

CANCER RESEARCH UK POLICY STATEMENT: RESEARCHER MOBILITY

JULY 2019

SUMMARY

Science depends on people—scientists who generate ideas and uncover new evidence that ultimately improves the lives of others. The UK research sector comprises a mix of domestic and international scientists, underpinning our position as a world-leader in the life sciences. Cancer research projects are no different, bringing together a unique mix of expertise and skills from around the world to answer fundamental questions about cancer and develop new interventions to improve outcomes for patients. Thanks to this diverse research community, 2 in 4 people now survive their cancer for 10 years or more in the UK, compared to 1 in 4 in the 1970s.

The UK Government (herein ‘Government’) is in the process of designing a new, post-Brexit immigration system. Ensuring that the UK produces the highest quality research will depend in large part on the attractiveness of the UK as a destination for international researchers. A skilled scientific workforce is essential to achieving the ambitions in the Government’s Industrial Strategy¹ and addressing shortages of STEM skills in the UK’s science and innovation sector. And the British public recognises the importance of an international research workforce to the UK: 90% of the public think scientists make a valuable contribution to society and 86% want to increase or maintain levels of the immigration of scientists.²

To maintain the UK’s position as a world leader in medical research, **Government must design a post-Brexit immigration system that enables us to attract, recruit and retain global scientific talent at all professional levels, regardless of nationality, and that facilitates collaboration with international partners.** The immigration system should also facilitate short-term travel for scientists, both into and out of the UK.

- 76% of CRUK funded postdoctoral researchers at our Institutes are not from the UK³
- Half of our funded PhD students are not from the UK⁴
- More than one-third of our clinical trials involve another country outside the UK⁵, relying on researchers being able to embark on short-term international travel.
- 72% of UK-based researchers spent time at non-UK Institutions from 1996 to 2012⁶ and nearly 50% of UK cancer research involves international collaboration⁷

While some of Government’s proposals in the 2018 Immigration White Paper are welcome, such as removing the cap on skilled migration, expanding the definition of skilled and abolishing the RLMT, in totality they amount to bringing EU citizens under the current non-EEA immigration system, which is not fit for purpose. We are especially concerned about this as the distinct majority of international researchers we support come from the EU. We believe current proposals would:

- Disincentivise skilled scientists from entering the UK, particularly from the EU
- Significantly increase costs for research institutions
- Cause serious strain to an already overstretched immigration system

Instead of bringing EEA citizens under the current non-EEA system, **we recommend that Government designs an improved immigration system for all scientists that:**

1. **Reduces costs and bureaucracy for scientists and research institutions**
 - The Home Office should reduce the costs associated with recruiting international scientists—for both the employing research institutions and applicant scientist.

- Building on proposals to scrap the Resident Market Labour Test, Government should commit to reducing bureaucracy for employers and international applicants for researcher posts, setting timeframes for digitization of the system.
- 2. Can be implemented effectively, given proposed timelines and Home Office capacity**
- Government should reassess the timescales of implementing the new system.
 - The Home Office should make the timelines around digitizing the immigration system transparent.
 - Government should undertake an impact assessment of current proposals on the workload of designated sponsorship bodies such as UKRI and the Royal Society.
 - Government should increase Home Office (UKVI) capacity in line with the expected uptake in demand for the visa service associated with EU nationals requiring a visa to work.
- 3. Has entry criteria that enables skilled scientific talent to take up positions in the UK**
- Our analysis has found that a minimum salary threshold of £30,000 will have a negative impact on the international recruitment of some skilled scientists. If minimum salary thresholds are to be used, they should be at a level that does not prevent skilled scientists from taking up vital roles, in any region across the UK.
 - Entry criteria should accommodate researchers who are working less than full time.
 - Government should consider more than just economic indicators when considering entry criteria, for example potential to improve research outputs.
 - If the Migration Advisory Committee can design a shortage occupation list that is dynamic, it should be used to exempt skilled scientists from minimum salary thresholds.
 - Viable alternatives to current Government proposals should be considered, including: exemptions from controls for scientists; a reciprocal migration deal with the EU for scientists; and the Russell Group's proposed EEA skills permit.
- 4. Maintains or aims to increase current levels of international students in disciplines relevant to cancer research**
- The Department for Education, HM Treasury and BEIS should assess the impact for the UK's medical research sector of extending the current tier 4 system to EU citizens, looking at expected impact of new bureaucracy for EU students and additional tuition and visa-related fees.
- 5. Enables frictionless movement into and out of the UK for researchers**
- During EU exit negotiations, the UK Government must prioritise a reciprocal agreement with the EU for short-term travel for researchers as part of its proposed science and innovation pact.⁸
- 6. Signals to the global research community that the UK is open to global scientific talent**
- Government should be consistent in communications regarding international scientists, demonstrating they are welcome in the UK.
 - In EU withdrawal negotiations, Government should prioritise issues likely to impact on the attractiveness of the UK for international researchers: access to funding; reciprocal short-term mobility; and citizen's rights.

FURTHER EVIDENCE: RECOMMENDATIONS FOR A POST-BREXIT IMMIGRATION SYSTEM FOR RESEARCH

This section provides further evidence on the likely impact Government proposals would have for cancer research and adds detail to our policy recommendations.

