# Consultation on Proposed Centres for Research Training (CRT)

The purpose of this consultation is to seek your views on a new programme of **Centres for Research Training (CRT)** which it is proposed Science Foundation Ireland will launch in 2018.

The background to this initiative is set out in this consultation paper with an opportunity to provide your views on key questions such as the priority sectors/disciplines where additional PhD and Research Masters graduates are needed, the type of skills/training most needed by employers, the balance between PhD and Research Masters and lessons from experience nationally and internationally in operating programmes such as the one proposed.

The document provides space for your responses to the questions set out.

Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Organisation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Please indicate if this submission is made in personal capacity or on behalf of your institution, organisation or group.

Name of institution, organisation or group covered by this submission:

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Respondents are requested to make their submissions by e-mail to crtconsult@dbei.gov.ie

**The closing date for submissions is Friday 20 April 2018.**

For telephone queries please contact Michael Clifford at **+353 1 631 2195.**

# Background

**Innovation 2020[[1]](#footnote-1)** is Ireland’s five-year strategy on research and development, science and technology. This strategy sets out the roadmap for continuing progress towards the goal of making Ireland a Global Innovation Leader, driving a strong sustainable economy and a better society, underpinned by excellent research in strategically important areas for the economy and society. Alongside support for continued investment in excellent research, Innovation 2020 outlines a commitment to the development of a talented and skilled workforce and researcher base that can respond to emerging industrial and societal needs.

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| **VISION**Ireland – a Global Innovation Leader driving a strong sustainable economy and a better society underpinned by:* **Excellent research** in strategically important areas that has relevance and impact for the economy and society
* A **strong innovative and internationally competitive enterprise base**, growing employment, sales and exports
* A renowned **pool of talent** both in Ireland’s public research system and in industry that maximises exchange of talent and knowledge
* A **coherent joined-up innovation ecosystem**, responsive to emerging opportunities, delivering enhanced impact through the creation and application of knowledge
* An **internationally competitive research system** that acts as a magnet and catalyst for talent and industry
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In Innovation 2020 there is a clear commitment to increasing research postgraduate enrolments to address employer needs and there is a recognition for the need to provide **career support** for postdoctoral and early-career researchers in the form of **mentorship, internships** and **placements** facilitated by the mobility of researchers between industry and academia. The strategy also highlights the needs for continued and enhanced focus on the provision of **training** in areas including **innovation** and **entrepreneurship related skills.** Innovation 2020 also sets the goal that **internationally-recognised standards** must apply to postgraduate research education and training as outlined in the **National Framework for Doctoral Education** and other related policy statements and reports.[[2]](#footnote-2)

# The Initiative

As a key stakeholder in the delivery of this strategy, and as set out in the National Development Plan Project Ireland 2040[[3]](#footnote-3), **Science Foundation Ireland (SFI)** has been allocated Government funding for a new research training programme. The **SFI Centres for Research Training programme** call will launch in 2018, building on research excellence to deliver world-class, postgraduate research and training programmes with a focus on employability, professionalism, and sectoral and international mobility. SFI Centres for Research Training will provide sustainable programmes of research and training for cohorts of research Masters and PhD students commencing in 2019, with new cohorts of students enrolling in subsequent years for a total of up to six student intakes. The cohort-based programme will deliver a world-class, student-focussed postgraduate experience which will contribute to the goal of positioning Ireland as a leader in postgraduate researcher training and education.

To achieve relevant actions set out in Innovation 2020, the primary objectives of SFI Centres for Research Training will be to:

* Develop highly trained research talent in strategically important areas
* Deliver world-class training programmes that adhere to national and international best practice
* Provide postgraduates with a professional skillset to adapt to evolving workplaces
* Engage closely with enterprise in the development and delivery of training programmes
* Ensure mobility of postgraduates between academia and industry
* Facilitate international mobility of postgraduates in research and training
* Promote best practices in postgraduate education, supervision, and governance
* Provide career development support to postgraduate students
* Encourage gender balance for both students and supervisors

