

**Science and Technology Committee  
Brexit Science and Innovation Enquiry 2018  
SULSA Response**

Written evidence submitted by Dr. Allison Jackson on behalf of the Scottish Universities Life Sciences Alliance.

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**1. EXECUTIVE SUMMARY**

- Scotland has a very strong life sciences research base, and a very high percentage of non-UK EU nationals working in the sector.
- Scottish biosciences, clinical medicine and veterinary medicine attract the largest amount of EU funding by speciality.
- Preserving access to Horizon 2020 / FP9 is critical to maintain this success.
- Researcher mobility is key to both accessing this funding and maintaining effective collaborations, but also to mitigate 'brain drain'.
- Effective communication of all decisions pertaining to these issues during Brexit negotiations across all levels of researchers and affiliated administrative staff is key.

**2. ABOUT SULSA**

The Scottish Universities Life Sciences Alliance (SULSA; <http://www.sulsa.ac.uk>) is one of Scotland's Research Pooling Partnerships, supported by the Scottish Funding Council (SFC). SULSA is a partnership of eight Scottish Universities that produce excellent life sciences research, and represents upwards of 10,000 researchers across Scotland. SULSA acts to support and improve the Scottish life sciences research sector by facilitating and supporting cross-Scottish consortia, promoting facilities and early career researchers, as well as identifying and responding to funding opportunities.

**3. SCOTLAND'S LIFE SCIENCES RESEARCH**

Scotland is home to some fantastic research universities, and has three Universities in the Global 100<sup>1</sup>, including two in the top 10 in the UK<sup>1</sup>. The University of Edinburgh is ranked 21 in the world for life sciences research<sup>1</sup>.

Scotland has a very successful life sciences research base that draws significant income from the EU, and in fact clinical medicine and the biosciences have the two largest research incomes by subject in Scotland, both in terms of EU and total research income<sup>2</sup>. In 2015-16, Scottish Higher Education Institutes in Clinical medicine secured £20 million of EU research funding, of £224 million total research income. This EU funding equates to 8.9 % of the total research income. Scottish Biosciences were awarded £15.3 million of EU funding (11.1 %), of £138 million total research income<sup>2</sup>. Whilst this is not as great a percentage of total funding (compared for example, to general engineering which relies on the EU for 47.7 % of its research funding)<sup>2</sup>, the large amounts of funding from the EU awarded to the Scottish life sciences still provides a major source of funding.

#### **4. ACCESS TO RESEARCH FUNDING**

Since 2014, £250 million was awarded from EU H2020 to Scotland<sup>2</sup>, and in 2014 -15, Scottish unis received £94 million from EU sources (9.4% total research income)<sup>2</sup>. Scottish life sciences disciplines (clinical medicine, biosciences and veterinary science) secured £175 million of EU funding in 2015-16<sup>2</sup>. Therefore, continued access to EU funding after Brexit is critical.

The ERC represents 17% of the overall Horizon 2020 budget (€ 13.1 billion of € 77 billion)<sup>3</sup>, and its Starting and Consolidator grants are the most prestigious researcher funding in Europe – see our comments on career development below (paragraph 16). Researchers from anywhere in the world can apply for ERC grants provided the research they undertake will be carried out in an EU Member State or Associated Country. If the UK does not become an Associated country then researchers based in the UK will not be eligible for this funding. Not having access to FP9 would be disastrous, and lessons can be learned from Switzerland’s experience, which after exclusion from Horizon 2020 saw a 40 % drop in participation<sup>4</sup>.

If the UK government is unwilling to become an EFTA country or a third country to gain associated access to Horizon 2020 / FP9, we cannot see a way to have access to EU research funding without convincing the EU to open out its funding model to include all countries, thereby including other strong research countries like America and Australia.

Alternatives to FP9 membership have been proposed, for example situations modelled on the UK-China Joint Strategy for Science, Technology and Innovation Cooperation and the UK-US Science and Technology Agreement. However, these agreements are in their infancies and their outcomes and successes are currently unknown. The UK-China agreement has seen £200 million committed with the first funding round scheduled in 2018<sup>5</sup>.

Another possibility is the Newton Fund model, which is managed by the UK’s Department of Business, Energy and Industrial Strategy, and delivered through 15 UK delivery partners. It has a total UK government investment of £735 million up until 2021, with matched resources from partner countries<sup>6</sup>.

Additionally, we seek to maintain membership to The European Molecular Biology Organisation (EMBO; <http://www.embo.org>), and the European Molecular Biology Laboratory (EMBL; <https://www.embl.de>); both have a wider membership than the EU, and the UK currently contributes. Amongst a large programme of funding and events, EMBO has a prestigious fellowship scheme for postdoctoral researchers.

