

# UK science and immigration: why the UK needs an internationally competitive visa offer

Research and innovation is global. The UK needs an internationally competitive immigration offer to ensure talented people from overseas contribute to our world-leading science and help us grow.

## The upfront costs of UK visas compared with other leading science nations

Current UK visa arrangements are among the most expensive in the world for migrants and sponsors.

Visa category	Costs to individuals and sponsors – UK	Costs to individuals and sponsors – average of leading science nations	% difference
Skilled worker permit	£8,419	£1,316	540%
Skilled worker permit for PhD level position	£3,419	£971	252%
Dedicated researcher visa	£2,760	£436	533%
Student visa	£1,375	£272	405%

Source: Fragomen LLP data collected for the Royal Society (March 2019)



“How the UK approaches immigration directly impacts our attractiveness as a place to work or train as a researcher. As well as tackling the immediate costs barrier, we need a cultural shift within the immigration system that makes us more human and welcoming in the way we handle cases.

The UK’s current offer to international talent is simply not competitive enough to guarantee our position among the leading science nations and we risk losing out as a result.”

Sir Venki Ramakrishnan, President of the Royal Society and Nobel Prize winner

# Introduction

Scientific research and innovation is essential for UK jobs, health and wellbeing and improving quality of life for us and people around the world. It is made possible by the ideas, knowledge and creativity of talented individuals from the UK and overseas.

Despite being home to **less than 1%** of the world's population, the UK produces **15%** of the most highly cited research publications<sup>1</sup>.

**Two-fifths** of the UK's academic workforce in science, technology and engineering are overseas nationals<sup>2</sup>.

**More than half** of postgraduate students across all disciplines are from overseas<sup>3</sup>.

Growing our scientific workforce will be vital to achieving the UK's target of investing 2.4% of GDP in research and development by 2027.

To reach 2.4%, we need to build an immigration system that attracts international talent while continuing to invest in home grown talent.

This explainer compares the UK's current immigration arrangements with those of 15 other leading science nations. It shows that action is needed to achieve an internationally competitive visa offer.

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## RECOMMENDATIONS

The UK must choose an approach to immigration that enhances our science base and drives our economy, jobs and international competitiveness. If the talent goes elsewhere, it will be the UK's loss.

- The costs of obtaining a UK visa for study or work should be in line with our international competitors.
- Applicant and sponsor costs that are calculated on a 'per year' basis should be spread over the duration of the visa rather than payable in full upfront.
- The cost of bringing family members should be minimised in line with international standards.
- The UK should seek visa-free study and work arrangements with other countries to reduce the sponsorship burden on employers.
- Continued improvements should be made to visa processing times as part of the UK's plans for the future immigration system.
- Visa extensions should be light touch and fast.

### What does it cost to bring my family to the UK?

An adult with three family members coming to the UK on a five-year skilled worker permit must pay £12,880 in upfront applicant costs. This excludes employer costs such as a certificate of sponsorship and immigration skills charge and ancillary costs to individuals such as language tests and document translation.

Costs to individuals	£
Main applicant visa fee	1,220
Family member visa fees	3,660
Main applicant immigration health surcharge	2,000
Family member immigration health surcharge x 3	6,000
<b>Total</b>	<b>£12,880</b>

**Three of the last five** Presidents of the Royal Society were born abroad.

**Over half** of the UK's research output is the result of international collaboration<sup>4</sup>.

**50% more** researchers are needed to meet the UK's goal of investing 2.4% of GDP in R&D by 2027<sup>5</sup>. Investing in UK skills alone will be insufficient, as it is impossible to grow the UK talent pool fast enough within this timeframe.

# How does the UK manage immigration?

The UK currently has two approaches to immigration, one for individuals from the European Economic Area (EEA), who can live, work and study in the UK without a visa, and another for non-EEA nationals, who are subject to visas and immigration rules.

The system for non-EEA nationals is administered by the Home Office and split across four\* visa routes:

- **Tier 1** For exceptional talent, investors, and innovators
- **Tier 2** For skilled workers
- **Tier 4** For students including PhDs
- **Tier 5** For temporary workers and youth mobility

Each of these routes carries different fees and charges which are payable by individuals and sponsors. The Home Office rationale for costs is to move towards a self-financing border using revenue retained from visa fees.

The revenue from the UK immigration health surcharge and immigration skills charge, which are payable alongside visa fees, goes to other government budgets. See page 6 for further information.

## What impact will Brexit have?

Government policy set out in the Immigration White Paper in December 2018 is to end visa-free work and study rights for individuals from the EEA once the UK leaves the EU<sup>9</sup>.

This means that anyone migrating to the UK will be subject to immigration rules and associated visa costs, unless specific agreements are put in place.

By ending free movement, the UK will become less accessible to highly-skilled EEA migrants who can work or study elsewhere in Europe without a visa. If the costs and burden of entering the UK are perceived to be too high, it will be other countries that benefit from the transfer of knowledge, expertise, and investment.

Ending free movement will also place a much higher administrative burden on visa sponsors. Research by EY for the Russell Group has estimated that introducing new immigration rules for EEA nationals from 2021 could increase university employer costs by 36% by the end of 2022<sup>10</sup>.

