRC-SFI Centres for Doctoral Training (CDT) Partnership          | €987            |
| SFI Science Policy Research Programme                              | €818            |
| SFI-HRB-Wellcome Trust Biomedical Research Partnership             | €650            |
| President of Ireland Young Researcher Award (PIYRA)                | €575            |
| SFI ERC Development Programme                                      | €562            |
| US-Ireland R&D Partnership: Centre-to-Centre mechanism             | €500            |
| ICS-SFI Collaborative Cancer Research Centre (CCRC) Programme 2014 | €379            |
| Royal Society-SFI University Research Fellow Enhancement Award     | €378            |
| EPSRC-SFI Joint Funding of Research                                | €277            |
| Conference and Workshop  | €244            |
| US-Ireland R&D Partnership: Centre-to-Centre Mechanism             | €224            |
| Technological Innovation Development Award TIDA                    | €188            |
| Translational Research Awards (TRA)                                | €183            |
| Royal Society-SFI University Start Up Grant                        | €125            |
| SFI-Pfizer Biotherapeutics Innovation Award Programme 2014         | €123            |
| Royal Society-SFI University Research Fellow Research Grant        | €117            |
| SFI ERC Support Programme  | €88             |
| US-Ireland R&D Partnership Planning Programme                      | €1              |
| NSF/SFI Graduate Research opportunities Worldwide (GROW) Programme | -€2,334         |
| Brussels Conference Event Programme                                | -€2,425         |
| SFI-NSF I-Corps@SFI Entrepreneurial Training Programme             | -€53,591        |
| <b>Total</b>   | <b>€188,285</b> |



| 2019 Grant Commitments by Programme                              | €000s           |
|--|-----------------|
| SFI Research Centres Phase 2                                     | €231,416        |
| SFI Centres for Research Training                                | €103,583        |
| EPSRC-SFI Centres for Doctoral Training (CDT) Partnership        | €38,580         |
| Research Infrastructure  | €9,684          |
| President of Ireland Future Research Leaders                     | €8,726          |
| SFI Fellowship   | €6,797          |
| SFI Future Innovator Prize                                       | €6,757          |
| Strategic Partnership Programme                                  | €6,505          |
| Industry Fellowship  | €5,818          |
| Starting Investigators Research Grant (SIRG)                     | €5,162          |
| SFI Discover Awards  | €5,009          |
| Research Professorship Programme                                 | €3,851          |
| Spokes Rolling Programme   | €3,689          |
| Royal Society -SFI University Research Fellowship                | €2,954          |
| US-Ireland R&D Partnership                                       | €1,755          |
| EPSRC-SFI Joint Funding of Research                              | €1,694          |
| SFI Future Innovator Prize - Winner                              | €1,275          |
| US-Ireland R&D Partnership: Centre-to-Centre Mechanism           | €810            |
| SFI Maternity Allowance  | €923            |
| SFI-HRB-Wellcome Trust Biomedical Research Partnership           | €646            |
| SFI Future Innovator Prize - Runner-up                           | €631            |
| SFI/RTÉ Joint Initiative   | €585            |
| SFI Research Centres   | €494            |
| SFI Discover Science Week  | €475            |
| Conferences and Workshops  | €255            |
| Royal Society-SFI Research Grant for Research Fellows            | €158            |
| Royal Society -SFI URF Enhancement Award                         | €124            |
| SFI-HRB-Wellcome Partnership Research Career Re-entry Fellowship | €84             |
| SFI Future Innovator Prize Workshop Grants                       | €30             |
| SFI-HRB-Wellcome Partnership (Seed Award)                        | €25             |
| US-Ireland R&D Partnership Planning Programme                    | €2              |
| <b>Total</b>   | <b>€448,510</b> |

| <b>2019 Number of Awards by Programme</b>                        |            |
|--|------------|
| Industry Fellowship  | 71         |
| SFI Discover Awards  | 47         |
| SFI Maternity Allowance  | 35         |
| SFI Discover Science Week  | 26         |
| SFI Future Innovator Prize                                       | 24         |
| Conference and Workshop  | 15         |
| SFI Fellowship   | 15         |
| Starting Investigator Research Grant (SIRG)                      | 11         |
| SFI Future Innovator Prize Workshop Grants                       | 8          |
| EPSRC-SFI Centres for Doctoral Training (CDT) Partnership        | 7          |
| President of Ireland Future Research Leaders (PIYRA)             | 6          |
| Research Centres Phase 2   | 6          |
| SFI Centres for Research Training                                | 6          |
| Research Infrastructure  | 5          |
| RS-SFI University Research Fellowship                            | 5          |
| EPSRC-SFI Joint Funding of Research                              | 4          |
| SFI-HRB-Wellcome Trust Biomedical Research Partnership           | 4          |
| US Ireland R&D Partnership                                       | 4          |
| SFI Secondment Model   | 3          |
| SFI Research Centres   | 2          |
| Spokes Rolling Programme   | 2          |
| Research Professorship Programme                                 | 1          |
| RS-SFI Research Grant for Research Fellows                       | 1          |
| RS-SFI University Research Fellow Enhancement Award              | 1          |
| SFI Future Innovator Prize - Runner-up                           | 1          |
| SFI Future Innovator Prize - Winner                              | 1          |
| SFI/RTE Joint Initiative   | 1          |
| SFI-HRB-Wellcome Partnership (Seed Award)                        | 1          |
| SFI-HRB-Wellcome Partnership Research Career Re-entry Fellowship | 1          |
| Strategic Partnership Programme                                  | 1          |
| US-Ireland R&D Partnership Planning Programme                    | 1          |
| US-Ireland R&D Partnership: Centre-to-Centre Mechanism           | 1          |
| <b>Total</b>   | <b>317</b> |

| <b>2019 Number of Awards by Institution</b>                    |    |
|--|----|
| University College Dublin                                      | 64 |
| Trinity College Dublin   | 48 |
| National University of Ireland, Galway                         | 35 |
| University College Cork  | 33 |
| University of Limerick   | 23 |
| Dublin City University   | 16 |
| Health Research Board  | 8  |
| Tyndall National Institute                                     | 8  |
| The Royal Society  | 7  |
| National University of Ireland, Maynooth                       | 4  |
| Royal College of Surgeons in Ireland                           | 4  |
| Teagasc  | 4  |
| Athlone Institute of Technology                                | 3  |
| Atlantic Corridor  | 3  |
| Cork Institute of Technology                                   | 3  |
| TU Dublin (Dublin Institute of Technology)                     | 3  |
| Waterford Institute of Technology                              | 3  |
| British Council Ireland  | 2  |
| Dublin Institute for Advanced Studies                          | 2  |
| Institute of Technology Sligo                                  | 2  |
| The Festival of Curiosity Ltd.                                 | 2  |
| The National Institute for Bioprocessing Research and Training | 2  |
| Ballyhoura Development Ltd.                                    | 1  |
| Camara Education   | 1  |
| Centre for Climate Change t/a Cool Planet Experience           | 1  |
| Cosmos Education t/a Blackrock Castle Observatory              | 1  |
| Crawford Art Gallery   | 1  |
| Dublinia Heritage Centre                                       | 1  |
| Feilte Dhuibh Linne Teoranta t/a St Patrick's Day Festival     | 1  |
| Fighting Blindness   | 1  |
| Foróige  | 1  |
| Gallomanor Communications Ltd.                                 | 1  |
| Galway Community Circus  | 1  |
| Galway Science & Technology Forum                              | 1  |
| Galway-Mayo Institute of Technology                            | 1  |
| Glenosheen Ltd.  | 1  |
| Imaginosity, Dublin Children's Museum                          | 1  |
| Institute of Technology Carlow                                 | 1  |
| Institute of Technology Tralee                                 | 1  |
| Kildare County Council   | 1  |
| Limerick Institute of Technology                               | 1  |
| Louth County Council   | 1  |

| <b>2019 Number of Awards by Institution</b>                    |            |
|--|------------|
| Marine Institute   | 1          |
| Mary Immaculate College  | 1          |
| Mayo County Council t/a Mayo Science & Technology Festival     | 1          |
| Mol Teic t/a Dingle Hub / Dingle Creativity and Innovation Hub | 1          |
| Monaghan County Council  | 1          |
| National College of Ireland                                    | 1          |
| Pint of Science Ireland  | 1          |
| Riverbank Arts Centre CLG                                      | 1          |
| RTÉ  | 1          |
| Scifest Ltd.   | 1          |
| South Dublin County Council                                    | 1          |
| Stop.watch Television Ltd.                                     | 1          |
| The Children's Cultural Centre Limited t/a The Ark             | 1          |
| The Cork Electronic Industries Association                     | 1          |
| The Institution of Engineers of Ireland                        | 1          |
| The National Concert Hall                                      | 1          |
| The Rediscovery Centre Ltd.                                    | 1          |
| Wexford County Council   | 1          |
| <b>Total</b>   | <b>317</b> |

