

SCIENCE AND IMMIGRATION

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Science is inherently international. There is an oft-cited statistic that there have been 97 Nobel winners from Britain, five of whom came as refugees and eight came to continue their academic careers.

One only has to look at the author lists of a contemporary paper – sometimes in the case of physics running into three figures – to see that key discoveries are increasingly the work of many hands, often from different disciplines and in different countries. A cursory glance at the staff lists of any top UK institution will show how successful we have been in attracting top global talent to our elite institutions, not to mention the many foreign student scientists and PhD candidates, visiting researchers and exchange students who make our world-class universities diverse and successful.

Human mobility is intrinsically linked to Britain's ability to remain at the forefront of science and research. The Government understands this

... supporting British science and research ...

and wants to support British science and research. While it has not shied away from taking tough action on immigration abuse, it has consistently protected and enhanced the treatment of scientists and science in the immigration system, in recognition of the critical role science plays in the economy and wider society. This article sets out how the

Government's support for science and research is reflected in the immigration system.

SCIENTISTS AND RESEARCHERS

Immigration reforms since 2010 have explicitly taken account of the needs of scientists and researchers, even whilst restricting migration in other spheres.

The Exceptional Talent route introduced in 2011 caters for world leaders in science, engineering, humanities and the arts. Exceptional scientists wishing to come to the UK need to obtain an endorsement from one of the Competent Bodies, which include the Royal Society and the Royal Academy of Engineering. Once here, the

terms of the visa are generous: holders are not tied to a specific employer, have no specific salary requirements and can qualify for settlement after five years. From April, the route will be expanded to include technology experts, with the Tech City UK coming on board as a new Competent Body.

A further new route (Permitted Paid Engagements) allows

certain professionals, including those visiting to give a lecture, examining students, and participating in or chairing selection panels, to use the visitor rules to come to the UK for up to one month without the need to be sponsored under the Points-Based System. This route was created in response to some very specific feedback that the previous arrangements

... attracting top global talent ...

simply were not working for science – imposing the types of requirement needed for longer stays on a scientist merely visiting the UK to support regular academic work was cumbersome and unnecessary.

The Government has also preserved the separate Tier 5 route for sponsored researchers, which allows them to come for up to two years, and relaxed the resident labour market test to make it easier for universities to recruit academic and research staff under Tier 2. In addition, the importance of academics and researchers has been recognised by exempting them from new earnings requirements for settlement.

Finally, it is worth noting that a number of science and engineering roles, particularly engineering roles, remain on the

Shortage Occupation List. That tells us that despite efforts to increase the UK supply, there are still genuine shortages of some skills where migration may be part of the answer. The Government recognises this, so employers can recruit migrants directly to roles on the Shortage Occupation List without first having to test the resident labour market.

... there is no cap on foreign students ...

STUDENTS

Student migration is of course far broader than just science, but overseas student researchers make up a significant proportion of the postgraduate community at many universities, and contribute to the viability of many science faculties.

First, it is important to be clear that there is no cap on foreign students. Genuine international students are very welcome to come to the United Kingdom. All the indications are that students are continuing to choose our world-class universities.

Sponsored applications for visas to attend UK universities rose 7% last year. UCAS applications from non-EU students for courses beginning in 2013 increased by 6%.

The current student visa offer is a good one, and builds on some common sense reforms to what had been a problematic route. Those who wish to study here need a place, sufficient funds to maintain themselves and any dependants and an ability to speak English (at B2 level of the Common European Framework of Reference for Languages), which is the right level to enable students to make the most of the teaching offered at the UK's world-class

universities, as well as to integrate into the student community and wider society.

On top of this, the system awards universities in particular a number of privileges, reflecting their contribution to the UK's international educational standing and the lower level of immigration abuse identified in the university sector compared to private colleges. They have flexibility on language testing,

their students have better work rights, and post-graduates can bring dependants. It is gratifying, therefore, that we continue to see rises in arrivals of the most talented foreign students. Recent UCAS data (published 24 October 2013) shows applications from top international undergraduates continue to rise. Applications to medicine, dentistry and veterinary courses, and all courses at Oxford and Cambridge, beginning in 2014 are up 10% compared to the same period last year.

POST-STUDY AND GRADUATES

It is a myth that international students can no longer remain in the UK to work, after graduation. Any student who

... the unique needs of international science ...

obtains a graduate level job paying a minimum of £20,300 can stay on a Tier 2 work visa. There is no limit on the number of these places, which are exempt from the cap on economic migrants. The employer does not need to test the UK labour market, provided the job is at the right skills level and the individual is paid an appropriate UK salary for their

occupation. And the salary levels are set at only the 10th percentile of UK earnings for each occupation, for these new entrants to the labour market – compared with the 25th percentile which is the general rule when recruiting from abroad.

