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How much research talent could Europe grab from the US?

Up to a fifth of researchers in top US universities have previously studied in Europe; they might be persuaded to return

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The policies of the Trump administration have put the research environment in the United States under pressure. Public research funding cuts, hostility towards academic freedom, climate science denial and the detaining or exclusion of foreign researchers have unsettled the scientific community in the US[1] . Researchers question the US's traditional role as a safe haven for global research – three quarters of US-based respondents to a *Nature* poll are considering leaving the country because of disruptions caused by the administration[2] .

Life-changing plans take time and it is too early to expect a massive outflow from the US. Nevertheless, other countries see opportunities to attract researchers from the US, reversing a historical brain drain that has seen the US as the main destination for global science talent. In May, the European Commission set out the Choose Europe Initiative, a €500 million package to attract researchers to Europe[3] . This includes long-term grants through the European Research Council and a doubling of top-up grants for researchers who relocate. Meanwhile, European universities are seeing change, with Provence-Aix Marseille University, for example, reporting being *"inundated"* with applications from US-based researchers[4] .

However, assuming the EU could become attractive enough for researchers leaving the US, how much US-based talent might realistically be looking to relocate?

The answer is necessarily speculative. Factors driving the choice to leave a country of residence include subjective preferences, family ties, professional development

projects and personal life plans. Primarily, researchers choose to move where they have better career prospects (Veugelers, 2017).

Some indications about researchers' propensity to move based on their experience can be given, however. All else being equal, a researcher with at least one degree earned abroad has shown a predisposition to relocate in the past. This can be interpreted as an indicator of potential future international mobility (even though it is just one of the factors affecting it)[5] . Of foreign students in the US, about a million who graduated from US institutions between 2012 and 2020 had moved out of the country by 2021 (O'Brien, 2024).

Researchers' pasts can thus provide a basis for speculating about their future choices. Based on a listing of top researchers in the Highly Cited Researchers (HCR) database and on ORCID public data on postdoctoral researchers at elite US universities, we find that 9.3 percent of top US-based researchers have at least one degree (bachelor, master's or PhD) from Europe (see the box for details). These top researchers could still have ties to Europe, and European countries may find it relatively easier to attract them back to where they have already lived.

However, top researchers tend to be well established and are less likely to be affected by funding cuts then their younger colleagues (because with less money universities can open fewer postdoc positions). We find that 7 percent to 19 percent of postdoctoral researchers in elite US universities hold at least one degree from a European institution. European universities could more easily win back this group using effective relocation incentive policies.

Box 1: Data on researchers

Data on researchers used in this analysis was taken from the Clarivate Highly Cited Researchers list, which includes individuals who in the last decade have authored multiple papers that rank in the top one percent by citations for their field and year. Our initial sample derived from this list amounted to 18,395 researchers. This was then matched with researchers' ORCID profiles[6], ORCID being *"a free, unique, persistent identifier (PID) for individuals to use as they engage in research, scholarship, and innovation activities"*. After standardising, screening and cleaning of data, our final sample of top researchers comprised 2,940 researchers across all research fields.

See https://clarivate.com/highly-cited-researchers/ and https://orcid.org/.

We also compiled a second sample of early-career researchers – postdoctoral fellows affiliated with top US research universities that have recently faced funding constraints (including Harvard, Princeton, Pennsylvania and Columbia). Using ORCID, we extracted data for 1,377 post-doctoral fellows at Harvard, 1,404 at the University of Pennsylvania, 835 at Columbia and 317 at Princeton. For further methodological details, contact the authors. Our samples are not representative of the whole research population; we focus on these two groups of researchers for the illustrative purposes explained in the text.

