

23 January 2017

Royal Society submission to the House of Commons Home Affairs Committee's inquiry on immigration

Summary

- Science is a global endeavour, and research and innovation advance our economic, social and cultural well-being and our health. As it considers its future approach to immigration policy, the UK must ensure that our research base continues to be able to access the skills it needs. The international nature of science will not change and the immigration system must support the UK's aim to be one of the best places in the world to research and innovate;
- The UK has attracted world-class talent to work in its research base and this is reflected in the international nature of the research workforce; 28% of academic staff in UK universities are non-UK nationals (16% EU and 12% non-EU), as are half of PhD students. The research and innovation system requires not only successful leaders in research fields, but also early-career researchers, the technologists and technicians with specialist expertise that support them, and the students that learn from and work with them;
- The Government should take the opportunity to explore how the wider, global immigration system could be streamlined. Any future system should be fair, transparent and efficient, and support recruitment to permanent positions, long and short visits, studentships, exchanges and support for emergencies. Researchers who travel to the UK should face minimal bureaucracy and cost, and have their applications processed swiftly. Researchers moving to the UK on a long-term basis should be offered attractive conditions for their visas, including routes to residency, freedom to travel and the right to bring dependents;
- UK research is supported by wide and deep networks across the EU, which have developed with the support of easy movement. Researcher mobility between the UK and EU Member States will be key to our future excellence and should be reinforced. The Society is concerned that applying the existing system for non-EEA immigration to all migrants, including those from the EEA and Switzerland, could negatively impact UK research and innovation;
- As the UK prepares to leave the EU, the Society is working to ensure the best possible outcomes for the UK and for science and innovation. In support of this, the Society is undertaking research and analysis on patterns, drivers and trends in researcher mobility to and from the UK. We would be happy to share this with the committee once it is complete.

Introduction

1. The Royal Society is the National Academy of Science for the UK. It is a self-governing Fellowship of many of the world's most distinguished scientists working across a broad range of disciplines in academia and industry. The Society draws on the expertise of its Fellowship to provide independent and authoritative scientific advice to UK, European and international decision makers. International mobility is fundamental to the practice of science¹ and the Society has a longstanding interest in immigration policy. The Society is also a Designated Competent Body for the Tier 1 (Exceptional Talent) visa route. As the UK prepares to leave the

¹The Royal Society (2015) The role of the EU in international research collaboration and researcher mobility.
<https://royalsociety.org/topics-policy/projects/uk-research-and-european-union/role-of-eu-researcher-collaboration-and-mobility/>

European Union (EU) and considers its future approach to immigration policy, the Society will be working to ensure the best outcome for UK research and innovation. We therefore welcome the opportunity to respond to the House of Commons Home Affairs Select Committee's inquiry on immigration.

2. This submission builds on the Society's past work on immigration policy,² outlining the value of research to the UK's future and the importance of foreign talent to its success. In the context of the UK's vote to leave the EU this response also outlines some principles for the UK's future immigration system, for migrants from the EU and the rest of the world.
3. Outstanding research and innovation advance our economic, social and cultural well-being and our health, and are part of our culture. In modern economies they are a key source of competitive advantage and can help increase productivity. The UK is a world leader in research and innovation, with a highly diverse, broad and efficient research system. With less than 1% of the world's population and 3.2% of global R&D expenditure, we produce 15.9% of the world's most highly cited research papers.³ This research base provides the foundation for new ideas and discoveries, and fuels economic growth and the creation of high-value jobs and skills. Excellent research and innovation help us to live healthier, fuller and better lives.
4. Science is a global endeavour and it is crucial that researchers are able to move to and from the UK in support of their work. It is imperative that any new immigration arrangements enable us to recruit the world's brightest and best. We welcomed the Prime Minister taking the opportunity in her speech on Brexit this week to underline that Britain will always welcome highly-skilled individuals from across the world. This will be crucial to support her objective for the UK to be one of the best places in the world for science and innovation as the UK exits the European Union. For the UK to prosper as a knowledge economy, its international networks and relationships will be of vital importance.
5. Public and private investment in UK research and innovation has lagged behind many other leading countries, and we therefore also welcomed the Government's commitment at the Autumn Statement to invest an additional £4.7 billion in science and innovation over the next four years. This investment from Government recognises the importance of research and innovation as fundamental drivers of economic growth.