## Full list of SFI awards made in 2019

| SFI Research Scientist | Programmes  | Research Title   | Research Body                          | Total Value of Award Including Overheads € |
|------------------------|---|--|--|--|
| Marcel Jansen          | Conference and Workshop                             | UV-B and Climate Change: Impacts on Plants and Vegetation  | University College Cork                | 1,200.00                                   |
| David Brayden          | Conference and Workshop                             | Keystone Symposium: Delivering Therapeutics Across Biological Barriers   | University College Dublin              | 22,000.00                                  |
| Elfed Lewis            | Conference and Workshop                             | IEEE World Forum on Internet of Things   | University of Limerick                 | 40,000.00                                  |
| Graham Ellis           | Conference and Workshop                             | Groups in Galway 2019  | National University of Ireland, Galway | 3,480.00                                   |
| Fraser Mitchell        | Conference and Workshop                             | 20th INQUA (International Union for Quaternary Research) Congress  | Trinity College Dublin                 | 30,000                                     |
| Sinead Ryan            | Conference and Workshop                             | HMI Workshop and Conference Series   | Trinity College Dublin                 | 31,250                                     |
| Edmond Magner          | Conference and Workshop                             | XXV International Symposium on Bioelectrochemistry and Bioenergetics   | University of Limerick                 | 14,500                                     |
| Ruth Britto            | Conference and Workshop                             | Amplitudes 2019  | Trinity College Dublin                 | 23,900.00                                  |
| Anthony Cronin         | Conference and Workshop                             | Linear Algebra and Matrix Theory Workshop  | University College Dublin              | 4,000.00                                   |
| Angela Feechan         | Conference and Workshop                             | International Symposium on Cereal Leaf Blights 2019  | University College Dublin              | 10,550.00                                  |
| Geraldine Duffy        | Conference and Workshop                             | 1st Annual Scientific Meeting of One Health European Joint Programme on Food-borne Zoonoses, Antimicrobial Resistance and Emerging Threats | Teagasc                                | 2,920.00                                   |
| Michael O'Dwyer        | Conference and Workshop                             | From Bench to Bedside - Targeted and Immunotherapies for Blood Cancers   | National University of Ireland, Galway | 2,800.00                                   |
| Eugene Benilove        | Conference and Workshop                             | 8th International Symposium on Bifurcations and Instabilities in Fluid Dynamics  | University of Limerick                 | 2,400.00                                   |
| Cian Desmond           | Conference and Workshop                             | Wind Energy Science Conference (WESC)  | University College Cork                | 26,100.00                                  |
| Liam P Barry           | Conference and Workshop                             | European Conference and Exhibition on Optical Communications   | Dublin City University                 | 40,000.00                                  |
| Michael Morris         | EPSRC-SFI Centres for Doctoral Training Partnership | Advanced characterisation of materials   | Trinity College Dublin                 | 6,248,818.10                               |
| Kevin O'Connor         | EPSRC-SFI Centres for Doctoral Training Partnership | Atoms-to-products an integrated approach to sustainable chemistry  | University College Dublin              | 5,763,364.00                               |
| Abhay Pandit           | EPSRC-SFI Centres for Doctoral Training Partnership | Engineered tissues for discovery, industry and medicine  | National University of Ireland, Galway | 6,328,069.90                               |
| Denis Dowling          | EPSRC-SFI Centres for Doctoral Training Partnership | Advanced metallic systems: metallurgical challenges for the digital manufacturing environment  | University College Dublin              | 5,266,591.40                               |
| Paul Townsend          | EPSRC-SFI Centres for Doctoral Training Partnership | Photonic integration and advanced data storage   | Tyndall National Institute             | 6,209,960.80                               |



| SFI Research Scientist | Programmes  | Research Title   | Research Body  | Total Value of Award Including Overheads € |
|------------------------|---|--|--|--|
| Brian O'Gallachoir     | EPSRC-SFI Centres for Doctoral Training Partnership | Energy resilience and the built environment  | University College Cork  | 4,855,006.40                               |
| Michael Zaworotko      | EPSRC-SFI Centres for Doctoral Training Partnership | Transformative pharmaceutical technologies   | University of Limerick   | 3,908,491.20                               |
| Marius de Leeuw        | EPSRC-SFI Joint Funding of Research                 | Solving spins and strings  | Trinity College Dublin   | 267,117.50                                 |
| Liam P Barry           | EPSRC-SFI Joint Funding of Research                 | Energy efficient communication using combs (EEMC2)   | Dublin City University   | 587,881.55                                 |
| David O'Regan          | EPSRC-SFI Joint Funding of Research                 | Emergent magnetism and spin interactions in metallo-molecular interfaces   | Trinity College Dublin   | 640,298.80                                 |
| Eoin Scanlan           | EPSRC-SFI Joint Funding of Research                 | Glycoconjugate tools for sensing endoglycosidase activity: a diagnostic sugar probe for heparinase   | Trinity College Dublin   | 199,203                                    |
| Ruslan Dmitriev        | Industry Fellowship                                 | Cellulose-based biosensor scaffolds for advanced tissue engineering  | University College Cork  | 95,471                                     |
| Mieszko Wilk           | Industry Fellowship                                 | Assessment of functionality of immune cells following Solupore <sup>®</sup> -mediated engineering  | Trinity College Dublin   | 62,674                                     |
| Filipa Lebre           | Industry Fellowship                                 | Bioactive drug incorporation into 3D bioprinted scaffolds for oncological application  | Trinity College Dublin   | 74,438                                     |
| Irene Lara-Saez        | Industry Fellowship                                 | Type VII collagen restoration for RDEB using a non-viral non-invasive CRISPR system  | University College Dublin                                      | 75,633                                     |
| Ciara Sanz-Nogues      | Industry Fellowship                                 | CD39/HGF modified CD362+ stromal cell therapy for ischemic muscle injury   | National University of Ireland Galway                          | 76,074.00                                  |
| Ehsan Rezvani          | Industry Fellowship                                 | Materials development for chip-based electrochemical sensors and energy storage devices  | Trinity College Dublin   | 83,150.08                                  |
| Patrick Floris         | Industry Fellowship                                 | Implementation of small-scale solutions within a newly established process development laboratory for supporting commercial scale biopharmaceutical manufacturing operations | The National Institute for Bioprocessing Research and Training | 86,052.50                                  |
| Stephen Porter         | Industry Fellowship                                 | Developing magnetic sensors technology through materials science methods and advanced characterisation techniques  | Trinity College Dublin   | 78,139.58                                  |
| Maria Lopez Zambrano   | Industry Fellowship                                 | Achieving Nearly Zero Energy Building (NZEB) standards by deep retrofitting existing buildings   | National University of Ireland, Galway                         | 77,038.00                                  |
| Deirdre Kilbane        | Industry Fellowship                                 | Nanomote   | Waterford Institute of Technology                              | 121,956.04                                 |
| Lea Tan                | Industry Fellowship                                 | Fats, oils and solids pre-treatment in a low-cost approach for resource recovery (FOTLA-RR)  | National University of Ireland, Galway                         | 83,093.75                                  |
| Edward Fagan           | Industry Fellowship                                 | Material characterisation and loading analysis for the Ampyx Power airborne wind energy system   | National University of Ireland, Galway                         | 75,147.33                                  |
| Barry Aldwell          | Industry Fellowship                                 | Development of novel sealing methods for high pressure aerospace valve assemblies  | Trinity College Dublin   | 97,074.25                                  |
| James Kelly            | Industry Fellowship                                 | Oscillating water column: from late stage research to early stage commercialisation  | University College Cork  | 88,300.00                                  |
| Valentina Castagnola   | Industry Fellowship                                 | Microfluidic approaches for BioNano constructs   | University College Dublin                                      | 88,419.75                                  |

| SFI Research Scientist         | Programmes          | Research Title  | Research Body                          | Total Value of Award Including Overheads € |
|--------------------------------|---------------------|---|--|--|
| Josue Parra Cetina             | Industry Fellowship | Development of photonic lenses and wire bonding for integrated circuits in optical communications applications  | Trinity College Dublin                 | 77,519.50                                  |
| Bruce Murphy                   | Industry Fellowship | Investigating the next-generation of non-animal derived 2D structural biomaterials  | Trinity College Dublin                 | 44,346.00                                  |
| Andrea Hess-Wijaya             | Industry Fellowship | Investigate self-diagnosing and self-configuring techniques to predict and prevent network faults   | Trinity College Dublin                 | 80,833.50                                  |
| Andrew Harvey                  | Industry Fellowship | Advanced materials and processes for the commercialisation of a novel implantable pressure sensor   | Trinity College Dublin                 | 87,346.67                                  |
| Hugh Manning                   | Industry Fellowship | Anti-microbial TiO <sub>2</sub> -based coatings for 3D printed ceramic and metal substrates   | Trinity College Dublin                 | 79,169.67                                  |
| Atul Thorat                    | Industry Fellowship | Porous glass materials: surface chemistry for separation science  | Trinity College Dublin                 | 72,100.08                                  |
| Okan Orhan                     | Industry Fellowship | Computational modelling of mechanical, thermal and plasmonic properties of Au <sub>x</sub> M <sub>(1-x)</sub> (M=Cu, Ag, Ni, Pd, Pt, Rh, Ir) Type Binary Alloys   | Trinity College Dublin                 | 72,178.40                                  |
| Maria Dolores Yesares Ortiz    | Industry Fellowship | Assessment of mineralisation styles in the Thinly Bedded Units at Navan deposit: from textural and chemical evolution to its application as a vectoring tool for exploration of Irish-type Zn-Pb deposits | University College Dublin              | 76,220.00                                  |
| Timothy Collins                | Industry Fellowship | Development of nano-enhanced electrochemical sensors for on-chip applications   | University College Cork                | 67,187.83                                  |
| Koen Torremans                 | Industry Fellowship | Mineral exploration under deep cover: unravelling the structural architecture of the Irish Lower Carboniferous and its basement   | University College Dublin              | 80,695.96                                  |
| Andres Omar Portillo Dominguez | Industry Fellowship | Combining the power of edge computing and machine learning to enhance multi-variant anomaly detection in IoT  | University College Dublin              | 114,804.75                                 |
| Katarzyna Mnich                | Industry Fellowship | Validation of novel class PERK inhibitors for the treatment of cancer   | National University of Ireland, Galway | 80,229.75                                  |
| Laura Milena Rueda Delgado     | Industry Fellowship | Identification of a predictive electrophysiological model of cognitive function in amnesic mild cognitive impairment  | Trinity College Dublin                 | 71,669.00                                  |
| Mark Bates                     | Industry Fellowship | Characterising the proteogenome of Circulating Tumour Cells [CTCs]  | Trinity College Dublin                 | 76,170.00                                  |
| Holger Alexander Ebhardt       | Industry Fellowship | Transfer and implementation of a novel protein panel test for diabetic kidney disease   | University College Dublin              | 105,062.92                                 |
| Yusuf Sani                     | Industry Fellowship | Edge-assisted intelligent video delivery service  | University College Cork                | 79,509.17                                  |
| Aine Fanning                   | Industry Fellowship | Characterisation of immunity and inflammatory profiles of different Bacillus probiotic strains in human intestinal epithelial cell lines  | University College Cork                | 78,343.13                                  |
| Elena Gomez Alvarez            | Industry Fellowship | The variance of air quality parameters after mechanical interventions of prototype climate control system   | University College Cork                | 97,613.67                                  |
| Yuanyuan Chen                  | Industry Fellowship | ThinStent - development of polylactic acid composites based biodegradable coronary stents with a thin stent strut via 3D printing and braiding technologies   | Athlone Institute of Technology        | 69,137.83                                  |
| Simone Marcone                 | Industry Fellowship | Validation of the clinical relevance of the OncoMasTR Assay in prostate cancer  | University College Dublin              | 84,143.76                                  |

