House of Commons Science & Technology Select Committee Call for Evidence: Science Diplomacy

Response from the British Academy

May 2025

About the British Academy
The British Academy is the UK's national academy for the humanities and social sciences. We mobilise these disciplines to understand the world and shape a brighter future. From artificial intelligence to climate change, from building prosperity to improving well-being – today's complex challenges can only be resolved by deepening our insight into people, cultures and societies. We invest in researchers and projects across the UK and overseas, engage the public with fresh thinking and debates, and bring together scholars, government, business and civil society to influence policy for the benefit of everyone.

About this submission

This submission represents the views of the British Academy, not one specific individual. We would be pleased to further discuss any elements of the response.

- **To what extent is the UK considered a global leader in science and innovation and how does this contribute to its soft power on the global stage?**

UK universities' research, particularly in the SHAPE disciplines (Social Sciences, Humanities and the Arts for People and the Economy), has a remarkable international impact and transformative role.[1] In particular, a recent preprint written by British Academy staff and collaborators from Digital Science on *Understanding the importance of SHAPE to the UK research ecosystem* demonstrates unequivocally that **SHAPE research confers a unique comparative advantage on the UK and that it could be better harnessed to realise the UK Government's social and economic goals.**[2] Many of the findings and conclusions of this research are set out below.

UK strengths and foundations are in the connectedness of its research base internationally. The UK has historically been a preferred country with whom to conduct international research in SHAPE; something we can measure accurately via scientometric methods including global research output, global citations, and most critically, measures of collaboration seen through calculating eigenvector centrality (the extent to which international research collaborations happen with researchers here in the UK versus other countries). Eigenvector centrality analysis shows that the UK was the 2nd preferred partner with whom to conduct research in SHAPE from 2013 to 2022. The influence of UK SHAPE in terms of eigenvector centrality is greater than that of UK STEM. In STEM, both the EU-27 and the US are a factor of 1.4x more influential than the UK, with China also consistently ahead of the UK since 2017.

Eigenvector centrality is often thought of as a measure of soft power and R&I leadership. In this context, soft power in a research context can be thought of as the ability to influence the global research conversation in respect of its norms and viewpoints.[3] This is a strategic advantage and should be maintained across all disciplines. We know from many analyses that the UK enjoys significant and enduring influence in STEM (Science, Technology, Engineering and Mathematics). This makes it all the more interesting to note that the high-quality work of its SHAPE community means that the international influence in SHAPE research is even more pronounced and indicates that the UK is a global power across all research disciplines. In addition, we know from reviewing Research Excellence Framework impact case studies that the impact of the SHAPE disciplines has influenced nearly all scientific disciplines.[4] A focus on international research collaboration that does not include the SHAPE disciplines ignores their entanglement with scientific discovery and impact.

More broadly, UK universities are a significant soft power asset for the UK as the knowledge, research, and the individual graduate careers that they enable have wide-ranging and long-standing influence throughout the world.[5] For example, in 2017, Arts, Humanities and Social

[1] https://shape-impact.co.uk/
[2] Hélène Draux et al, 'Understanding the importance of SHAPE to the UK research ecosystem', lhttps://arxiv.org/html/2501.16701v1
[3] Draux et al, 'Understanding the importance of SHAPE'
[4] Sander Wagner et al, *The SHAPE of Research Impact*, p.7, https://www.thebritishacademy.ac.uk/documents/5081/The-shape-of-research-impact-report.pdf (accessed 6 May 2025)
[5] The British Academy, *Universities as Social & Cultural Infrastructure: Roundtable summary note*, 2024 https://www.thebritishacademy.ac.uk/publications/universities-as-social-cultural-infrastructure-roundtable-summary-note/

Sciences graduates made up approximately 46% of the 2.32 million university students in the United Kingdom, 55% of global leaders and 58% of Financial Times Stock Exchange Executives.[6] The best scholars in this field want to come and work in the UK as a result, and thousands of students from around the world want to come and study here. However, **the UK's higher education sector is facing a funding crisis, threatening the UK's world-leading reputation in research, eroding the UK's international standing, and impacting international partnerships and collaborations. SHAPE disciplines, in particular, are being cut and reduced.**[7]

- **How has this agenda been impacted by the current geopolitical environment, including the international activities of Russia and China?**
- **How does science and technology innovation contribute to the UK's national security?**