Evidence shows that migrant workers have a **positive impact** on UK government finances, productivity and innovation<sup>6</sup>.

International students generate more than **£25 billion** for the UK economy<sup>7</sup>.

Migrants have **little or no overall impact** on employment outcomes among the UK population<sup>8</sup>.

\*A fifth 'Tier 3' visa category for low skilled workers has never been open to applicants.

# How do UK costs compare with other countries?

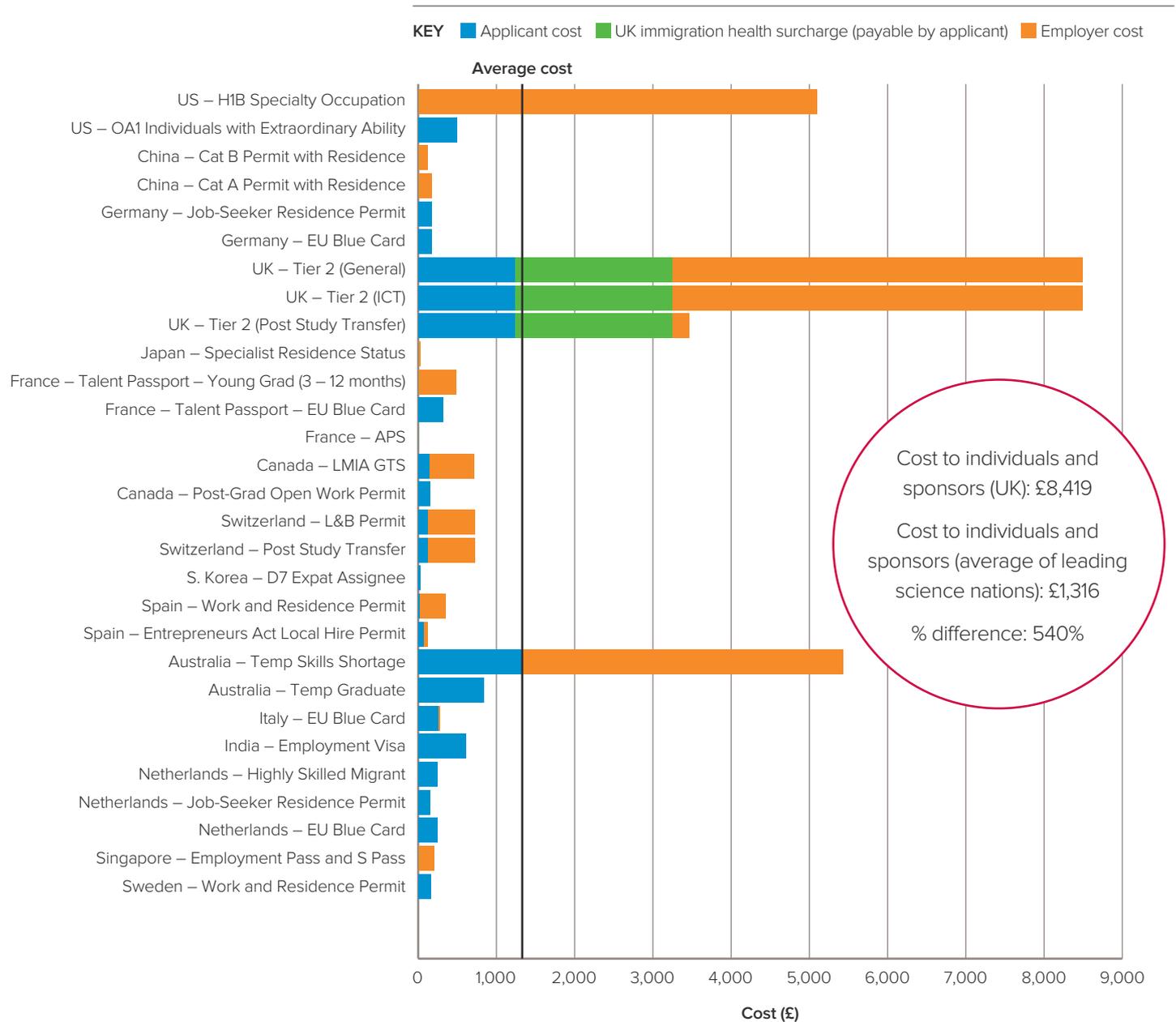
Current UK visa arrangements, which apply to non-EEA nationals only, are among the most expensive in the world for migrants and sponsors.

Below we compare the main UK visa routes for skilled work (Tier 2), exceptional talent (Tier 1), and study (Tier 4) against equivalent visa options in 15 other leading science nations

according to their Nature Index ranking. See 'Note on methodology' on page 14.

**FIGURE 1**

Cost of obtaining a UK skilled work permit (Tier 2) compared with other leading science nations.



Total individual and employer costs (where applicable) required for visa application. Visa durations vary by country and visa type – maximum permitted length used.  
 \* US H1B includes a border security and filing fee if the employer has 50 or more employees and more than 50% of its workforce is made up of H-1B and L-1 workers: USD \$4,000. \*\* Employer costs for the Australia Temporary Skills Shortage visa include a training levy of AUS \$1,800 per 12 month period requested for firms with a turnover of more than AUS \$10 million, or AUS \$1,200 for sponsors with a turnover of less than AUS \$10 million. Costs have been calculated on the basis of obtaining a four-year visa (the maximum permitted length) for an employer with a turnover of more than AUS \$10 million. \*\*\* Costs to individuals and sponsors (UK) refers to the total upfront costs of obtaining a Tier 2 (general) visa.

