

Brexit: “no-deal” is a bad deal for science

Science needs an outcome that:

Ensures that UK and EU scientists can continue to work in each others' countries with minimal friction, bureaucracy and cost

Demonstrate that the UK is a great place to do great science, and a welcoming place for people around the world to choose to bring their specialist skills and come and work.

Keeps access to money and networks which support collaboration between scientists around the EU and the world

Ensure that the UK remains a part of Horizon 2020 (the EU's research and innovation funding programme) to its end.

Work to ensure that the UK has full association with the next EU research and innovation funding programme, Horizon Europe.

Maintains regulation that supports access to new medicines, technologies and constructive collaborations

Ensure that the UK can continue to take part in EU-wide clinical trials and European Reference Networks, which helps cutting edge research into new medical treatments and diagnostics, and gives patients access to these.

Agree regulation and governance that will ensure that scientists can continue to work together across borders and we can all benefit from the new medicines and technologies that they create.

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“The UK is a global leader in science because top home-grown and international scientists want to work here. We must do everything we can to ensure that the UK maintains its role at the heart of European science, because that is in everyone's best interests. If science loses, everyone loses.”

Venki Ramakrishnan, President of the Royal Society.
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For more information visit royalsociety.org/topics-policy/projects/brexit-uk-science

Skilled people

If the UK leaves without a deal: EEA nationals working in the UK will have little clarity over their long-term future. UK-based researchers come from around the world and work with people across the globe. They can easily choose to build their careers elsewhere, damaging collaboration between European scientists.

R&D intensive companies rely on a mobile scientific workforce to respond to day to day challenges which require specialist knowledge or skills. “Failures to mutually recognise this kind of highly flexible movement with the EU would present serious barriers to such operations⁵”.

Costs could become a deterrent to skilled individuals that the UK needs. If the UK decided to apply immigration charges to EU nationals, based on the current system, an EU academic with a partner and two children entering the UK on a 3 year Tier 2 visa would have to pay upfront costs, equivalent to **14% of their annual salary⁶**.

1 in 6 academic staff in UK Higher Education Institutions are from elsewhere in the EU. They can easily choose to build their careers elsewhere³.

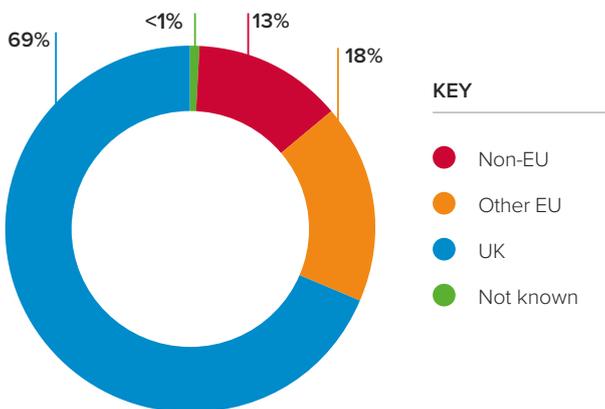
Many UK nationals work abroad, building their skills and networks and often bringing them back to the UK⁴. There is no clarity about what would happen to them if we leave the EU without a deal.

CASE STUDY



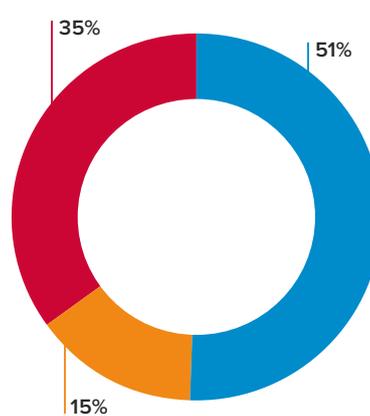
Dr Steven Spoel is a Dutch plant biologist, who has worked in the USA. He is now a Royal Society University Research Fellow and Head of Molecular Plant Sciences at the University of Edinburgh. His lab examines how plants respond to stresses encountered in their ever-changing environment. This research helps to design new stress-resilient food crops that increase agricultural yields in challenging environments and is vital to establishing future food security for a rapidly growing world population.

Where do academic researchers working in the UK come from?



Source: Higher Education Statistics Agency 2017 – 18 Staff numbers and characteristics.⁷

Where do postgraduate researchers in the UK come from?



