



## Data check: Why do Chinese and Indian students come to U.S. universities?

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Jeff tries to explain how government works to readers of

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Two new reports document the continued growth in the overall number of students coming to the United States from other countries. Those pursuing undergraduate degrees in so-called STEM (science, technology, engineering, and mathematics) fields make up 45% of the undergraduate total, and their share of the graduate pool is even larger. But within that broad picture are some surprising trends involving China and India, the two countries that supply the largest number of students (see graphic, above).

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One is that the flow of Chinese students into U.S. graduate programs is plateauing at the same time their pursuit of U.S. undergraduate degrees is soaring. Another is the recent spike in graduate students from India occurring despite a continuing small presence of Indian students at the undergraduate level.

In August, *ScienceInsider* wrote about a report from the Council of Graduate Schools (CGS) on the most recent acceptance rates for foreign students at U.S. graduate programs. Last week the report was updated to reflect this fall's actual first-time enrollment figures. And yesterday the Institute of International Education (IIE) issued its annual *Open Doors* report, which covers both undergraduate and graduate students from elsewhere enrolling in the United States as well as U.S. students studying abroad.

According to IIE, 42% of the 886,000 international students at U.S. universities in 2013 to 2014 hailed from China and India. China makes up nearly three-fourths of that subtotal. In fact, the number of Chinese students equals the total from the next 12 highest ranking countries after India.

This year's IIE report also includes a look at 15-year trends. For example, foreign students compose only 8.1% of total U.S. enrollment, but their numbers have grown by 72% since 1999, making international students an increasingly important part of U.S. higher education.

Their presence has long been visible within graduate programs in science and engineering fields, of course. But the new *Open Doors* report documents a surge in undergraduate enrollment from China, to the point where it almost equals the number of graduate students in the country—110,550 versus 115,727. In 2000, the ratio was nearly 1-to-6.

Trying to understand such trends keeps university administrators up at night. And the more they know, the better they can be at anticipating the next trend. That's why *ScienceInsider* turned to Peggy Blumenthal. She's spent 30 years at IIE, most recently as senior counselor to its current president, Allan Goodman, and that longevity has given her a rich perspective on the ebb and flow of international students. Here is her perspective on what's moving the needle for Chinese and Indian students.

### **An explosion of Chinese undergraduates**

**The numbers:** Chinese undergraduate enrollment in the United States has grown from 8252 in 2000 to 110,550 last year. Almost all of that growth has occurred since 2007, and there has been a doubling since 2010.

**The reasons:** A high score on China's national college entrance examination, called the gaokao, enables a Chinese student to attend a top university and can punch their ticket to a successful career. It requires years of high-stress preparation, however. A growing number of parents choose to remove their children from that pressure cooker, Blumenthal says, and look for alternatives abroad. The chance for a liberal arts education at a U.S. university is an attractive alternative to the rigid undergraduate training offered by most Chinese universities, she adds.

The U.S. system of higher education, Blumenthal says, offers Chinese families "a unique opportunity to shop" based on the price, quality, and reputation of the institution. The cost of out-of-state tuition at a top public U.S. university is a relative bargain for China's growing middle class, she notes, and community colleges are dirt cheap.

Recent changes in immigration policies have made the United Kingdom and Australia less desirable destinations among English-speaking countries, according to Blumenthal. She also thinks that U.S. colleges have built a sturdy support system based on their decades of experience in hosting foreign students. "In Germany or France you're pretty much on your own" in choosing classes, completing the work, and earning a degree, she says. "Nobody is there to help if you're having trouble."

### **Flat Chinese graduate enrollment**

**The numbers:** The CGS report says that the number of first-time graduate students this fall from China fell by 1%, the first time in the decade that it has declined. Thanks to that dip, the growth in the overall number of Chinese graduate students on U.S. campuses slowed to just 3% this fall, compared with double-digit increases in recent years. U.S. academic scientists may not be aware of this emerging trend because of the sheer number of Chinese graduate students on U.S. campuses. IIE puts the number last year at 115,727, and the CGS report says they represent one-third of all foreign graduate students.