1. A new system must reduce costs and bureaucracy for scientists and employers

Engagement with HR professionals, employing institutions and non-EEA scientists based in the UK consistently highlights the current immigration system as both extremely costly and bureaucratic for both applicant and employer. Assuming a researcher has no dependents, the following costs are incurred^{9,10}:

- Visa application fees- £1,220 for tier 2 (skilled worker) visa, *commonly paid by researcher*
- The Health Surcharge- £200 a year, *commonly paid by researcher*
- The Immigration Skills Charge¹¹- £1,000ⁱ a year, *paid by employersⁱⁱ*

Extending these costs to EU scientists will significantly increase the amount employers spend on recruitment. Doing so may mean many research institutionsⁱⁱⁱ, and funders may have to divert money away from funding important research projects and associated infrastructure. It may also give other EU countries a competitive advantage over the UK, where EU scientists face no visa costs.

The current system is also bureaucratic for employers and international applicants. Government has recognized this and the white paper committed to a new 'streamlined' system¹² that would aim to process visas in 2-3 weeks. If achieved, this would be a marked improvement from the current system—but still at a considerable disadvantage compared to EU countries for EU applicants. Proposals to achieve this include exploring digitizing visa processes. The white paper proposed scrapping the resident labour market test, which is a positive move that would reduce the time taken to recruit some international posts. CRUK also supports the endeavour to streamline and digitise the visa system, which has the potential to significantly reduce bureaucracy. However, currently there are no clear timelines for a digital solution or clear evidence detailing how the ambition to process visas in 2-3 weeks will be achieved.

Researcher costs are comparably high and should be lowered

The UK is already significantly more expensive than many comparable countries for international researchers and health professionals who accept job offers in the UK, and UK employers like research institutions and the NHS.

In a survey of over 600 CRUK funded researchers, 96% identified the ease with which dependents can access public services and take up work as a key factor in their decision when deciding where to choose as a research destination. However, the current UK system is particularly expensive for those researchers with dependents, and recent Russell Group analysis demonstrated that the majority of visa-related costs are covered by the researcher.¹³ In 2018, a five-year visa for a researcher with a partner and three children cost over £11,000.¹⁴ The same researcher and family could obtain a four-year French Talent passport, costing approximately £1,040.¹⁵

Extending these current, non-EEA costs to scientists from the EEA could deter skilled EEA scientists from entering the UK, in turn damaging the competitiveness of the research sector. This is a key

ⁱ There is a lesser annual fee incurred by charitable or medium sized employers

ⁱⁱ There is a Conservative Manifesto pledge to double this to £2,000, although there have been no recent developments

ⁱⁱⁱ Including those which are publicly funded

challenge for Cancer Research UK, as a high proportion of our international funded researchers come from the EEA. For example, a third of our Fellows are from the EU, compared to 10% from other countries outside of the UK. Comparably high dependent visa costs could contribute to a brain drain from the UK's research sector. Government should lower costs faced by all international researchers.

Role	UK (%)	EEA (%)	Non-UK, non-EEA (%)
PhD ¹⁶	50	35	15
Post-docs ¹⁷	24	42	34
Fellows ¹⁸	61	31	8

Figure 1: CRUK's funded research workforce, by nationality¹⁹

Research institutions should not face significant additional recruitment costs

Applying current costs in the non-EEA system to EU nationals will significantly increase the cost of employment for research institutions. Research institutions currently spend extensively to navigate the immigration system and covering visa costs. The Russell Group estimates current Government proposals would increase the cost of international recruitment for universities by 34%.²⁰

As demonstrated by figure 1, a disproportionate number of our international researchers are from the EU. By bringing EU citizens under the current immigration system, there will be a significant additional cost to bringing in scientific talent from the EU. As a medical research charity, we have finite budgets. Increasing expenditure to navigate the immigration system and sponsoring more researchers will cause a decrease in expenditure in other aspects of our research. Expenditure navigating the immigration system includes employing more non-research, administrative staff to process additional bureaucracy for international recruitment once freedom of movement has ended. An increase in visa costs and these additional recruitment costs may mean CRUK is less able to spend on lab consumables and other aspects of research. Increased expenditure for publicly-funded universities will also mean they have less budget for important research endeavours on a range of areas.

The NHS should not face significant additional international recruitment costs

NHS staff are essential to reaching CRUK's ambition of seeing 3 in 4 people survive their cancer by 2034. Alongside their clinical responsibilities, NHS staff undertake and facilitate research in the NHS and help to translate research breakthroughs into life-saving tests and treatments. NHS staff are currently stretched and struggling to recruit from the domestic pool of health professionals, with 1 in 10 diagnostic posts vacant in England and Scotland.²¹ The Immigration White Paper proposals not only make it more difficult for the NHS to recruit from the non-UK pool by adding bureaucracy to the recruitment process, but they will also dramatically increase the costs associated with this. The Royal College of Physicians estimate that recruitment for the NHS alone would cost an additional £225m in the next 3 years under current proposals.²² As the Institute for Government concluded in an assessment of current processes, 'The system depends on charging applicants high fees and shifting problems elsewhere in government.'²³ While the Home Office aims to be cost neutral, it is other departments – which are already stretched for financial resource – that are set to pick up the tab for visa costs associated with ending freedom of movement. Government should consider changing the Home Office approach from cost neutrality to one which views the Home Office as an active agent in attracting and recruiting global talent to contribute to UK.

