

► that bullying had been a major disruptive force at the institute, causing, in the student's opinion, at least two young researchers to leave their positions prematurely.

Kauffmann says: "Our procedures for evaluating graduate students and providing honest feedback are still not uniform enough, in my opinion. Approaches vary greatly, from 'keep quiet if the student is not doing well and let him/her sink in the exam or job market', to 'attempt to steer towards a successful career with all your strength'. I believe I fall into the latter category. Nobody I had trouble with ended up quitting astronomy."

MEASURES FOR IMPROVEMENT

The MPA leadership learnt of the bullying allegations in 2016, when the institute's external scientific advisory board described a complaint from young scientists, says Eiichiro Komatsu, a director at the MPA. Komatsu, who was managing director at the time, says that he and his colleagues responded immediately, and provided coaching for Kauffmann, who also agreed to daily monitoring.

Software engineer Andressa Jendrieck, who was a graduate student at the MPA between 2011 and 2014, told *Nature* that for

many years, young researchers were afraid to make complaints and believed that there was no independent person they could turn to.

In its report to the MPA leadership, the external board noted that "there is no effective mechanism for individuals at the MPA to file formal complaints to the Max Planck Society if they have been treated inappropriately by other members of the institute", says Komatsu.

In response to the February article in *Der Spiegel*, the MPA conducted an anonymous survey of its young scientists. It asked about their experiences of bullying or sexual harassment at the institute, among other things.

The results, which were due to be presented at the institute on 13 July but have now been leaked, show that the MPA sent the survey to 120 master's students, PhD students and post-docs, and that just over half responded. Three report that they were bullied and two report that they were sexually harassed. It is not clear whether these new accusations are related to the earlier allegations, nor whom they concern.

The Max Planck Society says that it has commissioned an independent law firm to investigate the new allegations. "We need to clearly define these allegations in order

to assess the severity of the incidents and to intervene accordingly," says the society's press officer, Christina Beck.

Beck says that contact details of the law firm will be sent to MPA staff in the coming weeks — and that scientists will be able to speak to the firm in full confidentiality. The firm will report its conclusions to the MPA leadership. Beck hopes that those affected will take advantage of the independent mechanism to report their allegations.

The unnamed graduate student who spoke to *Nature* says that researchers would probably engage with such a process. But the student also notes that, in their opinion, confidence in the Max Planck leadership has slipped because its responses in 2016 came too late, and were not tough enough.

The allegations at the MPA come in the wake of separate complaints by scientists at the Max Planck Institute for Biological Cybernetics about how the society is handling animal-welfare charges against a leading neuroscientist. Beck says that the institutes are independent of the society's general management, which only advises the institutes' leaderships and checks administrative procedures. ■

RESEARCHER MOBILITY

Scientists call for migration reform before Brexit

Figures on foreign-researcher mobility highlight need for UK policy change.

BY ELIZABETH GIBNEY

The UK immigration system may need to process tens of thousands more visas for scientists each year if European Union citizens lose their special immigration rights after Brexit, figures obtained by *Nature* suggest. The numbers underscore the urgent need for reform of the rules governing immigration by researchers — a topic that a parliamentary group has been investigating since May.

Immigration data gathered by *Nature* also highlight that the current system is not working well for scientists who come from outside the EU, irrespective of Brexit. One type of visa — called Tier 1 Exceptional Talent, and designed to attract leaders and emerging leaders from overseas, largely in the sciences and engineering — is vastly underused, with fewer than half of a possible 1,000 visas taken up last year. And non-EU researchers already often struggle to get visas for short visits for conferences and collaboration.

Despite recent tweaks to immigration rules in favour of researchers, many scientists see Brexit as an opportunity for further, much-needed reform to the entire system for highly skilled workers. "Maybe when the dust settles we can get a system that's better for those coming from all over the world," says Richard Catlow, foreign secretary at the Royal Society in London.

SYSTEM CHANGE

Immigration data requested by *Nature* from the UK Home Office under the Freedom of Information Act show that the United Kingdom approved visas for about 20,000 academic researchers and non-academic PhD-level research professionals from outside the EU in the 2016–17 academic year (see 'Researcher mobility after Brexit').

Because EU nationals currently have automatic rights to work in and travel freely to the

United Kingdom, comparable figures for the number of European researchers entering the country do not exist. However, data from the Higher Education Statistics Agency show that over the same period, UK universities hired about 10,500 researchers who were EU nationals: 5,760 full-time academics and 4,835 post-graduate research students. And calculations by *Nature*, based on migration data and annual labour surveys, suggest that each year, thousands more EU citizens take up research roles in UK industry, charities and government.

Neither count includes visitors coming to Britain on short trips, such as to attend conferences or for collaboration meetings. But data from the UK Office of National Statistics shows that in 2016, EU residents made more than three times as many business visits — which would include short, scientific trips — as did citizens from the rest of the world combined.

After Brexit, many of these thousands of EU researchers coming to the United Kingdom are likely to need some form of visa (the country

"The system would have to deal with an approximate doubling in capacity."