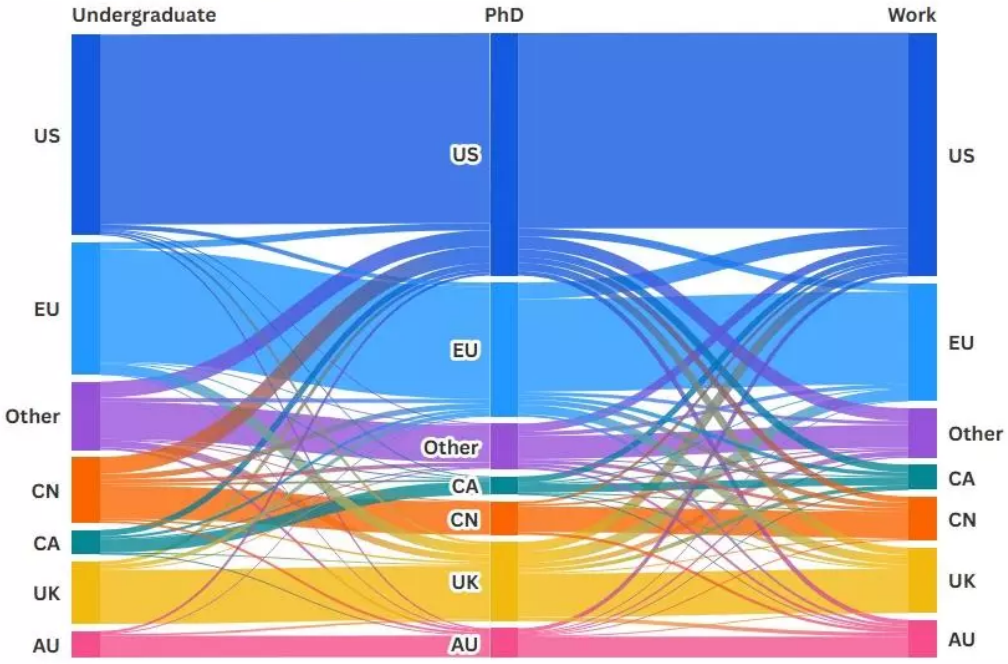
Educational ties of top researchers

Because of the long-standing US success as a host of global research talent (Van Bouwel and Veugelers, 2012; Kerr *et al*, 2016), in 2024, the US accounted for 36 percent of all HCRs, compared to 21 percent in China and 19 percent in the EU (including Switzerland and Norway).

We match HCRs to their ORCID profiles to retrieve their education trajectories (Box 1). Figure 1 shows the career movements of HCRs, from their places of study to their current countries of employment. It highlights the US's central role in the global academic ecosystem, especially as a destination for PhD education and long-term research careers. The US receives significant inflows of PhD students (who later become top researchers) from other regions (especially China and the 'other' category,

which includes all countries not listed separately in Figure 1): 22 percent of top researchers who have a US PhD pursued their undergraduate studies somewhere else. This contrasts with the 16.5 percent of top researchers with an EU PhD who obtained their bachelor or master's degrees outside the EU. While the EU retains a significant portion of its own talent, it also contributes substantially to the global pool of mobile top researchers, particularly to the US.

Figure 1: Career paths of highly cited researchers



Source: Bruegel based on Clarivate and ORCID. Note: country affiliations refer to the country of each researcher's primary institution. 'Undergraduate' indicates the country of the bachelor's degree; if no bachelor's information was available but master's data was, the country of the master's degree was used.The figure covers the education of all those who were listed at least once on the HCR list between 2014 and 2024.

Globally, more HCRs hold a US PhD than an EU PhD (37.4 percent versus 28.1 percent), reflecting the US's global leadership in doctoral training. Among EU-based HCRs, 78 percent earned their PhDs in the EU, and 6.4 percent earned them in the US. Among US-based HCRs, 70 percent earned their PhD domestically, and 7.7 percent in the EU (Figure 2).

