Opportunities in Ireland

Dr Aoife Ryan

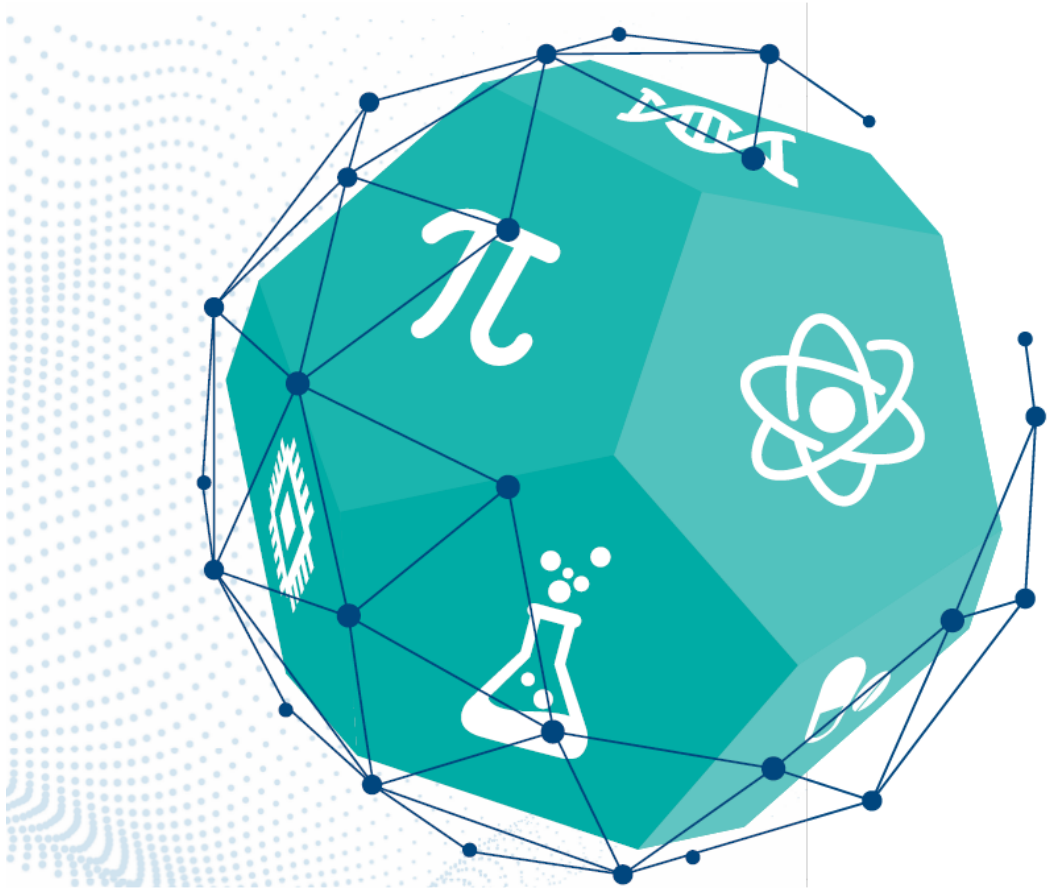
International Development Lead

Science Foundation Ireland

Science Foundation Ireland

Science Foundation Ireland (SFI) 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.

