Science Foundation Ireland sfi For what's next

Annual Report and Accounts

2020

Rialtas na hÉireann
Government of Ireland

Cover Image Title: 'Talking Heads'

SFI Research Image of the Year Winner 2020: Dr Niall Smith, Head of Research at Cork Institute of Technology (now Munster Technological University) and Head of MTU Blackrock Castle Observatory.

Image Description: Wearing a mask or face covering is one of the relatively simple steps that people can take to slow the spread of the COVID-19 virus during the pandemic. In 2020, Science Foundation Ireland (SFI) funded a multidisciplinary project at CIT (now MTU), under the COVID-19 Rapid Response Call Programme, that applies direct imaging techniques originally developed within astrophysics research at the MTU Blackrock Castle Observatory to see how effective various commonly available textiles are at stopping the flow of exhaled droplets.

These tiny droplets can carry the virus from a person's mouth or airways out into the surrounding environment. By measuring how well (or not) different materials and quality of fit reduce the flow of these droplets, the project is providing performance-based information for decisions on the widespread use of masks and the best materials and design considerations to use for these face coverings. It is supported by Andor Technologies (a photonics company based in Belfast), who are sponsoring the ultra-low-level imager than enables the research team to detect the smallest possible droplets.

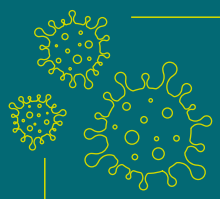
Contents

About Science Foundation Ireland

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

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

Key Statistics 2020



Addressing the COVID-19 Crisis

€22.8 million
was invested in **84 COVID-19** research and innovation projects

SFI delivered a **Five Point Plan** to support the Irish Government's National Action Plan

Excellent Science

Ireland is[1]...

12

in global scientific ranking

Ireland ranks[1]...

2nd	Immunology
3rd	Agricultural Sciences
3rd	Pharmacology and Toxicology
4th	Neuroscience and Behaviour
5th	Material Sciences

Ireland is[2]...

1st	In the world for knowledge diffusion
1st	For knowledge impact
3rd	For knowledge absorption
15th	Most innovative country

28

of the most highly cited researchers in the world have been funded by SFI[4]

5,888 publications reported[3]

SFI-funded publications are **2.5 times** more likely to be star publications than the global average[3]

Talent & Skills

43,307
Jobs supported, directly and indirectly in Ireland

5,447
People working on SFI-supported projects

1,966
Postgraduate students supported

2,262
Education and public engagement activities delivered by SFI researchers ensured equitable and inclusive access to STEM

[1] InCites by Clarivate Analytics
[2] Global Innovation Index 2020
[3] Star publications are publications in the top 1% of most cited publications, globally
[4] Clarivate Web of Science

Driving Competitiveness

€49.6m Funding from Industry

2,951 Industry collaborations

9 Spin-out companies

97 Patents filed

48 Patents awarded

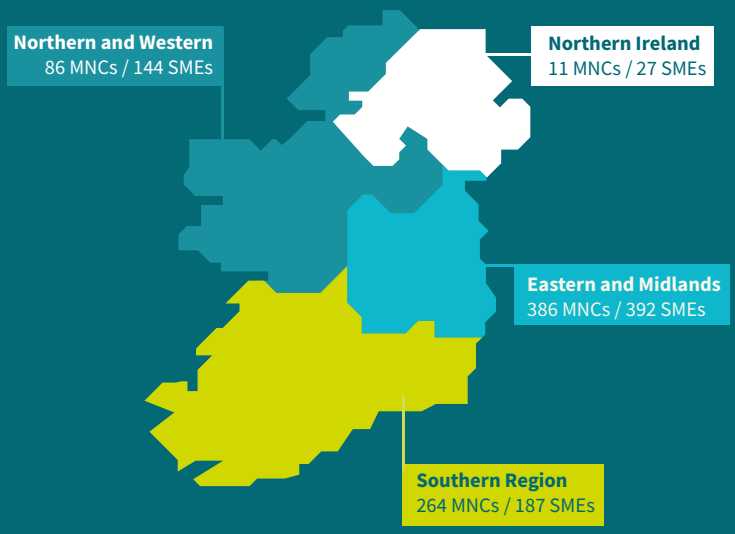
220 Invention disclosures

Regional Development

1,497 Regional industry collaborations in Ireland

747 Collaborations with Multinationals (MNC)

750 Collaborations with Small to Medium Enterprises (SME)



Value for money

From **€199m**, SFI investments leverage:

€255m Total external funding

€174m Total non-exchequer funding

which includes

€106m won from the EU

10 ERC awards won by SFI researchers

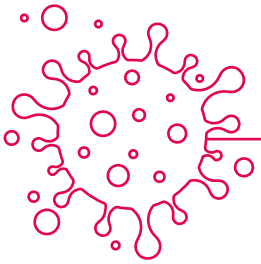
Global Footprint

5,513 international collaborations in **86** countries

72% of academic-academic collaborations are international

SFI-funded researchers were involved in or organised

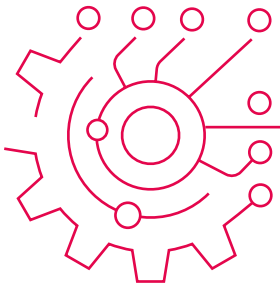
532 virtual STEM conferences



Responding to COVID-19

Strong Interagency Partnership

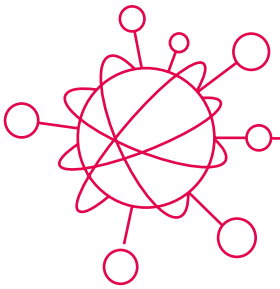
SFI worked with Government departments, IDA Ireland, Enterprise Ireland, Health Research Board, Irish Research Council and the wider research and innovation community to address the key challenges presented by the COVID-19 crisis. SFI's Five Point Plan saw the COVID-19 Rapid Response Research and Innovation Funding programme invest €18 million in 83 projects throughout 2020. In addition, €4.8 million was invested in the TCD COVID-19 Research Hub project under the SFI Strategic Partnership Programme. The resulting collaborative research engagement focused on immediate solutions like treatments and tests, as well as longer term solutions. SFI worked to collate national and global data, and connected experts from across academia and industry.



Excellent Science

SFI Frontiers for the Future

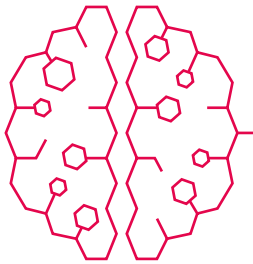
The first awards under the new SFI Frontiers for the Future programme saw €52 million invested across 72 grants to support excellent independent researchers through to well established leaders - providing opportunities for high-risk, high-reward research projects. In 2020, an important gender initiative was also implemented through the programme, which is run in partnership with Geological Survey of Ireland and the Environmental Protection Agency.



Disruptive Innovation

Challenge-based Funding

SFI continued to incentivise researchers to address specific complex challenges through the SFI Future Innovator Prize, in partnership with the Department of Foreign Affairs (Irish Aid). In 2020, Dr Alison Liddy and her team at NUI Galway (NUIG) were awarded €1 million for their project Hydrobloc. 12 teams progressed under challenges in the areas of Artificial Intelligence (AI) for Societal Good, and Zero Emissions, while two new challenges were launched in the areas of food waste and plastics sustainability.



Driving Competitiveness

SFI Research Centres

SFI's network of 16 SFI Research Centres, played a central role in Ireland's success at drawing down EU Horizon 2020 funding delivering on national targets. To date, SFI Research Centres have participated in over 680 major EU-funded initiatives and cumulatively won 45 prestigious European Research Council awards. Five SFI Research Centres progressed to a second six-year research programme, following rigorous international peer review, with an investment of €193 million, supporting over 1,000 research positions in 17 Higher Education Institutions. This commitment is backed by 200 Industry partners who will contribute an additional €91 million.

Chairman's Statement

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

Looking back over 2020, I am struck by the strength of our scientific community's sense of purpose and the determination of researchers to make the world a better place now and for future generations. In a year where, on so many levels, we were collectively pushed to the limit by COVID-19, scientists, mathematicians and engineers continued to discover, innovate, and have a vital positive impact on Ireland's society and economy.

Deeply collaborative partnerships with researchers, Higher Education Institutions (HEIs), industry, and government, underpin SFI's success. In 2020, we saw just how valuable these partnerships are in driving, at an unprecedented speed, innovative solutions to the pandemic. Through SFI's Five Point Plan to support the Irish Government's National Action Plan, SFI invested €18 million in 83 projects via the new COVID-19 Rapid Response Research, Development, and Innovation Call in partnership with IDA Ireland, Enterprise Ireland, the Health Research Board, and the Irish Research Council. In addition, €4.8 million was invested in the TCD COVID-19 Research Hub project under the SFI Strategic Partnership Programme. Importantly, despite the need for a rapid process, rigorous standards of review were utilised to ensure world-class research is funded. These projects continue to support our national response to COVID-19.

I am very heartened to see the exceptional achievements of the Irish research system over the last year in what has been, due to restrictions, a difficult year to carry out research, let alone deliver rapid and impactful results. From SFI funding of €199 million, researchers further leveraged external funding of €255 million, highlighting the value for money to the exchequer from SFI's investment. This approach is maximising the return on the taxpayer's investment through supporting high-quality research, research-informed teaching in our HEIs, supporting direct and indirect jobs, and driving the recovery of the Irish economy.

SFI funding supported 2,951 industry collaborations, with 1,497 regional collaborations across Ireland. A good balance was struck with 747 of these regional collaborations being with multinational companies (MNCs), while 750 are with small to medium enterprises (SMEs). In supporting Ireland's ambition to be a global innovation leader, and a location for research excellence and investment, SFI supported 1,966 graduate-student positions in 2020 and, with our HEI and enterprise partners, this continues to create employment opportunities for graduates while promoting Ireland as an attractive destination for top research talent.

The SFI Research Centre network, in collaboration with its industry partners and 17 HEIs across the country, continues to deliver excellent science. Following a rigorous international review process, five SFI Research Centres progressed to a second six-year research programme.

SFI's New Strategy

I was delighted to introduce the Taoiseach when, earlier this year, he launched SFI's ambitious new Strategy, *Shaping Our Future 2020-2025*. The objective of the Strategy is to deliver impact from research today, while preparing to address the challenges of tomorrow. The Strategy supports the priorities outlined in Ireland's Programme for Government and the objectives of the national recovery plan. Strong and continued investment in research will be a key determinant of the future success and prosperity of Ireland and its people. The Irish research sector remains essential for supporting economic recovery, job creation and national prosperity, built on a strong Research, Development and Innovation (RD&I) base, and supported by a pipeline of highly-educated and well-trained people.

This growth and success is absolutely dependent on increased investment in research to match that of our competitors. Research investment is an essential underpinning infrastructure for the Irish economy, critical for the continued attraction of foreign direct investment (and even more important to the future Irish value proposition). It is crucial for increasing productivity in SMEs, and vital for developing the capacity for Ireland to address anticipated, and unanticipated, societal challenges.

SFI recognises the need to fund a balanced portfolio of research, supporting the work of early-stage researchers, established individuals and larger research collectives. We will focus on supporting national priorities within critical 'grand challenge' areas, such as reducing agricultural methane emissions, fostering biodiversity, and enhancing cybersecurity. We will work, where possible, with all our partners on the island to maximise the collective expertise in these and other areas. SFI will continue to build strategic international collaborative partnerships, grow and develop new enterprise partnerships, and work with the public sector to foster the uptake of new technologies, to improve delivery of services, and to support evidence-based policymaking.

Science is for everyone and SFI is focused on supporting a diverse scientific, research and innovation workforce, which is welcoming to all and provides opportunities for many. SFI will continue to support public engagement in science and support a pipeline of talent, from school students to world-leading SFI Research Professors.

The Board and I are proud of the contribution of SFI to the Irish economy and to society. It has been a difficult year but also an exciting one, as the Agency came under the remit of the newly established Department of Further and Higher Education, Research, Innovation and Science led by Minister Simon Harris, TD. I would like to thank the Minister and his officials for the excellent working relationships that have been quickly established. I would also like to thank the past and present Ministers and officials of the Department of Enterprise, Trade and Employment for their support in the years since the establishment of SFI. In addition to furthering new partnerships in the new Department, we look forward to continuing to work hand in glove with the Department of Enterprise, Trade and Employment, IDA Ireland and Enterprise Ireland as we implement our new Strategy.

In closing, I wish to commend the adaptability and resilience of the SFI Research community, our HEI partners, government departments and our partner agencies. I would like to thank Prof Mark Ferguson, the Executive, and all of the highly-professional and dedicated staff of SFI for their outstanding work in challenging times. Finally, I would like to extend my thanks to the talented and dedicated members of the SFI Board who give of their valuable time to ensure SFI delivers to its full potential for the people of Ireland.

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

Director General's Statement

Professor Mark Ferguson
Director General, Science Foundation Ireland

Discovery, invention and innovation fuel great progress, with the potential to transform and improve lives across the world, resulting in better health, education, societal and economic outcomes. In our coming together at a time of world-wide crisis, in managing the COVID-19 pandemic, we have witnessed the enormous contribution of science, research and innovation. We are unquestionably stronger and more effective when we work together.

Despite the many challenges we faced throughout 2020, SFI's funded research community came together to deliver outstanding, cutting-edge science with real-world impact, often within rapid timeframes. The multi-agency COVID-19 Rapid Response Call exemplified this, and we must now take the learnings from such high-level efficient interagency collaboration and mainstream it, to address the equally urgent challenges in reducing our carbon emissions, transitioning to a green economy, digital transformation and minimising the impact of future pandemics.

In 2020, SFI-funded researchers reported 5,888 publications, 220 invention disclosures, 48 patent awards and nine spin-out companies. 28 of the most highly-cited researchers in the world are funded by SFI and Ireland remains 1st in the world for knowledge impact.

Our community continued to build our international footprint, with a total of 5,513 international academic research collaborations which took place across 86 countries. We competed successfully at the highest level in Europe. €106 million was won from the European Union (EU) and 10 prestigious European Research Council (ERC) awards were won by SFI researchers, demonstrating Ireland's growing leadership and success in major European and international programmes. Ireland's research success in Horizon 2020 saw for the first time Ireland winning more competitive funding [>€1.25bn] than its contribution to the Horizon budget.

SFI is supporting economic recovery with deep industry engagement and co-funding through the SFI Research Centres and Strategic Partnership awards. 2020 also saw a significant deepening of our collaborative relationships with our Higher Education Institution (HEI) partners, as well as continued collaborations with international partners such as the National Science Foundation (NSF), National Institutes of Health (NIH), UK Research and Innovation (UKRI), and the Royal Society.

Excellence in Ireland is distributed geographically across the various Higher Education Institutions and sectorally across small and large companies, as well as academia. SFI's Centres Programme (SFI Research Centres and SFI Centres for Research Training) harnesses that distributed excellence, delivering world class research and research training.

The first SFI Frontiers for the Future Programme awards were made to support individual-led research, encouraging more successful applications from women researchers and emerging investigators applying to SFI for the first time, as well as from established investigators. Developing, attracting, growing and retaining talent remains key for future prosperity.

Developing new approaches to supporting research remains a focus for SFI. The SFI Future Innovator Prize challenge funding programme saw its first €1 million prize award and two new challenges launched in areas of national strategic importance – Zero Emissions and AI for Societal Good.

In 2020, a total of 343 new awards were approved across 20 programmes, including support for five SFI Research Centres to commence their second phase and we are now in good stead to begin implementing our new five year strategy 'Shaping Our Future'.

SFI strongly welcomed the establishment of the new Department of Further and Higher Education, Research, Innovation and Science, which will facilitate greater cohesion in the Irish ecosystem.

Working with the new Department, and all our partners, SFI intends to execute this strategy so that Ireland can become a green, sustainable, deep tech, innovation leader. One that is also working to expand collaborations with Northern Ireland to create an all-island research ecosystem.

Eurostats has cited Ireland as the most R&D efficient country in Europe, generating more innovation output per euro of public funds invested than any other country. Amid the backdrop of intensifying global competition, COVID-19 and climate change, research and innovation are key to our nation's ability to respond quickly and effectively, capitalising on new opportunities and building resilience for future challenges. Globally, public investment in research and innovation is significantly increasing, and we must follow suit in Ireland if we are to sustain the agility, cohesion and dedication of our research ecosystem, and the societal and economic benefits of future research and innovation.

SFI will work with the public to create deeper and more sustained engagement, with greater input from citizens on what they want from the research agenda. Equity of access to education in STEM, ensuring that all citizens have equal opportunity to pursue STEM studies, will not only improve the country's scientific understanding, to make informed decisions about our collective future, but will also ensure we have the skills and talent to deliver the solutions to meet tomorrow's needs.

Acknowledgements

I wish to thank our research community for their commitment, and our stakeholders and partners across academia, Industry and government for your continued support and collaboration. I would like to thank the Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, and the many elected representatives for their support in 2020. The smooth transition into our new parent Department and close relationships with other departments, state agencies and the Higher Education Institutes are fundamental to how SFI works and delivers. I thank our international and industry partners for their engagement and support in joint funding partnership programmes and awards. Finally, I thank all SFI employees and the SFI Board for their deep commitment and hard work.

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

2020 A Year in Review

JANUARY

- 24 teams competed for €5 million in SFI's Future Innovator Prize AI for Societal Good Challenge and Zero Emissions Challenge to develop novel solutions that address key societal concerns.

  Watch video

Pictured l-r: APC Microbiome Ireland SFI Research Centre researchers at UCC: Dr Maria Rodriguez Aburto, Dr Eileen Ryan, Dr Maria Esteban-Torres, Dr Ciaran Lee.

FEBRUARY

- Four researchers at the APC Microbiome Ireland SFI Research Centre, led by University College Cork (UCC) were awarded prestigious EU Marie Skłodowska-Curie Action (MCSA) postdoctoral fellowships.
- SFI and EU-funded research at University College Dublin (UCD) in collaboration with the Roslin Institute successfully mapped lung cells in cows with resilience to tuberculosis (bTB).

Pictured l-r: Dr Sónia Negrão, UCD; Dr Roman Romero-Ortuno, Trinity College Dublin (TCD); Dr Nessa O'Connor, TCD; Dr David Loane, TCD; Dr Rory Johnson, UCD; Dr Ruth Freeman, Director of Science for Society, SFI; President of Ireland, Michael D. Higgins; Dr Caitriona Jackman, Dublin Institute for Advanced Studies (DIAS); Dr Stephen Redmond, UCD; Dr Suzanne Cloonan, TCD; Dr Eóin McNamee, and; Dr Joanne Masterson, both Maynooth University (MU).

MARCH

- President of Ireland, Michael D. Higgins, hosted ten recipients of the SFI President of Ireland Future Research Leaders Award in Áras an Uachtaráin to celebrate outstanding and emerging early career research leaders.

2020 A Year in Review

Pictured l-r: Prof Mark Ferguson, Director General, SFI, and Chief Scientific Adviser to the Government of Ireland, Prof Neville J Hogan, Sun Jae Professor of Mechanical Engineering (MIT), and Dr Ann B Kelleher, Senior Vice President at Intel.

Pictured l-r: Prof Patrick O'Shea, President of UCC; Prof Paul Ross, Director of APC Microbiome Institute SFI Research Centre; Dr Martin Kullen, Global Research and Development Lead at DuPont Nutrition and Biosciences; Dr Lori Lathrop Stern, Science Liaison at DuPont Nutrition and Biosciences; Prof Mark Ferguson, Director General of Science Foundation Ireland and Chief Scientific Adviser to the Government of Ireland; and Prof Catherine Stanton, Principal Investigator at APC Microbiome Institute SFI Research Centre.

MARCH Continued

- The SFI St Patrick's Day Science Medal was awarded to Prof Neville J Hogan, Sun Jae Professor of Mechanical Engineering and Professor of Brain and Cognitive Sciences at Massachusetts Institute of Technology (MIT) and Dr Ann B Kelleher, Senior Vice President (SVP) and General Manager at Intel.
- The APC Microbiome Ireland SFI Research Centre at UCC announced a new collaborative research project with DuPont Nutrition & Biosciences to improve infant health, as part of a €6.3 million project funded under the SFI Spokes Programme.
- SFI launched its five-point plan in response to the COVID-19 crisis and the COVID-19 Rapid Response Research and Innovation Funding programme.

Pictured l-r (taken in March 2020): Ms Lynne Miskelly, Department for the Economy Northern Ireland, Prof Mark Ferguson, SFI, Dr Sandra Cruz-Pol, National Science Foundation, Ms Jill Colquhoun, Department of Business, Enterprise and Innovation, Dr Ekaterina Nesterenko, SFI, Ms Sarah Scharf, National Institutes of Health, Dan Mulhall, Ambassador of Ireland to the United States of America, Dr Rosemary Hamilton, Northern Ireland Co-Chair of US-Ireland R&D Partnership Steering Group, Mr Feargal Ó Móráin, Ireland Co-Chair of US-Ireland R&D Partnership Steering Group and Ms Gráinne Lennon, InterTradeIreland.

APRIL

- A joint investment of €12 million was announced through a tripartite research and development partnership under the US-Ireland R&D Programme.

2020 A Year in Review

MAY

- Dr Alison Liddy and team at NUI Galway (NUIG) were announced as the first recipient of the €1 million SFI Future Innovator Prize for their Hydrobloc project.
- A €1.47 million SFI Infrastructure Award was granted to researchers at RCSI University of Medicine and Health Sciences (RCSI) to develop a unique facility for highly advanced microscopy in Ireland.

Dr Alison Liddy at NUI Galway. Image: Aengus McMahon.

JUNE

- RCSI, UCD and the CÚRAM SFI Research Centre for Medical Devices at NUIG won an SFI Research Infrastructure award of €3.4 million to develop a National Preclinical Imaging Centre (NPIC).
- Prof Jane Farrar and team at TCD's School of Genetics and Microbiology have developed a new gene therapy approach that has the potential to treat eye disease.

JULY

- Minister for Further and Higher Education, Innovation and Science, Simon Harris, TD, announced a €4.8 million investment into the immunology of COVID-19 led by Prof Kingston Mills and Prof Aideen Long at TCD.
- Two new SFI Future Innovator Prize competitions were launched in partnership with the Department of Foreign Affairs for food waste reduction and sustainable plastic, representing an investment of €4 million.
- Minister Simon Harris, TD, launched the SFI-supported Festival of Curiosity, with a new virtual events platform for people of all ages to enjoy and explore STEM and the arts.

Pictured l-r: Prof Mark Ferguson, Director General, SFI and Chief Scientific Adviser to the Government of Ireland, Prof Kingston Mills, TCD, Minister for Further and Higher Education, Innovation and Science, Simon Harris, TD, Prof Luke O'Neill, TCD, Prof Aideen Long, TCD, Dr Patrick Prendergast, former Provost, TCD.

Pictured l-r: Dr Ruth Freeman, Director of Science for Society at SFI, Minister Simon Harris, TD, and Dr Mairead Stack in the Pollinator Garden at TCD.

2020 A Year in Review

JULY Continued

- Lero, the SFI Research Centre for Software led by University Limerick (UL), announced new academic partnerships with Munster Technological University (then CIT), and Waterford Institute of Technology (WIT), which also incorporates the Walton Institute (formerly TSSG).
- BiOrbic Bioeconomy SFI Research Centre and Shannon Applied Biotechnology Centre at Limerick Institute of Technology (LIT) and MTU (then Institute of Technology Tralee) signed a partnership to develop Ireland's emerging bioeconomy.
- A first-of-its-kind study, by APC Microbiome Ireland SFI Research Centre, of the microbiome of Irish Travellers revealed potential protection from many chronic inflammatory disorders.

AUGUST

- Chairman of the Board of SFI, Prof J. Peter Clinch, had a first introductory meeting with Minister Simon Harris TD, marking the start of the transition of SFI into its new parent Department of Further and Higher Education, Innovation and Science.
- A new breakthrough in 3D bioprinting technology to support bone regeneration was developed by AMBER, the SFI Research Centre for Advanced Materials and Bioengineering Research at TCD.

Prof J. Peter Clinch, Chairman of the SFI Board.

Dr Sanathana Konugolu of CEO of BiopixS with Myriam Cronin, Head of Gateway UCC, Dr Rich Ferrie, Director, UCC, Innovation, Prof Paul Townsend, Head of the Photonics Centre, Tyndall and Director of the IPIC SFI Research Centre.

SEPTEMBER

- The IPIC SFI Research Centre, Tyndall National Institute and UCC Innovation launched a new spin out, BioPixS, to translate cutting-edge research into hi-tech, innovative solutions for the BioPhotonics market.
- The SFI Discover-funded 'ReelLIFE SCIENCE' video competition was launched in collaboration with NUIG, the Community Knowledge Initiative, CÚRAM SFI Research Centre for Medical Devices and Cell EXPLORERS.
- The CONNECT SFI Research Centre for Future Networks, led by TCD, launched a €2 million 'Open Ireland' research infrastructure project to accelerate telecoms research in Ireland.

