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## Study Raises Concern Over 'Brain Drain'

By THE ASSOCIATED PRESS

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SAN FRANCISCO (AP) -- The percentage of patents filed by foreigners living in the U.S. has tripled in the past decade -- yet the tight cap on permanent visas may force entrepreneurs back home to create rival companies in China, India and elsewhere, according to a study.

Researchers from Harvard, Duke and [New York University](#) on Wednesday will publish an analysis of international patent filings, calling the trend "reverse brain drain." They warn that, without [immigration](#) reform, skilled immigrants will leave the country, and U.S. competitiveness from Silicon Valley to Washington, D.C., could erode.

"We've brought in highly skilled people and given them a training in American business and marketing savvy, and then we force them to go back home and start competing," lead researcher Vivek Wadhwa said. "Companies lose talent, and workers are resentful and angry. It's a lose-lose situation."

Wadhwa, a Delhi-born engineering and business lecturer at Duke and Harvard, and his co-workers created a database of inventors who filed patent applications with the World Intellectual Property Organization from 1998 to 2006. Researchers wanted to determine how many were living in the United States without U.S. citizenship or permanent residency status at the time of their filing.

According to the report, so-called foreign nationals accounted for 7.3 percent of WIPO patents filed from the United States in 1998. By 2006, they more than tripled to 24.2 percent.

WIPO, part of the [United Nations](#), allows inventors to file a single patent application recognized by at least 125 countries. Researchers didn't analyze applications to the [U.S. Patent and Trademark Office](#), but many inventors file with both simultaneously.

Applications filed by foreigners were greatest in tech hubs such as California, where they made up one-third of the state's WIPO filings in 2006, and Massachusetts, New York, Texas and New Jersey.

Foreign nationals at technology pioneer [Qualcomm Inc.](#) and pharmaceutical leader [Merck & Co.](#) accounted for at least 65 percent of applications. Of WIPO applications filed by agencies of the U.S. government, foreign nationals filed 41 percent.

Although the number of patent applications from foreign residents is rising, the United States isn't allowing more inventors to stay here. One type of permanent visa for skilled workers, known as the EB visa, is capped at about 120,120 per year. The limit from any single country is about 8,400.

According to the report, based partly on U.S. Department of State data, more than 1 million foreign nationals were waiting for permanent residency in 2006 -- including more than 500,000 highly skilled immigrants.

It's impossible to say how many highly skilled foreign nationals have returned home to start businesses based on patents they filed in the United States. But with the economies of India and China surging, researchers warned, entrepreneurs have opportunities unheard of five years ago -- and their native countries may have lower housing costs and be closer to relatives.

"If you've been on a temporary visa for several years, you get frustrated, then you talk to your friends back home who are making about as much money as you but they have chauffeurs and every luxury," Wadhwa said. "These people are going to go back home. Maybe it's now just a trickle, some anecdotal evidence, but it could become a flood."

Echoing concerns of many Silicon Valley workers, Wadhwa said the U.S. should drastically increase permanent residency visas for skilled immigrants. Just last month, hundreds of engineers, doctors and other professionals rallied in San Jose to highlight the plight of legal immigrants facing years of uncertainty while green card applications are reviewed.

The report comes amid growing pressure from the tech industry to boost caps on skilled worker visas.

At San Jose-based [Cisco Systems Inc.](#), more than 60 percent of WIPO patent applications came from foreign nationals living in the United States -- a trove of business concepts and product ideas that Silicon Valley's most richly valued company would hate to lose.

"Cisco and other U.S.-based companies require access to a 21st century work force trained in technology, math and science to match our current and future employment needs," said Brian Schipper, Cisco senior vice president for human resources. "Innovation requires that we recruit the best and the brightest."