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Science and Technology Select Committee

4th Report of Session 2017–19

Science research funding in universities

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Science and Technology Select Committee

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* These Members did not take part in the inquiry

Declaration of interests

See Appendix 1.

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Committee staff

The staff who worked on this inquiry were Donna Davidson (Clerk), Dr Simon Cran-McGreehin (Clerk), Dr Amy Creese (Policy Analyst) and Cerise Burnett-Stuart (Committee Assistant).

Contact details

All correspondence should be addressed to the Science and Technology Select Committee, Committee Office, House of Lords, London SW1A 0PW. Telephone 020 7219 5750. Email hlscience@parliament.uk

Twitter

You can follow the Committee on Twitter: [@LordsSTCom](https://twitter.com/LordsSTCom).

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Evidence is published online at <https://www.parliament.uk/hlinquiry-science-research-funding-universities/> and available for inspection at the Parliamentary Archives (020 7219 3074).

Q in footnotes refers to a question in oral evidence.

SUMMARY

The UK's universities are internationally recognised as some of the best institutions in the world in which to conduct scientific research. Traditionally, the dual-funding system has supported the research community well, but a stagnation in Quality Related funding (QR funding) since 2010 has led to a deficit in funding which universities have had to plug through cross-subsidies. This has occurred alongside a decrease in the percentage of research costs universities are able to recover from funders including research councils and charities. We recommend that the Government addresses this deficit and commits to increasing QR funding each year by at least the rate of inflation.

It is in the context of a research system which is currently having to cross-subsidise from other areas of funding in the higher education ecosystem, for example from international student fees, that we examined the recommendations of the Augar Review. We found that the Augar Review did not take a holistic approach to the funding of universities and made no attempt to assess the potential impact of its recommended reductions in student fees on the funding of research.

We remain sceptical about the impact of many of the proposals made by the Augar Review on research funding in universities. We recommend that if the Government is to follow any of the recommendations of the review relating to tuition fees, it must implement them as a full financial package, including increasing the teaching grant to cover the loss of tuition fees, to ensure that universities are no worse off than they are now.

The Augar Review included proposals which we considered would erode the autonomy of universities, such as the proposal that the Office for Students should determine the value of teaching grant awarded to individual institutions for different subjects. We are concerned that the Office for Students would decide the relative value of different subjects. Given the complex nature of the cross-subsidies universities use to manage their finances, seemingly small disruptions to inputs could have significant unintended consequences for research. We do not believe that the Office for Students is the right body to make these decisions.

We considered the effects of Brexit on science research funding in universities. It was clear that the Government should commit to associating the UK with Horizon Europe as soon as possible to provide researchers with certainty and that it must ensure that UK universities continue to receive the same amount of funding they currently receive from the EU. In doing so, the Government must award funding on the basis of research excellence and should consider carefully the ratio of funding between discovery research and applied research.

The UK will not reach its target of investing 2.4% of GDP in research and development by 2027 unless funding for research in universities is secured and the UK can attract researchers from overseas. We recommend that the Government ensures that its post-Brexit immigration laws do not hinder the ability of UK universities to recruit and retain researchers. As well as this, remaining committed to international research collaborations following Brexit will enable the UK to continue to attract the best talent from around the world.

Science research funding in universities

CHAPTER 1: INTRODUCTION

Background

1. Many UK universities are recognised globally as some of the best places for conducting scientific research. Professor Louise Richardson, Vice-Chancellor of the University of Oxford, told us that “universities are one of the great success stories of the UK. We currently have the top two universities in the world in this country, and the top six universities in Europe.”¹
2. The UK is home to some of the world’s most respected researchers; the Campaign for Science and Engineering highlighted that “the UK has just 4% of the world’s researchers but they generate 15% of the most highly-cited papers, used most frequently by other researchers”.²
3. The way in which this research is funded directly affects the quality and quantity of research output. Over the last two years there have been several developments in the research and higher education landscape:
 - In November 2017, the Government published its white paper *Industrial Strategy: building a Britain fit for the future*, which set a target of investing 2.4% of GDP in research and development by 2027.³
 - In February 2018 the Government announced a Review of Post-18 Education and Funding, to be led by Philip Augar (hereafter referred to as the Augar Review). The review had a wide-ranging remit and focused on four areas: choice, value for money, access and skills provision.⁴ Its report was published on 30 May 2019.
 - United Kingdom Research and Innovation, a non-departmental public body bringing together the seven UK Research Councils, Innovate UK and Research England, was created in April 2018. Research England replaced the research functions of the Higher Education Funding Council for England.⁵
4. The Research and Innovation budget comprises the majority of the Government’s spending on science, research and innovation. It is largely delivered by the Department for Business, Energy and Industrial Strategy (BEIS). Most of this budget is allocated to UK Research and Innovation (UKRI): £6.38 billion out of £7.51 billion in 2017/18 (85%). The remainder is allocated to organisations such as the UK Space Agency, national academies, Public Sector Research Establishments and BEIS programmes.

1 Q 8 (Professor Louise Richardson)

2 Written evidence from the Campaign for Science and Engineering (SRF0001)

3 HM Government (2017) *Industrial Strategy: building a Britain fit for the future*, Cm 9528, June 2018: <https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future> [accessed 1 July 2019]

4 HM Government, ‘Prime Minister launches major review of post-18 education’ (February 2018): <https://www.gov.uk/government/news/prime-minister-launches-major-review-of-post-18-education> [accessed 1 July 2019]

5 We heard from witnesses that it is too early to assess the impact of the formation of UKRI on research.

5. Of the funding allocated to UKRI in 2017–18, the majority was allocated to research and innovation (76.9%), with the remainder allocated to scientific infrastructure (13.4%), Official Development Assistance (3.7%) and the National Productivity Investment Fund (6%).⁶ As part of its commitment to invest 2.4% of GDP in research and development by 2027, the Government is investing an additional £7 billion over five years (from 2017/18 to 2021/22) as part of the National Productivity Investment Fund.

Our inquiry

6. In May 2019 we launched a short inquiry into science research funding in universities. We considered the current system of research funding for universities in England⁷, its relationship with student funding, and its challenges. We examined the effect on research of possible changes to tuition fees resulting from the recommendations relating to higher education in the Augar Review,⁸ as well as issues that might arise when the United Kingdom leaves the European Union.⁹
7. We held 10 oral evidence sessions with 26 witnesses and received six written submissions, although we did not issue a call for written evidence due to time constraints.¹⁰

Structure of this report

8. Chapter 2 looks at the current issues faced by universities in obtaining sufficient funding for research. Chapter 3 explores the implications for universities if the recommendations of the Augar Review were fully or partially implemented. Chapter 4 considers the effects of Brexit on research in universities.

6 Department for Business, Energy and Industrial Strategy, *The allocation of funding for research and innovation* (July 2018): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731507/research-innovation-funding-allocation-2017-2021.pdf [accessed 1 July 2019]

7 Higher education is devolved in the UK so we focused on England for this inquiry, as did the Augar Review.

8 Department for Education, *Independent panel report to the Review of Post-18 Education and Funding*, CP 117, May 2019: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdf [accessed 1 July 2019]

9 We have conducted this inquiry on the basis of current Government policy which is that the UK will be leaving the EU no later than 31 October 2019.

10 All written and oral evidence is online, see House of Lords Science and Technology Committee, ‘Science research funding in universities inquiry’: <https://www.parliament.uk/business/committees/committees-a-z/lords-select/science-and-technology-committee/inquiries/parliament-2017/science-research-funding-in-universities/publications/>

CHAPTER 2: CURRENT ISSUES

Funding in higher education

9. Higher education in the UK has a number of sources of funding, which vary by nation. In England¹¹ the two sources of public funding are:
 - Directly, from funding councils (research and teaching) and research councils, and
 - Indirectly, from student loans.
10. In 2016/17, tuition fees comprised 49.3% of total higher education income in the UK.¹² In 2012, the tuition fee cap for undergraduate courses in England was raised from £3,000 to £9,000 per year, increasing to £9,250 from 2017, where it is currently frozen. Most higher education institutions charge the maximum fee for all courses, irrespective of factors such as differential cost of delivery between courses that are expensive to run, such as medicine and veterinary sciences, and courses that are cheaper, such as those in the humanities and social sciences.
11. Higher education institutions also receive a teaching grant from the Office for Students. Prior to the increase in tuition fees in 2012, all courses received additional income, the amount of which varied by price band. Band A courses (clinical medicine and dentistry, and veterinary science) received the highest teaching grant top-up, and Band D courses (those without studio, laboratory or fieldwork elements) received the least. Since 2012, the top-up has been paid only for Band A, B and C1 courses, known as high-cost subject funding. The value of the top-up grant is lower since increased fees were introduced in 2012.¹³
12. There is no cap on fees for postgraduate courses, and course costs vary widely. Many universities charge differential fees for home/EU students and international students.

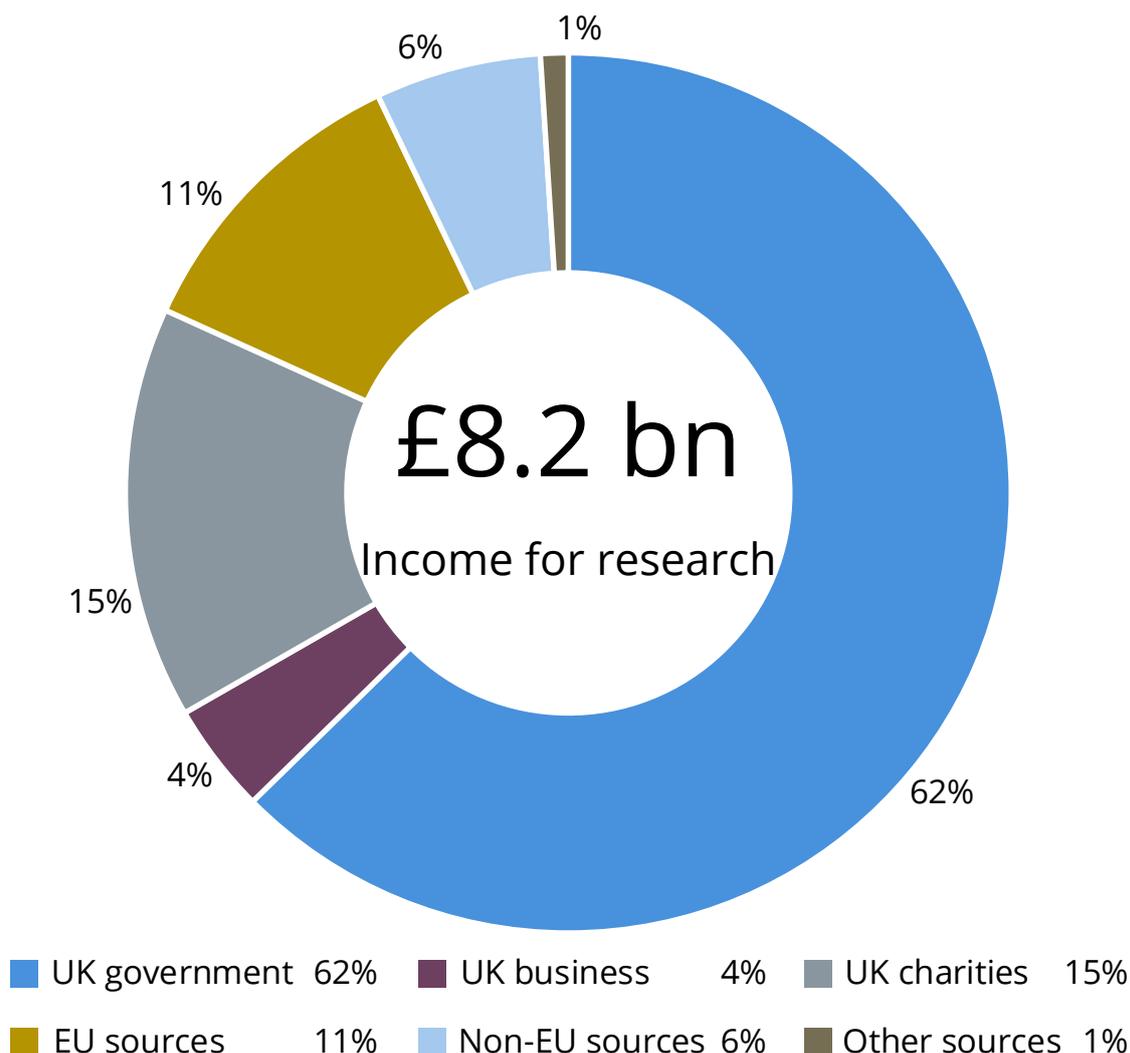
Direct funding for research

13. Most funding for research in higher education institutions is via direct funding routes. In 2017/18, 62% of research in UK higher education institutions was publicly funded. There are also non-public sources of income for research, such as charities, industry and the European Commission (see Figure 1).