# What is this consultation about?

In the design and development of this upcoming opportunity, the Department of Business, Enterprise and Innovation (DBEI) is seeking input from a wide spectrum of stakeholders. More specifically, areas under consideration include **the thematic areas of greatest priority**, the **nature of the skills training needed**, the **mechanism, mode and delivery of training**, the relative demand for **research Masters versus PhD** **graduates,** and the emphasis on **experiential research or industry placements** and the **mobility** between academia and industry, and internationally. The SFI Centres for Research Training will focus only on **research** Masters and PhD level qualifications. Although the importance of taught Masters courses is acknowledged in the context of addressing sectoral skills needs, this programme emphasises the complementary skillset acquired through independent research, in addition to that provided by taught elements and training within the programme. Within this consultation, selected national and international reports, as well as strategy and policy documents are referred to. It is acknowledged that this is a non-exhaustive list of those reports relevant to sectoral, skills and training needs, and input is welcomed beyond those cited.

# Who are we consulting?

**This is an open consultation for all interested parties**. Key stakeholders will include representatives from enterprise sector groups, relevant Government Departments and Agencies (including the HEA, DES), representatives from Higher Education Institutes and Research Performing Organisations including Deans of Research and Deans of Graduate studies, the Irish Universities Association (IUA) and the Technological Higher Education Association (THEA).

# Information on Consultation Process

**1. Submissions**

**Please note that the contributions provided will be published on our website and shared with relevant Government Departments and State organisations.**

Respondents are requested to make their submissions by e-mail to crtconsult@dbei.gov.ie

**The closing date for submissions is Friday 20 April 2018.**

For telephone queries please phone Michael Clifford at **+353 1 631 2195**

**2. Confidentiality of Submissions:**

Contributors are requested to note that it is the Department’s policy to treat all submissions received as being in the public domain unless confidentiality is specifically requested. Respondents are, therefore, requested to clearly identify material they consider to be confidential and to place same in a separate annex to their response, labelled “confidential”. Where responses are submitted by email, and those emails include automatically generated notices stating that the content of same should be treated as confidential, contributors should clarify in the body of their emails as to whether their comments are to be treated as confidential.

**3. Relevant provisions of Freedom of Information Act 2014**

Respondents’ attention is drawn to the fact that information provided to the Department may be disclosed in response to a request under the Freedom of Information Act. Therefore, should you consider that any information you provide is commercially sensitive, please identify same, and specify the reason for its sensitivity. The Department will consult with any potentially affected respondent regarding information identified as sensitive before deciding on any Freedom of Information request.

# Key Issues on which Feedback is Requested

# Sectoral Needs

A central objective of SFI Centres for Research Training will be to develop highly trained research talent in strategically important areas. Central to this will be the Government’s policy of Research Prioritisation and, in particular, the revised list of Research Priority Areas for the period 2018 to 2023 that has recently been published by Government[[4]](#footnote-4). Research priority areas include areas of significant economic opportunity in which Ireland already has research strengths or can realistically develop such strengths.

The 2018 – 2023 Research Priority Themes and Areas are:

Theme: ICT

* Future Networks and Communications
* Data Analytics, Management, Security, Privacy, Robotics and Artificial Intelligence (including Machine Learning)
* Digital Platforms, Content and Applications, and Augmented Reality and Virtual Reality.

Theme: Health and Wellbeing

* Connected Health and Independent Living
* Medical Devices
* Diagnostics
* Therapeutics

Theme: Food

* Food for Health
* Smart and Sustainable Food Production and Processing

Theme: Energy, Climate Action and Sustainability

* Decarbonising the Energy System
* Sustainable Living

Theme: Manufacturing and Materials

* Advanced and Smart Manufacturing
* Manufacturing and Novel Materials

Theme: Services and Business Processes

* Innovation in Services and Business Processes

The Research Priority Areas are underpinned by Platform Science and Technology areas which include the areas of Basic Biomedical Science, Nanotechnology, Advanced Materials, Microelectronics, Photonics and Software Engineering.

In the selection of strategically important areas, consideration should also be given to other national policies and reports. **Ireland’s National Enterprise Policy, Enterprise 2025[[5]](#footnote-5)** has identified sectors in which Ireland currently has strengths and potential for growth, such as ICT, life sciences manufacturing, agri-food, internationally traded services, international financial services and engineering/industrial products. The need for science and engineering graduates in these broad areas is also detailed in the **National Skills Bulletin 2017[[6]](#footnote-6)**. Enterprise 2025 goes on to highlight opportunities in areas of untapped potential such as in creative industries, green technologies, environmental services, marine and maritime, education services, and healthcare services, as well as new opportunities such as agritech, smart agriculture, advanced manufacturing, aquaculture, big data, born globals, composites and advanced materials, e-health, e-tailing, fintech, geosciences, internet of things, sharing economy, smart aging and space. These areas could also be considered in the development of the SFI Centres for Research Training call.

