Science for Ireland:
Time for an Ambitious Research and Innovation Strategy

An Open Letter to the Members of Dáil Éireann (on behalf of the Microbiology Society and the Institute of Physics),

In 2020, the Government of Ireland established the Department for Further and Higher Education, Research, Innovation and Science. Minister Simon Harris was appointed to represent the Department in Cabinet with a clear mandate to support and champion the sector. The Minister has launched a number of ambitious programmes, including the Senior Academic Leadership Initiative – a positive action plan which addresses gender imbalance in senior leadership roles in higher education.

We thank Professor Mark Fergusson for his service as Director General of Science Foundation Ireland (SFI) and Chief Scientific Advisor (CSA) to the Government. Professor Fergusson positively influenced and shaped Ireland's scientific research and innovation ecosystem, including when faced with the unprecedented challenges brought by the COVID-19 pandemic. We are delighted to welcome Professor Philip Nolan as Director General for SFI and commend the decision to decouple the CSA's dual role, as recommended by the Royal Irish Academy and other scientific societies.

With independent expert advice embedded in Cabinet, the Government has an opportunity to bring about an ambitious strategy for research and development (R&D), one that sets out a long-term vision for Ireland's science, society and economy.

Increasing public investments in R&D that support a broad, vibrant and ambitious research base will determine Ireland's ability to keep pace with other leading science nations. The benefits of investing in R&D for national economies cannot be underestimated. While Ireland is comparable to Denmark in population size and gross domestic product (GDP), the latter is one of the few countries in the European Union (EU) to have reached Europe's 2020 target for R&D intensity (i.e., R&D expenditure as a percentage of GDP) of 3%. By increasing its R&D intensity, which currently sits below the 2.1% EU average at only 1.1%, Ireland could aspire to match Denmark's performance and rank as an Innovation Leader on the European Innovation Scoreboard.
Following the recession, the Irish Government's research prioritisation strategy has been to concentrate funding in areas of applied research that might yield financial or commercial impact. Although successful in those aspects, the funding strategy has led to a lack of breadth, depth and adaptability in the research base. These are all essential components of the scientific community's ability to identify, create or seize new opportunities. If it is to reap the full rewards of research and innovation, Ireland needs to invest more and to rebalance the allocation of funding to strongly support both applied and basic research across the full breadth of scientific disciplines.

Offering competitive careers in research will ensure that home-grown expertise is harnessed rather than exported, and that overseas scientists choose to establish themselves in Ireland. In line with the Government's policy to improve the country's research credentials, the number of

people in Ireland with doctorates has doubled in the past 15 years. This forward looking strategy has delivered a talented and internationally competitive early career research community, with the potential to drive sustainable development through frontiers research. However, low stipends and unpaid teaching have left many PhD students struggling financially and mentally. We urge the Government to improve career opportunities and job security in higher and further education, as we believe a life in research should be incentivised and encouraged. Increasing PhD stipends and contract duration will lead to better graduate retention rates, contributing to a more vibrant research ecosystem. In addition, more frequent and regular responsive mode calls that allow researchers to plan further ahead will be instrumental in stimulating a rise in Ireland's research intensity, in attracting the best scientists and in incentivising inward investment.

Maintaining cross-border collaboration and an open dialogue with scientific experts will be key in supporting Ireland's ability to respond to current and future societal challenges. The COVID-19 pandemic has demonstrated the importance of international collaboration and expert advice in responding to global disease threats. However, it has also highlighted the need for stronger preparedness in order to face future crises, which range from the emergence and spread of drug-resistant pathogens to the impacts of global waste production and the effects of climate change on the ecosystem. Investments in R&D a generation ago are paying dividends now in Ireland's response to the pandemic, which has been comprehensive, timely and transparent. Given the current R&D intensity, it is uncertain whether the country would be able to address another crisis at a similar scale twenty years from now.

We urge the Government to increase investment in R&D, allocate funds more evenly along the innovation pipeline, offer competitive career opportunities, promote collaboration across borders and maintain an open dialogue with experts, all of which will underpin Ireland's recovery from COVID-19 and its ability to rise to future challenges. Now is the time to act.

Professional societies and scientific organisations represent the research and innovation community at large and can supply evidence-based advice and in-depth analysis of the sector to governments and other agencies. They are also uniquely placed to foster a coordinated and constructive approach between the different parts of the scientific community in the public and private sectors. The Microbiology Society and the Institute of Physics wish to send a strong message of support to the Irish Government and to the Department for Further and Higher Education, Research, Innovation and Science – we would welcome the opportunity to join forces and support an ambitious vision for Ireland to become a world leader in research and innovation.

If you'd like to discuss these issues further, you can get in touch by contacting policy@microbiologysociety.org

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