Source: Fragomen LLP data collected for the Royal Society (March 2019).

### Skilled worker permits

Figure 1 (previous page) shows that the fees for a UK Tier 2 visa, where no exemptions apply, are more than six times higher than the average cost across the group. This is driven largely by the UK immigration health surcharge paid by individual applicants and the immigration skills charge paid by employers. Note that roles listed in the immigration rules as PhD level are exempt from the skills charge.

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“The NHS fee is a big burden on international postdocs and the costs keep increasing. If you have a family as well, you have to spend more than 10% of your annual salary [on the surcharge].”

UK-based postdoctoral researcher from China

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#### BOX 1

##### What is the rationale for the UK immigration health surcharge?

The immigration health surcharge is intended “to ensure that migrants make a proper financial contribution to the cost of their NHS care”<sup>11</sup>. It is payable in full upfront, covering the duration of the visa, and has just been doubled to £400 per migrant and family member per year. For a five-year work visa, the upfront charge to an individual is £2,000 on top of visa application fees.

Critics of the health surcharge describe it as “double taxation”. Migrants, like resident workers, contribute tax and national insurance – the mechanisms by which 99% of the NHS budget is funded – and are liable to pay patient charges should they require prescriptions or dental care<sup>12</sup>. They also access the NHS less frequently than the general population, and yet the surcharge means they pay for it twice over<sup>13</sup>.

Whereas some countries require migrants or their employers to pay public or private healthcare insurance, none in our analysis levies a charge upfront as a condition of visa sponsorship except the UK.

#### BOX 2

##### What is the rationale for the UK immigration skills charge?

The immigration skills charge is intended “to incentivise employers to invest in training and upskilling the resident workforce”. It applies to the Tier 2 route only and is payable by employers upfront at a maximum level of £1,000 multiplied by the duration of the visa. There is a reduced fee for universities as charitable organisations and small companies, and PhD level roles are exempt.

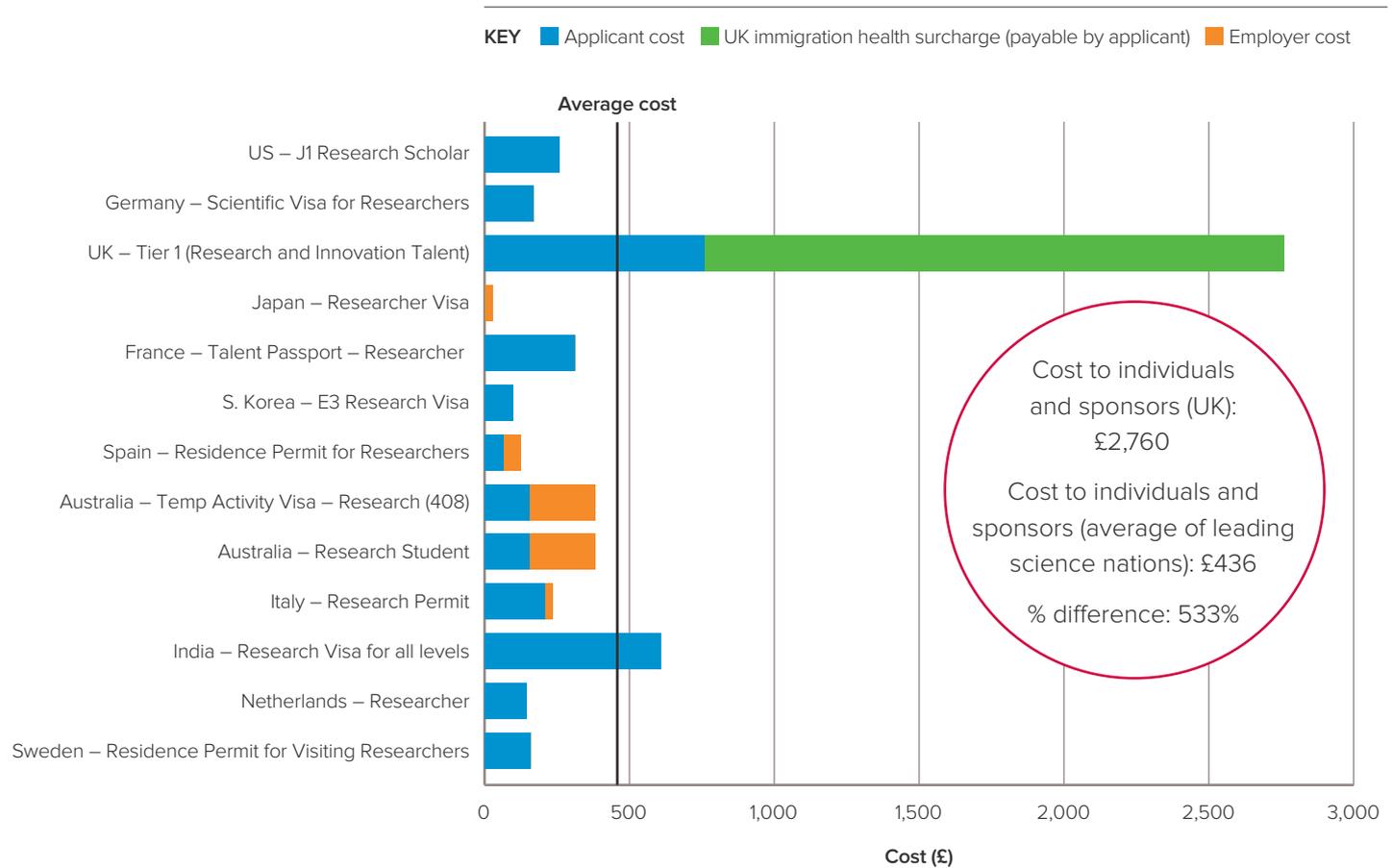
The Home Office has confirmed that revenue raised from the skills charge is returned to the Treasury which then allocates the money to the Department for Education (DfE) and devolved administrations. A response to a parliamentary question in February 2018 revealed that some of the revenue contributes to the DfE’s skills budget in England<sup>14</sup>. But where the rest of the money goes is unclear. Australia recently introduced an employer training levy which is similarly conceived.