**Note regarding responses:**

**Respondents are encouraged to keep their responses within the box accompanying each question. If you wish to supply any other information, please send additional material by email.**

# Your comments are requested

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| **Considering the reports mentioned above, which identify sectors of current and future labour needs, can you comment on the specific needs in these and other sectors of strategic importance?** |

# Your comments are requested

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| **The proposed SFI Centres for Research Training (CRT) programme will fund research postgraduates at NFQ 9 and NFQ 10 levels: can you comment on the demand specifically for Research Masters versus for PhD graduates in specific sectors?** |

# Skills and Training

The labour market is evolving more quickly than ever, particularly with the advent of disruptive technologies such as Artificial Intelligence, machine learning and the Internet of Things. In response to this evolution, the specific occupations, skills and qualifications that are required also continue to change over time. Interdisciplinary approaches, including between “STEM” and “Non-STEM” subject areas, will be important in building research teams both in the public and private sectors.

The first postgraduates from the SFI Centres for Research Training will enter the workforce in 2021 for those undertaking Masters and in 2023 for those taking PhDs, so the skills they acquire must not only be relevant now but to the working environment they enter in the future. The increasingly interdisciplinary nature of the world of work is also resulting in overlap in the skills required across different sectors and occupations. The importance of **cross-sectoral skills** has been reported, with demand for ICT skills including big data, data analytics, skills for international trade and engineering skills[[7]](#footnote-7). The growing importance of **transversal skills** is also recognised examples of which include entrepreneurship, interpersonal skills; creative and innovation skills; practical skills; creativity, design and innovation; critical, analytical thinking skills; people skills; and management skills. In recognition of the importance of these different facets of skills needs, the Expert Group on Future Skills Needs (EGFSN) has included in their 2017/18 work programme[[8]](#footnote-8) studies into the provision for training in Design skills, skills needed for the Digital Economy, as well as cross-sectoral skills that may be needed for the potential implications of Brexit.

SFI Centres for Research Training aim to provide postgraduates with a professional skillset to adapt to evolving workplaces and to ensure mobility of postgraduates between academia and industry.

The National Framework for Doctoral Education endorses the following skills and attributes, as articulated in the IUA PhD Graduates’ Skills statement, as key educational objectives for all graduates of Irish doctoral programmes:

* research skills and awareness;
* ethics and social understanding;
* communication skills;
* personal effectiveness/development;
* team-working and leadership;
* career management;
* entrepreneurship and innovation.

# Your comments are requested

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| **Recognising the importance of training in (i) transversal, (ii) cross-sectoral and (iii) discipline-specific skills, what essential skills in each of these categories should a postgraduate acquire to prepare them for current and future workplaces? Are there other skills and attributes (in addition to those in the National Framework) that need to be reflected in the new SFI programme?** |

The **National Skills Strategy 2025[[9]](#footnote-9)** identifies the need for training and education providers to focus on forming close relationships with enterprise for the development of relevant skills opportunities. The need for increased collaboration between **enterprise and academia** has also been identified in the Government’s **Action Plan for Jobs.** [[10]](#footnote-10)

The **Higher Education System Performance Framework** sets relevant objectives including maintaining Irish leadership in Europe for skills availability by providing a talent pipeline combining knowledge, skills and employability that respond to the needs of enterprise, public service and community sectors. The need for close enterprise partnerships is further emphasised in their objective to become an Innovation Leader in Europe through excellent research, development and innovation that has relevance and delivers economic and societal impact.

It is envisaged that the SFI Centres for Research Training will engage with enterprise from their conception and throughout their lifetime to ensure that training programmes are designed to meet current skills need, are delivered in the most effective way and are adapted to respond to changing economic conditions.