11 We did not look at funding structures in Scotland, Wales and Northern Ireland and have not made recommendations about elements of research funding that are devolved.

12 HESA, 'What is the income of HE providers?': <https://www.hesa.ac.uk/data-and-analysis/finances/income> [accessed 1 July 2019]

13 Office for Students, *Guide to funding 2018–19, OfS 2018.21* (11 May 2018): https://www.officeforstudents.org.uk/media/42d81daf-5c1d-49f6-961b-8b4ab1f27edc/ofs2018_21.pdf [accessed 1 July 2019]. See also Higher Education Policy Institute, *Differential tuition fees: Horses for courses?*, HEPI Report 104, (February 2018): https://www.hepi.ac.uk/wp-content/uploads/2018/02/HEPI-Differential-tuition-fees-Horses-for-courses-Report-104_FINAL.pdf [accessed 1 July 2019]

Figure 1: Universities' research income 2017/18

Source: *Universities UK analysis of HESA Finance record for UK universities [2017/18]*¹⁴

14. Public funding for research has been largely maintained in real terms since 2010.¹⁵ It is delivered via a 'dual support' system:
- (1) Higher education institutions in England receive annual block grant funding from Research England. Prior to the formation of UK Research and Innovation in April 2018, this funding was administered and distributed by the Higher Education Funding Council for England. Most funding is allocated on the basis of research quality, as assessed by the Research Excellence Framework (REF) exercise.¹⁶ It is commonly referred to as QR (quality related) funding.¹⁷
 - (2) Funding for specific research projects from the UK Research Councils is provided on a competitive basis, for projects which normally last for

14 HESA, 'Finance record 2017/18—Contents': <https://www.hesa.ac.uk/collection/c17031> [accessed 18 July 2019]

15 House of Commons Library, Higher education funding in England, Briefing Paper, [CBP-7393](#), July 2019

16 Research England, 'How we fund research': <https://re.ukri.org/research/how-we-fund-research/> [accessed 1 July 2019]

17 Funding councils also provide block grant funding for teaching in higher education institutions; in England this is administered by the Office for Students.

less than five years.¹⁸ Research Councils typically fund 80% of the ‘full economic cost’ of a research project, and the funding can be used only for that project.

15. Imperial College London told us about the benefits of the dual support system:

“The UK dual support research funding system is ranked 1st in the world for impact and quality.¹⁹ ... This has been critical to the success of UK research and universities. The system is widely regarded as a unique asset to UK research and innovation strength and resilience and has been enshrined in law in 2017 for the first time.”²⁰

Funding for scientific infrastructure

16. The definition of ‘infrastructure’ used by UKRI in their research and innovation infrastructure roadmap is:

“Facilities, resources and services that are used by the research and innovation communities to conduct research and foster innovation in their fields. They can include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives and scientific data; e-infrastructures, such as data and computing systems and communication networks and any other tools that are essential to achieve excellence in research and innovation.”²¹

17. The Research and Innovation budget allocates spending for scientific infrastructure. This is divided between the research councils (40.6%), the Science and Technology Facilities Council (18.6%), Research England (17.7%), UK Space Agency (15.6%), Public Sector Research Establishments (4%) and BEIS programmes (3%).²²
18. UKRI are currently developing a long-term roadmap for research and innovation infrastructure.²³ Their initial assessment of nationally significant infrastructures for the roadmap noted that there was a strong reliance on public funding to set up, operate and maintain an infrastructure. The Research Councils were the primary source of funding for the infrastructures that were assessed.²⁴
19. Research capital for scientific infrastructure is also provided directly to higher education institutions via devolved funding. Under Research England, most spending is via the Research Partnership Investment Fund, which has provided more than £680 million of capital funding to 43 projects since

18 The University of Sheffield, ‘Finance’: https://www.sheffield.ac.uk/finance/staff-information/howfinanceworks/higher_education/funding_of_research [accessed 1 July 2019]

19 Elsevier, *International Comparative Performance of the UK Research Base 2016* (October 2017): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/660855/uk-research-base-international-comparison-2016.pdf [accessed 1 July 2019]. The UK ranks first amongst its comparator countries by field-weighted citation impact, an indicator of research impact and quality.

20 Written evidence from Imperial College London (SRF0004)

21 UK Research and Innovation, ‘Research and Innovation Infrastructure Roadmap’: <https://www.ukri.org/research/infrastructure/> [accessed 1 July 2019]

22 Figures are for 2017–18.

23 UK Research and Innovation, ‘Research and Innovation Infrastructure Roadmap’: <https://www.ukri.org/research/infrastructure/> [accessed 1 July 2019]

24 UK Research and Innovation, *UKRI Infrastructure Roadmap* (March 2019): <https://www.ukri.org/files/infrastructure/landscape-analysis-march-2019-low-res-pdf/> [accessed 1 July 2019]

2012. The core objectives of the fund are to enhance the research facilities of higher education institutions, encourage partnerships between them and other research-active organisations, to stimulate additional investment in research in them, and to strengthen the contribution of the research base to economic growth.²⁵

Challenges posed by the current funding system

Stagnation of QR funding

20. The challenge most frequently raised by witnesses about the current dual support system was the flat rate of QR funding since 2010. Professor Sir Leszek Borysiewicz, Chair of Cancer Research UK, explained that although the “total QR funding for England under Research England is £1.35 billion per annum”, which represented “20% of the total UKRI budget”, the QR budget had been “fixed with no inflation allowance since 2010”.²⁶ Professor Luke Georghiou, Deputy President and Deputy Vice-Chancellor of the University of Manchester, told us that this represented a fall in the value of QR by “12.8% in real terms since 2010”,²⁷ as calculated by the Russell Group. The result was explained to us by Dr Sarah Main, Executive Director of Campaign for Science and Engineering (CaSE): “QR as a proportion of total research expenditure in universities has dropped from about one-third to about one-quarter over 10 years.”²⁸
21. This is significant because QR funding, unlike funding from research councils, charities or other investors, can be spent as the university sees fit without having to be earmarked for a specific project. Professor Michael Arthur, Provost of University College London, described it as “fundamental to the research structure and the general research ecology of the UK. It is funding that gives me, as university leader, and my teams the flexibility to do new, interesting and important things ... It is used to fund equipment and sometimes capital development.”²⁹ This was echoed by Professor Julia Buckingham, president-elect of Universities UK, who told us that QR funding was used in a variety of ways to support research, including “to support infrastructure, to allow for strategic developments in research, to build capacity and to pump-prime areas that are not quite ready for funding”.³⁰
22. QR funding for infrastructure and equipment is particularly significant. Dr Andrew Welchman, Head of Neuroscience and Mental Health at the Wellcome Trust, emphasised that the budget for these items could not be found through other sources of funding:

“My sense from the analysis that Wellcome conducted on QR spend is that an awful lot of that money is used to support physical infrastructure within universities. It is not something that Wellcome as a fund does a lot of, and my understanding is that UKRI has limited sources of money for it too. If we get to the situation where universities cannot make the strategic choices of where they want to invest and the facilities

25 Research England, ‘UK Research Partnership Investment Fund’: <https://re.ukri.org/research/uk-research-partnership-investment-fund/> [accessed 1 July 2019]

26 [Q 18](#) (Professor Sir Leszek Borysiewicz)

27 [Q 4](#) (Professor Luke Georghiou)

28 [Q 13](#) (Dr Sarah Main)

29 [Q 18](#) (Professor Michael Arthur)

30 [Q 25](#) (Professor Julia Buckingham)

that they want to invest in, we are going to see a decline in the physical infrastructure of those universities.”³¹

23. UKRI acknowledged the importance of QR funding for universities. David Sweeney, Executive Chair of Research England, said that they were committed to making “a strong case in the spending review for the importance of QR”.³² Chris Skidmore MP, Minister of State for Universities, Science, Research and Innovation and Interim Minister of State for Energy and Clean Growth at the Department for Education and the Department for Business, Energy and Industrial Strategy, told us that he wanted “to be looking at QR funding and providing a significant uplift. I hope that uplift will come shortly and that we will be able to make announcements for 2019/20 on QR funding.”³³
24. ***QR funding is vital in allowing universities to cover the full economic cost of research, and in helping universities to fund research infrastructure which is often not covered by other sources of funding. QR funding must rise by at least the rate of inflation and the deficit that has been created since 2010 should be addressed. The Government should commit to doing this as part of the spending review.***

Cross subsidies and the higher education ecosystem

25. The stagnation in QR funding has occurred alongside a decrease in the percentage of research costs universities are able to recover from funders. According to Professor Luke Georghiou, “public research funders have been falling short of providing the intended 80% that full economic costing provides for. In 2010 it was just short, at 77.8%. In 2016–17 it was down to 70.7%.”³⁴ Professor Mark Smith, Vice-Chancellor of Lancaster University, explained that at Lancaster University, “going from 2012/13 to 2017/18” the percentage of research cost recovered decreased as follows: “75%, 70%, 69%, 67%, 59% and 58%.”³⁵
26. UK Research and Innovation told us about the shortfalls from each source of research funding based on the Office for Students’ annual Transparent Approach to Costing (TRAC) analysis:

“For every £1 of costs for charity-supported research, on average universities need to contribute 39p (and charities contribute 61p); for every £1 of costs for industry-based projects universities contribute 23p (and industrial partners 77p); and for research council funding universities contribute 28p (and the research councils 72p).”³⁶

While some of the shortfall from charity grants is topped-up by the Government through the Charity Research Support Fund, universities must find substantial funds to make up the shortfall from all the research grants detailed above. This means that universities must find a way to subsidise research from other income streams.

31 [Q 13](#) (Dr Andrew Welchman). See also [Q 18](#) (Professor Sir Leszek Borysiewicz).