### Dedicated researcher visas

Figure 2 compares the UK's Tier 1 research and innovation (exceptional) talent visa with other dedicated researcher routes. As with Tier 2, the immigration health surcharge makes up the largest proportion of Tier 1 application fees and the total cost is more than six times higher than the average for countries that have an equivalent visa route.

**FIGURE 2**

Cost of obtaining a UK exceptional talent visa (Tier 1) compared with other leading science nations.



Total individual and employer Costs (where applicable) required for visa application. Not all countries offer dedicated researcher visas. Visa durations vary by country – maximum permitted length used.

Source: Fragomen LLP data collected for the Royal Society (March 2019)

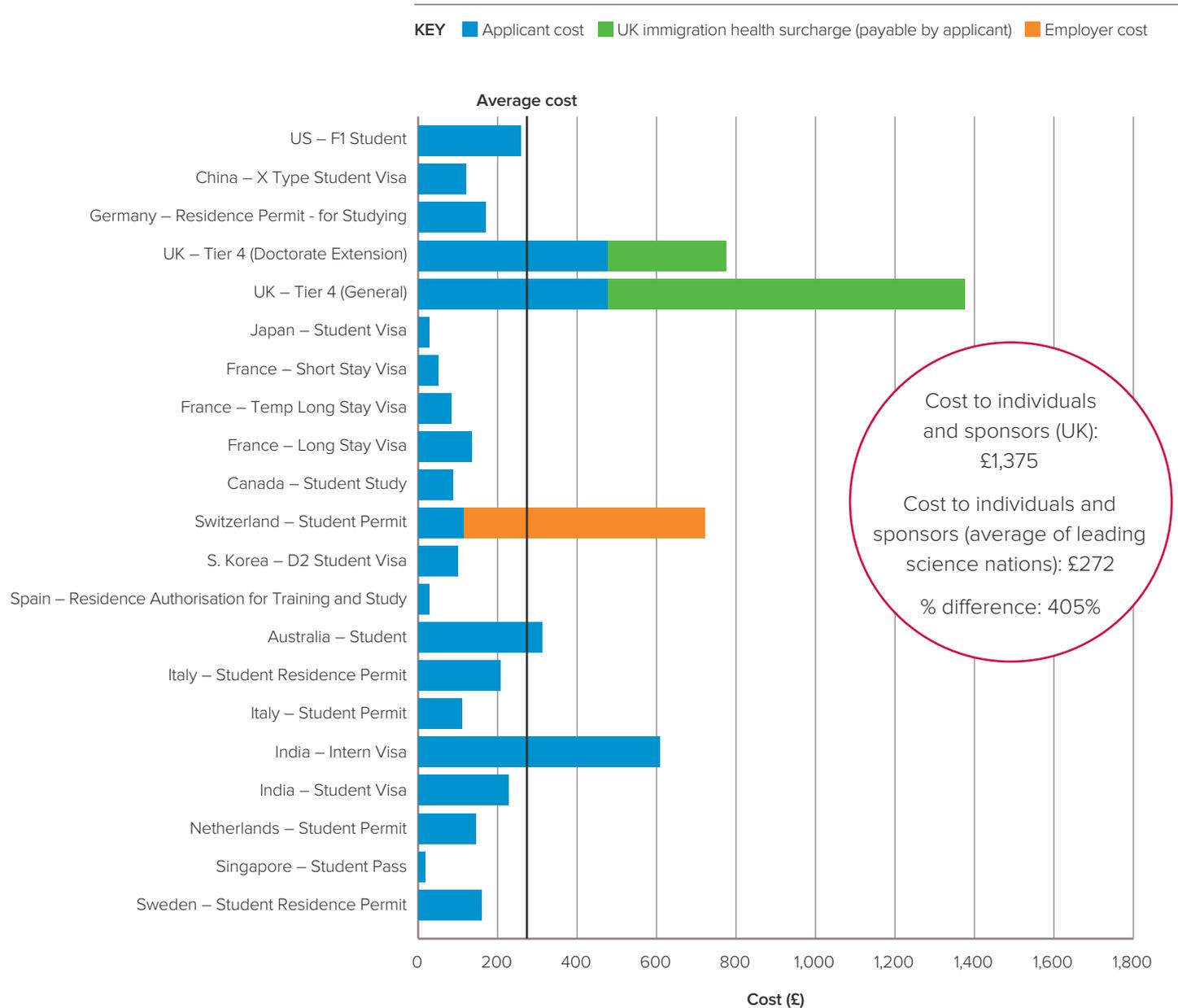
### Student visas

Figure 3 compares upfront student visa costs across the 16 countries. The total cost of obtaining a Tier 4 (general) visa in the UK is more than five times higher than the

average. Applying for a doctorate extension in the UK – which enables graduating PhDs to extend their visa to have more time to find work – carries costs that are almost three times the average.

