



ANNUAL PLAN 2018

1. SFI Mission and Remit

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

Science Foundation Ireland is mandated to fund research, predominantly within the areas set out in the recommendations of the *National Research Prioritisation (NRP) Steering Group report*¹, which was adopted as government policy in 2012. There are fourteen priority areas and six underpinning platform science and technology areas identified in the NRP report, and the vast majority of Science Foundation Ireland's research funding is directed towards these areas. However, it is acknowledged that research priorities can evolve with time, so in that context Science Foundation Ireland can also fund in previously-unidentified emergent areas of national strategic opportunity, long term industrial competitiveness or environmentally sustainable development. Science Foundation Ireland also has a mandate to fund research in broader areas, where the research is funded as a result of a partnership between Science Foundation Ireland and an international funding agency.

2. SFI Agenda 2020 Strategy

The Science Foundation Ireland strategy, *Agenda 2020*², describes Science Foundation Ireland's approach to funding research that delivers scientific excellence with the potential for impact in the Irish economy and society. The *Agenda 2020* refresh exercise, conducted in late 2017, demonstrated that Science Foundation Ireland has delivered strongly against the majority of its Key Performance Indicator (KPI) targets in the period 2012 to 2016. The refresh exercise also identified some areas where performance at a national level could be improved – most notably, the number of European Research Council (ERC) Advanced Grants won by Irish-based researchers in STEM, the number of early career researchers funded, the development and attraction to Ireland of international prize winners and potential winners, the gender balance of funded researchers, and the number and quality of IP outputs from publicly-funded research. Consequently, Science Foundation Ireland's strategic priorities in 2018 are aimed at maintaining the excellent work done to date in implementing

¹ <https://dbe.gov.ie/en/Publications/Research-Prioritisation-Steering-Group-Report.html>

² <http://www.sfi.ie/resources/Agenda-2020.pdf>

Agenda 2020, whilst addressing the identified gaps, and endeavouring to deliver against a range of Science Foundation Ireland targeted actions as prescribed in the national science and technology strategy *Innovation 2020*³.

Science Foundation Ireland will focus its funding activities **on six areas of strategic delivery in 2018**:

1. **The delivery of excellent relevant research with impact** – with a strong focus on increasing ERC award numbers, attracting international STEM research prize-winners and gender balance of funded researchers.
2. **Continued success and expansion of the SFI Research Centres** – with a focus on establishing the five new SFI Research Centres and completing the review process for the phase 2 funding of the first seven SFI Research Centres.
3. **STEM talent and skills** – with a focus on increasing postgraduate research student numbers and improving training in areas of economic priority.
4. **International partnerships** – with a strong focus on building on existing initiatives and developing new UK-related ones to address the Brexit challenge and maximise the opportunities as and when they arise.
5. **Industry partnership and increased entrepreneurship** – with a focus on developing research talent with a strong throughput to industry.
6. **Impactful public engagement and education** – with a strong focus on developing Ireland’s first challenge-based funding programme.

3. SFI Annual Plan 2018

The Science Foundation Ireland Annual Grants Plan in 2018 is aimed at delivering on these six strategic priority areas. The timelines for all programmatic calls are outlined in **Appendix 1** and the alignment of the planned Science Foundation Ireland programmatic calls with six strategic priorities is graphically depicted in **Appendix 2**.

1. Excellent Relevant Research, with Impact

Science Foundation Ireland will deliver a range of competitive funding programmes in 2018 that will support Ireland’s top principal investigators and catalyse the recruitment of excellent researchers from outside of Ireland. The programmes that will run in 2018 include:

³ <https://dbej.gov.ie/en/Publications/Innovation-2020.html>

- The **SFI Investigator Programme**– a call will run in 2018, with awards announced and budget spend planned for 2019. It is planned that this will be in partnership with and co-funded by a range of other Irish funding agencies.
- The **SFI Research Professorship Programme** – this will run as a rolling call and will be adapted to increase Advanced ERC awardee recruitment and to accommodate Joint UK-Ireland Professorial appointments (in line with the Brexit-related initiatives described in the ‘International’ section below).
- The **President of Ireland Future Research Leaders Programme** – the currently-open 2017 call will see awards made in 2018. A new call will initiate and run during 2018 and awards will be made with budget spend in 2019.
- The **ERC Support and Development Programmes** – these will continue to run as rolling call opportunities during 2018.