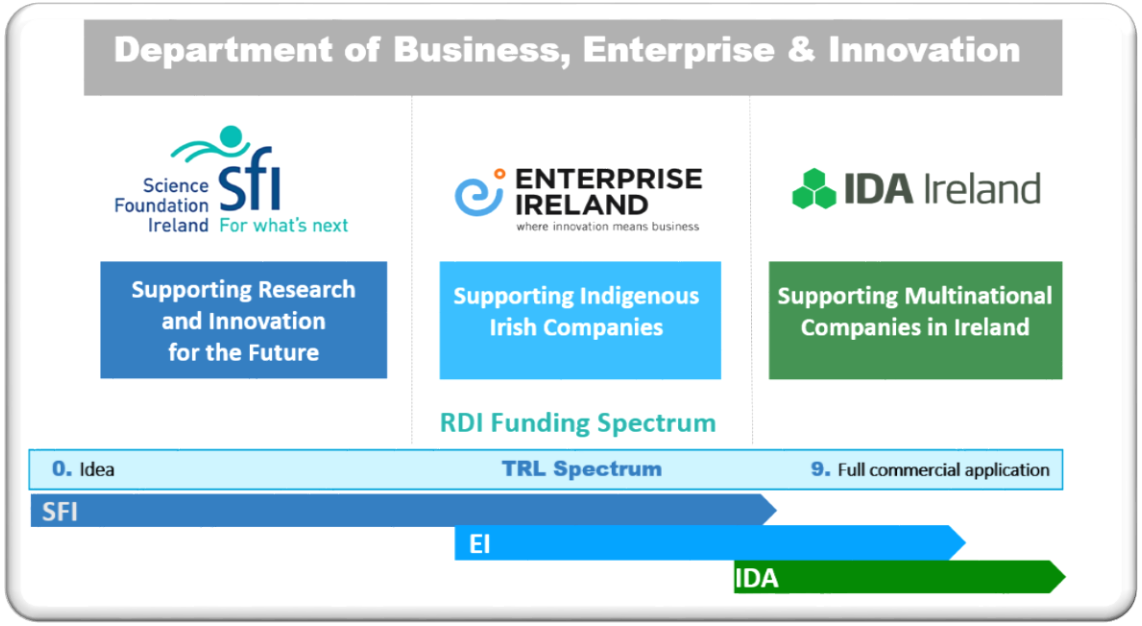
Science Foundation Ireland provides grants for researchers from around the world who wish to relocate to Ireland and those already based in Ireland, for outstanding investigators, for conferences and symposia, and for collaboration with industry.