#### **5. COLLABORATION**

International collaboration makes research more effective and impactful. Research that is published with EU funding acknowledgement has greater impact, and this also holds true for publications with authors from across the EU, in comparison to those with only UK-based authors<sup>7</sup>. Mobility is key to collaboration, and gives researchers the opportunity to learn new techniques, access equipment and build their networks and address global challenges.

## 6. RESEARCHER MOBILITY

Researcher mobility and international teams are critical to a successful research base. 26.2 % of academic staff in Scottish Higher Education Institutes in STEM disciplines are non- UK EU nationals (and life sciences has the highest percentage of non-UK EU nationals by discipline)<sup>8</sup>. The figures increase for research-only staff. 14.6 % of PhD students in the UK are non-UK EU citizens<sup>8</sup>. If an agreement cannot be reached with the EU on access to research funding then what will become of UK-based ERC grantees?

In addition, many researchers go on short-term exchanges to learn new techniques, establish collaborations and maintain their networks. SULSA, via the SFC, funds international research visits for early career researchers for a minimum of a month. These visits have been hugely successful in terms of output and leverage, and one wonders what the visa implications of such visits to EU countries will be after Brexit.

Another unintended consequence on Brexit is the image that the UK now has amongst the worldwide research population (and presumably the world in general) is that it is not welcoming to foreign researchers (EU or otherwise). Whilst difficult to provide tangible evidence for this, it will be key to the UK's continued research success to convince overseas researchers that they are needed and welcome in the UK. The best way to do this is to treat the issue of researcher mobility separate to that of general immigration. Although the Government has promised to double the number of Tier 1 exceptional talent visas (from 1,000 to 2,000)<sup>9</sup>, these numbers are limited and stretched across five disciplines, and it is unclear who exactly can benefit from them (for example are postdoctoral researchers eligible?). Furthermore, these visas do/will not apply exclusively to EU nationals.

## 7. RESEARCHER CAREER DEVELOPMENT

The EU provides a lot of different opportunities for funding support for promising individuals throughout their research career. The Marie Skłodowska-Curie Individual Fellowships support both PhD and postdoctoral researchers, as well as training networks. European Research Council's (ERC) Starting Grants supports Consolidator Grants awarded to the most outstanding researchers across Europe. The funding, part of the EU's Horizon 2020 programme, is worth in total €630 million. In the 2018 cohort, the UK was the top destination for researchers (60 grants, 17 in the life sciences), and 31 Britons received this funding<sup>10</sup>.

Some countries have bought-into these science funding programmes (Norway, Switzerland, Israel), but their access rights are limited and freedom of movement is a key feature of negotiations. The potential consequences for industry participation with the UK, and localisation of industry in the UK in the face of separate regulatory requirements are huge, however we do not feel that we are the best placed organisation to comment on this in more detail.

## 8. POLICY

A consequence of Brexit and not being part of Horizon 2020/FP9 is the inability of UK researchers to influence science policy and the framework for funding schemes and decisions on spend. Associate member status does not confer this capacity either. UK researchers would lose their 'seat at the table' and the implications of this cannot be understated.

## 9. ACCESS TO EU-FUNDED RESEARCH FACILITIES

There are many EU-funded facilities both within the UK and throughout the EU. These facilities provide expensive specialist infrastructure and equipment that is necessary to perform cutting-edge research. The EU provides a large amount of funding for these facilities; Horizon 2020 has allocated €2.4 billion. The UK houses headquarters for six of these facilities, as well hosting 10 other facilities with headquarters in other EU countries<sup>11</sup>.

## 10. COMMUNICATION

Lack of communication and specific information is a huge issue for the research community, who are most uneasy at the current uncertainties surrounding their profession. In its September 2017 Future Partnership paper, Collaboration on Science and Innovation, the UK government stated: *"Given the UK's unique relationship with European science and innovation, the UK would also like to explore forging a more ambitious and close partnership with the EU than any yet agreed between the EU and a non-EU country."*<sup>12</sup> Whilst this statement embodies in theory what researchers in both the UK and EU are hoping for, it does not provide any concrete reassurance or specifics. The lack of commitment in the 2017 Autumn Budget regarding science and Brexit (in particular access to FP9), was discouraging to many. The uncertainty of the UK scientific community can be seen already with a drop from 15 % to 12 % in Horizon 2020 participation, even though researchers have been encouraged to continue applying for H2020 funding<sup>13</sup>.

It will be vital that the Government considers and implements a strong communications plan regarding the scientific community in relation to Brexit and its associated issues. This communication should not just target senior members of UK Universities, but needs to take a multi-pronged approach, and connect with researchers at all levels – from undergraduate students, to PhD students, early career researchers and senior researchers – both within and outside the UK. In addition, administrative staff and researcher-support bodies (for example SULSA and the other Scottish Research Pools) dealing with researchers should also be targeted as they will have alternative communication routes they can take advantage of.

## References

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