Dr Marco Ruffini, Principal Investigator at CONNECT, the SFI Research Centre for Future Networks at TCD.

2020 A Year in Review

OCTOBER

- Minister Simon Harris, TD, announced 72 research grants with an investment of €52 million across 12 Higher Education Institutions, through the SFI Frontiers for the Future Programme.
- Maths Week Ireland ran from the 10th to 18th October with a range of online events that promoted an appreciation of maths across all sectors of society.
- New research by AMBER, the SFI Research Centre for Advanced Materials and Bioengineering Research, TrinityHaus and the Schools of Engineering and Chemistry at TCD, published in NatureFood, presented evidence of global infant exposure to microplastics.
- Minister Simon Harris, TD, announced 12 research awards representing an investment of €699,000 funded by SFI's Public Service Fellowship programme.

Minister for Education, Norma Foley TD, Dr Ruth Freeman, Director of Science for Society at SFI, Dr Sheila Donegan, Maths Week co-founder and a primary school student launch Maths Week 2020.

NOVEMBER

- Science Week celebrated its 25th anniversary with a virtual festival, under the theme 'Choosing our Future' which included 13 regional festivals.
- The Science on Screen film festival, run by CÚRAM, the SFI Research Centre for Medical Devices at NUIG and Galway Film Centre took place online showcasing STEM-related documentaries.
- A spin-out from the ADAPT SFI Research Centre for AI Driven Digital Media Technology, CaliberAI, is developing AI solutions that can flag defamation and hate speech before it's published.

Learning about the science of dinosaurs was one of the many events on offer at the Midlands Science Festival, during Science Week 2020. Image: Veronica Nicholson.

2020 A Year in Review

DECEMBER

- Minister Simon Harris, TD, announced a €5m climate change project called Terrain-AI, co-funded by Microsoft Ireland and SFI, in collaboration with Maynooth University.
- The Confirm SFI Research Centre in Smart Manufacturing, led by UL, launched its new bespoke Digital Manufacturing facility in the UL Digital District, as the first 5G digital manufacturing network in Ireland.
- 331 primary schools nationwide received an SFI Discover Primary Science and Maths Award (DPSM) recognising their excellent application of STEM in their curriculum.

  Watch video

Mark Langtry hosts a virtual science show series, as part of the SFI DPSM programme and ESERO Ireland, and in association with Dún Laoghaire-Rathdown County Council libraries.

Responding to COVID-19

In 2020, the global research community came together in an unprecedented, and immensely collaborative and agile manner to address the challenges of the COVID-19 pandemic.

In supporting the Irish government's response to the crisis, SFI rapidly developed a five-point plan which focused on providing immediate research funding; collating information and facilitating collaborative engagement and problem curation across many sectors.

Researchers in Ireland truly stepped up to 'pull on the green jersey' providing expertise from across the HEIs in areas such as contact tracing and manufacturing. They donated equipment and essential supplies, as well as providing staff and facilities for testing, modelling, and 3D printing. Despite the immense challenges, researchers still continued to publish excellent scientific papers and engage industry throughout 2020. SFI in turn recognised the major challenges facing many research groups, extending deadlines and assembling international peer review panels in a matter of weeks to disseminate funding with rigorous standards of excellence.

The COVID-19 Rapid Response Research, Development and Innovation programme was delivered by a high level of interagency and HEI collaboration, together with EI, IDA Ireland, the HRB and the IRC, with SFI investing €18 million in 83 projects via two funding calls, to provide innovative solutions across academia and industry.

Many of the funded initiatives address the long-term health and societal aspects of COVID-19 that will not be tackled with a vaccine alone. These long-term societal solutions are crucial as we continue to live with the virus and start to open society again.

Pictured l-r: Prof Mark Ferguson, Director General SFI and Chief Scientific Adviser to the Government; Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, Prof Zena Moore and Prof Donal O'Shea at the RCSI University of Medicine and Health Sciences.

Image by Dr Niall Smith, Head of Research at MTU and Head of MTU Blackrock Castle Observatory.

We are **stronger** when we work **together**

Under the second phase of the Programme, nine awards were made as part of a collaborative all-Ireland research partnership with the Department for the Economy and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland.

Our universities and institutes of technology continue to significantly support the national effort to combat the virus and assist us on the path to recovery. We are stronger when we work together.

Pictured l-r: Prof Conor McCarthy, Director Confirm, Prof Leonard O'Sullivan, School of Design UL , Prof Paul Burke, Chief Academic Officer University Hospital Limerick.

Pictured l-r: Prof Patricia Maguire, Director of UCD Institute for Discovery, with Dr Barry Kevane, Consultant Haematologist, Mater Misericordiae University Hospital, for the COCOON study, looking at COVID-19 coagulopathy and thrombosis: Novel prognostic and therapeutic opportunities.

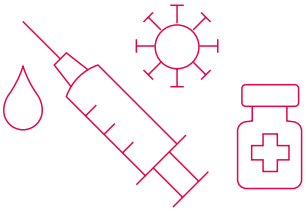
Pictured l-r: Prof Charles Spillane with members of his Genetics and Biotechnology Lab, Ryan Institute, NUI Galway. L-R: Maryam Sathteh, Dr Galina Brychkova, Prof Charles Spillane, Dr Noel Lucca. Their COVID-19 project involved a rapid high-throughput CRISPR-Cas13 a diagnostic platform for COVID-19 diagnostics.

COVID-19 Research Hub

€4.8 million was invested under the SFI Strategic Partnership Programme, in collaboration with TCD and Allied Irish Bank (AIB), to create a centre of excellence in the immunology of COVID-19. Led by Prof Kingston Mills and Prof Aideen Long at the Trinity Biomedical Sciences Institute (TBSI) and Trinity Translational Medicine Institute (TTMI) at TCD, in collaboration with researchers at UL and UCD, the research aims to answer key questions, such as why are some people are more susceptible to COVID-19 than others.

They are developing quick and straightforward assays to detect current or previous infection with SARS-CoV-2 and studying the immune responses in different COVID-19 patient cohorts, including those with high/low risk of developing disease or those that have been vaccinated.

This will provide key information for the design of more effective vaccines that confer long-term protection against infection, as well as therapeutics that control inflammation.



SFI invested **€18 million** in **83 projects** via two funding calls

Understanding COVID-19 Outbreaks in Meat Processing Plants

Outbreaks of COVID-19 in meat plants in Ireland have presented a threat to workers and to our wider society. Research funded under phase two of the COVID-19 Rapid Response Research, Development and Innovation Programme, in collaboration with the Department of Agriculture, Food and the Marine and led by Prof Grace Mulcahy at UCD, aims to better understand why meat plants are vulnerable to the transmission of COVID-19, and how to decrease the risks.

Studies will examine changes in virus genetic sequence, measurements of the impact of changes in temperature, humidity and airflows throughout plants, and an early-warning system using waste-streams.

A special episode of science at home with Dr Dan Nickstrom for the Midlands Science Festival which moved online due to the pandemic. Image: Slawek Bracki.

Disease surveillance

Research funded under the COVID-19 Rapid Response Programme and led by Prof Wim Meijer (UCD) and Dr Niall O'Leary (UCC) will see an integrated system for all-island SARS-CoV-2 wastewater surveillance established. A study led by UCD demonstrated that measuring the COVID-19 virus in wastewater in the Republic of Ireland can identify whether the virus is present and if the infection levels are going up or down. This technology is now being transferred to Northern Ireland, in collaboration with the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA).

A full list of funded projects can be found at COVID-19 Rapid Response Research and Innovation Funding (sfi.ie).

International Trilateral Research Partnership

A cross-border partnership between SFI, UK Research and Innovation (UKRI) and National Science Foundation (NSF) was set up to further improve the responsiveness and connectivity between the jurisdictions, and better facilitate scientific cooperation in addressing the COVID-19 pandemic. This strengthens our collective abilities to prevent or rapidly respond to future outbreaks with an integrated system of rapid detection, analysis, modelling, and countermeasures.

Spotlight on:

Prof Paul Cotter, Principal Investigator with APC Microbiome Ireland SFI Research Centre led by UCC and VistaMilk, SFI Research Centre at Teagasc.

Tracking the genetics of COVID-19

The virus that causes COVID-19, SARS-CoV-2, contains genetic information that can change over time.

The Consortium has been made possible due to the remarkable enthusiasm and commitment from very many clinicians and researchers across the country. By working together, we have provided and will continue to provide key insights into viral spread and how it is evolving over time.

Prof Paul Cotter

Under the COVID-19 Rapid Response Research, Development and Innovation Programme, SFI funded a National Coronavirus Sequencing Consortium that facilitated the 'reading' of the RNA sequence of viruses isolated from samples of patients who have lab-confirmed infections of COVID-19 and made the sequence information freely available for analysis. This has allowed epidemiologists to monitor trends in Ireland and internationally, and to watch for changes in the virus that could impact the development and delivery of treatments and vaccines.

'Reading' of these changes can facilitate a mapping of viral spread across regions. Being able to determine the genetic makeup of the viruses circulating in a country can also support efforts to respond to clusters of infections as they arise, and minimise the spread of the virus. Collecting the sequences of the viruses also allows for the identification of important new changes that could affect the ability of the virus to cause disease or to evade treatments or vaccines.

The Irish Coronavirus Sequencing Consortium (ICSC) is led by Prof Paul Cotter, a Principal Investigator with APC Microbiome Ireland and VistaMilk, SFI Research Centres at Teagasc. The ICSC is a truly national collaboration with researchers from NUI Galway, Maynooth University, UCC, UCD, TCD, Beaumont hospital, Cork University Hospital, Genomics Medicine Ireland, Helixworks, Limerick University Hospital, National Virus Reference Laboratory, RCSI University of Medicine and Health Sciences St James's Hospital. The ICSC is also working closely with its UK equivalent, COG-UK, and the European data repositories at the European Nucleotide Archive (ENA) and Global Initiative on Sharing All Influenza Data (GISAID).

Excellent Science

SFI supports and drives Ireland's contribution to the latest scientific breakthroughs which lead to innovation in academia, enterprise, the public sector, society and beyond.

Despite the significant challenges faced by the research community in 2020, SFI and its funded community, from individual investigators through to large scale SFI Research Centres, continued to deliver world-leading scientific excellence, with significant positive impact on our society and the economy. Leading with vision and agility, SFI researchers have tenaciously driven innovative scientific discovery, ensuring Ireland remains an attractive location for top scientific talent and foreign direct investment.

5,888

publications were reported by SFI researchers in 2020

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

The Irish national average is 1.75.

Publications and Citations

With access to laboratories limited for many sectors in academia during the pandemic, the number of publications saw a strong increase in 2020, as SFI-funded researchers continued to publish world-leading scientific discovery with excellence and impact.

Field Specific Rankings by Publication Quality Ireland ranks*:	
2nd	Immunology
3rd	Agricultural Sciences
3rd	Pharmacology and Toxicology
4th	Neuroscience and Behaviour
5th	Materials Sciences
6th	Microbiology
8th	Molecular Biology and Genetics
14th	Biology and Biochemistry
21st	Engineering

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

Country	Funder	# Documents in Web of Science	Documents in the Top 1%
Ireland	**All**	**234,466**	**1.75**
Ireland	Science Foundation Ireland	25,632	2.50
EU	All	14,276,081	1.25
EU	ERC	122,106	4.26
USA	All	11,889,845	1.79
USA	NIH	1,820,417	2.89
USA	NSF	774,776	2.87
China	All	5,358,986	1.20
UK	All	3,412,472	1.88
Switzerland	All	707,387	2.62
Denmark	All	398,089	2.45
Israel	All	355,971	1.70
Finland	All	307,287	1.85
Singapore	All	297,792	2.40
New Zealand	All	235,774	1.80

Source: *InCites by Clarivate Analytics*

Societal and Economic Impact

- An international study led by Prof David Henshall at the FutureNeuro SFI Research Centre for Chronic and Rare Neurological Diseases, led by RCSI University of Medicine and Health Sciences, uncovered three molecules that have the potential to be developed into new drugs to treat epilepsy. Epilepsy is one of the most common neurological disorders worldwide, with over 50 million patients across the world and no current cure.

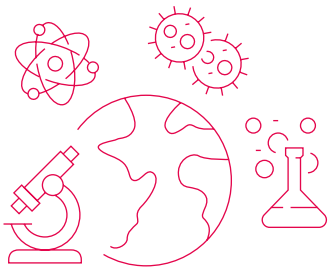
- A study by PhD candidate Abeba Birhane at the Lero SFI Research Centre for Software and UCD's Complex Software Lab, resulted in the withdrawal of an 80-million image library. Belonging to Massachusetts Institute of Technology (MIT) the dataset had been used to train AI and Machine Learning (ML) systems but was found to be contaminated with racist, misogynistic and other offensive content.

PhD candidate Abeba Birhane at the Lero SFI Research Centre for Software and UCD's Complex Software Lab.

Web of Science: 2020 most highly cited

33 scientists working in Ireland were named among the top 1% in the world when it comes to highly cited papers in 2020.

Of these, 28 researchers have been funded by SFI. The prestigious list published by Clarivate Analytics recognises world-class researchers for their exceptional research performance and their production of multiple highly cited papers.



28 SFI-funded researchers were named among the **top 1%** in the world

Prof Kingston Mills, Trinity Biomedical Sciences Institute.

SFI Researcher of the Year 2020

SFI was delighted to announce Prof Kingston Mills as the 2020 SFI Researcher of the Year. Kingston is a Professor of Experimental Immunology at TCD, and Director of the Trinity Biomedical Sciences Institute. 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.

His research focuses on T cells in infection and autoimmunity and he has published over 300 peer-reviewed papers and book chapters that have been cited over 31,000 times. He has been continuously successful in securing Prinicipal Investigator grants from SFI since its foundation in 2001 and has led a number of Strategic Research Partnerships with Industry.

Spotlight on:

Prof Luke O'Neill, School of Biochemistry and Immunology at TCD.

Discovery research

In 2020, Swiss drug company Roche acquired Dublin-based biotech company Inflazome, for €380 million.

In many ways it's a virtuous circle. SFI funded my lab, with tax payers money. We recruited and employed people, several of whom got jobs in industry and academia, so it built their careers. We developed a new company which generated income for the Irish Exchequer, the university and shareholders. Most importantly of all, this research will benefit patients. None of this would have been possible without that seed investment from SFI, which took a risk on me and my ideas.

Prof Luke O'Neill

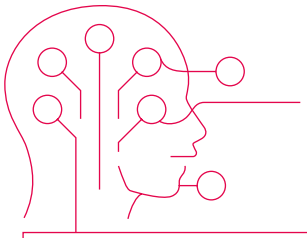
Co-founded in 2016 by Prof Luke O'Neill at the School of Biochemistry and Immunology at TCD and Prof Matt Cooper, a chemistry professor at the University of Queensland, the company's intellectual property is based on the SFI-funded research of Prof O'Neill in partnership with the University of Queensland.

Inflazome currently has two drugs in clinical trials: Inzomelid, for the treatment of neurodegenerative diseases and Somalix, for inflammatory diseases elsewhere in the body. The acquisition will see scientific discovery and innovation making a real difference in society, with potential treatments for serious illnesses such as Alzheimer's, Parkinson's and cardiovascular disease brought to market.

Inflazome has raised €55 million through various funding rounds since its incorporation. The company is backed by venture capital investors including Ireland's Fountain Healthcare and healthcare company Novartis among others. It is a an excellent example of Investigator-led research driving the innovation economy.

Prof O'Neill is a world expert on innate immunity and inflammation. He is listed by Thompson Reuters/ Clarivates in the top 1% of immunologists in the world, based on citations per paper. Inflazome is the second company that Prof O'Neill has in clinical trials. He is also co-founder of Sitryx, which aims to develop new medicines for inflammatory diseases. Prof O'Neill was recognised in 2020 with the SFI Outstanding Contribution to STEM Communication Award for his significant contributions to popularising and raising public awareness of science.

Watch video



Excellent Talent and Skills

SFI develops, attracts and retains diverse academic and research talent that powers Ireland's innovation society.

In 2020, COVID-19 and climate change brought to the fore the importance of the role of science and research in improving our world. SFI supports the work of early-stage researchers, established individuals and larger research collectives, investing in world-class talent to help Ireland become a global innovation leader in scientific and engineering research for the advancement of Ireland's economy and society.

SFI collaborates with government, industry and universities, working to create and sustain a more diverse STEM talent pool that is positioned to help rebuild our economy, and a more equitable and inclusive society, creating and advancing knowledge that can better ensure we are resilient to future economic and societal disruptions.

5,447
People working on SFI supported projects

1,966
Postgraduate (PhD and Masters) students supported by SFI

37%
of PhDs and Masters who departed from SFI teams went to industry as their first destination

574
SFI Award Holders

643
SFI Funded Investigators

Spotlight on:

SFI Centres for Research Training Programme

The SFI Centres for Research Training Programme was established to increase the number of PhDs under the theme of 'Data and ICT Skills for the Future'.

This is helping to meet the data skills needs of industry and to support and nurture early-career research talent, preparing postgraduate students for a multitude of career pathways, with 37% going on to Industry. This cohort model gives PhD students significant support in peer to peer learning and the opportunity to work across institutions.

In 2020, **179 students** began their PhDs.

41%
of these students were women.

74
collaborations were established, with **21** of these non-academic.

We get a lot of opportunity to present our own research to our peers, as well as learn about each other's research. We get to build relationships with thought leaders in their fields through having access to the multiple universities. We get a lot of industry partners in to give interesting talks about how machine learning can be used in industry and how our work then can be translated into an industry environment after we finish our PhDs.

Ciara Feely, PhD candidate at the SFI Centre for Research Training in Machine Learning

Watch Video

PhD Student, Lydia King, at the SFI Centre for Research Training in Genomics Data Science led by NUI Galway, has published research on the analysis of cancer genomes in the international journal PLOS ONE. The research, which commenced during Lydia's studies in NUI Galway's MSc in Biomedical Genomics programme, has identified genomic signatures in women developing the most common type of breast cancer that can be associated with long-term survival. The NUI Galway team analysed the genomes of breast cancer patients to look for associations with survival rates using advanced statistical techniques. The work highlights the enormous benefits of training interdisciplinary scientists with statistical and computational skills to generate new biological insights from genomics data with the potential to improve patient care.

The NUI Galway team focused on whether an overall measurement of genome instability in cancer cells from luminal breast cancer patients, observed at diagnosis and before treatment started, could provide additional information in predicting their long-term survival. To test this hypothesis, they analysed data from the Molecular Taxonomy of Breast Cancer International Consortium (METABRIC) led by Cambridge University.

Lydia and her colleagues calculated the level of genome instability across 2,000 patient genomes, then used multivariable statistical modelling to identify distinct long term survival outcomes for luminal subtype breast cancer patients. This enabled them to confirm the significantly worse prognoses for luminal patients suffering from the most extreme levels of genome instability in their tumour biopsies. This approach of using genomic analysis is known as "precision (or genomic) medicine" and is helping to define a new standard of care in many areas of clinical practice.

PhD candidate Lydia King with her mother Clarissa King, who both regularly do sponsored runs for breast cancer charities. Photo: Lydia King.

SFI Research Professorship Programme

The SFI Research Professorship Programme recruits 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 2020, Prof Jens Walter was recruited from University of Alberta in Canada to lead a €3.7 million chronic disease research programme at APC Microbiome Ireland SFI Research Centre at UCC. Professor Walter, recently listed as one of the world's most influential scientists in the recent global 2020 Highly Cited Researchers List, will establish a team of Irish and international collaborators from his research base at APC, to investigate the impact of a modern lifestyle on the gut microbiome and its relationship to increased chronic diseases. The award will also support a further nine research positions.

World-leading academic and SFI Research Professor Jens Walter at UCC.

Ocean Plastics Study

An Irish study emerging from an SFI-funded project on using technologies to build a sustainable Irish bioeconomy, led by SFI Research Professor Piet Lens at NUIG, found that up to 31% of exported plastic for recycling was not recycled and that plastic for recycling from Europe is being dumped in Asian waters. The study highlights the lack of available data on plastic waste and the need to consider extended audit trails as part of emerging regulations around trade in plastic waste.

SFI Supporting Emerging Research Leaders

SFI Frontiers awardee, Dr Norma Bargary (UL), is developing new algorithms to maximise the benefits of sensor data, such as that collected from medical and wearable devices.

In 2020, SFI launched the SFI Frontiers for the Future Programme to support individual-led research with an emphasis on areas of high-risk, high-reward, to help us to build a better future for Ireland through discovery, innovation, and impact.

Run in collaboration with the Geological Survey Ireland (GSI) and the Environmental Protection Agency (EPA), the programme design was driven by feedback from the research community seeking funding for individual-led research and access to shorter-term project funding.

The first Frontier awards were announced, 72 in total, representing an investment of €52 million supporting research in areas such as spinal cord injury, novel materials, species biodiversity in food production, computer graphics and information security. This new, highly competitive programme was engineered to address gender imbalance, in line with SFI's Gender Strategy, with 45% of the research grants supported to be led by women researchers. It provides support for emerging investigators and those returning to research after a period of leave.

Spotlight on:

Dr Boris Galkin, a research fellow at the CONNECT SFI Research Centre in TCD.

SFI Public Service Fellowship

In 2020, 12 awards were made under the SFI Public Service Fellowship Programme, representing an investment of €699,000, to contribute to the Government's objective of promoting a culture of innovation through collaboration, knowledge exchange and the development of data-driven and evidence-based solutions.

SFI worked with other Government Departments to place researchers within areas where they will provide the Public Service with deep technical knowledge to enhance service delivery, and inform policy-making, such as the Department of Public Expenditure and Reform, the Food Safety Authority of Ireland, the Houses of the Oireachtas Library and Research Services, and the Department of Further and Higher Education, Research, Innovation and Science.

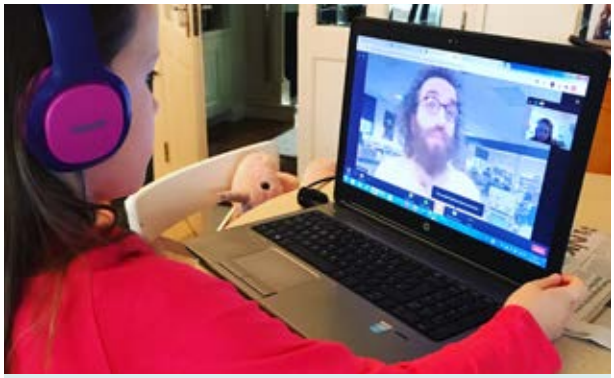
Researchers from UL, UCD, UCC, TCD, RCSI and NUI Galway will undertake collaborative research projects in areas such as blockchain technology, the detection of emerging food risks, measuring the impact of the open data initiative and the impact of new and emerging technologies, for a duration of between three and 24 months.

One of the researchers, Dr Rónán Kennedy of NUI Galway, has produced a report for the Oireachtas examining the impact of technological change on the legal sector, warning that artificial intelligence (AI) software designed to introduce efficiencies in the justice system could "learn" to discriminate in ways that are illegal, focusing on characteristics that are proxies for social class, race or gender.

Dr Boris Galkin, a research fellow at the CONNECT SFI Research Centre for Future Networks in TCD, was also placed within the Oireachtas Library and Research Service, to work on delivering a report that examines the economic, social and ethical implications of unmanned aerial vehicles such as drones and their rapid proliferation into the consumer and commercial sectors.

Education and Public Engagement

SFI showcases the best in Irish science, so that its value to the economy and society is understood and appreciated. In 2020, as the Irish public was learning to live through the COVID-19 pandemic, we saw the vital importance of providing the public with access to clear, concise and easily understood science. This knowledge impacted our lives, our health, our loved ones, and our collective future.



A student tunes into Dr Dan Nickstrom's online workshop as part of the Midlands Science Festival's Digital Discovery Day 2020.

Throughout 2020, SFI supported and delivered STEM engagement projects aimed at building scientific literacy and confidence among the Irish public, so they could be informed and input into the societal challenges we face together. SFI supported the digital delivery of engagement to ensure that these important conversations could continue to take place within the continuing restrictions, facilitating extended timelines and additional supports to projects where needed.

- **€5.4 million** invested in **50 STEM projects** through the SFI Discover Programme Call.
- **2,262 EPE activities** delivered by SFI-funded researchers.
- **331 primary schools** received an SFI Discover Primary Science and Maths (DPSM) award.
- **1,457 teachers** from 138 primary schools received continuous professional development (CPD) training through the SFI-supported DPSM/ European Space Education Resource Office (ESERO) programme.
- **3,000+ senior cycle students** attended Space Career Roadshows to learn about careers in the Space Sector.

Pictured l-r: Lola Jordan from Tivoli Senior Branch and Issy Jordan of Tivoli Guides, Dun Laoghaire, at the launch of Irish Girl Guides' Space badge in October 2020.