Students completing a PhD or other doctoral qualification at a UK university can stay for an additional year under the Tier 4 Doctorate Extension Scheme. This scheme was set up in April 2013, and allows completing students to work, gain experience in their chosen field, or set up as an entrepreneur, again with no limit on numbers. There is also provision for graduates who wish to undertake a period of professional training relating to

... eliminating backlogs ...

their degrees, before pursuing a career overseas, to do this by switching into an appropriate Tier 5 scheme. This is not a route to permanent stay, but there are no salary requirements (other than the National Minimum Wage).

Finally, graduates who wish to stay to develop a business idea can do so under the Graduate Entrepreneur scheme, the first in

the world of its kind. All they need is an endorsement from their Higher Education Institution that they have a genuine and credible business idea, to have graduated, and to have enough funds to support themselves. In April 2013 we doubled the number of places on the scheme, creating an additional 1,000 places for those who have completed an MBA in the UK.

DELIVERING BETTER SERVICES

So recent immigration reforms have taken account of the unique needs of international science in a number of ways. But an effective immigration system also demands good customer service. The experience of using the immigration system was an area of great focus in 2013, with the abolition of the former-UK Border Agency and its replacement by two new Home Office structures – UK Visas and Immigration (UKVI) and Immigration Enforcement. In doing this, part of the Home Secretary's rationale was to create in UKVI an organisation with a culture of customer satisfaction, focused on dealing swiftly and efficiently with visa

applications from legitimate travellers. Under the leadership of Sarah Rapson, UKVI is well on the way to eliminating backlogs in in-country applications, and is looking to improve online applications through gov.uk, and introduce "plain English" service standards. And for those who travel frequently – as many scientists do – I hope you will see a transformed experience at the UK Border, with queue times at Heathrow in particular immeasurably improved compared with 2011-12.

Immigration is both complex and controversial, but when it comes to supporting the UK's globally-successful scientists, the Home Office continues to listen and do what we can to help.

IMMIGRATION POLICY AND STEM – a view from the universities



Ian Haines
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UK UNIVERSITIES, PLC – A SUCCESSFUL EXPORT BUSINESS

In a comprehensive analysis of the contribution of education to the UK economy, London Economics estimated that in 2008-09 the value of overseas trade and investment in UK education totalled £14.1bn¹. The largest single factor was higher education, contributing £7.9bn. Adjusting for changes in student numbers and inflation, the income from higher education in 2011-12² was approximately £10bn of which £5.5bn came from fees and other spending by students.

Non-UK students make up differing proportions of new enrolments in the various modes and levels of study (Table 1)³. At undergraduate level the proportions are quite low but the total numbers fairly large. At postgraduate level many programmes would not be viable if numbers of non-EU full-time students dropped significantly.

The effect of international students on the employment of staff in universities is generally overlooked. In 2011-12, 17% of all students were non-UK-domiciled which led to the employment of a similar proportion of university staff – approximately 30,000 academic and 33,000 non-academic staff.

SIGNIFICANCE OF NON-UK STUDENTS TO STEM SUBJECTS

While the above data illustrates the importance of non-UK

Table 1. New Non-UK Enrolments in all Subjects by Domicile in 2011-12⁴

Mode of study	Total number	Non-EU	Other EU ³
Full-time postgraduate	120060	46%	12%
Part-time postgraduate	12015	7%	4%
Full-time undergraduate	88185	11%	6%
Part-time undergraduate	18060	4%	2%
All	238320	15%	6%

students, postgraduate taught enrolments in some STEM subjects are even more significant (Table 2). However, the impact of non-UK students is much more than a matter of numbers and income. They contribute to an international curriculum in taught programmes and research. Many reach positions of considerable responsibility on return to their home countries. If such export value were being generated by a company in any other sector of the economy, the government would act to preserve it at any cost, but the coalition's actions and rhetoric

have done nothing to support universities in an increasingly competitive environment.