Immigration and UK science

6. The UK must now realise and capture the full potential benefits of public and private investment in research and innovation to improve the lives of people in the UK. We cannot do this with UK talent alone. Research is a global endeavour and we need to attract the very best in the world to the UK. Internationally mobile researchers have a significantly higher research performance than sedentary researchers.⁴ Provisions for the movement of scientists are important to the UK's role in the international research ecosystem and they are part of informal bilateral arrangements with other countries.

² See for example: <https://royalsociety.org/topics-policy/publications/2015/migration-advisory-committee-review-tier-2/>

³ Elsevier (2013) International comparative performance of the UK research base – 2013.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf

⁴ Elsevier (2013) International comparative performance of the UK research base – 2013.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf

7. Researchers from overseas strengthen UK research teams by expanding our skills base and bringing new perspectives and approaches to problem solving. Those who ultimately return to their home countries often remain friends of the UK, expanding our scientific networks. Mobile talent contributes to the creation and diffusion of knowledge, and the international mobility of researchers creates lasting connections between research institutions around the world.
8. The international nature of science will not change, and if the UK is to stay at the cutting edge it is important that its world-leading research base continues to be able to interact with the best and most ambitious research and innovation in the rest of the world.⁵ The UK is the second most connected economy in terms of mobile scientists, after the USA,⁶ and its research base is truly international; 28% of academic staff in UK universities are non-UK nationals (16% EU and 12% non-EU), as are half of PhD students.⁷ Between 1996 and 2011, 7.6% of UK-affiliated researchers spent more than two years working in another EU country and 13.3% worked outside the EU.
9. The international profile of the UK's academic workforce reflects its ability to attract talent from overseas. For example, physicists Sir Andre Geim FRS and Sir Konstantin Novoselov had both moved to the UK from Russia before winning Nobel Prizes for their work on graphene at the University of Manchester. UK institutions with greater proportions of foreign researchers and researchers with international experience scored more highly in the recent Research Excellence Framework⁸, which assesses the quality of research in higher education institutions.
10. The research system also has a key role in training skilled people in the UK and in filling skills shortages, for example in industry,⁹ as insufficient numbers of UK students are coming through the education system and taking up roles in science, engineering and technology.¹⁰ Failure to meet demand for engineering skills alone is estimated to cost the UK £27bn a year from 2022.¹¹ Acute skills shortages also occur in emerging sectors, for example for software developers or bioinformaticians.¹² Among engineering, science, and hi-tech firms, nearly half (44%) report difficulties in finding experienced recruits with the right STEM skills, particularly high-level STEM skills.¹³
11. It is in our national interest to preserve and strengthen the conditions that underpin the success of the UK research and innovation ecosystem. For research, a time when home grown talent alone could substitute for a diverse, international workforce is not foreseeable. There is a global competition for top talent and the UK must choose an immigration system that can attract them.

⁵ The Royal Society (2016) UK research and the European Union: The role of the EU in funding UK research. <https://royalsociety.org/~media/policy/projects/eu-uk-funding/uk-membership-of-eu.pdf>

⁶ OECD (2014) Which factors influence the international mobility of research scientists? http://www.oecd-ilibrary.org/science-and-technology/which-factors-influence-the-international-mobility-of-research-scientists_5js1tmrr2233-en

⁷ Higher Education Statistics Agency (see <https://www.hesa.ac.uk/stats-staff>, accessed 22 March 2016)

⁸ Higher Education Funding Council for England, *Characteristics of high performing research units* (See <http://www.hefce.ac.uk/pubs/rereports/Year/2015/highperform/Title,107168,en.html> accessed 6 April 2016)