Irish Girl Guides Space Badge

ESERO Ireland, SFI and Blackrock Castle Observatory partnered with the Irish Girl Guides to launch their Space Badge during Space Week 2020. This project was led by Dr Niamh Shaw, science and space communicator, following her term as Ambassador for the Irish Girl Guides.

Niamh worked closely with Blackrock Castle Observatory to develop the Space activities which will support the girls in achieving their Space Badges and developing their scientific skills such as problem solving, teamwork and creativity.

Pick Your Brain Family Quiz with science presenter, Phil Smyth.

Spotlight on:

Liz Bonnin and Prof Luke O'Neill presenting Future Island Live during Science Week 2020.

Science Week celebrating 25 years

Delivered against a societal and technological backdrop never previously experienced, Science Week 2020 celebrated 25 years of showcasing the science of our everyday lives.

Science Week began as a small pilot initiative started in 1995 by the Royal Dublin Society, which was later developed and delivered by Forfás. It has been coordinated by SFI since 2012 (when Discover Science and Engineering was subsumed into SFI), and is now recognised as a flagship vehicle for regional STEM activity, supported by a national promotional campaign. Science Week has grown from 50 events in the first year to over 2,000 events in 2020. This week-long celebration of STEM public engagement, enables the public to see the relevance of STEM to our daily lives and pushes the boundaries of STEM public engagement.

The theme for Science Week 2020 was Choosing Our Future. Many of the choices we make today, in how we work, play, rest, will influence our culture and societal norms tomorrow. Amidst heightened COVID-19 public health measures, Science Week was delivered digitally for the first time. From a virtual conference for secondary school students at ASPIRE with ABBOTT, to virtual family days across the country, live stream quizzes with science questions, to a virtual conversation on public perceptions about women's health.

13 regional festivals were funded under the SFI Discover Programme Science Week Call, which delivered virtual engagements across the Midlands, the South East, Wexford, Kilkenny, Cork, Cavan-Monaghan, Sligo, Galway, Limerick, Tipperary, Kerry, Mayo and across Teagasc sites at the Festival of Farming and Food.

As part of the SFI-RTÉ joint initiative, Liz Bonnin and Prof Luke O'Neill presented Future Island Live during Science Week 2020, reaching an audience of over 1.1 million people over three one-hour episodes. Featuring a range of famous faces, the show explored the science behind three core themes: health, wealth and happiness.

Marking its 25th anniversary, 2020 showcased Science Week in a manner unlike any other year, adapting to delivering STEM engagement virtually, and at a time when the public turned to science to understand the pandemic. This move towards digital delivery helped to break down barriers for groups which previously may not have engaged in Science Week. While future Science Weeks will hopefully see the return of in-person celebrations of science, online activities will continue to be a key feature in the future.

Global Footprint

In 2020 SFI continued to foster and maintain our strong global connections with international funding agencies, as well as seeking new opportunities for international research collaborations.

- These diverse partnerships demonstrate the strength of our enterprise and research reputation which will play an important role in rebuilding our post-pandemic economy.
- SFI's international collaborations have extensive global reach: Europe (**67%**), North America (**18%**), Asia (**9%**), Australia and Oceania (**3%**), Southern and Central America (**2%**) and Middle East, North Africa, and Greater Arabia (**1%**).

7,712

academic-academic collaborations were reported by SFI researchers. **72%** were with international partners.

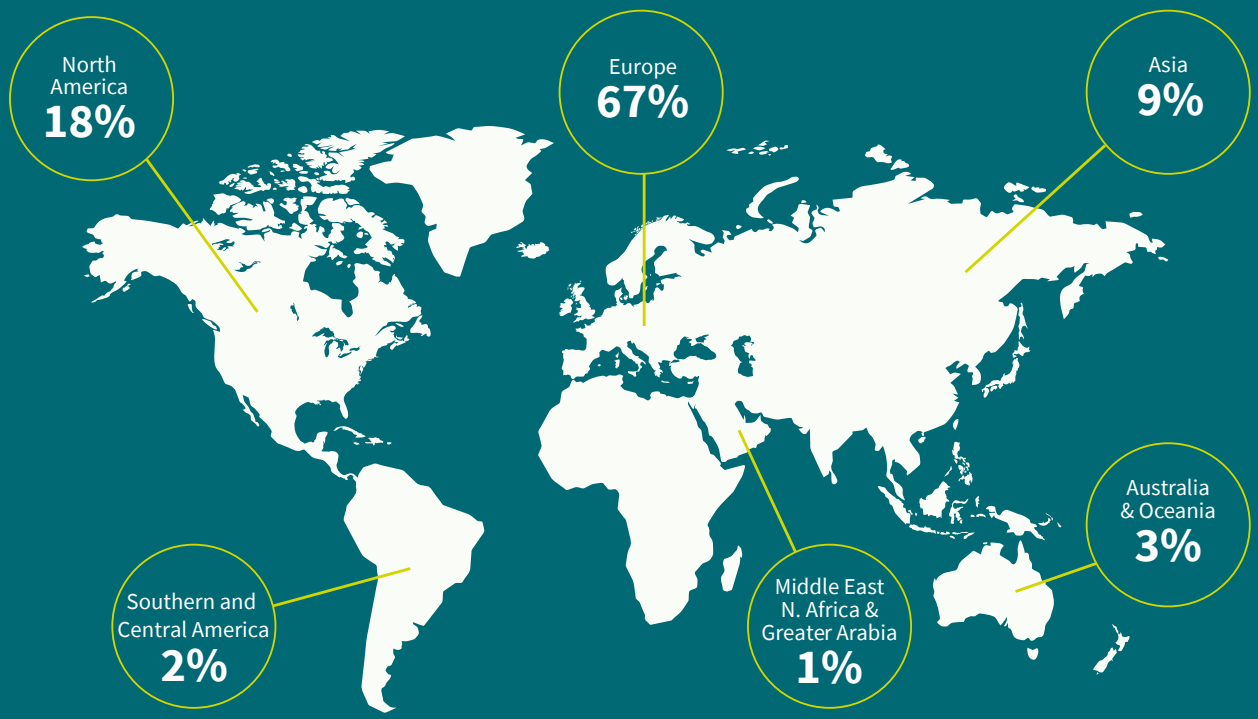
50%

of non-academic collaborations were with partners outside of Ireland – **11%** with the US, **10%** with the UK and **29%** with other countries.

532

SFI-funded researchers were involved in or organised **532** virtual STEM conferences

2020 International Academic Collaborations



Number of 2020 International Academic Collaborations by Country

United Kingdom (excluding Northern Ireland)	1006
United States of America	883
Germany	513
France	331
Spain	306
Italy	281
Netherlands	217
Northern Ireland	213
Sweden	148
China	146
Australia	133
Canada	127
Switzerland	113
Belgium	101
Denmark	99
Austria	71
Portugal	69
Brazil	51
Finland	51
India	50
Poland	46
Greece	42
Norway	41
Japan	39
New Zealand	36
Israel	27
Russian Federation	26
Czech Republic	24
Turkey	22
Singapore	21
Hungary	18
Korea, South (Republic of Korea)	17
South Africa	14
Saudi Arabia	14

Chile	12
Iran (Islamic Republic of)	11
Luxembourg	11
Slovenia	10
Slovakia	9
Taiwan, Province of China	8
Argentina	8
Romania	8
Vietnam	7
Pakistan	7
Cyprus	7
Croatia	6
Qatar	6
Mexico	6
Kazakhstan	6
Lebanon	6
Latvia	5
Estonia	5
Thailand	5
Hong Kong	5
Serbia	5
Lithuania	4
Ukraine	4
Colombia	4
Malaysia	3
Bosnia and Herzegovina	3
Malta	3
United Arab Emirates	3
Nigeria	3
Egypt	3
Sri Lanka	3
Puerto Rico	3
Mauritius	2
Kenya	2
Iceland	2

Tunisia	2
Macao	2
Uganda	2
Bulgaria	2
Kuwait	2
Fiji	2
Swaziland	1
Algeria	1
Belarus	1
Armenia	1
Bangladesh	1
Malawi	1
Mongolia	1
Morocco	1
Cuba	1
Burkina Faso	1
Grand Total	**5,513**

SFI US-Ireland Programme

In 2020, ten awards were made with a co-investment of €23 million through a tripartite research and development partnership between the United States of America (USA), Republic of Ireland (RoI) and Northern Ireland (NI), which will support more than 100 research positions across 20 research institutions, for three to five years.

The US-Ireland Research and Development Partnership, launched in July 2006, is a unique initiative that aims to increase the level of collaborative R&D amongst researchers and industry professionals across the three jurisdictions.

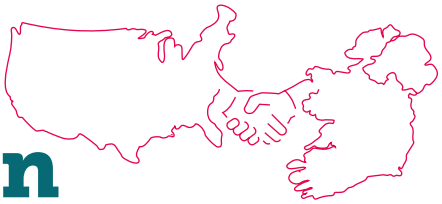
The partner agencies in the Republic of Ireland are SFI, the Health Research Board and the Department of Agriculture, Food and the Marine. It is facilitated by the National Science Foundation, US National Institutes of Health and the National Institute of Food and Agriculture, within the US Department of Agriculture in the USA.

In Northern Ireland, the Health and Social Care R&D Division, the Department for the Economy, and the Department of Agriculture, Environment and Rural Affairs are partners.

Ten awards were made with a co-investment of

€23 million

through a tripartite research and development partnership



SFI St. Patrick's Day Science Medal

The prestigious SFI St Patrick's Day Science Medal was awarded to Prof Neville J Hogan, Sun Jae Professor of Mechanical Engineering and Professor of Brain and Cognitive Sciences at Massachusetts Institute of Technology (MIT), and Dr Ann B Kelleher, Senior Vice President (SVP) and General Manager at Intel, at an event in Washington D.C. USA.

The Medal recognises distinguished Irish scientists, engineers or technology leaders living and working in the USA, for their significant scientific contributions to academia and industry.

UK Partnerships

SFI continued to work in partnership with UK research bodies throughout 2020 to achieve our shared goal of supporting research beyond borders and strengthening bilateral research collaborations. SFI continues to work with cross-Government departments on both sides of the border to address the challenges caused by Brexit which impact the research community and to create real opportunities for joint research partnerships, inward investment and jobs to benefit all communities.

Six awards were made under the Engineering and Physical Sciences Research Council (EPSRC) - SFI Joint Funding Research Programme with an investment of €2.1 million for researchers based in NUIG, TCD, UCD and IT Sligo. This will support research in the areas of environmental sensors, quantum technologies, augmented and virtual reality, energy system and cryptocurrencies, chemical engineering working towards energy system decarbonisation and materials science and electronics developing new energy sources for wearable devices.

Four awards were made through the prestigious **Royal Society-SFI University Research Fellowship Programme**, with €1.8 million invested. In December 2020, Dr Lynette Keeney at Tyndall National Institute and Dr Pauline Scanlan from APC Microbiome Ireland SFI Research Centre were each awarded prestigious Royal Society-SFI University Research Fellowships for the second time for their outstanding early career success in the areas of deep-tech data storage and microbiome sciences research respectively.

The RS-SFI University Research Fellowship scheme gives early career researchers a generous timeframe to develop their own research field and build their careers at a time when many are often also starting their families.

Dr Lynette Keeney, Tyndall National Institute and Dr Pauline Scanlan from APC Microbiome Ireland SFI Research Centre.

Dr Andrey Shkoporov, UCC.

Wellcome Trust Research Career Development Fellowship

Dr Andrey Shkoporov at APC Microbiome Ireland SFI Research Centre in UCC was awarded a prestigious Wellcome Trust Research Career Development Fellowship, worth €910,000 over five years, to better understand gut viruses.

UK-Irish Consortium Awarded £1.6 million

A UK-Irish consortium called QuamNess was awarded £1.6 million to explore the thermodynamics of quantum machines and technologies via an EPSRC-SFI award to researchers at TCD, Queen's University Belfast (QUB) and University of Bristol (UB). The research has potential to offer highly efficient ways of generating power, managing heat flows and recovering wasted energy in wide-ranging technologies from microprocessors to chemical reactions.

Spotlight on:

European Research Council
Established by the European Commission

Successful delivery of ERC targets

As Horizon 2020, the eighth framework programme for research and innovation of the European Union, comes to a close, Ireland has recorded the most successful engagement with a European funding framework to date with over €1 billion secured across academia and industry.

The European Research Council (ERC) has played a major role in Ireland's success. With an allocation of €13.1 billion, the ERC's role is to support fundamental blue skies research, judged solely on excellence.

The ERC covers all disciplines and career stages through its suite of programmes: Starting, Consolidator, Advanced, Proof of Concept and Synergy and are among the most prestigious awards globally that a researcher can secure. Over the lifetime of the framework, Ireland set a total national target for the ERC of €100 million, with an aspirational target of €125 million. Ireland has far exceed that indicative ambitious national target, winning almost €160 million, with the results of the final Advanced Grant 2020 yet to be announced.

SFI and the IRC act as National Contact Points (NCP) for the ERC programme in Ireland, to provide information and support to ERC applicants. Financial support is also provided by Enterprise Ireland who host the Horizon 2020 website, a primary source of information on European funding.

In 2020, four Ireland-based researchers were successful in the ERC 2019 Advanced Grant competition, with two successes recorded for UL: Professors Orla Muldoon and Michael Zaworotko; Prof Dan Bradley from TCD and Prof Geraldine Meaney from UCD. Ireland also recorded success in the ERC 2020 Starting Grant call with awards granted to Dr Alessandro Lunghi and Dr Claire Gillan from TCD; Dr Lorna Lopez from Maynooth University and Dr David Courtney from UCD, now based in Queen's University Belfast. There were also eight Consolidator Grants awarded: Dr Padraig Cantillon-Murphy, Dr Andrey Shkoporov and Professor Maria McNamara from UCC; Dr David O'Shaughnessy, Dr Thomas Chadefaux, Dr Marcus Collier, and Dr Stephen Dooley from TCD; and Dr Anne O'Connor from NUIG.

In September 2020, SFI in partnership with the IRC and support from Enterprise Ireland hosted a two-day National ERC Support and Information Forum to raise awareness of the prestigious ERC funding competitions, and provide supports and training to potential applicants and Research Office staff. Highly esteemed speakers included Minister Simon Harris TD, Interim-President of the ERC, Prof Jean-Pierre Bourguignon and scientists such as Profs Luke O'Neill, Valeria Nicolosi, Geraldine Meaney, Dan Bradley, Mike Zaworotko, Mary Cannon and Peter Kennedy.

The event was the first ever interagency online ERC forum, with over 870 registered participants over the two days and the European Research Council Executive Agency (ERCEA) highlighted the event as one of the largest ERC support events held to date.

Dr Lorna Lopez, Associate Professor at Maynooth University, was an SFI Starting Investigator Research Grant award holder before progressing to become an ERC Starting Grant holder.

SFI Driving Competitiveness

Ireland is a competitive, innovative country with ambitions to become a global innovation leader.

SFI seeks to foster academic-industry interactions by building strategic partnerships with industry to perform cutting-edge, industry-informed STEM research, enhancing our competitive advantage and helping to build resilience. The scientific advances resulting from SFI funding lead to new products, innovations and services, new companies, spin outs and high-value jobs. SFI helps Ireland compete on a global scale by building our nation's reputation in research, and supporting highly-trained postgraduates as they move from academia into industry.

Non-academic Collaborations

2,951 industry collaborations

2,270 distinct companies

1,571 industry collaborations with MNCs

1,380 industry collaborations with SMEs

Innovation and Commercialisation

SFI-funded researchers have delivered:

- **9** spin-out companies
- **97** patents filed
- **48** patents awarded
- **57** licenced technologies
- **220** invention disclosures

SFI Strategic Partnership Programme

Microsoft Terrain AI Technology in action.

In 2020, €8.5 million was invested in three awards under the SFI Strategic Partnership Programme. The Programme is a flexible mechanism for academic researchers to build strategic collaborations where significant co-funding is matched by a company, funding agency, charity, philanthropic organization or Higher Education Institute, or a combination of these. It aims to support standalone initiatives of scale with strong potential for delivering economic and societal impact to Ireland.

In 2020, some exceptionally strong projects came through the programme including a €5 million research project called Terrain-AI, co-funded between Microsoft Ireland and SFI.

Leveraging the latest multimodal sensing technologies, Internet of Things (IoT) devices and the Microsoft Azure Cloud, the project will collect high quality data to develop a modelling framework that will inform more effective policies to reduce carbon emissions. It will also help to inform future land use practices that will achieve reduced carbon outputs such as precision farming, carbon sequestration of grassland, and new approaches to public transport, or even tree planting in urban areas. This will enable society to make informed decisions about how we manage our climate and environment. The project led by Dr Rowan Fealy and Dr Tim McCarthy, at Maynooth University, will also be conducted in collaboration with SMEs, Government agencies, Teagasc, Trinity College Dublin, University College Dublin, Dublin City University, and University of Limerick.

A translational cancer research project called ACORN, also funded via an SFI Strategic Partnerships Award with €800,000 in 50:50 joint funding, will see Puma Biotechnology, Inc. working with the National Institute for Cellular Biotechnology (NICB) at DCU. The project will further investigate the drug neratinib, in treating HER2+ breast cancer, as well as its potential use in the treatment of other cancer types. Led by Prof John Crown and Dr Denis Collins, ACORN aims to advance cancer research skills in DCU and bring new findings to clinical trials that will benefit cancer patients in Ireland and globally.

Spotlight on:

Future Innovator Prize Challenge Funding

The SFI Challenge-based funding programme is an ambitious solution-focused funding approach that uses prizes, diverse teams and competitive funding, within a set timeline, to accelerate research activities to address societal problems.

Future Innovator Prize is a good example of cross-governmental problem solving, designed to facilitate the development of disruptive solutions to address critical societal challenges. During the 12-month programme, multidisciplinary teams compete for the final prize award to further advance and deploy their solution.

SFI is working to develop meaningful partnerships with Government departments to develop STEM solutions to address challenges. In 2020, SFI supported challenge-based funding calls to address major societal challenges in the areas of climate change, sustainability, and the responsible use of data and AI. These included four projects co-funded with the Department of Foreign Affairs:

In the area of Artificial Intelligence (AI) for Societal Good, the GreenWatch project, led by Andreas Hoepner at UCD, is developing a machine learning/ natural language processing system to identify instances of greenwashing related to the United Nations Sustainable Development Goals (SDGs). Also in the area of AI, the Tracking Adaptation Progress in Agriculture and Food Security (TAPAS) project led by Aaron Golden at NUIG, will use an AI-powered Satellite Remote Sensing Platform to enable developing countries to track climate change adaptation in their agri-food sectors. The measurement, reporting and verification of climate change adaptation is critical to assess and optimise the effectiveness of interventions and to direct investment.

In the area of climate change and sustainability under the Zero Emissions Challenge, the LiCoRICE project, led by Tony Keene at UCD, proposes a highly innovative solution for recycling scarce and valuable materials from waste battery products. This aims to reduce the cost of electric vehicles, which are a key element of Ireland's plan to decarbonise transport by 2030, as well as to improve the working conditions of populations in developing countries involved in mining raw materials.

The SolarCool project led by David McCloskey at TCD, will enhance solar panel performance using passive cooling technology. This will lower the cost of solar panels by increasing efficiency and operational lifetime, enabling increased uptake of solar energy.

These projects involve relevant and diverse non-academic team members, including the International Center for Tropical Agriculture (CIAT), Sustainable Nation Ireland, Concern Worldwide and WEEE Ireland.

Future Innovator Prize Programme workshops took place in SFI offices in January 2020. Pictured above are the participating teams that were co-funded by the Department of Foreign Affairs (DFAT). Pictured l-r Front row: Steven Ferguson (UCD), Andreas Hoepner (UCD), Mary McCarthy (DFAT), Ruth Freeman (SFI), Stephen O'Brien (TCD), Charlie Spillane (NUIG). Back row: Tony Keane (UCD), Conor Leonard (WEEE), Theodor Cojoianu (UCD), Georgiana Ifrim (UCD), Seamus O'Shaughnessy (TCD), David McCloskey (TCD), Aaron Golden (NUIG).

Investment of **€6.4 million** was made via six awards under the SFI Infrastructure Awards Programme

SFI Research Supporting Spin Outs and SMEs

- A spin out from the ADAPT SFI Research Centre for AI-driven Digital Content Technology, called Iconic, was acquired in a deal worth €18 million, by a world-leading provider of translation and localization, intellectual property support solutions and life sciences language services. Iconic will form a new vertical language technology business and will be led by its cofounders Dr John Tinsley and ADAPT's former Associate Director, Dr Páraic Sheridan.
- SeqBiome, a spinout from APC Microbiome Ireland SFI Research Centre, led by UCC and Teagasc was launched in 2020 to provide interactive sequencing and microbiome analysis.

SFI Supporting Research Infrastructure

An investment of €6.4 million was made via six awards under the SFI Infrastructure Awards Programme, in partnership with NUIG, RCSI, TCD, Teagasc and UCD. These awards provide research groups with cutting edge equipment to enhance the performance of their high quality, impactful and innovative research.

This ensures SFI-funded researchers have a competitive edge when accessing international funding opportunities, such as the EU's Horizon Europe. The programme facilitates inter-institutional sharing of national research infrastructure, encouraging collaboration and partnership across Ireland.

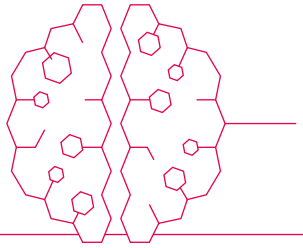
Pictured l-r: Dr Marcus Claesson, Brad Wrigley, Dr Rich Ferrie, Brendan Curran, Prof Paul Cotter, from the SeqBiome project at UCC.

SFI Generating Value for Money

In 2020, SFI-funded researchers significantly increased the amount of funding they competitively won from other diverse sources, demonstrating continued strong return on investment, value for money, and scientific excellence.

- SFI-funded researchers won **€255 million** from diverse sources
- SFI-funded researchers secured **€106 million** in funding from EU sources
- Funding from private enterprise was **€49.6 million**
- The ratio of funding from Irish Exchequer to non-Irish Exchequer is **1:2.1**
- The ratio of national funding to International funding is **1:1.4**

SFI Research Centres have drawn down approximately **€239 million** in cumulative Horizon 2020 funding and have an industry commitment of **€466 million**



External Funding Secured by SFI-Funded Researchers in 2020

	Total Funding Secured by PI (€)
European Union	€106,212,010
Private Enterprise	€49,572,698
Enterprise Ireland – Commercialisation and Non-Commercialisation Awards	€30,839,187
Other Irish Government Source	€12,191,797
Department of Agriculture, Food and the Marine	€9,605,691
Health Research Board	€8,710,300
Irish Research Council	€7,882,106
Higher Education Authority Ireland	€6,204,622
Other International Government Source	€5,392,899
Charity/Non-Profit Organisation (Irish)	€4,157,561
Other International Interest Organisation	€3,784,695
Charity/Non-Profit Organisation (International)	€2,488,787
Environmental Protection Agency	€2,870,567
Wellcome	€1,606,934
Teagasc	€1,439,500
Marine Institute	€1,212,506
National Institute of Health USA	€717,028
Department of Communications, Energy and Natural Resources (DCENR)	€436,540
Grand Total	**€255,325,428**

SFI Research Centres

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

The SFI Research Centres link scientists and engineers in partnerships across **910 research bodies** across the globe, including nine Irish universities and seven Institutes of Technology, representing a cumulative SFI investment of €684 million and an industry commitment of €466 million.

The Centres have signed **1,033** collaborative research agreements (CRAs) with **527** companies around the world (272 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:

€337 million
in non-exchequer, non-commercial funding

€234 million
from Industry

446
EI Commercialisation Awards

261
Licence agreements

44
Spin outs

20
Spoke Awards

Investment of **€193 million** in five SFI Research Centres for six years announced in 2020

Combined cumulative key performance indicator results for SFI Research Centres to end of 2020

Key Performance Indicator	Cumulative-to-2020
Journal Publications	10,522
Conference Publication	5,765
MSc/MEng Graduates	194
PhD Graduates	1,385
% Trainee Departures industry	34.6%
EU Participation	553
EU Coordination	129
ERC Awards	45
EI Commercialisation Awards	446
License Agreements	261
Spin Outs Incorporated	44

Cost-Share and Leveraging	Result	Target	Success
Cash-in-Bank	€95 million	€66 million	144%
Total Industry Funding Received	€234 million	€179 million	131%
Non Exchequer-Non Commercial Funding	€337 million	€335 million	101%

Investment in five SFI Research Centres

Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, announced an investment of €193 million in five SFI Research Centres for six years, to carry out research in smart medical devices, e-health, telecommunications networks, cybersecurity, smart cities, artificial intelligence, ethics and data privacy, as well as applied geosciences, energy security and marine resources.