32 [Q 48](#) (David Sweeney)

33 [Q 60](#) (Chris Skidmore MP). On 2 July Research England announced their budget for 2019/20, including an uplift of £45 million in QR funding, which represents an increase of 2.3%.

34 [Q 4](#) (Professor Luke Georghiou)

35 [Q 34](#) (Professor Mark Smith)

36 Written evidence from UK Research and Innovation ([SRF0007](#))

27. This cross-subsidy is managed in varying ways by the different universities from whom we heard evidence. At the University of Manchester, Professor Luke Georghiou told us that “international student fees generate a surplus, which offsets the very substantial losses that we make on research.”³⁷ This was echoed by Professor Michael Arthur from University College London when he explained that “we make a very slight loss on publicly-funded teaching, we make a significant loss on research, and on international student recruitment we make a significant surplus. So in effect there is cross-subsidy from teaching to research budgets.”³⁸ Dr Tim Bradshaw, Chief Executive of The Russell Group, suggested that this was a pattern across their universities where “by and large, teaching just about breaks even across all our disciplines in the UK. The additional money we get from international students goes to fund research.”³⁹
28. This strategy was familiar to the Minister who told us that “the total amount of research funding and that 30% gap between the amount universities spend—the £11.8 billion versus the £8.3 billion they get in—the £3.8 billion is plugged by international students who have a positive 134% return on the investment made in them.”⁴⁰
29. The University of Cambridge told us that “the University’s core operational activities of teaching and research are both loss-making activities. The University is dependent on cross-subsidisation from other sources, such as philanthropy and income from the University endowment fund, in order to meet the full costs of these activities.”⁴¹ The University of Oxford maintained a similar position. Professor Louise Richardson said that they were able to manage the deficit in research funding by raising money “through philanthropy, although, again, not enough to fill the gap. We generate a significant amount of income through Oxford University Press and other commercial activities.”⁴² She acknowledged that these were not options available to many other universities.
30. Professor David Lomas reported to us that the shortfall in funding for research was becoming so unmanageable that “some of the universities around the country ... are stopping academics applying for certain grants because the overheads and the recoveries are not high enough to cover the central costs.”⁴³

Ratio of applied research to discovery science research

31. Another challenge in the current funding system is obtaining money to conduct discovery science research.⁴⁴ Professor Julia Buckingham welcomed the increased investment through UKRI of “applied research to support the Government’s industrial strategy” but emphasised that discovery science investment was equally as important “otherwise, in 10 or 20 years’ time we will have nothing to translate into economic benefit.”⁴⁵ Imperial College London told us that “funding for basic ‘blue skies’ research is getting

37 [Q 3](#) (Professor Luke Georghiou)

38 [Q 18](#) (Professor Michael Arthur)

39 [Q 39](#) (Dr Tim Bradshaw)

40 [Q 60](#) (Chris Skidmore MP)

41 Written evidence from University of Cambridge ([SRF0006](#))

42 [Q 4](#) (Professor Louise Richardson)

43 [Q 33](#) (Professor David Lomas)

44 This is sometimes also referred to as fundamental or basic research.

45 [Q 26](#) (Professor Julia Buckingham)

more competitive ... Fundamental research can lead to unanticipated transformational breakthroughs and has real impact in applications in everyday life.”⁴⁶

32. Dr Alex Marsh, Deputy Director of Strategy at UKRI, assured us that they are “very clear about the value of discovery research in any sensible overall strategy” and he stated that UKRI will be making the case for funding for discovery research as part of their submission to the spending review.⁴⁷ The Minister was keen to point out that the UK is broadly similar to other European countries in the ratio of applied research to discovery research:

“The OECD analysis that was last done in 2016 shows that, as a proportion, we have had about 18% basic research, 44% applied and 38% experimental development, and that is pretty much on the European average. I do not feel we are in a place where we are somehow disproportionately weighting research streams against experimental research and that somehow, by looking at applied research, this is skewing the field.”⁴⁸

However, the loss of certain EU funding streams after Brexit may skew this ratio further, which we examine in Chapter 4.

2.4% target and the pipeline of researchers

33. The Government’s commitment to raising the UK’s investment in research and development, from all sources,⁴⁹ to 2.4% of GDP by 2027 was universally welcomed by our witnesses but we heard that the number of researchers could present a barrier to achieving that target. Professor Peter Bruce FRS, Physical Secretary and Vice-President of the Royal Society, explained that “if we are going to meet the ambition of 2.4% and, ultimately, 3%, we will have to see an increase of 50% in active researchers in the UK. That means we will have to attract more people into STEM subjects.”⁵⁰ Professor Dame Ann Dowling OM DBE FREng FRS, President of the Royal Academy of Engineering, added that “the increase in R&D does not simply need PhDs, it needs the technicians. In the short term, international mobility is going to be the only way of addressing the people issue”.⁵¹
34. However, Professor Peter Bruce told us that one of the difficulties in attracting international researchers was the immigration and visa system. He said that for international students wanting to “do a PhD in the UK, the initial cost of a visa to do that is around £1,200. For our competitors, it is about £300. There is a huge disparity in the attractiveness of the UK.”⁵²
35. The minister acknowledged that “when it comes to looking at some of those visa and post-study work visa issues, if we do not take action, Canada and

46 Written evidence from Imperial College London ([SRF0004](#)). See also written evidence from the Royal Society of Chemistry ([SRF0003](#)), [Q 34](#) (Professor David Lomas) and [Q 55](#) (Lord Macpherson of Earl’s Court)

47 [Q 51](#) (Dr Alex Marsh)

48 [Q 62](#) (Chris Skidmore MP)

49 Figures from the Campaign for Science and Engineering suggest this would require an additional £17 billion of private investment and £9 billion of public investment. Campaign for Science and Engineering, ‘Projections for R&D spending to reach 2.4% of GDP’, 16 October 2018 : <http://www.sciencecampaign.org.uk/resource/2-4-one-pager-rnd-investment.html> [accessed 1 July 2019]

50 [Q 39](#) (Professor Peter Bruce)

51 [Q 35](#) (Professor Dame Ann Dowling)

52 [Q 41](#) (Professor Peter Bruce)

Australia are already well ahead of us and we will suffer as a consequence.”⁵³ Difficulties in attracting researchers may be further exacerbated by Brexit, which we examine further in Chapter 4.

36. Professor Mark Smith explained that funding for PhD students represented “the lowest recovery area of any of the main funding streams”;⁵⁴ TRAC data for 2016/17 shows that it is 49.8%, the lowest across externally sponsored research activity. This presents further difficulties for universities in maintaining a pipeline of researchers for the future which, as Professor Roger Kain highlighted, “have to come from somewhere”.⁵⁵

53 [Q 64](#) (Chris Skidmore MP)

54 [Q 34](#) (Professor Mark Smith)

55 [Q 29](#) (Professor Roger Kain)

CHAPTER 3: THE AUGAR REVIEW

37. In February 2018, Prime Minister Theresa May MP announced an independent panel, led by Dr Philip Augar, would review post-18 education and funding. The panel's report (the "Augar Review") was published on 30 May 2019.⁵⁶
38. The report considered the whole post-18 education system and the panel made recommendations relating to further and higher education in England. It emphasised the importance of post-18 education options for the 50% of people who do not go to university and recommended an investment of at least £1 billion in further education over the next spending review period. The report also made recommendations about skills training, apprenticeships and funding for disadvantaged students.
39. On higher education, the panel's recommendations included:
- Reducing the cap on the fee chargeable to home and EU undergraduate students from £9,250 to £7,500 per year from 2021/22 (recommendation 3.1)
 - Replacing the lost fee income with an increased Government teaching grant to universities (recommendation 3.3)
 - Adjusting the teaching grant attached to each subject to reflect more accurately the subject's reasonable costs and social and economic value. (recommendation 3.5)

The panel made "no recommendations about research funding, which is outside the scope of this review, and is for government to consider separately."⁵⁷ We consider in paras 65–66 whether the panel should have considered research funding more carefully given its terms of reference.

Impact on university finances

40. Dr Tim Bradshaw told us that a tuition fee cut to £7,500 would equate to a total loss of £1.8 billion across the whole university sector, and £547 million from Russell Group universities.⁵⁸ Professor Michael Arthur told us that for University College London the reduction in income would be £40 million a year, equating to 19% of teaching funding.⁵⁹ Speaking as former Vice-Chancellor of the University of Cambridge, Professor Sir Leszek Borysiewicz told us that "every £1,000 fall per student is £10 million per annum extra which the university has to find."⁶⁰
41. The Augar Review's recommendations are presented as a package. Dr Philip Augar told us that the review "stated quite firmly that the recommended fee cut to £7,500 must be accompanied by a full top-up in the average, sector-wide unit of resource." However, numerous witnesses were concerned that the Treasury may choose to implement the fee cut without the compensatory increase in the teaching grant, particularly given the report's request for

56 Department for Education, *Independent panel report to the Review of Post-18 Education and Funding*, CP 117, May 2019: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdf [accessed 1 July 2019]

57 *Ibid.*, p 93

58 Q 39 (Dr Tim Bradshaw)

59 Q 22 (Professor Michael Arthur)

60 Q 18 (Sir Leszek Borysiewicz)

additional funding for further education. Lord Willetts, former Minister of State for Universities and Science, thought additional funding for both further education and higher education from the Treasury would be a “very difficult ask”, because higher education was not “ever a high priority for public spending”.⁶¹ He expressed doubt that, even if additional teaching grant funding materialised, it could be relied on as a source of income in the long term.⁶² Lord Macpherson of Earl’s Court GCB, former Permanent Secretary to the Treasury, was worried “whether over time this would result in universities receiving less funding.”⁶³ Following the publication of the Augar Review, Jo Johnson MP, former Minister of State for Universities, Science, Research and Innovation, said it was “highly unlikely” that the fee cut and enhanced top-up grant “would go in tandem” and that even if additional top-up funding was provided, there would be a “real risk that it ends up being a slush fund for the ministerial *project du jour*”.⁶⁴

42. We heard that lowering the tuition fee cap without increasing the teaching grant to compensate could have severe financial consequences for universities. Professor Luke Georghiou explained that while institutions such as his were at the “financially secure end of the system”, some institutions could close due to this loss of income.⁶⁵ This was in the context of increasing numbers of universities reporting financial deficits: data from the Higher Education Statistics Authority (HESA) show that almost a quarter of higher education providers in England reported a deficit in 2017/18, compared to a tenth of providers in 2012/13.⁶⁶
43. Our evidence suggested that most institutions would not face closure but would have to make significant cutbacks and reduce what they could deliver. Consequences could include bigger class sizes, higher student-staff ratios, reduced investment in and maintenance of infrastructure, a decline in outreach and widening-participation programmes, and cuts to the provision of high-cost, hands-on subjects such as engineering.⁶⁷
44. Professor Julia Buckingham raised the added pressure of the growing population of 18 year olds: “Unless we have a cast-iron guarantee that that funding will be replaced and increased with inflation and that there will be funding for what will be a growing population of 18 year-olds from 2021, there will be a funding gap.”⁶⁸
45. We asked witnesses how they might try to increase their income if the teaching grant is not made up in full. Given that international student fees currently produce a surplus (see paras 27–28), institutions may face increasing pressure to recruit more international students to help make up the gap in domestic student teaching income,⁶⁹ The University of Cambridge said that