| SFI Research Scientist | Programmes          | Research Title  | Research Body                          | Total Value of Award Including Overheads € |
|------------------------|---------------------|---|--|--|
| Annemarie Larkin       | Industry Fellowship | Novel immunodiagnostics for viral disease   | Dublin City University                 | 103,506.00                                 |
| Michele Conroy         | Industry Fellowship | Dynamic atomic interface characterisation for improved performance of electrical and magnetic devices   | University of Limerick                 | 84,752.50                                  |
| Nessan Kerrigan        | Industry Fellowship | Catalytic asymmetric synthesis of cyclopentanones and application to the synthesis of prostaglandin pharmaceuticals   | Dublin City University                 | 68,500.00                                  |
| Brendan Egan           | Industry Fellowship | Efficacy of a next-generation strength exercise training device for older adults  | Dublin City University                 | 46,922.00                                  |
| Brian Hand             | Industry Fellowship | Coronary catheter shaft predictive modelling  | Cork Institute of Technology           | 78,423.76                                  |
| Tatsiana Mikulchik     | Industry Fellowship | Novel photonic devices with customised diffraction patterns for in-line monitoring of nanoproperties of functionalised metallic surfaces and polymer thin films in production environment | Technological University of Dublin     | 71,541.75                                  |
| Suhaib Salawdeh        | Industry Fellowship | A novel approach for designing sustainable and smart precast concrete elements  | Galway-Mayo Institute of Technology    | 103,786.00                                 |
| Zhihang Zhang          | Industry Fellowship | Investigation of stabilities of key plasma reactive species under different controlled and environmental conditions for food storage (PLACHEM)  | Teagasc                                | 66,264.83                                  |
| Eoin Hinchey           | Industry Fellowship | Development of a digital twin-based safety system for smart manufacturing applications  | University of Limerick                 | 90,076                                     |
| Tania Malik            | Industry Fellowship | A framework for efficient and scalable high performance big data risk analytics (HP-Analytics)  | University College Dublin              | 80,983                                     |
| Amr Ahmed              | Industry Fellowship | Haptic robotic system for rehabilitation with modular design  | University College Dublin              | 74,361                                     |
| Ciaran Finucane        | Industry Fellowship | Next generation patient pathways enabled through structured remote management of heart failure using novel implantable pressure sensors and advanced analytics                            | Trinity College Dublin                 | 128,613                                    |
| Nivedita Basu          | Industry Fellowship | Development of robust, scalable and compatible electrode surface modification strategies for highly integrated electrochemical liquid sensors   | Tyndall National Institute             | 78,757                                     |
| Karzan Zangana         | Industry Fellowship | ECOSil - economical and ecofriendly manufacture of nanoporous silica  | University College Cork                | 67,513                                     |
| Caroline Murphy        | Industry Fellowship | Development of high-throughput bioassays for the detection of host cell by-products during biotherapeutic production  | Dublin City University                 | 84,902                                     |
| AmirAli Farokhniaee    | Industry Fellowship | Development of new adaptive strategies for closed-loop deep brain stimulators   | University College Dublin              | 82,437                                     |
| Kevin Moroney          | Industry Fellowship | Multiscale modelling of chip-scale electrochemical gas sensors to optimise design, monitor state-of-health and enable novel integrated gas sensor platforms                               | University of Limerick                 | 88,380                                     |
| John Williams          | Industry Fellowship | Understanding the impact of the bioreactor environment on CHO cell biology and a quality attribute associated with activity of a therapeutic enzyme                                       | University College Cork                | 83,574                                     |
| Amit Kumar Haldar      | Industry Fellowship | Development and testing of novel sandwich panel structure suitable for use in the next generation wind and tidal energy device  | National University of Ireland, Galway | 74,025                                     |

| SFI Research Scientist      | Programmes                                   | Research Title  | Research Body                            | Total Value of Award Including Overheads € |
|-----------------------------|--|---|--|--|
| Claudio Monasterolo         | Industry Fellowship                          | Development of organocatalytic procedures for the preparation of halogenated ketones  | University College Dublin                | 73,140                                     |
| Alexandra Micu              | Industry Fellowship                          | SmartBridge: Continuous monitoring of bridges in operational condition  | University College Dublin                | 68,466                                     |
| Emily Growney Kalaf         | Industry Fellowship                          | ARDENT 2: development of a next generation neuromodulation device for the treatment of inflammatory diseases of the nasal cavity  | National University of Ireland, Galway   | 80,097                                     |
| Eimear O'Hara               | Industry Fellowship                          | Development of an additively manufactured shoulder implant with OsteoAnchor technology  | National University of Ireland, Galway   | 66,322                                     |
| Christophe Penno            | Industry Fellowship                          | Revolutionising ribosome profiling  | University College Cork                  | 95,634                                     |
| Ihsan Ullah                 | Industry Fellowship                          | Enhancing pedestrian detection by predicting their intent   | National University of Ireland, Galway   | 101,410                                    |
| Emanuel Popovici            | Industry Fellowship                          | Digital IC design for security applications   | University College Cork                  | 113,771                                    |
| Maria Angeles Nunez Sanchez | Industry Fellowship                          | The use of tangential flow filtration for the removal of protein impurities from therapeutic monoclonal antibody process streams  | University College Cork                  | 71,306                                     |
| Elaine Waters               | Industry Fellowship                          | Mycoprep: a novel effective peptide treatment for Mycoplasma bovis  | Teagasc                                  | 84,284                                     |
| Pranab Biswas               | Industry Fellowship                          | Materials enhancement and tip development to achieve high performance RF MEMS switch  | Trinity College Dublin                   | 88,210                                     |
| Yadong Jiang                | Industry Fellowship                          | Design and optimisation of highly efficient wind turbine blades for retrofitting existing Irish wind farms  | National University of Ireland, Galway   | 75,423                                     |
| Marcus Baumann              | Industry Fellowship                          | Development of continuous biocatalysed processes - continuous biocatalysed chemicals (CATCH)  | University College Dublin                | 96,099                                     |
| Sigen Asigen                | Industry Fellowship                          | Development of UV crosslinkable hyperbranched poly(beta-amino ester) as a new generation of tissue adhesive for sternum bonding   | University College Dublin                | 67,961                                     |
| LiGuo Wang                  | Industry Fellowship                          | Adaptation of wave structure interaction modelling to verify the value proposition of a novel anchor optimisation product   | National University of Ireland, Maynooth | 77,300                                     |
| Ting Bi                     | Industry Fellowship                          | An intent-driven network-based multipath-TCP framework (IDNMTF) over 5G heterogeneous network   | Dublin City University                   | 82,573                                     |
| Vijaya Krishna Kanala       | Industry Fellowship                          | Develop adhesive biodegradable scaffolds of hyaluronic acid to aid arterial wound closure in high-pressure systems  | National University of Ireland, Galway   | 81,683                                     |
| Harish Ravishankar          | Industry Fellowship                          | Increasing nutrient removal performance in Membrane Aerated Bio-film Reactor (MABR) for the treatment of municipal wastewater   | National University of Ireland, Galway   | 81,056                                     |
| Roman Romero-Ortuno         | President of Ireland Future Research Leaders | FRAILMatics: mathematical research and big data analytics towards the development of the next generation of transdisciplinary diagnostics for the assessment of physiological vulnerability in older adults | Trinity College Dublin                   | 1,525,970.00                               |
| Sonia Negrao                | President of Ireland Future Research Leaders | Looking into time - how abiotic stress impacts barley production and malting quality  | University College Dublin                | 1,466,217.00                               |

| SFI Research Scientist | Programmes  | Research Title  | Research Body                            | Total Value of Award Including Overheads € |
|------------------------|---|---|--|--|
| Caitriona Jackman      | President of Ireland Future Research Leaders          | Data analytics and machine learning in Space science  | Dublin Institute for Advanced Studies    | 1,325,539.00                               |
| Rory Johnson           | President of Ireland Future Research Leaders          | Discovering non-protein-coding vulnerabilities in lung cancer with CRISPR-Cas9  | University College Dublin                | 1,546,106.00                               |
| Nessa O'Connor         | President of Ireland Future Research Leaders          | Beyond biofuel: advanced seaweed cultivation for marine biodiscovery and climate change mitigation  | Trinity College Dublin                   | 1,374,384                                  |
| Eoin McNamee           | President of Ireland Future Research Leaders          | MicroRNA control of mucosal inflammation  | National University of Ireland, Maynooth | 1,488,046                                  |
| Fengzhou Fang          | Research Infrastructure                               | Ultra-precision multi-functional freeform manufacturing infrastructure for innovative medical devices and implants  | University College Dublin                | 1,938,950                                  |
| Michael Zaworotko      | Research Infrastructure                               | Centre for in-situ characterisation of advanced materials (CISCAM): in-situ powder x-ray diffraction suite  | University of Limerick                   | 716,823                                    |
| Annette Byrne          | Research Infrastructure                               | National preclinical imaging centre   | Royal College of Surgeons in Ireland     | 3,431,166                                  |
| Gavin Walker           | Research Infrastructure                               | National advanced drug product manufacturing facility which will provide for batch and continuous processing of pharmaceutical powders into finalised drug products | University of Limerick                   | 1,193,234                                  |
| Michael Morris         | Research Infrastructure                               | National x-ray research laboratory  | Trinity College Dublin                   | 2,404,650                                  |
| Ortwin Hess            | Research Professorship Programme                      | Metamaterial quantum nanophotonics  | Trinity College Dublin                   | 3,851,432                                  |
| Marius de Leeuw        | Royal Society-SFI Research Grant for Research Fellows | Correlation functions and symmetry  | The Royal Society                        | 158,500.00                                 |
| Neale Gibson           | Royal Society-SFI Research Grant for Research Fellows | Atmospheres of alien worlds: spectroscopy of transiting exoplanets  | The Royal Society                        | 147,285.78                                 |
| Lewys Jones            | Royal Society-SFI Research Grant for Research Fellows | Retrofitting small-scale, high-impact, modular innovations for next-generation transmission electron microscopy (RetroTEM)  | The Royal Society                        | 722,938.60                                 |
| Andrea Droghetti       | Royal Society-SFI Research Grant for Research Fellows | Exploring out-of-equilibrium effects and functionalities at hybrid interfaces   | The Royal Society                        | 666,290.10                                 |
| Eimear Dolan           | Royal Society-SFI Research Grant for Research Fellows | A soft robotics approach to reduce the foreign body response to medical implants  | The Royal Society                        | 732,567.94                                 |
| John Regan             | Royal Society-SFI Research Grant for Research Fellows | Seed black hole formation from environment to accretion   | The Royal Society                        | 685,229.66                                 |
| Neale Gibson           | Royal Society-SFI URF Enhancement Award               | Atmospheres of alien worlds: exploring Doppler spectroscopy for probing exoplanets atmospheres  | The Royal Society                        | 124,800.00                                 |
| James Gleeson          | SFI Centres for Research Training                     | Foundations of Data Science   | University of Limerick                   | 17,699,453                                 |
| Brian Mac Namee        | SFI Centres for Research Training                     | Machine Learning  | University College Dublin                | 15,594,868                                 |