⁹ http://www.cbi.org.uk/media/2119176/education_and_skills_survey_2013.pdf

¹⁰ The Royal Society (2014) Vision for science and mathematics education. <https://royalsociety.org/~media/education/policy/vision/reports/vision-full-report-20140625.pdf>

¹¹ http://www.engineeringuk.com/Research/Engineering_UK_Report_2015/

¹² HM Government (2015) Tier 2 shortage occupation list. <https://www.gov.uk/government/publications/tier-2-shortage-occupation-list>

¹³ <http://news.cbi.org.uk/reports/education-and-skills-survey-2015/education-and-skills-survey-2015/>

To rely solely on the flow of researchers coming through the UK pipeline would have a detrimental effect on the sector's performance as a whole.

Post-EU-referendum immigration policy and UK science

12. The Society notes that public opinion on immigration is nuanced. A survey after the referendum showed that an overwhelming majority of the public (88%) supported maintained (42%) or increased (46%) migration of highly skilled workers to the UK, whereas only 12% wanted a reduction.¹⁴ A majority of British adults would like to maintain (44%) or increase (18%) the number of international students in the UK, and only a minority consider international students (24%) or EU students (23%) coming to study at a UK university as immigrants.¹⁵
13. High-tech jobs also create jobs outside of the high-tech sector, both in skilled occupations and in unskilled ones.¹⁶ International students that come to the UK are a major export industry for the nation, worth £10.7bn to the UK economy. EU students at UK universities contribute £3.7bn to the UK economy each year and support around 34,000 jobs.

Principles for a future migration system

14. The Government's overall approach to the UK's future immigration policy—both for EEA and Swiss nationals and for the rest of the world—is not yet clear. In order to support research and innovation to bring broad benefits for the UK, any future system should be fair, transparent and efficient. In reviewing the UK's immigration policy, the Government should take the opportunity to explore how the wider immigration system for migrants from outside the EEA could be streamlined. Doing so would decrease the administrative burden, make us more competitive in the global market for talent, and send a strong signal in support of the UK's ambition to be a global leader in research and innovation.
15. The research and innovation ecosystem is complex.¹⁷ Strategically valuable individuals include not just successful leaders in research fields, but the early-career researchers, technologists and technicians with specialist expertise that support them, as well as the students that learn from them and work with them.
16. The immigration system should support all relevant types of mobility from recruitment to permanent positions, long and short visits, studentships, exchanges and support for emergencies. Researchers who travel to the UK should face minimal bureaucracy and cost, and have their applications processed swiftly. Researchers moving to the UK on a long-term basis should be offered attractive conditions for their visas, including routes to residency, freedom to travel and the right to bring dependents.
17. While the focus of this inquiry is on the UK's approach to immigration policy, the Society notes that it will also be important to maintain the ability of UK researchers to travel and work overseas. Mobility helps to build the networks through which science progresses and research careers are often characterised by periods of time spent abroad. Many UK-trained researchers return to take up permanent positions here after having broadened their experience overseas.

¹⁴ British Future, [What next after Brexit?](#) (2016)

¹⁵ [Universities UK poll](#) conducted by ComRes, October 2016

¹⁶ Moretti, Enrico (2012) *The New Geography of Jobs*. Houghton Mifflin Harcourt.

¹⁷ For example, see Figure 10 in Dowling, A (2015) *The Dowling Review of Business-University Research Collaborations*. <http://www.raeng.org.uk/publications/reports/the-dowling-review-of-business-university-research>

The Government will need to seek appropriate bilateral and multilateral arrangements as other countries review their own approaches to immigration policy.