WORDS AND ACTIONS ON IMMIGRATION

Risk to the UK's attractiveness to international students surfaced before the 2010 general election with much hyperbole about reducing 'net immigration to tens of thousands' and clamping down on bogus students and colleges. *The Coalition: our programme for government* stated: 'We will introduce an annual limit on the number of non-EU economic migrants admitted into the UK

Table 2. STEM PGT enrolments by subject and domicile 2011-12⁵

	Number of students	Non-EU %	Other EU %	UK %
Mathematics and computing	21,340	49%	9%	41%
Engineering and Technology	38,740	49%	13%	38%
Physical sciences	7,840	29%	10%	61%
Architecture, building, planning	7,365	24%	8%	68%
Veterinary science, agriculture	2,320	21%	11%	67%
Medicine, dentistry	7,740	19%	7%	74%
Biological sciences	10,220	14%	8%	78%
Subjects allied to medicine	14,575	10%	4%	86%

to live and work', and the need to 'minimise the abuse of the immigration system', citing as the only example abuse of the student visa route. The stage could hardly have been set more negatively for recruitment of international students, including those from mainland Europe.

Following the election, revisions to immigration rules were published on eight occasions in 2011 and ten in 2012. Of particular significance for higher education were:

- closing the Post-Study Work Route which allowed non-EU graduates completing their studies to remain in the UK for two years to obtain work experience, replacing it with a more restricted scheme
- reducing the numerical cap on skilled workers
- increased checks on English language capabilities – although skills in English are essential they may be over-specified for some students in STEM where mathematics and technical skills predominate
- introduction of a new category of 'exceptional talent'.

CAUSE AND EFFECT?

In the decade up to 2010, international student recruitment increased steadily. However, this did not continue (Table 3), with significant reductions, especially in postgraduate programmes. Official numbers for 2012 are not yet available but many believe the downward trend continued. The effect on certain STEM subjects between 2010 and 2011 was very serious with non-EU postgraduate recruitment down 8%, engineering and technology 10% and computer science 14%. Specific examples quoted by members of UK Deans of

Table 3 New Enrolments in all subjects by domicile, 2008 to 2011

Year of first enrolment		Non-EU, % change over previous year	Other EU % change over previous year
2008	Postgraduate	+16%	+9%
	Undergraduate	+13%	+1%
2009	Postgraduate	+12%	+12%
	Undergraduate	+12%	+4%
2010	Postgraduate	+8%	+5%
	Undergraduate	+8%	-1%
2011	Postgraduate	-2%	-2%
	Undergraduate	+2%	-1%

Science include the non-EU entry to an MSc in biosciences from 2008 to 2012: 100+, 60+, 30+, 10+, 10. Another university gave figures for postgraduate registrations from India before and after withdrawal of the Post-Study Work Route: computer science down c 50% and engineering down c 65%. Such changes make business planning impossible and can jeopardise a Faculty's ability to retain experts in a particular field, seriously affecting its research and teaching capabilities.

The anti-immigration rhetoric is only part of the story. Limited space prevents a more detailed analysis taking into account the changes in the attractiveness of other international locations, including the substantial investment in university development in countries that have been main sources of the UK's recruitment. However, review of the press in such countries illustrates the negative side of what has happened. To give just one example, in *The Economic Times of India* in May 2012 (repeated on many websites) an Indian Birmingham University student is quoted as saying that if he had been in India when the Post-Study Work had stopped he would not have applied to the UK.

UK Deans of Science has

many recent examples of difficulties, including:

- inability to appoint a non-EU external examiner even if s/he were not paid a fee
- a highly prestigious MSc scheme based on three day sessions in the UK plus 6 weeks of internet-based work. Candidates would fly in for the UK-based sessions but the course team could not find a legal way for this to happen
- a Chinese MSc candidate refused entry as she already had Masters – studied in Mandarin!
- a student refused entry who had sufficient funds in a bank account when he applied but the money had reduced in value due to currency fluctuation
- a student refused because only one month stipend was in his bank account though the stipend was guaranteed to be paid every month
- queues of students outside a Central London police station on enrolment day due to the requirement to report to a police station.

The Coalition may not have intended its immigration rules to cause such effects, but politicians are not judged solely by their actions but the

impressions that they give in their public statements. Never was this more significant for universities than in relation to immigration.

THE FUTURE

Recent changes in immigration policies (October 2013) included:

- powers to refuse Tier 4 extension applications where the applicant cannot speak English (a reasonable criterion) but, rather oddly, removing the English language requirement for intra-company transferees
- a Tier 5 exchange scheme allowing some students to work as interns, though limited to a small number of countries and prioritising applicants with some form of British overseas citizenship
- expanded checks to ensure applicants for work and student visas are genuine, that they intend to meet the conditions of leave they apply for.

