

House of Lords Select Committee on Science and Technology

Inquiry into international STEM students

Evidence from the Russell Group

1. Summary

- If we are to maintain our place in the premier league of global higher education, it is crucial our visa system continues to support the efforts of our leading universities to attract the very best students, academics and researchers from around the world.
- The provision of highly-skilled STEM graduates and postgraduates is vitally important to the prosperity of the UK, helping to generate innovation and new technologies, and to drive future economic growth. Russell Group universities play a vital role, training around 30% of the UK's science and engineering graduates and more than 80% of UK graduates in medicine and dentistry.
- International STEM student numbers at Russell Group universities rose by 4% in 2012-13, with further increases predicted for 2013-14. This demonstrates the continuing demand for the high-quality teaching and research experience that our world-leading universities provide. By producing an increasing number of international STEM graduates each year, Russell Group universities are making an extremely valuable contribution to the UK economy.
- Meanwhile, international STEM student numbers across UK universities as a whole have declined for two consecutive years, by 10% in total between 2010-11 and 2012-13, and by 15% at postgraduate taught level.
- Although international STEM student numbers at Russell Group universities have continued to increase, the overall numbers mask differences between individual institutions. International STEM student numbers fell across several Russell Group institutions in 2012-13, and by 21% at one institution. We are concerned about possible future declines, particularly as further restrictions to immigration are introduced.
- The Government must make sure its immigration policies facilitate the UK's international competitiveness in higher education in order to maximise potential for growth. Provisions affecting international students and staff contained in the Immigration Bill are unhelpful in this regard.

- In order to signal that the UK's doors are fully open to genuine international students, including STEM students, the Government should:
 - Remove students from the proposed healthcare levy and reconsider proposals to introduce landlord checks of tenants' immigration status
 - Introduce a longer post-study work period
 - Reduce the cost of a student visa to ensure parity with key competitor markets
 - Remove students from the net migration target
- In addition, the Government should prioritise removing caps on international student numbers in medicine and dentistry. This would help to drive economic growth, boost the UK's overseas influence, provide security for universities and create a pool of UK-trained healthcare professionals the NHS could call on if needed to meet future demand.
- Alongside welcoming the best and brightest international STEM students, the Government must ensure that STEM provision is sustainable and has sufficient funding. This is particularly important for the UK's world-class research-intensive universities who produce such a high proportion of STEM graduates.

2. Introduction

- 2.1 The Russell Group's leading universities are global players, engaging in world-class research and education in many different countries. Our track record in attracting the most talented international staff and students has made a very important contribution to the considerable intellectual and financial success of UK higher education to date.
- 2.2 Higher education is an important growth sector for the UK, making a significant positive contribution to the economy in its own right and underpinning growth in every other sector through its education, research and innovation activities. It is one of this country's most successful export industries and is estimated to contribute more than £10 billion a year in overseas earnings – £3.9bn in tuition fees and £6.3bn in living expenses per annum alone.¹
- 2.3 As a conservative estimate, international students at Russell Group universities generate at least £4 billion per annum for the UK. In Sheffield alone international students pump £120 million into the local economy every year.²
- 2.4 Russell Group universities are highly successful in attracting the brightest students and most talented academics and researchers from around the world:
- Although Russell Group universities have a 24% share of the total number of students in the UK, they have a 38% share of the total number of non-EU students, and a 41% share of non-EU postgraduate students.³

¹ Data for 2011/12, BIS, 'International Education: Global Growth and Prosperity', (2013)

² 'The Economic Costs and Benefits of International Students: A report for the University of Sheffield', (2013)

³ HESA data 2012-13

- The proportion of non-UK nationality academic staff is around 33% at Russell Group universities compared to an average of 19% for all UK HEIs.⁴
- 2.5 **If we are to maintain our place in the premier league of global higher education, it is crucial our visa system continues to support the efforts of our leading universities to attract the very best students, academics and researchers from around the world.**
- 2.6 We welcome the opportunity to contribute evidence to the inquiry into international STEM students from the Lords Select Committee on Science and Technology. It is appropriate for the Committee to consider the extent to which changes to the immigration regime have impacted on the international competitiveness of UK universities in general, and the recruitment of international STEM students in particular. The inquiry is timely as the Immigration Bill currently passing through the House of Lords aims to introduce regulations which are likely to have a further negative impact on the attractiveness of the UK to international students.
- 2.7 It is widely acknowledged that the provision of STEM graduates is critical to industry in the UK, and will help to rebalance the economy. Various estimates have been made of the increasing demand for STEM skills in the future. Engineering UK analysis suggests that double the number of engineering graduates and apprentices will be needed by 2020 to meet demand, for example.⁵ Alongside encouraging more UK students into STEM subjects, the recruitment of international students, and the ability of those students to fill highly skilled jobs in the UK after graduation, will be imperative to meeting that demand. But these international students are, by their very nature, highly mobile; we face stiff competition to attract them to the UK and the Government should do all it can to ensure the UK visa and immigration system is both competitive and welcoming, while continuing to tackle abuse.
- 2.8 **The provision of highly-skilled STEM graduates and postgraduates is vitally important to the prosperity of the UK, helping to generate innovation and new technologies, and to drive future economic growth. Russell Group universities play a vital role, training around 30% of the UK's science and engineering graduates and more than 80% of UK graduates in medicine and dentistry.**

