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CEO: Helen Gordon
President: Professor Carole Mundell

The Rt Hon Rishi Sunak MP
Chancellor of the Exchequer
HM Treasury
1 Horse Guards Rd
London
SW1A 2HQ

29th September 2021

Dear Chancellor of the Exchequer,

We are scientific organisations convened by the Science Council, that collectively represent the thousands of UK scientists, researchers, and technicians, who all contribute to the success of the UK's science and innovation. We write ahead of the upcoming Spending Review. Many of the organisations which are co-signatories to this letter have also produced their own submissions for HM Treasury to consider, which provide more detail and evidence in their respective fields of interest. This letter serves as an overview of the shared priorities and needs of the UK science community, complementing those submissions.

We are calling on HM Treasury to:

1) Ensure consistent steady year on year rises in science funding, starting immediately to ensure credible progress towards the target of 2.4% of GDP by 2027.

2) Remedy cuts to science programmes impacted by the reduction of ODA, using funding from outside the reduced ODA budget.

3) Secure further investment in science education, including technical education, ensuring a strong skills pipeline to support the UK's ambition to be a science superpower.

The Science Council and its member organisations are proud of the impactful research that takes place in the UK, the importance of which has never been more apparent than in the response to the COVID-19 pandemic. Ensuring the UK retains its position as a world leader in science, particularly in this era of climate and biodiversity crisis, requires an ongoing commitment by both Government and the scientific community.

We understand the challenging fiscal context in which this spending review is taking place, with constraints on spending across many areas of Government. However, investment in science must remain an intrinsic component of the Government's plan for growth.

Government spending on research and development (R&D) is a major catalyst for further private investment, with findings of private sector R&D output rising by 20p per year in perpetuity for every pound spent by Government. Government spending commitments can particularly provide research initiatives with stability and can give industry confidence in making additional investments.

We share an ambition for the UK's R&D sector to reach 2.4% of GDP by 2027, which was the OECD average at the time it was set. However, the OECD average has continued to rise with many of the UK's competitors exceeding this figure including the United States, China, Japan, and Germany. Becoming a science superpower is a major plank of the Government's ambition for Global Britain, but that cannot be truly realised while the UK lags in science spending behind other developed economies.

The Government is currently committed to increasing the public research budget to £22bn by 2024/25 as part of its trajectory towards the 2.4% target. We strongly encourage the Government to commit to sustained and steady increases, rather than the bulk of the increase at the end of the investment period. Predictable and signalled year on year rises will give industry more confidence to invest in the UK and give time for the scientific infrastructure and workforce to grow alongside the increases in funding, so that, together, the UK can reach the GDP target successfully. If the UK instead puts off investment or otherwise fails to progress on its long term science spending commitments, businesses are likely to take their R&D investments elsewhere in the world.

A strong science base plays an important part in our national resilience and ability to react to emerging challenges, as well as bringing economic benefits. The COVID-19 pandemic has demonstrated the vital role the science community plays in rising to public health challenges, with healthcare scientists, clinical engineers and technologists handling the immediate threat ongoing, as well as managing the impacts on diagnosis and care for other health conditions, including cancer and mental health conditions. UK universities played a leading role in developing responses, prophylaxis and therapies, but our national response to the pandemic also benefited from the large pool of trained researchers across the whole country who could be drawn on for testing and vaccination efforts. We cannot reliably predict what future kinds of challenges the UK will face, but we do know that having a strong multidisciplinary scientific workforce will bring huge dividends in tackling them.

The Government has rightly placed the transition to net-zero as one of its key priorities for this spending review. The scale of the challenge in transforming the UK into a net-zero economy whilst bringing benefits for and from nature, is enormous, but success is imperative to the health and prosperity of our global society. The UK's leadership and collaboration with the wider world on this front is perhaps an even greater challenge, but also absolutely key for future generations to thrive. UK science is and will play a significant role in developing new approaches to enabling this transition, including contributions towards revolutionising our energy supply, exploring new options for energy efficiency, and integrating nature-based solutions into resilient and sustainable management plans. By targeted investment into research programmes such as these now, the UK can continue to lead and support the global effort to limit the rise in global temperatures to 1.5C, and reverse biodiversity loss, at the urgent pace required. The negative impacts and effort will be many times more costly, if we act too late to prevent irreversible and damaging change to the planetary systems we rely on.

In recent years, Government investment in science has increasingly been focused on addressing specific challenges, particularly those relating to medicine and energy. These are valuable initiatives that drive innovation.

However, it is important to complement this with growth in core science funding, as insights from undirected and discovery research often present some of the greatest opportunities. The World Wide Web was invented by Tim Berners-Lee while he was working at CERN, and has transformed our lives in ways unimagined by CERN's funders.

Ensuring a balanced portfolio of research across the full range of scientific disciplines is key to science superpower status, creating the best possible environment for world leading research to flourish. This can also support the Government's levelling up aspiration, with more diverse funding options giving opportunities to institutions across the country, rather than concentration on established destinations.

A major component of the UK's success in science has been its international collaboration and partnerships, including those linked to UK aid spending. The Government's decision to cut Official Development Assistance funding to 0.5% of GNI, compounded by reduction in GNI caused by the pandemic, has had profound and immediate consequences for UK Science. UKRI was hit by a £120m shortfall affecting more than 800 research programmes, including some which supported the global fight against COVID-19, and other diseases with pandemic potential. This cut affected thousands of UK based researchers, but also directly undermined the kind of international collaboration needed for excellent science.

Revisiting the cuts to these programmes is a priority for the UK scientific community, but we would be concerned if doing so impacted on other important aid programmes. We therefore would call on the Government to explore ways of addressing this funding gap from outside the current ODA budget and other existing science funding, given that these programmes play an important part of the Government's ambition for a Global Britain. The Science Council and its members would be keen to work with the Government in exploring a long term solution including development of a stronger, more sustainable system to support the UK's international R&D efforts.

In growing the UK science sector, simply spending on R&D will not be sufficient; these efforts will also require a skilled and growing workforce of researchers, technicians and support staff to facilitate this growth. Investments in science and technical education are necessary to secure the future of UK science, providing the skills base needed for excellence and the future innovators that shape our world. In addressing skills shortages, many members of the Science Council can play a valuable role in promoting and supporting continuous professional development (CPD) and assessing areas for development in curricula and training.

It is important that our education system produces scientifically literate citizens who can make informed choices both politically and in their own lives as scientific questions increasingly shape our future. There are significant challenges for our education system including unequal access to high quality teaching, high teacher attrition rates, and recruitment shortages in the sciences. Being taught consistently by subject-specific teachers increases the likelihood of students progressing to post-16 science qualifications, so the Government should consider additional funding to improve the subject-specific CPD available to science teachers.

We hope that you will consider these comments in preparing for the spending review, and that you will also consider the further detailed submissions from across the UK science community.

The Science Council and its member bodies would be happy to engage with HM Treasury on any of these points. We can be contacted via our policy officer Ryan Mercer (r.mercer@sciencecouncil.org).

Yours sincerely,

Helen Gordon, Chief Executive
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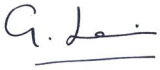

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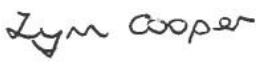

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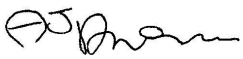

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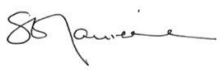

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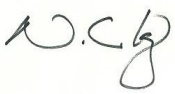

Professor Nicola King, Chair
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