Science Foundation Ireland will also run a **Strategic Research Infrastructure** call in 2018, with the aim of improving the quality of research equipment in the Research Bodies. In the absence of other national sources of infrastructure funding, it is important that such funding is provided to ensure that Ireland’s research ecosystem remains at the cutting edge, a significant magnet for industry engagement, in the face of increased investment and competition internationally.

In addition, Science Foundation Ireland will strengthen its **gender strategy** implementation, which will involve a refreshed implementation plan and further enhancements made to Science Foundation Ireland programmes to drive increased numbers of female funded researchers during 2018.

2. SFI Research Centres

Science Foundation Ireland will continue to develop world-class, large scale SFI Research Centres, that are co-funded by industry, and where world leading applied and basic research is conducted in key areas of strength and significant strategic opportunity for Ireland. 2018 will be focused on:

- The establishment of the **five new Research Centres** – Beacon, Confirm, FutureNeuro, I-Form and a fifth in the area of Future Milk/Precision Agriculture, which will be co-funded by the Department of Agriculture, Food and Marine. Important year-1 activities will include: the setting of KPI targets for each of the SFI Research Centres; the initiation of the first wave of industry collaborative research agreements, and recruitment of postdoctoral and postgraduate research staff.

- The completion of the review process that will decide on phase 2 funding for the **seven 2012 SFI Research Centres** – Amber, APC, Infant, Insight, IPIC, MaREI and SSPC. The final decision on future funding is expected to happen in Q2 2018, with phase 2 funding scheduled to begin in H2 2019. In reaching their decision, SFI will need to consider the recommendation on each Centre made by the international expert panels, as well as the final recommendation and rank-order provided by the international oversight panel. The panel recommendations will inform SFI on whether each Centre is:
 - 1) performing excellently and should receive phase 2 funding,
 - 2) not performing and should not receive continued funding, or,
 - 3) is performing well, but not sufficiently well to merit immediate funding in phase 2.

Centres falling into the third group will be advanced to a follow-up SFI Research Centres call, which would likely run during 2019/2020. In this, they would be reviewed alongside other prospective Centre applications in an open competition. The SFI **Research Centres Spokes Programme** will continue to run as a rolling call throughout 2018. The Spokes Rolling Programme is an important mechanism that allows Centres to expand, to change direction and to bring in other SFI Research Centres and / or new PIs to work on collaborative research projects in 50:50 partnership with industry.

3. Talent & Skills

Science Foundation Ireland will support the development of Ireland’s early career STEM research skills with the aim of creating a pipeline of research talent for future successful careers, either in academia or in industry. The programmes that will run in 2018 are:

- The new **SFI Postgraduate Studentship Programme** – this initiative will roll out in three phases during 2018:
 1. A SFI **Research Centres-only supplementary funding** call will enable the existing SFI Research Centres to enhance their numbers of PhD and/or Research Masters students, as well as allowing them to (i) bring new PIs into the Centre, (ii) bring in new institutional partnerships – with particular focus on the Institutes of Technology, (iii) partner with industry – either in the funding of studentships or in the delivery of training, and (iv) engage with other countries (most notably the UK) in the co-supervision and training of students.
 2. The **SFI Centres for Research Training (CRT) programme**, a call for which will launch early in 2018, following a DBEI-led stakeholder consultation. It is envisaged that this

new programme, modelled on UK EPSRC Centres for Doctoral Training (CDTs), will deliver sustainable 4-year structured funding up to 10 CRTs, which will allow an initial intake of approximately 100 postgraduate students (PhDs and Research Masters) during 2019, followed by additional intakes in 2020, 2021, 2022 and 2023. The CRTs will be focused on strategic areas where there are currently national skills shortages and will deliver excellent training with industry involvement.

3. A **Joint PhD Scheme with the UK**, will be developed as part of a broader suite of UK-Ireland partnership initiatives outlined in the 'International' section below.

The initial phase of this scheme will be an extension of the current SFI-EPSRC Partnership (see below), which will provide an opportunity for Irish PhD students to be enrolled in the EPSRC CDTs as part of a new CDT call during 2018.