**FIGURE 3**

Cost of obtaining a UK student visa (Tier 4) compared with other leading science nations.



Total individual and employer Costs (where applicable) required for visa application. Visa durations vary by country – maximum permitted length used. UK figures are based on three-year duration for Tier 4 (general) and one-year duration for Tier 4 (doctorate extension). \*Tier 4 (general) visa application fee is £475 where the application is completed from within the UK and £348 when the application is completed from outside the UK. The higher figure was used in this analysis (see ‘Note on methodology’ on page 14). \*\*Costs to individuals and sponsors (UK) refers to the total upfront costs of obtaining a Tier 4 (general) visa.

Source: Fragomen LLP data collected for the Royal Society (March 2019)

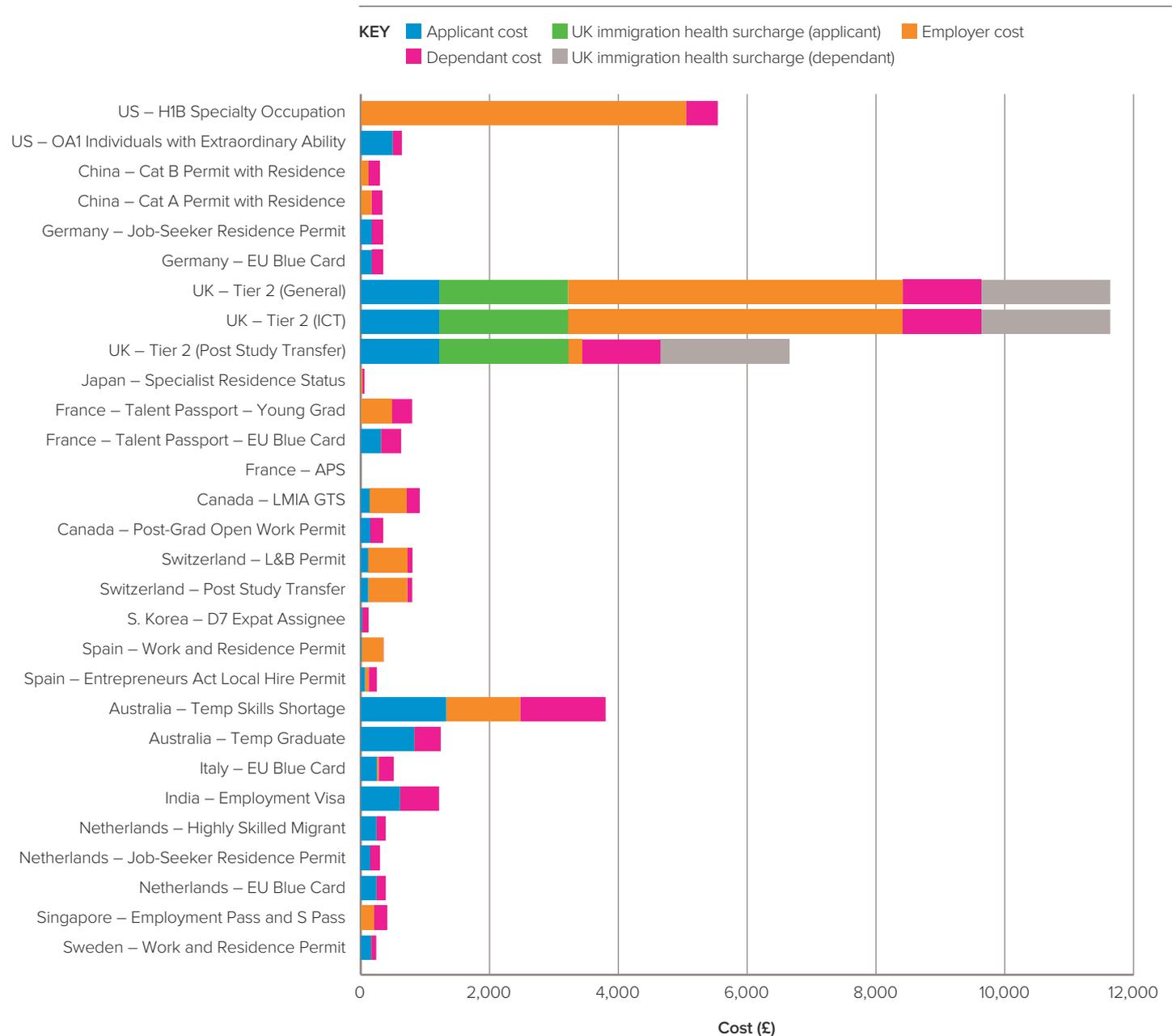
## Family members

In many cases, visa applicants will be joined in the host country by their family members which will add to the upfront charges. Figure 4 replicates Figure 1 above but includes the additional cost of bringing a single dependant such as a spouse. The UK's arrangements are once again shown to be expensive compared to other countries and costs would increase further still if the visa applicant had children.