Recommendations:

- **Government should commit to reducing costs for Tier 2 sponsors and applicants, including costs associated with dependents visas.**

- **Building on proposals to scrap the Resident Market Labour Test, Government should commit to reducing bureaucracy for employers and international applicants for researcher posts, setting timeframes for digitization of the system.**

Case study 1: Alexis Webb– the Tier 2 system is costly and bureaucratic

Alexis Webb – the Tier 2 system is costly and bureaucratic

Alexis Webb is a US citizen and came to the UK as a skilled scientist in 2013, taking up a Research Associate position at the Sir Francis Crick Institute, studying the genetic mechanisms underlying vertebrae formation in developing embryos. She studied a Neuroscience PhD in the US, before moving to Germany in 2010 to take up a post-doctoral position in Development Biology at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden. She described the German visa process as ‘head and shoulders’ above the system in the UK, saying the bureaucratic requirements in the UK left her feeling like she was ‘fighting to remain in the UK’.

Alexis has spent over £10,000 in fees to the Home Office since being in the UK. As is common in the research sector, Alexis took up various post-doc positions, securing different funding awards for each role. As the Tier 2 (skilled worker) system is currently structured, every time she changed funding sources she incurred visa costs.

In 2016, she applied for a spouse visa. In doing so she had to return to the US. By the time the Home Office processed her spouse visa more than 180 days had passed since the end of her Tier 2 visa, so her continuous residency was reset. This means she will now qualify for permanent residency in 2021, rather than 2018.

Alexis was also frustrated at having to pay the NHS surcharge, given she is on a work visa and pays tax. Rather than demonstrate to international scientific talent that the UK is open for business, current policies make it difficult for international scientists to come into the UK.

2. Timeframes and ambitions should be reassessed and Home Office capacity increased

As freedom of movement ends, the Home Office will have to cope with a substantial increase in the number of visa applications from skilled people from the EU. The Institute for Government recently concluded that ‘the Home Office is not ready or able to meet the challenge of ending free movement after we leave the EU’.²⁴ Home Office capacity should be assessed and increased if Government is to successfully introduce wide-sweeping changes to the immigration system in the given timeframes.

EU nationals are indispensable to CRUK’s work. These skilled scientists currently do not have to apply for a visa. However, current proposals set out in the White Paper indicate in the future they would need to go through a similar process as non-EEA nationals currently do – which is costly and comparatively bureaucratic for employing institutions and international applicants.

If the current composition of CRUK’s funded research workforce were to persist, under current Government proposals the Home Office and other relevant bodies^{iv} would have to process:

- Over double the number of Tier 4 (student) visa applications as today’s levels
- An increase by just less than a quarter of post-doctoral visas
- Four times more visas for our funded fellows²⁵

^{iv} For example, the Royal Society are currently involved in the process for approving Tier 1 ‘Exceptional Talent’ visas

Pace and legislative scrutiny of proposed changes

A new, functional system will need to be implemented by the end of January 2021. The current points-based system took over 4 years to implement following the initial White Paper in 2005. The Home Secretary described current proposals as ‘generational changes’ to the system.²⁶ While Government has said there will be a phased implementation of changes to the immigration system extending beyond January 2021²⁷, this should be assessed so that EU researchers are introduced to an immigration system which is fully functional and fit for purpose.

There is also a danger that these changes – described by the Home Secretary as “the biggest change to our immigration system in a generation”^v – will not receive appropriate parliamentary scrutiny. The Immigration Bill, in its current form, would end freedom of movement and empower Government to pass all subsequent immigration proposals through Immigration Rules, a form of secondary legislation. While secondary legislation does allow for a limited form of parliamentary scrutiny, it does not seem to be the appropriate mechanism for making ‘generational’ changes, especially not to something as important as a person’s immigration status. The Joint Committee on Human Rights has expressed concern about the use of secondary legislation to manage something as important as a person’s immigration rights.^{vi}

A new, digitised system which can streamline visa applications was alluded to in the immigration white paper. This could help Government reduce the time taken to implement reforms. However, no timeframes have been given for the development, testing and implementation of any new technology.

Case study 2: Tier 1 visas

Currently the Royal Society and Home Office are involved with processing Tier 1 visas associated with science and research. Currently capped at 2,000 a year, Tier 1 visas are for ‘exceptional talent’. Many of Cancer Research UK’s Fellowship awards are eligible for this visa. Cancer Research UK awards around 20 new fellowships a year, currently funding a total of 130 fellows. EU nationals, who currently don’t have to apply for visas to work in the UK, make up 31% of our funded fellows.

In 2018, there was not a single Tier 1 visa application by Fellows on our research projects. Based on the current composition of our funded research workforce, bringing EU citizens under the current system could substantially increase the number of visas that need to be processed. It is not clear that Home Office (specifically the UK visa team) or associated accrediting bodies like the Royal Society have capacity to deal with a radical increase in this type of work.

Find out more on CRUK’s website about tier 1 visas: <https://www.cancerresearchuk.org/funding-for-researchers/research-features/2017-07-31-accelerated-uk-work-visa-route-for-early-and-mid-career-researchers>

^v “Home Secretary asks independent migration experts to advise on future salary thresholds”, Home Secretary, 24 June 2019, <https://www.gov.uk/government/news/home-secretary-asks-independent-migration-experts-to-advise-on-future-salary-thresholds>

^{vi} Legislative Scrutiny: Immigration and Social Security Co-ordination (EU Withdrawal) Bill, Joint Committee on Human Rights, 20 March 2019, <https://publications.parliament.uk/pa/jt201719/jtselect/jtrights/569/569.pdf>

Recommendations:

- **Government should reassess the timescales of implementing the new system** given the unprecedented pace of change proposed.
- **The timelines around digitising the immigration system should be made transparent by the Home Office** as the success of implementing the scale of change required will need a streamlined system.
- **Government should undertake an impact assessment of current proposals on the workload of designated sponsorship bodies such as UKRI and the Royal Society should be undertaken** and made publicly available.
- **Home Office (UKVI) capacity must increase further.** This could be more staff or, as recommended, better technology, including IT for processing visas.