In the follow up phase, it is envisaged that an Ireland-UK Joint PhD scheme will deliver co-funded PhD cohorts in Ireland and UK, with students registered in their 'home' university and co-supervised by an Ireland and a UK-based supervisor, with a strong emphasis on excellent training and mobility between Ireland and the UK during their research. However, it is likely that funding would only become available for this in 2019.

- The SFI **Starting Investigator Research Grant (SIRG) Programme** – this key early-career funding call will launch in early Q1 2018, with awards announced during 2018.
- The SFI **Career Development Award (CDA) Programme** – this early-mid-career funding call will launch in late 2018, with awards announced during 2019.

4. International Partnerships

Science Foundation Ireland will continue to stimulate collaboration between Irish and international researchers by engaging in partnerships with international funding agencies in strategically important countries - in particular, the UK, US, Germany and China.

The partnership programmes relevant to the **UK** that will run in 2018 are:

- **New joint UK-Ireland activities** in response to Brexit – these include a Joint PhD scheme (as outlined above) and Joint UK-Ireland Professorial appointments, which will be operated through the SFI Research Professorship scheme.
- The **SFI-EPSRC co-funding partnership** – will run throughout 2018 as previously, and will be expanded to include an opportunity for Irish involvement in the EPSRC CDTs.

- The **SFI-HRB-Wellcome partnership** – Ireland-based applicants will continue to be able to apply to a wide range of Wellcome programmes in 2018, with co-funding from Science Foundation Ireland, Wellcome and HRB (where relevant).
- **The SFI-Royal Society partnership** – Ireland-based applicants will continue to be able to apply to the **University Research Fellowship** programme in 2018, with full funding from Science Foundation Ireland.
- The **SFI-BBSRC co-funding partnership** – will be reviewed during early 2018 and it is anticipated that it will be re-initiated later in the year, with awards being made in 2019.

The partnership programmes relevant to the **US** that will run in 2018 are:

- **US-Ireland** tri-jurisdictional schemes, involving Ireland, the US and Northern Ireland – these include US-Ireland Investigator calls with the National Science Foundation (NSF) and the National Institute for Health (NIH) and the US-Ireland Centre-to-centre calls with NSF.
- **SFI-NSF** bilateral schemes - these include the I-Corps@SFI scheme with NSF, the GROW scheme with NSF and the PIRE scheme with NSF.

The partnership with the **National Natural Science Foundation of China (NSFC)** will be developed further in 2018, with a stakeholder workshop to be run in Q2/Q3, co-led by the two agencies. This workshop, bringing together key Irish and Chinese researchers and other stakeholders, will feed into the themes and design of a future call, likely to be launched in 2019.

Science Foundation Ireland will continue to explore the opportunity of developing an **Ireland-Germany research partnership** that will provide for the co-funding of research projects between Irish centres and the Fraunhofer institutions. In its initial iteration, such a scheme would require at least €5M committed per year from each country, and as such will require additional government funding in 2019.

Lastly, Science Foundation Ireland will continue to support Irish researchers to lead and participate in major research consortia in Europe with the ultimate goal of winning funding in **Horizon 2020** and contributing to the national H2020 draw-down target. Science Foundation Ireland will accomplish this through a range of support programmes, which include:

- The **Brussels meetings** support scheme that allows research groups, aiming to influence large-scale calls, to hold large-scale workshops and meetings in Brussels.

- A **joint-transnational funding support scheme**, which commits co-funding for future JPI and ERA-NET calls. Science Foundation Ireland has currently committed to such calls in areas such as Advanced materials, Quantum technologies, Nanomedicine, Healthy Diet and Lifestyle, Neurology and the Marine economy.

5. **Industry and Entrepreneurship**

Science Foundation Ireland will continue to deliver funding programmes that facilitate Ireland's top researchers to develop strong mutually-beneficial co-funded partnerships with industry and other non-exchequer research players. The programmes that will drive this industry agenda in 2018 (other than the SFI Research Centres) will be:

- The **SFI Strategic Partnership Programme** – this will continue to run as a rolling call aimed at delivering 50:50 co-investment between SFI and the private sector – including industry, venture capital firms, philanthropy and charitable foundations – in areas where there is not a pre-existing SFI Research Centre.
- The **SFI-Pfizer Biotherapeutics Innovation Award Programme** – this jointly-reviewed co-funded scheme is projected to run in 2018, subject to final confirmation with Pfizer.
- The **SFI Industry Fellowship Programme** – this will run as two calls again in 2018, with application closing dates in Q2 and Q4. In parallel, Science Foundation Ireland plans to open a new arm to the Industry Fellowship Programme that will allow researchers to spend time working on collaborative projects in a venture capital funding environment.