This is backed by significant industry support from 200 industry partners committing over €91 million in cash and in-kind contributions, and will support approximately 1,060 graduate and post-doctoral students and research fellows employed by the Centres.

The five SFI Research Centres receiving this second phase of funding are ADAPT, the SFI Research Centre for AI-Driven Digital Content Technology, led by TCD; CONNECT, the SFI Research Centre for Future Networks and Communications, led by TCD; CÚRAM, the SFI Research Centre for Medical Devices led by NUIG; iCRAG, the SFI Research Centre for Applied Geosciences led by UCD; and Lero, the SFI Research Centre for Software, led by UL.

Benefiting the whole country, partners include Athlone Institute of Technology (AIT), DCU, DIAS, DKIT, LIT, MU, MTU, NUIG, RCSI University of Medicine and Health Sciences, Teagasc, TUD, TCD, Tyndall National Institute, UCC, UCD, UL, and WIT.

Watch Video

- To date, SFI Research Centres have participated in over 680 major EU-funded initiatives and cumulatively won 45 prestigious European Research Council (ERC) awards.
- SFI Research Centres have signed 122 collaborative research agreements (CRAs), of which 75 were with international companies. They had an industry committment of €34 million in 2020.
- A multi arts project 'Inception Horizon' explored the research of iCRAG, the SFI Research Centre for Applied Geosciences' – resulting in a unique choral performance.

Spotlight on:

Prof Ortwin Hess at TCD.

Frontiers research

Researchers at AMBER, the SFI Research Centre for Advanced Materials and BioEngineering Research, hosted by TCD, CRANN and the Trinity Centre for BioMedical Engineering, have designed an innovative new device that will emit single particles of light, or photons, from quantum dots, a key element in developing practical quantum computers and other quantum devices.

This provides a valuable quantum resource and has the potential to develop devices with much greater sensing sensitivity or computational powers over and above standard computing.

Scientists are exploring different options and designs to make quantum technologies a viable reality. One proposed idea for quantum computation utilises photonic systems, making use of quantum properties of light at the nanoscale, as qubits. Current computers process and store information in bits of either 0s or 1s whereas qubits can be 0 and 1 simultaneously. The AMBER team has made a significant improvement on previous designs in photonic systems via their device, which allows for controllable, directional emission of single photons and which produces entangled states of pairs of quantum dots.

The team explored such a system in a 2020 published paper in the high-profile journal Nano Letters. Their system utilises single photons of light emitted in a controlled fashion in time and space from quantum emitters (nanoscale materials known as quantum dots). For applications such as quantum computing, it is necessary to control emissions from these dots and to produce quantum entanglement of emission from pairs of quantum emitters.

SFI Research Professor, Ortwin Hess, who is Professor of Quantum Nanophotonics in Trinity's School of Physics and CRANN, added: *"By scanning the metal tip over the surface containing the quantum dots, we can generate single photon emission as required. Such a device is much simpler than current systems that attempt to fix a metal tip, or a cavity, in close proximity to a quantum dot. We now expect that this device and its operation will have a striking effect on research in quantum emitters for quantum technologies."*

The team plans to fabricate devices that will demonstrate controlled single photon emission and contribute strongly to the research effort in quantum technologies in Ireland.

SFI Policy Updates

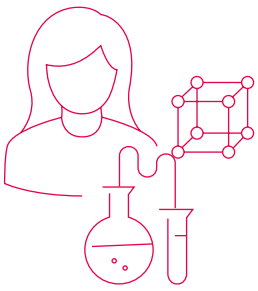
Improving gender equality, diversity and inclusion in SFI

SFI continues to build upon its significant work to improve gender balance, equality, diversity and inclusion across the research teams it supports. Supporting the Athena SWAN initiative, endorsed by Irish Research Bodies, SFI ensures subject matter experts participating in either remote or panel reviews, are briefed on unconscious bias. In 2020, 29% of SFI award holders were women. SFI's target is 30%. Of team members, 38% were women.

In 2020, SFI's gender initiatives in the SFI Frontiers for the Future Programme included widening the eligibility criteria to allow for a more diverse applicant pool, having a language expert review programme calls to improve inclusivity and where applicants received the same final score, priority was given to applications from women. This saw the percentage of funded women increase to 45% in this programme, from 21% in previous programme calls.

SFI aims to fund researchers who undertake excellent research and positively contribute to developing the next generation of research talent, society and the economy, the research community, and a positive research culture. To ensure this is part of the grant evaluation process, in 2020, SFI introduced a new applicant CV and evaluation criteria to reflect these values in-line with the Declaration on Research Assessment (DORA) principles. This is also in line with SFI's move to a more holistic view of a researcher's achievements, supporting a more inclusive research environment.

SFI is participating in the Horizon 2020 GRANteD project, which aims to review the occurrence and causes of gender bias in research funding in Europe. As such, the SFI Frontiers for the Future 2020 call will be evaluated by international experts in the field of gender equality in research funding. Results arising from this evaluation will provide SFI with recommendations to consider implementing across its funding programmes.



45%

of SFI Frontiers for the Future awardees were women.

Research Integrity and Research Governance

In 2020, SFI continued to work with its external advisors to review policies and processes that exist in support of Research Integrity in Research Performing Organisations (RPOs), including those pertaining to training and education, and to examine their reach and effectiveness across schools, departments and Centres, and at the level of individual researchers. This is helping to ensure that the highest standards of integrity underpin all aspects of the research being supported by public monies.

SFI has reviewed institutional policies and procedures regarding Research Integrity, training and the handling of allegations of scientific misconduct, the results of which are being shared with the relevant RPOs. Additionally, SFI's data provenance review process, which allows an external subject-matter expert panel to study the provenance of a dataset and engage with the research team, is now a central component of SFI's virtual programme progress site reviews of individual-led awards.

Open Science

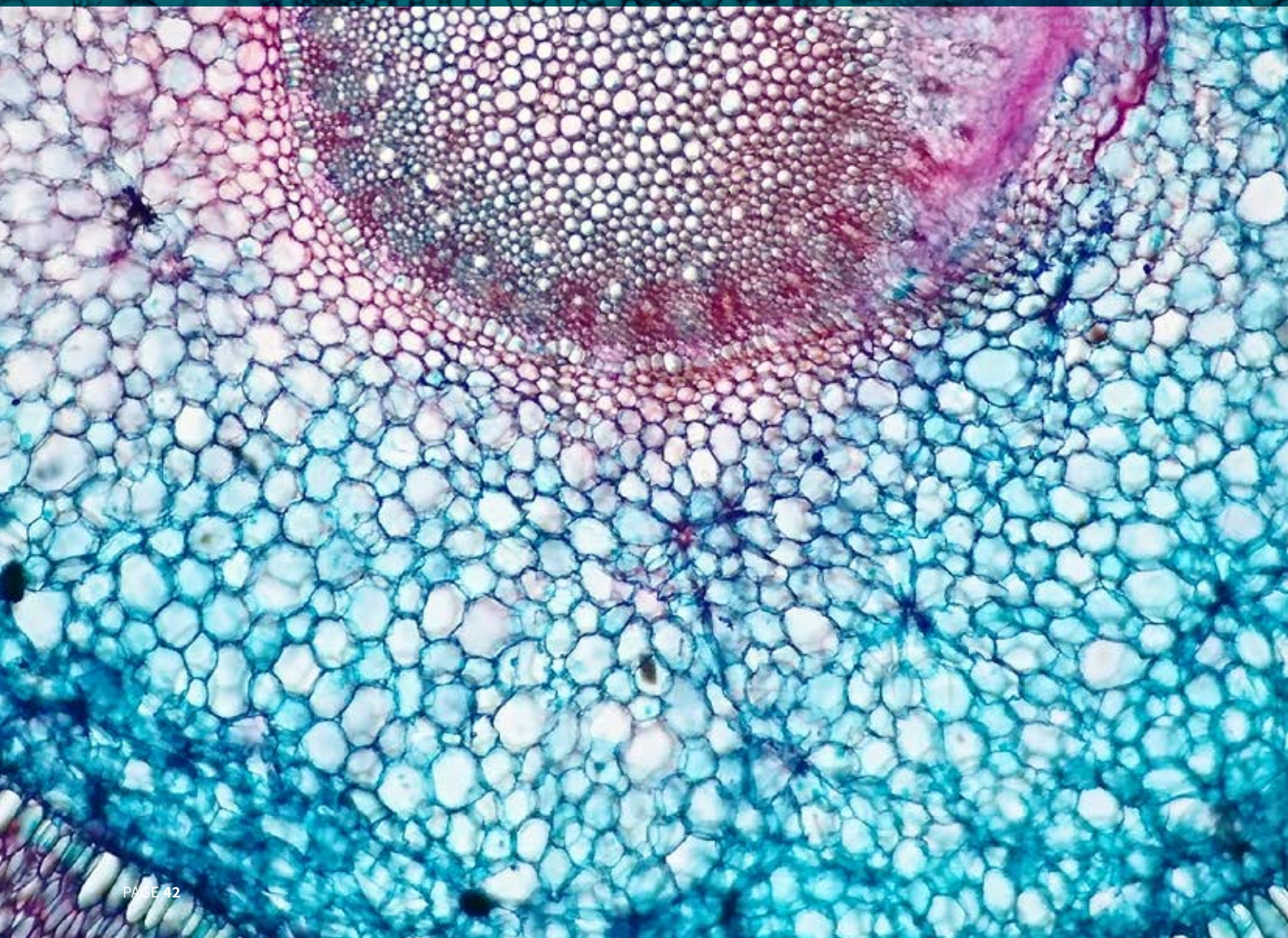
SFI funds research that makes a real difference to our society and economy and increasing accessibility to publications and other research outputs significantly contributes to this position. In 2020, 59% of SFI-funded original and review articles were openly available. SFI's Open Access Policy stipulates that all papers submitted for publication from the 1st of January 2021 must be made openly available immediately upon publication. SFI also requests that all outputs, including research data must be Findable, Accessible, Interoperable, and Reusable (FAIR), and is including Data Management Plans as a requirement for new funding calls.

SFI has supported IReL to secure additional funding for transformative agreements. By the end of 2020, IReL had negotiated nine transformative agreements with publishers such as Elsevier, Springer, Wiley, and the Royal Society. These developments will provide much needed support and infrastructure for SFI funded researchers in aligning with SFI's Open Access Policy. Similarly, supporting Open Access will greatly complement SFI's commitment to DORA which seeks to shift the emphasis from publication metrics towards recognising the quality and impact of research. SFI is also leading a taskforce to monitor the impacts of Plan S, both positive and negative, on early career researchers, in particular.

59%

of SFI-funded original and review articles were openly available.

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



Science Foundation Ireland Board Members*

Prof J. Peter Clinch

Chairman of the Board of Science Foundation Ireland (SFI)

Prof J. Peter Clinch was appointed Chairperson of the Board of SFI in August 2019. He was previously Chairperson of the National Competitiveness Council where he served as a senior independent adviser to Government on competitiveness, trade and economic policy. Peter is a former Vice President of UCD where he holds the Jean Monnet Chair of Public Policy and he is an Affiliate Faculty member of the competitiveness 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, a member of the Governing Boards of the Global Research Council and of the European Commission Joint Research Centre and is a founding member of the Small Advanced Economies Initiative. 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. Recently Mark has served in Ireland's response to the COVID-19 pandemic, e.g., as a member of NPHET. 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.

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 Astex has drugs for breast cancer and urothelial carcinoma on the market world-wide and several 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.

Aidan W. Donnelly

Managing Director of Advest Management Ltd

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

Máire Geoghegan-Quinn

Former EU Commissioner for Research, Innovation and Science

Máire Geoghegan-Quinn served as the European Commissioner for Research, Innovation and Science from 2010-2014. As Commissioner, she established the 'Innovation Union' initiative; progressed the European Research Area; and delivered the largest ever research framework programme, Horizon 2020, with a 30% budget increase (€80 billion in total for research and innovation). She had political responsibility for two directorates general – the Directorate General for Research and Innovation and the Joint Research Centre. In March 2021, Máire was appointed as chairperson of the governing authority of NUIG, Údarás na hOllscoile. Máire previously served as a Fianna Fáil TD for the Galway West constituency (1975–1997); and held several ministerial positions including: Minister for the Gaeltacht (1979–1981), becoming the first 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.

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.

Prof Ann Leen

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

Ann Leen is a Professor of Pediatrics in the Center for Cell and Gene Therapy at Baylor College of Medicine and an immunologist with more than 20 years of experience in developing and testing novel T-cell therapies for the treatment of viral infections and cancer. She has developed and clinically implemented immunotherapeutic strategies to treat a spectrum of diseases including myeloma, lymphoma, leukemia, pancreatic cancer and COVID-19. She is currently the principal investigator on five investigator-initiated Investigational New Drug (IND) studies and over the past 10 years has served as PI on over 10 clinical trials using “first in man” cell therapies for patients. She has co-founded two companies – Marker Therapeutics and Allovir - and serves as AlloVir’s Chief Scientific Officer. Prof Leen is a senior or co-author on more than 100 peer-reviewed publications and a named inventor on 14 issued patents. She has also reviewed manuscripts for various journals and served as a grant peer reviewer for both national and international funding agencies. Prof Leen holds a Ph.D. in Immunology from the CRC Institute for Cancer Studies in Birmingham, UK and a BSc in biochemistry from UCC.

Prof Liam Madden

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

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

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.

Cliona Murphy

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

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

**As of 30th April 2021*

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 Act"). The functions of the Board are set out in section 7 of the Act, as amended. The Board is accountable to the Minister for Further and Higher Education Research Innovation and Science ("the Minister") and is responsible for ensuring good governance and performs this task by setting strategic objectives and targets and taking strategic decisions on all key business issues (with effect from 1 January 2021, SFI was transferred from the Department of Enterprise, Trade and Employment to the newly established Department of Further and Higher Education Research Innovation and Science, with effect from 1 January 2021). Section 7(4) of the Act requires the Board to comply with such general directives relating to policy in the exercise of its functions as may be given by the Minister. The regular day-to-day management, control and direction of SFI are the responsibility of the Director General, the Executive Committee and the senior management team. The Board also sets the ethical tone of the Foundation by ensuring that SFI's values, good standards of governance and ethical behaviours permeate throughout 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 senior management of SFI.

Board Responsibilities

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

- 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 a going concern basis unless it is inappropriate to presume that it will continue in operation, and state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements.

The 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 7, 2020. 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 as at 31 December 2020.

Board Structure and Committees

The SFI Board normally consists of a Chairperson, Deputy Chairperson and ten ordinary members appointed by the Minister, following consultation with the Minister for Education and Skills, as set out in Section 8 of the Act. The independent nonexecutive Board Members, have the necessary and complementary skills and expertise to set the strategy and broad policies for the Foundation and oversee its operation. The table below details the appointment period for current members:

Board Member	Role	Date appointed
Prof J. 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 Máire Geoghegan-Quinn	Board Member	11/04/18
Mr Brendan Harte	Board Member	17/12/19
Prof Ann Leen	Board Member	10/09/21
Prof Liam Madden	Board Member	01/02/13 (reappointed 08/06/17)
Ms Grainne McAleese	Board Member	25/10/18
Ms Cliona Murphy	Board Member	10/09/21

The Board reviewed its performance in March 2020 with the submission of a report on 2020 activities, which included a review of the Board Committees and the Board members also completed a Board evaluation questionnaire. The Board has established five 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 conducts audits of SFI grants made to external institutions. The committee ensures that 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 Committee normally has five members including at least one external member. The current members of the Committee are Brendan Harte (Chairperson), Aidan Donnelly, Grainne McAleese, Stephen O'Connor (who joined the committee on 30 March 2020) and Cliona Murphy (who joined the Committee on 8 December 2020). Mr Breathnach left the Committee in July 2020 due to the transfer of SFI out of the Department of Enterprise Trade & Employment. Stephen O'Connor is an external committee member. There were eight meetings of the ARC in 2020.

Board Nominations Advisory Committee

The Board Nominations Advisory Committee (NAC) comprises three members and considers the skillsets required on the Board, as well as relevant areas of expertise and advises the Public Appointments Service accordingly when Board vacancies arise. The Committee reports to the Board after each meeting. The current members of the Committee are Prof J. Peter Clinch (Chairperson), Prof Mark Ferguson and Prof Ann Leen. There were no meetings of the Committee in 2020.

Management Development and Remuneration Committee

The Management Development and Remuneration Committee (MDRC) comprises four 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 J. Peter Clinch (Chairperson), Mr Aidan Donnelly, Ms Grainne McAleese and Ms Cliona Murphy (appointed on 8 February 2021). There was one meeting of the Committee in 2020.

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: Prof Liam Madden (Chairperson), Prof Tom Blundell, Ciaran Conlon, Prof Ann Leen and Prof Mark Ferguson. Ciaran Conlon joined the Committee as an external member on 30 March 2020. Ann Leen joined the Committee on 7 December 2020. There were three meetings of the Committee in 2020 (and on three occasions Committee members approved grants by email). The Committee conducted a review of its effectiveness following completion of a self-assessment questionnaire in December 2020.

Recruitment Committee

The SFI Recruitment Committee was established on 8th June 2020 to oversee and manage on behalf of the Board key elements of the process for the appointment of a new Director General in January 2022. The Committee comprises three members, Peter J. Clinch (Chairperson), Grainne McAleese and Aidan Donnelly. The Committee held two meetings in 2020.

Schedule of Attendance, Fees and Expenses

A schedule of attendance at the Board and Committee meetings for 2020 is set out below, including the fees and expenses received by each member:

	Board	Audit and Risk Committee	Grant Approval Committee	Board Nominations Advisory Committee	Management Development and Remuneration Committee	Recruitment Committee	Fees 2020 €	Expenses 2020 €
No of meetings	**7**	**8**	**3**	**0**	**1**	**2**		
Prof J. Peter Clinch (appointed 01/08/19)	7				1	2	0	0
Prof Mark Ferguson	7		3				0	0
Prof Sir Tom Blundell	7		3				€11,970	0
Mr Aidan Donnelly	7	8			1	2	€11,970	0
Ms Máire Geoghegan-Quinn	5						€11,970	0
Ms Mary Doyle	4						€6,982	0
Mr Brendan Harte	7	8			1		€12,453	0
Prof Ann Leen (appointed 10/9/20)	3						0	0
Prof Liam Madden	7		3				0	(€3,483)
Ms Grainne McAleese	7	8				2	€11,970	0
Ms Cliona Murphy (appointed 10/9/20)	3	1					0	0
Board fees paid to UCD*							€20,520	0
Total							**€87,835**	**(€3,483)**

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

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

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

Key Personnel Changes

The following appointments to and resignations from the Board took place in 2020:

- Ms Mary Doyle and Mr Dermot Mulligan retired on 25 July 2020.
- Prof Ann Leen and Ms Cliona Murphy were appointed on 10 September 2020.

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

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

Employee Short-Term Benefits Breakdown

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

Range			No of Employees
From	To	2020	2019
€60,000	€69,999	12	14
€70,000	€79,999	9	5
€80,000	€89,999	1	3
€90,000	€99,999	3	6
€100,000	€109,999	9	5
€110,000	€119,999	1	-
€120,000	€129,999	1	1
€130,000	€139,999	-	1
€140,000	€149,999	1	-
€150,000	€159,999	-	2
€160,000	€169,999	2	-
€170,000	€179,999	-	-
€180,000	€189,999	-	-
€190,000	€199,999	1	1

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

Consultancy Costs

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

	2020 €	2019 €
Consultancy fees for move to new premises	€47,064	€553,296
Legal advice	€283,364	€92,575
Public relations advice	€126,234	€124,353
Research Integrity advice	€37,112	€29,227
HR and pensions advice	€81,480	€26,508
Tax and financial advice	€60,270	-
Procurement advice	€19,099	
State Aid compliance advice	€100,620	-
Other	€59,839	€68,421
Total Consultancy	**€815,082**	**€894,380**
Consultancy costs capitalised	€47,064	€553,296
Consultancy costs charged to the Income and Expenditure and Retained Reserves	€768,018	€341,084
Total	**€815,082**	**€894,380**

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:

	2020 €	2019 €
Domestic		
- Board*	€1,942	€17,718
- Employees	€11,839	€88,531
International		
- Board*	(€3,483)	€29,270
- Employees	€73,554	€122,443
Total	**€83,852**	**€257,962**

** includes travel and subsistence of €Nil paid directly to Board members in 2020 (2019: €2,690). The balance of (€1,541) (2019: €44,298) relates to net refunds received by SFI on behalf of the Board members.*

Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure

	2020 €	2019 €
Staff hospitality	€3,788	€4,357
Client hospitality	-	-
Total	**€3,788**	**€4,357**

Statement of Compliance

The Board has adopted the Code of Practice for the Governance of State Bodies (2016) and has put procedures in place to ensure compliance with the Code. SFI had complied with the Code of Practice for the Governance of State Bodies in 2020.

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 2021

SFI BOARD

- Grant Approval Committee
- Audit and Risk Committee
- Management Development and Remuneration Committee
- Board Nominations Advisory Committee

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

Dr Ciarán Seoighe
Deputy Director General

Mr George Poole
Board Secretary / Chief Risk Officer

Ms Carolyn O'Malley
Head of HR and Organisational Development

Ms Alva O'Cleirigh
Head of Corporate Communications

Dr Peter Clifford
Head of Strategy

Dr Michael Ryan
Head of International

Mr Donal Keane
Chief Operations Officer

- **Dr Marion Boland** — *Head of Research Policy*
- **Mr Eric Dowdall** — *Chief Information Officer*
- **Ms Joan Hynes** — *Head of Finance and Grants*

Dr Abigail Ruth Freeman
Director of Science for Society

- **Dr Roisin Cheshire** — *Head of Individual-led Research*
- **Ms Margie McCarthy** — *Head of Education and Public Engagement*
- **Dr Lisa Higgins** — *Head of Challenge Research*

Dr Siobhan Roche
Director of Science for the Economy

- **Dr Aisling McEvoy** — *Head of Enterprise Partnerships*
- **Dr Kevin Walsh** — *Head of Research Centres*

Science Foundation Ireland Executive Team

Prof Mark W.J. 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, Research Policy and liaison with the Internal Audit Coordinator with respect to internal audits and external grant audits. Donal joined SFI from IADT Dun Laoghaire, where he held the position of Secretary/ 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, Hibergen 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 1 January 2005. SFI continues to comply with the provisions of the Act.

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

SFI became a prescribed body under the Freedom of Information Act 1997 from 31 May 2006. SFI complies fully with the Act. Requests for information under this Act should be addressed to the FOI Officer, Science Foundation Ireland, Three Park Place, Hatch Street Upper, Dublin 2. In 2020, SFI received eleven 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 1 July 2011. This provision ensures that payments to suppliers in respect of all valid invoices received will be made within 15 calendar days. SFI reports quarterly in the 'About Us – Governance - Customer Service' section of the website on the implementation of the 15-day Prompt Payments Rule. http://www.sfi.ie/about-us/governance/customer-service/

1. Employment Equality Acts 1998-2015

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

2. Protected Disclosures Act 2014

There were no protected disclosures made to SFI in 2020.

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 2020, 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 2020

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Report of Comptroller & Auditor General

Ard Reachtaire Cuntas agus Ciste
Comptroller and Auditor General

Report for presentation to the Houses of the Oireachtas

Science Foundation Ireland

Opinion on the financial statements

I have audited the financial statements of Science Foundation Ireland for the year ended 31 December 2020 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 2020 and of its income and expenditure for 2020 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

7 September 2021

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 2020 and up to the date of approval of the financial statements.

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

Capacity to Handle Risk

Science Foundation Ireland has an Audit and Risk Committee (ARC) comprising of five members, of whom during 2020 four were Board members (and three of these are qualified accountants). The ARC met 8 times in 2020. Stephen O'Connor joined the Committee as an external member in March 2020. Marcus Breathnach, from the Department of Enterprise, Trade and Employment left the Committee in July 2020.

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;
- Monitoring of Industry Cost Share targets at Research Centres with proactive management where targets are not being achieved.
- A programme of systems-based audits at the Eligible Research Bodies are undertaken on an annual basis, covering on average four different Research Bodies each year;
- Following an EU Thematic audit on the ERDF fund 2014-2020 a new State Aid Verifications Checklist is being developed to enable SFI to check compliance by the Research Bodies with State Aid rules.
- Setting targets to measure financial and other performance;
- Formal project management disciplines.

Procurement

I confirm that Science Foundation Ireland has procedures in place to ensure compliance with current procurement rules and guidelines and that during 2020 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 2020 on 26h March 2021.

Internal Control Issues

No weaknesses in internal control were identified in relation to 2020 that require disclosure in the financial statements.