3. The recruitment of international STEM students

- 3.1 International STEM students currently make up a significant proportion of total STEM students in the UK. Across the sector as a whole, international students make up 13% of first year students studying STEM subjects, and at Russell Group universities, the figure is 24%, rising to 41% for postgraduate taught students.⁶
- 3.2 Russell Group universities attract a far higher proportion of international STEM students, relative to their share of overall student population, than other UK HEIs. Of

⁴ HESA data 2011-12

⁵ Engineering UK, 'The State of Engineering' (2014)

⁶ HESA 2012-13. Definition of STEM subjects used is the same as that used in the Committee's 2012 report on STEM: JACS subjects Medicine & dentistry, Subjects allied to medicine, Biological sciences, Veterinary science, Agriculture & related subjects, Physical sciences, Mathematical sciences, Computer science, Engineering & technology, Architecture, building & planning.

international STEM students in the UK, 48% are studying at Russell Group universities.⁷

- 3.3 The below table outlines recent trends in first year international STEM student numbers for the UK HE sector as a whole and for the Russell Group broken down by subject and level of study:

Latest data available from HESA, first year only ⁸	2012-13		% change 2011-12 to 2012-13		% change 2010-11 to 2011-12	
	Whole sector	Russell Group	Whole sector	Russell Group	Whole sector	Russell Group
Medicine & dentistry	3,025	2,395	-6%	-6%	5%	7%
Subjects allied to medicine	6,200	1,950	-12%	8%	-16%	9%
Biological sciences	5,140	2,305	0%	2%	3%	4%
Veterinary science	220	150	-23%	-23%	14%	8%
Agriculture & related subjects	795	250	-5%	-19%	7%	29%
Physical sciences	4,170	2,285	5%	5%	-1%	11%
Mathematical sciences	3,050	2,255	7%	9%	9%	15%
Computer science	6,765	2,020	-11%	0%	-25%	-7%
Engineering & technology	19,165	9,745	0%	4%	-7%	5%
Architecture, building & planning	4,375	2,135	8%	18%	1%	21%
Total (all STEM subjects)	52,905	25,490	-2%	4%	-8%	7%
Postgraduate (research)	6,325	4,090	6%	7%	3%	8%
Postgraduate (taught)	24,980	12,075	-3%	1%	-13%	6%
Undergraduate	21,605	9,315	-4%	7%	-4%	7%

- 3.4 In 2012-13, there were 25,490 first year international STEM students in total at Russell Group universities, a 4% rise compared to the previous year; by comparison international STEM student numbers declined by 2% across HEIs in the UK as a whole.

- 3.5 The total number of international STEM students starting at Russell Group universities in 2013-14 is estimated to have risen by approximately 9% compared to 2012-13.⁹ Broken down by level, the highest rate of growth is estimated to be for postgraduate

⁷ HESA data 2012-13

⁸ HESA data for first year non-EU domiciled enrolments.

⁹ Estimate is based on an aggregated sample of 13 Russell Group universities providing enrolments for the year so far. Universities may also have intentionally implemented changes in provision so this should be kept in mind when interpreting trends.

taught students, rising by 12%, followed by undergraduate students, rising by 10%. Postgraduate research student numbers are estimated to fall by 5%.

- 3.6 We estimate that international enrolments at Russell Group universities in 2013-14 have increased in the following subject areas compared to the previous year: medicine and dentistry, biological sciences, physical sciences, mathematical sciences, computer science, engineering and technology, and architecture, building and planning.
- 3.7 **International STEM student numbers at Russell Group universities rose by 4% in 2012-13, with further increases predicted for 2013-14. This demonstrates the continuing demand for the high-quality teaching and research experience that our world-leading universities provide. By producing an increasing number of international STEM graduates each year, Russell Group universities are making an extremely valuable contribution to the UK economy.**
- 3.8 **Meanwhile, international STEM student numbers across UK universities as a whole have declined for two consecutive years, by 10% in total between 2010-11 and 2012-13, and by 15% at postgraduate taught level.**
- 3.9 The decline in STEM numbers will have a negative impact on some universities and some courses in particular. There has been a particular decline in subjects allied to medicine, computer science, and engineering and technology.
- 3.10 Falling international student enrolments present a particular problem for disciplines such as computer science and engineering and technology, as international students represent a high proportion of enrolments.
- 3.11 **Although international STEM student numbers at Russell Group universities have continued to increase, the overall numbers mask differences between individual institutions. International STEM student numbers fell across several Russell Group institutions in 2012-13, and by 21% at one institution. We are concerned about possible future declines, particularly as further restrictions to immigration are introduced.**