| SFI Research Scientist | Programmes                        | Research Title  | Research Body  | Total Value of Award Including Overheads € |
|------------------------|-----------------------------------|---|--|--|
| Cathal Seoighe         | SFI Centres for Research Training | Genomics Data Science   | National University of Ireland, Galway                     | 17,210,106                                 |
| Barry O'Sullivan       | SFI Centres for Research Training | Artificial Intelligence   | University College Cork                                    | 18,102,689                                 |
| Carol O'Sullivan       | SFI Centres for Research Training | Digitally Enhanced Reality  | Trinity College Dublin                                     | 17,068,223                                 |
| Dirk Pesch             | SFI Centres for Research Training | SFI Centre for Research Training in Advanced Networks for Sustainable Societies | University College Cork                                    | 17,908,066                                 |
| Valerie Cowman         | SFI Discover                      | CEIA - Education to Industry  | The Cork Electronic Industries Association                 | 29,240                                     |
| Sharon Lawton          | SFI Discover                      | VEX Robotics  | Cork Institute of Technology                               | 297,327                                    |
| Shane McCracken        | SFI Discover                      | I'm a Scientist Ireland and I'm an Engineer Ireland                             | Gallomanor Communications Ltd.                             | 34,650                                     |
| Declan Fahie           | SFI Discover                      | Peigi's Adventures in Science   | University College Dublin                                  | 49,844                                     |
| Enda O'Connell         | SFI Discover                      | ReelLIFE SCIENCE video competition  | National University of Ireland, Galway                     | 15,000                                     |
| Sylvia Leatham         | SFI Discover                      | Advanced manufacturing: 3D printing and teacher training                        | University College Dublin                                  | 21,400                                     |
| Grainne Walshe         | SFI Discover                      | SOPHia: science outreach to promote physics to female students                  | University of Limerick                                     | 49,980                                     |
| Roseanne O'Leary       | SFI Discover                      | Engineers Ireland STEPS Programme - 2020 and 2021                               | The Institution of Engineers of Ireland                    | 300,000                                    |
| Conor Cahalane         | SFI Discover                      | Space, Surveyors and Students: STEM and sustainable development goals           | National University of Ireland, Maynooth                   | 299,079                                    |
| Catriona Kenny         | SFI Discover                      | Sensational STEM - sensory friendly STEM for ASD students                       | Tyndall National Institute                                 | 41,000                                     |
| Claire Gillan          | SFI Discover                      | Scientist-in-training: spreading science through smartphones                    | Trinity College Dublin                                     | 50,000                                     |
| Pamela O'Brien         | SFI Discover                      | Pair teaching in coding for primary school teachers                             | Limerick Institute of Technology                           | 32,400                                     |
| Jackie Gorman          | SFI Discover                      | Quiet Science - co creating ASD appropriate STEM outreach                       | Atlantic Corridor  | 50,000                                     |
| Anne Boddaert          | SFI Discover                      | Invisible light   | Crawford Art Gallery                                       | 42,430                                     |
| Sheila Porter          | SFI Discover                      | SciFest   | Scifest Ltd.   | 150,000                                    |
| John Morrissey         | SFI Discover                      | Rebel yeast   | University College Cork                                    | 49,807                                     |
| Danielle Lynch         | SFI Discover                      | Science Foundation Ireland Science Zone at the Festival Village                 | Feilte Dhuibh Linne Teoranta t/a St Patrick's Day Festival | 46,966                                     |
| Jackie Gorman          | SFI Discover                      | Investing in the future - science capital training                              | Atlantic Corridor  | 50,000                                     |

| SFI Research Scientist  | Programmes   | Research Title  | Research Body  | Total Value of Award Including Overheads € |
|-------------------------|--------------|---|--|--|
| Clair McSweeney         | SFI Discover | Engaging Space  | Cosmos Education t/a Blackrock Castle Observatory              | 299,092                                    |
| Abhay Pandit            | SFI Discover | Curious Young Minds   | National University of Ireland, Galway                         | 28,695                                     |
| Muriel Grenon           | SFI Discover | Cell EXPLORERS Escape Room  | National University of Ireland, Galway                         | 46,642                                     |
| Mary Murphy             | SFI Discover | Let's Find Out Series 2   | Stop.watch Television Ltd.                                     | 238,345                                    |
| Jessamyn Fairfield      | SFI Discover | Bright Club   | National University of Ireland, Galway                         | 49,862                                     |
| Becca Clayton           | SFI Discover | The Science Behind The Circus   | Galway Community Circus  | 44,150                                     |
| Pramod Pathak           | SFI Discover | ELI community STEM engagement through coding clubs, workshops and events      | National College of Ireland                                    | 50,000                                     |
| Marianne Checkley       | SFI Discover | STEM as Gaeilge agus Cant   | Camara Education   | 501,928                                    |
| Geraldine O'Meara       | SFI Discover | Generations of Learning, STEAM Ahead at South Dublin Libraries                | South Dublin County Council                                    | 21,000                                     |
| Nigel Flegg             | SFI Discover | Music and Science: Quavers to Quadratics                                      | The National Concert Hall                                      | 44,570                                     |
| Derek O'Keeffe          | SFI Discover | Starship Earth  | National University of Ireland, Galway                         | 39,200                                     |
| Deirdre de Bhailís      | SFI Discover | Activating the Energy Citizen on the Dingle Peninsula                         | Mol Teic t/a Dingle Hub / Dingle Creativity and Innovation Hub | 49,920                                     |
| Nina Bresnihan          | SFI Discover | OurKidsCode: delivering family creative computing workshops nationally        | Trinity College Dublin   | 299,927                                    |
| Sian Ní Mhuirí          | SFI Discover | The Lonsdale Project  | Riverbank Arts Centre CLG                                      | 50,000                                     |
| Daniel Vincent McCarthy | SFI Discover | Festival of Curiosity 2020 & 2021 - Inspiring collaboration/connecting Dublin | The Festival of Curiosity Ltd.                                 | 300,000                                    |
| Eileen Culloty          | SFI Discover | Voices for Vaccines   | Dublin City University   | 39,435                                     |
| Laura Grehan            | SFI Discover | Citizens' Think-Ins: engaging Irish adults in STEM dialogue and discussion    | Dublin City University   | 40,933                                     |
| Elizabeth Mathews       | SFI Discover | Irish sign language STEM glossary project phase 3                             | Dublin City University   | 50,000                                     |
| Siún Nic Mhuirí         | SFI Discover | Maths4all   | Dublin City University   | 34,240                                     |
| Eilish McLoughlin       | SFI Discover | STEM Teacher Internship (STInt) Programme                                     | Dublin City University   | 263,315                                    |
| Liz McBain              | SFI Discover | FameLab Ireland 2020  | British Council Ireland  | 49,950                                     |
| Benjamin Cochain        | SFI Discover | Pint of Science Ireland 2020 Festival   | Pint of Science Ireland  | 12,909                                     |

| SFI Research Scientist | Programmes                | Research Title  | Research Body  | Total Value of Award Including Overheads € |
|------------------------|---------------------------|---|--|--|
| Marion McAfee          | SFI Discover              | Engineering NorthWest   | Institute of Technology, Sligo                             | 58,000                                     |
| Patricia Maguire       | SFI Discover              | Little Big Questions  | University College Dublin                                  | 49,970                                     |
| David McKeown          | SFI Discover              | EIRSAT-1 Hub - Space for Engagement                             | University College Dublin                                  | 40,470                                     |
| Denis O'Brien          | SFI Discover              | YES! (Youth Engineering Solutions)                              | Foróige  | 217,117                                    |
| Niamh O'Meara          | SFI Discover              | Career Mathways   | University of Limerick                                     | 34,181                                     |
| Monica Ward            | SFI Discover              | Weave - interwoven culturally responsive computational thinking | Dublin City University                                     | 296,495                                    |
| Sheila Donegan         | SFI Discover              | South-East STEM Hub and Cluster                                 | Waterford Institute of Technology                          | 150,000                                    |
| Amanda Branigan        | SFI Discover Science Week | Louth Science Festival 2019                                     | Louth County Council                                       | 8,000.00                                   |
| Jeremy Bird            | SFI Discover Science Week | Sligo Science Festival  | Institute of Technology Sligo                              | 30,000.00                                  |
| Carolyn Kelly          | SFI Discover Science Week | Medieval Maladies and Medicine                                  | Dublinia Heritage Centre                                   | 5,490.00                                   |
| Laura Brady            | SFI Discover Science Week | Retina Public Engagement Day 2019                               | Fighting Blindness   | 8,000.00                                   |
| Jackie Gorman          | SFI Discover Science Week | Midland Science Festival - Year 2                               | Atlantic Corridor  | 30,000.00                                  |
| Sheila Donegan         | SFI Discover Science Week | South East Science Festival - Year 2                            | Waterford Institute of Technology                          | 30,000.00                                  |
| Amber Mothersoul       | SFI Discover Science Week | Ballyhoura Science Day  | Ballyhoura Development Ltd.                                | 5,132.87                                   |
| Pat McHale             | SFI Discover Science Week | Mayo Science and Technology Festival 2019                       | Mayo County Council t/a Mayo Science & Technology Festival | 26,500.00                                  |
| Darren Kavanagh        | SFI Discover Science Week | EUREKA Science & Technology Festival 2019                       | Institute of Technology Carlow                             | 35,000.00                                  |
| Catriona Boyle         | SFI Discover Science Week | Festival of Farming and Food - SFI Science Week at Teagasc      | Teagasc  | 26,770.00                                  |
| Arlene Gallagher       | SFI Discover Science Week | Junior Alphas   | Trinity College Dublin                                     | 7,031.00                                   |
| Sarah Miller           | SFI Discover Science Week | Let's Talk Science Festival 2019                                | The Rediscovery Centre Ltd.                                | 8,000.00                                   |
| Martin McHugh          | SFI Discover Science Week | Medicine Maker Workshop   | University of Limerick                                     | 2,607.57                                   |
| Mr. Mervyn Horgan      | SFI Discover Science Week | Cork Science Festival 2019 - 2021                               | Glenosheen Ltd.  | 30,000.00                                  |
| Liz McBain             | SFI Discover Science Week | Baking in Space 2019  | British Council Ireland                                    | 7,986.00                                   |
| Paul Mee               | SFI Discover Science Week | Galway Science and Technology Festival                          | Galway Science & Technology Forum                          | 20,000.00                                  |