**94% of researchers** in a Cancer Research UK survey in 2017 agreed that their spouse or partner's ability to live and work in the host country was a key consideration when applying for a position<sup>15</sup>.

**FIGURE 4**

Cost of main visa applicant bringing a single dependant under Tier 2 versus other skilled worker routes.



Individual, employer (where applicable) and single dependant cost required for visa application. Visa durations vary by country and visa type – maximum permitted length used.

Source: Fragomen LLP data collected for the Royal Society (March 2019)

# Case studies

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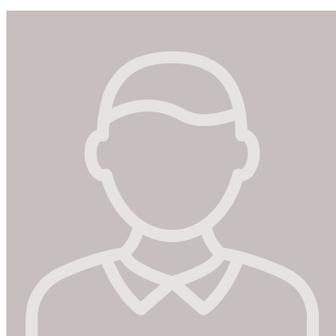
## **Dr Artem Bakulin**

Research Fellow, Imperial College London

Artem is a graduate of Lomonosov Moscow State University and received his PhD from the University of Groningen (2009). He moved to Imperial College London in 2016 as a Royal Society University Research Fellow and is a European Research Council (ERC) Starting Grant holder.

“The UK, its research community, and high standards of academic excellence are appealing for scientists with an ambition for frontier research. However the combination of high costs and bureaucratic hurdles like restriction on travelling and repetitive language tests makes the system unattractive.

“This made me consider moving to Schengen countries in the past and I found ‘kennismigrant’ status and the ‘blue card’ offered for researchers in the Netherlands and Germany very straightforward and welcoming.”



## **Anonymous**

Postdoctoral researcher

In 2018, a research group at University College London identified a highly-talented overseas scientist to work on a research project developing computer modelling software in materials chemistry.

When combined with the initial outlay for rented accommodation (estimated at around £3,000), the total upfront visa costs for the individual, who had a partner and a child, proved to be prohibitive. The university was able to cover the visa fee but all other expenses including the immigration health surcharge had to be paid by the applicant.

Faced with this, the individual rejected the job offer, meaning that the research group was forced to re-advertise the position. An important element of the project was delayed as a result.



## **Dr Amélie Saintonge**

Associate Professor of Astrophysics, University College London

Amélie has a degree in mathematics and physics from the University of Montreal and a PhD from Cornell University (2007). After research appointments in Switzerland and Germany, she moved to UCL in 2013 as a Royal Society University Research Fellow. She was awarded the 2018 Fowler Award for Early Achievements in Astronomy by the Royal Astronomical Society.

“There have to be solid professional reasons to be a scientist in another country but it is ultimately a personal choice that can be swayed by other things. In the current climate, being a foreigner in the UK is not particularly pleasant. The uncertainties around Brexit and the general feeling that the country has become less welcoming is always there in the back of your mind, and I know I am not alone in thinking this.

“I have also had to grapple with practical problems with visas and constant issues at the border. Without the support of the Royal Society’s University Research Fellowship scheme, I would most likely have left the UK by now.”

