

Written evidence submitted by the British Society for Immunology

Summary

- Science and innovation is an inherently international endeavour. Progress and success are intrinsically linked with the UK's ability to collaborate and trade with the EU as well as attracting the brightest and best to our science and innovation institutions.
- In the event of a 'No Deal' Brexit, the UK will leave the EU without any mutually agreed legislation. This will be highly detrimental to science and innovation in both the UK and EU as it will hinder funding, immigration, trade and many other factors.
- The Government must prioritise science and innovation when making new agreements with the EU and communicate effectively to the science and innovation communities.

Introduction

1. The British Society for Immunology is the largest immunology society in Europe. We represent the interests of approximately 3,700 immunologists working in academia, clinical medicine and industry. Our main objective is to promote and support excellence in research, scholarship and clinical practice in immunology for the benefit of human and animal health.
2. The UK is a world-leader in immunological research, ranking first for infection and immunology amongst our G7 partners.¹ As highlighted in our report '[Immunology: An international, life-saving science](#)', UK immunological science and innovation is a highly collaborative and international effort which has been greatly facilitated by EU membership.²
3. Leaving the EU without a Withdrawal Agreement, or 'Deal', would be highly damaging to the progression of science and innovation both within the UK and the EU. Loss of and uncertainty over funding and immigration will deter the best and brightest from working within UK science and innovation and our ability to collaborate effectively and smoothly with EU partners will be greatly hindered. As trade deals with the EU may no longer apply, UK-based technology companies may lose EU custom as their products will no longer fall under EU trade directives.
4. The British Society for Immunology welcomes the opportunity to voice our concerns over the effect that a 'No Deal' Brexit will have on science and innovation.

1. What would a 'No Deal' Brexit would mean for the science and innovation community?

Immigration and residency

5. Although a 'No Deal' Brexit will not have significant effects on the residency rights of EU citizens residing in the UK compared with those outlined in the Withdrawal Agreement, this now only applies to those residing in the UK by 29 March 2019, as opposed to up to the end of 2020 as stated in the Withdrawal Agreement.³ There has been a lack of information on the immigration and residency rights for EU nationals coming to the UK after 29 March 2019, and the UK's post-Brexit immigration policy is not set to be made public until at least 2020.
6. Immunology, where 26% of the current workforce is from the EU,⁴ is just one example of an important scientific sector that thrives on the skill and innovation of EU scientists. Lack of information regarding EU immigration and residency will immediately deter researchers, skilled workers and technicians from the EU from applying for jobs in the UK after 29 March 2019 and is therefore highly damaging to the progressive, international nature of science and innovation. Worryingly, the effects are already being seen as the Russell Group of universities has recently reported a 9% decrease in the number of EU postgraduate research students enrolling at its institutions for the past two academic years.⁵
7. Due to a lack of a 'Deal' between the UK and EU, the Government has been unable to guarantee the rights of UK citizens residing in the EU, meaning that those working for science and innovation companies in the EU risk losing rights to employment, healthcare, education, benefits and other services.³ As highlighted in our [Careers in Immunology](#) review, over half of immunologists interviewed who had completed a PhD in the UK between 1975 and 2015 had worked abroad at some point during their career: the majority of these had worked in the EU and 10% are now living and working in the EU – many of whom are in the industry and academia sectors.⁴ Our respondents also indicated that these periods of international experience were a key part of an immunologist's academic career development. A 'No Deal' Brexit therefore not only jeopardises the future of UK immunologists living and working in the EU, but also hinders the ability of up-and-coming immunologists to develop their careers by gaining experience and building important contacts in EU countries. Not only will this have potentially devastating consequences for the institutions and companies UK immunologists currently work for in the EU, but it will also affect the career pathways of immunologists at more junior levels.