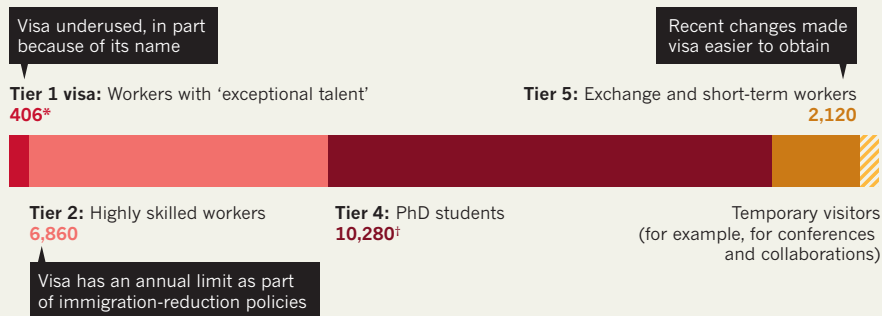
RESEARCHER MOBILITY AFTER BREXIT

The UK immigration system may need to process tens of thousands more visas each year for European Union scientists if EU citizens lose their rights to live and work in the United Kingdom after Brexit, suggest figures obtained by *Nature*.

▨ Precise data are not readily available

RESEARCHERS FROM OUTSIDE THE EU

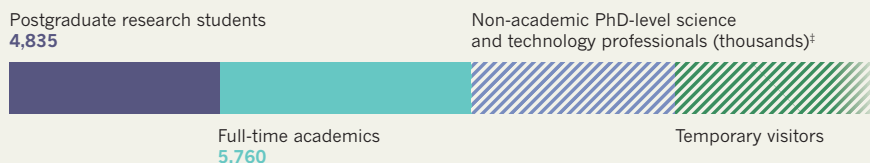
Non-EU scientists enter the United Kingdom on a variety of visas, with 19,666 visas for academic and non-academic PhD-level researchers approved in the last academic year. The system currently limits how many 'highly skilled' workers can come in.



Non-EU researchers who came to the UK in 2016–17

RESEARCHERS FROM THE EU

Some 10,500 EU researchers started long-term positions in UK academia last year, according to available data, but the true number of incoming EU researchers is likely to be thousands higher when those coming to work in industry, charities and government are included.



EU researchers who came to the UK in 2016–17

*Applicants for Tier 1 visas are endorsed by eminent organizations. Data shown are for endorsements rather than approvals, but most applicants who are endorsed receive visas, according to the organizations. †Higher Education Statistics Agency data on new non-EU starters in postgraduate research degrees used as a proxy for Tier 4 visas. ‡Order of magnitude estimate based on the 3.5% of EU arrivals in 2014–17 who were listed as working in PhD-level jobs in the 2017 Labour Force Survey. Tier 3 does not exist.

workers and are the channel through which most non-EU scientists come to work in the United Kingdom. The cap, part of government efforts to reduce overall immigration, is unpopular irrespective of Brexit: between December and March, for instance, it meant that 3,500 eligible technicians, engineers, and science and technology professionals were refused visas.

Scrapping the cap has growing support in the government, says Jonathan Portes, an economist at Kings College London who is leading a project on how Brexit is likely to affect immigration.

And, on 6 July, the government announced immediate changes to a different visa route, called Tier 5, that will expand the range of institutions that can sponsor researchers and technicians hired on placements of up to two years. "It's another positive visa change," says Main.

Organizations say that overhauling the entire system for highly skilled workers is a priority — but some worry that it is unlikely to happen by the end of 2020. As a result, many have proposed mechanisms to the inquiry that would cater for EU nationals in the years directly after 2020, to address the immediate problem of researcher mobility. These mechanisms, if implemented successfully, would give the government more time to work on broader reform and could form the basis of a better overall system.

One of these temporary measures, suggested by the biomedical-research charity the Wellcome Trust, would be to extend visa-free travel for conferences and collaboration visits — already available to US and Canadian nationals — to EU citizens for a period after 2020. For longer stays, the trust has suggested trialling a 'science visa' for EU nationals; a body such as UK Research and Innovation, the national science funder, would endorse applicants with job offers to speed up their applications. Countries including Canada, France and Singapore have researcher-specific visas, the committee heard.

Negotiations about several aspects of the UK–EU relationship after Brexit are ongoing and it is still not clear through which avenue any provisions for researcher mobility might be made. The government is expected to release its immigration plans in September. But the government has also made it clear that it wants a special pact on science and innovation with the EU after Brexit — to allow the United Kingdom to access EU research money — and this could specify special measures for researchers. ■

leaves the EU in March 2019, but EU nationals retain their current rights until the end of 2020). "These numbers tell us that if you were going to expand the non-EU system, it would have to deal with an approximate doubling in capacity," says Sarah Main, executive director of the London-based Campaign for Science and Engineering (CaSE).

SPECIAL MEASURES

Main and Catlow are two of the many representatives of science organizations and researchers who have submitted evidence to the parliamentary inquiry, set up by the House of Commons' science and technology committee to address

the issue of researcher mobility in the wake of Brexit. The government has pledged to restrict migration from the bloc but it is yet to publish its long-awaited overall plans for immigration after the departure. The committee hopes its recommendations will inspire immigration solutions that would best serve science, says Norman Lamb, the member of parliament leading the inquiry. Many people would be alarmed by the idea of fitting EU citizens into the existing system without any adjustment, he says.

Research organizations responding to the inquiry say that one straightforward option for reform is to permanently remove a cap on Tier 2 visas, which are given to highly skilled



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