Arrangements for researcher mobility across the EU

18. 16% of academic staff in UK universities—31,635 people—come from other EU countries. The Society has repeatedly stated that EEA nationals already in the UK, and their families, should urgently be given concrete assurances that they will be able to live and work in the UK should their existing right to work as citizens of EEA countries change.
19. With the advent of the EU, EU Member States have chosen to jointly invest in the scientific endeavour. This has enabled ambitious projects such as the creation of the European Research Council that has established a very strong international reputation and attracts researchers from around the world. Europe's strong global position in research has been developed with a clear emphasis on collaboration and mobility and in over 20 years of participation in EU research programmes, UK researchers have built strong networks of collaborators across the European Research Area and beyond. 60% of the UK's internationally co-authored papers are with EU partners and seven EU countries are among the UK's top ten strongest collaborators. UK research is now supported by wide and deep networks across the EU, which have developed with the support of easy movement. Researcher mobility between the UK and EU Member States is key to our future excellence and should be reinforced.
20. The Society has [welcomed](#) the Prime Minister's statement that one of the Government's negotiating objectives for exiting the EU is for the UK to be one of the best places in the world for science and innovation. In support of the ambition to continue to collaborate with our European partners on major science, research, and technology initiatives, Government must also seek to ensure that the system for movement of researchers between the UK and the EU supports the researchers to be involved in these programmes.
21. One approach to managing the movement of researchers across the EU that might be considered would be to apply the existing system for non-EEA immigration to all migrants, including those from the EEA and Switzerland. The Society is concerned that this could negatively impact UK research and innovation, by placing an unmanageable burden on the sector; both for applicants and employers. Although 12% of the academic workforce have come to the UK from outside the EU, a further 16% have migrated here from the EEA and Switzerland. Until now, the burden on the sector of the non-EEA migration system has been balanced with the ease with which researchers can move across the EEA.
22. The University of Cambridge have estimated the potential impact of this approach. Based on past recruitment rates, the additional visa costs that would apply if EEA recruits used existing visa routes would be ~£1.25 million per annum. Visa costs are sometimes borne by institutions and sometimes by individuals. The upfront cost for an individual awarded a 3-year Tier 2 visa, and who is bringing a partner and child to the UK, could be £3,492.¹⁸
23. A marked increase in cost could make the UK less able to attract the talent it needs, as could the increase in bureaucracy. For example, researchers may also be required to travel to other

¹⁸ Campaign for Science and Engineering (2016) Immigration: Keeping the UK at the heart of global science and engineering. <http://www.sciencecampaign.org.uk/resource/caseimmigrationreport2016.html>

cities, or sometimes even back to their home country if they work abroad; for interviews or to provide original documentation.

24. The Tier 2 visa route is most commonly used by researchers, but restrictions on it, such as the annual cap on visas awarded and the minimum salary thresholds, could also be problematic. This is particularly likely to affect for some professional services staff who support research, such as lab technicians and language assistants.
25. We are also concerned that not all roles are well covered by the existing visa system. For example, while the system makes clear provision for some researchers through the prioritisation of PhD-level roles in Tier 2, there is no clear path for technicians; and sponsorship routes are considered too burdensome for some start-ups and SMEs.

The Society's research and analysis following the referendum

26. Before the referendum, the Society published [three reports](#) setting out the role of the EU in UK science, covering funding, mobility and collaboration and regulation and policy. Following the UK's vote to leave the EU, the Society is working to ensure the best possible outcomes for the UK and for science and innovation. In support of this work, we are undertaking relevant research and analysis to provide evidence for the debate. This work will underpin our advice to Government as the situation progresses and we would be happy to share it with the committee once complete.
27. The Society has commissioned RAND Europe to undertake a piece of research to deepen understanding of patterns, drivers and trends in researcher mobility to and from the UK, in academia and industry, to the EU and beyond. This work will comprise (1) a synthesis of all existing evidence and (2) survey work to fill gaps in the evidence and provide richer qualitative information. We expect this work to be published in spring 2017.
28. With its sister Academies, the Academy of Medical Sciences, the British Academy and the Royal Academy of Engineering, the Society has commissioned Technopolis to undertake a piece of research to deepen understanding of the role that EU funding plays within the wider landscape for UK research and innovation, looking at how it interacts with and compares to domestic sources of funding and the activities and sectors for which it is most, and least, important to the success of UK research. We expect this work to be published in spring 2017.

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