Research and innovation are increasingly moving to the forefront in many countries' policymaking apparatuses and aspirations. In the UK that has included a focus on securing 'strategic advantage', especially in certain technologies and an increasing prominence given to the national security implications of science and technology. In June 2021, it formed part of the rationale for establishing a ministerial National Science and Technology Council (NSTC) and an Office for Science and Technology Strategy (OSTS), both of which were designed to protect the UK's competitive edge. As Sir Patrick Vallance, the then Government Chief Scientific Adviser, noted, *"The number of countries that now employ science and technology strategically is much greater than ever before, and they are very alive to the fact that this capability can give them an advantage."*[8]

This shift is happening because research and innovation are central to countries' efforts to deliver future aims linked to foreign policy, national security, resilience and economic stability. However, defining what constitutes strategic advantage or supports national security raises important questions. Do current UK strengths in research and innovation, including in SHAPE disciplines, already provide this advantage? How can we optimise opportunities across these areas to fulfil broader national and international policy objectives?

It is therefore worth noting that our research shows that in the UK, the SHAPE disciplines **are both significantly more influential than China and much closer to the US's leading degree of influence in SHAPE disciplines.** This includes in relation to partnership with business – often linked to patents – where SHAPE research is especially collaborative on a global scale.

Consistently, the UK has held the third or fourth position globally in terms of its share of Global Research Output and Global Citations in SHAPE. Notably, **UK SHAPE has shown exceptional resilience in the face of China's rise compared to the largest research economies.** In a decade where China has more than doubled its global influence in the

[6] Sophie Hedges et. al, *Understanding the career paths of AHSS graduates in the UK and their contribution to the economy*, April 2019, understanding-career_paths-AHSS-graduates.pdf, pg. ii
[7] Mapping SHAPE Provision in UK higher education, https://www.thebritishacademy.ac.uk/policy-and-research/british-academy-shape-observatory/mapping-shape-provision/
[8] Patrick Vallance, 'Creating strategic advantage in science and innovation', FST Journal, Vol. 23, Issue 2, July 2022, https://www.foundation.org.uk/Journal/2022/Volume-23-Issue-2/Strategic-Advantage/Creating-strategic-advantage-in-science-and-innova

international SHAPE research ecosystem as measured by global output and global citations, the EU-27 has lost around 7% of its influence, and the US has lost 11% and 12.4% of its SHAPE's Global Output and Global Citations share respectively, the UK has managed to hold its own, only losing 4% of its Global Output share, but increasing its Global Citations share in 2.9%.

To date in the UK, grasping strategic advantage, or enhancing national security, and providing international science leadership has been presented as being defined by focusing on specific emerging and frontier technologies. However, evidence summarised above indicates that such an approach risks underplaying the UK's strengths and the long-term foundations of its research and innovation leadership, namely its connectedness.

Our analysis suggests a need to rebalance and stabilise policy and investment to support the foundations of connectedness, alongside the UK's frontier and emerging technology policy aims. One conclusion that could be drawn is that future research and innovation policy needs to look beyond a singular gaze on and investment in frontier technologies, to a more sustainable, long-term and broad-based approach. This will require investing heavily in the research environment and foundations on which the development of technology, innovation and knowledge are based. **UK research and innovation policy internationally should invest in the UK's connected capabilities and capacities as one of its primary aims, alongside technology priorities.**

One very specific threat to our national security is the systematic eroding of our strategically important languages capabilities, including the educational pipeline and research base in the UK. Languages are strategically vital for the future of the UK. They are important for diplomacy,[9] furthering international partnerships, and leading alliances, particularly for business and trade, social cohesion and cultural understanding. Economically, research from the University of Cambridge/RAND[10] shows that eradication of language barriers with Arabic, Chinese, French and Spanish-speaking countries could increase UK exports annually by c.£19bn, and previous research has estimated the economic cost of the UK's linguistic underperformance in terms of trade and investment at up to £48bn a year. However, the UK is not fulfilling its linguistic potential, and language skills are eroding across the pipeline from education to employment, as well as in government. Language learning continues to decline,[11] provision in schools and at post-16[12] is decreasing, and university language departments face cuts and closures which affect the pipeline of language teachers and the supply of much-needed linguists, including those speaking strategically important languages. The British Academy, with partners across the UK, has published a blueprint for a national languages strategy and continues to advocate for the importance of this vital subject for our national security.[13]

[9] Dr Selina Chen and Anne Breivik, *Lost for Words: The Need for Languages in UK Diplomacy and Security*, November 2013 https://www.thebritishacademy.ac.uk/documents/199/British_Academy_report_Lost_for_words_report.pdf

[10] Wendy Ayres-Bennett et. al, 'The economic value to the UK of speaking other languages', February 2022 https://www.rand.org/pubs/research_reports/RRA1814-1.html

[11] The British Council, 'Language Trends research series', 2025 https://www.britishcouncil.org/research-insight/research-series/language-trends