| SFI Research Scientist     | Programmes                | Research Title   | Research Body  | Total Value of Award Including Overheads € |
|----------------------------|---------------------------|--|--|--|
| Kevin Murphy               | SFI Discover Science Week | Kildare Libraries Science Week 2019 Public Events        | Kildare County Council   | 8,000.00                                   |
| Maeve Liston               | SFI Discover Science Week | Tipperary Festival of Science                            | Mary Immaculate College  | 34,561                                     |
| Vicky Brown                | SFI Discover Science Week | Cool Planet Experience - Science Week                    | Centre for Climate Change t/a Cool Planet Experience           | 8,000.00                                   |
| Al Russell (Aideen Howard) | SFI Discover Science Week | Science Week at The Ark 2019                             | The Children's Cultural Centre Limited t/a The Ark             | 8,000.00                                   |
| Joseph Walsh               | SFI Discover Science Week | Kerry Science Festival - A Prospective on Climate Change | Institute of Technology Tralee                                 | 25,500.00                                  |
| Bernie Quilligan           | SFI Discover Science Week | Limerick Festival of Science 2019 - 2021                 | University of Limerick   | 30,000.00                                  |
| Deirdriu McQuaid           | SFI Discover Science Week | Cavan Monaghan Science Festival                          | Monaghan County Council  | 30,000.00                                  |
| Daniel Vincent McCarthy    | SFI Discover Science Week | Curiosity Accelerator @ Science Week 2019                | The Festival of Curiosity Ltd.                                 | 8,000.00                                   |
| Gemma Dardis               | SFI Discover Science Week | Dr Osity Body Science Show - Dublin DEIS Schools 2019    | Imaginosity, Dublin Children's Museum                          | 8,000.00                                   |
| Eileen Morrissey           | SFI Discover Science Week | WexSci Wexford Science Festival                          | Wexford County Council   | 35,000.00                                  |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 410,855.47                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 632,604.70                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 632,604.70                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 259,242.10                                 |
| Linda Doyle                | SFI Fellowship            | SFI Fellowship   | Trinity College Dublin   | 208,371                                    |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 190,483.73                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 632,604.70                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 634,914.80                                 |
| VP Research NIBRT          | SFI Fellowship            | SFI Fellowship   | The National Institute for Bioprocessing Research and Training | 238,750.38                                 |
| Linda Doyle                | SFI Fellowship            | SFI Fellowship   | Trinity College Dublin   | 228,254.00                                 |
| Linda Doyle                | SFI Fellowship            | SFI Fellowship   | Trinity College Dublin   | 289,313.70                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 306,665.94                                 |
| Orla Feely                 | SFI Fellowship            | SFI Fellowship   | University College Dublin                                      | 635,679.20                                 |

| SFI Research Scientist | Programmes                 | Research Title  | Research Body                          | Total Value of Award Including Overheads € |
|------------------------|----------------------------|---|--|--|
| Orla Feely             | SFI Fellowship             | SFI Fellowship  | University College Dublin              | 635,679.20                                 |
| Orla Feely             | SFI Fellowship             | SFI Fellowship  | University College Dublin              | 211,397.86                                 |
| Orla Feely             | SFI Fellowship             | SFI Fellowship  | University College Dublin              | 201,415.47                                 |
| Orla Feely             | SFI Fellowship             | SFI Fellowship  | University College Dublin              | 207,449.58                                 |
| Linda Doyle            | SFI Fellowship             | SFI Fellowship  | Trinity College Dublin                 | 241,609.00                                 |
| Sam Cromie             | SFI Future Innovator Prize | SMILE: Smart Mobility Initiative for Lower Emissions. Transforming mode selection through HMI, machine learning, personalisation, transport engineering and behavioural science | Trinity College Dublin                 | 286,000                                    |
| David McCloskey        | SFI Future Innovator Prize | Day-time radiative cooling for passive climate control  | Trinity College Dublin                 | 282,623                                    |
| Wolfgang Schmidt       | SFI Future Innovator Prize | Carbon-impact: implementing atmospheric CO <sub>2</sub> -capture technologies   | Trinity College Dublin                 | 285,943                                    |
| Aaron Golden           | SFI Future Innovator Prize | Tracking adaptation progress in agriculture and food security using an AI-powered satellite remote sensing platform - TAPAS   | National University of Ireland, Galway | 286,000                                    |
| Martin O'Halloran      | SFI Future Innovator Prize | SmartAblate: a disruptive non-surgical treatment for lung cancer  | National University of Ireland, Galway | 286,000                                    |
| Paolo Dessi            | SFI Future Innovator Prize | Hybrid Bio-Solar Reactors for wastewater treatment and CO <sub>2</sub> recycling  | National University of Ireland, Galway | 283,252                                    |
| Andrew Cashman         | SFI Future Innovator Prize | Quantification and reduction of the environmental impact of additive manufacturing processes  | Cork Institute of Technology           | 286,000                                    |
| Tony Keene             | SFI Future Innovator Prize | Closing the circuit - bringing lithium cobalt batteries into the circular economy   | University College Dublin              | 285,893                                    |
| Andreas Hoepner        | SFI Future Innovator Prize | AI for anti-greenwashing  | University College Dublin              | 284,736                                    |
| Eugenia Siapera        | SFI Future Innovator Prize | Fair AI: preventing algorithmic bias in machine learning  | University College Dublin              | 268,164                                    |
| Patricia Maguire       | SFI Future Innovator Prize | Development of an AI-powered risk stratification platform for preeclampsia  | University College Dublin              | 283,531                                    |
| Padraig Cunningham     | SFI Future Innovator Prize | An AI based solution for enabling custom patient-optimised 3D printed prosthetic devices  | University College Dublin              | 258,941                                    |
| Lina Xu                | SFI Future Innovator Prize | 3D sensing for a better world: real time privacy preserving predicting sensing  | University College Dublin              | 259,227                                    |
| Siobhan Kelleher       | SFI Future Innovator Prize | The first digital biomarker in female reproductive health – uncloaking endometriosis and filling the diagnostic gap   | National University of Ireland, Galway | 286,000                                    |
| Ciaran Simms           | SFI Future Innovator Prize | Artificial intelligence combined with musculoskeletal models to infer athlete collision force from video  | Trinity College Dublin                 | 275,772                                    |
| Derek O'Keefe          | SFI Future Innovator Prize | A novel digital biomarker for diabetes diagnosis  | National University of Ireland, Galway | 284,727                                    |
| Kevin O'Connor         | SFI Future Innovator Prize | HoloWave - new approaches to wavefront sensing, based on modal and zonal methods, using novel holographic devices   | University College Dublin              | 285,752                                    |



| SFI Research Scientist      | Programmes                                 | Research Title   | Research Body                          | Total Value of Award Including Overheads € |
|-----------------------------|--|--|--|--|
| Liam Marnane                | SFI Future Innovator Prize                 | AI-4-LIFE: AI for fetal wellbeing  | University College Cork                | 286,000                                    |
| Mathieu d'Aquin             | SFI Future Innovator Prize                 | Smart marketplace for reuse and repair of electrical and electronic equipment  | National University of Ireland, Galway | 285,997                                    |
| Yuansong Qiao               | SFI Future Innovator Prize                 | National autonomous pod sharing service (NAPSS) - autonomous roving test demonstration and controlled initial deployment                       | Athlone Institute of Technology        | 285,813                                    |
| Jerry Murphy                | SFI Future Innovator Prize                 | ElectroFuels in a circular economy (EFACE)   | University College Cork                | 281,265                                    |
| Ciara Heavin                | SFI Future Innovator Prize                 | pCCare (palliative community care) - 'Ethics by Design' approach to specialist palliative care decision support and analytics in the community | University College Cork                | 278,708                                    |
| Michael Zaworotko           | SFI Future Innovator Prize                 | C-MINUS: low energy carbon capture devices to enable on-site carbon capture and net negative carbon technologies                               | University of Limerick                 | 286,000                                    |
| Ansar Masood                | SFI Future Innovator Prize                 | A novel sustainable electric motor using high-grade permanent magnets based on common metallic elements  | Tyndall National Institute             | 285,250                                    |
| Dominic Zerulla             | SFI Future Innovator Prize - Runner-up     | Real-time imaging of nanoscale biological processes via plasmonically enabled nanopixel arrays   | University College Dublin              | 631,019                                    |
| Alison Liddy                | SFI Future Innovator Prize - Winner        | A novel hydrogel to treat and cure persistent post-operative pain  | National University of Ireland, Galway | 1,275,480                                  |
| Yuansong Qiao               | SFI Future Innovator Prize Workshop Grants | Autonomous transport in Ireland - the countdown begins   | Athlone Institute of Technology        | 4,050.00                                   |
| Piet Lens                   | SFI Future Innovator Prize Workshop Grants | Potential of biohybrid solar reactors for CO2 valorisation (BSR-CO2VAL)  | National University of Ireland Galway  | 4,050.00                                   |
| Luiz da Silva               | SFI Future Innovator Prize Workshop Grants | Microgeneration smart grids – zero-emission networks   | Trinity College Dublin                 | 5,000.00                                   |
| Breandán Goss               | SFI Future Innovator Prize Workshop Grants | Systemic demand-led sustainability solutions   | Trinity College Dublin                 | 3,800.00                                   |
| Niall English               | SFI Future Innovator Prize Workshop Grants | Renewable gas: prospects, challenges and outlook for vision and deployment in Ireland  | University College Dublin              | 2,230.00                                   |
| Eoin Syron                  | SFI Future Innovator Prize Workshop Grants | Ireland's future hydrogen economy  | University College Dublin              | 3,350.00                                   |
| Michael Zaworotko           | SFI Future Innovator Prize Workshop Grants | C-MINUS technology workshop  | University of Limerick                 | 4,500.00                                   |
| Tadhg Kennedy               | SFI Future Innovator Prize Workshop Grants | Novel battery technologies for low cost, long range electric vehicles  | University of Limerick                 | 3,850.00                                   |
| Douwe van Sinderen          | SFI Maternity Allowance                    | Functional analysis of the host adsorption and DNA injection processes of a lactococcal bacteriophage  | University College Cork                | 20,606.42                                  |
| Douwe van Sinderen          | SFI Maternity Allowance                    | Functional analysis of the host adsorption and DNA injection processes of a lactococcal bacteriophage  | University College Cork                | 17,849.70                                  |
| Fergus Shanahan             | SFI Maternity Allowance                    | APC supplement   | University College Cork                | 27,964.04                                  |
| Paul Ross (Fergus Shanahan) | SFI Maternity Allowance                    | BacTrans – natural DNA transfer systems for bacterial starter cultures   | University College Cork                | 9,929.71                                   |
| Geraldine Boylan            | SFI Maternity Allowance                    | Personalise nutrition for the preterm infant (PiNPOiNT)  | University College Cork                | 6,927.36                                   |