**The reasons:** Chinese graduate students have more options at home now. "China has pumped enormous resources into its graduate education capacity" across thousands of universities, Blumenthal says. An increasing proportion of the professors at those universities have been trained in the United States and Europe, she says, and upon their return they have implemented Western research practices. "They are beginning to teach more like we do, publish like we do, and operate their labs like we do."

At the same time, she says, the added value of a U.S. graduate degree has shrunk in relation to a comparable Chinese degree. “That’s not true for MIT [the Massachusetts Institute of Technology] or [the University of California,] Berkeley, of course—those degrees still carry a premium in the job market,” she says. “But for the vast majority of Chinese students, it’s not clear that an investment in a U.S. degree is worth it, especially when the rapid growth of the Chinese economy has created such a great need for scientific and engineering talent.”

In the United States, a tight job market often translates into more students attending graduate school in the hope that it will give them an edge. But high unemployment rates among college graduates in China haven’t created a potentially larger pool of applicants to U.S. graduate programs, she says, because those students are not competitive with their U.S. peers.

“They are probably not English speakers and would have trouble passing the TOEFL [an assessment of English language skills],” she surmises. “So they might only get into a fourth-rate U.S. graduate program.” In contrast, she says, U.S. graduate programs have historically gotten “the cream of the crop” from China. And if a larger proportion of those students can build a career in China, fewer need apply to U.S. graduate programs.

### **Few Indian undergraduates**

**The numbers:** India barely registers on a list of originating countries for U.S. undergraduates. Compared with China, home to 30% of all U.S. international undergrads, Indian students compose only 3% of the pool. And the overall total for 2013—12,677—actually reflects a drop of 0.5% from 2012.

**The reasons:** Top-performing Indian students are well-served at the undergraduate level by the country’s network of elite technology institutes, known as IITs. India has also never had a strong connection to the United States at the undergraduate level, according to Blumenthal. In addition, she says, “many Indian parents are reluctant to send their girls abroad, especially at the undergraduate level.” By contrast, she says, China’s one-child-per-family rule has meant that they have “one shot at success, male or female.”



## **Soaring graduate enrollment from India**

**The numbers:** The incoming class of Indian students for U.S. graduate programs is 27% larger this year than in 2013, according to CGS's annual survey. And that increase follows a 40% jump in 2013 over 2012. However, CGS officials note that the Indian numbers have historically been more volatile than those from China; the increases for 2011 and 2012 were 2% and 1%, respectively.

**The reasons:** U.S. graduate programs have benefited from several recent developments that, together, have opened the floodgates for Indian students. For starters, India's investment in higher education hasn't yet had much effect on graduate education, Blumenthal says. Unlike in China, she says, "in India there's been very little effort to upgrade the quality of the faculty."

At the same time, it's becoming harder for graduates of India's universities to follow the traditional path of doing their further training in Britain or Australia, as many of their professors had done in previous generations. For the United Kingdom, tuition increases, visa restrictions, and a tightening of rules for those seeking work permits after college have all created greater barriers to entry, Blumenthal says. "It sends a message from the U.K. government that [it's] not really interested in international students," she says. "They are now regarded as simply another category of immigrants" rather than a valuable future source of intellectual capital.

In Australia, Blumenthal notes, there's a growing backlash against earlier government attempts to recruit more international students. "People think they let in too many," she says. "They didn't fit in, they didn't speak English, and there was a perception that they were taking away jobs from Australians."

A recent strengthening of the rupee against the U.S. dollar has made U.S. graduate education more affordable for the middle class, she adds. And sluggish economic growth in India has meant fewer jobs for recent college graduates.

<http://news.sciencemag.org/education/2014/11/data-check-why-do-chinese-and-indian-students-come-u-s-universities>