3. Entry criteria should enable skilled scientists to take up research positions in the UK.

There is currently a shortage of STEM skills in the UK's science and innovation sector. Among engineering, science, and tech-orientated firms, nearly half (44%) report difficulties in finding experienced recruits with the right STEM skills.²⁸

What it means to be 'skilled'

To enter the UK as a skilled worker, UK Government is proposing individuals fill roles that require a minimum of RQF 3 (A-Level or equivalent qualification and above) and a salary of £30,000.²⁹ If applicants are aged 25 or lower or switching from a tier 4 visa, lower thresholds are applied. This may be as low as £20,800, with different thresholds applying to different roles.

Expanding the definition of skill to RQF 3 is positive and can help the recruitment of international staff. However, salary thresholds should not present an additional barrier to recruiting to STEM roles. A minimum salary threshold of £30,000 could prevent some skilled scientists from entering the UK.

Minimum salary thresholds should not prevent recruitment of global scientific talent

An example of a highly-skilled, yet modestly paid, workforce is the technical workforce. Technical roles cover a diverse range of staff. Technical staff support researchers and research projects, with roles split to varying degrees between research directly and the management of lab space and processes. The technical workforce comprises UK and non-UK nationals and with staff both skilled by Government definitions and not.

Minimum salary thresholds of £30,000 would restrict research institutions from recruiting from the international talent pool. UK institutions tend to recruit technicians from the international pool when filling an especially niche, specialist role. 90% of international technicians at Russell Group Universities are skilled to degree level, compared to 64% of the overall technical workforce.³⁰ As illustrated by case studies 3. and 5., these individuals could be prevented from entering the UK, if £30,000 thresholds were retained.

Approximately 5% of skilled (by Government definition) scientific posts at Cancer Research UK's Sir Francis Crick, Manchester and Beatson Institutes^{vii} are filled by EU nationals earning less than £30,000—and all of these staff are in technical roles.³¹ While a relatively small proportion, if this was indicative of the wider research sector, approximately 400 skilled science technicians at Russell

^{vii} Based on data provided by CRUK. This is the total percentage- the range was from 2.4% to 5.2% of technical staff.

Group Universities alone would not have been able to enter the UK to take up their current role under proposed salary thresholds.^{viii}

And, as illustrated by case studies in the appendix, many EU researchers now earning more than £30,000 entered the UK on less than £30,000. These individuals would be penalized by proposals and would inhibit early-mid career researchers over the age of 25 from continuing or beginning their career in the UK.

Entry criterion should accommodate those working less than full time

Current proposals do not allow salaries which are nominally less than £30,000, but above £30,000 when measured as pro-rata. A recent Russell Group report showed that disproportionate numbers of women tend to work less than full time in academia.³² By not accommodating for posts that work less than full time (LTFT):

1. Research institutions' ability to fill specialized, LTFT roles will be inhibited
2. Female applicants would be discriminated against

Regional variation in wages

While regional salary thresholds may not be practical to implement, a national salary threshold must account for regional disparities in wages. Wages in the South-East of England tend to be higher than the rest of the UK³³, reflecting regional variation in cost of living and local employer budgets. If a national salary threshold is to be used, it must reflect regional disparities in wages, going against Government's place-based agenda, a key part of the industrial strategy.

Those applying for a Tier 2 visa through the 'new entrants' route will be subject to a lower minimum salary threshold of £20,800 under current proposals. This threshold could also prevent talented graduates from taking up employment across the UK, disproportionately impacting areas outside of the South East. For example, average salaries for graduates in the North West, Yorkshire and the Humber, the East Midlands, Wales and Northern Ireland are below the £20,800 Tier 2 new entrant salary threshold.³⁴

Entry criteria should consider more than economic factors

The immigration white paper noted that the Migration Advisory Committee would have an expanded role in helping to develop immigration policy, including entry criteria to the UK.³⁵ The MAC is currently comprised solely of economists. When determining the merits of different approaches to immigration policy, it is important that Government considers more than just economic factors. While investment in medical research has a good return on investment for the wider economy³⁶, the real value is in the discovery of new tests and treatments for UK patients.

The Shortage Occupation List

Clarity is yet to be provided on the role of the Shortage Occupation List, which is currently not dynamic enough to meet the needs of the research sector. It is not clear whether it is possible to have a shortage occupation list which is dynamic and able to keep up with the rapidly evolving needs of the research sector. If designed to meet the needs of the sector, the shortage occupation list should be used to exempt skilled scientists from minimum salary thresholds. If a shortage occupation list is to be used to make exemptions from immigration rules for the research sector, it

^{viii} Based on the total number of Science technicians in post at Russell Group Universities, cited in the Russell Group's 'Challenges and costs of the UK immigration system for Russell Group Universities', 2019: <https://russellgroup.ac.uk/media/5750/challenges-and-costs-of-the-uk-immigration-system-for-russell-group-universities.pdf> This does not account for those subject to a lower threshold as a result of switching from a student (tier 4) visa, or those below the age of 25, since this data is not available.

should exempt job families—rather than job titles. Job titles in the research sector are extremely varied, with essentially the same role at two different institutions often having distinctly different job titles.