It remains to be seen what effect this will have, but the first reference to them in the Indian newspaper, the *Deccan Herald*, was headlined: *'Indian students to the UK: Welcome or not? Universities are wooing Indian students, but the UK Border Agency does not seem to be waiting with open arms to issue visas. The mixed signals are playing havoc with young lives.'*

A category that has come in for criticism is Tier 1 (Exceptional Talent) which allows up to 1,000 entrants a year if endorsed by one of four national organisations⁶. In the first year this permitted 72 entrants while over 700 'talented' sports people were given visas. Clearly, exceptional talent should not be interpreted as 'likely to win a Nobel Prize'. Perhaps the recipients of some

prestigious awards and fellowships should have automatic right to entry under this category.

The Coalition must reverse the negative impression of its attitude to 'foreigners'. This article concentrates on the university sector but the increased difficulties for students joining FE colleges will impact on universities soon. It is worth noting too that in STEM subjects, including electronic and computing engineering, the

percentage of academic staff⁷ who are not UK nationals varies between 41% (in physics) and 33% (in biosciences)⁸. Any further fall in international interest in our universities could threaten the viability of STEM departments and courses. Departmental business planning and research collaborations could be at risk. University science departments work hard to maintain their international presence. What is now needed is for all government

departments to ensure that their policies support them. Science is international and we must keep our STEM borders open to the world.

Footnotes

- 1 Estimating the Value to the UK of Education Exports, June 2011,
- 2 2011-12 used as this is the latest date for which data are available at the time of writing
- 3 The term 'other EU' denotes those students from the EU, but not UK-domiciled

4 Higher Education Statistics for the United Kingdom, 2011/12, HESA 2013

5 Data supplied by UUK

6 Arts Council England, British Academy, Royal Academy of Engineering, Royal Society

7 Professors, senior lecturers, lecturers and researchers

8 Academic Physics Staff in UK Higher Education Institutions, IoP, December 2013

AN IMMIGRATION POLICY FOR SCIENCE

IS OUR IMMIGRATION SYSTEM CREATING BARRIERS FOR SCIENCE?



Ian Robinson
Fragomen

Immigration is always in the news, Parliamentarians will know that better than anyone.

This morning I read reports about Eastern European criminals, a botched deportation and the impending (as I type) right of free movement for Romanian and Bulgarian nationals. Yesterday I spent my lunch reading about an asylum seeker on hunger strike.

I have spent ten years working in immigration most recently concentrating on the rules for bringing skilled foreign workers to the UK. Only once can I remember the media reporting that it was too hard for workers to get in, rather than worrying about it being too easy.

In 2010 the Campaign for Science and Engineering (CaSE) ran an excellent campaign on the issues that the UK's immigration policy was creating for science. CaSE combined current experience with the risks that could be realised as immigration law was reshaped

and otherwise tightened.

The Times did a great job of nationalising the issue. One morning I would read about scientists being sent home; the next it would be Nobel Prize winners expressing deep concern about the prospect of a cap on scientists and other foreign workers.

The campaign made a real difference. The cap on skilled workers was implemented – as was inevitable – but scientists were prioritised ahead of other workers. Science was also given a new visa category for exceptionally talented researchers and all manner of other carve outs and exceptions. The system wasn't perfect but it was much better than it might have been.

In October 2013, three years after the campaign began, the Parliamentary and Scientific Committee had a fresh look. The questions for debate were reasonably simple – is UK immigration policy causing

problems for science and if so what should Parliament and policy makers be thinking about.

For the last two years I have worked for a City law firm, helping businesses in all sectors to bring staff to the UK. For the eight years prior I had been a Home Office official, and had led on the development of migrant skilled worker policy for two years until 2011.

Going from one side of the fence to the other is an interesting experience. It was only after making the jump that I knew how little I understood about my own policy area. Systems we thought were reasonably straightforward are much more complex in real life. Our transparent Points Based System becomes a little more opaque with every idiosyncratic case.

None of this means that the system doesn't work well.

As an official we were encouraged to be intellectually curious, looking at other policies

elsewhere in the world.

I now work with a variety of multinational corporations and get to see how they operate across numerous countries. It is good to be able to see how effective the UK's visa system is as compared to other countries in Europe.

So what does this have to do with science and is our immigration policy causing difficulties?

My own view is that we are in good shape but the Home Office can do more to help.

If you are a large organisation with a base here, whether in academia or industry, the system should work well for you. We have one of the world's only objective regulatory frameworks for immigration. The UK's system is calibrated to provide absolute certainty when all requirements are met. My

... the system needs to work better ...

colleagues overseas have to manage their way through subjective processes that are at best predictable and at worst erratic.