On behalf of the Board of Science Foundation Ireland:

Professor Peter Clinch
Chairman

Date: September 2nd, 2021

Statement of Income and Expenditure and Retained Revenue Reserves

For the year ended 31 December 2020

	Notes	2020 €'000	2019 €'000
Income			
Oireachtas Grant	2	**211,295**	207,429
Other Income	3	**3,408**	1,651
Net Deferred Retirement Benefit Funding	5 (c)	**1,649**	1,778
		216,352	210,858
Expenditure			
Administration, Operations & Promotion Expenses	4	**12,312**	12,471
Depreciation	6	**724**	736
Retirement Benefit Costs	5(a)	**1,402**	1,564
Grants Paid	9(a)	**202,072**	189,657
		216,510	204,428
(Deficit)/Surplus for the year before appropriations		**(158)**	6,430
Transfer from the Capital Account	7	**676**	(6,068)
Surplus for the Year after appropriations		**518**	362
Balance brought forward at 1 January 2020		**1,089**	727
Balance carried forward at 31 December 2020		**1,607**	1,089

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

On behalf of the Board of Science Foundation Ireland:

Professor Peter Clinch
Chairman

Date: September 2nd, 2021

Professor Mark Ferguson
Director General

Date: September 2nd, 2021

Statement of Comprehensive Income

For the year ended 31 December 2020

	Notes	2020 €'000	2019 €'000
Surplus after Appropriations		**518**	362
Experience losses on retirement benefit obligations		**(388)**	(325)
Change in assumptions underlying the present value of retirement benefit obligations		**(3,125)**	(2,901)
Total Actuarial Loss in the period	5(d)	**(3,513)**	(3,226)
Adjustment to Deferred Retirement benefits funding		**3,513**	3,226
Total Comprehensive Income for the year		**518**	362

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

On behalf of the Board of Science Foundation Ireland:

Professor Peter Clinch
Chairman

Date: September 2nd, 2021

Professor Mark Ferguson
Director General

Date: September 2nd, 2021

Statement of Financial Position

As at 31 December 2020

	Notes	2020 €'000	2019 €'000
Fixed Assets			
Property, Plant & Equipment	8	**5,738**	6,414
Current Assets			
Receivables	10	**395**	449
Cash and Cash Equivalents		**2,392**	2,707
		2,787	3,156
Current Liabilities (Amounts falling due within one year)			
Payables	11	**(1,180)**	(2,067)
Net Current Assets		**1,607**	1,089
Retirement benefits			
Retirement Benefit Liability	5(b)	**(28,955)**	(23,793)
Deferred Retirement Benefit Funding Asset	5 (b)	**28,955**	23,793
		-	-
Total Net Assets		**7,345**	7,503
Representing:			
Capital Account	7	**5,738**	6,414
Accumulated Surplus at end of Year		**1,607**	1,089
		7,345	7,503

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

On behalf of the Board of Science Foundation Ireland:

Professor Peter Clinch
Chairman

Date: September 2nd, 2021

Professor Mark Ferguson
Director General

Date: September 2nd, 2021

Statement of Cash Flows

For the year ended 31 December 2020

	Notes	2020 €'000	2019 €'000
Net Cash Flows from Operating Activities			
(Deficit)/Surplus for the year before appropriations		**(158)**	6,430
Depreciation of property, plant & equipment	6	**724**	736
Decrease/(Increase) in Receivables	10	**54**	(157)
(Decrease)/Increase in Payables	11	**(887)**	816
Net Cash Flow from Operating Activites		**(267)**	7,825
Cash Flows from Investing Activities			
Payments to acquire property, plant & equipment	8	**(48)**	(6,838)
Loss on disposal of property, plant & equipment		**-**	34
Net Cash Flows from Investing Activities		**(48)**	(6,804)
Cash Flows from Financing Activities		**-**	-
(Decrease) /Increase in Cash and Cash Equivalents		**(315)**	1,021
Cash and Cash Equivalents at 1 January 2020		**2,707**	1,686
Cash and Cash Equivalents at 31 December 2020		**2,392**	2,707

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

On behalf of the Board of Science Foundation Ireland:

Professor Peter Clinch
Chairman

Date: September 2nd, 2021

Professor Mark Ferguson
Director General

Date: September 2nd, 2021

Notes to the Financial Statements

For the year ended 31 December 2020

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 2020 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 Enterprise, Trade and Employment with the consent of the Minister for Public Expenditure and Reform under the Industrial Development (Science Foundation Ireland) Act 2003, and by the Industrial Development (Science Foundation Ireland) (Amendment) Act, 2013. The financial statements reflect the requirements of the Code of Practice for the Governance of State Bodies 2016, which came into effect for accounting periods commencing on or after the 1st September, 2016. The following accounting policies have been applied consistently in dealing with items which are considered material in relation to Science Foundation Ireland's Financial Statements.

(d) Revenue

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

(e) Property, plant & equipment

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

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

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

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

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

For the year ended 31 December 2020

1. Accounting Policies *(cont'd)*

(f) Capital Account

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

(g) Foreign Currency

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

(h) Employee Benefits

Short term benefits

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

Retirement Benefits

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

Pension costs reflect pension benefits earned by employees in the period and are shown net of staff pension contributions which are remitted to the Department of Enterprise, Trade and Employment 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 Enterprise, Trade and Employment.

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 Enterprise, Trade and Employment.

(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.

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

For the year ended 31 December 2020

1. Accounting Policies *(cont'd)*

(k) Critical Accounting Judgements and Estimates

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

Depreciation and Residual Values

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

Retirement Benefit Obligation

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

The assumptions can be affected by:

(i) The discount rate, changes in the rate of return on high-quality corporate bonds

(ii) Future compensation levels, future labour market conditions

(iii) Changes in demographics

2. Oireachtas Grants

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

		2020 €'000	2019 €'000
Grants for Current Expenditure			
Pay *	Subhead B.4	**5,084**	4,992
Administration Expenses	Subhead B.4	**7,300**	7,050
Grants for Capital Expenditure			
Research Grants	Subhead B.4	**183,411**	172,750
Capital costs for move to Three Park Place	Subhead B.4	**-**	7,137
Research Grants – Centres for Research Training	Subhead B.5	**15,500**	15,500
		211,295	207,429

*The grant for pay expenditure is stated net of employee pension contributions of €261k (2019: €236k) remitted to the Exchequer. These include deductions of €110k in 2020 (2019: €92k) 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. At 31 December 2020 the aggregate amount made available to the three Agencies was €10.2 billion (2019: €8.9 billion).

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

For the year ended 31 December 2020

3. Other Income

Grants for Current Expenditure	Notes	2020 €'000	2019 €'000
Contributions from other funding agencies to Awards made by SFI			
Teagasc	3(a)	**226**	189
Marine Institute	3(b)	**431**	733
Environmental Protection Agency	3(c)	**402**	101
Geological Society of Ireland	3(d)	**311**	297
Irish Cancer Society	3(e)	**163**	52
Department of Agriculture, Food & the Marine	3(f)	**1,073**	-
Department of Foreign Affairs and Trade	3(g)	**555**	-
Sub-Total		**3,161**	1,372
Contribution towards EU ERA NET funding calls	3(h)		
• ERA-HDHL		**36**	60
• EU NanoMed III		**76**	10
• BlueBio		**-**	1
• QuantERA		**-**	3
Income from EU in respect of SFI's participation in Horizon 2020 awards where SFI is a partner	3(i)		
ACT		**-**	36
INROAD		**-**	14
Contribution from Pfizer Corp towards awards made by SFI under the SFI-Pfizer Biotherapeutics Innovation Award Programme		**-**	35
European Space Agency	3(j)	**135**	120
Total		**3,408**	1,651

(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, 2017 and 2020.

(d) Contributions from the Geological Society of Ireland for Co-Funding of multi-annual awards made in 2016, 2017, 2018 and 2020.

(e) Contribution from the Irish Cancer Society towards the ICS-SFI Collaborative Cancer Research Centre (CCRC) Programme awarded 2015.

(f) Contribution from the Department of Agriculture, Food and the Marine for SFI Research Centre awarded in 2018.

(g) Contribution from the Department of Foreign Affairs and Trade for SFI Future Innovator Prize awards in 2020.

(h) SFI participates in a number of different ERA Net funding calls in conjunction with other European funding agencies and the EU. As part of its participation in these activities, SFI receives funding towards both the capital cost of awards made and towards the programme management costs of running these activities.

(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.

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

For the year ended 31 December 2020

4. Administration, Operations & Promotion Expenses

	Notes	2020 €'000	2019 €'000
Remuneration and Other Pay Costs	4(a)	**5,556**	5,409
Accommodation		**2,337**	2,240
Programme Management		**631**	1,100
Marketing & Supports	4(b)	**1,368**	1,481
IT Support & Infrastructure		**690**	683
Administration Expenses	4(c)	**389**	605
Accounting & Internal Audit Services		**224**	324
Professional & Support Services	4(d)	**818**	318
Specialist & Education Services		**206**	210
HR Management		**61**	69
Statutory Audit Fee		**32**	32
Total		**12,312**	12,471

4(a) Remuneration and other pay costs

	Notes	2020 €'000	2019 €'000
Staff Salaries		**4,756**	4,576
Employers' contribution to Social Welfare		**484**	457
Increase /(Decrease) in holiday pay accrual		**65**	(30)
Staff Training and Development		**80**	74
Staff travel and subsistence costs	4(e)	**85**	211
Board Members' Remuneration and Expenses	4(f)	**86**	121
Total		**5,556**	5,409
Actual employed as at year end		**64**	62

The total Key Management personnel compensation for 2020 was €846k (2019: €841k). This includes the compensation for the Board members, the Director General and four Senior Executives who reported to him. Science Foundation Ireland deducted pension levies from staff of €188k (2019: €220k) which were paid over to the Department of Enterprise, Trade and Employment. There were no overtime payments, other allowances or termination payments made in either year.

4(b) Included in Marketing & Supports is public engagement consultant fees of €126k (2019: €124k)

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

For the year ended 31 December 2020

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

	2020 €'000	2019 €'000
Staff hospitality	**4**	4
Client hospitality	**-**	-
Total	**4**	4

4(d) Professional & Support Services

	2020 €'000	2019 €'000
Legal advice	**283**	93
Research Integrity advice	**37**	29
HR and Pensions advice	**82**	27
Tax and Financial advice	**60**	-
Other Professional fees	**60**	68
State Aid Compliance Advice	**101**	-
Administrative services	**176**	101
Procurement advice	**19**	-
Total	**818**	318

There were no legal cases or settlements made in 2020. SFI defines consultancy fees as specific finite tasks involving expert skills or capabilities that would not normally reside within SFI.

4(e) Travel and Subsistence Expenditure

Staff Travel and subsistence expenditure is categorised as follows:

	2020 €'000	2019 €'000
Domestic Travel & Subsistence	**12**	89
International Travel & Subsistence	**73**	122
Total	**85**	211

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

For the year ended 31 December 2020

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

Employee benefits breakdown

	Number of Employees	
	2020	2019
€60,000 - €69,999	**12**	14
€70,000 - €79,999	**9**	5
€80,000 - €89,999	**1**	3
€90,000 - €99,999	**3**	6
€100,000 - €109,999	**9**	5
€110,000 - €119,999	**1**	-
€120,000 - €129,999	**1**	1
€130,000 - €139,999	**-**	1
€140,000 - €149,999	**1**	-
€150,000 - €159,999	**-**	2
€160,000 - €169,999	**2**	-
€170,000 - €179,999	**-**	-
€180,000 - €189,999	**-**	-
€190,000 - €199,999	**1**	1

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

4(f) Board Members' Remuneration and Expenses

Board Member	Board Fees 2020	Vouched Expenses 2020	Meetings attended 2020	Board Fees 2019	Vouched Expenses 2019	Meetings attended 2019
	€	€	Number	€	€	Number
Prof Peter Clinch	-	-	7 out of 7	-	247	3 out of 3
Prof Mark Ferguson	-	-	7 out of 7	-	-	9 out of 9
Prof Sir Tom Blundell	11,970		7 out of 7	11,970	1,874	7 out of 9
Bernie Cullinan	-	-	n/a	11,165	292	9 out of 9
Aidan Donnelly	11,970	-	7 out of 7	11,970	-	9 out of 9
Mary Doyle	6,982	-	4 out of 4	-	278	7 out of 9
Dr Pat Duane	-	-	n/a	6,789	-	3 out of 6
Maire Geoghegan Quinn	11,970	-	5 out of 7	11,970	340	6 out of 9
Brendan Harte	12,453	-	7 out of 7	-	-	1 out of 1
Prof. Ann Leen	-	-	2 out of 2	-	-	n/a
Prof Liam Madden	-	(3,483)	7 out of 7	-	27,477	6 out of 9
Grainne McAleese	11,970	-	7 out of 7	11,970	-	6 out of 9
Dermot Mulligan	-	-	4 out of 4	-	-	8 out of 9
Cliona Murphy	-	-	2 out of 2	-	-	n/a
Barry O'Sullivan	-	-	n/a	-	-	3 out of 9
Board fees paid to UCD*	20,520	-	n/a	8,550	-	n/a
General Board expenses	-	1,942	n/a	-	16,480	n/a
Total	87,835	(1,541)		74,384	46,988	

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

For the year ended 31 December 2020

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

Board members are paid fees as determined by the Minister of Enterprise, Trade and Employment (DETE) 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, and Mr. Dermot Mulligan.

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

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

The Director General's remuneration package for 2020 was as follows: annual basic salary €197k (2019: €193k) 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 €9k (2019: €41k) of which €Nil (2019: €0.6k) related to CSA activities.

Board members vouched expenses are set out as follows:

	2020 €'000	2019 €'000
Domestic Travel & Subsistence	**2**	18
International Travel & Subsistence	**(3)**	29
Total	**(1)**	47

Board expenses for 2020 include €3k refunded to SFI in 2020 in respect of a flight paid for in 2019 which was cancelled. The balance of €2k in 2020 (2019: €44k) relates to expenditure paid by Science Foundation Ireland on behalf of the Board members. No expenses were paid directly to Board members in 2020 (2019: €3k).

The following appointments to and resignations from the Board took place in 2020:

- Mary Doyle retired as a member on 25th July 2020
- Dermot Mulligan retired as a member on 25th July 2020
- Professor Ann Leen was appointed as a member on 10th September 2020
- Cliona Murphy was appointed as a member on 10th September 2020

5. Retirement Benefit Costs

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

	2020 €'000	2019 €'000
Current Service Cost	**1,367**	1,424
Interest on Retirement Benefit Scheme Liabilities	**296**	376
Employee Contributions	**(261)**	(236)
	1,402	1,564

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

For the year ended 31 December 2020

5. Retirement Benefit Costs *(cont'd)*

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

	2020 €'000	2019 €'000
Net retirement benefit obligation at 1 January	**23,793**	18,789
Current Service Cost	**1,367**	1,424
Interest Costs	**296**	376
Payments to Pensioners	**(14)**	(22)
Actuarial Loss	**3,513**	3,226
Net retirement benefit obligation at 31 December	**28,955**	23,793

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

	2020 €'000	2019 €'000
Funding recoverable in respect of Current Year retirement benefit costs	**1,663**	1,800
Less State Grant applied to pay retirement benefits	**(14)**	(22)
	1,649	1,778

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 Enterprise, Trade and Employment.

The Science Foundation Ireland pension scheme is a defined benefit final salary scheme with retirement benefits linked to final salary and length of service. The Single Public Service pension scheme is also a defined benefit scheme with retirement benefits linked to career average revalued earnings and length of service. The valuation used for FRS 102 disclosures is based on an actuarial review of the schemes for the financial year ended 31 December 2020 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 2020.

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

For the year ended 31 December 2020

5. Retirement Benefit Costs *(cont'd)*

D. Description of the scheme (cont'd)

The principal actuarial assumptions were as follows:

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

	2020	2019
Financial Assumptions		
Discount Rate*	**0.85% p.a**	1.25% p.a
Future Salary Increases	**3% p.a**	3% p.a
Future State Pension increases	**3% p.a**	3% p.a
Future Pension Increases	**2.5% p.a**	2.5% p.a
Future price inflation	**1.5% p.a**	1.5% p.a
Revaluation in deferment	**2.5% p.a**	2.5% p.a

** discount rate reflects a duration of liabilities of approximately 31 years in 2020 (31 years in 2019*

	2020	2019
Demographic Assumptions		
Mortality pre-Retirement	**62% PNMLOO (Males)**	62% PNMLOO (Males)
	70% PNFLOO (Females)	70% PNFLOO (Females)
Mortality post-Retirement	**58% ILT15 (Males)**	58% ILT15 (Males)
	62% ILT15 (Females)	62% ILT15 (Females)
Retirement age		
New entrants	**Age 65**	Age 65
Other members	**Age 62**	Age 62

The Mortality basis explicitly allows for Improvements in life expectancy over time, so that life expectancy at retirement will depend on the year in which a member attains retirement age (age 65). The table below shows the life expectancy for members attaining age 65 in 2020 and 2040.

Year of attaining age 65	2020	2040
Life expectancy - Male	**21.5**	23.9
Life expectancy - Female	**24.0**	26.0

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

For the year ended 31 December 2020

5. Retirement Benefit Costs *(cont'd)*

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

Prior Year Comparatives

Year ending December 31st	2020 €'000	2019 €'000	2018 €'000	2017 €'000	2016 €'000
Closing pension liability	28,955	23,793	**18,789**	17,518	15,113
Experience (loss) / gain arising on the plan Liabilities	(388)	(325)	**(415)**	(828)	161
% Liabilities	-1.3%	-1.3%	**-2.2%**	-4.7%	1.1%
Total (Loss) / Gain recognised in Statement of Comprehensive Income	(3,513)	(3,226)	**395**	(824)	(3,766)
% Liabilities	-12.1%	-13.5%	**2.1%**	-4.7%	-24.9%

6. Depreciation

	Notes	2020 €'000	2019 €'000
Depreciation charge for the year	8	**724**	736
Total		**724**	736

7. Capital Account

	2020 €'000	2019 €'000
Opening Balance as at 1 January	**6,414**	346
Transfer from Statement of Income & Expenditure and Retained Revenue Reserves		
- To fund Fixed Asset acquisitions	**48**	6,838
- Amortised in line with asset depreciation	**(724)**	(736)
-To reflect loss on disposal of Fixed Assets	**-**	(34)
	(676)	6,068
Closing balance as at 31 December	**5,738**	6,414

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

For the year ended 31 December 2020

8. Property, plant & equipment

	Leasehold Improvements €'000	Computer Equipment €'000	Computer Software €'000	Fixtures & Fittings €'000	Total €'000
Cost					
At 1 January 2020	5,417	1,229	**131**	684	7,461
Additions	47	1	**-**	-	48
At 31 December 2020	**5,464**	**1,230**	**131**	**684**	**7,509**
Depreciation					
At 1 January 2020	226	561	**123**	137	1,047
Charge for Year	218	361	**8**	137	724
At 31 December 2020	**444**	**922**	**131**	**274**	**1,771**
Net Book Amount					
At 1 January 2020	5,191	668	**8**	547	6,414
Net Movement for Year	(171)	(360)	**(8)**	(137)	(676)
At 31 December 2020	**5,020**	**308**	**-**	**410**	**5,738**

9. Grants

(a) Analysis of Grants Paid

	2020 €'000	2019 €'000
ICT		
Future Networks, Communications and Internet of Things	**15,599**	16,995
Data Analytics, Management, Security, Privacy, Robotics and Artificial Intelligence (including Machine Learning)	**24,382**	23,729
Digital Platforms, Content and Applications, and Augmented Reality and Virtual Reality	**6,930**	8,265
Health & Wellbeing		
Connected Health and Independent Living	**2,524**	2,570
Medical Devices	**10,672**	10,378
Diagnostics	**9,451**	16,920
Therapeutics	**19,925**	19,104
Food		
Food for Health	**9,549**	9,181
Smart and Sustainable Food Production and Processing	**13,994**	6,283
Energy, Climate Action and Sustainability		
Decarbonising the Energy System	**3,463**	6,066
Sustainable Living	**6,709**	6,079
Manufacturing and Materials		
Advanced and Smart Manufacturing	**13,108**	9,989
Manufacturing and Novel Materials	**29,342**	23,210
Services and Business Processes		
Innovation in Services and Business Processes	**1,320**	546
Basic Biomedical Science (BBS)	**3,200**	6,898
Covid Rapid Response Call	**16,097**	0
Other	**15,807**	23,445
Total	**202,072**	189,657

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

9(b) Grant Commitments

	Notes	2020 €'000	2019 €'000
Outstanding Grant Commitments as at 1 January		**655,567**	400,897
Grants approved during the year		**312,291**	448,510
De-commitments during the year		**(12,546)**	(5,555)
Grant payments made in the year – Gross	9(a)	**(202,072)**	(189,657)
Amounts received from other funding agencies for Co-Funding of SFI awards	3		
Teagasc		**226**	189
Marine Institute		**431**	733
Environmental Protection Agency		**402**	101
Geological Society of Ireland		**311**	297
Irish Cancer Society		**163**	52
Department of Agriculture, Food & the Marine		**1,073**	-
Department of Foreign Affairs and Trade		**555**	-
Outstanding Commitments as at 31 December		**756,401**	655,567

10. Receivables

	2020 €'000	2019 €'000
Debtors	**4**	20
Prepayments & Accrued income	**391**	429
Total	**395**	449

11. Payables

	2020 €'000	2019 €'000
General Creditors	**(1)**	30
Deferred Income*	**546**	1,084
Accruals	**572**	813
Interagency Balance - IDA**	**63**	140
Total	**1,180**	2,067

*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 2020 for accommodation costs paid on behalf of SFI.

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

For the year ended 31 December 2020

12. Commitments under Operating Leases

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

	2020 €'000	2019 €'000
Within 1 year	**1,671**	1,672
During 2-5 years	**6,675**	6,667
Over 5 years	**28,992**	30,661

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.

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

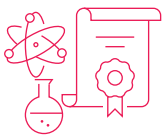
The Financial Statements were approved by the Board of Science Foundation Ireland on September 2nd, 2021.

Award Portfolio and New Awards Approved

In 2020, **343 awards** were approved across **20 SFI programmes**, with a value of **€312 million**, to fund a diverse and balanced portfolio of early to mid-career researchers through to world-leading research professors. Total payments to to research bodies and institutions were **€199 million**.

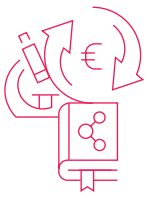
Summary of award programme decisions in 2020:

- The first awards under the new SFI Frontiers for the Future programme saw **€52 million** invested across **72 grants** to support excellent independent researchers.
- **Five SFI Research Centres** progressed to a second six-year research programme, following rigorous international peer review, with an investment of **€193 million**.
- The COVID-19 Rapid Response Research and Innovation Funding programme invested **€18 million** in **83 projects** throughout 2020.
- The SFI Research Infrastructure Programme funded **six research equipment and facilities awards** valued at **€6.4 million** to support key research infrastructure projects.
- **50 awards** were made through the SFI Discover Programme totalling **€5.4 million** to support the STEM education and engagement.
- **16 awards** were made under the SFI Future Innovator Prize Call 2020, with an investment of **€3.5 million** to support challenge-based funding.
- **€8.5 million** was invested in three awards under the SFI Strategic Partnership Programme to foster and develop co-funded partnerships of scale delivering economic and societal impact to Ireland.
- **Six awards** were made under the Engineering and Physical Sciences Research Council (EPSRC) - SFI Joint Funding Research Programme with an investment of **€2.1 million**.
- **12 research awards** representing an investment of **€699,000** were funded by SFI's Public Service Fellowship programme to foster innovation within the Public Sector by supporting the development and implementation of data-driven and evidence-based approaches.