Alternative proposals

Government should consider looking at alternative arrangements to ensure a thriving research environment. Analysis from the Royal Society shows approximately half of comparable countries have a dedicated visa route for scientists.³⁷ The Government Office for Science is currently looking at the impact of Government's immigration proposals for the science and research sector. Government should consider the evidence given from the sector and the subsequent case for either a dedicated visa route, or exemptions from immigration controls, for skilled scientists.

A disproportionate amount of our international funded researchers are from the EEA. Reciprocal arrangements for the migration of EEA scientists should be considered during EU withdrawal negotiations.

The merits of whole-system alternatives to current proposals should also be considered. For example, the Russell Group's proposal of an EEA skills permit would allow EEA students or migrants skilled by government definitions to work or study in the UK for up to 5 years.³⁸ Applicants would simply have to demonstrate a job offer, bring a research grant to the UK or prove that they are studying at an accredited institution.

In June 2019, the Home Office instructed the MAC to revisit minimum salary thresholds. We welcome the chance to feed-in and hope new proposals enable the recruitment of skilled international scientists at all professional levels.

Case study 3: Romana Ranftl, Austrian scientist at the Institute of Cancer Research

Romana is an Austrian researcher who currently works in a technical role as a Higher Scientific Officer at the Institute of Cancer Research (ICR). Romana currently works on projects which seek to discover novel cancer therapies. For example, she helps her team to identify molecules in cancer cells that can be targeted to stop breast cancer cells growing. She is using state-of-the-art technical methods such as CRISPR/Cas9 and performs her experiments in 3D cell cultures that better mimic the tumour compared to conventional 2D methods.

Romana began work in the UK in 2014, taking up a Scientific Officer role at the ICR. Her initial salary was £29,000. **Subsequently, despite her niche academic and professional background, under the Government proposal of a £30,000 minimum salary threshold, she would not have been allowed into the UK for work.**

Romana completed her university education in Vienna in 2011, specializing in Biotechnology. She then worked as a Research Technician for a Pharmaceutical company in Austria until 2014, contributing to projects aiming to develop novel cancer drugs. In 2014, aged 32, she came to the UK to work as a Scientific Officer at the ICR. She first helped to set-up the newly established research laboratory for Tumour Microenvironment at the ICR and contributed to research investigating the role of non-cancerous cells within a tumour.

Romana's time, as with many technical staff, is split between research and managerial duties. She contributes to maintaining a functional laboratory and teaches new lab members such as PhD students and Postdoctoral researchers how to operate within the lab effectively and safely. Romana is also involved in research directly; a cited author³⁹ having contributed to scientific publications and gathering preliminary data for research projects.

Recommendations:

- **If minimum salary thresholds are to be used, they should be at a level that does not prevent skilled scientists from taking up vital roles in regions across the UK.**
- **Entry criteria should accommodate researchers who are working less than full time.**
- **If the Migration Advisory Committee can design a shortage occupation list that is dynamic, it should be used to exempt skilled scientists from minimum salary thresholds.**
- **Consider viable alternatives to current Government proposals**, including: exemptions from controls for scientists; a reciprocal migration deal with the EU for scientists; and the Russell Group's proposed EEA skills permit.

4. International student numbers for STEM subjects must be maintained or increased

International students outside of the EEA have a designated route in the immigration system, through the tier 4 visa route. Students not originally from the UK are vital for progress in cancer research. CRUK currently spends approximately £20m per annum on studentships (5% of our total research spend).⁴⁰ Our PhD students conduct vital research and are often the future leaders in their fields. They are integral to our ambitions to see improved outcomes for cancer patients.

Reflecting the need for a mix of domestic and global scientific talent, half of our funded PhD students are not from the UK, and 35% are EEA citizens. This differs from than the wider research sector—only 25% PhD students studying in the UK from 2012-2017 were from the EU, with 56% of PhD students coming from outside of the UK and EU.⁴¹ This implies that our research is more reliant on PhD students from the EU than the wider sector.

Case study 4: Graduate students at the Cancer Research UK Cambridge Institute

The Cancer Research UK Cambridge Institute is a joint venture between Cancer Research UK and the University of Cambridge. Research ranges from basic cancer biology and computational biology through to translational research and clinical application. The Institute is world-leading and continues to produce exemplary research. For example, hyperpolarised carbon-13 spectroscopic imaging, a technique that can increase the sensitivity of MRI by more than 10,000 times, will soon undergo patient trials.

The Institute has 61 graduate students, playing pivotal roles in the continuing success of research programmes. In 2017, approximately one third of graduate students at the Institute were from the UK, with two thirds coming from outside of the UK. In 2017, the Institute took on 11 new graduate students— 10 of whom were from outside of the UK.

As recognized in the Migration Advisory Committee International Students report, international students substantially benefit the economy.⁴² In 2014/15, international students paid an estimated £4.8bn to universities in tuition fees alone, accounting for 13% of total university income.⁴³

Many students stay on to undertake further research in the UK through further work or study once their first degree has finished, benefitting the UK economy and advancing research progress. Approximately 89% of EU graduates of UK Universities working in the UK hold professional level jobs within six months of graduation, compared with 79% of UK students.⁴⁴

Clarity on EU tuition fees is needed

It is not currently clear if EU students will pay international tuition fees in the future. International fees for EU students could lead to a decline in talented EU students studying in the UK, for those

who are no longer able to afford fees, or would prefer to pay EU fees in an EU member state. Uncertainty around tuition fees for prospective students may also prove a deterrent to prospective students.