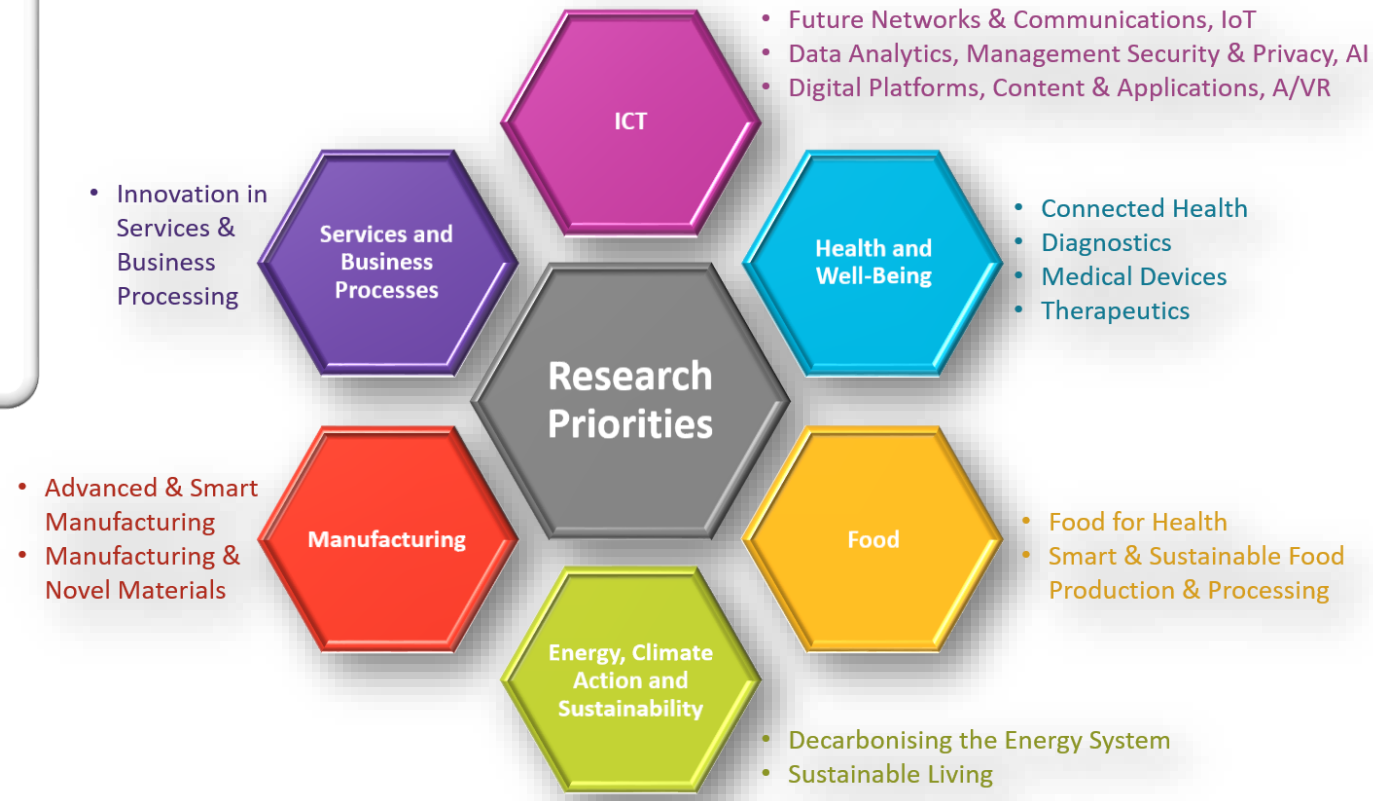


#BelieveInScience

@scienceirel

Science Foundation Ireland and Irish RDI Landscape





What Science Foundation Ireland delivers for its annual €200M budget

Research, development, innovation and a highly educated workforce will be key points of differentiation for Ireland and key drivers of our future economic success

A research engine of **4,924** people led by **450** leading scientists

16 world leading research centres spanning several HEIs and industry

750 Active Research Projects

Generating Annually

39,823 jobs in Ireland supported directly or indirectly

4,881 scientific publications

1,715 collaborations with industry (including 504 MNCs, 393 SMEs in all regions)

12 spin out companies formed

53 licensed technologies

51 patents

€230m in leveraged non-SFI funding

3,797 international collaborations in 72 countries

1,600 Smart Futures volunteers provided STEM careers advice to over 120,000 students

641 primary schools received Discover Primary Science and Maths Awards

250,000+ people reached in over **1,200** events during Science Week

Excellent Science

Ireland is 12th in global scientific ranking[1]

25 most highly cited researchers in the world funded by SFI

Ireland ranks[1]…

- **1st** – Immunology
- **2nd** - Agricultural Sciences
- **3rd** – Nanotechnology
- **5th** - Material Sciences

Ireland is[2]…

1st in the world for knowledge diffusion

5th for knowledge impact

6th for knowledge absorbtion

10th most innovative country

4,881 publications reported. SFI-funded publications are 2.66 times more likely to be star publications than the global average[3]

SFI Driving Competitiveness

Funding from Industry
up by 43% = **€46m**

1,715 industry collaborations

12 spin-out companies

51 patents awarded

174 invention disclosures

Value for Money

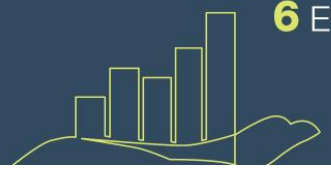
From €188 million, SFI investments leverage

Non-exchequer funding

€230 million (up by 31%)

€98 million won from the EU **(up by 40%)**

6 ERC awards won by SFI researchers



SFI Talent & Skills

SFI supports **39,823** jobs in Ireland (up by 28%)

4,924 people working on SFI-supported projects

1,610 Postgraduate students supported

Education and public engagement activities up by **20%**

Industry continues to be the single largest destination for team leavers **(26%)**

SFI Portfolio

SFI Research Professors

Attracting ‘star’ global research talent

- €5M research funding from SFI for 5 year
- University pays the salary – up to €250K pa
- In strategically-important research areas for Ireland

Chemistry (pharma/energy)
Prof. Mike Zaworotko
University of Limerick (UL)
Moved to Ireland from USA

Electrical Eng. / Internet of Things
Prof. Bogdan Staszewski
University College Dublin (UCD)
Moved to Ireland from the Netherlands

