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Students marked the centennial of the National Autonomous University of Mexico in the streets of Mexico City's Zócalo district in 2010. The university's more than 300,000 students are a precious resource in a country where the average citizen has only a little more than eight years of schooling.

# THE OTHER IMMIGRANTS

The United States is luring many of Mexico's best and brightest northward.

BY JESUS VELASCO

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**L**AST YEAR, THE PEW RESEARCH CENTER's Hispanic Trends Project reported that net migration from Mexico to the United States "has stopped and may have reversed." Mexicans can only hope that this trend included the highly skilled workers and researchers who have been moving to the United States in droves in recent years. Alas, that is unlikely.

Amid all the controversy in the United States over illegal immigration by low-skilled workers, few Americans recognize how significantly the influx of Mexican talent has benefited the United States—and how much it has hurt Mexico. The number of college-educated Mexicans living in the United States rose from some 300,000 in 2000 to 530,000 in 2010. This is a grievous loss in a country where the average citizen has only a little more than eight years of schooling. According to education researcher Alma Maldonado, Mexico has only 30,000 citizens with a PhD, and 11,000 of them live in the United States.

For the most part, the United States has not paid for the education and training of these talented newcomers. They were educated in Mexico, and

many who obtained graduate degrees did so with the support of the Mexican government—in some cases, in the form of scholarships to study at U.S. universities. In many ways, the United States is getting a free ride.

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Many of Mexico's best minds are now contributing to American (and global) science on the strength of intellectual assets they developed in Mexico. Their achievements have contributed only marginally to the growth and prestige of Mexican academia and industry, and their absence from their native country deprives young Mexican students of important teachers and mentors. Take, for example, Ignacio Chapela, a microbial ecologist at the University of California, Berkeley. He was able to write his still controversial 2001 *Nature* article in which he claimed to reveal the flow of transgenes

from genetically modified corn into Mexican wild maize because he was intimately familiar with the southwestern state of Oaxaca, where he said the contamination had occurred. (Chapela had used borrowed money to open a rudimentary laboratory in the region in the 1980s.) Rodolfo Dirzo, a professor of environmental science at Stanford, is currently working in Kenya and Tanzania, studying the impact of human behavior on elephants, giraffes, and other big fauna, and the feedback effects on human health. But Dirzo's project wasn't born at Stanford or in Kenya; it grew out of his years as a researcher in

the Lacandona and Tuxtlas rainforests of southern Mexico.

"All my experience [was] acquired in Mexico," observes Jorge Soberón, a biologist who served as executive secretary of the National Commission for Knowledge and Use of Biodiversity in Mexico before accepting a faculty position in the United States, "but my current productivity looks good for the University of Kansas, where I work." Not even when Mario Molina was awarded a Nobel Prize in Chemistry in 1995 for his work revealing the threat posed by chlorofluorocarbons to Earth's ozone layer did Mexico win wide recognition.



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**Mario Molina is the kind of immigrant Mexico hates to lose. He came to the United States as a graduate student and went on to receive a Nobel Prize in Chemistry. In August, President Barack Obama awarded him the Presidential Medal of Freedom.**

Molina currently teaches at the University of California, San Diego.

**T**HERE ARE MANY REASONS WHY SO many of Mexico's knowledge elite leave home. The most obvious is that they are welcomed abroad with open arms. American universities and industries support a free market in brainpower, in which the most qualified—and sometimes those willing to work for lower pay—get the job. Those conditions cannot always be found in Mexico. The U.S. government works hard to attract foreign talent, and it is under constant pressure to do more by, for example, increasing the supply of visas for highly skilled foreign workers. Earlier this year, the Senate approved an immigration reform bill that would eliminate caps on the number of green cards available to foreign citizens working in the United States who hold a U.S. graduate degree in science and other critical areas.

For highly educated Mexicans, the lure of the United States is strong. Mexico's support for education and research is meager. Last year, Mexico invested only 0.39 percent of its gross domestic product in research and development, while South Korea devoted 3.45 percent and the United States 2.85 percent.

But Mexico's investment also trails that of other less developed countries such as Brazil (1.25 percent) and Argentina (0.61 percent). President Enrique Peña Nieto has promised to increase Mexican R & D to one percent of GDP, which will be a significant improvement if he can achieve it, but still less than is needed.

Low pay hobbles Mexican research institutions. Entry-level professors are paid less than a third as much as their counterparts to the north. Bureaucracy and politics pervade the universities. "When you work in experimental science," said Soberón, "you are always subject, on the one hand, to the stupid bureaucracy of Hacienda [the Ministry of Finance] and Customs, and on the other, to the university's bureaucracy. You have to wait a long time to obtain any DNA reagents or primers. Besides, you always, always, always, always have to fight, because in Mexico the institutions are weak."