[12] The British Academy, 'Subject choice trends in post-16 education in England', 2024 https://www.thebritishacademy.ac.uk/publications/subject-choice-trends-post-16-education-england/

[13] The British Academy, 'Towards a National Languages Strategy, 2020, https://www.thebritishacademy.ac.uk/publications/towards-national-languages-strategy-education-and-skills/

- **How effective is the UK Government's strategy for positioning the UK as a global leader in science and technology and what role does the Department for Science, Innovation and Technology (DSIT) play in advancing this agenda?**
- **Does the UK need an International Science Strategy and what would it contain?**
- **What are the key international scientific relationships for the UK?**
- **How well positioned is the government to link scientific and technological progress with enhanced global and UK security?**
- **What are the benefits of bilateral agreements or global collaborations, such as CERN, for the UK economy and its innovation ecosystem?**
- **To what extent are science and technology innovation activities supported through UK Official Development Assistance (ODA) spending?**
- **How can the UK be made an attractive destination for global R&D investment, and how can the benefits of this investment be maximised locally and nationally?**
- **How can the government ensure leading scientific researchers continue to view the UK as an attractive place to base themselves?**

The purpose of international research and innovation should not be primarily to support the UK's diplomatic relationships and efforts to strengthen ties with allies. Research and innovation should be the primary aims for international research and innovation funding. **The UK needs an attractive and stable proposition for UK-based researchers who wish to take up international opportunities and to engage with their international partners. Alongside this, the UK needs an attractive proposition for those international partners who are interested in engaging with the UK and/or wish to work in the UK. That proposition needs to be flexible to the interests and needs of researchers and innovators in the UK and internationally.** It should be enabled by government policy, however, the UK has chopped and changed its support for international research and innovation in the last decade. This instability is unhelpful and damaging to the UK's international standing. A lack of a consistent approach is damaging.

The vast majority of international research and innovation partnership takes place between researchers and innovators directly. Institutions and funders have important roles as well, and government can provide a stable long-term framework. **The aim of fostering collaboration internationally between researchers and innovators is not generally best advanced by direct government-government partnerships. It can be part of a mix, however, international research and innovation should not be constructed around the premise that researchers and innovators will automatically collaborate simply because their respective governments have formed a partnership. That will lead to an unattractive UK research and innovation proposition for researchers and innovators internationally as well as their counterparts here in the UK.**

It is the Academy's view that the development of an international science strategy is not a panacea. The existence of a strategy document is not proof of acting strategically. Experience would suggest that such documents proliferate and priorities chop and change between them with priority setting and implementation exercises often proving time-consuming and not focusing on the UK's long-term strengths. We would argue that in the context of supporting the UK's strengths and a long-term strategic focus on investing in the UK's connected capabilities and capacities that international research and innovation funding in recent years has been undermined by efforts to 'prioritise'. Prioritisation can be helpful, however, in this context it has meant a narrowing of opportunities focused on ever-changing government priorities that have

simply led to questions from partners about the suitability of the UK as a partner and the potential politicisation of our research and innovation effort.

At its most basic level, international partnership and collaboration require stable frameworks that support people and institutions, provide resources and are delivered over the long-term. The UK has been failing to achieve that in recent years. The cuts to ODA funding continue to reverberate and the termination of those grants remain an obstacle to future international partnerships, with the announcement of further UK aid cuts already being picked up negatively in the Academy's own interactions internationally. The UK is no longer as trusted a partner as we once were. The future of the International Science Partnerships Fund is unclear and even then the funding available was far less than what had been available previously. It was also only available for two financial years with funding only starting to be in the sector by the close of the first financial year. This closes down opportunity to maintain and further build on UK leadership in strengthening the wider global research and innovation ecosystem. This is not the long-term stable framework international research and innovation requires.

We have to face the reality that the UK is not as attractive a place to partner and collaborate with internationally across a range of issues. Major measures need to be taken to address this. We recommend that:

- Government should provide stability to the sector through long-term dedicated funding that supports international research and innovation broadly speaking and across all disciplines that is not limited by theme or country. A sole focus on bilateral activity with priority countries is not a well-conceived way to support international research and innovation.

- International research funding should not be considered as a separate budget line leading to continuous bidding processes, often year-by-year. Instead, long-term stable funding should be provided via uplifting core research budgets.

- Ensure there is significant funding available through a diverse set of mechanisms for UK-based researchers to partner with their counterparts internationally through researcher- and innovator-led processes. Any international research and innovation funding must have a substantial mix of bottom-up and more top-down investments.