Proposed post-study work rights are an improvement, but could be further improved

In 2012, the Government removed the post-study work visa which had allowed international (non-EU) students to stay in the UK and find work for up to 2 years.⁴⁵ In the Immigration White Paper, Government propose that both Bachelor's and Master's students have 6 months to stay in the UK to find work, with 12 months for PhD students. While this is an improvement on the present system, where international students have just 4 months to secure work following completion of studies, it is still less generous than 2012. Government should maximise the time students have in the UK to find jobs in the research sector.

Case study 5: Stela Monk, Romanian scientist based at Medical Research Council's Cancer Unit

Stela, originally from Romania, works as a Research Assistant in the MRC Cancer Unit at the University of Cambridge, where she has been since 2015. She is part of a research team that assesses novel treatments such as drugs directed against various epigenetic modulators in combination with immunotherapy- that harnesses the body's immune system to fight cancer progression. These treatments focus on treating pancreatic ductal adenocarcinomas. In the UK, only 20% of patients with this cancer survive for more than one year after being diagnosed.

Stela is integral to the functioning of the research project and her responsibilities include: planning and executing experiments; analysing the results of experiments *and*; presenting data to internal and external colleagues. She also trains some technical staff so that they can contribute effectively to research projects.

Stela came to the UK to study as soon as Romania joined the EU in 2007, as she was able to afford domestic fees and was eligible for student loans. She studied a BSc in Medical Genetics at Queen Mary, followed by an MSc in Immunology and Infectious Diseases at the London School of Hygiene and Tropical Medicine. Stela says she would not have been able to afford a UK education if it was not for her domestic status and would have pursued her studies elsewhere in Europe if she had to pay international fees.

Stela's current role at the MRC cancer unit requires 5 years work experience and a master's degree in a relevant field. Like others in the medical research sector, Stela is highly skilled, but does not receive a high wage. **Stela started her role on c.£25,000 in 2015, 3 years after finalizing her studies, so would not have been eligible to apply for this role according to Government's current proposal for a £30,000 minimum salary threshold.**

Recommendations:

- **The Department for Education, HM Treasury and BEIS should assess the impact for the UK's medical research sector of extending the current tier 4 system to EU citizens, looking at expected impact of new bureaucracy for EU students and additional tuition and visa-related fees.**

5. Frictionless international movement is essential for progress in medical research

International travel is a key component of a researcher's professional development and vitally important to advance scientific progress through collaboration. 72% of UK-based researchers spent time at non-UK Institutions from 1996 to 2015. Nearly half of the UK active researcher population is transitory—that is, they have stayed in the UK for less than two years, or temporarily stayed outside for a similar period.⁴⁶

Nearly half of all UK cancer research involves international collaboration.⁴⁷ This collaboration is vital to UK research outputs—nearly half of the UK's scientific publications have non-UK authors and the impact of these papers is significantly higher than the average impact of UK papers.⁴⁸ If short-term travel between the EU and UK is made considerably more difficult for UK researchers, we risk isolating ourselves from international collaborators – which ultimately benefit UK patients.

Common reasons for international travel include collaboration (such as clinical trials), giving and receiving training, use of equipment and attending conferences. The UK and EU collaborated on over 4,800 clinical trials between 2004 and 2016⁴⁹, requiring movement of the research workforce to share data, equipment, knowledge and expertise. Clinical trials often involve more than one country when looking at rarer cancers, like brain or paediatric cancers, since domestic patient populations are too small to conduct robust research.

Restrictions on EU travel could make the UK a less attractive destination for researchers

An immigration system which makes short-term travel for researchers more difficult could:

- reduce the attractiveness of the UK as a research destination
- inhibit our ability to take lead roles in clinical trials
- prevent researchers from attending vital conferences.

Any future immigration system therefore must enable short-term mobility into and out of the UK.

We welcome steps to stop penalizing researchers' continuous residence status when they spend prolonged periods outside of the UK for research purposes.⁵⁰

Recommendations:

- **In EU exit negotiations, Government should prioritise a reciprocal agreement with the EU for short-term travel for researchers as part of its proposed science and innovation pact⁵¹**

6. Signalling to global scientists and research partners: the UK is open for business

Designing an immigration system that works for science would be a significant step forward in helping set the tone of our future as a research destination. There is growing evidence to show scientists feel less welcome in the UK than they did before the EU referendum.⁵² While Government language on the importance of international researchers has generally been helpful, there have been incidence where senior Government officials have used rhetoric which undermines our international researchers. Feedback from interviews with some of our funded international researchers was that these public statements have a demotivating, hostile affect. More high-profile and consistent language needs to be used, demonstrating to researchers based in the UK, and those considering the UK as a research destination, that the UK values its international researchers. More needs to be done to state the importance of international scientists to the UK so that we can retain our current international workforce and attract the next generation of talented scientists. Government also need to make it clearer that international researchers in the UK are valued.⁵³ We welcome

Government's move to subsidise Settled Status Scheme fees, showing EU nationals that they are valued in the UK.

International researcher applications are declining

The message Government sends to scientists in both policy and public discourse is incredibly important.^{ix} Frequently, we hear that our research community feel less welcome than they did before the EU referendum.⁵⁴ This may be a contributing factor for a decline in non-UK applications we are beginning to see. For example, in 2016, 28% of post-doc applicants at the CRUK Beatson Institute were from the EU, falling to 13% of applicants in 2018.⁵⁵

Government also needs to provide reassurances to researchers in the face of great uncertainty regarding the future relationship between the UK and EU.