343 awards were approved across **20 SFI programmes**, with a value of

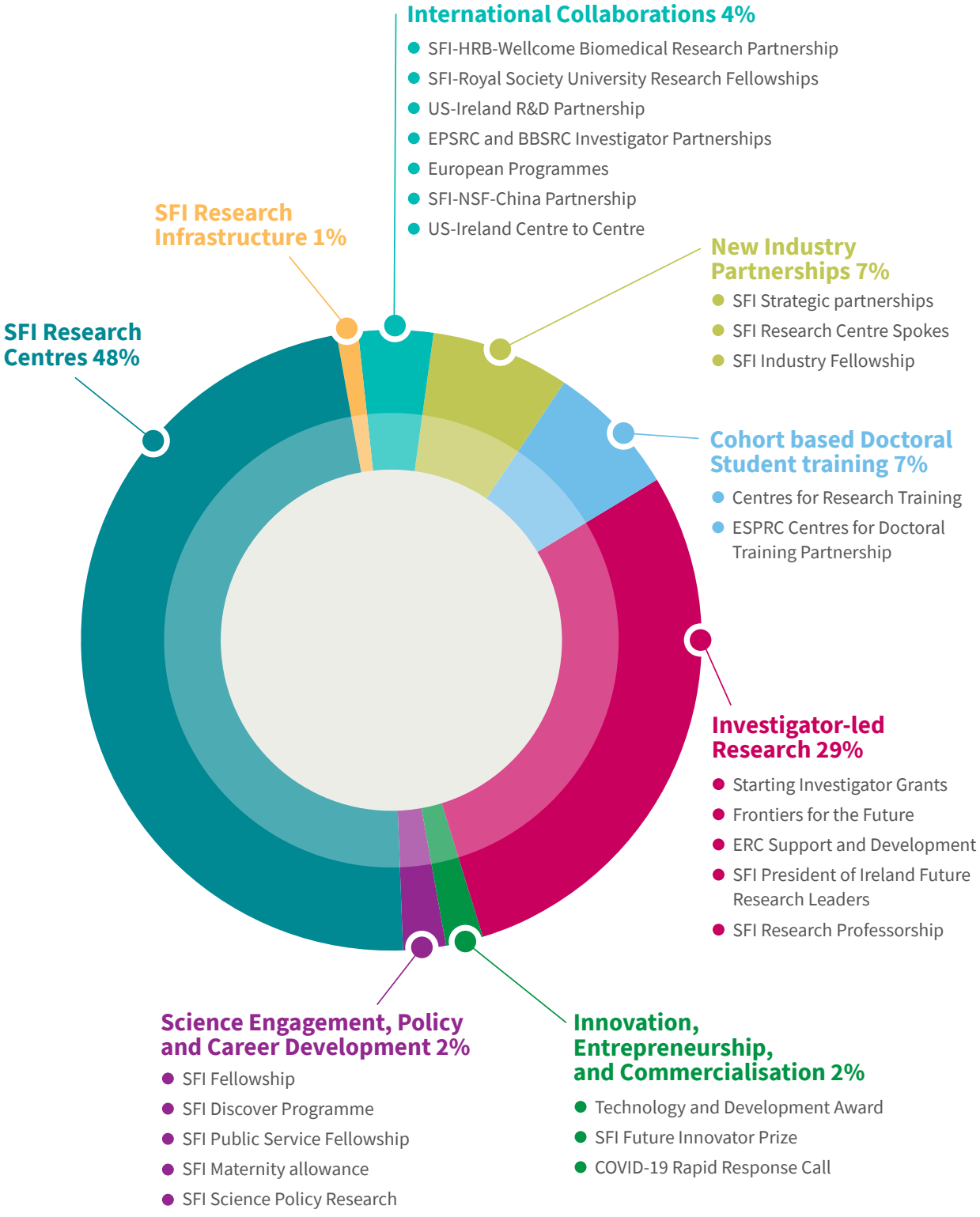
€312m



Total payments to research bodies/ institutions were

€199m

Science Foundation Ireland Portfolio*



*Based on payments issued and scheduled from 1/1/2020 to 31/12/2023 as at 31/12/2020.

New awards made in 2020

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Gil U Lee	COVID-19 Rapid Response	Critical reagent production addressing supply chain risk for COVID-19 diagnostics	University College Dublin	€530,236
Timothy McCarthy	COVID-19 Rapid Response	Data platform for emergency response management (DPERM)	Maynooth University	€393,425
Martin O'Halloran	COVID-19 Rapid Response	INSPIRE: Facilitating non-invasive ventilation (NIV) during the COVID-19 crisis	National University of Ireland, Galway	€193,100
Ignacio Martin-Loeches	COVID-19 Rapid Response	Prognostic indicators of critically ill patients with COVID-19: impact on early immunology and survival	Trinity College Dublin	€187,751
Paul Cotter	COVID-19 Rapid Response	Irish coronavirus sequencing consortium	Teagasc	€378,176
Sean Doyle	COVID-19 Rapid Response	SARS-CoV-2 serological test development	Maynooth University	€197,531
John Dalton	COVID-19 Rapid Response	Rapid ELISA test for SARS-CoV-2 (coronavirus) disease detection and surveillance	National University of Ireland, Galway	€78,000
Andrew Parnell	COVID-19 Rapid Response	Computational tools for medium-term impact and recovery forecasting from COVID-19	Maynooth University	€90,717
Frederic Adam	COVID-19 Rapid Response	Implementing LEANBH ambulatory integrated blood pressure monitoring in maternity services	University College Cork	€118,877
Lee Coffey	COVID-19 Rapid Response	Pre-validation and expansion of COVID-19 rRT-PCR diagnostic testing	Waterford Institute of Technology	€118,208
Wim Meijer	COVID-19 Rapid Response	SARS-CoV-2 surveillance of sewage and sewage impacted waterbodies	University College Dublin	€37,436
Paul Hynds	COVID-19 Rapid Response	COVID-19: (Space Time) scanning, mobility and intervention diagnosis (CO/SMID)	Technological University Dublin	€123,965
Jim Buckley	COVID-19 Rapid Response	COVIGILANT: Optimizing digital contact tracing from end-user/ current practice/idealised-solution perspectives	University of Limerick	€192,264
Leonard O'Sullivan	COVID-19 Rapid Response	Rapid advanced production responses to frozen supply chains in hospitals (RAPID)	University of Limerick	€237,215
Denis Dowling	COVID-19 Rapid Response	COVID-19 rapid response digital manufacturing and innovation hub	University College Dublin	€126,071
Gareth Brady	COVID-19 Rapid Response	Identifying protective immunity in frontline healthcare staff during the COVID-19 pandemic	Trinity College Dublin	€77,510
Bryan Hennessy	COVID-19 Rapid Response	Detection of COVID-19 infection using exhaled breath condensate	RCSI University of Medicine and Health Sciences	€57,181
Gerard Lacey	COVID-19 Rapid Response	Safe PPE tools for improved HCW safety	Trinity College Dublin	€129,827

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Zena Moore	COVID-19 Rapid Response	Preventing healthcare staff facial pressure ulcers in a COVID-19 intensive care unit	RCSI University of Medicine and Health Sciences	€63,911
Paddy Mallon	COVID-19 Rapid Response	Detection and quantification of neutralising antibodies against COVID-19 infection	University College Dublin	€220,312
Michael Gilchrist	COVID-19 Rapid Response	Development of plastic packaging and film resistant to COVID-19	University College Dublin	€155,073
James Jones	COVID-19 Rapid Response	Manufacture of novel COVID-19 Laryngoscopes for airway intubation	University College Dublin	€54,708
Donal O'Shea	COVID-19 Rapid Response	National roadmap for facial PPE sterilisation	RCSI University of Medicine and Health Sciences	€163,496
Dermot Brougham	COVID-19 Rapid Response	Next generation magnetic beads for enhanced viral RNA detection and improved COVID-19 testing, securing supply and improving performance	University College Dublin	€85,649
Paul Cahill	COVID-19 Rapid Response	ACE-2 primed human MSCs-derived extracellular vesicles (EVs) to treat critically ill COVID-19 patients	Dublin City University	€175,457
Irina Tal	COVID-19 Rapid Response	PRIVATT - assessing Irish attitudes to privacy in times of COVID-19	Dublin City University	€72,583
Carl Scarrott	COVID-19 Rapid Response	Early detection of secondary waves of COVID-19 infection	National University of Ireland, Galway	€41,803
Isabel Rozas	COVID-19 Rapid Response	Blocking SARS-CoVid2 infection by inhibiting the TMPRSS2 protease	Trinity College Dublin	€57,494
Barry Kevane	COVID-19 Rapid Response	COVID-19 coagulopathy and thrombosis: novel prognostic and therapeutic opportunities - The COCOON study	University College Dublin	€291,877
Eilish McAuliffe	COVID-19 Rapid Response	Expanding care capacity through remote monitoring of COVID-19 patients	University College Dublin	€217,549
Hossein Javidnia	COVID-19 Rapid Response	Investigating psychological and social effects of COVID-19: a call for action	Trinity College Dublin	€58,567
Stephen Daniels	COVID-19 Rapid Response	Airborne environmental indicators of airborne COVID-19 in hospitals	Dublin City University	€185,049
Madeleine Lowery	COVID-19 Rapid Response	Home monitoring of respiration in COVID-19 patients using smartphone technology	University College Dublin	€143,685
Niamh Gilmartin	COVID-19 Rapid Response	AptaGold – A rapid saliva-based COVID-19 screening assay	Technological University Dublin	€256,428
Elaine Kenny	COVID-19 Rapid Response	Rapid and adjustable population-scale diagnostics via Next Generation Sequencing(NGS)	Trinity College Dublin	€286,075
Paul O'Toole	COVID-19 Rapid Response	COVIDBIOME: Microbiome-based biomarkers of COVID 19 disease outcomes	University College Cork	€309,007
Liam O'Mahony	COVID-19 Rapid Response	Identify diagnostic biomarkers to predict and treat COVID-19 sepsis	University College Cork	€246,042
Niall Smith	COVID-19 Rapid Response	MASK: making aerosol safety known	Cork Institute of Technology	€58,916

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Alberto Alvarez-Iglesias	COVID-19 Rapid Response	Quantifying the effects of public health interventions in Ireland	National University of Ireland, Galway	€53,205
Muhammad Atif Qureshi	COVID-19 Rapid Response	RCES: Rapid cues exploratory search using taxonomies for COVID-19	Technological University Dublin	€75,648
Niall O'Leary	COVID-19 Rapid Response	COVID-19 community wide surveillance via wastewater based epidemiology (WBE)	University College Cork	€44,876
Derek O'Keeffe	COVID-19 Rapid Response	An innovative digital acoustic biomarker for COVID-19	National University of Ireland, Galway	€125,649
James Sweeney	COVID-19 Rapid Response	The health and economic impacts of COVID-19 control measures	University of Limerick	€54,243
Conor McGinn	COVID-19 Rapid Response	Robots to protect against COVID-19 (ROPAC)	Trinity College Dublin	€164,662
John MacSharry	COVID-19 Rapid Response	Saliva sampling for the detection and diagnosis of COVID-19	University College Cork	€108,559
Gerard O'Connor	COVID-19 Rapid Response	Measurement inspired laser fabrication of aerosol filter materials	National University of Ireland, Galway	€137,003
Emmanuel J. Ekoi	COVID-19 Rapid Response	Applying surface engineering to PPEs in the fight against COVID-19	University College Dublin	€101,970
Peter Davern	COVID-19 Rapid Response	Development of user-friendly scalable manufacturing process for guanidine thiocyanate	University of Limerick	€78,000
Michael Prentice	COVID-19 Rapid Response	Novel airborne surveillance of SARS-CoV2 in healthcare and airport environments	University College Cork	€79,585
Colin Doherty	COVID-19 Rapid Response	Analysing blood-brain barrier integrity to inform on protection from COVID-19 associated encephalopathy	Trinity College Dublin	€65,189
Katriona O'Sullivan	COVID-19 Rapid Response	DreamSpace: Bringing STEAM education to homes across Ireland	Maynooth University	€35,170
Charles Spillane	COVID-19 Rapid Response	A rapid high-throughput CRISPR-Cas13a diagnostic platform for COVID-19 diagnostics	National University of Ireland, Galway	€125,809
Clair Gardiner	COVID-19 Rapid Response	Immune genes, protective immunity and improved vaccine design	Trinity College Dublin	€262,613
Ahmad B. Albadarin	COVID-19 Rapid Response	Engineered inhalable antiviral-composites for pulmonary delivery with optimal therapeutic outcomes	University of Limerick	€255,731
Jane Suiter	COVID-19 Rapid Response	The COVID-19 Irish citizens' online forum	Dublin City University	€85,514
Paul Leonard	COVID-19 Rapid Response	Antibody-based testing hub for serological assay validation	Dublin City University	€87,124
Gregory O'Hare	COVID-19 Rapid Response	COMBAT: COVID-19 modelling through agent-based techniques	University College Dublin	€303,424
Darach Ó Ciardha	COVID-19 Rapid Response	Tracking COVID-19 and identifying patients at high risk of contracting COVID-19 using GP data	Trinity College Dublin	€45,847
Cliona O'Farrelly	COVID-19 Rapid Response	DIRECTS: Detecting innate protection against SARS-CoV2	Trinity College Dublin	€497,391

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Naomi Harte	COVID-19 Rapid Response	RoomReader - supporting teachers in interactions with students for online classes in third level	Trinity College Dublin	€346,164
Ross McManus	COVID-19 Rapid Response	COVREs: Understanding the host-virus response in patients with mild versus serious disease	Trinity College Dublin	€422,844
Kevin McGuinness	COVID-19 Rapid Response	Social distancing detection in airport surveillance networks	Dublin City University	€259,656
Virginie Gautier	COVID-Rapid Response	Accelerating COVID-19 antiviral treatments with novel strategies targeting the virus-host interface	University College Dublin	€364,111
Eoin Feeney	COVID-19 Rapid Response	Markers of adipose tissue and systemic inflammation in obese and non-obese patients with COVID-19	University College Dublin	€402,375
Hilary Humphreys	COVID-19 Rapid Response	COVID-19 and the environment. Plasma-enabled fogging for safe and effective surface decontamination	RCSI University of Medicine and Health Sciences	€354,228
Carla Perrotta	COVID-19 Rapid Response	COVID-19 outbreaks in workplace settings: understanding and preventing super spreading events	University College Dublin	€315,779
Roger Preston	COVID-19 Rapid Response	New approaches to understanding blood vessel dysfunction in COVID-19 patients	RCSI University of Medicine and Health Sciences	€276,922
Roman Romero-Ortuno	COVID-19 Rapid Response	Technology-assisted solutions for the recognition of objective physiological indicators of post-COVID-19 fatigue (TROPIC Study)	Trinity College Dublin	€281,943
Nicola Fletcher	COVID-19 Rapid Response	Investigation of the mechanisms of COVID-19 associated neurological disease	University College Dublin	€277,579
Denis Shields	COVID-19 Rapid Response	Multifunctional peptides targeting SARS-CoV-2 coronavirus infection	University College Dublin	€368,928
Grace Mulcahy	COVID-19 Rapid Response	Understanding and preventing COVID-19 outbreaks in meat processing plants - prepared for the future (UPCOM)	University College Dublin	€1,226,759
Fiona Doohan	COVID-19 Rapid Response	Food shield: Resilience, growth and digitisation of food and feed supply systems	University College Dublin	€332,369
Nollaig Bourke	COVID-19 Rapid Response	VIRCOA-TILDA: Viral and immune risk factors for COVID-19 in older adults in the TILDA study	Trinity College Dublin	€378,872
Paddy Mallon	COVID-19 Rapid Response	Biological profiling in COVID-19 infection to characterise optimal therapeutic approaches	University College Dublin	€469,234
Mark Robinson	COVID-19 Rapid Response	DELAY-COVID-19: Dysregulated innatE immunity in liver disease amplifies the severity of COVID-19	Maynooth University	€281,141
Kingston Mills	COVID-19 Rapid Response	InflaTMP: Design of a novel combination anti-inflammatory and anti-viral biotherapeutic for COVID-19 targeting the NLRP3 inflammasome and TMPRSS2	Trinity College Dublin	€260,001

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Michelle Kilcoyne	COVID-19 Rapid Response	Antibody effector functions and COVID-19 immune response	National University of Ireland, Galway	€279,662
Margaret McGee	COVID-19 Rapid Response	A new approach for the prevention of SARS-Coronavirus-2 transmission and associated inflammation during COVID-19	University College Dublin	€430,135
Paul Murray	COVID-19 Rapid Response	DISECT: Deep immunophenotyping combined with spatial profiling and integrated RNA sequencing to explain the complex tissue pathophysiology of COVID-19	University of Limerick	€310,082
Wim Meijer	COVID-19 Rapid Response	An integrated system for all-island SARS-CoV-2 wastewater surveillance and reporting	University College Dublin	€377,945
Desmond O'Neill	COVID-19 Rapid Response	Residential long term care and COVID-19: the role of the built environment in balancing infection control and quality of life	Trinity College Dublin	€250,188
Rob Brennan	COVID-19 Rapid Response	RK Virus: Active Risk Knowledge platform for mindful governance of PPE for Virus infection control and prevention	Dublin City University	€250,063
Tofail Syed	COVID-19 Rapid Response	Antiviral fabrics for masks and gowns (Anti-Fab)	University of Limerick	€264,204
Walter Kolch	SFI Discover	Ensuring equity of access to a STEM placement programme	University College Dublin	€49,563
Eoin Byrne	SFI Discover	Cyber Academy	Cork Institute of Technology	€49,685
Abhay Pandit	SFI Discover	Science Waves	National University of Ireland, Galway	€43,719
Enda O'Connell	SFI Discover	ReelLIFE SCIENCE video competition	National University of Ireland, Galway	€27,987
Muriel Grenon	SFI Discover	Cell EXPLORERS	National University of Ireland, Galway	€267,636
Patricia Maguire	SFI Discover	Little big questions	University College Dublin	€49,990
Joanne Dolan	SFI Discover	Teen-Turn	Teen-Turn	€50,000
Ann Butler	SFI Discover	Futurewize	Junior Achievement Ire Ltd.	€185,810
Ann Butler	SFI Discover	Our World	Junior Achievement Ire Ltd.	€159,820
Shane McCracken	SFI Discover	I'm a Scientist and I'm an Engineer Ireland	Gallomanor Communications Ltd.	€38,000
Daniel Vincent McCarthy	SFI Discover	Curiosity Accelerator 2021 and 2022: Prototyping excellence and scaling mpact	The Festival of Curiosity Ltd.	€300,000
Dea Birkett	SFI Discover	StrongWomen Science circus science show tour in Mayo rural and island communities	Circus250 CIC	€16,625
Jackie Gorman	SFI Discover	Science communities - engaging, informing and consulting for change	Atlantic Corridor	€50,000
Naoise Nunn	SFI Discover	Human Lab at Electric Picnic 2021	Schweppe Curtis Nunn Ltd.	€25,000

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Rob Brennan	SFI Discover	AI In My Life: AI, ethics and privacy transition year workshops	Dublin City University	€42,262
John White	SFI Discover	Physics in action	Dublin City University	€47,987
Eleanor Attridge	SFI Discover	Educational platform for Irish beekeepers (EDIBEE)	Federation of Irish Beekeepers' Associations (FIBKA) CLG	€53,650
Pramod Pathak	SFI Discover	ELI community blended STEM family learning and coding project	National College of Ireland	€50,000
Roseanna Shanahan	SFI Discover	Science Hub at Learning Hub Limerick	Learning Hub Limerick Ltd.	€50,000
Anne Cleary	SFI Discover	Eco showboat expedition 2021	School of Looking	€49,510
Katriona O'Sullivan	SFI Discover	STEM-pssport for inclusion (STEMP. inc)	Maynooth University	€299,955
Rosemary Monahan	SFI Discover	CoCoA: Co-create collaborate activate - advancing computational thinking education	Maynooth University	€149,376
Grace Mulcahy	SFI Discover	Reimagining the Future - one health, COVID and us (REFOHCUS)	University College Dublin	€48,118
Alison Hanlon	SFI Discover	STEM engagement using poetry: through the lens of one welfare	University College Dublin	€16,543
Sylvia Leatham	SFI Discover	Manufacturing in the classroom: I-Form's 3D printing for teachers programme	University College Dublin	€31,800
Eoin Gill	SFI Discover	Maths Week Ireland	Waterford Institute of Technology	€299,990
Mervyn Horgan	SFI Discover	Lifetime Lab - primary STEM outreach	Cork City Council t/a Lifetime Lab	€24,500
Geraldine Boylan	SFI Discover	Science 4 sight loss	University College Cork	€49,434
Fergus Shanahan	SFI Discover	Redefining STEM: science of traveller ethnicity and microbiome	University College Cork	€50,000
Eoin Lettice	SFI Discover	Tree explorers	University College Cork	€46,721
Maria McNamara	SFI Discover	Ireland's secret past - unlocking our fossil heritage	University College Cork	€299,441
Paul Holloway	SFI Discover	NatureWatch: Exploring the benefits of nature to wellbeing using technology	University College Cork	€40,030
Aoife Deane	SFI Discover	Dingle Peninsula 2030 - a model enabling community-led climate action	University College Cork	€282,045
Pamela O'Brien	SFI Discover	Exploring digital citizenship	Limerick Institute of Technology	€49,717
Mary Cunningham	SFI Discover	21st Century STEAM for Youthreach	National Youth Council of Ireland	€275,257
Mary Cunningham	SFI Discover	STEAM in youth work	National Youth Council of Ireland	€299,653
Gerardine Meaney	SFI Discover	Miasmatists: Data science, epidemics and public health	University College Dublin	€49,200

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Nigel Flegg	SFI Discover	Music and science: Quavers to quadratics	The National Concert Hall	€27,675
Liz McBain	SFI Discover	FameLab Ireland 2021	British Council Ireland	€49,500
Roseanne Leddy	SFI Discover	STEM workshop programme	Lismore Heritage Centre	€38,686
Sarah Miller	SFI Discover	STEM and sustainability national education programme	The Rediscovery Centre Ltd.	€207,850
Elizabeth Mathews	SFI Discover	Irish sign language STEM glossary project - national expansion	Dublin City University	€131,806
Helen Osment	SFI Discover	Igniting curiosity in STEM: IET FIRST LEGO League	The Institution of Engineering and Technology	€299,300
Karen McCarthy	SFI Discover	Appetite for knowledge	University College Cork	€26,590
Declan O'Sullivan	SFI Discover	DALIDA: Data literacy discussion workshops for adults	Trinity College Dublin	€41,785
Andrew O'Connell	SFI Discover	Visioneers – a smart cities education programme	Trinity College Dublin	€59,395
Brendan Tangney	SFI Discover	Girls coding - CodePlus	Trinity College Dublin	€214,628
Daragh Bradshaw	SFI Discover	Digital well-being and teenage social media engagement	University of Limerick	€49,979
Gareth Morris	SFI Discover	Epilepsy in English workshops	RCSI University of Medicine and Health Sciences	€40,210
Brian Ward	EPSRC-SFI Joint Funding of Research	An ocean microlab for autonomous dissolved inorganic carbon depth profile measurement	National University of Ireland, Galway	€380,103
John Goold	EPSRC-SFI Joint Funding of Research	Non-equilibrium steady-states of quantum many-body systems: uncovering universality and thermodynamics (QuamNESS)	Trinity College Dublin	€367,126
Aljosa Smolic	EPSRC-SFI Joint Funding of Research	EPSRC-SFI: SpheryStream	Trinity College Dublin	€187,140
Suresh Pillai	EPSRC-SFI Joint Funding of Research	Next generation energy autonomous textile fabrics based on Triboelectric Nanogenerators (NextGenT-TENG)	Institute of Technology, Sligo	€616,511
Paul Cuffe	EPSRC-SFI Joint Funding of Research	Blockchain transactions in the electricity industry: beyond tokenised energy	University College Dubin	€160,257
Stephen Dooley	EPSRC-SFI Joint Funding of Research	Tailored production and utilisation of sustainable low cost Lignocellulosic advanced biofuel blends as diesel and petrol substitutes: SusLABB	Trinity College Dublin	€437,997
Eilis Dowd	Frontiers for the Future	Harnessing the potential of biomaterials for improving stem cell-derived brain repair for Parkinson's disease	National University of Ireland Galway	€597,385

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Elaine O'Reilly	Frontiers for the Future	Biocatalytic cascades for the synthesis of therapeutic iminosugars from monosaccharides	University College Dublin	€535,932
Lynette Keeney	Frontiers for the Future	Optimisation of single phase room temperature multiferroic materials enabling next generation data storage	Tyndall National Institute	€559,970
Claire Gillan	Frontiers for the Future	Rich, repeated and robust: a smartphone-based approach to computational psychiatry	Trinity College Dublin	€622,320
Felipe Murphy Armando	Frontiers for the Future	Orbitron: Spin, charge and light polarisation control and characterisation of CMOS compatible light sources - Leaner Future Networks	Tyndall National Institute	€519,202
Shane Donohue	Frontiers for the Future	Geophysical and Earth observation tools for evaluating the condition of slopes (GEOTECS)	University College Dublin	€604,618
Rachel McDonnell	Frontiers for the Future	RADICal: On-set virtual reality for actors portraying digital characters	Trinity College Dublin	€604,258
Bryan Hennelly	Frontiers for the Future	Label-free flow cytometry using broadband coherent anti-stokes raman spectroscopy	Maynooth University	€592,877
Arman Farhang	Frontiers for the Future	New waveforms for next generation wireless networks (NEW WAVE)	Maynooth University	€563,235
John Costello	Frontiers for the Future	Tracking ultrafast electron dynamics in next generation EUV lithography (EUVL) materials	Dublin City University	€623,752
Andreas Ruschhaupt	Frontiers for the Future	Shortcut-enhanced quantum thermodynamics	University College Cork	€617,611
Michael Prentice	Frontiers for the Future	Bacterial microcompartment engineering: Building them up and knocking them down	University College Cork	€520,030
Aine Kelly	Frontiers for the Future	The brain-muscle loop: Using physical activity to target age-related neurodegeneration	Trinity College Dublin	€621,157
Gareth Brady	Frontiers for the Future	Investigating immunomodulation by a human-adapted poxvirus and its therapeutic potential (IHAPT)	Trinity College Dublin	€608,065
Pepijn Luijckx	Frontiers for the Future	Can we use the metabolic theory of ecology to predict disease outbreaks in a warming world?	Trinity College Dublin	€469,606
Lewys Jones	Frontiers for the Future	Maximum information-efficiency scanning transmission electron microscopy	Trinity College Dublin	€546,378
Juan Diego Rodriguez-Blanco	Frontiers for the Future	Separating critical metals through mineral crystallization (SEleCTOR)	Trinity College Dublin	€596,940
Paula Colavita	Frontiers for the Future	Advancing the green transition via novel electrode materials for valorisation processes	Trinity College Dublin	€610,174