Medical devices / Clinical trials
Prof. William Wijns
National University of Ireland, Galway (NUIG)
Moved to Ireland from Belgium

Biophotonics / Med devices
Prof. Stefan Andersson-Engels
University College Cork (UCC)/ Tyndall
Moved to Ireland from Sweden

Manufacturing
Prof. Fengzhou Fang
University College Dublin (UCD)
Moved to Ireland from China

Digital Platforms and Content
Prof. Dr. Aljoša Smolić
Trinity College Dublin (TCD)
Moved to Ireland from Switzerland

Joint position – Ireland and UK
Quantum Materials / Quantum Technology
Prof. Séamus Davis
University College Cork (UCC)/ University of Oxford
Moved to Ireland from USA

Mining and Mineral Resources
Prof Murray Hitzman – iCRAG/UCD
Moved to Ireland from USA (Associate Director for Energy & Minerals, US Geological Survey)

Manufacturing
Prof. Paul Michael Weaver
University of Limerick (UL)
Moved to Ireland from the U.K.

Energy Technologies
Prof. Piet Lens
National University of Ireland, Galway (NUIG)
Moved to Ireland from the Netherlands

SFI Frontiers for the Future Programme

Aim: to support excellent independent researchers to conduct highly innovative, collaborative research with the potential to deliver impact, whilst also providing opportunities for high-risk, high-reward research projects.

- Two streams
  - **Frontiers for the Future Projects** will provide funding for high-risk, high-reward research that facilitates highly innovative and novel approaches to research.
  - **Frontiers for the Future Awards** will provide larger scale funding for innovative, collaborative and excellent research programmes that have the potential to deliver economic and societal impact.

Frontiers for the Future Programme		
	Projects	**Awards**
Amount	€200,000 - €480,000 (direct costs)	€500,000 - €1,000,000 (direct costs)
Duration	24, 36 or 48 months	48 or 60 months

The SFI Frontiers for the Future Programme replaces the SFI Investigators Programme and the SFI Career Development Award Programme