Recommendations:

- **Government should be consistent in communications regarding international scientists – demonstrating they are welcome in the UK**
- **In EU withdrawal negotiations, Government should prioritize issues likely to impact on the attractiveness of the UK for international researchers: access to funding; reciprocal short-term mobility *and*; citizens' rights**

*Enquiries relating to this paper should be directed to Ben Moore, Policy Advisor:
ben.moore@cancer.org.uk*

Appendix – additional case studies

Case study 6- Ana Ferreira, Portuguese Scientist based at the ICR

Ana Ferreira is originally from Portugal and works as a Higher Scientific Officer at the Institute of Cancer Research. She completed her higher education in Portugal, focussing on areas related to pathology and oncology research. Ana processes clinical samples for phases 1 and 2 drug development. **Under current Government proposals, Ana would not have been able to apply for her position at the ICR if she were 1 year older when the post was advertised.** She would have been prevented from entering the UK for work as the position was advertised at £24,200 a year and she would have been over 25 – the Government has proposed a minimum salary threshold of £30,000 for international applicants over the age of 25, who have not recently studied a degree in the UK.

In 2014, Ana came to the UK to work as a Medical Lab Assistant at Aintree University Hospital in Liverpool. She worked in the cellular pathology department and was involved in the processing of human tissue samples for diagnostic purposes. Ana was then appointed as a Scientific Officer at the Institute of Cancer Research, earning £24,200. Her team is involved in a range of research projects that can help to accelerate progress in cancer survival. Ana processes clinical samples for phases 1 and 2 drug development. In recognition of her contribution to these research projects, she was promoted to Higher Scientific Officer in 2018. Despite having a niche skillset relating to the study of cancer and human tissue, under current Government proposals she would not have been able to enter the UK to take up her initial position.

^{ix} CRUK communicates updates to researchers to try and provide more clarity on developments with immigration policy

Case study 8 - Hanna Zielinska – Research Technician, University of Bristol

Hanna Zielinska is a Polish national who currently works as a Research Technician at the University of Bristol. Hanna works on projects looking at how nutrition and metabolism affect cancer progression. For example, she is involved in a clinical trial looking at exercise as an intervention for men with prostate cancer. Her role involves collecting, managing and processing blood and human tissue samples. She runs various assays to measure the circulating levels of metabolic markers and performs immunohistological analyses. While Hana's role is highly skilled, like others in the medical research sector, she has sacrificed a lucrative career to advance our understanding of fatal diseases. Currently, Hana's salary is £27,025. As she studied in the UK immediately before taking up her current role, Hana would likely be allowed to take up any job paying above £20,800.

However, if she had completed her studies outside of the UK, she would have been subject to a £30,000 salary threshold according to Government proposals of a £30,000 minimum salary threshold—and thus not been eligible to enter the UK for work.

Hanna completed her undergraduate studies in 2012 in Pharmaceutical Sciences at the University of the West of England. Hanna then started work as a Research Technician at the University of Bristol's Microvascular Research Lab. Here, she investigated the role of splicing factors in cancer tumour growth and metastasis. This project involved various cellular and molecular biology techniques including tissue culture, protein and DNA techniques.

Hanna then studied a PhD at the University of Bristol, exploring the molecular mechanism underlying the clinical connection between metabolic conditions such as obesity and diabetes and breast cancer progression. Hanna was awarded the prize of Best Doctoral Research Thesis 2017/18 at the University of Bristol, her dissertation supervisor describing her as 'incredibly industrious- an excellent scientist'.

Case study 7- Barbara Martins da Costa, Portuguese Scientist based at the ICR

Barbara, originally from Portugal, works as a Scientific Officer at the Institute of Cancer Research (ICR). Her role is split between assisting with trials involving animals in the biological service unit and assisting in clinical trials looking into brain cancers neuroblastoma and medulloblastoma.

Barbara completed her ungraduated studies in Biology in Portugal, before gaining 5 years' experience in veterinary biology in Portugal, working in a veterinarian hospital. In 2016, she came to the UK to help advance progress in cancer research, taking up her current role.

Barbara was 40 and earned £26,000 when she came to the UK. **Under Government's current proposal of a £30,000 minimum salary threshold, she would not have been allowed into the UK to work, despite her experience and academic background.** This threshold is lower for those who have studied in the UK or are under the age of 25—neither of which apply to many researchers seeking to come to the UK, including Barbara. Minimum salary thresholds should not prevent institutions focussing on cancer research from employing the most qualified candidates.