Those requirements are rarely onerous for skilled workers. Evidential requirements are robust but straightforward and we can comfortably get an application together in a couple of days. Elsewhere in the world it can take weeks or months.

Once you've selected a new employee or an assignee a visa will normally be issued in two to 15 days; you can see from the map that the same cannot be said elsewhere on the continent.

This is all important to multinational corporations. When a pharmaceutical company needs to initiate a project urgently, senior management will look at how quickly international experts can be

moved and start work. A three week wait for a UK visa is a compelling factor if it can take twice as long for other jurisdictions.

If everything is rosy why did the issue need to be discussed in Parliament?

For science there are three areas where sensible changes in policy or approach would make a huge difference. After that anything else would be a bonus.

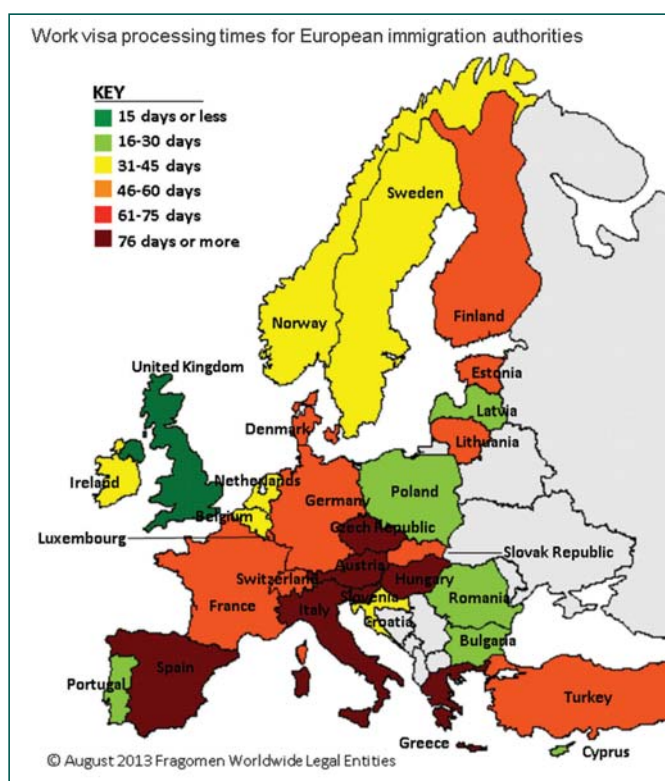
Firstly the system needs to work better for smaller and newly formed research centres. Labs sponsoring an overseas scientist for the first time have to apply for a sponsor licence, wait for a Certificate of Sponsorship and apply for a visa.

It can be four months before the scientist can come to the UK and start work. During that time a project can slip, an opportunity can be missed or the scientist

may look for a different employer.

There are various ways to speed up the system and I would urge ministers to consider them. I favour a simple system of third party sponsorship. My colleagues prefer temporary admission visas. Either way we are talking about highly qualified people so any immigration risk is low.

Secondly, more thought is needed on the Exceptional Talent visa. The principle behind the visa is fairly simple – entry clearance officers cannot be expected to know who the world's best scientists are so the experts get to pick them. If the Royal Society think that, for instance, a Canadian immunologist is extraordinary then the Home Office will give him a visa.



The Home Office's overseas posts can issue visas faster than other European countries

The concept is great but the execution has been poor. The visa was created with a view to hundreds of scientists using it every year. In two years the number hasn't yet topped 100.

This is not necessarily an issue for the Home Office. Ministers did their job when they empowered expert bodies to endorse talented individuals. It is now up to the scientific community to work out how they can use it properly.

The Arts Council administer the same visa system and our experience has been uniformly positive. If it can work for a body that takes in as diverse a group as ballet dancers, film actors and poets it has to be possible for expert researchers.

The final issue is rather more abstract. It is clear to me that the UK's immigration system is a lot better than big and small business think. Business leaders tell me it is slow and cumbersome or complicated and uncertain. This perception

may be honest but it is not accurate. The system does work.

There has to be space for the Home Office and the scientific community to do some myth busting. This might mean the Home Office doing more to publicise the speed it can issue a visa relative to other countries; the scientific community could do more to publicise what works and less to castigate the politicians where it doesn't.

This is not easy – it would only take one bad headline to turn the effort on its head, but surely it has to be worth a go?

This returns me to my opening comments. All too often the press find room to report where our immigration system is not working. I am not naive enough to think that this will change any time soon but it is a shame that nobody seems willing to talk about where it does work.

People like me have a part to play in this. Personally I can't see a better starting point than science.