

Joint Committee on Enterprise, Trade and Employment

Discussion on the Future of the National Training Fund and Creating our Future

3 May 2023

Thank you Chair and Members of the Committee. It is my pleasure to be here today.

Science Foundation Ireland (SFI) is the largest funder of competitive research in Ireland. We fund research that makes a real difference to our society and economy, now and into the future.

Understanding the skills needs of our economy and society and responding accordingly in a balanced manner and at all levels of training is essential. The need to grow and nurture our skills base so that we may respond to economic and societal challenges is a priority area for SFI and I look forward to discussing SFI's efforts and priorities in relation to training – particularly at doctoral level.

We warmly welcome the opportunity to come before the Committee to share information with you on our experiences of a critical piece of work which the agency carried out, on behalf of the Government of Ireland – *Creating Our Future*.

Creating Our Future is an award-winning public engagement campaign led by Simon Harris, Minister for Further and Higher Education, Research, Innovation and Science which was operationalised by SFI in partnership with the Department.

It was introduced to understand where the public felt research could play a part in addressing the challenges and opportunities the people of Ireland experience in their lives. It created a conversation with the public on the role that research plays in addressing those challenges and harnessing any opportunities.

The question “tell me what researchers in Ireland should explore to create a better future” was put to the people.

What set this initiative apart from other campaigns was our commitment to ensuring that we reached all corners of society. We gathered a large network of partners together to work with us to help us reach that goal. Whenever possible, we removed barriers to participation by always considering the needs of the population at large.

Over 18,000 submissions were received from the public. They were analysed and synthesised into 16 thematic areas. We were truly overwhelmed by the positive response from the public. We had set a target of 10,000 submissions based on the experiences of colleagues in other countries.

The people of Ireland have yet again, clearly demonstrated that they want their voice to be heard and that they have the confidence in the promise and potential of research to transform lives and create a sustainable and just future where all – regardless of their background – can thrive.

One of Ireland's most competitive differentiators on the world stage is our talent and creativity. In 2022 there were a total of 8,766 people working on teams of SFI award holders. Just under 60% of that group are Postdoctoral Researchers and PhD students. These talented individuals

are being trained alongside senior researchers, technicians and research management professionals. They are the lifeblood of our research and higher education system.

Education, research and innovation are interdependent processes in our ecosystem: the researchers who are working at the frontiers of research and fuelling innovation, are inspiring, teaching and training the next generation of creative citizens, knowledge workers, and economic and social innovators. A stable and secure career track for the academic community is essential - from early career stage through to leadership roles and in all disciplines. A well-trained cohort of researchers and educators that are trained with an innovation mindset will greatly support the research system to respond to the challenges and opportunities as voiced by the public.

The demands for those with STEM skills is accelerating and is projected to continue on an upward trajectory with demand expected to grow by around 8% between now and 2025 – compared to expected average growth of 3% for all occupations. Employment in STEM related sectors is also expected to rise by ~6.5% between now and 2025. Everyone should have an opportunity to benefit from these career opportunities. The agency has been at the forefront in developing initiatives to remove and mitigate any existing or perceived factors that may limit the participation of women in STEM careers at fourth level. Initiatives have led to the percentage of women funded in the SFI Frontiers for the Future Programme rising from 21% in previous equivalent programmes to 45% in the 2019 call.

Much work remains to be done. An analysis of the SFI peer review process of applications from 2011 tells us that approximately 70% of applicants and awardees were men. SFI recognises that it is imperative that diverse perspectives inform STEM research in Ireland in order to progress and develop solutions for the many challenges we face. The agency is in the process of developing an Equality, Diversity and Inclusion strategy and associated implementation plan.

Aligning higher education with skills needs for a successful economy makes sense. Technical capabilities within specific domains are required but so too are the skills that enable individuals to navigate the business environment. Competencies such as stakeholder engagement, creative problem-solving, leadership, change management and collaboration are all vital aspects of a talented and agile workforce. We need to consider how we develop our skills base with these competencies being nurtured alongside and complementing the technical knowledge.

In 2018, SFI launched the [SFI Centres for Research Training \(CRT\) programme](#). The purpose of the SFI CRTs is to build on research excellence and to provide cohorts of academically outstanding future research leaders with the skills and knowledge required to address the future challenges of an ever-changing work environment. We are currently funding six CRTs that will train a total of 700 PhD students in Data and ICT Skills for the future. The CRTs are working closely with industry partners who are informing the shape of the programmes with an awareness of industry needs and the ever changing work environment. The CRTs reported working with 57 MNCs and 24 SMEs during 2022. Importantly, the CRTs are also working with Government bodies and the NGO sector. The quality of the research is also evident with publications rising from 82 in 2021 to 193 in 2022.

The cohort-based model is uniquely purposed to equip students with transversal, cross-sectoral and discipline-specific skills, developing individuals with skills and talent that can attract and retain enterprise investment, and support modern, sustainable public services. This model of PhD funding has been cited as world class. They create networks of PIs and Postdoctoral researchers that are working together to train PhD students with deep technical skills whilst also providing opportunities to nurture the aforementioned competencies.

SFI does not currently have a budget to launch a new phase of this programme. It is our ambition to secure budget so that we may build on the success of the investments by running future calls in broader areas that respond to the needs of our economy and society - including those identified by the public through Creating Our Future.

I am delighted to be joined here today by Prof James Gleeson, Director of the SFI Centre for Research Training in Foundations of Data Science. Prof Gleeson is well placed to share his experiences of this model of training and particularly the experiences of the impact that it is having on their industry partners.

The CRT programme is just one way that SFI is contributing to building our skills base. The SFI Industry RD&I Fellowship Programme supports academia-industry interactions to address industry-informed challenges. This programme funds the temporary placement of academic researchers with an industry partner.

The network of 16 SFI Research Centres also continue to train PhD students in areas of strategic importance to Ireland. Later this year, SFI will launch a new SFI Research Centres Programme. The new iteration of the programme has been guided by extensive consultation and international expertise. It will see a renewed focus on a cohort approach to PhD training, and maintaining and strengthening research collaborations with enterprise, government and civil society, partnership representing a major feature of the SFI Research Centres.

In July of last year, a new partnership between industry and the government to recruit and retain research talent was announced by the Government.

Innovate for Ireland is a novel training programme that aims to establish Ireland as a destination of choice for doctoral research with a focus on sustainability and innovation, with funding coming from the public and private sector.

The initial phase of the Innovate for Ireland initiative will seek to attract up to 400 high calibre PhD students to undertake research in Ireland that tackles national and global grand challenges such as climate change and climate adaptation; global health and pandemics; water poverty; digital society; cyber-security.

SFI is working with Government make this vision a reality, leaning on our proven expertise in funding cohort-based PhD programmes. SFI data reflects that 253 PhD students and 337 Postdocs left SFI teams in 2022. 32% (82) of PhDs and 32% (107) of postdocs immediately moved to industry. Industry is the most common destination for departing postdocs and PhDs – a clear indication that there remains a need for individuals with deep skills across sectors.

Thank you for inviting SFI to participate in this conversation. The message I would like to leave you with today is that equipped with an understanding of our skills needs, there is a need for training and skills at all levels – from apprenticeships to micro credentials to doctoral training. It is the recommendation of SFI that consideration is given to exploring mechanisms to invest a small percentage of the National Training Fund to enable the continuation and growth of the SFI CRT Programme to deliver the appropriate percentage of individuals, with deep research and technical skills, trained to doctoral level.