4. The impact of changes to the immigration regime

- 4.1 The report of the Committee into STEM subjects in 2012 touched on the concern that changes to the immigration rules, for example, the closure of the post-study work route, could affect the competitiveness of the UK in attracting international students to study here.¹⁰
- 4.2 As outlined above, international STEM student numbers at Russell Group universities increased by 4% in 2012-13, while numbers across UK HEIs as a whole declined. This pattern is replicated for international student numbers across all disciplines. Whilst international student numbers across all UK HEIs declined by 1% for the first time in 2012-13, they increased by 4.6% at Russell Group universities.¹¹

¹⁰ Lords Select Committee on Science and Technology, 'Higher Education in Science, Technology, Engineering and Mathematics (STEM) subjects' (2012)

¹¹ HESA 2012-13

- 4.3 However, growth in international student numbers at Russell Group universities has stalled compared to previous years and numbers have fallen from some countries.
- (a) In 2012-13, new intakes of postgraduate taught students at Russell Group universities declined from Canada, India, Nigeria, Pakistan, Turkey and the US.
 - (b) New intakes of postgraduate taught students from India, one of the largest international student groups, dropped by 21% at Russell Group universities in 2012-13.
 - (c) By contrast, Indian postgraduate student numbers to the US increased by 40% in 2013.¹² Visas granted to Indian students across all levels in Australia have risen by 22% in the last year following the introduction of a more open immigration policy and visas granted to Indian students in Canada rose by 8% in 2012.¹³
- 4.4 International education is a growing market and it is vital that the UK is able to take advantage of this. Between 2000 and 2011, the number of international students across the world more than doubled.¹⁴
- 4.5 BIS estimates it is likely international student numbers will increase by 15-20% over the next 5 years.¹⁵ With international student numbers declining across the sector in 2012-13, the UK is not currently on track to meet that target.
- 4.6 The global market for international staff and students is highly sensitive to visa system changes. In order to take advantage of the opportunity to grow the UK's international education market share, we should follow the lead of competitor countries such as Australia and Canada, who have introduced more welcoming immigration policies in recent years. For example:
- (a) In 2012, Australia introduced a package of reforms to streamline the visa process, easing assessment requirements and reducing processing times for visa applicants.
 - (b) Under Canada's International Education Strategy, \$42 million will be invested over two years to ensure timely and efficient processing of student visas. Restrictions on work during study will also be eased.
- 4.7 There are a number of areas in which the UK's international competitiveness could be improved significantly through changes to immigration regulations. For example, international students value the opportunity to work in the country in which they studied after graduation for a number of reasons including to gain valuable experience of the business environment and culture before returning home. One of the reasons for the fall in international student numbers from countries such as India is the reduction of the post-study work period from 2 years to 4 months.¹⁶
- 4.8 Currently, the UK has one of the shortest post-study work periods for international students among key English-speaking and European markets, with many offering 12

¹² Council of Graduate Schools data (2013)

¹³ Department for Immigration and Border Protection statistics (Australia); Citizenship and Immigration Canada statistics (Canada)

¹⁴ OECD, 'Education at a glance' (2013)

¹⁵ BIS, 'International Education: global growth and prosperity' (2013)

¹⁶ The period for which international students can remain in the UK on a Tier 4 student visa without having to switch to Tier 2

months to stay in the country post-graduation in order to find work, and the US offering 29 months for STEM graduates.