Science Foundation Ireland will also run programmes in 2018 aimed at supporting the development of a stronger culture of entrepreneurship and capacity to commercialise research among the research community, with the ultimate aim of improving Ireland's IP outputs, exploitation and company creation numbers. The entrepreneurship-focused programmes running in 2018 will be:

- The **Technology Innovation Development Award (TIDA) Programme** – this programme is in partnership with Enterprise Ireland and will launch early in 2018, with funding decisions made in Q4 2018.
- The **I-Corps@SFI Programme** – a second call for applications to this programme will happen during 2018. The programme funds successful SFI researchers to attend world-class NSF I-Corps entrepreneurial training in the US.

6. Public Engagement and Education

Science Foundation Ireland will continue to strive to ensure that the Irish public is highly engaged in and informed about STEM and its potential to deliver for the Irish economy and society. Public engagement-focused programmes running in 2018 include:

- The **SFI Discover Programme** – this programme, which funds innovative STEM-focused education and public engagement initiatives in the community, is scheduled to launch in Q1 2018 and read out at the end of the year.
- The **SFI St. Patrick's Day Science Medal** – this programme recognises excellence and lifetime achievement from Irish-born scientists and industry leaders in the US and is an excellent platform for communications and public engagement during the St Patrick's Day festivities.

As part of a new initiative, Science Foundation Ireland will conduct the initial design work, during 2018, on Ireland's first **challenge-based funding programme**. It is likely that this programme will be developed utilising the model proposed by AmCham in their recently-published paper⁴ and, as such, will actively involve industry and will require significant industry co-funding. Following the development of the challenge-based funding model and proposal(s) in early 2018, Science Foundation Ireland will seek the additional government funding needed to implement the challenge-based funding programme in 2019.

⁴ <http://www.amcham.ie/News/News-Room/Publications/Establishing-a-Grand-Innovation-Challenge-Process.aspx?ext=.pdf>

Appendix 1 – Overview of 2018 Planned Programmes Timelines

The 2018 Science Foundation Ireland programmes fall into four categories as outlined in the tables below:

- Programmes launched during 2017, where a funding decision will be made in 2018
- Fixed Deadline Calls open in 2018
- Rolling Calls open during 2018
- International Partnerships open in 2018

All launch dates provided in these tables are indicative and are subject to change, e.g. in response to alterations in Science Foundation Ireland’s annual grants budget, staffing resources, other new schemes Science Foundation Ireland may develop and government policy / priorities.

Table 1. Programmes launched during 2017; funding decision to be made in 2018

| Acronym | Programme | Call Deadline | Decision Timeframe |
|-------------------------------------------------|--------------------------------------------------------|-----------------|--------------------|
| RC | SFI Research Centres - Phase 2 funding of 2012 Centres | June 2017 | Q2 2018 |
| FRL | SFI President of Ireland Future Research Leaders Award | September 2017* | April 2018 |
| IF | SFI Industry Fellowship (Round 2) | November 2017 | February 2018 |
| RC PhD | SFI Research Centres PhD Supplement | December 2017 | February 2018 |
| SPD | SFI St. Patrick’s Day Science Medal | Q3 2017 | Q1 2018 |
| <i>* where Full Proposal deadline indicated</i> | | | |

Table 2. Fixed Deadline Calls Open in 2018

| Acronym | Programme | Call Launch | Call Deadline | Award Decision Timeframe |
|---------|--------------------------------------------------------|-------------|---------------|--------------------------|
| SIRG | SFI Starting Investigator Research Grant Programme | Q1 2018 | Q2 2018 | Q4 2018 |
| FRL | SFI President of Ireland Future Research Leaders Award | Q1 2018 | Q3 2018 | Q2 2019 |