# Your comments are requested

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| **In which areas of training could a closer collaboration between academia, enterprise or other organisations lead to more impactful training for postgraduates, and what form might this collaboration take (e.g., design, delivery, etc.)? If you have had experience of these types of collaborations, please include examples in your response.** |

# Mobility

Through a close relationship with enterprise, SFI Centres for Research Training will facilitate the sectoral mobility of research postgraduates with the goal of enhancing employability. As well as the definition, design and delivery of skills training, these relationships provide opportunities for wider experiential learning and networking beyond the student’s core research project, such as through work and research placements[[11]](#footnote-11), which are expected to be a feature of the research and training programmes in SFI Centres for Research Training. International mobility will also be encouraged through such placements with international academic and enterprise partners.

# Your comments are requested

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| **Facilitating mobility between academia and other sectors will improve the employability of researchers. In your opinion, what skills or wider experiential training opportunities would increase the mobility of postgraduates and prepare them for a variety of career paths? Have you had experience of work/research placements, and if so, can you comment on both barriers to and positive outcomes of successful placements?** |

# Learning from Experience

SFI Centres for Research Training Programme will represent a significant investment and will be expected to demonstrate strong impacts consistent with the National Framework for Doctoral Education. The impacts will derive from the proposed cohort structure and focussed objectives of the programme to deliver highly trained research postgraduates in strategically important areas of particular interest to enterprise, as described above.

# Your comments are requested

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| **Structured PhD programmes are well established nationally: Please share your experience of coordinating or being involved in one of these programmes, highlighting elements that you consider have worked well, but also any relevant challenges you may have encountered.**  |

# Your comments are requested

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| **Considering the objective of this programme to deliver highly trained research postgraduates with a focus on positive student experience, employability and mobility, can you share experience or knowledge of national or international examples that you would consider exemplars of this type of programme?** |

# Any other Remarks

# Your comments are requested

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| **Please provide below any other comments you wish to make on this proposal.** |

1. <https://dbei.gov.ie/en/Publications/Publication-files/Innovation-2020.pdf> [↑](#footnote-ref-1)
2. The National Framework for Doctoral Education (<http://hea.ie/assets/uploads/2017/04/national_framework_for_doctoral_education_0.pdf>), IUA PhD Graduate Skills Statement (<http://www.iua.ie/publication/view/iua-graduate-skills-statement-brochure-2015/>) and Quality and Qualifications Ireland’s Quality Assurance Guidelines for Providers of Research Degree Programmes (<https://www.qqi.ie/Publications/Publications/Research%20Degree%20Programmes%20QA%20Guidelines.pdf>) provide doctoral education standards, expected training outcomes and quality standards for all aspects of Research Degree provision. The above are also consistent with international best practice guidelines. [↑](#footnote-ref-2)
3. http://www.gov.ie/en/project-ireland-2040/ [↑](#footnote-ref-3)
4. <https://dbei.gov.ie/en/Publications/Research-Priority-Areas-2018-to-2023.html> [↑](#footnote-ref-4)
5. https://dbei.gov.ie/en/Publications/Publication-files/Enterprise-2025-Renewed.pdf [↑](#footnote-ref-5)
6. <http://www.solas.ie/SolasPdfLibrary/NSB.pdf> [↑](#footnote-ref-6)
7. For example, IBEC Entrepreneurial Education

[https://www.ibec.ie/IBEC/DFB.nsf/vPages/Education\_and\_training~Policy\_positions~entrepreneurial-education-20-08-2015/$file/Entrepreneurial%20Education.pdf](https://www.ibec.ie/IBEC/DFB.nsf/vPages/Education_and_training~Policy_positions~entrepreneurial-education-20-08-2015/%24file/Entrepreneurial%20Education.pdf); DBEI Policy Framework for Design in Enterprise in Ireland <https://dbei.gov.ie/en/Publications/Publication-files/Policy-Framework-Design-in-Enterprise-in-Ireland.pdf> [↑](#footnote-ref-7)
8. <http://www.skillsireland.ie/Publications/2017/Annual%20Activity%20Statement%202016.pdf> [↑](#footnote-ref-8)
9. <https://www.education.ie/en/Schools-Colleges/Services/National-Skills-Strategy/> [↑](#footnote-ref-9)
10. <https://dbei.gov.ie/en/Publications/Action-Plan-for-Jobs-2018.html> [↑](#footnote-ref-10)
11. Under the Higher Education System Performance Framework 2018 to 2020, there is a target that all students would have the opportunity to undertake a work placement or work-based project as part of their programme of study by 2025. [↑](#footnote-ref-11)