| SFI Research Scientist | Programmes              | Research Title   | Research Body                            | Total Value of Award Including Overheads € |
|------------------------|-------------------------|--|--|--|
| Elaine Dunleavy        | SFI Maternity Allowance | Epigenetic mechanisms of stem cell maintenance   | National University of Ireland, Galway   | 37,460.53                                  |
| Rachel McLoughlin      | SFI Maternity Allowance | Profiling 'immune signatures' predictive of outcome in Staphylococcus aureus infection: advancing next generation vaccine design | Trinity College Dublin                   | 37,460.53                                  |
| Timothy McCarthy       | SFI Maternity Allowance | Drone research and innovation  | National University of Ireland, Maynooth | 30,067.67                                  |
| Annie Curtis           | SFI Maternity Allowance | MacroCLOCK - circadian control of macrophage mitochondria: a new approach in the treatment of chronic inflammatory disease       | Royal College of Surgeons in Ireland     | 20,227                                     |
| Conor McCarthy         | SFI Maternity Allowance | Confirm SFI Research Centre for Smart Manufacturing  | University of Limerick                   | 48,765                                     |
| Pauline Scanlan        | SFI Maternity Allowance | Bacteria-bacteriophage antagonistic coevolution in the gut   | University College Cork                  | 35,607                                     |
| Andrew Keane           | SFI Maternity Allowance | Energy Systems Integration Partnership Programme (ESIPP)   | University College Dublin                | 48,219                                     |
| Susan Kelleher         | SFI Maternity Allowance | Polymeric nanoneedle arrays for injecting drugs into cells for localised gene therapy (GeneInject)                               | University College Dublin                | 37,461                                     |
| Katherine Howell       | SFI Maternity Allowance | Elucidating the potential therapeutic role of Erythropoietin in the treatment of Emphysema                                       | University College Dublin                | 37,461                                     |
| Federico Milano        | SFI Maternity Allowance | Advanced modelling for power system analysis and simulation  | University College Dublin                | 19,728.74                                  |
| Filipa Lebre           | SFI Maternity Allowance | Bioactive drug incorporation into 3D bioprinted scaffolds for oncological application  | Trinity College Dublin                   | 24,621.57                                  |
| Stephen Pennington     | SFI Maternity Allowance | Development of multiplexed affinity-MRM assays for personalised healthcare decisions in inflammatory arthritis                   | University College Dublin                | 21,503.20                                  |
| Mingjia Yan            | SFI Maternity Allowance | Organisational life cycle assessment of the agri food industry: methodological development and validation                        | University College Dublin                | 12,993.29                                  |
| Jens Ducree            | SFI Maternity Allowance | Fraunhofer Project Centre for Embedded Bioanalytical Systems   | Dublin City University                   | 5,861.05                                   |
| Clara Sanz-Nogues      | SFI Maternity Allowance | CD39/HGF modified CD362+stromal cell therapy for ischemic muscle Injury  | National University of Ireland, Galway   | 26,834.63                                  |
| Abhay Pandit           | SFI Maternity Allowance | CÚRAM SFI Research Centre for Research in Medical Devices  | National University of Ireland, Galway   | 27,472.71                                  |
| Abhay Pandit           | SFI Maternity Allowance | CÚRAM SFI Research Centre for Research in Medical Devices  | National University of Ireland, Galway   | 30,409.15                                  |
| Abhay Pandit           | SFI Maternity Allowance | CÚRAM SFI Research Centre for Research in Medical Devices  | National University of Ireland, Galway   | 22,673.13                                  |
| Stephen Keely          | SFI Maternity Allowance | Pharmaceutical and nutraceutical targeting of the farnesoid X receptor for treatment of chronic intestinal diseases              | Royal College of Surgeons in Ireland     | 20,194.72                                  |
| David Henshall         | SFI Maternity Allowance | FutureNeuro SFI Research Centre  | Royal College of Surgeons in Ireland     | 20,280.31                                  |
| Michael Morris         | SFI Maternity Allowance | Amber SFI Research Centre  | Trinity College Dublin                   | 24,621.57                                  |

| SFI Research Scientist | Programmes   | Research Title  | Research Body                          | Total Value of Award Including Overheads € |
|------------------------|--|---|--|--|
| Andrea Hess-Wijaya     | SFI Maternity Allowance  | Investigate self-diagnosing and self-configuring techniques to predict and prevent network faults             | Trinity College Dublin                 | 29,173.81                                  |
| Andrew Keane           | SFI Maternity Allowance  | Energy systems integration partnership programme  | University College Dublin              | 26,323.65                                  |
| Alex Lastovetsky       | SFI Maternity Allowance  | Meeting the future challenges of heterogeneous and extreme-scale parallel computing™                          | University College Dublin              | 22,408.65                                  |
| Michael Zaworotko      | SFI Maternity Allowance  | SSPC SFI Research Centre for Pharmaceuticals  | University of Limerick                 | 10,908.52                                  |
| Brian Fitzgerald       | SFI Maternity Allowance  | Lero SFI Research Centre  | University of Limerick                 | 18,224.51                                  |
| Frank Peters           | SFI Maternity Allowance  | Injection locking within photonic integrated circuits supporting high spectral density optical communications | Tyndall National Institute             | 34,780.34                                  |
| Oliver Blacque         | SFI Maternity Allowance  | Bilateral BBSRC-SFI: structure-function relationships in the ciliary transition zone                          | University College Dublin              | 26,171.15                                  |
| Paul Ross              | SFI Maternity Allowance  | APC SFI Research Centre Phase 2   | University College Cork                | 46,144.41                                  |
| Geraldine Boylan       | SFI Maternity Allowance  | Personalise nutrition for the preterm infant (PiNPOiNT)   | University College Cork                | 36,242.32                                  |
| Murray Hitzman         | SFI Research Centres   | Centralised EPE support to the SFI Research Centres Programme   | University College Dublin              | 247,000                                    |
| Murray Hitzman         | SFI Research Centres   | Centralised communications support to the SFI Research Centres Programme                                      | University College Dublin              | 247,000                                    |
| Fergus Shanahan        | SFI Research Centres Phase 2                                     | APC SFI Research Centre Phase 2   | University College Cork                | 34,251,344                                 |
| Oliver Daniels         | SFI Research Centres Phase 2                                     | Insight SFI Research Centre Phase 2   | National University of Ireland, Galway | 63,628,806                                 |
| Michael Zaworotko      | SFI Research Centres Phase 2                                     | SSPC SFI Research Centre Phase 2  | University of Limerick                 | 29,973,083                                 |
| Michael Morris         | SFI Research Centres Phase 2                                     | Amber SFI Research Centre Phase 2   | Trinity College Dublin                 | 51,895,011                                 |
| Paul Townsend          | SFI Research Centres Phase 2                                     | IPIC SFI Research Centre Phase 2  | Tyndall National Institute             | 26,639,181                                 |
| Jerry Murphy           | SFI Research Centres Phase 2                                     | MaREI SFI Research Centre Phase 2   | University College Cork                | 25,029,197                                 |
| Adrian Lynch           | SFI/RTÉ Joint Initiative   | SFI/RTÉ grant support initiative 2019   | RTÉ                                    | 585,000.00                                 |
| Darrin Morrissey       | SFI-HRB-Wellcome Partnership (Seed Award)                        | Cross-kingdom interactions and bio-communication  | Health Research Board                  | 25,233.00                                  |
| Darrin Morrissey       | SFI-HRB-Wellcome Partnership Research Career Re-entry Fellowship | Mapping the miRNA atlas of CF airway epithelial cells using patient derived gene-edited iPSC                  | Health Research Board                  | 84,121.00                                  |
| Pavel Baranov          | SFI-HRB-Wellcome Trust Biomedical Research Partnership           | Molecular memory in human AMD1 gene: mechanisms and functions   | Health Research Board                  | 320,963.00                                 |
| Uri Frank              | SFI-HRB-Wellcome Trust Biomedical Research Partnership           | The mechanisms that induce dedifferentiation to drive regeneration in the absence of stem cells               | Health Research Board                  | 269,960.00                                 |
| Simon Furney           | SFI-HRB-Wellcome Trust Biomedical Research Partnership           | Development of a method for clinical interpretation of cancer genomes   | Health Research Board                  | 27,215.00                                  |