61 [Q 39](#) (Lord Willetts)

62 *Ibid.*

63 [Q 54](#) (Lord Macpherson of Earl’s Court)

64 ‘Ex-ministers warn Treasury will not make up funding if fees cut’, *Times Higher Education* (June 2019): <https://www.timeshighereducation.com/news/ex-ministers-warn-treasury-will-not-make-funding-if-fees-cut> [accessed 1 July 2019]

65 [Q 6](#) (Professor Luke Georghiou)

66 HESA, ‘Higher Education Provider Data: Finance’: <https://www.hesa.ac.uk/data-and-analysis/finances> [accessed 1 July 2019]

67 [Q 6](#) (Professor Luke Georghiou), [Q 22](#) (Professor Michael Arthur), [Q 32](#) (Professor Dame Ann Dowling), [Q 29](#) (Professor Julia Buckingham), [Q 40](#) (Dr Tim Bradshaw), written evidence from Imperial College London ([SRF0004](#)), written evidence from University of Cambridge ([SRF0006](#))

68 [Q 29](#) (Professor Julia Buckingham)

69 [Q 6](#) (Professor Luke Georghiou)

it “may have no choice but to consider increasing its proportion of overseas undergraduate students relative to its home cohort to make up for the loss in funding”.⁷⁰ Professor Julia Buckingham stated that in her understanding, “the OfS [Office for Students] data suggests that every university is planning to increase its international students”,⁷¹ but Professor Roger Kain, Vice-President for Research and Higher Education Policy at the British Academy, suggested these were “heroic assumptions” and it should not be assumed that the “amount of money that is moving out of fee income will be made up” by increasing the number of international students.⁷²

46. The university representatives we spoke to were positive about the role of international students in their institutions’ communities, and the importance of remaining attractive destinations for them.⁷³ However, witnesses generally agreed that having to increase the proportion of international students to fill a funding gap was not desirable. Professor Michael Arthur highlighted that University College London was a “British university” with a “responsibility to the country”.⁷⁴ The University of Cambridge said that while “the quality of both home and overseas undergraduate applicants is extremely high across the University”, altering the balance between home and overseas students would “have an impact on opportunities for UK undergraduate students, in particular, to receive a world-class education and, bearing in mind limited capacity, would impact on social mobility.”⁷⁵
47. We also heard concerns that even if the teaching grant was increased, as proposed by the review, the recommendation that the teaching grant be tied to the “value” of subjects could result in an overall reduction in the grant available to universities. Dr Tim Bradshaw explained how the system works at present, and how the Augar Review recommendations could exacerbate financial strains:

“at the moment, the Government top up teaching grants for some subjects: STEM subjects, medicine ... and a few others. Across the middle group of band B subjects—most of science, technology and engineering we [Russell Group universities and peers] make a loss of about £1,400 per student ... even with the current government top-up grant. If you cut the fee again, that puts an even bigger hole in the teaching of STEM subjects. The top-up grants that you would need from Augar are substantially more than just the gap from £9,250 down to £7,500. They would need to make up the additional deficit that we are already carrying on those subjects.”⁷⁶

48. **Reducing the tuition fee cap in England to £7,500 without compensating universities for this loss in full by increasing the teaching grant will result in significant financial consequences for universities. The immediate casualties of such a reduction in income will likely be widening-participation programmes, student experience, infrastructure maintenance and repair, and the hands-on elements of courses.**

70 Written evidence from University of Cambridge (SRF0006)

71 Q 29 (Professor Julia Buckingham)

72 Q 29 (Professor Roger Kain)

73 Q 29 (Professor Julia Buckingham), Q 6 (Professor Luke Georghiou, Professor Louise Richardson)

74 Q 22 (Professor Michael Arthur)

75 Written evidence from University of Cambridge (SRF0006)

76 Q 39 (Dr Tim Bradshaw)

Impact on research

49. While the proposed cuts would ostensibly affect universities' teaching budgets, witnesses told us that they would also be likely to have implications for research, due to the complex cross-subsidies within university finances, as outlined in Chapter 2. Professor Michael Arthur explained that “we tend to think of these budgets in silos—teaching funding, research funding and so on”, but that when it came to funding a school or faculty, they were in fact treated as a single budget. The budget was then spent “in order to create the greatest academic excellence in both teaching and research.” Disturbing any element of the budget would therefore affect the other parts.⁷⁷
50. Many witnesses said that there would be a negative impact on research if the teaching grant was not made up in full to compensate tuition fee cuts. Professor Luke Georghiou told us the effects would be “absolute and dramatic for research, causing us to lose both quality and volume”.⁷⁸ Professor Peter Bruce said it would be “pretty close to a disaster if the shortfall was not made up in another way,”⁷⁹ particularly as it would exacerbate the pressures on QR funding for universities, as outlined in Chapter 2.
51. Although UKRI considered the amount of QR funding available to universities was sustainable at present,⁸⁰ David Sweeney admitted there was a “significant risk” to universities' sustainability if the tuition fee income loss was not made up, and that UKRI did not have the capacity to help make up funds to universities without further investment from the Government.⁸¹ Dr Alex Marsh echoed this and stated that if the recommendations were implemented in a way that did not protect universities' sustainability, it would have a “damaging effect on universities' ability to continue to perform the missions that are so central to the industrial strategy and to delivering the 2.4% target.”⁸² David Sweeney added that UKRI and Research England would consider different ways in which they could allocate their current resources, but all such scenarios would “severely undermine the Government's commitment to 2.4% of R&D being invested in research and innovation.”⁸³
52. We did not receive evidence indicating the Government's position on the Augar Review and its implications for university finances. However, the minister said in a personal capacity that he would “warn against any reduction in fee level without a commensurate addition of funding.”⁸⁴

Diversion of resources to teaching

53. Witnesses expressed concern that, under a reduced-income scenario, resources would be prioritised for teaching over research. University faculties and departments are staffed as “academic units”, and staff often contribute to both teaching and research.⁸⁵ Professor Michael Arthur explained that, if universities' overall income was cut, resources could be diverted to teaching,

77 [Q 22](#) (Professor Michael Arthur)

78 [Q 6](#) (Professor Luke Georghiou)

79 [Q 39](#) (Professor Peter Bruce)

80 [Q 48](#) (David Sweeney)

81 [Q 47](#) (David Sweeney)

82 [Q 47](#) (Dr Alex Marsh)

83 [Q 47](#) (David Sweeney)

84 [Q 59](#) (Chris Skidmore MP)

85 [Q 22](#) (Professor Michael Arthur)

as “most academics will prioritise that above their research”.⁸⁶ The University of Cambridge told us that “any further loss of funding to the University would require us to divert other income streams to support teaching, reducing the resource available to support the undertaking of research and the ongoing renewal of our research facilities.”⁸⁷ The Campaign for Science and Engineering also expressed concern that QR funding could be re-directed to fill gaps in teaching funding, at the expense of research.⁸⁸

54. Dr Tim Bradshaw highlighted that, while in many universities at present there was an effective cross-subsidy from international student fees to research, if there was a shortfall in the teaching budget, universities would “have to think very carefully about where that money is used” as the money could not be used twice.⁸⁹ This would further reduce the ability of universities to make up the full economic cost of research. The University of Cambridge echoed this: “in the scenario of a funding cut, [the university] would need to switch a greater proportion of its own resources to subsidising education and student support,” which would be at the expense of “meeting the costs attached to research”.⁹⁰

Impact on specific disciplines

55. Reducing universities’ income is likely to have a disproportionately high impact on the provision of particular disciplines, and by extension the research produced in those disciplines and the pipeline of talent from undergraduates to researchers. Such subjects include those which are expensive to run, and so which may not be able to cover costs on a reduced income, and those which may be cheaper to run but are considered ‘low-value’ and so may not receive adequate teaching grant top-up income.
56. The former category includes courses like engineering. Professor Dame Ann Dowling explained that “engineering courses cost between £12,000 and £15,000 a year” to run, so if the teaching grant was not increased by an adequate amount, universities may cut provision of these expensive courses.⁹¹ Imperial College London, which teaches primarily STEM subjects, told us that “the cost of delivering an Imperial [undergraduate] degree exceeds the tuition fee income in every case, with an average deficit of c. £2,650 per student”.⁹²
57. These problems are exacerbated by the fact that in many cases universities already make a loss on high-cost subjects, despite targeted teaching grant money intended to make up the difference. At Imperial College London, all subjects except mathematics qualify for the high-cost or very-high-cost subject additional funding streams, but they still operate at a loss. They told us that if fees were cut to £7,500 and there was no additional teaching grant, the average loss would increase to £4,300 per student per year.⁹³
58. Universities may have to cut the more expensive elements of courses to reduce overall costs. Dr Tim Bradshaw expressed concern that “attractive

86 [Q 22](#) (Professor Michael Arthur)

87 Written evidence from University of Cambridge ([SRF0006](#))

88 Written evidence from the Campaign for Science and Engineering ([SRF0001](#))

89 [Q 39](#) (Dr Tim Bradshaw)

90 Written evidence from University of Cambridge ([SRF0006](#))

91 [Q 32](#) (Professor Dame Ann Dowling)

92 Written evidence from Imperial College London ([SRF0004](#))

93 *Ibid.*

and interesting bits of fieldwork or lab study” that students often chose to do in the latter years of their degrees “could ... end up being squeezed.”⁹⁴ Professor Dame Anne Dowling explained that in engineering the most expensive element was the “hands-on practical experience, such as doing experiments and running projects” which were “essential to turn out the trained people that industry needs.”⁹⁵ She also said that as hands-on teaching was more staff-intensive, if staff numbers were cut the practical elements of courses would suffer.⁹⁶

59. The most serious outcome could be departments for some high-cost subjects being forced to close. Professor Mark Smith explained that when the unit of resource of government funding reduced in the early- to mid-1990s, research-intensive universities responded by closing chemistry departments to cut expenses.⁹⁷
60. At the other end of the spectrum, there were concerns that the panel’s recommendation to “adjust the teaching grant attached to each subject to reflect more accurately the subject’s reasonable costs and its social and economic value to students and taxpayers”⁹⁸ would adversely affect courses in the arts, humanities and social sciences, which are generally the lowest-cost courses.
61. Under the current system, teaching grant funding is primarily allocated to universities on the basis of their provision of high-cost subjects. Subjects in price groups C2 (including geography, mathematics and languages) and D (including humanities, business and social sciences) are not allocated teaching grant top-up funding.⁹⁹ This is manageable for many universities charging £9,250 fees but could become unmanageable if fees are reduced to £7,500 and no top-up is received. Dr Tim Bradshaw explained:

“One of our challenges is the £7,500 figure that is in Augar’s report. You may have seen that, at the same time, the Government commissioned a piece of work from KPMG looking at an alternative view of how much it costs to teach various subjects. I think the lowest-cost band of subjects that it looked at was English, law and modern languages. The average fee that it came up with that would be needed in that area was £8,801. Even that is well above what Augar was suggesting.”¹⁰⁰

Professor Michael Arthur told us he was “very worried about what happens to arts, humanities and social sciences funding” under the proposed system, and that any impact on those disciplines would be a “disaster for the country”, as we “need that research and teaching capability.”¹⁰¹

94 [Q 40](#) (Dr Tim Bradshaw)

95 [Q 32](#) (Professor Dame Ann Dowling)

96 [Q 33](#) (Professor Dame Ann Dowling)

97 [Q 33](#) (Professor Mark Smith)

98 Department for Education, *Independent panel report to the Review of Post-18 Education and Funding*, CP 117, May 2019, p 96: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdf [accessed 1 July 2019]

99 Office for Students, *Guide to funding 2018–19, OfS 2018.21* (May 2018): https://www.officeforstudents.org.uk/media/42d81daf-5c1d-49f6-961b-8b4ab1f27edc/ofs2018_21.pdf [accessed 1 July 2019]

100 [Q 39](#) (Dr Tim Bradshaw). See also KPMG for the Department for Education, *Understanding costs of undergraduate provision in Higher Education* (May 2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/804975/Understanding_costs_of_undergraduate_provision_in_higher_education.pdf [accessed 1 July 2019].