# How does the UK compare on visa processing times?

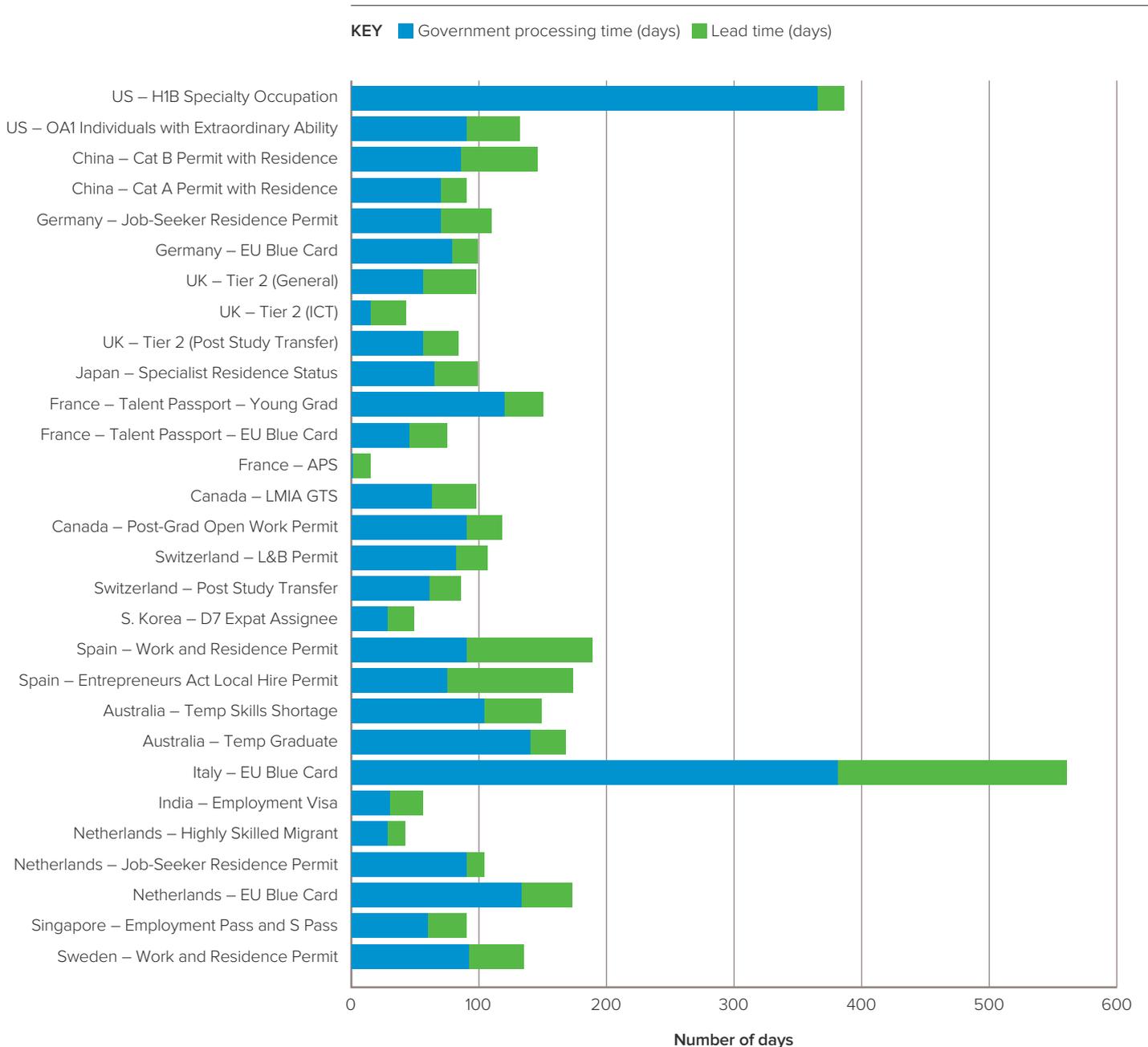
Although the UK's visa costs are high by international standards, we perform relatively well on processing times across each of the routes.

Figure 5 compares Tier 2 with skilled worker routes in other countries and reveals the UK to be among the quickest at handling applications. The UK is also typically

faster at processing Tier 1 and 4 visas than equivalent routes elsewhere.

**FIGURE 5**

Typical processing time for Tier 2 applications versus other skilled worker routes.



Based on times for standard applications. Quicker processing times are available for some countries, but at a premium. Worst case timings taken e.g. Italy includes a residency processing time of more than 100 days once the applicant is in the country; US H1B can range from 30 days to one year.

Source: Fragomen LLP data collected for the Royal Society (March 2019).

# What other factors influence people's migration choices?

The upfront cost of entering a country for work or study is a determining factor in people's decision about where to migrate, acting either as a physical barrier to entry, where the charges are unaffordable, or as a push factor to look elsewhere.

But there will also be other factors that influence whether someone chooses one country over another. For researchers, this will include quality of living, the reputation of the host country, as well as access to facilities and funding.

Figure 6 on the following page looks at how the UK scores on different indicators compared to the other European countries in our analysis. It shows that while the UK ranks highly in the Nature Index of leading science nations, it is outscored on various other criteria – such as health and disposable income – that could influence a researcher's decision about where to move.

Furthermore, if the UK ends free movement after Brexit, it will be the only country in western Europe to require visas for EEA citizens. Those moving to Germany, France, Switzerland, Spain, Italy, Netherlands and Sweden will be able to enter freely for study or work without this extra cost, and these countries also have much lower visa charges for non-EEA nationals.

Scientists are more likely to move between countries which are geographically closer, socioeconomically similar and have comparable scientific cultures<sup>16</sup>.

Professional motivations, such as career development, are the main reasons for researcher mobility to and from the UK<sup>17</sup>.

**FIGURE 6**

How attractive is the UK compared to our European neighbours?