- Work with the sector and partners internationally to support the development and implementation of the Equitable Partnership in International Collaboration (EqPIC) Call to Action.[14]

- Continue to support boosting participation in Horizon Europe as swiftly as possible and agree to a youth exchange system with the EU. In addition, the Government should publicly aim to associate to Framework Programme 10, Euratom, Copernicus, Erasmus and Creative Europe in the next Multiannual Financial Framework.

- Government should not require duplicative reporting from institutions, such as through export controls, the National Security and Investment Act, the Higher Education Freedom of Speech Bill, the Academic Technology Approval Scheme (ATAS), and the Foreign Influence Registration Scheme.

[14] https://www.thebritishacademy.ac.uk/international/equitable-partnership-in-international-collaboration/equitable-partnership-in-international-collaboration-eqpic-a-call-to-action/

- Reduce significantly the visa costs, and the upfront costs involved, to come to the UK for students, technicians, language specialists, researchers and innovators, including removing the Immigration Health Surcharge. A target to have the most competitive cost in the G7 would be an ambition we would like to see.

- Continue to develop the GTV scheme. As an Endorsing Body for the Global Talent Visa (GTV), we have been pleased with how this has been received by the community and the improvements it has made. Our goal is to see the GTV as the research and innovation visa for the UK with further development focused on the accelerated routes and improving the offer for early career researchers, technicians and other specialists.

- Continue to support the current postgraduate visa provision but increase it from 3 to 5 years post-PhD and significantly expand the list of eligible universities under the High Potential Individual visa for graduates of institutions outside the UK

- The current Visitor visa is not working for research and innovation as detailed in this Royal Society report.[15] The Home Office and UKVI should provide accurate and regularly updating information on visa processing times to enable hosts and visitors to better plan and avoid disappointment.

- Reverse the restriction on international taught postgraduate students from bringing their dependents to the UK and exempt students from paying the UK Immigration Health Surcharge whilst re-evaluating the metrics for determining net migration with the aim of excluding international student numbers.

- Conduct an urgent review of higher education funding in order to develop a sustainable model that delivers a wide breadth of subjects and is resilient to regional inequalities in provision.[16]

- Strengthen the take up of languages through the education pipeline. Providers of post-16 education should incorporate language elements in existing extension qualifications, and explore new types of post-16 qualifications in languages. Build on the success of the Mandarin Excellence Programme by introducing intensive schemes for other languages which are accessible to all learners.

- **What impact will the rebranded Science and Technology Network have on the UK's global position?**
- **Are the thematic areas selected by the Network the right ones to prioritise?**
- **What areas or sectors should the Network prioritise in the coming years?**

The Science and Technology Network can play a role in the UK's international research and innovation, however, as noted above, the vast majority of international research partnership takes place between researchers directly rather than between governments. We would therefore recommend that the Network should focus its efforts on supporting the UK's connected

[15] https://royalsociety.org/news-resources/publications/2023/borders-of-science-short-term-researcher-mobility-visas/

[16] The British Academy, *A manifesto for the Social Sciences, Humanities and the Arts*, 2024 https://www.thebritishacademy.ac.uk/publications/manifesto-social-sciences-humanities-arts/

capabilities and capacities. The Academy has often found the Network's priorities and prioritisation problematic. This is because these priorities are set by the Government and invariably focus on specific technologies rather than the full gamut of research. As the Network is directed to focus on these priorities, it understandably engages with its government partners on those priorities. The obvious result is that it finds that the priorities the UK has are the ones that the country in question has as those are the areas it will engage with that country on as directed by the Government. This is why it is important for the Government and the Network to recognise that either its activity is supporting only the development of specific government-to-government relationships in certain areas of importance to government and thus does not have a wider role in terms of international research and innovation cooperation, or its current approach to priority setting requires fundamental change.

- **How can the impact of science diplomacy activities be measured, particularly in terms of enhancing national branding, fostering international influence, and contributing to conflict resolution?**
- **How can the UK assess the value derived from its participation in international science collaborations in areas such as space initiatives, climate, particle physics, and vaccines development?**

In a similar way to suggestions of how to measure soft power resources, we would argue that the UK government's ability to mobilise its international research and innovation or science diplomacy resources on a day-to-day basis is limited – and indeed there are serious questions about the extent to which it should do so. The chopping and changing of recent years, which can in part be seen as an effort to instrumentalise these resources can easily backfire. The UK government's mobilisation of international research and innovation needs to be smart, and often also light-touch, in order to be convincing. Heavy-handed actions such as strict theme or country priority setting, cutting funding and chopping and changing approaches will only detract from the UK's ability to influence and participate internationally.