101 [Q 22](#) (Professor Michael Arthur)

62. Overall, witnesses were cautious of the suggestion that income could be “precision-engineered” in such a way for any subject, given the complexities of university finances and the cross-subsidies within them.¹⁰² Lord Willetts told us that “Augar goes too far in thinking that you can attach precise purposes to specific bits of money rather than regarding university as an overall institution that has to be well run by its academic community and its vice-chancellor.”¹⁰³
63. Witnesses also expressed concern about the recommendation that the Office for Students should determine the value of subjects and, as a result, the value of teaching grant top-ups. They told us this indicated increased involvement by the Government in matters which universities are better equipped to deal with; Dr Tim Bradshaw said that the Augar Review felt like “another chip away at [universities’] autonomy”.¹⁰⁴ Professor Sir Leszek Borysiewicz said that “universities are far closer to the customer base” and can be “more responsive than any centrally created behemoth that will define the disciplines that will create the country in the future.”¹⁰⁵ Lord Macpherson echoed this, saying that the “demand for greater central direction” was “implicit” in the Augar Review, but “generally, the gentleman in Whitehall does not know best.”¹⁰⁶
64. **The Augar Review recommends that the social and economic value of different subjects be determined by the Office for Students, taking account of the subject’s relative importance with respect to alignment with the Government’s Industrial Strategy and a range of other factors such as the financial viability of the university and its contribution to the local economy. This recommended process is far from straightforward and is certain to be controversial. We are concerned that it will be fraught with difficulties and that it will remove autonomy from universities.**

Comprehensive review of university finances

65. The Augar Review panel focused on just one element of the university finance system in the review. The report states that commenting on research was “outside the scope of this review”;¹⁰⁷ however, David Sweeney told us that “the terms of reference say explicitly that the recommendations should be guided by the need to support the role of universities and colleges in delivering the Government’s objectives for science, R&D and the industrial strategy,” and “it was not clear how much the review focused on the broader role of universities”.¹⁰⁸ In fact, the terms of reference for the Augar Review included the following consideration: “How we can support a more dynamic market in provision, taking into account reforms already underway, whilst maintaining the financial sustainability of a world-class higher education

102 Q 29 (Professor Julia Buckingham)

103 Q 39 (Lord Willetts)

104 Q 39 (Dr Tim Bradshaw)

105 Q 22 (Sir Leszek Borysiewicz)

106 Q 55 (Lord Macpherson of Earl’s Court)

107 Department for Education, *Independent panel report to the Review of Post-18 Education and Funding*, CP 117, May 2019, p 93: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdf [accessed 1 July 2019]

108 Q 47 (David Sweeney)

and research sector.”¹⁰⁹ We therefore consider that research should have been an integral part of the review.

66. The Augar Review acknowledged that “there will be concerns about the impact of the resource freeze on some institutions with pockets of research excellence” but the panel were “of the view that it is for government, business and other interested bodies to fund research adequately and directly”.¹¹⁰ The report stated further that “the sector could and should absorb a further squeeze on per student resources to help fund investment in other parts of the post-18 education system”.¹¹¹
67. Lord Willetts told the Committee that there was a “tension in public policy” over responsibility for universities. He explained:
- “Responsibility for universities is divided between two different departments, one covering teaching and the other covering research. It is clear that the Augar agenda—who knows to what extent it is the DfE [Department for Education] agenda—is to reduce teaching funding and reduce the unit of resource going into universities. The BEIS [Department for Business, Energy and Industrial Strategy] agenda is to grow R&D spend. So you have one department with its foot on the brake and one department with its foot on the accelerator ... it is a very peculiar way of going about things.”¹¹²
68. **By concentrating on student education and making only a passing reference to research and development, the terms of reference of the Augar Review did not take a holistic approach to the funding of universities. The panel compounded this by making no attempt to assess the potential impact of its recommended reductions in student fees on the funding of research, declaring that it was outside the scope of the review. The result is a distorted assessment of the sector’s financial health as a whole.**
69. **In looking at university funding without considering research and cross-subsidies, the Augar Review has made recommendations which, if implemented, could prove harmful to the already challenging ecosystem of university funding.**
70. ***If the Government is to follow any of the recommendations of the review relating to tuition fees, it must implement them as a full financial package, including increasing the teaching grant to cover the loss of tuition fees, to ensure that universities are no worse off than they are now. We are, however, concerned by the proposal that the Office for Students should determine the value of teaching grant awarded to individual institutions. This gives the Office for Students too much power to determine the fate of universities and erodes their autonomy. Whoever has the responsibility for determining the value of teaching grant awards must do so using clear metrics to***

109 Department for Education, *Review of Post-18 Education and Funding Terms of Reference*, February 2018, p 2: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/682348/Post_18_review_-_ToR.pdf [accessed 11 July 2019]

110 Department for Education, *Independent panel report to the Review of Post-18 Education and Funding*, CP 117, May 2019, p 93: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdf [accessed 1 July 2019]

111 *Ibid.*, p 92

112 [Q 39](#) (Lord Willetts)

assess the impact on the research base. Given the complex nature of the cross-subsidies universities employ in managing their finances, seemingly small disruptions to inputs could have significant unintended consequences for research.

CHAPTER 4: BREXIT

71. The UK is currently set to leave the European Union on or before 31 October 2019. At the time of writing, no agreement on the terms of the UK's departure has been made with the EU that has the support of the House of Commons.
72. Leaving the EU, with or without a deal, will have implications for scientific research in the UK and scientific collaboration with EU countries. We have considered the impact of Brexit on UK science in a previous report. This gave an overview of concerns of the UK science community immediately after the referendum.¹¹³
73. There are three aspects of leaving the EU which will have significant implications for research funding in universities: continued access to EU funding, the ability to recruit and retain researchers, and continued access to European networks of collaboration.

EU funding for research

74. In the period 2014–20, the total EU budget for directly supporting research and innovation was estimated to be €120 billion. This was broadly divided into three main parts:
 - €74.8 billion for the Horizon 2020 programme
 - €40.2 billion in structural funds for R&D activities
 - €5 billion for sectoral R&D programmes.¹¹⁴

Additional EU programmes indirectly support research activities, such as the European Fund for Strategic Investment and Erasmus+.¹¹⁵

75. Horizon 2020 is the eighth EU Framework Programme, the predominant EU funding mechanism for funding research, development and innovation. Funding is largely allocated via competitive calls for proposals, which are managed under several schemes and agencies. These include the European Research Council, Marie Skłodowska-Curie Actions, the Small and Medium sized Enterprises instrument and the European Institute of Innovation and Technology. As of August 2018, the UK had received €5.1 billion of funding from Horizon 2020 (14.3% of the total).¹¹⁶
76. The UK is one of the largest recipients of EU research funding, receiving more than the proportion of its EU contribution that is earmarked for research and development.¹¹⁷ In 2007–13, the UK contributed €5.4 billion to EU research and development while it received €8.8 billion.¹¹⁸ In the latest round of European Research Council grants, one fifth of the successful

113 Science and Technology Committee, *A time for boldness: EU membership and UK science after the referendum*, (1st Report, Session 2016–17, HL Paper 85)

114 The Royal Society, *UK research and the European Union* (December 2015): <https://royalsociety.org/-/media/policy/projects/eu-uk-funding/uk-membership-of-eu.pdf> [accessed 1 July 2019]

115 *Ibid.*

116 Department for Business, Energy and Industrial Strategy, *Horizon 2020 funding if there's no Brexit deal* (June 2019): <https://www.gov.uk/government/publications/horizon-2020-funding-if-theres-no-brexit-deal/horizon-2020-funding-if-theres-no-brexit-deal--2> [accessed 1 July 2019]

117 The Royal Society, *UK research and the European Union* (December 2015): <https://royalsociety.org/-/media/policy/projects/eu-uk-funding/uk-membership-of-eu.pdf> [accessed 1 July 2019]

118 *Ibid.*

grants were awarded to researchers in the UK,¹¹⁹ and under Framework Programme 7 the UK received 25.5% of the Marie Skłodowska-Curie Actions total budget.¹²⁰

77. EU funding is a significant proportion of funding for research in UK universities. In 2017/18 EU funding comprised 11% of research income of UK universities, of a total of €8.2 billion.¹²¹ Professor Louise Richardson told us that 11% of the University of Oxford’s research funding was from the European Commission, totalling £63 million last year, and that loss of that funding would be “deeply damaging”.¹²²

Horizon 2020 and Horizon Europe

78. The extent to which the UK will be able to engage with EU research programmes after Brexit depends on the conditions under which the UK leaves the EU. If the UK leaves with the Withdrawal Agreement, it will be able to participate fully in EU programmes including Horizon 2020 and the European Regional Development Fund scheme until December 2020 when the current funding finishes.
79. If the UK leaves the EU without a deal, it will revert to “third country” status. In preparation for the possibility of leaving without a deal, the Government committed on 13 August 2016 to “underwrite funding for approved Horizon 2020 projects applied for before the UK leaves the EU” (the Underwrite Guarantee).¹²³ On 25 October 2016, Jo Johnson MP, then-Minister of State for Universities, Science, Research and Innovation, told us that this funding would be new money, “not money from the existing science ring-fence ... it is an additional commitment from the Treasury to underwrite EU research funding.”¹²⁴
80. On 24 July 2018 the Government also committed to cover funding for successful bids to EU calls open to third countries submitted between the date of exit and the end of 2020 (Post-EU Exit Guarantee Extension).¹²⁵ The funding guarantee would cover the lifetime of the projects, even if they last beyond December 2020.
81. Third-country participation does not extend to all elements of Horizon 2020 funding, including European Research Council grants and some Marie Skłodowska-Curie Actions.¹²⁶ With these, the Government said it would

119 European Research Council, *ERC Advanced Grants 2018 Outcome: Indicative statistics*: <https://erc.europa.eu/sites/default/files/document/file/erc-2018-adg-statistics.pdf> [accessed 1 July 2019]

120 The Royal Society, *UK research and the European Union* (December 2015): <https://royalsociety.org/-/media/policy/projects/eu-uk-funding/uk-membership-of-eu.pdf> [accessed 1 July 2019]

121 HESA, ‘Finance record 2017/18—Contents’: <https://www.hesa.ac.uk/collection/c17031> [accessed 18 July 2019]

122 [Q 7](#) (Professor Louise Richardson)