Most of the well-educated Mexicans I interviewed for this article said that traffic, pollution, and other quality-of-life issues were additional inducements to leave. "I have never liked the chaos of Mexico City," said Héctor Valdés, an economist at the Inter-American Development Bank in Washington, "and you can also add the issue of insecurity." Mexico's crime rate

has soared, with kidnappings rising from almost 600 in 2006 to more than 1,300 in 2011; the number of homicides doubled in that period, to more than 27,000. The threat of crime and general insecurity also seems to be scaring away American students. Once the main destination for young Americans studying in Latin America, Mexico dropped to third place in the 2010–11 academic year, according to the Institute of International Education. The number of American students in Mexico dropped 42 percent from the year before, tumbling to just over 4,000.

**M**EXICO HAS TAKEN ONLY A FEW steps to stop the brain drain. Through its National Council for Science and Technology (CONACyT), the government has pursued two main policies, one of retention, the other of repatriation. A competitive program created in 1984 to bolster technological and scientific research within Mexico provides Mexican researchers with substantial grants. If the program did not exist, said Jorge Durand, a distinguished specialist on immigration at the University of Guadalajara, “the brain drain would be a stampede.”

The parallel CONACyT effort to bring émigré Mexican researchers back to the country has been beset by prob-

lems, however. In order to qualify, candidates must first find a job at a Mexican institution. But many open positions are not properly advertised, and personal contacts are indispensable—a significant obstacle for people who work abroad. And for people trained in very specific areas, appropriate jobs often do not exist. Ana Mylena Águilar, a specialist in health and population economics who holds a Harvard PhD, recently told me, “There are no jobs in my field in Mexico. . . . Besides, in Mexico there are no people who stay up-to-date in my area.”

Some argue that highly skilled Mexicans do not necessarily need to come home in order to benefit their country. Instead, they can join in what those who study the migration of talent worldwide have called “brain circulation.” The idea is that people who have gone abroad can engage in collaborative research across borders or, particularly if their work is more commercially oriented, participate in transnational investment and joint ventures. And they can use the personal networks they develop abroad for the benefit of others in their home country. Stanford’s Rodolfo Dirzo, for example, teaches a course in Mexico, sharing his knowledge and contacts with his Mexican students.

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**Many jobs in Mexico's private sector pay very well, so coming home is relatively easy for highly skilled corporate workers.**

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Something like brain circulation already prevails in the world of commerce. Highly qualified Mexicans in business have more options than researchers and academics. As Alejandro Cardoso, CEO for Latin America of the global advertising firm Publicis, told me, the atmosphere of insecurity contributes to some departures, but often those who work for transnational companies in Mexico simply find that promotions take them to the U.S. headquarters or outposts of their employers. Others seek jobs across the border as a way to build their resumé for multinational careers. Indeed, many émigré Mexican businesspeople spend no more than a few years abroad. They work in fields where turnover is high relative to what it is in academia, and jobs in Mexico's private sector pay very well, so coming home is relatively easy. And it is not uncommon for Mexican employees of multinationals to be transferred back to their

home country after a few years abroad. Mexico reaps many benefits from these transnational workers.

Given the disparity in opportunities between Mexico and the United States in higher education and research, the cross-border exchange of people in these two fields is likely to remain mostly unidirectional. But knowledge and ideas can travel much more easily than people. Brain circulation in the realm of research requires "synergy between professionals abroad and home-country institutions," argue sociologists Alejandro Portes and Adrienne Celaya; they add that generating such synergy is the work of "an efficient and proactive state." But the Mexican government is not doing as much as it could, relying chiefly on a program called the Mexican Talent Network. It works through 24 Mexican consulates around the world, 11 of them in the United States, often relying on consuls to recruit one or two successful Mexicans in their region to establish cross-border communications. Javier Díaz de León, a former director of the program that oversees the Talent Network, who is now Mexico's consul in North Carolina, says that the program "has been very successful in building networks but has not been very successful in creating products or specific outcomes."

The Talent Network is at least based on a sound premise: It will be difficult in the foreseeable future to lure many Mexican academics and researchers home permanently as long as the differential in pay, research facilities, and living conditions remains so large. The idea instead must be to tap the knowledge and abilities of this diaspora from afar, and to build its strength and numbers.

Higher education and R & D are already becoming more of a common enterprise between Mexico and the United States as the North American Free Trade Agreement and globalization dissolve borders. But the United States is reaping a disproportionate share of the benefits. To create a more balanced circulation of talent, the U.S. government should finance a program to bring more Mexican students to top American universities. When they embark on careers, many of these students likely

will stay north of the border, increasing the benefit for the United States. That outcome should be balanced by formal programs to allow these people to return to Mexico to teach or conduct research for defined periods of time, helping to build Mexico's intellectual capital. Under this arrangement, other U.S.-educated Mexicans would probably return home, and many would join the transnational professional class that increasingly links Mexico and the United States. With a creative approach, brain circulation could become a boon to both countries. ■

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