- 4.9 The cost of a basic student visa in the UK is also much higher than in many of our key competitor countries. The average cost of a student visa across nine of our top competitor countries is £145. The current cost of a Tier 4 student visa in the UK is more than twice as expensive at £298, and will be increased by 4% to £310 in April this year.
- 4.10 Both the comparatively high cost of a student visa in the UK, and the restrictive rules on post-study work, impact on the UK's international competitiveness, restricting our ability to take advantage of opportunities to grow international education.
- 4.11 Furthermore, the Immigration Bill currently being considered in the House of Lords seeks to introduce provisions which could lead to negative perceptions about the extent to which the UK welcomes international students and university staff, and therefore, affect the UK's international competitiveness. In particular:
- (a) The proposed healthcare levy of £150 would mean that a prospective international student seeking to enter the UK for a 4-year course would be required to pay £944 up front, compared to £332 today – in other words, almost a 3-fold increase.¹⁷ It would also increase the tax burden on international staff and students working part-time, as they will already be paying national insurance contributions but would have to pay the levy on top of this to access healthcare services.
 - (b) The proposal to introduce compulsory checks to the immigration status of potential tenants by landlords could lead to international students and staff members, along with other non-EEA and indeed EU nationals, being subject to discrimination. Private landlords typically already insist on guarantors and/or 6 month's rent (or more) upfront before letting to international students and these proposals are likely to worsen the situation.
- 4.12 We welcome the fact that there is no cap on international student numbers. However, the fact that students are still included in the net migration target could lead to the perception that the UK is not 'open for business', affecting the UK's ability to compete effectively in the international education market.
- 4.13 **The Government must make sure its immigration policies facilitate the UK's international competitiveness in higher education in order to maximise potential for growth. Provisions affecting international students and staff contained in the Immigration Bill are unhelpful in this regard.**
- 4.14 **In order to signal that the UK's doors are fully open to genuine international students, including STEM students, the Government should:**
- **Remove students from the proposed healthcare levy and reconsider proposals to introduce landlord checks of tenants' immigration status**
 - **Introduce a longer post-study work period**

¹⁷ Calculation is: Tier 4 visa fee in 2014/15 (£310) + health levy per year (4X£150) + police registration fee (£34); note that higher costs would also apply to any spouse or dependant accompanying the student as they would be liable for the full £200 health levy.

- **Reduce the cost of a student visa to ensure parity with key competitor markets**
- **Remove students from the net migration target**

5. Restrictions on international student numbers in medicine and dentistry

- 5.1 Currently, the number of international students studying medicine and dentistry in the UK is restricted by tight caps imposed by the Department of Health, meaning that our universities cannot take advantage of overseas demand for UK courses in these disciplines.¹⁸
- 5.2 Removing, or at least lifting, these caps would provide security for universities, particularly given the recent cuts to home student intake. It would also drive economic growth through increased export earnings and boost the UK's overseas influence, exporting medical and dental knowledge and expertise to countries that need it.
- 5.3 For medical students, the change can be facilitated by moving the point of registration to the point of graduation, as recommended in the recent Shape of Training Review.¹⁹ However, this will require primary legislation to change the 1950 Medical Act.
- 5.4 There are some other practicalities to address in making that change, but the Government could facilitate the move by putting forward a Health Bill or adding the proposal to a Cabinet Office deregulation Bill for the next session of Parliament. This would allow more flexibility to be introduced for the 2015-16 intake and would still leave a number of years for other issues around the point of registration to be resolved before that cohort graduates
- 5.5 As long as there are sufficient financial safeguards in place to cover both educational, clinical training and health service costs then our world-class universities should not be restricted in the number of international medical and dental students they can take.
- 5.6 **The Government should prioritise removing caps on international student numbers in medicine and dentistry. This would help to drive economic growth, boost the UK's overseas influence, provide security for universities and create a pool of UK-trained healthcare professionals the NHS could call on if needed to meet future demand.**

6. The cost of STEM subject provision

- 6.1 In our previous submission to the inquiry on STEM subjects, the Russell Group highlighted the cost of teaching subjects such as medicine, engineering, chemistry and physics, which are so important to the future success of the UK's economy. Teaching costs in these subjects are significantly higher than others because of the requirement for expensive laboratories, consumables and equipment and additional costs associated with training and supervision of students in their use. There are also

¹⁸ International dental students are currently capped at 5% of a school's intake and international medical students at 7.5%.

¹⁹ 'Securing the future of excellent patient care: Final report of the independent review led by Professor David Greenaway' (2013)

particular cost pressures associated with maintaining and up-grading facilities such provision in world-class research-intensive universities requires.

- 6.2 Given the overall decline in international STEM student numbers across UK HEIs, the continued contribution of Russell Group universities in producing an increasing number of international STEM graduates, as well as a high proportion of home STEM graduates, is vital to the UK economy – and becoming even more critical with time.
- 6.3 We welcome the commitment contained in Autumn Statement 2013 for extra funding of £185m over four years for teaching vital science subjects, starting in 2015-16. It is essential for a high proportion of this new money to be allocated for increased funding per student for existing STEM places. High quality provision of STEM subjects is extremely costly, as outlined above, and cannot be met by tuition fee income alone.
- 6.4 **Alongside welcoming the best and brightest international STEM students, the Government must ensure that STEM provision is sustainable and has sufficient funding. This is particularly important for the UK's world-class research-intensive universities who produce such a high proportion of STEM graduates.**

February 2014