Source: Higher Education Statistics Agency 2017 – 18 Full-time PGR student enrolment figures by domicile 2016/17 and 2017/18.⁸

3. There are 206,870 academic staff working in the UK. 17% (35,920) of Academic staff working in the UK HEIs are non-UK EEA nationals. <https://royalsociety.org/~media/policy/projects/brexit-uk-science/uk-research-eu-people-june-2018.pdf>

4. RAND Europe (2017) International researcher mobility International mobility of researchers: a review of the literature <https://royalsociety.org/topics-policy/projects/international-researcher-mobility/international-mobility-researchers-review-literature/>

5. techUK submission to the Science and Technology Committee inquiry: An immigration system which works for Science and Innovation.

6. <https://royalsociety.org/topics-policy/publications/2018/consultation-response-home-office-approach-to-charging-for-services/> Family in this scenario is a partner and two children with an average salary of £37500. See <https://royalsociety.org/~media/policy/projects/brexit-uk-science/references-and-workings-for-brexit-no-deal-factsheet.xlsx> for the calculations on which this is based

7. <https://www.hesa.ac.uk/news/24-01-2019/sb253-higher-education-staff-statistics> (Figure 2) accessed 5 June 2019. Numbers are rounded calculations on which this is based

8. <https://www.hesa.ac.uk/news/17-01-2019/sb252-higher-education-student-statistics/location> (Figure 8) accessed 5 June 2019. Postgraduate researchers include students undertaking research masters' and PhDs full-time. Part-time students are not included. Numbers are rounded.

Funding and networks

If the UK leaves without a deal: access to funding and networks that support work with brilliant scientists around the world will be lost and this will undermine the relationship between some of the strongest scientific collaborators.

This funding has been decades in development and creates easy ways for European researchers to work together. Global collaborations like these are increasingly important for cutting-edge research, enabling researchers across Europe to work with the best teams around the world. It would take a long time to rebuild similar relationships. Scientists need to be growing mechanisms that help build these relationships, not be cut out of them.

Without a deal, researchers in receipt of European Research Council or Marie Skłodowska-Curie Actions funding will not be able to use that funding to work in world-leading UK research institutions⁹.

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EU countries are among the UK's top ten strongest scientific collaborators, forging relationships that are valuable to both countries¹⁰.

UK'S TOP COLLABORATIVE PARTNERS ACROSS EUROPE



This map uses publication data of the UK's top collaborative partners to show the strength of collaboration between publications co-authored by UK-based and overseas researchers, with higher numbers indicating stronger degree of collaboration. The data is based on publication data available.

Data and analysis: Clarivate Analytics, Incites.

9. European Commission, Participant Portal H2020 Online Manual, http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm
10. <https://royalsociety.org/~media/policy/projects/eu-uk-funding/phase-2/EU-role-in-international-research-collaboration-and-researcher-mobility.pdf>.

Regulation and governance that helps us work together

If the UK leaves without a deal: it loses access to new medicines and technologies and limits its ability to tackle global problems.

The diseases that affect people in the UK affect people across the EU and around the world. Similarly, the same technologies can improve all of our lives, from smart phones to electric cars. Agreements, shared regulatory standards and governance help us work together, enabling us to pool expertise and resources to develop cures faster, innovate more rapidly to bring new products to market and tackle global challenges such as climate change that will affect us all. Without the clarity and certainty provided by a deal, these relationships will fall apart.



11. ABPI (2018) Life Sciences sector responds to BEIS Committee report on the impact of Brexit on the pharmaceutical sector <https://www.abpi.org.uk/media-centre/news/2018/may/life-sciences-sector-responds-to-beis-committee-report-on-the-impact-of-brexit-on-the-pharmaceutical-sector/>
12. BBC (2018) AstraZeneca to stockpile drugs for Brexit <https://www.bbc.co.uk/news/business-44847914>.

“No-deal” is a bad deal for science

If the UK leaves without a deal, it will impact on scientific research immediately and could take years to rebuild.

Science needs an outcome that:

1 in 6 academic staff in UK Higher Education Institutions are from elsewhere in the EU. They can easily choose to build their careers elsewhere, damaging collaboration between European scientists.

Keeps highly-skilled EU scientists working in the UK and allows highly skilled UK scientists to work in the EU, ensuring that international talented people are still able to contribute to globally competitive science.

The UK could lose access to EU research funding. Even with the UK government’s guarantees, this will have an immediate impact on research underway in the UK. It could take years to develop alternatives, meaning that valuable research could be stopped in its tracks.

Keeps access to money and networks that support the UK to work with scientists around the world.

People lose access to new medicines and technologies and limit the ability to tackle global problems as regulatory and governance arrangements fall apart.

Maintains regulation that supports access to new medicines, technologies and constructive collaborations.