123 Department for Business, Energy and Industrial Strategy, *Safeguarding funding for research and innovation* (13 August 2016): <https://www.gov.uk/government/news/safeguarding-funding-for-research-and-innovation> [accessed 1 July 2019]

124 Oral evidence taken on 25 October 2016 (Session 2016–17), [Q 51](#) (Jo Johnson MP)

125 HC Deb, 24 July 2018, [col 926WS](#)

126 Department for Business, Energy and Industrial Strategy, *UK participation in Horizon 2020*, December 2018: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766510/horizon-2020-government-overview-december-2018-update.pdf [accessed 1 July 2019]

consider “what other measures may be necessary to support UK research and innovation in the event that the guarantee and the extension are required.”¹²⁷

82. Beyond Horizon 2020, the question remains whether the UK intends to associate with its successor programme, Horizon Europe, which will run between 2021–27. The Government’s July 2018 White Paper stated that the UK “wishes to explore association in research and innovation programmes, including Horizon Europe”;¹²⁸ it has not stated a firm commitment beyond this.
83. The evidence we received suggested a strong desire from the research community to associate with Horizon Europe. Dr Tim Bradshaw was clear that the Russell Group wanted the UK to associate with Horizon Europe.¹²⁹ Imperial College London wrote that “we need certainty on access to research collaboration frameworks” and so “we urge the government to seek Associated Country status for the UK in the future Horizon Europe programme.”¹³⁰ This reflects the evidence received by the EU Home Affairs Sub-Committee earlier this year for its inquiry into the impact of Brexit on the UK’s participation in Horizon 2020 and Erasmus+, leading to the recommendation that the Government should “confirm whether it will seek full association to the 2021–2027 Erasmus and Horizon Europe programmes as soon as possible, to maximise certainty and stability for UK students and researchers, and to enable them to plan for any changes.”¹³¹
84. The minister told us he had “made a very clear statement of intent that I want to see us associated to the future Horizon Europe programme”, but “it is not yet possible to associate to the regulation” as it had not been finalised.¹³²
85. ***We urge the Government to associate the UK with Horizon Europe as soon as possible, to ensure certainty and stability for researchers in universities and industry.***

Funding post-Brexit

86. Despite the assurances on Horizon 2020, the science community remained concerned that UK universities will lose out on important funding streams after the UK has left the EU, hindering their ability to conduct research. We heard that the UK’s participation in EU projects is already suffering due to uncertainties surrounding Brexit. Professor Sir Leszek Borysiewicz told us that “there has been a substantial fall in the number of awards” as well as a “fall in the number of UK participations or even invitations to lead joint programmes in the EU.”¹³³

127 Department for Business, Energy and Industrial Strategy, *UK participation in Horizon 2020*, 11 December 2018: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766510/horizon-2020-government-overview-december-2018-update.pdf [accessed 1 July 2019]

128 HM Government, *The future relationship between the United Kingdom and the European Union*, Cm 9593, July 2018: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/786626/The_Future_Relationship_between_the_United_Kingdom_and_the_European_Union_120319.pdf [accessed 1 July 2019]

129 [Q 45](#) (Dr Tim Bradshaw)

130 Written evidence from Imperial College London ([SRF0004](#))

131 European Union Committee, *Brexit: the Erasmus and Horizon programmes* (28th Report, Session 2017–19, HL Paper 283)

132 [Q 64](#) (Chris Skidmore MP)

133 [Q 23](#) (Professor Sir Leszek Borysiewicz)

87. Further, witnesses were concerned that the total amount of funding available after Brexit would be reduced, given that the UK is currently a net beneficiary of EU funding. Lord Willetts said:
- “My understanding of the Treasury’s current position is that it thinks it will compensate to the amount that we put in, not the amount we get out. To simplify, if we put in a billion pounds and get out £1.5 billion, I think the current Treasury position is the science community will get £1 billion”.¹³⁴
- Dr Alex Marsh said that UKRI were “very clear that what matters for our R&D system and for the outcomes that we seek to deliver is the amount of investment that we get out of the programmes”, and they were putting this case to the Treasury.¹³⁵
88. We heard that UK researchers may not be able to access European Research Council grants after Brexit. As explained to us by the minister, the current funding guarantees “do not cover all forms of funding, particularly European Research Council funding, Marie Skłodowska-Curie Actions and the SME instrument.”¹³⁶ The UK is currently very successful at winning European Research Council grants, which are awarded solely on research excellence.
89. Professor Roger Kain told us it was a “huge advantage” that the European Research Council made funding decisions on the basis of research excellence, as it meant “discovery research that is peer-reviewed and comes through as excellent, is fundable,” and “the loss of that will be difficult to make up.”¹³⁷ Professor Peter Bruce said that if the UK lost access to European Research Council funding, discovery research would be “one of the biggest casualties.”¹³⁸
90. Witnesses told us that the European Research Council funds areas of research that are not as well funded by UK sources. Professor Louise Richardson said the European Research Council “funds all these areas that are difficult to get funding for”, including “early-career researchers ... curiosity-driven research, the humanities and the social sciences”.¹³⁹ Dr Sarah Main told us that 30–40% of all funding for space and astronomy science in the UK comes from European Research Council funding.¹⁴⁰
91. Concerns were raised about funding for arts, humanities and the social sciences, which we were told the EU funds particularly well. Professor Sir Leszek Borysiewicz told us that 39% of funding for archaeology research in the UK came from EU sources,¹⁴¹ while Professor Roger Kain explained that 20% of the Horizon 2020 budget went towards arts, humanities and social sciences research, compared to only 9% of UK public funding.¹⁴²
92. Professor Louise Richardson said “should the money Britain gives to the EU be brought back and distributed nationally” it would be “distributed

134 [Q 45](#) (Lord Willetts)

135 [Q 53](#) (Dr Alex Marsh)

136 [Q 65](#) (Chris Skidmore MP)

137 [Q 30](#) (Professor Roger Kain)

138 [Q 45](#) (Professor Peter Bruce)

139 [Q 7](#) (Professor Louise Richardson)

140 [Q 16](#) (Dr Sarah Main)

141 [Q 22](#) (Professor Sir Leszek Borysiewicz)

142 [Q 26](#) (Professor Roger Kain)

in a very different way: towards more applied, short- and medium-term government goals and much less towards the humanities, the social sciences, the curiosity-driven research that is so critical to us.”¹⁴³ Professor Peter Bruce echoed this, saying that as research excellence was the only criterion for European Research Council grants, there was no “strategic element” to the decision making; if UK researchers could no longer access that funding, “we need to replicate it with a UK funding council which is driven by the discovery agenda and not by a strategic agenda.”¹⁴⁴ Professor Roger Kain said that this should be administered independently from UKRI and should have some oversight from the national academies.¹⁴⁵ However, Dr Tim Bradshaw doubted that the UK “could ever genuinely replicate the ERC as a UK-only fund,” given the international reputation European Research Council grants offer.¹⁴⁶

93. Administering such funding centrally post-Brexit may add to the concerns outlined in paras 63–64 around the erosion of academic independence if the teaching grant value is determined centrally.
94. Finally, funding for scientific infrastructure and facilities may be affected when the UK leaves the EU. Professor Richardson told us that “Brexit represents a serious threat to our ability to retain access to funding for large-scale scientific infrastructure, which can operate only at the transnational level”.¹⁴⁷ Funding facilities is important to enable collaboration between universities and industry: Professor Mark Smith told us that the European Regional Development Fund had been “hugely important in creating physical spaces that have allowed us to develop incubators and space for SMEs”; there was “not any direct equivalent” for this type of funding.¹⁴⁸ He warned that “unless these European funds are replaced post-Brexit through new funding mechanisms, such as Shared Prosperity, there will be a significant decrease in research and innovation collaborations between universities and SMEs.”¹⁴⁹
95. ***The Government should ensure that once the UK has left the EU the level of funding the UK currently receives from the EU for research is matched in full. As the UK is a net beneficiary of EU research funding this amount will be greater than the amount the UK currently contributes to the EU research pot.***
96. ***Public funding for research in universities after Brexit should seek to replace not just the amount of funding but the areas it supports, like discovery research and scientific infrastructure and facilities. It is important to the scientific community that the basis for awarding funding is research excellence.***

Recruitment and retention of researchers

97. The ability of UK universities to recruit and retain researchers, including research students, after Brexit was a concern raised by almost all witnesses. We were told there were two elements of Brexit that affected the attractiveness of the UK to international and EU researchers: the post-Brexit funding

143 [Q 7](#) (Professor Louise Richardson)

144 [Q 45](#) (Professor Peter Bruce)

145 [Q 26](#) (Professor Roger Kain)

146 [Q 45](#) (Dr Tim Bradshaw)

147 [Q 5](#) (Professor Louise Richardson)

148 [Q 37](#) (Professor Mark Smith)

149 Written evidence from Professor Mark Smith ([SRF0005](#))

environment and post-Brexit immigration policy.¹⁵⁰ When asked which of these was the more pressing concern, Professor Louise Richardson told us “They will both be dreadful. I cannot say which will be worse. If people do not want to come here because there is no research funding, the fact that they cannot get here will not matter so much.”¹⁵¹

98. Of the UK’s academic workforce, 18% are non-UK EU citizens and 13% are from outside the EU.¹⁵² Dr Tim Bradshaw told us that a high proportion of academics in the Russell Group universities were non-UK EU citizens, including 40% in economics and econometrics, 37% in modern languages, 34% in IT and computer science, 31% in maths and 25–27% of chemists, physicists and bioscientists.¹⁵³
99. The Government’s future skills-based immigration system White Paper, published on 19 December 2018, set out plans to end free movement for EU citizens into the UK and to introduce a new single immigration system.¹⁵⁴ Key proposals included the introduction of new work routes for skilled and temporary workers, and for visa eligibility to be determined by minimum salary and skill levels. Under the proposals, the same visa and immigration rules as for non-EEA migrants would apply to EEA nationals coming to study in the UK, including PhD students.
100. Witnesses were concerned that some of these proposals would mean talented researchers would be unable to come and work in UK universities, and would discourage EU citizens from remaining in the UK. This is problematic because the UK needs more researchers to meet its R&D investment target of 2.4% of GDP, as explained in Chapter 2.
101. We heard that there is already evidence that EU citizens are leaving, or thinking of leaving, the UK. Professor Michael Arthur told us that, since approximately one-third of University College London’s postdoctoral staff were European, they would expect them, under ordinary circumstances, to constitute one-third of leavers. He said “that was the case in the year of the referendum, but in the following year it rose to 37% of leavers, and the year after that it was 40%.”¹⁵⁵ The Campaign for Science and Engineering said that in one survey of EU nationals working in the UK “nearly 70% of respondents said they are thinking of leaving the UK because of Brexit”. It noted instances of researchers turning down prestigious research fellowships at organisations such as the Wellcome Trust and Cancer Research UK, citing uncertainty around Brexit as a key factor.¹⁵⁶
102. There were concerns that since the referendum EU citizens are not applying for jobs in the UK in the first place. Professor Peter Bruce told us that, whilst he had been involved in research for over 30 years, it was only in the last two years that he had no applicants from Spain, France or Germany for advertised postdoctoral jobs¹⁵⁷. Professor Louise Richardson said that the