Attractiveness to EU students

8. There has been little clarity on whether EU students would have to pay international/overseas student rates – more than double the current fees – after 2020. This uncertainty will potentially deter prospective EU students from applying to and studying at UK universities. This will not only create a 'brain drain' effect on science and innovation due the loss of the UK's attractiveness to the EU's brightest students, but will also result in huge losses to UK university funding as EU nationals have generated £2.27 billion by studying at UK institutions.² This will have a devastating knock-on effect on the resource capability of universities, for example in their ability to build new research centres, acquire materials and employ staff.

Funding

9. Horizon 2020 is the current European funding programme for science and innovation, running from 2014 until the end of 2020. The UK is a key contributor to Horizon 2020 and, between 2007 and 2013, has invested £5.4 billion yet received £8.8 billion back in funding grants.⁶ A 'No Deal' Brexit puts our current access to the Horizon 2020 funding programme at risk. Although the Government has released an underwrite guarantee confirming that they will honour all successful Horizon 2020 grants in lieu of the EU in the case of 'No Deal',⁷ after 2020 the UK, as a third country, will be exempt from Horizon 2020 funding from the European Research Council (ERC), Marie Skłodowska-Curie Actions (MSCA) and the SME instrument.⁷ Thus, despite the underwrite guarantee, a 'No Deal' Brexit may significantly deplete the amount of European funding available for science and innovation.
10. Access to Horizon 2020's successor, Horizon Europe, which is set to run from 2021 until 2027, will also be impacted by 'No Deal'. As a third country, as well as exemption from ERC grants, MSCA and the SME instrument, the UK will not have automatic access to other Horizon Europe funding unlike EU countries and countries with Associated Status such as Norway and Switzerland. New guidelines for Horizon Europe state that third countries will not be able to take out more than they put in, therefore, based on the UK's history of benefitting from a higher amount of funding grants than money invested, even if the UK can secure Horizon Europe funding it will be significantly less than that seen pre-Brexit.⁸

Collaboration

11. The UK's ability to collaborate with EU partners on science and innovation projects will be greatly hindered by a 'No Deal' Brexit. The Government's Horizon 2020 underwrite guarantee described previously does not extend to international organisations that are in collaborative projects with UK organisations, meaning that these projects could stand to lose a significant amount of funding.⁷ Funding from Horizon 2020 and its successor Horizon Europe can only be given to collaborative projects where at least three participants are from three different EU Member States or Associated countries. Following a 'No Deal' Brexit, the UK automatically has third country status and may have to apply to gain Associated Country status. This could be a lengthy procedure and during this time UK institutions would be less likely to be considered as a collaborative partner in EU-funded projects.⁷
12. Following a 'No Deal' Brexit, the UK will lose its open borders with the EU. This will have a negative impact on UK researchers, workers and students within the science and innovation community that are required to travel to other EU institutions as part of ongoing collaborative projects. Firstly, for travel to any country within the Schengen zone, UK passports will be required to have at least 6 months remaining prior to expiry and to have been issued in the last 10 years.⁹ UK travellers may also require a European Travel Information and Authorization System (ETIAS) in order to enter EU countries. Ensuring these rules are adhered to could cause long delays in UK collaborators' entry to Schengen zone countries and negatively impact the ease of collaboration with EU institutions.
13. In the science and innovation sector, it is common for UK collaborators to travel to the EU to work for short periods of time at institutions they are in consortia with. There has been little information on if and how visa and work restrictions would apply in this case; lack of clarity

with such little time before the official 'Brexit day' presents a significant obstacle in the UK's collaborative efforts with the EU in science and innovation.