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Charles Spillane	Frontiers for the Future	Harnessing haploid inducers and cyto-nuclear interactions for enhanced plant growth and heterosis effects for sustainable agriculture (CytoHeterosis)	National University of Ireland, Galway	€623,595
Katarzyna Goljanek-Whysall	Frontiers for the Future	Pre-clinical development of Oxi-MIR inhibitors for muscle wasting	National University of Ireland, Galway	€604,673
Gerhard Schlosser	Frontiers for the Future	Cofactor-dependent functions of Eya1 in sensory neurogenesis	National University of Ireland, Galway	€512,062
Eoin Scanlan	Frontiers for the Future	Accelerated microfluidic Thiol-ene mediated native chemical ligation for synthesis and manufacture of peptide and protein therapeutics	Trinity College Dublin	€618,792
Ken O'Halloran	Frontiers for the Future	INSPIRE DMD: Interventional strategy to protect and increase respiratory efficacy in Duchenne muscular dystrophy	University College Cork	€ 552,535
Charles Patterson	Frontiers for the Future	Simulation of organic optoelectronic materials using many-body theory (SOOMAT)	Trinity College Dublin	€295,132
David Hoey	Frontiers for the Future	Mechanically activated extracellular vesicles as a multi-targeted therapy to enhance bone regeneration	Trinity College Dublin	€622,086
Gary Moran	Frontiers for the Future	The role in virulence and drug target potential of the Candida albicans telomeric TLO gene family	Trinity College Dublin	€607,277
Sarah Hudson	Frontiers for the Future	Modular release of dual acting antimicrobial peptides (MORE-AMP)	University of Limerick	€618,965
Dympna O'Sullivan	Frontiers for the Future	Enabling self-care and shared decision making for people living with dementia	Technological University Dublin	€545,183
Colm Bergin*	Frontiers for the Future	Investigating a viral immune evasion mechanism of SARS-CoV-2: towards a cure for COVID-19	Trinity College Dublin	€403,003
Desmond Tobin	Frontiers for the Future	Investigations of the homeo-dynamic status of heterogeneous subpopulations of normal human cutaneous melanocytes: a paradigm for understanding melanoma-genesis	University College Dublin	€437,920
Tia Keyes	Frontiers for the Future	Shedding light on advanced microscopy; Supramolecular probes for super-resolution microscopy and phototheranostics	Dublin City University	€986,682
Michael Rowan	Frontiers for the Future	Protecting vulnerable synaptic networks in early Alzheimer's Disease	Trinity College Dublin	€1,242,328
Leonie Young	Frontiers for the Future	Epi-genomic and epi-transcriptomic aberrations in breast cancer brain metastasis	RCSI University of Medicine and Health Sciences	€1,166,431
Aideen Ryan	Frontiers for the Future	RESTORE - Sialylation as a target to reverse stromal cell mediated immunosuppression in cancer	National University of Ireland, Galway	€893,539

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Triona Ní Chonghaile	Frontiers for the Future	HDAC6i: Understanding and targeting the function of histone deacetylase 6 in triple negative breast cancer	RCSI University of Medicine and Health Sciences	€618,921
Ed Lavelle	Frontiers for the Future	Tailored design of nanoparticulate adjuvants to enhance vaccine induced cellular immunity	Trinity College Dublin	€1,299,893
Sinéad Corr	Frontiers for the Future	Exploring miR-21 in the dialogue between the microbiome and immunity to decipher mechanisms of disease	Trinity College Dublin	€619,934
Luke O'Neill	Frontiers for the Future	Exploring Itaconate as a critical immunometabolite in inflammation	Trinity College Dublin	€1,281,737
Wenxin Wang	Frontiers for the Future	Multifunctional single-chain cyclized/knot polymers and their applications for Recessive Dystrophic Epidermolysis Bullosa (RDEB) wound healing	University College Dublin	€1,299,724
Olivia McAuliffe	Frontiers for the Future	EBSTAR: Efficient biotransformation of underutilised and waste food processing streams into alternative and renewable products	Teagasc	€323,104
Helen Roche	Frontiers for the Future	Diet, immune training and metabolism	University College Dublin	€1,289,363
Dearbhaile Dooley	Frontiers for the Future	Targeted control of microglia polarisation after spinal cord injury	University College Dublin	€319,440
Noel Lowndes	Frontiers for the Future	Canonical and non-canonical roles for ATR in maintenance of genomic integrity	National University of Ireland, Galway	€1,115,040
David McCloskey	Frontiers for the Future	Field effect phase modulation with 2D nanomaterials	Trinity College Dublin	€799,007
Vincent O'Flaherty	Frontiers for the Future	MAME: Managing agricultural methane emissions. Transforming the greenhouse gas footprint and bio-economic value of ruminant agriculture by selective inhibition of methanogenic archaea	National University of Ireland, Galway	€984,775
Aidan Meade	Frontiers for the Future	CHEMPREDICT DL – Segregation of breast cancer patients at low and high risk of recurrence with chemical imaging and deep learning	Technological University Dublin	€544,717
Utz Roedig	Frontiers for the Future	Personal voice assistant security and privacy	University College Cork	€934,991
Liam Marnane	Frontiers for the Future	Model-based decision support for newborn brain protection	University College Cork	€1,220,239
Emma Teeling	Frontiers for the Future	LongHealth: The molecular basis and regulation of longer healthspan in mammals	University College Dublin	€1,280,525
Fiona Newell	Frontiers for the Future	MultiCategory: Behavioural and brain correlates of adaptive coding in multisensory object categorisation	Trinity College Dublin	€858,773

**Award transferred from Nigel Stevenson following departure from TCD.*

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Ronan Sulpice	Frontiers for the Future	Pristine coastal areas: Harnessing Ulva's potential for carbon and nutrient removal	National University of Ireland, Galway	€613,419
Mary Pryce	Frontiers for the Future	Exploiting singlet fission: An innovate design strategy for antimicrobial materials	Dublin City University	€893,428
Caroline Brophy	Frontiers for the Future	STRIVE: Achieving sustainable agri-ecosystems through advances in modelling and visualising the biodiversity and ecosystem multifunctionality relationship	Trinity College Dublin	€395,372
Luis Padrela	Frontiers for the Future	Controlled nucleation for the continuous crystallization of nanopharmaceuticals	University of Limerick	€271,196
Grace Morgan	Frontiers for the Future	Optical and magnetic integration of surface molecules (OptiMISM)	University College Dublin	€1,010,247
Jennifer Foster	Frontiers for the Future	Rolling in the deep: Unravelling a neural net's capacity for language	Dublin City University	€357,397
Dimitrios Zeugolis	Frontiers for the Future	Cell assembled tissue engineered remedies for enhanced regeneration (CATERER)	National University of Ireland, Galway	€1,252,906
Noel O'Dowd	Frontiers for the Future	Physically-based modelling of bainitic and martensitic steels for flexible and sustainable power generation and distribution (Process)	University of Limerick	€939,479
Norma Bargary	Frontiers for the Future	Functional data analysis for sensor technologies (FAST)	University of Limerick	€606,040
Lorraine Hanlon	Frontiers for the Future	Building on EIRSAT-1: Nanosatellites as a disruptive technology platform for innovation and research in the global Space sector	University College Dublin	€1,269,047
Mark Devocelle	Frontiers for the Future	Antimicrobial pegtides	RCSI University of Medicine and Health Sciences	€252,366
Ingmar Schoen	Frontiers for the Future	Mechanobiology of platelet contractility and secretion during thrombosis	RCSI University of Medicine and Health Sciences	€311,132
Yvonne Nolan	Frontiers for the Future	Mechanisms underpinning the interplay between chronic neuroinflammation and exercise on cognitive function during middle age	University College Cork	€1,072,304
Gerard O'Keeffe	Frontiers for the Future	Defining the potential of HDAC5 and HDAC9 as novel therapeutic targets for Parkinson's disease	University College Cork	€618,491
James O'Gara	Frontiers for the Future	Targeting membrane transporters to increase antibiotic susceptibility in bacterial pathogens	National University of Ireland, Galway	€620,613
Geraldine Butler	Frontiers for the Future	Effect of genome diversity on antifungal drug resistance in the human pathogen Candida parapsilosis	University College Dublin	€1,280,082

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
John Crean	Frontiers for the Future	Next generation therapeutics for chronic kidney disease (NGENKID): Metabolic memory and the manipulation of the chromatin landscape for therapeutic reprogramming	University College Dublin	€609,711
Emmeline Hill	Frontiers for the Future	An integrative approach to understand the impact of the skeletal muscle epigenome on economically important traits in the thoroughbred horse	University College Dublin	€1,139,108
Olive Lennon	Frontiers for the Future	The 3Rs: Responsive, rehabilitative robotics in motor relearning of functional standing and walking after Stroke	University College Dublin	€784,657
Emma Sokell	Frontiers for the Future	xLuminate: Nanoimaging and spectroscopy enabling brilliant tuneable, laboratory-scale x-ray source technology	University College Dublin	€1,161,677
Paula Meleady	Frontiers for the Future	Deciphering the role of ubiquitination in regulating the productivity of biotherapeutics from recombinant Chinese hamster ovary cell lines	Dublin City University	€931,893
Stephen Connon	Frontiers for the Future	Cooperative ionic species: a new direction in asymmetric nucleophilic catalysis	Trinity College Dublin	€611,843
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	€19,133
Michael Zaworotko	SFI Maternity Allowance	SSPC SFI Research Centre for Pharmaceuticals	University of Limerick	€81,308
Michael Zaworotko	SFI Maternity Allowance	SSPC SFI Research Centre for Pharmaceuticals	University of Limerick	€12,025
Noel O'Connor	SFI Maternity Allowance	Insight SFI Research Centre for Data Analytics	National University of Ireland Galway	€24,406
Vincent Wade	SFI Maternity Allowance	ADAPT, the SFI Research Centre for AI-Driven Digital Content Technology	Trinity College Dublin	€17,248
Vincent Wade	SFI Maternity Allowance	ADAPT, the SFI Research Centre for AI-Driven Digital Content Technology	Trinity College Dublin	€53,214
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	€30,457
John Donegan	SFI Maternity Allowance	Athermal semiconductor lasers for applications in information and communications technologies	Trinity College Dublin	€29,601
Orla Feeley	SFI Maternity Allowance	SFI ERC Support Programme	University College Dublin	€18,017
Orla Feeley	SFI Maternity Allowance	SFI ERC Support Programme	University College Dublin	€18,017
Abhay Pandit	SFI Maternity Allowance	CÚRAM, the SFI Research Centre for Medical Devices	National University of Ireland Galway	€12,701
Andrew Keane	SFI Maternity Allowance	Energy Systems Integration Partnership Programme (ESIPP)	University College Dublin	€19,816

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Award declined	Public Service Fellowship Programme	Award declined	Award declined	€78,943
Rónán Kennedy	Public Service Fellowship Programme	The economic, social and ethical implications of technological innovation	National University of Ireland, Galway	€34,398
Kosala Yapa Mudiyanselage	Public Service Fellowship Programme	Distributed ledger technology – Identifying and solving public service problems using the blockchain	National University of Ireland, Galway	€87,475
Aine Ni Leime	Public Service Fellowship Programme	The economic cost of discrimination and the benefits of diversity in the workplace	National University of Ireland, Galway	€115,143
Mary O'Connell-Motherway	Public Service Fellowship Programme	Assessment of the safety of probiotic foods on sale targeted at vulnerable groups in Ireland	University College Cork	€122,029
Kevin Burke	Public Service Fellowship Programme	Data analytics for signals of emerging food safety risks	University of Limerick	€81,275
Tim Jacquemard	Public Service Fellowship Programme	The economic, social and ethical implications of eHealth innovations in the Irish healthcare system	RCSI University of Medicine and Health Sciences	€17,163
Boris Galkin	Public Service Fellowship Programme	The economic, social and ethical implications of technological innovation	Trinity College Dublin	€17,622
David Lewis	Public Service Fellowship Programme	The economic, social and ethical implications of technological innovation: AI and Big Data	Trinity College Dublin	€16,426
Cormac Ó Coileáin	Public Service Fellowship Programme	The economic, social and ethical implications of technological innovation	Trinity College Dublin	€20,274
Claire McKenna	Public Service Fellowship Programme	Development of a standardised classification scheme for public investment in research	Trinity College Dublin	€80,954
Nicholas Vafeas	Public Service Fellowship Programme	Responding to climate change and sustainability	University College Dublin	€16,363
Fatemeh Ahmadi Zeleti	Public Service Fellowship Programme	Measuring the benefits and impact of Ireland's Open Data Initiative	National University of Ireland, Galway	€89,634
Vincent Wade	SFI Research Centres Phase 2	ADAPT, the SFI Research Centre for AI-Driven Digital Content Technology	Trinity College Dublin	€42,090,078
Brian Fitzgerald	SFI Research Centres Phase 2	Lero SFI Research Centre for Software	University of Limerick	€37,449,510
Brendan Jennings	SFI Research Centres Phase 2	CONNECT SFI Research Centre for Future Networks	Trinity College Dublin	€38,864,909
Abhay Pandit	SFI Research Centres Phase 2	CÚRAM, the SFI Research Centre for Medical Devices	National University of Ireland, Galway	€46,372,380
Murray Hitzman	SFI Research Centres Phase 2	iCRAG SFI Research Centre for Applied Geosciences	University College Dublin	€28,273,066

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Donal O'Shea	Research Infrastructure	Super-Resolution Imaging Consortium (SRIC)	RCSI University of Medicine and Health Sciences	€1,471,192
Charles Spillane	Research Infrastructure	Closed-loop smart photosynthesis platform for low carbon-footprint edible protein supply (SustProt Platform)	National University of Ireland Galway	€796,861
Marco Ruffini	Research Infrastructure	DubliNets: Distributed laboratory and outdoor testbed infrastructure for research on future end-to-end networks and services for 5G and beyond	Trinity college Dublin	€1,136,353
Jochen Prehn	Research Infrastructure	Next generation single cell analysis platform combining high throughput super-resolution imaging, laser capture and robotic preparation for single cell sequencing ('LSM-LCM-Robo')	RCSI University of Medicine and Health Sciences	€1,176,465
Aoife Gowan	Research Infrastructure	Next generation spectral imaging platform	University College Dublin	€999,511
Olivia McAuliffe	Research Infrastructure	Biotransformation and culture process innovation platform	Teagasc	€858,934
Jens Walter	SFI Research Professorship	Redressing the impact of industrialisation on gut microbiome composition and function (Microbe Restore)	University College Cork	€3,746,340
Award not commenced	SFI Research Professorship	Award not commenced	Award not commenced	€5,591,920
Award declined	RS-SFI University Research Fellowship	Award declined	Award declined	€633,916
Lynette Keeney	RS-SFI University Research Fellowship Renewal	Making memories: Ultra-thin multiferroics for disruptive data storage technologies	The Royal Society	€454,438
Jonathan Mackey	RS-SFI University Research Fellowship Renewal	Asymmetric nebulae of massive stars	The Royal Society	€448,675
John Regan	RS-SFI University Research Fellowship Supplement	Seed black hole formation from environment to accretion	The Royal Society	€12,025
Pauline Scanlan	RS-SFI University Research Fellowship Renewal	Local adaption of bacteria in the human gut	The Royal Society	€455,705
Neale Gibson	RS-SFI University Research Fellowship Renewal	Atmospheres of alien worlds: Developing novel algorithms for next-generation spectroscopy of transiting planets	The Royal Society	€401,085

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Anne Heffernan	SFI Discover Opportunistic	Space Academy	Mind the Gap Film	€233,593
Louise Kelly	SFI Discover Science Week	Emerging technologies for a sustainable future	Irish Manufacturing Research	€7,805
Linda Coyne	SFI Discover Science Week	eHealth - Keeping people at the centre	RCSI University of Medicine and Health Sciences	€6,219
Fergal Malone	SFI Discover Science Week	BIAS: Inequality in women's health and research	RCSI University of Medicine and Health Sciences	€8,000
Walter Kolch	SFI Discover Science Week	Invisible Spectrum: Engaging minority communities in science and cancer research	University College Dublin	€7,990
Joseph Walsh	SFI Discover Science Week	Kerry Science Festival – Our 2020 Vision	Institute of Technology, Tralee	€28,000
Mairéad Hurley	SFI Discover Science Week	Aistear Spáis	Trinity College Dublin	€8,000
Mairéad Hurley	SFI Discover Science Week	Tech Scéal	Trinity College Dublin	€8,000
Pat McHale	SFI Discover Science Week	Mayo Science and Technology Festival 2020	Mayo County Council t/a Mayo Science & Technology Festival	€26,500
Liz McBain	SFI Discover Science Week	Baking in Space 2020	British Council Ireland	€8,000
Jackie Gorman	SFI Discover Science Week	Midlands Science Festival	Atlantic Corridor	€30,000
Sheila Donegan	SFI Discover Science Week	South East Science Festival	Waterford Institute of Technology	€30,000
Jeremy Bird	SFI Discover Science Week	Sligo Science Festival	Institute of Technology, Sligo	€30,000
Catriona Boyle	SFI Discover Science Week	Festival of Farming and Food - SFI Science Week at Teagasc	Teagasc	€26,770
Mervyn Horgan	SFI Discover Science Week	Cork Science Festival (2019, 2020, 2021)	Glenosheen Ltd.	€30,000
Deirdriu McQuaid	SFI Discover Science Week	Cavan Monaghan Science Festival	Monaghan County Council	€30,000
Paul Mee	SFI Discover Science Week	Galway Science and Technology Festival	Galway Science & Technology Forum	€20,000
Bernie Quilligan	SFI Discover Science Week	Limerick Festival of Science 2019, 2020 and 2021	University of Limerick	€30,000
Maeve Liston	SFI Discover Science Week	Tipperary Festival of Science	Mary Immaculate College	€30,000
Vicky Brown	SFI Discover Science Week	Cool Planet Experience	Centre for Climate Change t/a Cool Planet Experience	€8,000
Anna Kadzik-Bartoszewska	SFI Discover Science Week	Science Connects	Gaiety School of Acting	€8,000
Amanda Branigan	SFI Discover Science Week	Louth Science Festival 2020	Louth County Council	€8,000

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Breda O'Mahony	SFI Discover Science Week	Gulp!	St Angela's College	€8,000
Al Russell	SFI Discover Science Week	Science Week at The Ark 2020	The Children's Cultural Centre Ltd. t/a The Ark	€8,000
Sean O'Brien	SFI Discover Science Week	"Industry 4.0 Experience" Launch Events	University of Limerick	€8,000
Eileen Morrissey	SFI Discover Science Week	Wexford Science Festival	Wexford County Council	€35,000
Carrie O'Donoghue	SFI Discover Science Week	Ballyhoura Science Day	Ballyhoura Development Ltd.	€7,996
Sarah Miller	SFI Discover Science Week	Let's Talk Science Festival 2020	The Rediscovery Centre	€8,000
Daniel Vincent McCarthy	SFI Discover Science Week	Curiosity Accelerator @ Science Week 2020	The Festival of Curiosity Ltd.	€8,000
Sheila Donegan	SFI Discover Science Week	Kilkenny Science Festival	Waterford Institute of Technology	€32,800
John Donovan	SFI Fellowship	SFI Fellowship	Technological University Dublin	€226,872
Linda Doyle	SFI Fellowship	SFI Fellowship	Trinity College Dublin	€234,484
Linda Doyle	SFI Fellowship	SFI Fellowship	Trinity College Dublin	€248,278
Orla Feeley	SFI Fellowship	SFI Fellowship	University College Dublin	€214,970
Orla Feeley	SFI Fellowship	SFI Fellowship	University College Dublin	€224,113
Fergal O'Brien	SFI Fellowship	SFI Fellowship	RCSI University of Medicine and Health Sciences	€234,048
Paolo Dessi	SFI Future Innovator Prize	Hybrid Bio-Solar Reactors for wastewater treatment and CO2 recycling	National University of Ireland, Galway	€129,951
Una Fitzgerald	SFI Future Innovator Prize	Closing the loop on lab plastics	National University of Ireland, Galway	€256,271
Ioannis Manolakis	SFI Future Innovator Prize	Recyclable and re-processable epoxy resin systems (r2-Epoxy)	Institute of Technology, Sligo	€242,552
Sushanta Kumar Saha	SFI Future Innovator Prize	Disruptive technologies to valorise food waste into value added commodities (WAVA)	Limerick Institute of Technology	€285,785
Corine Nzeteu	SFI Future Innovator Prize	Turning plastic and food waste to key value added chemicals and energy (TURNKEY)	National University of Ireland, Galway	€267,484
Ultan McCarthy	SFI Future Innovator Prize	Eye-Q: An intelligent optical freshness profiler	Waterford Institute of Technology	€266,736
Nan Zhang	SFI Future Innovator Prize	Controlled synthesis and production of biodegradable Poly (DL-lactic acid) for high value-added microfluidics lab consumables	University College Dublin	€267,639
Francesco Pilla	SFI Future Innovator Prize	Plastic Raiders	University College Dublin	€285,796

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Jennifer Gaughran	SFI Future Innovator Prize	Grain-4-Lab: Laboratory-grade bioplastics production from native renewable waste streams: promoting a circular Irish bioeconomy	Dublin City University	€280,834
Lorraine Foley	SFI Future Innovator Prize	Evaluating quality and shelf life of silicon enriched fresh salad leaves using alternative plastic packaging solutions	Technological University Dublin	€237,473
Michael Morris	SFI Future Innovator Prize	Removal of plastic from food/ beverage packaging: Alternative lightweight glass (EADROM)	Trinity College Dublin	€284,726
Graham O'Neill	SFI Future Innovator Prize	Blue Stream - Transforming fish blood into a biopolymer composite to replace plastic	Technological University Dublin	€265,787
Kevin M Ryan	SFI Future Innovator Prize	Plastic waste as a source of sustainable materials for advanced lithium–sulfur batteries (PLASMA-LiS)	University of Limerick	€273,131
Saranya Rameshkumar	SFI Future Innovator Prize	GREEN CLEAN - Supercritical carbon-dioxide technology for recovery and recycling of contaminated plastic waste	Trinity College Dublin	€257,642
John Boland	SFI Future Innovator Prize	Microplastics free plastics: Eliminating microplastic generation at source	Trinity College Dublin	€264,029
Paul O'Toole	SFI Future Innovator Prize	SOLARBIOME: A novel food product harnessing the mediterranean diet to promote healthy aging by maintaining the gut microbiome	University College Cork	€269,011
Dara Stanley	SFI Maternity Allowance	Food in the future; sustainable crop pollination in a changing world	University College Dublin	€37,518
Paul Ross	SFI Maternity Allowance	BacTrans – Natural DNA transfer systems for bacterial starter cultures	University College Cork	€10,433
Stefan Oscarson	SFI Maternity Allowance	Design, synthesis and development of carbohydrate–based vaccines, therapeutics, diagnostics and medical devices	University College Dublin	€21,410
Michael Zaworotko	SFI Maternity Allowance	SSPC SFI Research Centre for Pharmaceuticals	University of Limerick	€51,946
Paul Townsend	SFI Maternity Allowance	IPIC SFI Research Centre	Tyndall National Institute	€26,703
Gregory O'Hare	SFI Maternity Allowance	CONSUS: Crop optimisation through sensing, understanding and visualisation	University College Dublin	€19,147
Paul Moynagh	SFI Maternity Allowance	Discovering and exploiting novel regulatory pathways in inflammation for therapeutic advantage	Maynooth University	€22,154
Michael Morris	SFI Maternity Allowance	AMBER SFI Research Centre for Advanced Materials and BioEngineering Research	Trinity College Dublin	€30,929
Noel O'Connor	SFI Maternity Allowance	Insight SFI Research Centre for Data Analytics	National University of Ireland, Galway	€25,638