150 Q 36 (Professor Mark Smith). See also Q 7 (Professor Louise Richardson).

151 Q 7 (Professor Louise Richardson)

152 Q 36 (Professor David Lomas)

153 Q 44 (Dr Tim Bradshaw)

154 HM Government, *The UK’s future skills-based immigration system*, Cm 9722, December 2018: <https://www.gov.uk/government/publications/the-uks-future-skills-based-immigration-system> [accessed 1 July 2019]

155 Q 23 (Professor Michael Arthur)

156 Written evidence from Campaign for Science and Engineering (SRF0001)

157 Q 44 (Professor Peter Bruce)

University of Oxford had noticed “significantly fewer EU nationals applying for jobs that we advertise”.¹⁵⁸ Professor Michael Arthur told us that while a “prestigious scheme” for early career researchers at UCL usually attracted a third of applications from the EU, in 2018, for the first time, there were no applications from non-UK EU nationals.¹⁵⁹

103. The loss of EU researchers from UK universities may have an impact on research funding. Professor David Lomas explained:

“We do very well with international grants and EU grants but only 25% of the UK’s starting grants in 2018 went to UK nationals. Around 70% went to people who were non-EU who won their money from the EU to spend it here, and 5% went to people who won the money in the EU and came to Britain.”¹⁶⁰

Dr Tim Bradshaw told us that Brexit could cause this to “work the other way” and that “if the UK is no longer a hospitable environment, [and] it is underinvesting in facilities and equipment and teaching,” researchers might “take their ERC money away with them” to other EU countries.¹⁶¹ The risk of reduced access to funding once the UK leaves the EU may also cause some EU nationals to leave; Professor Louise Richardson told us that the “moment their research funding is in jeopardy, we do not doubt that they will leave.”¹⁶²

104. Witnesses were worried about the effect Brexit may have on the likelihood of EU students applying to study in the UK and the likelihood of them staying here afterwards. Professor Michael Arthur told us:

“One of the reasons why UCL is so successful is that for 20-odd years a lot of people have come from Europe and have literally given their lifetimes of scientific expertise to the university and to this country. They are now senior professors. Almost all of them came to this country as PhD students or early-career researchers. I am deeply worried about losing that pipeline of talent for the UK.”¹⁶³

105. Dr Tim Bradshaw told us that, while EU students made up 8% of the total student population at Russell Group universities, they comprised 15% of postgraduate research students, and those students were “a key pipeline for us to get through to the next stage to early-career researchers, proper research academic careers and research careers with business and elsewhere.”¹⁶⁴ Imperial College London said that “a reduction in EU student numbers could affect EU PhD students in particular,” and that “any reduction in EU PhD student numbers would have a severe detrimental impact on the UK research talent pipeline.”¹⁶⁵ Professor Luke Georghiou said that at the University of Manchester applications for postgraduate research courses had fallen by 10%.¹⁶⁶

158 [Q 7](#) (Professor Louise Richardson)

159 [Q 23](#) (Professor Michael Arthur)

160 [Q 36](#) (Professor David Lomas)

161 [Q 45](#) (Dr Tim Bradshaw)

162 [Q 7](#) (Professor Louise Richardson)

163 [Q 23](#) (Professor Michael Arthur)

164 [Q 41](#) (Dr Tim Bradshaw)

165 Written evidence from Imperial College London ([SRF0004](#))

166 [Q 7](#) (Professor Luke Georghiou)

106. Professor Julia Buckingham told us that “being attractive to international students is critical,” but that the post-study work visa system was restrictive and made the UK less attractive than other countries.¹⁶⁷ The immigration White Paper proposed a slight increase in the time international students could remain in the UK after finishing their studies (up to six months for bachelor’s and master’s students, and up to a year for PhD students), but this may not be enough to encourage students to study in the UK. Professor Buckingham said “we keep talking about our skills shortages; we have trained those people and it would be really great if we could enjoy their talents as well.”¹⁶⁸ Numerous witnesses were clear that the UK needed to have a supportive visa and immigration system post-Brexit to ensure the viability of the research talent pipeline.¹⁶⁹
107. There were concerns that the minimum salary threshold for skilled workers, which the Migration Advisory Committee recommended keeping at £30,000, will have implications for technicians, a key component of the UK’s research base. The Royal Society reported that 42% of technicians in UK universities earned less than £30,000 in 2017.¹⁷⁰ Professor Dame Ann Dowling told the committee that to achieve the Government’s research and development targets the UK will need to recruit more technicians and, at least in the short term, international mobility will be the only way of addressing the shortfall.¹⁷¹ The minister told us he had “already been public about the MAC £30,000 salary cap”¹⁷² and in January 2019 he told the House of Commons Science and Technology Committee he wanted to ensure the cap is seen as “quite detrimental for the science community”.¹⁷³
108. On 24 June 2019 the Home Secretary, Sajid Javid MP, wrote to the Migration Advisory Committee asking it to look further at the salary threshold question. The Home Secretary asked the committee to advise on the mechanism for calculating future salary thresholds, the impact salary thresholds may have in different areas and on exceptions to salary thresholds. One of the issues the committee is asked to advise on is: “what impact salary thresholds might have on sectors that provide high public value to society and the economy but which might not necessarily pay as high wages”.¹⁷⁴
109. ***Retaining the mobility of researchers after Brexit is vital to ensuring the UK can continue to attract the best researchers and meet its research and development goals. The Government must ensure post-Brexit immigration laws do not hinder the ability of UK universities to recruit and retain the scientific staff they require, including technicians earning below the recommended salary threshold. In doing so the Government must also give consideration***

167 [Q 29](#) (Professor Julia Buckingham)

168 *Ibid.*

169 [Q 41](#) (Dr Tim Bradshaw). See also [Q 23](#) (Professor Michael Arthur), [Q 20](#) (Sir Leszek Borysiewicz), [Q 7](#) (Professor Louise Richardson), [Q 50](#) (Dr Alex Marsh).

170 The Royal Society *et al.*, *£30,000 salary threshold would be detrimental for research and innovation* (May 2019): <https://royalsociety.org/-/media/policy/Publications/2019/28-05-19-30k-salary-immigration-threshold-explainer.pdf> [accessed 1 July 2019]

171 [Q 35](#) (Professor Dame Ann Dowling)

172 [Q 64](#) (Chris Skidmore MP)

173 Oral evidence taken before the House of Commons Science and Technology Committee, 30 January 2019 (Session 2017–19), [Q 115](#) (Chris Skidmore MP)

174 Letter from the Home Secretary to the chair of the Migration Advisory Committee, on salary thresholds, 24 June 2019: <https://www.gov.uk/government/publications/migration-advisory-committee-welcomes-salary-threshold-commission/the-home-secretarys-commissioning-letter-to-the-chair-of-the-migration-advisory-committee-on-salary-thresholds> [accessed 1 July 2019]

to amending immigration laws relating to families and dependants of those scientific staff.

European networks and collaboration

110. Witnesses were not just concerned about access to funding and the mobility of researchers; access to networks and collaborations across the EU are viewed as a vital part of the ability of UK universities to conduct high-quality research.¹⁷⁵ Professor Julia Buckingham told us:

“Networks are unbelievably important. They take a very long time to build, but are destroyed very easily ... What we often do not appreciate is how what happens in one network spreads into another. You may be working on a research project in Germany and meet other people and link things up. Those links carry on forming the whole time; it is like a complex spider’s web. It is quite difficult to describe, but the value to research is absolutely enormous.”¹⁷⁶

111. Professor Peter Bruce explained that being part of such networks within the EU had huge advantages for research, as researchers in the UK can share facilities, equipment and expertise seamlessly:

“Currently, if I have a European grant, I can send a postdoc for six months to work in a French lab or use facilities that they may have in Germany that we do not have in the UK. It is entirely seamless and there are no barriers to doing this. You can do that only if you are fully participating in the European programmes. If we end up not being able to do that, it will have a significant detrimental effect on our collaborative research.”¹⁷⁷

112. We heard that uncertainty around Brexit, and some of the proposals so far, risk damaging the UK’s international reputation. Professor Sir Leszek Borysiewicz said that we “have to recognise how the other partners in those networks view the United Kingdom at the present time”. During his discussions with central European countries, it was “clear that because of this uncertainty that [the UK] may no longer be the first country they will contact”. He said that “we have to do the best we can to minimise the perceived or real damage so that we remain the competitive place in which to do R&D in Europe. That means being global in outlook, collaborative in spirit and prepared to engage.”¹⁷⁸ Professor Michael Arthur told us that some damage has already been done, with the number of research collaborations having fallen by more than 50% since the Brexit referendum.¹⁷⁹

113. *We urge the Government to communicate to the EU and the rest of the world that the UK is committed to continuing research collaborations after it has left the EU, and we look forward to seeing the recommendations put forward by Professor Sir Adrian Smith in his review of international research collaboration.*

175 [Q 7](#) (Professor Louise Richardson). See also [Q 53](#) (Dr Alex Marsh), [Q 28](#) (Professor Roger Kain), [Q 44](#) (Professor Peter Bruce), written evidence from the Royal Society of Chemistry ([SRF0003](#))

176 [Q 28](#) (Professor Julia Buckingham)

177 [Q 44](#) (Professor Peter Bruce)

178 [Q 23](#) (Professor Sir Leszek Borysiewicz)

179 [Q 23](#) (Professor Michael Arthur)

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Current issues

1. *QR funding is vital in allowing universities to cover the full economic cost of research, and in helping universities to fund research infrastructure which is often not covered by other sources of funding. QR funding must rise by at least the rate of inflation and the deficit that has been created since 2010 should be addressed. The Government should commit to doing this as part of the spending review. (Paragraph 24)*

The Augar Review

2. Reducing the tuition fee cap in England to £7,500 without compensating universities for this loss in full by increasing the teaching grant will result in significant financial consequences for universities. The immediate casualties of such a reduction in income will likely be widening-participation programmes, student experience, infrastructure maintenance and repair, and the hands-on elements of courses. (Paragraph 48)
3. The Augar Review recommends that the social and economic value of different subjects be determined by the Office for Students, taking account of the subject's relative importance with respect to alignment with the Government's Industrial Strategy and a range of other factors such as the financial viability of the university and its contribution to the local economy. This recommended process is far from straightforward and is certain to be controversial. We are concerned that it will be fraught with difficulties and that it will remove autonomy from universities. (Paragraph 64)
4. By concentrating on student education and making only a passing reference to research and development, the terms of reference of the Augar Review did not take a holistic approach to the funding of universities. The panel compounded this by making no attempt to assess the potential impact of its recommended reductions in student fees on the funding of research, declaring that it was outside the scope of the review. The result is a distorted assessment of the sector's financial health as a whole. (Paragraph 68)
5. In looking at university funding without considering research and cross-subsidies, the Augar Review has made recommendations which, if implemented, could prove harmful to the already challenging ecosystem of university funding. (Paragraph 69)
6. *If the Government is to follow any of the recommendations of the review relating to tuition fees, it must implement them as a full financial package, including increasing the teaching grant to cover the loss of tuition fees, to ensure that universities are no worse off than they are now. We are, however, concerned by the proposal that the Office for Students should determine the value of teaching grant awarded to individual institutions. This gives the Office for Students too much power to determine the fate of universities and erodes their autonomy. Whoever has the responsibility for determining the value of teaching grant awards must do so using clear metrics to assess the impact on the research base. Given the complex nature of the cross-subsidies universities employ in managing their finances, seemingly small disruptions to inputs could have significant unintended consequences for research. (Paragraph 70)*

