The Royal Society of Biology: Spring Budget 2024 Submission

To achieve science superpower status, investment in R&D must at least match OECD leading scientific nations' expenditure such as Israel (5.56% GDP), Korea (4.93% GDP) and the USA (3.46% GDP)[1].

The latest revised estimates of the Office for National Statistics show that the UK has spent roughly 2.9% of its GDP on R&D in 2021[2], surpassing the commitment to reach 2.4% of GDP by 2027. We welcome this landmark and call on the government to continue on this trajectory by setting a new, higher R&D investment target. We also call on the government to reaffirm the commitment to spend £20 billion on R&D in 2024-25, in addition to any Horizon Europe underspend.

R&D outcomes provide vital contingency to help avoid and mitigate known and unknown risks to society. For example, during the COVID-19 pandemic, decades of prior R&D enabled the development of new vaccines at pace[3]. By not investing appropriately in research, government hinders the potential of UK academic and private sectors to develop new technologies, processes and products to tackle key issues, such as the global climate and nature emergency and its widespread public health and economic impacts. R&D outcomes underpin effective policymaking and contribute to the creation of economic progress and societal benefits. Further investment in R&D is also in line with public opinion, with 70% of the population in favour of Government-funded research[4].

However, R&D spending will not achieve maximum benefit for cost without an appropriate research workforce supply to deliver these imperative R&D outcomes. It is in the best interest of the UK's scientific output to deploy incentives addressing education and skills provision challenges[5,6] to create an inclusive environment allowing a diverse workforce to thrive[7]. There is also an opportunity cost in parallel budgeting for immigration policies that act to reduce the attractiveness of the UK for global talent. Isolating UK researchers and research institutions from the global community blocks this source of further skills and knowledge with which to further UK R&D. The UK must remain as welcoming as possible to international scientists across the research

[1] OECD, Main Science and Technology Indicators, Volume 2022 Issue 2, 2023, https://doi.org/10.1787/1cdcb031-en
[2] Office for National Statistics (ONS), Research and development expenditure by the UK government: 2021, https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgovernmentexpenditureonscienceengineeringandtechnology/2021
[3] Excler JL et al. Factors, enablers and challenges for COVID-19 vaccine development, BMJ Glob Health, 2023, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10255030/
[4] Campaign for Science and Engineering (CaSE), Attitudes to taxpayer investment into R&D, 2022, https://www.sciencecampaign.org.uk/what-we-do/public-opinion/public-attitudes-to-r-d/investing-in-r-d/
[5] Campaign for Science and Engineering (CaSE), The Skills Opportunity: Building a more innovative UK, 2023, https://www.sciencecampaign.org.uk/analysis-and-publications/detail/the-skills-opportunity/
[6] All-Party Parliamentary Group (APPG) on Diversity and Inclusion in Science, Technology, Engineering and Maths (STEM), Regional STEM Skills Inequity, 2023, https://www.britishscienceassociation.org/regional-stem-skills-inequity
[7] RSB response to the APPG on Diversity and Inclusion in STEM inquiry on equity in the STEM workforce, 2021

workforce, and their families; the success of our science sector relies on the success of our international collaboration in science.[8]

R&D investment must be seen as part of the broader national funding landscape to ensure this policy objective is not undermined. A good example is spending on responsible R&D to develop solutions to adapt to, and mitigate, climate change. This can easily be undermined by domestic policies that are likely to increase greenhouse gas emissions through energy security policies or parallel research which act counter to the holistic R&D investment. The risk is especially high where budgets reside in different departments of State.

About The Royal Society of Biology (RSB)

RSB is a learned society representing a diverse membership of individuals, learned societies and other organisations in UK's life science sector. As a single unified voice for biology, we aspire to build a world that values its contribution to improving life for all by advising Government and influencing policy, advancing education and professional development, supporting our members, and engaging and encouraging public interest in the life sciences.

Biological sciences underpin many essential aspects of society, from agriculture to the latest medical advances. They are central to addressing some of the most pressing global challenges that we are facing, such as climate change, biodiversity loss and the emergence and spread of infectious diseases.

As a pillar of the UK's economy and global competitiveness, the biosciences sector will certainly benefit from continued strategic investment in research and innovation, which will in return contribute to Government's ambitions for the UK to become a science superpower.

[8] Royal Society, The role of the EU in international research collaboration and researcher mobility, 2016 https://royalsociety.org/topics-policy/projects/uk-research-and-european-union/role-of-eu-researcher-collaboration-and-mobility/snapshot-of-the-uk-research-workforce/