



Weighing the Costs and Benefits of Foreign-Born STEM Talent

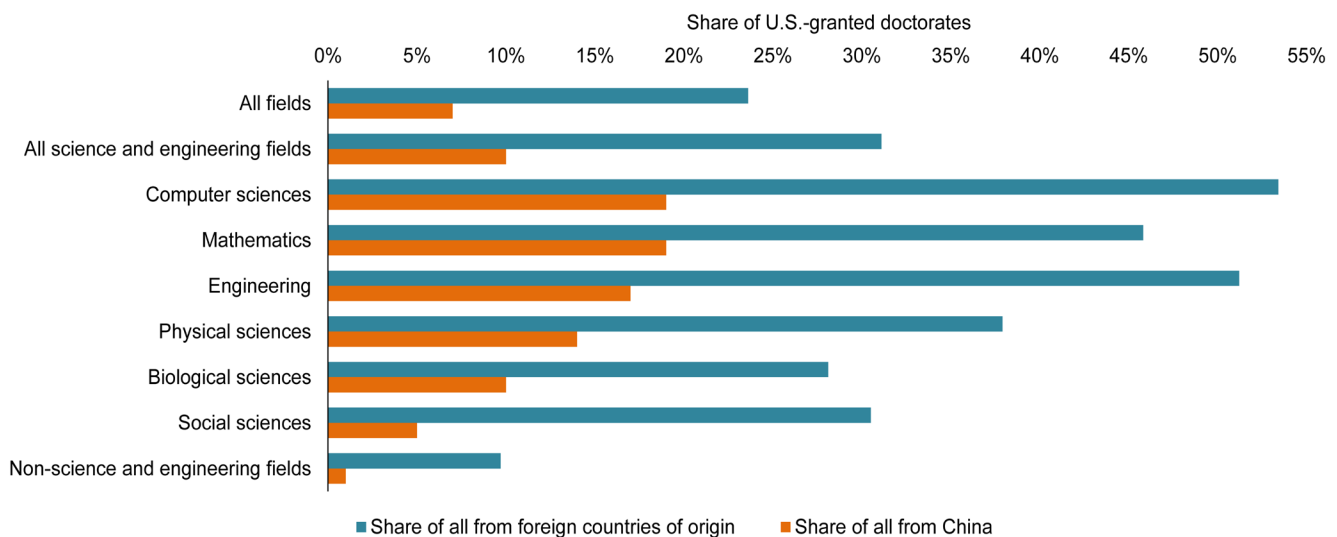
The United States has long been a magnet for students and workers from abroad, particularly at advanced degree levels. Today, nearly half of all individuals with doctoral degrees working in science, technology, engineering and mathematics (STEM) fields in the United States were born abroad. However, concern over protecting U.S. technology and trade secrets from foreign competitors has fueled debate over the admission of foreign students and workers to the United States, particularly those from China.

STEM workers in the U.S. drive innovation and economic growth; however, innovation activities at U.S. companies in the past have been vulnerable to theft by foreign adversaries. Geopolitical tension between the U.S. and China has prompted debate over government policies concerning the admission of foreign students and workers to the United States, especially as it relates to citizens of China.

The U.S. government is wary of potential theft of trade secrets by Chinese nationals working or studying in the United States. A 2021 [report](#) by a team of researchers from the Science and Technology Policy Institute (STPI) identified challenges in China's academic STEM research system that could explain why China is likely to engage in the theft of U.S. trade secrets. The report argues that China has difficulty fostering home-grown innovation because of systemic issues like overbearing, top-down governmental control, lack of rewards for long-term research projects, and lack of incentives for creative thinking.

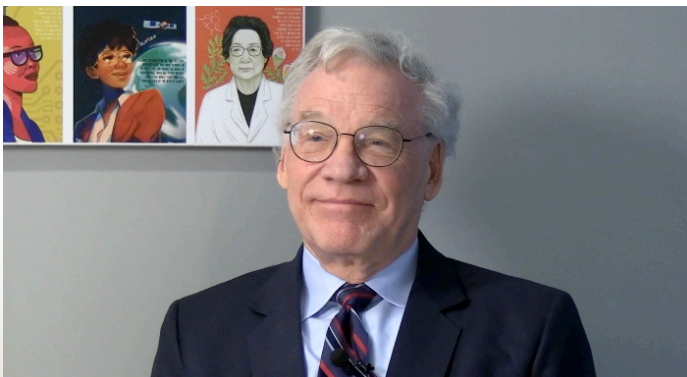
Another STPI [report](#) sheds light on whether the foreign nationals studying and working in the United States generate greater benefits than potential losses to the U.S. economy. Keith Crane led a team of researchers that used U.S. national income accounts and other statistical data to estimate the benefits to the United States generated by foreign STEM talent. They found that foreign-born STEM workers added nearly 2% to U.S. gross domestic product in 2019, an estimated value of \$367 billion to \$409 billion.

The researchers approximated potential economic losses resulting from foreign STEM talent by estimating the potential costs of misappropriation of trade secrets. They did so by looking at historical information on thefts of trade secrets by foreign workers in the United States and determined the median cost of restitution of a trade secret — the damages a convicted individual was ordered to pay — to be about \$420,000. They then assumed a maximum likelihood that a foreign-born individual engages in theft to estimate a potential overall loss. Subtracting the value of the possible loss from the net economic benefit generated by each foreign-born individual yielded a large net positive value per foreign-born individual.



Between 2000-2017, a large share of U.S.-granted STEM doctorates were awarded to non-U.S. citizens, many of whom were from China.

Keith and his team were able to demonstrate that contributions to the U.S. economy by foreign-born talent in STEM fields consistently outweigh the potential losses. The report's findings contributed to the formulation of U.S. policies that offer more options for foreign-born STEM visitors, students and workers in the United States.



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