Brexit

7. *We urge the Government to associate the UK with Horizon Europe as soon as possible, to ensure certainty and stability for researchers in universities and industry. (Paragraph 85)*
8. *The Government should ensure that once the UK has left the EU the level of funding the UK currently receives from the EU for research is matched in full. As the UK is a net beneficiary of EU research funding this amount will be greater than the amount the UK currently contributes to the EU research pot. (Paragraph 95)*
9. *Public funding for research in universities after Brexit should seek to replace not just the amount of funding but the areas it supports, like discovery research and scientific infrastructure and facilities. It is important to the scientific community that the basis for awarding funding is research excellence. (Paragraph 96)*
10. *Retaining the mobility of researchers after Brexit is vital to ensuring the UK can continue to attract the best researchers and meet its research and development goals. The Government must ensure post-Brexit immigration laws do not hinder the ability of UK universities to recruit and retain the scientific staff they require, including technicians earning below the recommended salary threshold. In doing so the Government must also give consideration to amending immigration laws relating to families and dependants of those scientific staff. (Paragraph 109)*
11. *We urge the Government to communicate to the EU and the rest of the world that the UK is committed to continuing research collaborations after it has left the EU, and we look forward to seeing the recommendations put forward by Professor Sir Adrian Smith in his review of international research collaboration. (Paragraph 113)*

APPENDIX 1: LIST OF MEMBERS AND DECLARATIONS OF INTEREST

Members

Baroness Bloomfield of Hinton Waldrist (from 1 July)
 Lord Borwick
 Lord Browne of Ladyton (from 1 July)
 Lord Fox (until 1 July)
 Lord Griffiths of Fforestfach
 Baroness Hilton of Eggardon (from 1 July)
 Lord Hollick (from 1 July)
 Lord Hunt of Chesterton (until 1 July)
 Lord Kakkar
 Lord Mair
 Baroness Manningham-Buller
 Lord Maxton (until 1 July)
 Baroness Morgan of Huyton (until 1 July)
 Baroness Neville-Jones (until 1 July)
 Lord Oxburgh (until 1 July)
 Lord Patel (Chairman)
 Lord Renfrew of Kaimsthorn (until 1 July)
 Viscount Ridley (from 1 July)
 Baroness Sheehan (from 1 July)
 Lord Vallance of Tummel (until 1 July)
 Baroness Walmsley (from 1 July)
 Baroness Young of Old Scone

Declaration of Interests

Baroness Bloomfield of Hinton Waldrist
No relevant interests declared

Lord Borwick
Trustee of Royal Brompton and Harefield Hospital charity, which funds some research

Lord Browne of Ladyton
Fellow, St. Catherine's College, University of Cambridge

Lord Fox
No relevant interests declared

Lord Griffiths of Fforestfach
No relevant interests declared

Baroness Hilton of Eggardon
No relevant interests declared

Lord Hollick
No relevant interests declared

Lord Hunt of Chesterton
*Fellow, Royal Society, and Member of other professional societies
 Director and chair of CERC Ltd, Cambridge
 Emeritus Professor at University College London (UCL)
 Visiting Professor at Delft University Technology, Netherlands
 Fellow, Trinity College Cambridge*

Lord Kakkar*Professor of surgery, University College London**Chairman, UCL Partners**Director, Thrombosis Research Institute**Member Advisory Committee, Royal Society***Lord Mair***Emeritus Professor of Civil Engineering, Cambridge University**Head, Centre for Smart Infrastructure and Construction, Cambridge University**Fellow, Royal Society**Fellow, Royal Academy of Engineering**Immediate Past-President, Institution of Civil Engineers**Chair, Isaac Newton Trust, Trinity College and Cambridge University**Chair, Department of Transport's Science Advisory Council**Commissioner, Royal Commission for the Exhibition of 1851**Council Member, Foundation for Science and Technology***Baroness Manningham-Buller***Chair, Wellcome Trust**Advisory Board, Royal Society**Advisory Board, British Museum***Lord Maxton***No relevant interests declared***Baroness Morgan of Huyton***Vice-Chair of Council, King's College, University of London**Chair, Royal Brompton and Harefield NHS Foundation Trust**Master Elect, Fitzwilliam College, University of Cambridge from October 2019***Baroness Neville-Jones***Member of the Governing Council of Lancaster University***Lord Oxburgh***No relevant interests declared***Lord Patel***Emeritus Professor, University of Dundee**Chancellor, University of Dundee 2006–18**Fellow, Academy of Medical Sciences**Fellow, Royal Society of Edinburgh**Honorary degrees from University of Dundee; University of St Andrews; Edinburgh Napier University; and University of Aberdeen***Lord Renfrew of Kaimsthorn***No relevant interests declared***Viscount Ridley***Wife is a Professor of Neuroscience at Newcastle University***Baroness Sheehan***No relevant interests declared***Lord Vallance of Tummel***No relevant interests declared***Baroness Walmsley***No relevant interests declared***Baroness Young of Old Scone***Chancellor of Cranfield University*

Chair, Woodland Trust (Research funder)
Incoming Chair of the Royal Veterinary College

A full list of Members' interests can be found in the Register of Lords Interests:
<http://www.parliament.uk/mps-lords-and-offices/standards-and-interests/register-of-lords-interests/>.

APPENDIX 2: LIST OF WITNESSES

Evidence is published online at <https://www.parliament.uk/hlinquiry-science-research-funding-universities> and available for inspection at the Parliamentary Archives (020 7219 3074).

Evidence received by the Committee is listed below in chronological order of oral evidence session and in alphabetical order. Those witnesses marked with ** gave both oral evidence and written evidence. Those marked with * gave oral evidence and did not submit any written evidence. All other witnesses submitted written evidence only.

Oral evidence in chronological order

- * Professor Louise Richardson, Vice-Chancellor, Oxford University [QQ 1–8](#)
- * Professor Luke Georghiou, Deputy President and Deputy Vice-Chancellor, University of Manchester
- ** Dr Sarah Main, Executive Director, Campaign for Science and Engineering (CaSE) [QQ 9–16](#)
- ** Dr Andrew Welchman, Head of Neuroscience and Mental Health, Wellcome Trust
- * Hannah Davies, Head of External and Public Affairs, Northern Health Science Alliance
- * Professor Wendy Baird, Faculty of Medicine, Dentistry and Health Director of Research and Innovation, University of Sheffield
- * Professor Michael Arthur, Provost, University College London [QQ 17–23](#)
- * Professor Sir Leszek Borysiewicz, Chair, Cancer Research UK
- * Professor Roger Kain CBE FBA, Vice-President for Research and Higher Education Policy, British Academy [QQ 24–30](#)
- * Professor Julia Buckingham CBE, President-Elect, Universities UK
- * Professor David Lomas, Academy of Medical Sciences [QQ 31–37](#)
- ** Professor Mark Smith, Vice-Chancellor, Lancaster University
- * Professor Dame Ann Dowling, OM DBE FREng FRS, President, Royal Academy of Engineering
- * Dr Tim Bradshaw, CEO, Russell Group [QQ 38–45](#)
- * The Rt Hon Lord Willetts, Executive Chair of the Resolution Foundation, King’s College, London and former Minister of State (Department for Business, Innovation and Skills) (Universities and Science) 2010–14

- * Professor Peter Bruce FRS, Physical Secretary and Vice-President, Royal Society
- ** David Sweeney, Executive Chair of Research England, UK Research and Innovation (UKRI) [QQ 46–53](#)
- ** Dr Alex Marsh, Deputy Director of Strategy, UKRI
- * Lord Macpherson of Earl’s Court GCB, former Permanent Secretary to the Treasury [QQ 54–57](#)
- * Chris Skidmore MP, Minister of State for Universities, Science, Research and Innovation and Interim Minister of State for Energy and Clean Growth, Department for Education and Department for Business, Energy and Industrial Strategy (BEIS) [QQ 58–66](#)
- * Paul Drabwell, Deputy Director, Science Research and Innovation, BEIS
- * Harriet Wallace, Director, International Science and Innovation Directorate, BEIS
- * Dr Philip Augar, Chair, Post-18 review of education and funding [QQ 67–74](#)
- * Professor Sir Ivor Crewe, Panel Member, Post-18 review of education and funding
- * Jacqueline de Rojas CBE, Panel Member, Post-18 review of education and funding
- * Matt Toombs, Secretariat, Post-18 review of education and funding

Alphabetical list of witnesses

- * Academy of Medical Sciences ([QQ 31–37](#))
- * Professor Michael Arthur, Provost, University College London ([QQ 17–23](#))
- * Professor Wendy Baird, Faculty of Medicine, Dentistry and Health Director of Research and Innovation, University of Sheffield ([QQ 9–16](#))
- * Professor Sir Leszek Borysiewicz, Chair, Cancer Research UK ([QQ 17–23](#))
- * British Academy ([QQ 24–30](#))
- ** Campaign for Science and Engineering (CaSE) ([QQ 9–16](#)) [SRF0001](#)
- * Department for Business, Energy and Industrial Strategy (BEIS) ([QQ 58–66](#))
- * Professor Luke Georghiou, Deputy President and Deputy Vice-Chancellor, University of Manchester ([QQ 1–8](#))
- Imperial College London [SRF0004](#)

- * Lord Macpherson of Earl's Court GCB, former
Permanent Secretary to the Treasury ([QQ 54–57](#))
- * Northern Health Science Alliance ([QQ 9–16](#))
- * Post-18 review of education and funding ([QQ 67–74](#))
- * Professor Louise Richardson, Vice-Chancellor, Oxford
University ([QQ 1–8](#))
- * Royal Academy of Engineering ([QQ 31–37](#))
- * Royal Society ([QQ 38–45](#))
- Royal Society of Chemistry [SRF0003](#)
- * Russell Group ([QQ 38–45](#))
- ** Professor Mark Smith CBE, Vice-Chancellor,
University of Lancaster ([QQ 31–37](#)) [SRF0005](#)
- ** UK Research and Innovation (UKRI) ([QQ 46–53](#)) [SRF0007](#)
- * Universities UK ([QQ 24–30](#))
- University of Cambridge [SRF0006](#)
- ** Wellcome Trust ([QQ 9–16](#)) [SRF0002](#)
- * The Rt Hon Lord Willetts, Executive Chair of the
Resolution Foundation, King's College, London and
former Minister of State (Department for Business,
Innovation and Skills) (Universities and Science)
2010–14 ([QQ 38–45](#))

APPENDIX 3: SEMINAR HELD AT THE HOUSE OF LORDS ON 14 MAY 2019

Members of the Committee present were Lord Patel (Chairman), Lord Borwick, Lord Fox, Lord Griffiths of Fforestfach, Lord Hunt of Chesterton, Lord Kakkar, Lord Mair, Baroness Morgan of Huyton, Baroness Neville-Jones and Baroness Young of Old Scone.

Presentations were heard from:

- Professor David Price, Vice-Provost (Research), University College London; and
- Becky Purvis, Head of Public Affairs, The Royal Society.