China, India face tech brain drain through US universities

Foreign nationals who earn STEM PhDs stateside mostly stick around

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Most foreign nationals who earn STEM PhDs in the United States remain in the country many years after graduating, with the highest numbers among Chinese and Indian graduates, according to a report released this week from American policy think tank, the Center for Security and Emerging Technology (CSET).

Roughly 77 per cent of international STEM PhDs who graduated in the US between 2000 and 2015 were still living in the country as of February 2017, compared to 55 per cent of non-STEM PhDs.

Retention rates varied according to economic conditions, with the dot-com crash in the early '00s and the Great Recession of the late '00s giving graduates good reasons to leave.

The rates did not vary by STEM discipline.

Chinese nationals had the highest rate at 90 per cent, followed by Indian nationals at 87 per cent. All other countries averaged out to 66 per cent. Chinese and Indian nationals accounted for nearly half of all international graduates during that time.

When Chinese and Indian nationals stay, they tend to stay for the long haul and even pursue paths to citizenship. In contrast other nationalities "trickle out" of the country over time, said CSET.

Most of the foreign nationals attending US graduate schools enter on F-1 student visas, and those staying typically transition to temporary residency, including an H-1B visa, before becoming permanent residents or naturalized citizens. Seventy per cent of the STEM PhDs from US universities between 2000 and 2007 were either citizens or permanent residents by February 2017.

But thanks to country-based caps that prevent more than seven per cent of green cards be issued to individuals from a single country, those from China and India face more difficulties naturalizing as they compete with their fellow citizens for visas.

A study from American public policy research organization the Cato Institute calculated that Chinese nationals who applied for permanent residency in 2020 will wait over a decade to have their applications processed, while Indian nationals may wait upwards of 80 years. Yes, we do

mean eighty years – eight decades. The Cato Institute wrote that 200,000 applicants will therefore die before being awarded their green card.

Efforts are in place to make exceptions to US immigration caps for STEM PhD holders, however they have not yet been made into law.

"US universities remain a top destination for students around the world, particularly at the graduate level," wrote the authors, who observed that international students account for 40 per cent of the 500,000 doctoral degrees awarded by US universities between 2000 and 2019.

While some US politicians have stirred up fears that Chinese PhD graduates educated in the US use their skills back in China, thereby undermining US national security, the CSET study confirms the opposite is true.

"If anything, available data supports the Chinese Communist Party's concern that China is losing STEM talent to the United States and other countries," wrote the authors.

That analysis is controversial in China. Recent research by a Chinese university that reached similar conclusions was quietly taken down.

CSET has previously recommended that the US look to hire more foreign talent as part of a multi-pronged approach to secure the domestic supply chain and chip industry – an opinion greeted with disdain by Chinese media, which has accused the research org of advocating poaching.

CSET concluded that foreign STEM talent is valuable and should be treated as such.

"Those who stay in the country after receiving their degrees strengthen the domestic STEM workforce and make valuable contributions to the economy and society," wrote the think tank.