References

- ¹ Industrial Strategy: Building a Britain fit for the future, (2017)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf
- ² Time to get it right, British Future, 2017
- ³ Based on the survey responses of over 600 of our funded research community
- ⁴ Based on internal data collected by CRUK's R&I directorate
- ⁵ Statistics from CRUK's internal databases and include clinical trials from our Clinical Research Committee, New Agents Committee and Centre for Drug Development
- ⁶ <https://www.ohe.org/publications/exploring-interdependencies-research-funders-uk>
- ⁷ Elsevier, International comparative performance of the UK research base, 2013
- ⁸ <https://www.gov.uk/government/publications/framework-for-the-uk-eu-partnership-science-research-and-innovation>
- ⁹ Based on analysis by the Together Science Can campaign, documented in 'An Profile of International Visa systems' <https://drive.google.com/file/d/1ETU8hWw2M54h9kQ7WDti6GPqVEegr9yu/view>
- ¹⁰ Whether this is paid by the researcher or employing institution varies depending on individual institutions' policies. Cancer Research UK currently funds projects involving over 4,000 nurses, students and scientists
- ¹¹ Excluding roles requiring a PhD, who are currently exempt from this charge
- ¹² Immigration White Paper (2018)—'We will also take this opportunity to transform our operational systems and processes, using the latest digital technology to streamline and improve our service to individuals and employers'
- ¹³ For example, only 10% of Russell Group Universities always cover the immigration health surcharge; 50% cover tier 2 visa application fees; 0% cover dependent family members costs. The Russell Group and Ernst Young (2019): Challenged posed by immigration proposals to Russell Group Universities
- ¹⁴ Quoted in the S&T committee report
- ¹⁵ French Premier Emanuel Macron said he wanted France to become 'Europe's new capital for research and innovation'
- ¹⁶ Internal data collected by CRUK, for PhD students receiving a CRUK award
- ¹⁷ Internal data for post-docs based at our core-funded institutes
- ¹⁸ Internal data
- ¹⁹ Internal data collected by CRUK
- ²⁰ The Russell Group and Ernst Young (2019): Challenged posed by immigration proposals to Russell Group Universities
- ²¹ HEE Phase 1 Cancer Workforce plan
- ²² The £490m question, Royal College of Physicians
- ²³ The Institute for Government (2019): Managing migration after Brexit
- ²⁴ The Institute for Government (2019): Managing Migration
- ²⁵ These could be either Tier 1 or Tier 2
- ²⁶ Home Secretary Sajid Javid announcing the immigration White Paper to the House of Commons:
<https://www.gov.uk/government/speeches/home-secretary-future-border-and-immigration-system>
- ²⁷ Home Office, The UK's future skills-based immigration system: engagement programme, March 2019, Accessed May 2019 <https://www.gov.uk/guidance/the-uks-future-skills-based-immigration-system-engagement-programme>
- ²⁸ ABPI (2019): Bridging the Skills Gap
- ²⁹ Unless switching from a student visa, in which case the threshold is £20,800
- ³⁰ Russell Group (2017): Impact of Brexit on Technicians
- ³¹ Based on data provided to CRUK from the HR departments at Cancer Research UK's Beatson, Crick and Manchester Institutes
- ³² Russell Group (2019)

-
- ³³ The Office for National Statistics (2018): Low and high pay in the UK: 2018
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/lowandhighpayuk/2018>
- ³⁴ HESA data accessed by Universities UK
- ³⁵ Home Office, The UK's Future Skills-based Immigration System, Cm 9722, The Stationery Office, 2018, Accessed March 2019, www.gov.uk/government/publications/the-uks-future-skills-based-immigration-system
- ³⁶ Every £1 of public spend on medical research returns around an additional 25p to the UK economy every year. This includes health benefits equivalent to around 10p plus a further 17p, which is the current best estimate of 'spill over' effects from research to the wider economy. Grant J, Buxton MJ, Economic returns to medical research funding, *BMJ Open* 2018;8:e022131. doi:10.1136/bmjopen-2018-022131
- ³⁷ TBC: Forthcoming Royal Society report looking at visa systems in comparable countries
- ³⁸ Russell Group (2018): An EEA Skills permit <https://russellgroup.ac.uk/news/skills-permit/>
- ³⁹ Publications Romana has contributed to: Dickkopf-3 links HSF1 and YAP/TAZ signalling to control aggressive behaviours in cancer-associated fibroblasts. (Ferrari N, Ranftl R, Chicherova I, Slaven ND, Moeendarbary E, Farrugia AJ, Lam M, Semiannikova M, Westergaard MCW, Tchou J, Magnani L, Calvo F.) *Nat Commun.* 2019 Jan 10;10(1):130; Analysis of Breast Cancer Cell Invasion Using an Organotypic Culture System. (Ranftl RE, Calvo F.) *Methods Mol Biol.* 2017;1612:199-212; Cdc42EP3/BORG2 and Septin Network Enables Mechano-transduction and the Emergence of Cancer-Associated Fibroblasts. (Calvo F, Ranftl R, Hooper S, Farrugia AJ, Moeendarbary E, Bruckbauer A, Batista F, Charras G, Sahai E.) *Cell Rep.* 2015 Dec 29;13(12):2699-714
- ⁴⁰ Internal data
- ⁴¹ <https://www.ukcisa.org.uk/Research--Policy/Statistics/International-student-statistics-UK-higher-education>
- ⁴² International students report
- ⁴³ According to the 2015/16 HESA student finance record
- ⁴⁴ Based on Russell Group universities, highlighted in the HESA 2015/16 DLHE survey
- ⁴⁵ <https://www.universitiesuk.ac.uk/news/Pages/New-visa-for-international-students-would-benefit-UK.aspx>
- ⁴⁶ Elsevier, International Comparative Performance of the UK Research Base 2016
https://www.elsevier.com/_data/assets/pdf_file/0018/507321/ELS-BEIS-Web.pdf
- ⁴⁷ <https://www.ohe.org/publications/exploring-interdependencies-research-funders-uk>
- ⁴⁸ Elsevier, International comparative performance of the UK Research Base, 2016
- ⁴⁹ Impact of collaboration report
- ⁵⁰ <http://www.sciencecampaign.org.uk/news-media/press-releases/case-responds-to-the-chancellor-spring-statement.html>
- ⁵¹ <https://www.gov.uk/government/publications/framework-for-the-uk-eu-partnership-science-research-and-innovation>
- ⁵² Polling cited in Research Fortnight
- ⁵³ <https://www.gov.uk/government/speeches/pm-speech-to-cbi-19-november-2018>
- ⁵⁴ This was cited by all international researchers interviewed as part of the evidence gathering process for this paper
- ⁵⁵ Based on data provided to CRUK by the Beatson Institute