Trade and logistics

- 14.** A 'No Deal' Brexit will have damaging implications for EU–UK trade, and this extends to UK science and innovation enterprises. For example, currently, the regulatory bodies that assess UK medical devices work with the European Medicines Agency (EMA) to ensure that UK products can be sold in the EU. A 'No Deal' Brexit threatens this as EU legislation will no longer apply to UK medical devices, risking their ability to be sold in the EU.¹⁰ This will have profound effects on UK science and innovation enterprises as they risk losing their niche in the EU market.
- 15.** There has been much discussion in the media about how a 'No Deal' Brexit would result in a long backlog of imports to the UK due to added custom checks at the UK border.^{11,12} In the science and innovation sector, lab-based research relies heavily on the ability to import equipment and reagents from the EU in a timely manner as many labs have limited storage capabilities and certain reagents, such as culture media, antibodies and cell lines, have short expiry dates and/or require storage at a controlled temperature. This backlog could therefore greatly impact on the reagents available to UK researchers and slow down or halt crucial biomedical research.
- 16.** A backlog at the UK border also has potentially devastating consequences for the use and advancement of cutting edge patient therapies. For example, CAR-T cell therapy, a recently-approved type of immunotherapy shown to be extremely effective in certain cancers, relies on a wide range of reagents and other medical supplies that are imported from the EU. Any delay in their import would directly impede the delivery of complex treatments such as CAR-T cell therapy and risk the lives of people living in the UK.

2. How adequately are the Government and its non-departmental public bodies preparing for such an outcome?

Prioritising science and innovation

- 17.** Although it is clear that preparation for a 'No Deal' Brexit is a huge task requiring policy and legislative alterations to numerous areas concerning the UK's relationship to the EU, it is the Society's view that the Government's preparations for a 'No Deal' Brexit have been largely inadequate for the science and innovation community. There has been little clarity on a number of areas, such as immigration and trade, and this has resulted in the loss of the UK's status as a place to study and work within the sector. The life sciences industry, of which immunology is an important part, is worth around £70 billion to the UK economy and employs almost 241,000 people across the country.¹³ The Government needs to prioritise this industry in all future discussions regarding the UK's relationship with the EU.

Communication

- 18.** General communication on the Government's 'No Deal' has been sparse and long overdue – whether this means there has been little preparation by the Government or that

communication efforts have been poor is unclear. Technical notices outlining plans for ‘No Deal’ were only released in August 2018, giving 7 months for businesses, universities, research centres to prepare before UK leaves the EU. This is extremely insufficient preparation time. For example, funding applications are written months in advance and recruitment processes can be lengthy and have already been affected by lack of information on immigration rights.

19. The technical notices that have been released are complex and difficult to understand for those not working within government and policy – such as research scientists, prospective EU migrants and university staff – resulting in confusion and a lack of clarity across multiple sectors. This is detrimental to the progression of science and innovation for a multitude of reasons, for example it impacts heavily on the sector’s confidence in recruiting from and collaborating with the EU.

¹ All Party Parliamentary Group on Global Health. 2015. The UK’s contribution to health globally: benefitting the country.

² British Society for Immunology. 2016. [Immunology: An international, life-saving science](#).

³ Department for Exiting the European Union. 2018. Citizens’ Rights - EU citizens in the UK and UK nationals in the EU.

⁴ British Society for Immunology. 2017. [Careers in immunology](#).

⁵ Russell Group. 2019. Fall in EU student numbers.

⁶ British Society for Immunology. 2016. [Potential impact of the UK’s withdrawal from the EU on funding for universities and scientific research](#).

⁷ Department for Business, Energy & Industrial Strategy. 2018. Horizon 2020 funding if there’s no Brexit deal.

⁸ European Commission. 2018. Proposal for a regulation of the European Parliament and of the council establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination

⁹ UK Government. 2018. Travelling to the EU with a UK passport if there’s no Brexit deal.

¹⁰ British Medical Association. 2017 (Updated 2018). Brexit Briefing: Medicines and medical devices regulation. Maintaining an effective working relationship between the UK and the EU.

¹¹ BBC News. 2019. Brexit: Could leaving with no deal cause traffic jams?

¹² The Guardian. 2018. Dover checks ‘would take eight hours per lorry’ in no deal Brexit

¹³ UK Government. 2018. Press Release UK life sciences sector brings record growth as new Life Sciences Council meets for first time.