| SFI Research Scientist      | Programmes   | Research Title   | Research Body                         | Total Value of Award Including Overheads € |
|-----------------------------|--|--|---------------------------------------|--|
| Eddie Myers                 | SFI-HRB-Wellcome Trust Biomedical Research Partnership | Towards a unifying mechanistic picture of glycation-induced crosslinking of protein  | Health Research Board                 | 28,036.00                                  |
| Brian Fitzgerald            | Spokes Rolling Programme                               | Blended Autonomy Vehicles  | University of Limerick                | 2,038,545.00                               |
| Paul Ross (Fergus Shanahan) | Spokes Rolling Programme                               | Missing microbes in infants born by c-section  | University College Cork               | 1,650,751                                  |
| Rebeca Garcia Lopez         | Starting Investigator Research Grant                   | Precision Imaging of GEO satellites in Space - PIGS in Space   | Dublin Institute for Advanced Studies | 530,334.00                                 |
| Kevin Murphy                | Starting Investigator Research Grant                   | HoloWave - new approaches to wavefront sensing, based on modal and zonal methods, using novel holographic devices  | Technological University Dublin       | 535,868                                    |
| Grace Cott                  | Starting Investigator Research Grant                   | 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             | 513,301                                    |
| Maria Stamenova             | Starting Investigator Research Grant                   | Atomistic theory and simulations for emerging THz spintronic devices   | Trinity College Dublin                | 522,030                                    |
| Saeed Shirazian             | Starting Investigator Research Grant                   | Flow crystallisation for advanced pharmaceutical manufacturing   | University of Limerick                | 541,384                                    |
| Julia Calderwood            | Starting Investigator Research Grant                   | Developing information sharing networks in Irish fisheries as a tool to avoid unwanted catches   | Marine Institute                      | 521,915                                    |
| Adam Narbudowica            | Starting Investigator Research Grant                   | Wireless physical layer cryptography for post-quantum Internet of Things using antenna-channel interaction   | Trinity College Dublin                | 531,674                                    |
| Paul Deane                  | Starting Investigator Research Grant                   | Connecting continents: the role of global transnational grids in mitigating climate change   | University College Cork               | 374,999                                    |
| Maria Daniela Angione       | Starting Investigator Research Grant                   | Investigating bacteria-host adhesion mechanisms through glycosylated 3-dimensional organic film (Glyco-BastaMeD)   | Dublin City University                | 541,785                                    |
| Peng Lu                     | Starting Investigator Research Grant                   | PlasmaTune: multiphase reactive cold plasma design for functionality and efficacy control  | Technological University Dublin       | 549,080                                    |
| Walter Kolch                | Strategic Partnership Programme                        | Precision Oncology Ireland   | University College Dublin             | 6,505,352.77                               |
| Lorraine Brennan            | US-Ireland R&D Partnership                             | Food-based biomarkers, diet quality and cardiometabolic health   | Health Research Board                 | 444,551.96                                 |
| Vincent Kelly               | US-Ireland R&D Partnership                             | Study of queuosine salvage and function in eukaryotes; a forgotten micronutrient   | Health Research Board                 | 430,355.90                                 |
| Ivan O'Connell              | US-Ireland R&D Partnership                             | EPMD: enabling next generation integrated optoelectronics with free-form metamaterials based on graphene   | Tyndall National Institute            | 441,860                                    |
| Emanuel Pelucchi            | US-Ireland R&D Partnership                             | Engineering deterministic electron correlations and topological states in site - controlled III-V quantum droplets   | Tyndall National Institute            | 438,742.00                                 |
| Tim O'Higgins               | US-Irl R&D Partnership Planning Programme              | BLUESHED; Human marine activities and impacts on housing markets in coastal regions  | University College Cork               | 2,524.72                                   |
| Dermot Brabazon             | US-Irl R&D Partnership: Centre-to-Centre Mechanism     | Centre to Centre (C2C) international collaboration on advanced photovoltaics: electrode manufacturing and indoor power   | Dublin City University                | 810,171.26                                 |
| <b>Total</b>                |  |  |                                       | <b>448,510,244.53</b>                      |

## SFI Peer Review Panels

SFI has revised its policy on the disclosure of the identities of reviewers who have participated on Site Review Panels and Sitting (Impact) Panels. Below, is a consolidated alphabetised list of the international reviewers who participated on Site Review Panels, and on Sitting Panels in 2019, 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 frank assessment.

| SFI 2019 Sitting Panellists and Site Reviewers | Organisation  |
|--|---|
| Adjiman, Claire                                | Imperial College London                                       |
| Ahring, Birgitte                               | Washington State University                                   |
| Allmendinger, Rick                             | Cornell University  |
| Altman, Russ                                   | Stanford University   |
| Andersen, Peter                                | Technical University of Denmark                               |
| Angelidaki, Irini                              | Technical University of Denmark                               |
| Atature, Mete                                  | University of Cambridge                                       |
| Austin, Topun                                  | Cambridge University  |
| Baker, Mary                                    | HP Inc  |
| Balandin, Alexander                            | University of California – Riverside                          |
| Barber, David                                  | University College London                                     |
| Barter, Laura                                  | Imperial College London                                       |
| Bayvel, Polina                                 | University College London                                     |
| Beyaert, Rudi                                  | Ghent University  |
| Blanchet, Simon                                | Station d'Écologie Théorique et Expérimentale                 |
| Blaut, Michael                                 | German Institute of Human Nutrition Potsdam-Rehbruecke (DIfE) |
| Blunn, Gordon                                  | University of Portsmouth                                      |
| Bolzonella, David                              | University of Verona  |
| Borsellino, Giovanna                           | IRCCS Foundation Santa Lucia                                  |
| Boyan, Barbara                                 | Virginia Commonwealth University                              |
| Breen, Gerome                                  | King's College London   |
| Brussow, Harald                                | Nestle Research Centre  |
| Buhimschi, Irina                               | Ohio State University   |
| Burgess, Diane                                 | University of Connecticut                                     |
| Capmany, Jose                                  | Universidad Politecnica de Valencia                           |
| Carter, Sue                                    | University of California, Santa Cruz                          |



| SFI 2019 Sitting Panellists and Site Reviewers | Organisation                                   |
|--|--|
| Castree, Noel                                  | The University of Manchester                   |
| Catalao, João P. S.                            | University of Porto                            |
| Caulcott, Celia                                | University College London                      |
| Cavalluzzo, Claudia                            | Converge Challenge                             |
| Chambers, Rachel                               | University College London                      |
| Chan, Vincent                                  | Massachusetts Institute of Technology (MIT)    |
| Chen, Robert                                   | University of Massachusetts Boston             |
| Cimiano, Philipp                               | University of Bielefeld                        |
| Conati, Cristina                               | The University of British Columbia             |
| Coombes, Charles                               | Imperial College London                        |
| Cooper, Jonathan                               | University of Glasgow                          |
| Corchado, Juan                                 | Universidad de Salamanca                       |
| Corne, David                                   | Heriot-Watt University                         |
| Cox, Nancy                                     | Vanderbilt University Medical Center           |
| Craig, Ed                                      | The University of Edinburgh                    |
| Daelemans, Walter                              | University of Antwerp                          |
| Daly, Roger J                                  | Monash University                              |
| Davletov, Bazbek                               | University of Sheffield                        |
| De Souza, Maria Merlyne                        | University of Sheffield                        |
| De Vos, Maarten                                | University of Oxford                           |
| Dean, Lewis                                    | Research Councils UK                           |
| Delamarche, Emmanuel                           | IBM Zurich Research Laboratory                 |
| Demchenko, Alexei                              | University of Missouri-St Louis                |
| DiMichele, Donna                               | National Institutes of Health (NIH)            |
| Donovan, Sharon                                | University of Illinois                         |
| Drecun, Aleksandra                             | Center for the Promotion of Science            |
| Drese, Klaus                                   | Coburg University of Applied Sciences and Arts |
| Dupont, Valerie                                | University of Leeds                            |
| Durocher, Yves                                 | Universite de Montreal                         |
| Ehrgott, Matthias                              | Lancaster University                           |
| Erkip, Elza                                    | New York University                            |
| Faaij, André                                   | University of Groningen                        |
| Ferguson, Jamie                                | Oxford University Innovation                   |
| Finkelstein, Noah                              | University of Colorado Boulder                 |
| Frame, Margaret                                | Edinburgh Cancer Research Centre               |
| Franceschini, Nora                             | The University of North Carolina               |

| SFI 2019 Sitting Panellists and Site Reviewers | Organisation  |
|--|---|
| Gage, Simon                                    | Edinburgh International Science Festival            |
| Garlan, David                                  | Carnegie Mellon University                          |
| Georgakoudi, Irene                             | Tufts University                                    |
| Gershon, Elliot                                | The University of Chicago                           |
| Gill, Karamjit S.                              | University of Brighton                              |
| Giraffa, Giorgio                               | Centro di Zootecnia e Acquacoltura (CREA-ZA)        |
| Girardin, Stephen                              | University of Toronto                               |
| Girolami, Mark                                 | Imperial College London                             |
| Glowacki, Julianne                             | Brigham and Women's Hospital and Harvard University |
| Gold, Ralf                                     | Ruhr-Universität Bochum                             |
| Gross, George                                  | University of Illinois at Urbana-Champaign          |
| Hammoudeh, Mohammed                            | Manchester Metropolitan University                  |
| Harrison, Sandy                                | University of Reading                               |
| Harvey, Andy                                   | University of Glasgow                               |
| Harvey, Patricia                               | University of Greenwich                             |
| Hearn, Vicki                                   | Social Tech Trust                                   |
| Heien, Michael L                               | The University of Arizona                           |
| Hennigan, Mike                                 | Technion Israel Institute of Technology             |
| Higgins, Rosemary                              | George Mason University                             |
| Hillman, Rachel                                | Film & Television Charity                           |
| Hirohata, Atsufumi                             | University of York                                  |
| Hsi, Sherry                                    | The Concord Consortium                              |
| Hockstad, Douglas                              | The University of Arizona                           |
| Höglund, Jacob                                 | Uppsala University                                  |
| Holzwarth, Ronald                              | Max Planck Institute of Quantum Optics              |
| Hoyle, Pauline                                 | National Science Learning Centre                    |
| Hubert, Pascal                                 | McGill University                                   |
| Hutchings, Jeffrey                             | Dalhousie University Canada                         |
| Illingworth, Sam                               | Manchester Metropolitan University                  |
| Isolauri, Erika                                | University of Turku                                 |
| James, Gareth                                  | Aston University                                    |
| James, Matt                                    | The Henry Smith Charity                             |
| Jannach, Dietmar                               | Technical University of Dortmund                    |
| Johnson, David                                 | University of Oregon                                |
| Jones, Alain                                   | Université Catholique de Louvain                    |
| Jordt, Sven-Eric                               | Duke University                                     |