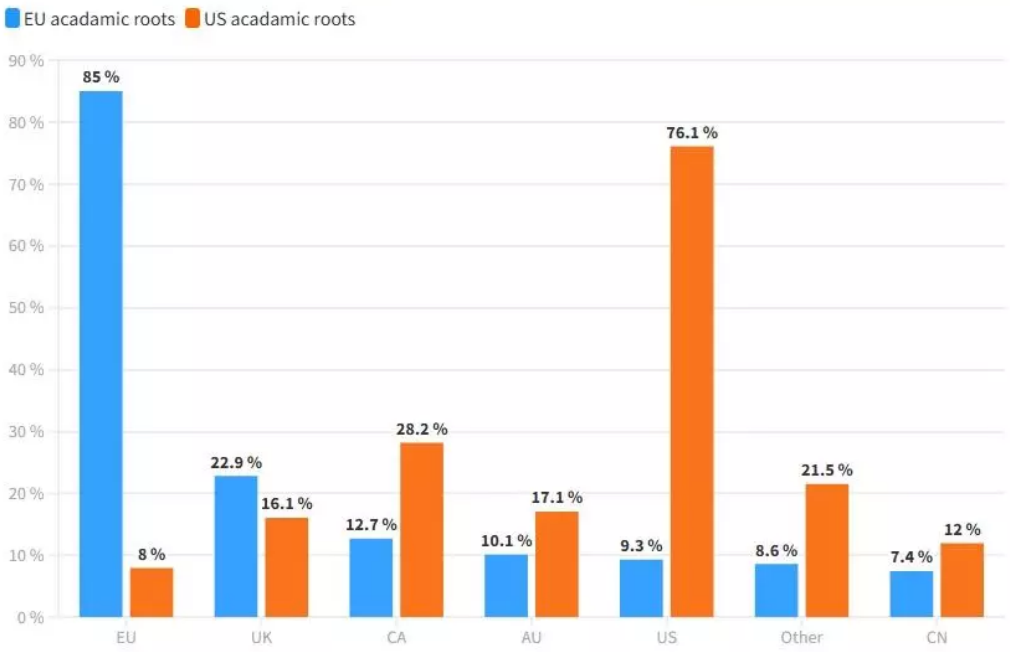
Figure 2: Share of researchers with US vs EU PhD degrees

Source: Bruegel based on Clarivate and ORCID. Note: Country affiliations reflect the country of the researchers' primary institution.

A significant chunk of the US-based top research workforce has an international education: 24 percent of US-based HCRs were entirely educated abroad (76 percent of US-based HCR have pursued at least one degree in the US; Figure 3). This proportion rises by eight percentage points for those HCRs who previously studied at least once outside the US: 32 percent of US-based HCRs have some educational ties abroad. By contrast, only 15 percent of EU-based HCRs never previously studied in the EU.

Figure 3 also shows that 9.3 percent of top US-based researchers have at least one degree from a European university. All else being equal, this group could be the most inclined to consider relocating to the EU.

Figure 3: Educational roots by current work country



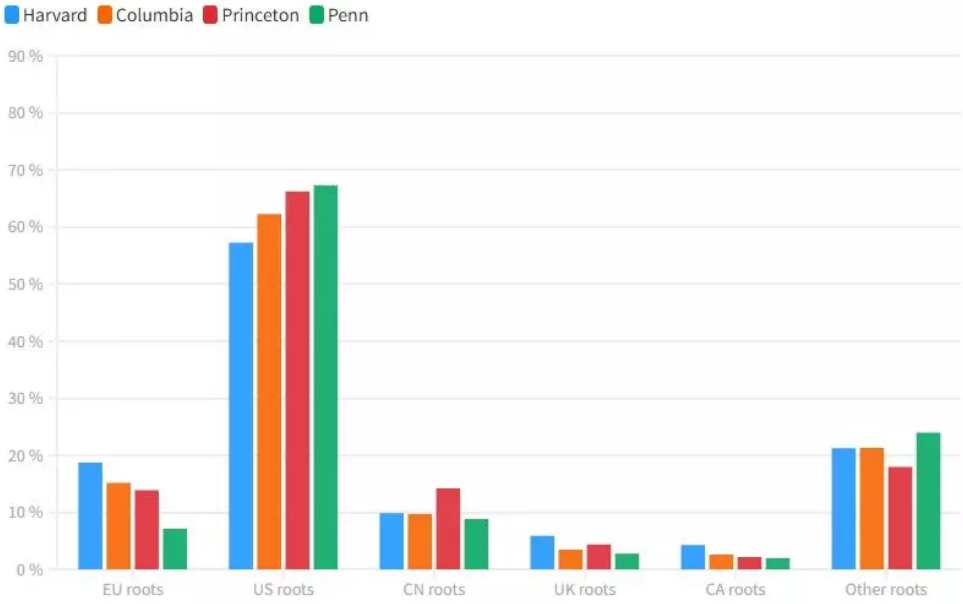
Source: Bruegel based on Clarivate and ORCID. Note: EU (US) education roots = researchers who earned at least one degree (Bachelor, Master, or PhD) in the EU (US). Country affiliations reflect the country of the researchers' primary institution. "Other" includes all remaining countries.