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Paul Townsend	SFI Maternity Allowance	EPSRC-SFI Centre for Doctoral Training in photonic integration and advanced data storage	Tyndall National Institute	€12,025
Timothy McCarthy	SFI Maternity Allowance	Drone research and innovation	Maynooth University	€34,828
Michael Morris	SFI Maternity Allowance	AMBER SFI Research Centre for Advanced Materials and BioEngineering Research	Trinity College Dublin	€29,601
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	€14,910
Denis Dowling	SFI Maternity Allowance	I-Form SFI Research Centre for Advanced Manufacturing	University College Dublin	€21,955
John Dalton	SFI Maternity Allowance	Mining the molecular interplay between parasite and host for vaccines, diagnostics and biotherapeutics discovery	National University of Ireland, Galway	€25,401
Paul Ross	SFI Maternity Allowance	APC Microbiome Ireland SFI Research Centre	University College Cork	€48,339
Joanne Masterson	SFI Maternity Allowance	Transcriptional mechanisms controling epithelial cell fate determination during allergic esophageal inflammation in eosinophilic esophagitis	Maynooth University	€37,518
Walter Kolch	SFI Maternity Allowance	Precision Oncology Ireland	University College Dublin	€43,278
Susan Kelleher	SFI Maternity Allowance	Polymeric nanoneedle arrays for injecting drugs into cells for localised gene therapy (GeneInject)	University College Dublin	€12,130
Denis Dowling	SFI Maternity Allowance	I-Form SFI Research Centre for Advanced Manufacturing	University College Dublin	€31,764
Murray Hitzman	SFI Research Centres Phase 2	Centralised EPE Support to the SFI Research Centres Programme	University College Dublin	€1,586,000
Murray Hitzman	SFI Research Centres Phase 2	Centralised Communications Support to the SFI Research Centres Programme	University College Dublin	€507,000
Adrian Lynch	SFI/RTÉ Joint Initiative	SFI/RTÉ Grant support Initiative 2020	RTÉ	€585,000
Simon Kelly - Darrin Morrissey	SFI-HRB-Wellcome Trust Biomedical Research Partnership	What dictates the extent of evidence accumulation in human decision making?	Health Research Board	€208,599
John Crown	Strategic Partnership Programme	trAnslational Cancer research On pan-heR iNhibition (ACORN)	Dublin City University	€511,825
Kingston Mills	Strategic Partnership Programme	How immunology can help to address the COVID-19 epidemic in Ireland	Trinity College Dublin	€4,874,207
Rowan Fealy - Tim McCarthy	Strategic Partnership Programme	Terrain-AI	Maynooth University	€3,147,744

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Conall Michael Dennedy	US-Ireland R&D Partnership	Treating primary aldosteronism-induced hypertension via microwave ablation	National University of Ireland Galway	€906,220
Paula Bourke	US-Ireland R&D Partnership	Plasma-based therapies for bone infection	University College Dublin	€817,953
Thomas Walther	US-Ireland R&D Partnership	Targeting the compromised brain endothelial barrier function during cerebral malaria with AT2 receptor agonists	University College Cork	€882,088
Simon Kelly	US-Ireland R&D Partnership	Uncovering the neural architecture underlying decisions abstracted from movements	University College Dublin	€751,553
Rose Anne Kenny	US-Ireland R&D Partnership	Social circumstances and epigenomics: Promoting health in three countries	Trinity College Dublin	€829,033
Grace Morgan	US-Ireland R&D Partnership	Molecular magnetoelectric materials	University College Dublin	€352,705
Oliver Mason	US-Ireland R&D Partnership Programme	Control co-design of heterogeneous arrays of wave energy converters	Maynooth University	€399,653
Frank McDermott	US-Ireland R&D Partnership: Centre-to-Centre mechanism	Multi-scale investigation of bio-based mineral precipitation in carbonate bearing granular soils and construction-related waste	University College Dublin	€534,051
Gerard O'Connor	US-Ireland R&D Partnership: Centre-to-Centre mechanism	Cardiac organoid systems partnership (COSP)	National University of Ireland, Galway	€869,274
Garry Duffy	US-Irl R&D Partnership: Centre-to-Centre Mechanism	Global cell manufacturing and delivery partnership (GCMPD)	National University of Ireland, Galway	€830,492
Total				**€315,925,752**

Co-funded awards 2020

Co-funded Frontier for the Future Programme Awards

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Caroline Brophy	Frontiers for the Future Co-Fund	STRIVE: Achieving sustainable agri-ecosystems through advances in modelling and visualising the biodiversity and ecosystem multifunctionality relationship	Environmental Protection Agency	-€197,685
Paula Colavita	Frontiers for the Future Co-Fund	Advancing the green transition via novel electrode materials for valorisation processes	Environmental Protection Agency	-€166,991
Shane Donohue	Frontiers for the Future Co-Fund	Geophysical and Earth observation tools for evaluating the condition of slopes (GEOTECS)	Environmental Protection Agency	-€201,540
Shane Donohue	Frontiers for the Future Co-Fund	Geophysical and Earth observation tools for evaluating the condition of slopes (GEOTECS)	Geological Survey of Ireland	-€201,539
Pepijn Luijckx	Frontiers for the Future Co-Fund	Can we use the metabolic theory of ecology to predict disease outbreaks in a warming world?	Environmental Protection Agency	-€234,803
Juan Diego Rodriguez-Blanco	Frontiers for the Future Co-Fund	Separating critical metals through mineral crystallization (SEleCTOR)	Environmental Protection Agency	-€198,980
Juan Diego Rodriguez-Blanco	Frontiers for the Future Co-Fund	Separating critical metals through mineral crystallization (SEleCTOR)	Geological Survey of Ireland	-€198,980

Co-funded US-Ireland Awards

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Paula Bourke	US-Ireland R&D Partnership co-fund	Plasma-based therapies for bone infection	Health Research Board	-€408,977
Conall Michael Dennedy	US-Ireland R&D Partnership co-fund	Treating primary aldosteronism-induced hypertension via microwave ablation	Health Research Board	-€453,110
Simon Kelly	US-Ireland R&D Partnership co-fund	Uncovering the neural architecture underlying decisions abstracted from movements	Health Research Board	-€375,776
Thomas Walther	US-Ireland R&D Partnership co-fund	Targeting the compromised brain endothelial barrier function during cerebral malaria with AT2 receptor agonists	Health Research Board	-€441,044

Co-funded Future Innovator Prize Awards

SFI Research Scientist	Programmes	Research Title	Research Body	Total Value of Award Including Overheads €
Aaron Golden	Future Innovator Prize co-fund	Tracking adaptation progress in agriculture and food security using an AI-powered satellite remote sensing platform - TAPAS	Department of Foreign Affairs	-€141,500
Andreas Heopner	Future Innovator Prize co-fund	AI for anti-greenwashing	Department of Foreign Affairs	-€140,718
Tony Keene	Future Innovator Prize co-fund	Closing the circuit - bringing lithium cobalt batteries into the circular economy	Department of Foreign Affairs	-€137,697
David McCloskey	Future Innovator Prize co-fund	Day-time radiative cooling for passive climate control	Department of Foreign Affairs	-€135,311
Total co-funded				**(€3,634,651)**
Net total				**€312,291,101**

Grant Commitments and Payments Analysis 2020

2020 Payments by Institution	€000s
Trinity College Dublin	€44,641
University College Dublin	€38,924
University of Limerick	€28,969
National University of Ireland Galway	€25,275
University College Cork	€21,049
Tyndall National Institute	€8,503
Royal College of Surgeons in Ireland	€7,689
Teagasc	€6,490
Dublin City University	€5,124
Maynooth University	€5,018
The Royal Society	€2,782
Technological University Dublin	€1,378
Dublin Institute for Advanced Studies	€860
Health Research Board	€759
Waterford Institute of Technology	€631
RTÉ	€576
Institute of Technology Sligo	€456
Limerick Institute of Technology	€330
The Festival of Curiosity Ltd.	€313
National Youth Council of Ireland	€266
The National Institute for Bioprocessing Research and Training	€214
Junior Achievement Ire Ltd.	€214
Mind the Gap Films	€210
Cork Institute of Technology	€158
The Institution of Engineers of Ireland	€150
The Institution of Engineering and Technology	€143
The Rediscovery Centre Ltd.	€118
Atlantic Corridor	€75
Mary Immaculate College	€66
British Council Ireland	€57
Federation of Irish Beekeepers' Associations (FIBKA) CLG	€48
Learning Hub Limerick Ltd.	€47
National College of Ireland	€45
Teen-Turn	€45
School of Looking	€44
Gallomanor Communications Ltd.	€38
Wexford County Council	€35

2020 Payments by Institution	€000s
Lismore Heritage Centre	€35
Monaghan County Council	€33
Glenosheen Ltd.	€30
Kite Entertainment	€29
The National Concert Hall	€28
Cosmos Education T/A - Blackrock Castle Observatory	€28
Institute of Technology Tralee	€27
Mayo County Council t/a Mayo Science and Technology Festival	€26
Cork City Council t/a Lifetime Lab	€22
Galway Science and Technology Forum	€20
Royal Society of Chemistry	€20
Circus250 CIC	€15
Centre for Climate Change t/a Cool Planet Experience	€11
Louth County Council	€8
The Children's Cultural Centre Limited t/a The Ark	€8
Ballyhoura Development Ltd.	€8
Gaiety School of Acting	€7
St Angela's College	€7
Irish Manufacturing Research	€7
Schweppe Curtis Nunn Ltd.	€5
Brigit's Garden CLG	€4
Feilte Dhuibh Linne Teoranta t/a St Patrick's Day Festival	€4
DunLaoghaire Rathdown County Council	€2
Fighting Blindness	€1
Imaginosity, Dublin Children's Museum	€1
Dublinia Heritage Centre	€1
Royal Dublin Society RDS	-€8
CoderDojo Ireland Foundation	-€12
Irish Cancer Society*	-€162
Athlone Institute of Technology	-€274
Geological Survey of Ireland*	-€311
Environmental Protection Agency*	-€402
Marine Institute*	-€430
Department of Foreign Affairs*	-€555
Department of Agriculture, Food and the Marine*	-€1,073
Total	**€198,911**

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

2020 Payments by Programme	€000s
SFI Research Centres	€78,891
Investigator Programme	€16,626
COVID-19 Rapid Response Call	€16,189
SFI Centres for Research Training	€14,738
Research Professorship Programme	€11,076
Strategic Partnership Programme	€8,270
Research Infrastructure	€6,380
Frontiers for the Future	€6,234
Spokes Fixed and Rolling Programme	€5,529
Career Development Award	€5,490
SFI Discover	€4,878
Starting Investigator Research Grant (SIRG)	€3,569
US Ireland R&D Partnership	€3,338
EPSRC-SFI Centres for Doctoral Training (CDT) Partnership	€3,040
Royal Society - SFI Research Grants (Includes 1 supplement)	€2,782
SFI-NSFC Partnership	€2,156
President of Ireland Future Research Leaders	€1,625
EU Co-Funding Initiatives	€964
SFI Secondment Model	€915
SFI Maternity Allowance	€894
SFI-HRB-Wellcome Trust Biomedical Research Partnership	€850
EPSRC-SFI Joint Funding of Research	€839
SFI Science Policy Research Programme	€748
SFI Future Innovator Prize	€748
BBSRC-SFI Joint Funding of Research	€635
SFI Fellowship	€487
Public Service Fellowship Programme	€444
SFI ERC Development Programme	€395
President of Ireland Young Researcher Award (PIYRA)	€271
Technological Innovation Development Award (TIDA)	€181
SFI ERC Support Programme	€30
Conference and Workshop	€13
SFI-NSF I-Corps@SFI Entrepreneurial Training Programme	-€3
Short Term Travel Fellowship	-€4
Research Frontiers Programme	-€4
Industry Fellowship	-€301
Total	**€198,911**

2020 Grant Commitments by Programme	€000s
SFI Research Centres Phase 2	€193,049
Frontiers for the Future	€51,536
COVID-19 Rapid Response Call	€17,979
Research Professorship Programme	€9,338
Strategic Partnership Programme	€8,533
Research Infrastructure	€6,439
SFI Discover call	€5,106
SFI Future Innovator Prize	€3,579
US-Ireland R&D Partnership	€3,260
RS-SFI University Research Fellowship	€2,405*
US-Ireland R&D Partnership: Centre-to-Centre mechanism	€2,233
EPSRC-SFI Joint Funding of Research	€2,149
SFI Research Centres Phase 2 - Supplement awards	€2,093
SFI Fellowship	€1,382
SFI Maternity Allowance	€893
Public Service Fellowship Programme	€778*
SFI/RTÉ Joint Initiative	€585
SFI Discover Science Week	€505
SFI Discover Opportunistic Programme	€233
SFI-HRB-Wellcome Trust Biomedical Research Partnership	€208
Total	**€312,291**

**Includes commitment of one award declined*

2020 Number of Awards by Programme	Number of awards
COVID-19 Rapid Response Call	83
Frontiers for the Future	72
SFI Discover call	49
SFI Maternity Allowance	32
SFI Discover Science Week	29
SFI Future Innovator Prize	16
Public Service Fellowship Programme	13*
US-Ireland R&D Partnership	7
Research Infrastructure	6
RS-SFI University Research Fellowship	6**
EPSRC-SFI Joint Funding of Research	6
SFI Fellowship	6
SFI Research Centres Phase 2	5
Strategic Partnership Programme	3
US-Ireland R&D Partnership: Centre-to-Centre mechanism	3
Research Professorship Programme	2
SFI Research Centres Phase 2 - Supplement awards	2
SFI/RTÉ Joint Initiative	1
SFI Discover Opportunistic Programme	1
SFI-HRB-Wellcome Trust Biomedical Research Partnership	1
Total	**343**

**Includes one declined award*

***Includes one declined award and one supplementary award*

2020 Number of Awards by Institution	Number of awards
University College Dublin	67
Trinity College Dublin	66
National University of Ireland Galway	39
University College Cork	29
University of Limerick	20
Dublin City University	17
Royal College of Surgeons in Ireland	16
Maynooth University	14
Technological University Dublin	8
The Royal Society	6
Waterford Institute of Technology	5
Teagasc	4
Tyndall National Institute	4
Institute of Technology Sligo	3
Atlantic Corridor	2
British Council Ireland	2
Cork Institute of Technology	2
Junior Achievement Ire Ltd.	2
Limerick Institute of Technology	2
National Youth Council of Ireland	2
The Festival of Curiosity Ltd.	2
The Rediscovery Centre Ltd.	2
Ballyhoura Development Ltd.	1
Health Research Board	1
Centre for Climate Change t/a Cool Planet Experience	1
Circus250 CIC	1
Cork City Council t/a Lifetime Lab	1
Federation of Irish Beekeepers' Associations (FIBKA) CLG	1
Gaiety School of Acting	1
Gallomanor Communications Ltd.	1
Galway Science and Technology Forum	1
Glenosheen Ltd.	1
Institute of Technology Tralee	1
Irish Manufacturing Research	1
Learning Hub Limerick Ltd.	1
Lismore Heritage Centre	1
Louth County Council	1
Mary Immaculate College	1
Mayo County Council t/a Mayo Science and Technology Festival	1
Mind the Gap Films	1
Monaghan County Council	1

2020 Number of Awards by Institution	Number of awards
National College of Ireland	1
RTÉ	1
School of Looking	1
Schweppe Curtis Nunn Ltd.	1
St Angela's College	1
Teen-Turn	1
The Children's Cultural Centre Limited t/a The Ark	1
The Institution of Engineering and Technology	1
The National Concert Hall	1
Wexford County Council	1
Total	**343**

SFI Peer Review Panels

Below is a consolidated alphabetised list of the international reviewers who participated in Review Panels and Sitting Panels in 2020, for those programmes where all funding decisions are complete, and applicants have been notified of the outcome.

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

Reviewer Name	Organisation
Adali, Tulay	University of Maryland
Adamchuk, Viacheslav	McGill University
Alexe, Marin	University of Warwick
Alocilja, Evangelyn C.	Michigan State University
Alpert, Carol Lynn	Museum of Science, Boston
Amor, Sandra	VU University Medical Center Amsterdam
Aurbach, Elyse	University of Michigan
Bancroft, Ian	University of York
Barrow, Abigail	Cambridge Innovation Partners
Baulac, Stéphanie	Université de Sorbonne
Baumeister, Ralf	University of Freiburg
Beach, Mark	University of Bristol
Benfenati, Fabio	Universita di Genova
Berge, David	Universiteit van Amsterdam
Bergström, Christel	Uppsala University
Bierkens, Marc	University of Utrecht
Blumberger, Jochen	University College London
Blunn, Gordon	University of Portsmouth
Bode, Ann	University of Minnesota
Bonnema, Guusje	Wageningen University
Brain, Susan	King's College London
Brandão, Miguel	KTH - Royal Institute of Technology
Brodsky, Emily	University of California Santa Cruz
Brouwer, Kim	University of North Carolina
Brown, Grant	University of Toronto
Brown, Steve	Swansea University
Buchert, Johanna	Natural Resources Institute Finland
Buratti, Emanuele	International Centre for Genetic Engineering and Biotechnology
Burrows, Andrew	University of Bath
Cardella, Monica	Purdue University
Case, Keith	Loughborough University
Castree, Noel	University of Manchester

Reviewer Name	Organisation
Chen, Lydia	Delft University of Technology
Cheung, Peter	Imperial College London
Christlieb, Martin	University of Oxford
Cifuentes, Alejandro	Institute of Food Science Research
Clardy, Jon	Harvard University
Corchado, Juan	Universidad de Salamanca
Coutanceau, Christophe	University of Poitiers
Davazoglou, Dimitris	National Center for Scientific Research Demokritos
De Bruin, Rob	University College London
De Reuse, Hilde	Institut Pasteur
De Vries, Helga E	VU University Medical Center Amsterdam
Dean, Lewis	Research England
Delerue, Christophe	Institute for Electronics, Microelectronics and Nanotechnology
DePaolo, Donald	University of California Berkeley
Derby, Brian	The University of Manchester
Dressler, Falko	Universität Paderborn
Driesen, Johan	Katholieke Universiteit Leuven
Driessen, Arnold	University of Groningen
Ebrahimi, Touradj	Ecole Polytechnique Federale de Lausanne
Egger, Anne	Central Washington University
El Haj, Alicia	Birmingham University
Elezzabi, Abdulhakem	University of Alberta
Errachid El Salhi, Abdelhamid	Université de Lyon
Faaij, André	Netherlands Organisation for Applied Scientific Research
Fabris, Stefano	Scuola Internazionale Superiore di Studi Avanzati
Featherstone, Helen	University of Bath
Felser, Claudia	Max Planck Institute
Feng, Liang	University of Pennsylvania
Ferhatosmanoglu, Hakan	Warwick University
Finkelstein, Noah	University of Colorado, Boulder
Fraser, Hamish	Ohio University
French, Jacqueline	NYU Langone Medical Centre
Gage, Simon	Edinburgh International Science Festival
Gambardella, Luca Maria	University of Lugano
Gao, Robert	Case Western Reserve University
Giannotti, Fosca	University of Pisa
Giudici, Paolo Stefano	University of Pavia
Glowacki, Julianne	Harvard University
Gomes, Ana	Universidade Católica Portuguesa
Gori-Giorgi, Paola	Vrije Universiteit Amsterdam
Green, Rylie	Imperial College London
Greene, Casey	Perelman School of Medicine

Reviewer Name	Organisation
Groleau, Denis	University of Sherbrooke
Gu, Sai	University of Warwick
Guiot, Serge R.	University of Montreal
Gurr, Sarah	University of Exeter
Guy, Owen	Swansea University
Hadad, Christopher	Ohio State University
Hardingham, Giles	The University of Edinburgh
Harrison, Sandy	University of Reading
Hashsham, Syed	Michigan State University
Hassanizadeh, Majid	Utrecht University
Hatti-Kaul, Rajni	Lund University
Havinga, Paul	University of Twente
Hillman, Rachel	Film TV Charity
Hovakimyan, Naira	University of Illinois at Urbana-Champaign
Hunt, John	University of Liverpool
Illingworth, Sam	University of Western Australia
Irvine, John	St Andrews
Jacob, Jamey	Oklahoma State University
Jacobovitz, Gloria	Johns Hopkins University
Johansson, Asa	Uppsala University
Joyce, Johanna	University of Lausanne
Jukan, Admela	Technische Universität Braunschweig
Jusiak, Andrew	University of Iowa
Kamath, Chandrika	Lawrence Livermore National Laboratory
Kanyuka, Kostya	Rothamsted Research
Kauppinen, Tiina	University of Manitoba
Keep, Richard	University of Michigan
Keller, Andreas	Universität des Saarlandes
Kemp, Christopher	Fred Hutchinson Cancer Research Center
Kingon, Angus	Brown University
Klinkert, Annette	European Science Engagement Association
König, Sven	Institut fur Tierzucht und Haustiergenetik
Kurup, Smita	Rothamsted Research
Lanfumey, Laurence	INSERM
Lanz, Minna	Tampere University of Technology
Lee, Hoyun	University of Ottawa
Liou, Frank	Missouri University
Lipshitz, Howard	University of Toronto
Liu, Ling	Georgia Institute of Technology
Louw, Marti	Carnegie Mellon University
Lund, Mogens Sandø	Aarhus University
Lusher, Amy	Norwegian Institute for Water Research

Reviewer Name	Organisation
Mallucci, Giovanna	University of Cambridge
Mantovani, Alberto	Humanitas Clinical and Research Center
Maroto-Valer, Mercedes	Heriot-Watt University
McGroarty, Frank	University of Southampton
Millar, Kate	University of Nottingham
Moayyedi, Paul	Mc Master University
Moller, Charles	Aalborg University
Moore, Craig S	Memorial University of Newfoundland
Nallanathan, Arumugam	Queen Mary University of London
Obermayer, Klaus	Technische Universität Berlin
Olsson, Eva	Chalmers University
O'Neill, Alex John	University of Leeds
Palmer, Mitchell	United States Department of Agriculture
Palmer, Richard	Swansea University
Palmore, G. Tayhas R.	Brown University
Paolone, Mario	EPFL - Ecole Polytechnique Federale de Lausanne
Parak, Wolfgang	University of Hamburg
Paterlini, Sandra	University of Trento
Patterson, Andrew D.	The Pennsylvania State University
Patterson, Eann	University of Liverpool
Peacock, David	University of Bergen
Perucca, Emilio	University of Pavia
Pollmann, Frank	TU Munich
Quigley, David	University of Warwick
Ragaert, Kim	Ghent University
Rankin, Shelley C.	University of Pennsylvania
Rathje, Ellen	University of Texas at Austin
Reynolds, Chris	University of Reading
Rinaldi, Rosaria	University of Salento
Rogaeva, Ekaterina	University of Toronto
Romero, Ignacio	The Open University
Rorison, Judy	University of Bristol
Ryan, Anthony J	University of Sheffield
Sadanandom, Ari	Durham University
Samuolienė, Giedrė	Lithuanian Research Centre for Agriculture and Forestry
Sarro, Lina	Delft University of Technology
Schulze-Osthoff, Klaus	University of Tübingen
Shalaev, Evgenyi	Allergan Inc.
Sittig, Dean	University of Texas Health Science Center at Houston
Skeldon, Kenneth	Wellcome Genome Campus
Soreq, Hermona S.	The Hebrew University of Jerusalem
Sozzani, Silvano	University of Brescia

Reviewer Name	Organisation
Stein, Andreas	University of Minnesota
Steinkellner, Herta	University of Natural Resources and Applied Life Sciences Vienna
Stevens, Gary	Kinectrics
Strauss, Bradley	University of Toronto
Tagmatarchis, Nikos	National Hellenic Research Foundation
Taherzadeh, Mohammad J.	University of Borås
Tasker, Paul	Cardiff University
Teixeira, José António	University of Minho
Thomsen, Marianne	Aarhus University
Thornley, Patricia	Aston University
Tirkkonen, Olav	Aalto University
Toyserkani, Ehsan	University of Waterloo
Tozzini, Valentina	Consiglio Nazionale della Richerce
Trancik, Jessika	Massachusetts Institute of Technology
Udalova, Irina	University of Oxford
Ulm, Roman	University of Geneva
Uttamchandani, Deepak	University of Strathclyde
Vale, Zita	Polytechnic Institute of Porto
Valente, Enza Maria	University of Pavia
van de Weijer, Carlo J.T.	Eindhoven University of Technology
van der Meer, Yvonne	Maastricht University
van Eck, Miranda	Leiden University
van Iersel, Marc W.	University of Georgia
Van Rhijn, Ildiko	Harvard Medical School
van Schaik, Willem	University of Birmingham
van Wijk, Ad	Delft University of Technology
Vancso, Julius	University of Twente
Vedral, Vlatko	University of Oxford
Walczak, Henning	University College London
Walsh, Patrick	University of Pennsylvania
Walton, Krista	Georgia Tech
Wang, Lihui	KTH Sweden
Wolf, Tilman	University of Massachusetts Amherst
Wosinska, Lena	KTH - Royal Institute of Technology
Yang, Simon	University of Guelph
Zhang, Xiao-Ping	University of Birmingham
Zincir-Heywood, Nur	Dalhousie University Canada
Zuilhof, Han	Wageningen University

Science Foundation Ireland
sfi
For what's next

Science Foundation Ireland
Three Park Place
Upper Hatch Street
Dublin 2
Ireland

+353 1 607 3200
info@sfi.ie
www.sfi.ie
@scienceirel