2019 call under review
Rolling call to open H1 2020

16 world-leading **SFI Research Centres** of scale and excellence

Collaboration with

+ Higher education institutions
+ Industry
+ National and international funders

16
World-Leading Research Centres

€700M
SFI Commitment

€465M
Industry Commitment

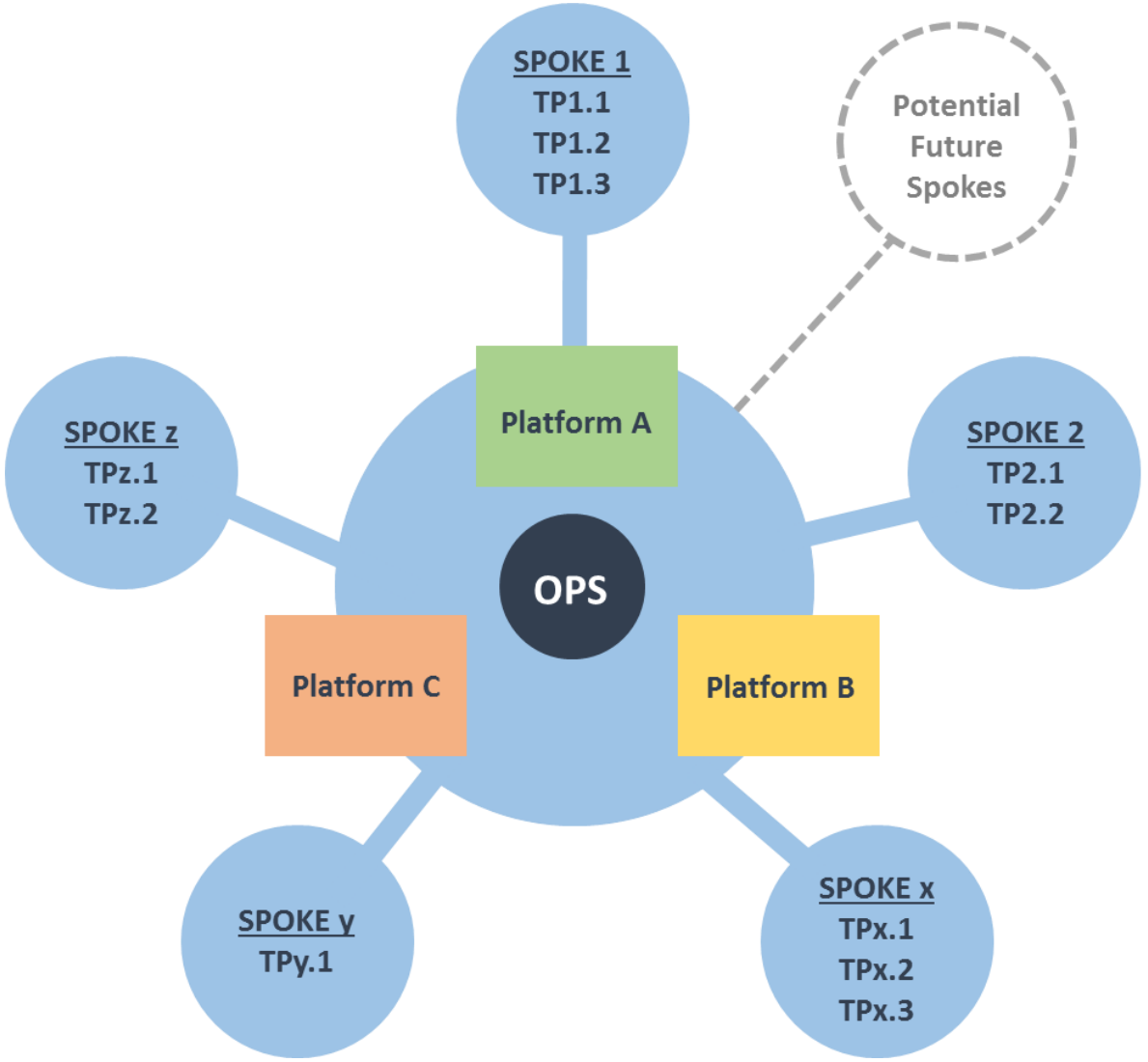
>€700M
EU Funding Target

15
Research Bodies

421
Companies

828
Collaborative Research Agreements

SFI Research Centre Structure - Hub & Spoke Model



SFI Industry Fellowships
Talent exchange

SFI Spokes Programme
New industry collaborative projects

SFI Industry Fellowships

- Movement of researchers between industry & academia
- Focus on *collaborative research*
- Must be a *research-active* company
- Maximum budget of €100,000 - SFI provides salary and travel support & the company supports research costs
- Up to 12 months full-time or 24 months part-time
- Work on company research project
- Can be a company anywhere in the world
- No restrictions at the end e.g. Company can hire the Fellow, Fellow can stay overseas, Fellow can return to university etc

SFI Industry Fellowship Group
https://www.linkedin.com/groups/8201626

SFI Spoke and Partnership awards with Industry

Examples

Science Foundation Ireland For what's next

Precision Oncology Ireland

Consortium of 5 Irish Universities, 6 Irish Cancer Research Charities, and 10 international companies aiming to develop new diagnostics and therapeutics for personalised cancer treatment

Value €12 million

ENABLE

Connecting communities to smart urban environments through the Internet of Things

water management, air pollution, transport congestion, data privacy and cyber security

2017 SFI Spoke award to the CONNECT SFI Centre

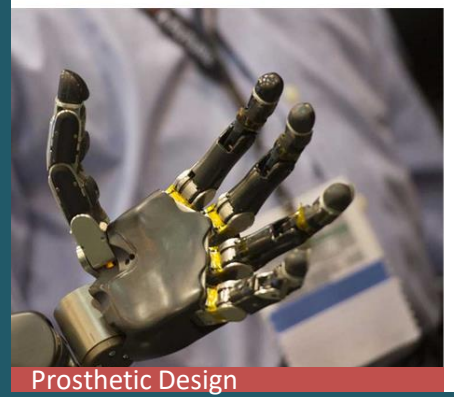
Partnership with Insight, Lero & over 25 companies including large multinationals such as **Intel** & **Huawei**, & SMEs such as Cork-based **Accuflow, Response Group, Oxymem,**