Educational history of US-based young researchers

It may be easier for Europe to attract early-career scientists who are not yet established in the universities where they are based. Non-US residents are likely on temporary visas and on the lookout for tenure-track placements. Their decision on where to locate is significantly affected by career-related factors: the quality of the research environment, opportunities for advancement and the presence of strong academic peers (Van Bouwel *et al*, 2011).

Among postdocs at Harvard, Princeton, Columbia and the University of Pennsylvania (some of the universities most threatened by the US government) whose educational histories could be retrieved, 33 percent to 43 percent were entirely educated abroad (57 percent to 67 percent have pursued at least one degree in the US). A significant share has EU educational roots: 7 percent to 19 percent of postdoctoral researchers in the selected elite US universities[7] hold at least one degree from a European institution (Figure 4).

Figure 4: Origins of academic training for post-doctoral fellows at US universities



Source: Bruegel based on ORCID. Note: education roots in the EU (US) = researchers who earned at least one degree (Bachelor, Master, PhD) in the EU (US).

What this means for the EU

The current developments in the US academic context are no doubt affecting researchers' life decisions. Researchers outside the US may pause their plans to move to the US. Within the US, some researchers may be considering whether to leave. There is still no data on the impact of recent US government policy.

US-based researchers who have previously studied in Europe (9.3 percent of US-based top researchers and up to 19 percent of researchers in a selected sample of elite US universities) might be more likely to consider leaving the US for Europe. These figures are by no means conclusive, but may indicate the potential size of the prize for the EU. To benefit, the EU must increase its attractiveness, nurturing a competitive, open and well-funded research environment, in order to fill the vacuum left by the US[8].

Europe might not be the first alternative to the US in the minds of migrating scholars. The most attractive destinations in 2022-2024, among US graduates who wanted to move abroad, were the United Kingdom and Canada[9]. Furthermore, the salary gap between US and EU academics remains huge. A top researcher at the University of California can earn between $500,000 and over $1 million annually, while even the

highest-paid professors at top European institutions such as Spain's Complutense University typically earn no more than €75,000[10]. In many EU countries, universities need state approval for budgets and follow rigid pay scales, though research suggests that universities with more control over their budgets and greater reliance on competitive grants achieve better research outcomes (Aghion *et al*, 2010).

The higher the quality of the academic ecosystem and the richer the academic opportunities, the greater the attractiveness for ambitious researchers, especially those at the start of their careers. The European Commission's Choose Europe Initiative is thus welcome.

Reducing barriers for international students and researchers is another important area for action. For example, recent policy changes in Norway, where it was decided to stop mandatory language training for foreign postdocs and PhD students, demonstrate how national measures can create more welcoming and flexible research environments[11].

Building strong education systems, providing good career opportunities and solid research funding is not only a priority to attract global talent today. It is also a wise long-term strategy with long-lasting beneficial effects. More international students – the talent of the future – might choose to study and work in the EU, if the EU can become what the US has been until now: the best destination worldwide for scientists.

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Endnotes

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5 Several economic papers have analysed researchers' migration patterns, though granular data is scant. Van Bouwel (2010) found that 64 percent of European economic students who obtained their PhDs in the US remained to work in the US, with 24 percent of them returning to their home countries.

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