Criteria	Germany	UK	France	Switzerland	Spain	Italy	Netherlands	Sweden
<b>Nature Index ranking</b>	3rd	<b>4th</b>	6th	8th	10th	12th	14th	16th
<b>Upfront visa costs</b> to employers/ applicants for skilled worker permit	3rd £170	<b>8th</b> <b>£8,419</b>	6th £313	7th £722	1st £124	5th £277	4th £242	2nd £160
<b>Cost of visa extension</b> *UK visa holders must also pay upfront immigration health surcharge at £400 x the duration of visa	2nd £82	<b>7th</b> <b>£1,220*</b>	8th £2,975	6th £627	3rd £82	4th £151	5th £242	1st £80
<b>Full access to future EU Framework Programme funding</b> for research and innovation (Horizon Europe)	Yes	<b>Not known</b>	Yes	Probably	Yes	Yes	Yes	Yes
<b>Schengen visa</b> enabling easy mobility between other European countries (not available in UK)	Yes	<b>No</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Material living conditions</b> (EU and EEA) 2016 – Median equivalised disposable income	4th 18,007	<b>3rd</b> <b>18,543</b>	6th 17,493	1st 21,583	8th 15,043	7th 15,263	2nd 19,142	5th 17,799
<b>Productive or main activity</b> (EU and EEA) 2017 – Employment rate, proportion of the population aged 15 – 64 years who were in employment (%)	4th 75.2	<b>5th</b> <b>74.1</b>	6th 64.7	1st 79.8	7th 61.1	8th 58.0	3rd 75.8	2nd 76.9
<b>Health</b> (EU and EEA) 2016 – Proportion of the population aged 16 and over, with perceived health status of “very good” or “good” (%)	8th 65.2	<b>6th</b> <b>69.0</b>	7th 66.4	1st 77.7	4th 72.5	5th 70.9	2nd 75.9	3rd 75.1
<b>Governance and basic rights</b> (EU and EEA) 2013 – Trust in the political system, (Rating 0-10, averaged across 1st quintile and 5th quintile scores for income)	4th 4.9	<b>5th</b> <b>3.8</b>	6th 3.0	1st 6.6	8th 1.9	7th 2.1	2nd 5.5	2nd 5.5
<b>Natural and living environment</b> (EU and EEA) 2016 – Population exposed to pollution, grime or other environmental problems (%)	8th 23.2	<b>3rd</b> <b>9.0</b>	6th 14.1	2nd 8.9	4th 10.1	7th 15.1	5th 13.2	1st 6.3

Source: Eurostat ‘Quality of life indicators’. Further information and other indicators can be found at [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality\\_of\\_life\\_indicators\\_-\\_measuring\\_quality\\_of\\_life](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_indicators_-_measuring_quality_of_life)

# Note on methodology

The analysis in this paper is based on data collected by Fragomen LLP for the Royal Society in March 2019. The countries in the study group – USA, China, Germany, UK, Japan, France, Canada, Switzerland, South Korea, Spain, Australia, Italy, India, Netherlands, Singapore, and Sweden – were selected according to their volume of top-cited scientific publications as a proxy for research excellence (sources: Nature Index<sup>18</sup> and OECD<sup>19</sup>).

The chosen visa categories – skilled work, exceptional talent and student – are the main routes that researchers at different career stages may use to enter a host country for an extended period of study or work.

The analysis is not a strict like-for-like comparison in that no two visa systems are directly comparable. The UK visas covered in this paper tend to be valid for a longer period than similar visas offered overseas. There are also different rules on visa eligibility, settlement, and the treatment of dependants, which can be considered in addition to cost.

We have defined upfront costs as ‘government fees the employer or individual must pay’ as part of the visa application process. Common ancillary costs such as document translation have been omitted from Figures 1 – 4 owing to a lack of fixed values, or value ranges, as the basis for comparison. We found for example that while many countries require document translation on top of visa fees, the costs can rise indefinitely depending on the number of documents the individual needs translating (in the UK, it costs approximately £50 per A4 sheet).

Where Fragomen LLP gave a range of application fees or processing times, in all cases we have taken the maximum value. Costs were converted into GBP on 3 April 2019.

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7. Universities UK (2017), 'The economic impact of international students' – March 2017
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9. The Immigration and Social Security Coordination (EU Withdrawal) Bill provides the legal framework for ending free movement and is supported in policy terms by the Home Office Immigration White Paper. See Home Office (2018), 'The UK's future skills-based immigration system' – December 2018
10. EY (2019), 'Challenges and costs of the UK immigration system for Russell Group universities' – March 2019
11. House of Commons Library (2019), 'Immigration Health Surcharge: common casework questions' – January 2019
12. Immigration Law Practitioners' Association and Joint Council for the Welfare of Immigrants (2018), 'ILPA and JCWI briefing on the Immigration (Health Charge) (Amendment) Order 2018' – October 2018
13. *Ibid*
14. See <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2018-02-20/128703/>
15. Cancer Research UK (2017), 'CRUK survey of funded researchers' – unpublished. NB 93.8% of researchers (n = 450 for this question) either agreed or strongly agreed with the statement: when thinking about applying for a position in another country, the ability for my partner/spouse to live and work in the host country is a key consideration for me.
16. S Appelt et al (2015) 'Which factors influence the international mobility of research scientists?', OECD Science Technology and Industry Working Papers 2015/02 – December 2015
17. S Guthrie *et al* (2017), 'International mobility of researchers: A survey of researchers in the UK', RAND Europe – May 2017
18. See <https://www.natureindex.com/annual-tables/2018/country/all>
19. OECD (2017), 'Science, Technology and Industry Scoreboard 2017: The digital transformation' – November 2017, Figure 11, p 25



The Royal Society is a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The Society's fundamental purpose, as it has been since its foundation in 1660, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.

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- Supporting international collaboration
- Demonstrating the importance of science to everyone

**For further information**

The Royal Society  
6 – 9 Carlton House Terrace  
London SW1Y 5AG

T +44 20 7451 2500

W [royalsociety.org](http://royalsociety.org)