Value €14.5 million

SFI Challenge Funding - Future Innovator Prize

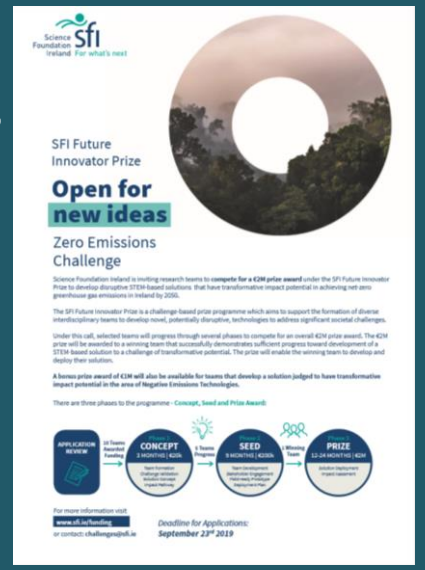
- SFI aims to incentivise the development of novel, potentially disruptive, technologies to societal challenges;
- To accelerate societal impact;
- Convergence of disciplines and mindsets;
- Interdisciplinary team formation, expansion, training & support;
- Focus on validation of the challenge and validation of proposed approach in phases;
- Flexibility to pivot; idea and approach;
- Tech & non-tech aspects of solution;
- Promote stakeholder / beneficiary engagement;
- Stage-Gate funding;

SFI FUTURE INNOVATOR PRIZE 2019 ARTIFICIAL INTELLIGENCE FOR SOCIETAL GOOD AND ZERO EMISSIONS CHALLENGES



€ 2M Artificial Intelligence (AI) for Societal Good Challenge

€3M Zero Emissions Challenge



SFI International Partnerships

Horizon 2020
Ireland secured to date
€861M, 15.3% success rate

ERC success €111 million, 59 awards

Horizon 2020
European Union Funding
for Research & Innovation

NSF

NIH
National Institutes of Health

NSFC
国家自然科学基金委员会
National Natural Science Foundation of China

US-Ireland R&D partnership programme
3 jurisdictions:
(USA), Republic of Ireland (RoI) & Northern Ireland (NI)

Single proposal, single review by NSF and NIH

EPSRC
Engineering and Physical Sciences Research Council

BBSRC
bioscience for the future

THE ROYAL SOCIETY

SFI-HRB-Wellcome
Research Partnership

SFI Centres for Research Training

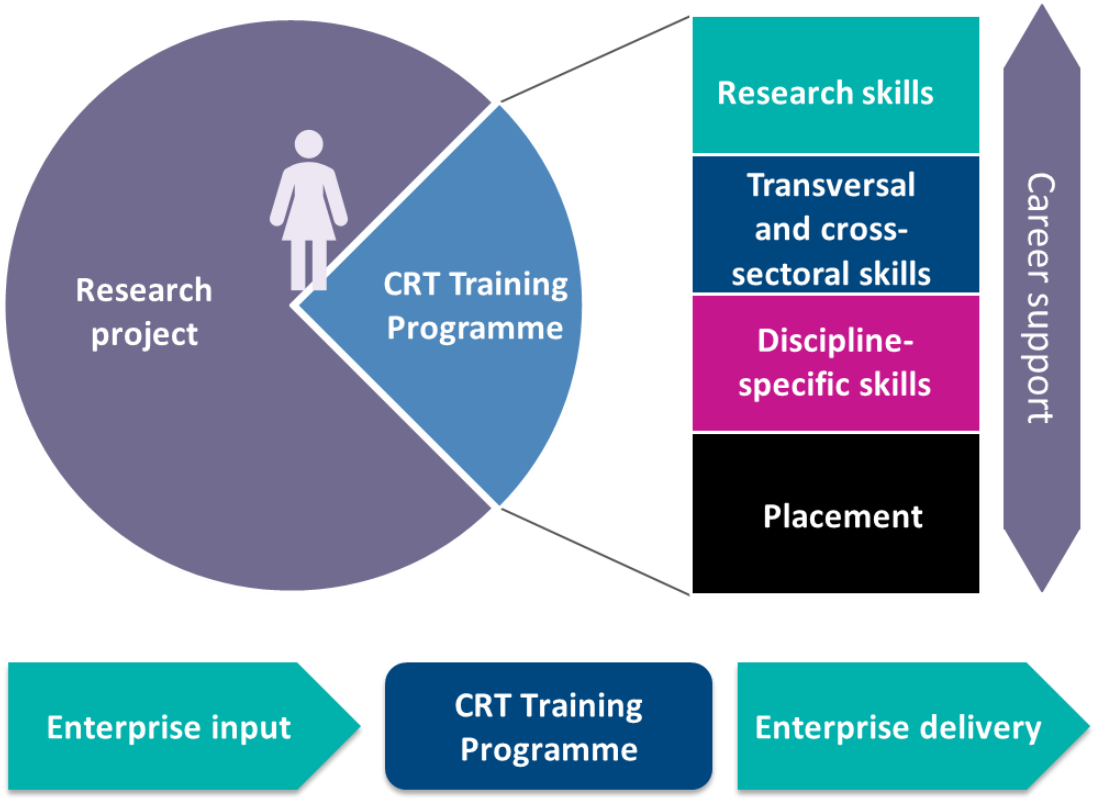
€100M SFI investment – support for approx. 700 postgraduate research students to create **talent pipeline for the research and innovation sector** in Ireland.

