

Chemistry and Brexit

In June 2016, the UK voted by a small majority to leave the European Union. The campaign had created major divisions within UK society and the aftermath has sadly enhanced these divisions with entrenched positions being taken up on both sides of the argument. Curiously, in this context, even the most vociferous proponents of leaving the EU understand that research, innovation and education are areas where the UK has benefitted enormously from its membership of the EU and involvement in the Framework programmes including Horizon 2020.

Writing in *The Scotsman* following the publication of the Royal Society of Edinburgh's Advice paper to the UK negotiators, Sir John Elvidge (Chair of the Strategy Group) and I (Chair of the Sub-Group for Research, Innovation and Tertiary Education) concluded: "the best way to...(develop UK research) ... is for the UK to remain fully in H2020 and the developing European Research Area, including shaping the projects and planning future programmes."

UK politicians are keen to see research links with Europe developed and protected. Theresa May's 10th Objective for the UK after it leaves includes "we will also welcome agreement to continue to collaborate with our European partners on major science, research, and technology initiatives."

Chemists in Europe also share the desire to continue collaboration with the UK. The European Association for Chemical and Molecular Sciences (EuChemS), of which I am President, has provided advice to the European negotiators in a paper signed by 21 Presidents of Member Societies or their representatives. They argue that: "Research and industrial competitiveness across the EU greatly benefit from the input of UK researchers and vice versa. Withdrawal of the UK from the many funding schemes would remove some of the key quality drivers and fundamentally damage research and innovation in Europe as well as in the United Kingdom."

The European negotiators will not present their position on any future role of the UK in Horizon 2020 and other Framework Programmes until after arriving at an agreement over the status of UK nationals living in the EU and EU nationals living in the UK; the border between the Irish Republic and Northern Ireland and the Financial Settlement.

Most chemists and other scientist agree that the key positive attributes of the UK being within Horizon 2020 and future Framework programmes include People, collaboration, standards and com-



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patible regulatory systems. Removal of the UK from these programmes will damage all four.

People are the driving force of all research. The UK is the most popular destination for Marie Skłodowska-Curie actions, which encourage the movement of young people between European countries whilst 16 % of the Academic workforce in the UK were born in other EU countries. They greatly enrich the UK research landscape, which gives them enhanced possibilities for career progression. Many UK scientists spend part of their formative years working in a different EU country. This allows for significant enhancement of research activity by increasing the breadth of experience of so many young scientists. **Collaboration** allows groups of scientists from all over Europe to work together with industries to develop new world leading technologies. EU scientists enhance the competitiveness of UK industry whilst UK scientists enhance that of EU companies. Through Horizon 2020 some of the world's best scientists collaborate to tackle major global challenges such as climate change, antibiotic resistance, and the provision of enough food and clean water for an ever-increasing population. Collaboration also occurs

through the major international facilities such as CERN and ILL. **Standards** are greatly increased by competition. The ERC is widely seen as one of the world's most important and successful mechanisms for delivering fundamental research of the highest quality. Removing one of the key competitors would undoubtedly reduce the impact, quality and significance of the research carried out through the ERC. A harmonised **Regulatory** framework has allowed industry to operate across the entire EU. Different regulations on either side of the Channel could severely jeopardise the ability of industries to flourish.

It is in the best interests of EU and UK scientific and industrial organisations that the UK should remain an active partner in the planning and execution of all current and future Framework programmes and it is incumbent on the negotiating politicians on both sides to find a solution which allows this.

Even more importantly, it is essential that both the EU and the UK mutually and immediately guarantee the rights of one another's citizens living within their jurisdictions.

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UK SHOULD REMAIN AN ACTIVE PARTNER IN EU FRAMEWORK PROGRAMMES FOR RESEARCH AND INNOVATION