| SFI 2019 Sitting Panellists and Site Reviewers | Organisation  |
|--|---|
| Jukan, Admela                                  | Technische Universität Braunschweig                 |
| Kalogeraki, Vana                               | Athens University of Economics and Business         |
| Kelly, Paul                                    | University of Twente                                |
| Kietzmann, Thomas                              | University of Oulu                                  |
| Kingon, Angus                                  | Brown University                                    |
| Kobayashi, Shu                                 | The University of Tokyo                             |
| Kozlova, Olga                                  | University of Strathclyde                           |
| Kronenberg, Florian                            | Universität Innsbruck                               |
| Kuner, Rohini                                  | University of Heidelberg                            |
| Lacroix, Christophe                            | ETH Zurich  |
| Landers, James                                 | University of Virginia                              |
| Lau, Kei May                                   | Hong Kong University of Science and Technology      |
| Lechuga, Laura M                               | Catalan Institute of Nanoscience and Nanotechnology |
| Leggett, Graham                                | University of Sheffield                             |
| Li, Xingde                                     | Johns Hopkins University                            |
| Liang, Steven                                  | Georgia Institute of Technology                     |
| Lindstedt, Peter                               | Imperial College London                             |
| Lopes, Cristina Videira                        | University Of California, Irvine                    |
| Lorence, Argelia                               | Arkansas State University                           |
| Louw, Marti                                    | Carnegie Mellon University                          |
| Macpherson, Julie                              | University of Warwick                               |
| Madsen, Karen                                  | University of Alberta                               |
| Magnuson, Jim                                  | University of Connecticut                           |
| Mao, Xuerong                                   | University of Strathclyde                           |
| Marchese, Anthony                              | Colorado State University                           |
| Marie, Xavier                                  | University of Toulouse                              |
| Marizzi, Christine                             | Cold Spring Harbor Laboratory's DNA Learning Center |
| Markopoulos, Panos                             | Eindhoven University of Technology                  |
| Martínez, Beatriz                              | Spanish National Research Council (CSIC)            |
| Matos, Anibal                                  | University of Porto                                 |
| Mawe, Gary                                     | University of Vermont                               |
| McMahon, Stephen                               | King's College London                               |
| McNairn, Heather                               | Agriculture and Agri-Food Canada                    |
| Meacham, Stephen                               | National Science Foundation                         |
| Mehilli, Julinda                               | LMU Munich  |
| Metz, Martin                                   | Charite - Universitätsmedizin Berlin                |

| SFI 2019 Sitting Panellists and Site Reviewers | Organisation  |
|--|---|
| Metzinger, Laurent                             | Universite de Picardie Jules Verne                            |
| Meuth, Mark                                    | University of Sheffield                                       |
| Meyer, Rikke Louise                            | Aarhus University   |
| Moens, Marie-Francine                          | Katholieke Universiteit Leuven                                |
| Mohrdiek, Stefan                               | Swiss Center for Electronics and Microtechnology (CSEM)       |
| Moreno, Carlos                                 | Emory University  |
| Mouratidis, Haralambos                         | University of Brighton  |
| Muggeridge, Ann                                | Imperial College London                                       |
| Müller, Ralph                                  | ETH Zurich  |
| Myers, Brad A.                                 | Carnegie Mellon University                                    |
| Myers, Robert                                  | Perimeter Institute for Theoretical Physics                   |
| Nieminen, Risto                                | Aalto University  |
| Olsson, Eva                                    | Chalmers University of Technology                             |
| Oosterlaan, Jaap                               | University of Amsterdam                                       |
| Ornella, Rossetto                              | University of Padua (Università di Padova)                    |
| Ostendorf, Mari                                | University of Washington                                      |
| Otte, Kerstin                                  | University of Applied Sciences Biberach (Hochschule Biberach) |
| Parise, Mario                                  | Consiglio Nazionale della Ricerche                            |
| Parker, Jane E.                                | Max Planck Institute for Plant Breeding                       |
| Penn, Marc                                     | Northeast Ohio Medical University                             |
| Petrozza, Annamaria                            | Istituto Italiano di Tecnologia                               |
| Pilu, Maurizio                                 | Digital Catapult Centre                                       |
| Plant, Richard                                 | University of California, Davis                               |
| Pohl, Nicola                                   | Indiana University  |
| Popescu, Gabriel                               | University of Illinois at Urbana-Champaign                    |
| Porcello, Darrell                              | University of California at Berkeley                          |
| Portman, Michelle                              | The University of Nottingham                                  |
| Preneel, Bart                                  | KU Leuven   |
| Pumera, Martin                                 | University of Chemistry and Technology, Prague                |
| Pumphrey, Michael                              | The University of Arizona                                     |
| Puska, Martii                                  | Aalto University  |
| Ratchev, Svetan                                | University of Nottingham                                      |
| Ribeiro, Pedro                                 | University of Porto   |
| Rice, Margaret                                 | NYU Langone Medical Centre                                    |
| Rorison, Judy                                  | University of Bristol   |
| Rosenberg, Catherine                           | University of Waterloo  |

| SFI 2019 Sitting Panellists and Site Reviewers | Organisation  |
|--|---|
| Ruf, Wolfram                                   | The Scripps Research Institute                          |
| Russina, Olga                                  | Sapienza University of Rome                             |
| Sams, Mikko                                    | Aalto University  |
| Sander, Erik                                   | University of Florida                                   |
| Scanlon, Bridget                               | The University of Texas at Austin                       |
| Schneider, Christian                           | Vesalius Biocapital                                     |
| Schober, Robert                                | Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) |
| Scott, Kimberly                                | Arizona State University                                |
| Seidel, Edward                                 | University of Illinois System                           |
| Serranti, Silvia                               | Sapienza University of Rome                             |
| Shakouri, Ali                                  | Purdue University                                       |
| Simon, Adam                                    | University of Michigan                                  |
| Skeldon, Kenneth                               | Wellcome Genome Campus                                  |
| Sobel, Pete                                    | Museum of Science                                       |
| Sørli, Therese                                 | Oslo University Hospital                                |
| Souto, Eliana                                  | University of Coimbra                                   |
| Starling, Bella                                | Manchester University NHS Foundation Trust              |
| Steed, Jonathan                                | Durham University                                       |
| Steffenson, Brian                              | University of Minnesota                                 |
| Stein, Alfred                                  | University of Twente                                    |
| Stoltz, Brian                                  | California Institute of Technology                      |
| Storey, Margaret-Anne                          | University of Victoria                                  |
| Strauss, Bradley                               | Sunnybrook Health Sciences Centre                       |
| Streitz, Norbert                               | Smart Future Initiative in Frankfurt                    |
| Stuart, Josh                                   | University of California, Santa Cruz                    |
| Sukhorukov, Gleb                               | Queen Mary University of London                         |
| Sutter, Eli                                    | University of Nebraska-Lincoln                          |
| Synder, Jeffrey                                | Northwestern University                                 |
| Szunerits, Sabine                              | Lille University  |
| Takata, Masao                                  | Imperial College London                                 |
| Tan, Reginald                                  | National University of Singapore                        |
| Thakor, Nitish V.                              | Johns Hopkins University                                |
| Thierry, Guillaume                             | University of Bangor                                    |
| Tindale, Wendy                                 | University of Sheffield                                 |
| Turnbull, Jerry                                | University of Liverpool                                 |
| Uchegbu, Ijeoma F.                             | University College London                               |




| SFI 2019 Sitting Panellists and Site Reviewers | Organisation                                     |
|--|--|
| Ucko, David                                    | National Center for Science and Civic Engagement |
| Udrea, Florin                                  | University of Cambridge                          |
| Ulukus, Sennur                                 | University of Maryland                           |
| Urban, Gerald                                  | University of Freiburg                           |
| Valstar, Michel                                | University of Nottingham                         |
| van Bueren, Ellen                              | Delft University of Technology                   |
| van den Berg, Marijke                          | University Medical Center Utrecht                |
| van Dover, Bruce                               | Cornell University                               |
| Vandendorpe, Luc                               | Université Catholique de Louvain                 |
| Voldborg, Bjorn Gunnar                         | Technical University of Denmark                  |
| Wagh, Pooja                                    | Massachusetts Institute of Technology (MIT)      |
| Wall, Dennis                                   | Stanford University                              |
| Wallace, Robin                                 | The University of Edinburgh                      |
| Walmsley, Sarah                                | The University of Edinburgh                      |
| Wang, Su Su                                    | University of Houston                            |
| Watt, Danielle                                 | University of Minnesota Medical School           |
| Webster, Zoë                                   | Innovate UK                                      |
| Wells, Jerry                                   | Wageningen University & Research                 |
| Wild, David L.                                 | University of Warwick                            |
| Williams, Laurie                               | North Carolina State University                  |
| Wilson, Chick                                  | University of Bath                               |
| Wong, Stephen T.                               | Weill Cornell Medical College                    |
| Wu, Yvonne                                     | University of California, San Francisco          |
| Yan, Xifeng                                    | University of California, Santa Barbara (UCSB)   |
| Yeatman, Eric                                  | Imperial College London                          |
| Yi, Allen                                      | Ohio State University                            |
| Young, Yin Lu (Julie)                          | University of Michigan                           |
| Yvon, Francois                                 | Universite Paris Sud                             |
| Zabaniotou, Anastasia                          | Aristotle University of Thessaloniki             |
| Zadpoor, Amir                                  | Delft University of Technology                   |
| Zhang, Lin                                     | University of Pittsburgh                         |
| Zheng, Ming                                    | University of Windsor                            |



**Science Foundation Ireland**

Three Park Place  
Upper Hatch Street  
Dublin 2  
Ireland

 +353 1 607 3200

 [info@sfi.ie](mailto:info@sfi.ie)

 [www.sfi.ie](http://www.sfi.ie)

 [@scienceirel](https://twitter.com/scienceirel)