Build on research excellence to train **cohorts of future research leaders** with the skills and knowledge – Digital & ICT

Engagement with enterprise in design and delivery of training programmes

World-class training programmes will include enterprise-relevant discipline-specific and transversal skills

Student placements in enterprise, other non-academic establishments, or in groups of international collaborators.

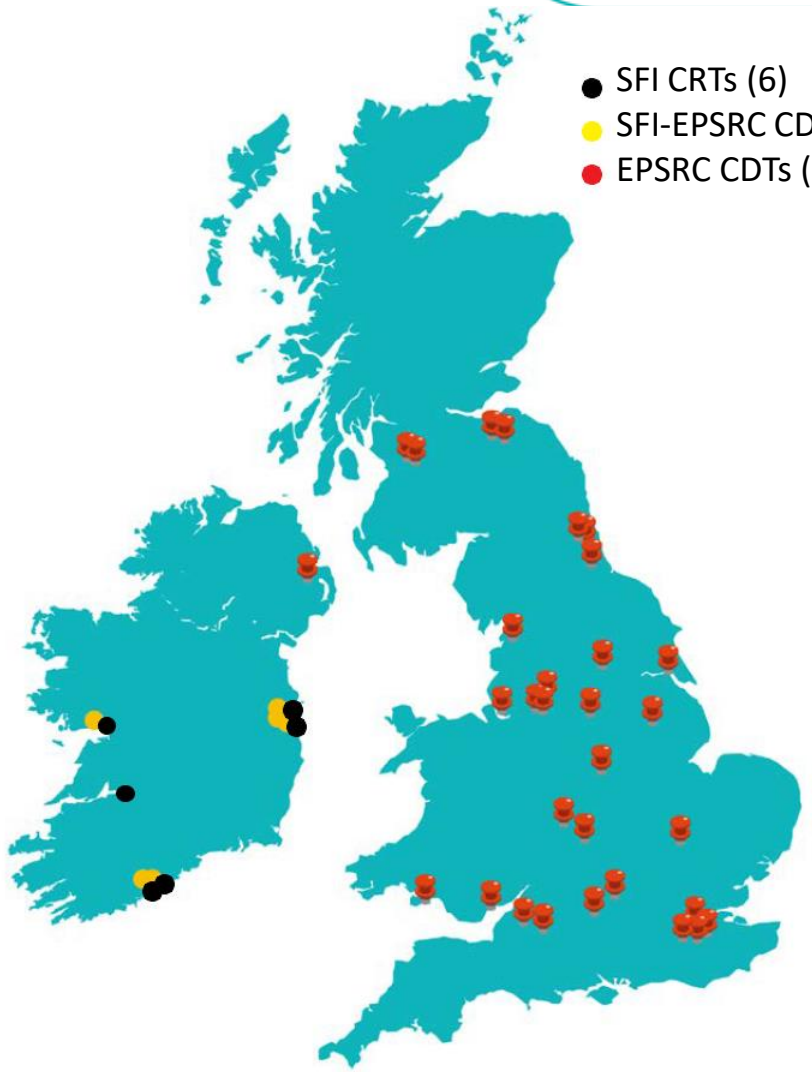


6 SFI Centres for Research Training in:

- **Machine Learning**
- **Foundations of Data Science**
- **Artificial Intelligence**
- **Digitally-Enhanced Reality**
- **Genomics Data Science**
- **Advanced Networks for Sustainable Societies**

Cohort model is a defining feature of the SFI CRTs & EPSRC-SFI CDTs

- World-class training
- Added value
- Student-focused
- Collaboration and Network
- Student representation
- Partnerships inform design and delivery of training



SFI Public Service Fellowship

SFI believes that there is a significant role for STEM in helping Government to address significant national and global challenges

2020 Host Organisations:

- The Oireachtas Library & Research Service
- Department of Public Expenditure and Reform
- Department of Business, Enterprise and Innovation
- Department of Justice and Equality
- Food Safety Authority of Ireland
- Office of the Revenue Commissioners
- Local Government Management Agency
- The Ireland Strategic Investment Fund
- National Treasury Management Agency

Fulbright Scholars

- US based academics are being invited to contact us if they are interested in spending **6-9 months in SFI in Dublin** and SFI will fund their stipend.
- The nature and detail of the scholarship would be tailored to suit interested parties.
- Scholars will be involved in the scoping and design of novel initiatives to direct research activity towards pressing societal and technical challenges and thus drive the delivery of significant impact
- Great opportunity for SFI to rotate in scientific expertise to enrich planning and scoping exercises, and to link with the academic community in Ireland.