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|-----------------|---------------------------------------------------|---------|---------|---------|
| IF | SFI Industry Fellowship (two rounds) | Q1 2018 | Q2 2018 | Q4 2018 |
| | | | Q4 2018 | Q2 2019 |
| TIDA | SFI / EI Technology Innovation Development Award | Q1 2018 | Q2 2018 | Q4 2018 |
| RI | SFI Research Infrastructure | Q1 2018 | Q2 2018 | Q4 2018 |
| PhD | SFI PhD Programme – Centres for Research Training | Q1 2018 | Q3 2018 | Q4 2018 |
| BIAP | SFI-Pfizer BIAP | Q1 2018 | Q2 2018 | Q4 2018 |
| SPD | SFI St. Patrick’s Day Science Medal | Q2 2018 | Q3 2018 | Q1 2019 |
| Discover | SFI Discover Programme | Q2 2018 | Q2 2018 | Q4 2018 |
| IvP | SFI Investigators Programme | Q4 2018 | Q1 2019 | Q4 2019 |
| CDA | SFI Career Development Award | Q4 2018 | Q1 2019 | Q4 2019 |

Table 3. Rolling Calls Open during 2018

| Acronym | Programme |
|--------------------|--------------------------------------|
| Res Prof | SFI Research Professorship Programme |
| Spokes | SFI Research Centres – Spokes |
| SPP | SFI Strategic Partnerships Programme |
| ERCD | SFI ERC Development Programme |
| ERCS | SFI ERC Support Programme |
| C&W | SFI Conferences and Workshops |
| Discover | SFI Discover Opportunistic |
| SFI Fellows | SFI Fellowship Programme |

Table 4. International Partnerships Open in 2018

| Acronym | Programme | Lead Agency | Call Deadline | Award Decision Timeframe |
|---------------|--------------------------------------|-------------|---------------------|--------------------------|
| US Irl | US-Ireland R&D Partnership Programme | NSF / NIH | NSF & NIH deadlines | NSF & NIH timeframes |

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|------------------|----------------------------------------------------------|---------------|--------------------|---------------------|
| Wellcome | SFI-HRB-Wellcome Biomedical Research Partnership | Wellcome | Wellcome deadlines | Wellcome timeframes |
| URF | SFI Royal Society University Research fellowship | Royal Society | RS deadline | RS timeframes |
| GROW | SFI-NSF Graduate Research Opportunities Worldwide (GROW) | NSF | NSF deadline | NSF timeframes |
| ERANETS | Various | Various | Various | Various |
| JPIs | Various | Various | Various | Various |
| EPSRC-SFI | EPSRC-SFI Partnership | EPSRC | Various | Various |
| EPSRC CDT | EPSRC-SFI CDT Partnership | EPSRC | Q1 2018 | Q1 2019 |
| I-CORPs | SFI/NSF iCorps@SFI Entrepreneurial Training Programme | NSF | NSF deadline | NSF timeframes |

SFI Strategic Deliverables How Programmes link to the SFI Strategy

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| <p>Excellent relevant research, with impact</p> <ul style="list-style-type: none"> Investigator Programme (IvP) Research Professorships Future Research Leaders ERC support & development Research infrastructure | <p>Talent & Skills</p> <ul style="list-style-type: none"> PhD Studentships Career Development Award (CDA) Starting Investigators Research Grant (SIRG) SFI Fellowships | <p>Industry & Entrepreneurship</p> <ul style="list-style-type: none"> Strategic Partnerships Pfizer Partnership Technology Innovation Development Award (TIDA) Industry Fellowships NSF ICORPS |
| <p>Research Centres</p> <ul style="list-style-type: none"> Research Centres Programme Research Centre Spokes | <p>International & National</p> <p><u>Europe</u></p> <ul style="list-style-type: none"> H2020: JTI, ERANets. etc <p><u>US</u></p> <ul style="list-style-type: none"> US-Ireland partnership (NSF & NIH) NSF partnership –GROW, PIRE, ICORPS <p><u>UK</u></p> <ul style="list-style-type: none"> Wellcome Trust partnership Royal Society partnership BBSRC partnership EPSRC partnership <p><u>China</u></p> <ul style="list-style-type: none"> NSFC partnership | <p>Public engagement & education</p> <ul style="list-style-type: none"> Discover programme SFI St. Patrick's Day Science Medal Challenge-based funding (<i>in development</i>) Conferences & Workshops |