https://awards.cies.org/content/future-scoping-and-challenge-based-funding

For more details contact:
Lisa Higgins l Head of Challenge Research
Science for Society Directorate
E-mail: lisa.higgins@sfi.ie

MSCA COFUND programmes offering fellowships in Ireland

COFUND	Managing Body	Research Areas	Website
SPARKLE Fellowship Programme	IPIC Centre, University College Cork	Photonics research spanning materials, devices, integration and systems.	elite-sparkle
ELITE-S Fellowship Programme	ADAPT Centre @ DCU	Regulation and Compliance; Content Analytics and Content Preservation; Data and Process Management Interoperability	elite-fellowship.eu
PROCESS: Engineering Solutions for the Process Industry	SSPC, PMTC & DPTC @University of Limerick	Hybrid Processing; Process Modelling, Control & PAT; Bulk Solids; Heat & Momentum Transfer; Mass Transfer Processes	process-cofund.eu
EDGE	Amber, ADAPT & Connect Centres @ Trinity College Dublin	ICT	edge-research.eu
MedTrain	Cúram Centre @ National University of Ireland Galway	Medical Devices	curamdevices.ie/curam/research/eu-projects/medtrain
Career-FIT	Enterprise Ireland	STEM	horizon2020.ie/career-fit
CAROLINE	Irish Research Council	All research areas	research.ie/funding/caroline
TLRH – Visiting Research Fellows	Trinity Long Room Hub	Arts & Humanities	tcd.ie/trinitylongroomhub/fellowships
APEX	APC Microbiome Ireland	Gut microbiota in human health and disease	apc.ucc.ie/apex
ALECS	LERO Centre @ University of Limerick	Software	alecs.lero.ie
Research Leaders 2025	Teagasc	Agricultural Research	teagasc.ie/rl2025
Career-FIT PLUS fellowship programme	Enterprise Ireland	STEM	https://www.horizon2020.ie/career-fit-plus/
Smart 4.0 Fellowship Programme	Confirm Centre, University of Limerick	Smart Manufacturing	http://smart.confirm.ie/

More information can be found at this link: https://www.iua.ie/irish-marie-curie-office/for-fellowships/

Thank you

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Science Foundation Ireland

For what's next

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